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Cover: Drawing of a Fremont Ivie Creek Black-on-white bowl found at Five Finger Ridge in Clear Creek Canyon. Drawing by Tula Rose.

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Message from the Editors

The 2008 issue marks the 20th anniversary of *Utah Archaeology*. On this momentous occasion we are pleased to bring you a special issue of the journal. The 13 invited essays within span a range of topics, including the beginnings of the journal, the history of archaeology in Utah, the history and contributions of USAS and URARA, past and present theoretical positions and methods used throughout the state, the intercises of politics and archaeology, and current topics in CRM and agency archaeology in the region. Although the essays do not necessarily reflect the opinions of the editors, we believe all of the contributions offer important and interesting points, which will hopefully spark discussion and worthwhile debate. It is also important at this anniversary to remember that Utah Archaeology would not exist if not for contributions from our archaeological community: academics, contract archaeologists, agency archaeologists, and avocational archaeologists alike. Twenty years of solid research is an accomplishment we can all be proud off!

David T. Yoder
Chris N. Watkins

In the Beginning

David B. Madsen
Texas Archaeological Research Laboratory

The publication of Utah Archaeology in 1988 resulted from a sustained growth of the Utah Statewide Archaeological Society and creation of the Utah Professional Archaeological Council following the creation of a state Antiquities Section and the office of the state archaeologist in 1973. After the demise of the state funded publication series Antiquities Section Selected Papers due to budgetary constraints, these amateur and professional organizations recognized the need for a privately funded publication that could report work carried out by their members. The publication series is a product of a vibrant and coherent archaeological community responding to its own needs in a unified fashion.

My purpose here is not to dwell on the specifics of how and why *Utah Archaeology* was first published, hopefully someone with a better memory than mine can do that, but to provide a general background of the social and political forces that led to its founding. While the first issue of *Utah Archaeology* was published in 1988, it is necessary to go all the way back to the beginnings of the Antiquities Section in 1973 to understand the forces driving the publication of that first issue.

That year, Jesse Jennings, Lucy Beth Rampton, George Tripp, and others were successful in getting an Antiquities Law passed that included the establishment of a State Antiquities office, creation of the position of State Archaeologist, and provisions for regulating archaeological work in the state through a permit system. Jennings wanted the State Archaeologist's office to be associated with the Utah Museum of Natural History, presumably so he could keep the State Archaeologist under his thumb. Due to a series of legislative machinations, however, the Antiquites Section was placed within the Utah State Historical Society (or the Division of State History as it is known in state government).

In the fall of 1973, Mel Smith, the director of the Historical Society, hired me to be the first Utah State Archaeologist, despite the long hair and numerous other clues suggesting I might not be the smoothest cog in a state administrative system. Throughout the first ten years of the Antiquities Section's existence Mel was in all ways supportive as both the general public and the state's bureaucratic powers slowly came to grips with the presence of a serious advocate for archaeological preservation in the state.

Although it is hard to imagine now, given the many archaeologists (and the regulations that support them) found throughout all levels of both the state and federal bureaucracy in Utah, no one at the time had even heard of a State Archaeologist, and they were not prepared to have their activities monitored in any way by rules protecting the state's archaeological resources. Even Jennings was dumbfounded (and more than a little pissed off) when he was asked to apply for a permit before starting a fieldwork project, claiming the law had been instituted to govern the activities of pothunters, not someone like himself. I think I spent most of my first four or five years facing various state dignitaries sitting behind their desks with mixed looks of surprise and obstinacy as I explained their responsibilities to them under the new Antiquities Law.

The public, as well, found it difficult to grasp the new status quo, and the politically connected were not hesitant in trying to use their influence to

circumvent the Antiquities Law. I well remember a relic-hunting dermatologist who applied for a permit claiming that since he was a doctor he was qualified to excavate archaeological sites. When told that was not quite sufficient, he stormed out of the office shouting imprecations, rejecting my offer to let him on the site under some archaeological supervision, and claiming he did not need a permit in the first place. Weeks later, he sent his nurse in with a manuscript on the "excavation" that he wanted published in the *Antiquities Section Selected Papers* (ASSP). The "report" represented little more than an artifact hunt, and was so poorly written I would have had to reject it even if the work had been done under the proper regulatory authority. I suggested in the rejection letter that I "wouldn't operate if he wouldn't excavate," but unfortunately, he failed to see the humor in that and went straight to his friend in the Governor's office, trying to get me fired. I was only saved through the good graces of Mel Smith, who, when called on the carpet by the Governor and told to get rid of me, replied that if he was forced to do that he would have to be replaced as well. While Smith was being a stand-up guy, he was aided in his stance by the Antiquities Act itself, as it specified both the position and duties of the State Archaeologist, making it difficult for a politician to fire someone for doing what he was specifically required by law to do. The episode was only one of a number of attempts during the first 10-15 years after the founding of the Antiquities Section made by developers, pot-hunters, and others trying to get the Antiquities Law abrogated, the section budget slashed, or the State Archaeologist removed.

Most of these attempts to circumvent the Antiquities Act were internal, as the powers that be behind the departments of Natural Resources, Transportation, State Trust Lands, and other agencies responsible for archaeological sites under their control came to realize they had a real thorn in their sides. Dealing with this initial resistance to managing archaeological sites properly was mostly a matter of negotiation. We had to be firm enough to make people realize there would be real consequences if sites were bulldozed without proper evaluation and salvage, but had to be flexible enough to find solutions to apparent conflicts between "progress" and preservation. In these first years the solution usually involved personnel of the Antiquities Section helping agencies by conducting surveys and salvage operations at costs reduced to the point the agency could find them palatable. Such an approach was necessary during these early years because no state agency had its own archaeologist and because the number of Cultural Resource Management firms was too limited and their size too small to do the jobs required. By using this stick and carrot approach, most state agencies came to grudgingly accept the need to comply with the state antiquities laws and eventually to hire a professional staff to manage that compliance.

None of that would have happened, however, without the "stick." The threat of "real consequences" was the threat of an appeal to the public and the associated negative publicity that would produce. Since the general public interest in archaeological preservation is often less focused, while nonetheless real, it was, in particular, the threat of an appeal to an organized public constituency comprised of the professional and amateur archaeological communities (and the lawsuits they might bring!) that proved to be of greatest concern to the state's bureaucrats. One of the by-products of the initial bureaucratic resistance to archaeological preservation was the creation of an "us against them" feeling among members of the archaeological community. Although initially small in numbers, this community was cohesive, unified, and thus persuasive, and was a motivating factor in getting state government to deal with the state's archaeological resources appropriately.

There were two major steps in creating this cohesive public force. First, the organization of the Utah Professional Archaeological Council (UPAC) in 1982 provided a public face for concerned professionals who either had little individual influence or who operated under

organizational restrictions. UPAC officers like Rick Holmer and Joel Janetski could, and did, approach elected officials and political appointees and pointed out to those officials that they represented a membership that was united behind their lobbying efforts. Second, the growth of the Utah Statewide Archaeological Society (USAS) created a wide base of support. Initially, USAS was a somewhat moribund organization with only two small chapters, but with the help of people like George Tripp and Mark Stuart, it grew exponentially during the late 1970s and early 1980s and became a force when dealing with the state legislature. Part of this was simply because George was a superb salesman and lobbyist who fit in well with the state's legislators because he spoke their language. Mostly, however, it was because, with six to seven chapters spread statewide (by 1990 USAS would have ten chapters and more than 400 members), USAS members had direct access to the legislators who represented them.

With the united front presented by these professional and amateur organizations, those who cared about Utah archaeology were able to promote the preservation of archaeology within state agencies and to fend off attacks aimed at hamstringing enforcement of the state's antiquities laws and regulations. The *Antiquities Section Selected Papers* series was one of the principal beneficiaries of these promotional efforts. ASSP was initially started to provide a public outlet for the many project reports generated by work the Antiquities Section conducted for state and federal agencies, but it also provided a means of publishing many other "gray literature" reports generated by other institutions. The original 1973 Antiquities Act required that the Antiquities Section and the State Archaeologist "edit and publish antiquities records," and, as the preface in each volume of ASSP repeated:

> The series has three goals: 1) to provide a vehicle for the publication of research carried out by the Antiquities Section; 2) to provide an outlet for archaeological reports which do not have a general distribution (i.e., investigations done in conjunction with environmental impact statements); and 3) to allow publication of valuable manuscripts now on file and re-publication of articles now out of print and unavailable. Manuscripts from all sources, including state and federal agencies, educational institutions, and private individuals, will be accepted for examination and possible publication [Madsen 1975:i].

Gradually, this latter orientation began to dominate, and with the publication of volumes like *Fremont Perspectives* (Vol. 7), it became essentially the voice of Utah archaeology, providing a forum for debates about Utah's cultural resources. By the time of its demise, ASSP had a full-time, legislatively funded staff, due mostly to the lobbying efforts of USAS and many professionals, and was becoming a focal point for papers particularly pertinent to the prehistory of Utah.

All that came to a crashing halt in the early 1980s. Local members of the "sagebrush rebellion" began a concerted effort to rid state government of what they perceived as stumbling blocks to progress, particularly rather large, visible blocks like the Antiquities Section and the State Archaeologist. One of the leaders of this movement in the state legislature was a representative named Mac Haddow. When, as part of a legislative tour of the Antiquities Section facilities, he was heard loudly to grumble about the money wasted putting useless rocks in brown paper bags on a shelf, it became immediately clear trouble was brewing. In the next legislative session, Haddow became a major player in an effort to do away with antiquities protection laws, or failing that, to do away with the legislatively created positions of the people who were required to enforce those laws. In this, Haddow was largely unsuccessful, due mostly to the efforts of the Utah archaeological community. By presenting a unified public face, despite many internal disagreements (one must remember there were as many prickly personalities then as there are now), the memberships of UPAC and USAS were able to forestall this attempt at revisionism. I have fond memories of, and am grateful to many

people standing up in a legislative committee hearing to testify in support of the antiquities laws, the Antiquities Section, and me personally. When the committee hearing closed to public comment and I had to sit mute as Haddow first moved to, "eliminate the Antiquities Section," then to "eliminate the administrative part of the Antiquities Section," and, finally, to "eliminate David Madsen" and was voted down 11-1 each time, I was certainly glad to have such a unified, supporting force behind me.

Unfortunately, while these direct attacks were blunted, a more indirect approach was more successful the following year. While the Antiquities Section budget and the funding of ASSP were left intact, thanks to efforts by Utah's archaeological community, Haddow and his friends managed to cut the budget of the *Utah Historical Quarterly*. This put the director of USHS in a difficult position; he had to either eliminate the flagship publication of the Historical Society, first published in 1928, or eliminate ASSP, the upstart archaeological publication, whose funding was sufficient to keep the *Quarterly* going until a friendlier legislative atmosphere might arise. One might guess how a professional historian and director of a historical society would decide, and further, how I might have reacted to that decision, but over the years I have to come to at least understand why it had to be done. Regardless, with the production of the last volume in 1980, the publication of ASSP came to a sudden and irreversible halt.

That left a rather large break in the lines of communication between members of Utah's archaeological community, and there were immediate attempts to repair it. It had become apparent through the publication of the seven ASSP volumes that there was a need for a publishing forum for work pertinent to Utah, work that would likely find no other outlet. Initially, these attempts at reviving a Utah archaeology publication involved lobbying efforts to return legislative funding levels to those sufficient to keep ASSP alive. Despite valiant efforts by Tripp and others, however, budget levels remained depressed to the point where it became clear ASSP was finished for good.

While much of this failure was due to the bad economic conditions of the times, the continued efforts of the Sagebrush Rebellion, now grown more subtle and harder to combat as the result of the failure of frontal attacks like Haddow's, were also at play. Not only were budgets kept low enough to prevent any coherent action on many fronts beyond just publishing, but the 1973 Antiquities Act was also repeatedly amended, first in 1977, then again in 1983 and 1986. These were seemingly innocuous changes in wording about the duties and responsibilities of the State Antiquities Section and the State Archaeologist, but had the effect of severely limiting the power of the State Archaeologist to interfere with state agency actions in order to protect the state's archaeological resources. These periodic legislative attacks finally became fully successful only a few years ago when the position of State Archaeologist was completely eliminated in law (it now exists merely as a job title) and archaeological permitting was shifted out of the Antiquities Section and placed within the Governor's office where it can be directly subject to political whim.

Fortunately, in the mid-1980s the archaeological community was strong, vibrant, and growing, with any internal discord kept wholly internal, and as it became evident ASSP was not going to rise again from its ashes, thoughts of a new and independent journal devoted to Utah archaeology began to circulate. These thoughts came from two directions: (1) UPAC, as a growing professional organization, felt the need for a journal in which the increasing number of projects its members were producing could be made part of the public record and made available to others working in the state, and (2) USAS was also growing, and its old mimeographed newsletter was no longer sufficient to report the activities of its many new and archaeologically active members.

While the specifics of who did what to get *Utah Archaeology* started remain hazy, I do recall (with the help of Joel Janetski) discussions over

the wet screens at the Fox site in northern Utah County about the need for a new journal. The project involved both professionals and amateurs, and the discussion revolved around how to get the two organizations more involved with one another. After a series of meetings throughout the mid-1980s, both UPAC and USAS decided to join hands in the publication of a joint archaeological journal devoted to Utah archaeology. In 1986, I was appointed to chair a committee (on which George Tripp and Al Lichty also served) to "pursue the possibility of a joint UPAC/USAS journal or publication that would serve as a local outlet for publication of recent research efforts in the state" (UPAC News Volume 4, No. 3:4). By 1987, *Utah Archaeology* was gestating under the guidance of Joel Janetski (representing UPAC) and Steve Manning (representing USAS) as co-editors, and in 1988 the first of a continuous line of annual publications was issued.

Utah Archaeology is thus a product of the growth of an integrated professional and amateur community that through perseverance, hard work, and a cooperative approach moved archaeology in Utah into the main stream. By the early 1990s this community had made archaeological management and preservation a standard practice in state government and had raised general public consciousness about archaeological protection issues. By the time *Utah Archaeology* was barely five years old virtually every land management agency in the state had an archaeological staff and archaeological preservation was fully integrated into each agency's day-to-day activities.

Unfortunately, from my view as someone who is now something of an outsider (although I still continue to work in Utah several times each year), this very success seems to have resulted in complacency. Many Utah archaeologists now seem, to me, to be more concerned with internal issues within their own institution, agency, or chapter rather than with the welfare of the archaeological community as a whole and the archaeological resources with which that community is concerned. As a result, in recent years the publication of *Utah Archaeology* seems to have, at times, faltered a bit. This is unfortunate, since, in my opinion, the journal plays an important role in holding the archaeological community together. If *Utah Archaeology* is to continue to grow and remain a successful publication representing the work of the state's entire professional and amateur archaeological community, that community will have to return to the cohesive and integrated force it once was. Fortunately, *Utah Archaeology* appears to be on the rebound thanks to both the current editors and to recent editors like Steve Simms, and if, through the course of another twenty years, Utah's archaeological community remains vibrant, I will be looking forward to having someone read the fortieth issue of *Utah Archaeology* to me through my ear trumpet. ■

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Trends and Such in Utah Archaeology—A Personal View

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In the past half century archaeology in Utah has evolved from a university-centered pursuit dominated by individual research interests and personalities to a highly diverse discipline driven by legislative mandates and federal funds. Graduates in the field are far more likely to get a job and more likely to get a job in some agency, federal or state, than in an academic setting. They will deal with consultation, contracts, and curation more than excavation, and university classes have to cover legislative acts as much as theory and world prehistory. These changes have resulted in many benefits including a greater understanding of Utah's human history. To continue making such contributions archaeologists must retain core values and encourage public-oriented projects and publications as these are critical to the future of archaeology in the 21st century.

I have been asked to pen a short essay on theoretical trends and/or developments in Utah archaeology. I do so reluctantly as I am sure to leave persons, events, or trends by the wayside and annoy someone. So I make clear at the onset that this is my biased view.

I began a career in archaeology in the mid-1970s. A series of unique events in my life introduced me to Jesse Jennings and the archaeology program at the University of Utah in1973. After a class or two, Jennings allowed me to accompany him to Western Samoa in 1974 for three months, and the following fall I worked for the Antiquities Section in the Utah Historical Society. So my time frame starts in the mid-1970s.

Two important events transpired at about the time I began my archaeological career (although I was clueless at the time), and these were to affect the future of regional archaeology in a significant way: (1) Utah antiquities legislation was passed in 1972, and (2) the following year the state hired David B. Madsen as the state archaeologist. Madsen brought new energy, a new perspective, and, in a number of ways, a new era to Utah archaeology—Cultural Resource Management (CRM). Both have had a lasting impact on the direction of archaeological research in the state and the role of state government in protecting archaeological resources. David Madsen was trained in paleoenvironmental studies at the University of Missouri. His research interests were (and are) explicitly scientific (e.g., paleoecology, environmental change, quantitative approaches to subsistence data, etc.), which were a departure from the decidedly cultural historical views of Jesse D. Jennings, who had dominated Utah archaeology for over 20 years. Those interests placed Madsen squarely in the processual school with its emphasis on the scientific method and explanation. Madsen's influence was almost immediate as he, along with assistant state archaeologist LaMar Lindsay, excavated Backhoe Village and, armed with abundant cattail pollen from house floors, challenged existing Fremont subsistence models (Madsen and Lindsay1977; Madsen 1979) and encouraged new approaches to Fremont studies (Madsen 1980). I return to Madsen's influence below.

The mention of Jennings' name brings me to another significant event in Utah archaeology—Jennings' retirement from the University of Utah in 1980 and the hiring of James F. O'Connell. O'Connell, a University of California Berkeley graduate, brought specific interests and ideas that were new to the state. Following his experience

at Berkeley he embarked on ethnoarchaeological studies of Australian hunter-gatherers, a research strategy he continued in Utah. His Middle Range research strengthened processual interests in the state and influenced numerous graduate students and the direction of local archaeology in general. (Middle Range research focused on strengthening methods and developing bridging arguments to connect past behaviors with the archaeological record [see O'Connell 1993 and references therein]). Madsen and O'Connell together edited the *Man and Environment in the Great Basin* monograph which contained two highly influential articles: Madsen's (1982) model of Fremont strategy diversity (influenced both by Binford's 1980 model of hunter-gatherers and Richard Holmer's interpretation of Binford's model generated during the ill-fated MX project) and O'Connell's piece (co-authored with then graduate students Steven Simms and Kevin Jones) promoting evolutionary ecology as a more useful (than descriptive ecology) theoretical perspective for archaeological studies in the Great Basin and beyond (O'Connell et al. 1982).

These two topical interests, Fremont strategy diversity and hunter-gatherer research applying optimal foraging models derived from evolutionary ecology (now often called human behavioral ecology) have more or less dominated archaeological research in the state ever since. The adaptive diversity model was further developed by Simms (1986) who, along with other O'Connell students, also pursued research aimed at middle range issues such as site structure and activity areas (Simms and Heath 1990; Metcalfe and Heath 1990). Use of optimal foraging models has become common in academic pursuits (e.g., Simms 1988; Barlow 2002) and, to a lesser extent, CRM projects (e.g, Metcalf et al. 1993). The adaptive diversity model portraying the Fremont as rational actors weighing costs and benefits of farming and foraging was most elegantly expressed by Madsen and Simms (1998).

The interest in hunter-gatherers is perhaps best exemplified by Simms' work at post-Fremont sites like Orbit Inn (Simms and Heath 1990) and the Bustos Wickiup site (Simms 1989). Both were done to test notions of site structure. My own research in Utah Valley during the 1980s and 1990s also focused on hunter-gatherer sites, especially Late Prehistoric, although the theoretical perspective was not explicitly evolutionary ecology (Janetski and Smith 2007). Interest in hunter-gatherers and specifically the post-Fremont era in the eastern Great Basin received considerable stimulus by the Numic Spread workshop at Lake Tahoe in 1992, which culminated in the *Across the West* volume focused on that issue (Madsen and Rhode 1994). Importantly the research on the Late Prehistoric by Simms, Janetski, James Allison (Allison et al. 2000), and Mark Stuart (1993) has provided the first useful insights into the post-Fremont period.

Another point to be made here is that following Jennings's departure field work in the state was no longer centered at the University of Utah. Instead we see a diversification among several entities with BYU emerging as the most significant university-based field program, at least during the 1980s. There are a number of reasons for these developments. My view is that the CRM efforts at the University of Utah diminished dramatically as Richard Holmer (who directed the program) was hired by Idaho State University, and I (his assistant) came to BYU. My arrival at BYU brought a renewed interest in local archaeology where the emphasis had been largely on Mesoamerica. In addition, BYU had a viable contracting office with excellent staff that won several significant contracts in the early 1980s. The loss of the contracting office at Utah coupled with O'Connell's interest in ethnoarchaeology, rather than field archaeology, created a vacuum that BYU was positioned to fill. Clearly, Utah has continued to exert theoretical influence in the state, but fieldwork was no longer aggressively pursued as it had been during the Jennings era.

I return now to cultural resource management and a consideration of the impact of that development on Utah archaeology. As is well

known, CRM came about due to the passing of federal legislation in the 1960s and early 1970s. These laws required developers using public funds or working on public lands to pay attention to archaeology. This has resulted in some good work and some not so good. Many are no doubt aware of Jennings' opinion on this topic as "a mixed blessing . . . [with] costs far beyond its scientific rewards . . . [with] a few bright spots . . . [but] on balance CRM has generally harmed our discipline" (Jennings1986:60). Jennings' comments are perhaps more understandable as they follow rather closely the MX projects of the late 1970s/early 1980s, which serve as examples of significant funds spent with little to show, although there are earlier examples as well. Actually, Jennings and Utah archaeology benefitted from early CRM-like projects as public monies provided support for important work at Median Village (Marwitt 1970:v) and Sudden Shelter in central Utah, both excavated in advance of Interstate highway construction, although these were done under the 1956 Federal Aid Highway Act (see Jennings et al. 1980:xv).

There is little doubt, however, that CRM projects have resulted in significant advances in what we know about Utah's pre-European past. Consider, for example, our understanding of Fremont origins. In 1975 David Madsen and Michael Berry reviewed dates from archaeological sites in the northeastern Great Basin and concluded there was a cultural hiatus from about 2500 to 1500 years ago. They asked two questions in this paper: (1) "What happened to the Archaic populations? And (2) what were the origins of the Fremont culture?" They noted that archaeological research to that point had found no evidence for Archaic-Fremont continuity; therefore, the Fremont genesis was due to an "influx of Fremont agriculturalists at ca. 1500 B.P." (Madsen and Berry 1975:404). Their conclusions were based on the best data available at the time, but those data were clearly biased having been obtained (with few exceptions) from cave sites and Fremont villages (see Madsen and Berry 1975 for references). Within a few years, however, the1000-year hiatus evaporated. Sites like the Elsinore Burial (Wilde and Newman 1989), Icicle Bench (Talbot et al. 1999), the Confluence Site (Gruebel 1998), Steinaker Gap (Talbot and Richens 1996), and others dating to the hiatus were discovered and explored. Why did this happen? CRM forced archaeologists to look in places never before examined. As a consequence, new discoveries and new information gave scholars critical insights into the process of Fremont development.

CRM also made possible for the first time the exploration of a Fremont community, a goal proposed by Pat Hogan and Lynn Sebastian (1980). I-70 construction through Clear Creek Canyon provided that opportunity. An unusual sequence of events involving outreach efforts by Bob Leonard, Fishlake National Forest archaeologist, and strong support from the Paiute Tribe of Utah and the Antiquities Section resulted in nearly complete excavation of Five Finger Ridge in central Utah (Talbot et al. 2000). The exposure of this Fremont community was only possible through federal highway funds. Those funds also enabled the Clear Creek Canyon Project to carry out a regional study with survey and excavations of both structural and non-structural Fremont sites (various, but see Janetski et al. 2000 for summaries). The well-publicized work excited the local community resulting eventually in the construction of Fremont Indian State Park. The work at Five Finger Ridge also inspired the near total exposure of another Fremont community, Baker Village near the Utah-Nevada border (Wilde and Soper 1999). The research was done by a field school directed by Jim Wilde, then director of the Office of Public Archaeology at BYU. The unique alignments at Baker Village and the community plan at Five Finger Ridge stimulated speculations regarding Fremont society (e.g., Hockett 1998; Barker 1994; Janetski and Talbot 2000a; MacEaneney 2004), an important emphasis in Fremont studies that had languished since James Gunnerson's (1969) report on the Claflin-Emerson expedition

and Dorothy Sammons-Lohse's (1981) chapter in the Bull Creek report.

Projects in southern Utah contributing significantly to our understanding of prehistory over the past two decades have included both CRM projects and field schools. The work of Phil Geib and his colleagues in Glen Canyon National Recreation Area (Geib 1996) and on the Kaiparowits Plateau (Geib et al. 2001) are good examples of the former. Geib's (1996) contributions include a thoughtful discussion of the Fremont - Anasazi borderlands offering material approaches to ethnicity as an alternative to the time-and-calories interests. The Kaiparowits work resulted from the designation of a huge chunk of southern Utah as the Grand Staircase-Escalante National Monument and significant funding for archaeology. Doug McFadden's encouragement of research there, as well as his own (McFadden 1996) is yielding new insights in an area not systematically explored since the Glen Canyon days. The research of Geib and McFadden has been complemented by BYU's studies in the Escalante drainage utilizing both CRM contracts and field schools (various, but see Harris 2009). The University of Colorado at Boulder archaeological field school has made a decade-long commitment to research at the Bluff Great House focusing on understanding the Chaco Phenomenon (e.g., Cameron 2002, 2009).

Finally, the Great Salt Lake (GSL) Wetlands Project, which followed the high waters of the 1980s, generated invaluable data on Fremont subsistence and lifeways (Simms et al.1991; various in Hemphill and Larsen1999). Importantly, this work has been cited as confirming the adaptive diversity model of Fremont lifeways (Simms 1999). The GSL wetlands work also highlighted Joan Coltrain's important and ongoing research on Fremont diet using stable carbon isotopes (Coltrain 1993; Coltrain and Stafford 1999). Coltrain's work has changed the landscape regarding our understanding Fremont diet (as well as other time periods) by providing dietary signatures at specific times in the past. In addition the GSL wetlands work included genetic research providing first ever quantified insights demonstrating Fremont connections to historic Southwestern peoples rather than Numic speakers (Carlyle et al. 2000).

Two other significant developments occurred in the 1980s—the organization of Utah Professional Archaeological Council and the revitalization of the Utah Statewide Archaeological Society (USAS): the former a professional watchdog group for archaeology in the state and the latter an effective grass roots advocate for our discipline. Both have proven important in supporting research on and preservation of Utah's archaeological resources. The re-emergence in 1988 of *Utah Archaeology*, a continuation of the original USAS newsletter reconceptualized as a regional journal, has provided not only an outlet for professionals and avocationalists to publish archaeological research, but also a critical link between professionals and the supporting public, especially USAS.

The growth of USAS signals greater public involvement in archaeology, a trend that some say is the future of American archaeology (Moore 2006). The US Forest Service Passport in Time (PIT) projects are excellent examples of involving the public. Notable in this regard have been the numerous PIT projects on the Ashley National Forest by Byron Loosle which have led to several publications and new insights into Uintah Basin prehistory (Loosle 2000; Loosle and Johnson 2002; Johnson and Loosle 2000). Other agency archaeologists regularly sponsor PIT projects (e.g., Bob Leonard, Fishlake National Forest and Charmaine Thompson, Uinta and Manti-La Sal forests). The success of these programs is indicative of a vibrant volunteer public fascinated by history both recent and ancient. For a glimpse of the track record of PIT project in Utah visit http://www.passportintime.com/.

This overview wouldn't be complete without mention of Range Creek, which is arguably the most celebrated archaeological story in the history of Utah archaeology. The "discovery" of a canyon rich in well preserved Fremont sites is now broadly known. The importance of Range

Creek lies as much in the archaeological interest it excited as in the sites themselves. What will come of the research in terms of new insights into Utah prehistory is just beginning to be realized, but certainly the potential is great (e.g., Metcalfe 2007).

Even though David Madsen is now affiliated with the Texas Archaeological Research Labs at the University of Texas at Austin, he along with David Schmitt continues to report important research. As an example, I mention the Buzz Cut Dune publication (Madsen and Schmitt 2005), which is the first detailed report of a Fremont forager site. In some ways that report challenges assumptions of the adaptive diversity model, but at a minimum, it demonstrates the difficulties of testing the model archaeologically. And Madsen's research with colleagues at Homestead Cave (Grayson 2002; Schmitt et al. 2004), primarily a paleontological site, and the fine-grained excavations at Camel's Back Cave (Schmitt and Madsen 2005) has yielded highly detailed insights into regional paleoclimates.

Where are we today in Utah archaeology? CRM continues to be the primary generator of new data (e.g., Reed et al. 2005), although not nearly enough of those results are making it into journals. Hopefully with *Utah Archaeology* healthy once more, we will see more articles resulting from CRM projects. I see the recent publication of two books on Great Basin archaeology directed at broader audiences as very positive contributions. I am referring here to Steve Simms' recent paperback *Ancient Peoples of the Great Basin and Colorado Plateau* from Left Coast Press and a new School of Advanced Research book, *The Great Basin*, edited by Kay and Don Fowler. The latter is a glossy paperback with multiple short chapters authored by numerous Great Basin scholars. Both go a long way toward giving something back to the public for their support of archaeology. But we need more of these kinds of publications. The problem, in part, is that CRM is highly competitive today with 75 or so firms permitted and most universities involved at some level. In addition, generating public volumes is costly. Actually, I worry that the competition (perhaps involving cost cutting) will have a negative effect on the quality of work. Controlling quality is largely in the hands of various agencies, SHPO, and the new Public Lands Policy Coordination Office (PLPCO). Mention of PLPCO reminds us of the recent removal of permitting from the Antiquities Section and delegating it to PLPCO, a state agency outside of the Division of State History. That was a decision mired in politics and the wisdom of the shift remains to be seen.

It is important to note here the passage of repatriation legislation at both the federal (Native American Grave Protection and Repatriation Act or NAGPRA, passed in 1990) and state level (Utah Antiquities Protection Act of 1992) and the impact those act are having on Utah archaeology. I admit I viewed this legislation with trepidation. But I witnessed the "in your face" confrontation of Native Americans at the Society for American Archaeology meetings in the late 1980s and began to understand the depth of Native American feelings on this issue as well as the direction of the political winds blowing in the post-processual world. These laws require native peoples' involvement and give them a voice in the study of the past. In some ways, this has forced archaeologists to relinquish control and allow native perspectives. I believe that has been a good thing, although not always easy. In 1994 Bob Leonard and I struggled through consultation with the Paiute Tribe of Utah regarding the Fish Lake research when that process had yet to be clarified. The end result was amazingly rewarding, however, with memorable experiences for all, including students (Janetski et al. 1999; Janetski 2010). On the other hand, discovering burials, which was once reason for excitement given the rich information human remains can yield, is now reason for concern and, at times, confrontation. NAGPRA has been particularly difficult and costly for museums and has given rise to some controversy. The repatriation of the Pectol Shields is one such case. I understand the logic involved in that process, but the removal

of these unique expressions of some past artistic genius from public viewing and appreciation is a great loss in my view.

I see promising signs of diversity in research agendas—specifically, the endorsing of a broader view such as that espoused some years ago by Upham (1994). This approach can be conceived at various scales: structures, sites, locales, and, in the case of Upham's view, the entire arid west. For Fremont research, I consider such expanding interests to be a consequence of a focus on the analysis of space (as mentioned above at Nawthis Village, Orbit Inn, and Five Finger Ridge). This interest has broadened to include community planning and the implications for social structure, although opportunities have been few given the fiscal challenges of the broad exposures needed to explore site structure (e.g., O'Connell 1987; especially O'Connell 1993). The Clear Creek Project, and Five Finger Ridge specifically, was one such project and one such site that offered such an opportunity and insight, and exploring Fremont social structure was an explicit research goal (Talbot et al. 1998:43). In the summary volume of that project we reviewed historic approaches to Fremont studies under the following headings: Puebloan Perspectives, Fremont Introspection (including both Economic Perspectives and the Behavioral Perspectives), and called for a Macro Perspective (Janetski and Talbot 2000b). Briefly, Puebloan Perspectives dominated from the time of Neil Judd's (various, but see 1926) pioneering work along the Wasatch Front to Jack Rudy's (1953) survey of the west deserts. Rudy objected to the "Northern Periphery" label, a term he felt tended to "submerge and obscure the individuality of the Utah cultures" and characterized the Utah "Puebloan" sites as "marginal" to the Anasazi (Rudy 1953:168; see also Jennings and Norbeck 1955). This rejection marked an increasing emphasis on introspection dominated by identifying regional variants based on material culture (various, but see Marwitt 1970 as example). This introspection continued in the 1970s, although data sets used to identify regional variants shifted from artifacts to foods (e.g., Berry 1974; Madsen1979, 1980)—hence Economic Perspectives. The Behavioral Perspective (Madsen and Simms 1998) continued the emphasis on the gastric, but rather than proposing regional variant models, this approach described dietary variability at the individual level. The Macro Perspective didn't reject the interest in diet, but argued for expanded topical interests (e.g., economics, trade, social structure), as well as a broader geographical scale. Specifically, we called for scholars to "recast the Fremont tradition as an aspect of the larger Southwestern farming pattern...," (Janetski and Talbot 2000b:7). The utility of the macro view in understanding the ebb and flow of human history is recognized by Simms (2008) who uses it to advantage in his text on the ancient peoples of the Great Basin.

On a different note, I offer some rambling thoughts on archaeology and the role of archaeologists. I recently read Lynn Sebastian's (2006) insightful re-consideration of Bill Lipe's "Conservation Model for American Archaeology" (Lipe 1974). Lipe's paper urged conservation of archaeological sites which, at the time (prior to the implementation of Section 106) were rapidly being destroyed due to development. Sites, Lipe argued, should be conserved, perhaps in national parks or preserves to be available for answering critical questions about the past. In some ways, however, that preservation ethic has gone too far "to the detriment of the very kinds of important research Lipe envisioned" (Sebastion 2006:111), since national parks and monuments are perhaps the most difficult places to do research (Sebastion 2006:118). On that note, I mention briefly our experiences in Capitol Reef National Park and in Grand Staircase/Escalante National Monument. Both were truly wonderful experiences for our students (both were pursued as field schools), myself, and the OPA/BYU staff. But we were struck by the reluctance of the Park staff to allow other than modest test excavations. Subsequent work in Grand Staircase/Escalante National Monument was different—excavation was okay, but only of damaged sites.

Has the preservation ethic gone too far? What is the role of archaeology in society? As Lipe states in *Common Ground*:

> What justifies preservation is the ability to use the archaeological record to gather new information. Archaeology is more than excavation, but archaeology without excavation cannot fulfill its social role (2001:26).

And further:

> Pledging to dig only on threatened sites has the unintended effect of trivializing archeology's contributions to society. Essentially, what we're saying is that any other socially approved activity, like putting in an access road, ranks higher as a reason for excavating than the prospect of learning something.

I agree. Field work, including excavation, is integral to being an archaeologist. Excavation is not an "adverse effect" equivalent to bulldozing and looting. I am grateful to Bill Lipe for his thoughts on this and to Lynn Sebastian for reminding us of what conservation archaeology is really intended to do. That model advocated "frugal" consumptive use of archaeological sites, but preservation for the sake of preservation may preclude fruitful study. Site stewardship, management, and preservation are a means to an important goal—learning about ancient human societies and understanding the creative processes involved in dealing with life's challenges. Ultimately society expects archaeologists to tell them about the past—we cannot fulfill those expectations as site stewards alone. ■

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Potsherds and People: A Brief History of the Utah Statewide Archaeological Society

Mark E. Stuart
Utah Statewide Archaeological Society

The purpose of this paper is to present a brief history of the Utah Statewide Archaeological Society (USAS) from its earliest beginning to the present. It chronicles some of the society's successes and mishaps as well as documents the importance of USAS to the understanding of Utah prehistory. It acknowledges the help and support of many people, both professional archaeologists and lay amateurs, in donating many hours of service and monetary resources in the quest for understanding the past. Support and growth of USAS is important for documenting and preserving the archaeological resources of Utah.

Neil Judd, one the first professional archaeologists to work in Utah, was dismayed at the destruction of archaeological sites along the Wasatch Front due to urban expansion, agriculture pursuits, and looting. He lamented the fact that almost every site he visited had been disturbed in some way (Judd 1926). His sentiments were echoed later by Elmer Smith of the University of Utah. Writing in 1937, Smith expressed his alarm over the number of sites being dynamited, destroyed by horse drawn scraper, and indiscriminately dug to obtain Indian relics for both private collections and large, mainly Eastern, museums. He pleaded that this destruction had to somehow be slowed or the unwritten history of native peoples would be irretrievably lost. Smith went on to propose the implementation of an educational program to acquaint the public with the rules and regulations governing archaeological resources in the state (Smith 1937). Smith's recommendations were, unfortunately, not pursued.

Dr. Jesse D. Jennings came to the University of Utah in 1948. His impact on the archaeology of Utah and the Great Basin was immediate and significant (Janetski 1997). The three decades he spent at the University of Utah was a time of intense archaeological work. In 1949 he organized the Utah Statewide Archaeological Survey. Jennings, with various graduate assistants, conducted survey in many parts of the state and directed excavations at key sites he felt could define the cultural chronology of Utah. In this work he was assisted by local lay people, many of whom had a deep and abiding interest in the prehistory of their particular area. Jennings and his students, recognizing this interest, realized that there needed to be some outlet for the interested public to become involved in Utah archaeology in constructive and meaningful ways. In 1955, James H. Gunnerson at the University of Utah sent out a newsletter to a number of individuals, inquiring if they were interested in organizing a group focusing on Utah archaeology. He received many positive responses and the organization began quite informally. Members of the Utah Statewide Archaeological Society (USAS) received a copy of the quarterly USAS newsletter. It was called "Utah Archaeology; A Newsletter." Gunnerson continued as editor of the newsletter and the organization was informal for five years although calls were made for a more formal organization. The organization was sponsored and partially funded by the Department of Anthropology at the University of Utah. The administration of

USAS gradually passed from the university to the members of the society. By 1959, USAS had officers who drafted a constitution and by-laws that were voted on by USAS members in 1960. Jennings was the advisor to the group going forward. In the Editors Notes section of Vol. 6, No. 1, Gunnerson is called the "founder of this society" by Lloyd Pierson (1960), the new editor. The contribution of the University of Utah during USAS's formative years was huge.

The purposes of the new USAS organization were to "increase and diffuse archaeological knowledge and to preserve and protect the archaeological heritage of Utah for the mutual enjoyment of all" (for a more recent update on the purposes of USAS see the USAS web site at www.utaharchaeology.org).

USAS chapters were soon established in all parts of the state and the Utah Archaeology Newsletter became the means for disseminating archaeological work conducted throughout Utah and adjoining areas. Much of the pioneering work of Dr. Jennings and his students was first published here in preliminary reports. Fortunate indeed is one who still has access to these first publications.

From its inception, USAS members donated hundreds of hours working on their own or with professionals on research or other activities on behalf of archaeology. One of the immediate benefits of public involvement was effective lobbying efforts to help establish the Utah Museum of Natural History on the campus of the University of Utah in 1963 with Dr. Jesse Jennings as its first director. This was followed up in 1973 with legislation establishing the Antiquities Section of Utah State History and providing for a State Archaeologist. Some significant sites like Hogup Cave and the Bear River sites were recorded and excavated as joint professional and amateur projects. Unfortunately, the initial goodwill between the public and professionals was not to last. For various reasons relations cooled considerably in the mid 1970s. Without professional support USAS dwindled to only a single chapter: the Salt Lake/Davis Chapter in Salt Lake City, which struggled for survival.

Dr. David B. Madsen, Utah's first State Archaeologist, and his assistants Michael Berry, Lamar Lindsay, and Kevin Jones soon realized that for archaeology to have relevance in modern society, it needed to be accessible to the public. In this respect they sought to revitalize USAS. Working closely with dedicated amateurs like George Tripp of Bountiful, Jeff Herrick of Salt Lake City, and Dr. Eldon Doorman, M.D. of Price, they traveled the state in the mid 1980s seeking to rebuild defunct chapters and creating new USAS chapters. The result of these efforts has been the growth and continuing vitality of USAS up to ten chapters with a membership of about 200-300 scattered throughout the state. Each of these chapters has professional archaeologists as their volunteer advisors. These advisors are drawn from both academia and government agencies and have given many hours of service. Other professionals present programs at USAS monthly meetings and include USAS chapters in their research projects. All of this professional help is greatly appreciated by USAS.

An important factor in the growth of USAS has been the hands-on involvement of avocationalists in field work. Many of these individuals are well-read on archaeological subjects (in part due to the statewide certification program), have years of experience in recognizing artifacts and cultural remains, and are a reliable labor force. As a result USAS members have donated thousands of hours working on professional research projects or in other ways in behalf of archaeology. Examples of such projects are the Great Salt Lake Wetlands project in northern Utah (Promontory Chapter and Weber State /Utah State Universities), the Goshen Valley and Utah Valley Prehistory Project (Utah Valley Chapter and Brigham Young University) the Huntington Mammoth and Nine Mile Canyon Project (Castle Valley Chapter, Division of State History and Brigham Young University), various projects in the Uinta Mountains and Uintah Basin (Uinta Basin Chapter and BLM and USFS) and the Jensen Pit House Project in Blanding. The

statewide certification program which prepared many USAS members for fieldwork was very significant. USAS, and George Tripp in particular, lobbied the Utah legislature with the Division of State History to get funding and then hired Jim Wilde to write the original program (see Wilde 1988). This program has since been updated and revised as the Utah Avocational Archaeology Education Program (Hackney 2002)

USAS members have also been active in public education. In the early 1990s they helped develop a teaching kit for use by school teachers and the general public to illustrate the importance of Utah's archaeological resources and the need to protect and preserve these resources for future generations. USAS members have given hundreds of hours taking the teaching kits into public schools and communities. These teaching kits are still in use by school teachers all over the state. USAS has also been actively involved in raising public sentiment and lobbying for the establishment of archaeological museums around the state such as Fremont State Park in Clear Creek Canyon, Edge of the Cedars Museum in Blanding, and the College of Eastern Utah Prehistoric Museum in Price. USAS members have also been involved in preparations, through grants for supplies and Saturday work sessions, to re-house and stabilize objects (under the supervision of Michelle Knoll) for the move to the new Utah Museum of Natural History in Salt Lake City. In addition, USAS was heavily involved in legislative lobbying efforts for the passage of Utah's human burial laws and the creation of the burial vault at Pioneer State Park. It was also instrumental in rallying support for Utah's 1996 archaeological resource protection laws on state lands.

A further example of cooperation between USAS and professionals is the growth and expansion of Utah Prehistory Week. Many local activities occur each spring across the state to inform and involve the public further in these fascinating sciences. Collaboration between professionals (represented by the Utah Professional Archaeological Council [UPAC]) and USAS is best exemplified by the joint sponsorship with the Division of State History of *Utah Archaeology*, a journal dedicated to publishing and distributing information about local archaeological research across Utah. The twentieth anniversary of the publication of *Utah Archaeology* was in 2008. It has grown to be a well respected journal across the nation by professionals and amateurs alike and we hope for its continued success for many years to come.

A notable impact of public involvement in archaeology has been the reduction in numbers of archaeological sites being looted across the Utah. Programs developed by both federal and state government agencies have used USAS members in the very difficult task of protecting irreplaceable sites through site stewardship and informal education. Site stewardship programs are already in place in the St. George Basin in southwestern Utah, the Blanding area in Southeastern Utah, and the Salt Lake Chapter to monitor Danger and Juke Box Caves in western Utah. All of these programs appear to be working well and the hope is to expand site stewardship throughout the state.

As with any organization, USAS has had its ups and downs. Some struggles are reflections of concerns in society today. The current economic and energy crisis has taken its toll on USAS membership and public involvement in archaeology. Another concern is an aging membership. In an age of cell phones, video games, and instant gratification, it is a challenge to interest a younger generation in the time-consuming quest for knowledge of the past. One of the major challenges for USAS and archaeology in general is its relevance to the "now" generation. USAS is present on the worldwide web (www.utaharchaeology.org) where up-to-date listings of events, programs, and projects are posted. Communication between chapters and members is fast with e-mail and a Yahoo group. Even still, we must do a better job in meeting this challenge.

Utah archaeology in the twenty-first century is a dynamic and diverse field very different from what

it was at the beginning of the twentieth century. Today archaeologists are employed by every land managing agency and all of the universities. Many archaeologists work in Cultural Resource Management in the private sector business. Utah has an influential professional group (UPAC), a very active amateur archaeological society (USAS) and an amateur group devoted to the study of rock art throughout the state (Utah Rock Art Research Association [URARA]). Unfortunately the archaeological resource base is still rapidly disappearing. A major reason for this is the construction of homes, communities, and transportation corridors as Utah's population expands. This is where the role of archaeological collections curated by museums will become an important resource for future research. There is still a great deal to learn from the past. If Utah's prehistoric heritage is to survive into the next century for future generations it will take the combined efforts and cooperation of all groups with archaeological interests to educate the public. ■

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Utah's Rock Art and the Role URARA has Taken Toward its Preservation

Nina Bowen and Troy Scotter
Utah Rock Art Research Association

The Utah Rock Art Research Association (URARA) has grown from a small organization established in 1979 to an organization with over 400 members today. During that time its purpose and mission have changed significantly. URARA started as a way for a group of friends to enjoy each others' company and to share information about the then relatively little known field of rock art. As popular interest in rock art and archeology grew, membership increased. Starting in the early 2000's URARA members expressed increasing concern about preservation issues. In the 2003 Green River symposium the membership voted to undertake activities to protect Nine Mile Canyon. Around the same time the URARA Board grew concerned about the size and impact of field trips to archaeological sites and created an ethics policy to address the issue. Today URARA has built a strong preservationist core onto its other activities.

The organization destined to become the Utah Rock Art Research Association (URARA) was initially formed in 1979 following a symposium of the American Rock Art Research Association (ARARA) at Bottle Hollow near Vernal, Utah. It was initially a chapter of ARARA. Charter members were Kenneth Castleton, Phil Garn, Jesse Warner, Spencer Squire, Jim Olive, Ben and Cindy Everitt and Layne Miller. It soon became apparent that a separate organization would better serve the needs of the people living in Utah. The purpose of URARA was primarily social in nature, taking trips to sites and holding monthly meetings to see slides from the last trip and plan the next trip. Interest beyond the academic level and knowledge regarding rock art in Utah was just beginning to emerge but had not yet become a major purpose for URARA.

As the group size and knowledge increased, a greater emphasis on research naturally developed. URARA's first symposium was held in May of 1981 at the College of Eastern Utah in Price. An annual symposium has been held every year since that time resulting in 26 published compilations of articles related to these symposiums. Jesse Warner, one of URARA's founding members, wrote in the preface to the 1998 publication of our symposium papers, "Our motto is that we all know something, no one knows everything, so let's get together and share what we know" (Warner 1993). URARA provides a forum for the amateur and professional to discuss, research, and publish articles regarding Utah rock art topics. These topics have included solar observations at rock art sites, ethics, stylistic delineation, deciphering glyphs, and specific images in panels of rock art.

URARA has grown dramatically, and we now have over 400 members. Two hundred people attended our 2008 symposium in Escalante. URARA still maintains its strong social character. Our members enjoy visiting sites, and field trips are still a major component of URARA activities. Although URARA has helped document rock art sites since its inception, the impact URARA has made on Utah rock art studies has increased over time (Figure 1). URARA member, Steven Manning, was instrumental in having a rock art supplement form added to the IMACS (Intermountain Archaeological Computer System) site forms so that important rock art information would not be overlooked during cultural resource inventories. Members have helped fine-tune IMACS site forms and Site Condition Reports used by state and federal agencies to record rock art. Our education committees have worked

Figure 1. URARA members build a fence to prevent cattle from damaging a rock art site near Moab, Utah. Photograph by Pam and Quent Baker.

with educators on all levels to provide accurate information about rock art to their students, and our volunteers have taught many school classes. We have helped the Bureau of Land Management (BLM) and Forest Service locate rock art sites on the land they manage. In Moab, URARA initiated a site steward program in conjunction with BLM archaeologists, which is active and effective. As our membership has grown we have been able to use the recording skills of individuals to train others in the group (Figure 2). With larger numbers of trained recorders we have been able to provide volunteer services to BLM and National Parks to document sites at risk. In 2007 the BLM regional archeologists presented URARA with an award for our documentation efforts on public lands.

The growth of URARA has brought about opportunities to change our ethics and mission. In 2001 URARA held a field trip in the St. George area to which over 50 people showed up. Such large numbers posed not only logistical problems but also ethical dilemmas. How could 50 people visit a site without negatively impacting it and creating trails? Was it appropriate to take them to "less well-known" sites? This field trip sent a shock wave through the URARA leadership. Over several years new ethics guidelines were developed which now limit the types of sites we will visit and the number of participants we will allow on field trips. URARA continues to maintain a strong social tradition while focusing on research and preservation.

Figure 2. URARA has an active program with the Moab BLM to conduct training, site stewardship, and documentation. Photograph by Troy Scotter.

URARA is gradually expanding our preservation efforts from just documentation to the inclusion of advocacy. This is partially because the rock art in Utah has become increasingly endangered, and we feel we must act to try and preserve it (Figure 3). We have also been fortunate to have members in the group who have the desire and ability to do something. At our Green River symposium in 2003 the membership formally voted that URARA should take action to protect Nine Mile Canyon. URARA contributed $5,000 to the Nine Mile Canyon Coalition to assist in the nomination of the canyon to the National Register of Historic Places. In 2004 URARA joined a lawsuit with the Southern Utah Wilderness Alliance. We decided that our primary "client" was the regional public lands archaeologist. We were willing to protest or litigate government agency actions at a higher level. The last few years of the Bush administration were not kind to environmental interests. Our Conservation and Preservation Committee commented on over 5,000 pages of resource management plans and also on environmental impact statements for the West Tavaputs and oil shale development. We have filed an amicus brief regarding the use of categorical exclusions to drill wells that impact Nine Mile Canyon and reviewed and commented on the BLM oil and gas leases released in late 2008. The transition to an advocacy organization has not been easy, requiring new skill sets, and extensive amounts of time and money. We have earned new

Figure 3. Petroglyphs in the West Tavaputs area, Utah. Photograph by Troy Scotter.

friends and probably made a few enemies along the way. We have lost a few members who don't like the new "environmental" tone, but we find that we are gaining new members who respect our actions. We truly feel that URARA can make a difference in the recognition and preservation of Utah's rock art.

URARA faces ongoing problems in the preservation of rock art without obvious solutions. These include, but are not limited to:

- Vandalism. It was frustrating that while we were recording a site near Fillmore, someone was vandalizing panels of pictographs near Torrey. Site steward programs in Utah are extremely difficult to manage, and those who monitor sites without official status can't be everywhere at all times.
- Visitation. While at one level it educates and informs the public, it also opens up sites to vandalism and inadvertent damage from the public. Cultural tourism has become a growth industry in Utah. Counties and tourism agencies are actively soliciting tourists to visit our cultural sites; often without management plans or preparation for the volume of visitation these areas will consequently experience. Well known examples include Southeastern Utah, Moab, Blanding, Bluff, Comb Ridge, Cedar Mesa, and Grand Gulch.
- Population growth. The continuing population growth of Utah brings the urban interface into conflict with archeological sites and moves more and more people into sensitive areas. Utah Lake and St. George share these challenges. Early Mormon settlers around

Provo paid people to remove annoying "mounds" to make cultivation of their fields easier. In 2006 URARA members worked with the city of Eagle Mountain and developers to protect rock art that would have been destroyed by residential development. City planners had been unaware of its existence before they were notified where it was by URARA members. In the south, we partnered with the St. George district BLM to get the rock art surrounding a bike path recorded before the information it contained could be potentially lost to vandalism.

- Development. The problem of development has always been with us. Today the "drill, baby, drill" mentality prioritizes resource development over cultural preservation. While oil and gas development is the most obvious issue, we have recorded chemical damage to rock art at Stansbury Island, which we believe is associated with air pollution created by mineral development on the Great Salt Lake, and we have also seen the loss of rock art near the airport in St. George due to sprawl of the business district. URARA members are not Luddites. We use the products associated with this resource development. Our goal is to find solutions that allow development while protecting cultural resources. We recognize that flexibility and sacrifice are going to be required on both sides of this equation.

The public's attitude towards rock art and cultural resources is changing, but slowly. The mother of one of the authors of this article was a frequent visitor to the McConkie Ranch, near Vernal, some fifty years ago. She said that while people knew about the "Indian writings" no one ever bothered to visit them. It would probably be incorrect to typify the attitude of the time as disdain of rock art—rather it was more likely dismissive. That stuff simply was not of interest to most people then. Today the McConkie Ranch is a local landmark. The family has built trails to the rock art panels, and universities have spent years documenting the rock art and archaeology at the site. The growing awareness of the importance of cultural resources seems to be focused in culturally rich areas. One can't set foot in Moab without being within throwing distance of an image of Kokopelli. St. George has rock art themed houses and whole developments named for rock art. On the other hand we could probably stop ten people on the streets of Salt Lake City and only find a couple that understand the term "rock art". Awareness and appreciation seem to grow in relation to contact and proximity.

The membership of URARA seems to have flourished due to the publication of rock art books and hiking guides. Most bookstores provide plenty of fodder for those who have been to Utah and seen rock art panels or for people who are planning trips to Utah. They see pictures of panels in the hiking guides they buy, and they look up URARA's website on the Internet (URARA is usually listed as further reading), finding something that they can relate to. They join URARA mostly as a way of support for the mission statement.

Some years ago, the John Hutchings Museum of Natural History in Lehi, Utah was turned over from private ownership to the city. The collection was moved to a much larger facility, and they are now able to display several boulders containing some good examples of rock art. This museum is doing a great job of educating the local people about the boulders, many of which have come from within a few miles of their homes.

Southwestern, central, and northeastern Utah are experiencing large population growth. Meanwhile, areas such as Emery, Grand, and San Juan counties are marketing archaeology as a tourist factor. "Rock art and ruins" is the tag line used by San Juan County in radio advertisements. These two developments—population growth and marketing—are likely to create a growing interest in and an appreciation of the cultural heritage of Utah (Figure 4).

In spite of the fact that museums and schools continue to teach about rock art, and the World Wide Web is rife with it, this cultural heritage

Figure 4. Pictographs in the Maze District area, Utah. Photography by Troy Scotter.

remains largely unappreciated, unprotected, and understudied. The study of rock art is perceived as being a limited field, which does not have great potential for discovery, whether pertaining to finding more rock art or new meanings. The organizations that are interested in protecting and educating the public about the cultural heritage of Utah are too insular and divided. Few have offices, staff, or money. None has the membership that provides sufficient mass to accomplish large-scale objectives. We cannot challenge well-funded, well-organized full-time government and private enterprises with alternative agendas.

Few people know what rock art images mean or when they were made. Native Americans tend to keep their knowledge of rock art to themselves, sharing it with only a few of the next generation. Since rock art can't be easily interpreted or dated, it loses its value to many people. School curriculum has no time for it. Teachers are mandated to teach specific things in their classrooms on a very controlled time schedule. Only creative instructors will fit rock art into their lessons.

There is not a single university in Utah that offers academic courses in rock art. Rock art enthusiasts hold no antipathy towards surface artifacts, and we understand that useful information can be gleaned from ceramic sherds and flakes. However, there are also great possibilities for cultural insight that can be gained from the disciplined study of rock art. Many researchers have spent significant parts of their lives devoted to the study of rock art. Kenneth Castleton was a founding member of URARA and published the "bible" of rock art in Utah (Castleton 1978, 1979). Sally Cole has spent many years studying the medium and

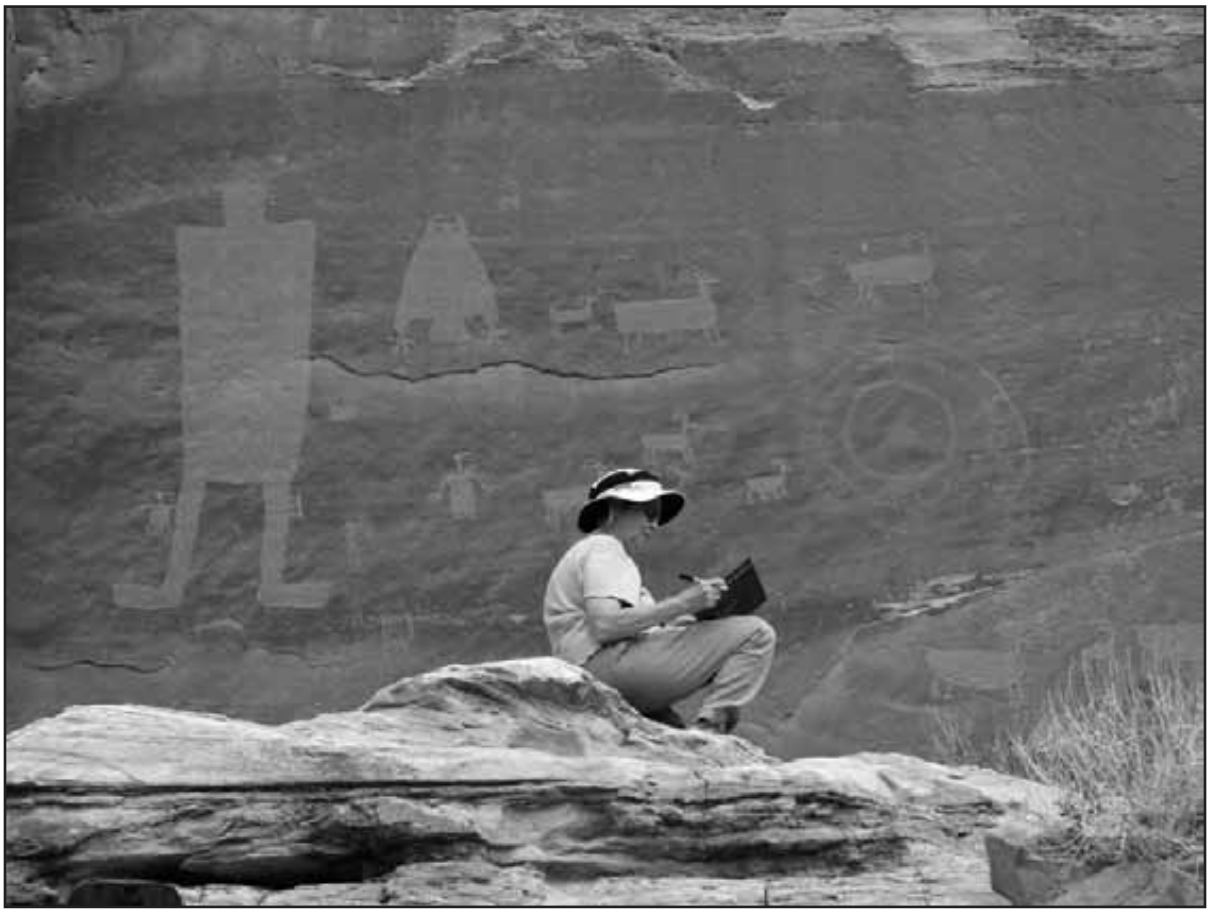

Figure 5. URARA member documenting rock art near Moab, Utah. Photograph by Pam and Quent Baker.

has emphasized the role of archaeology in the interpretation of rock art (Cole 1990). Work by local individuals such as Steven Manning (1982, 1984, 1990) and Jesse Warner (1982, 1984, 1985, 1991, 1993, 1995) (among many others) have added many insights into different aspects of rock art studies in Utah and the surrounding areas.

The Internet, for good or ill, is playing a major role in the education of the public at large. Not only is site information available online, but theories on meaning and style proliferate. While the Internet can allow for an easy entry into the world of rock art and encourages a free flow of new and interesting ideas, it can also disseminate erroneous information, and beginning researchers should use this resource with care.

URARA is doing its best to educate the public about what it perceives to be something very unique and important. We are definitely a minority group, one whose membership consists mostly of amateurs who are making all the difference we can (Figure 5). We notify the authorities as well as the media when we see damage being done to rock art sites. We have our symposiums in a different town each year, and invite local people to participate. Symposium papers are then published. We do our best to see that these volumes are available to the public through our publications department and through donations of volumes to university libraries. We go to schools when invited, as well as church and scouting groups. We all do what we can to

educate others about rock art and its significance, and that is done in many ways.

For many of our members, the experience of being a URARA member might not have changed that much over time. We are still a group that enjoys looking at rock art, trying to figure out what it means, and enjoying the company of likeminded individuals. But the practical reality is that as an organization we have grown and changed significantly over the past 29 years. We know more about the location of rock art sites than any other organization in Utah. We have studied the rock art, and more fully appreciate its uniqueness and value than anyone. We appreciate how critical it is to the study of the movement of peoples in this area over time. No one knows as well as we do how endangered Utah's rock art is. We will continue to do all we can to save what is left. ■

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Writ Large: Archaeological Theory and Method in Utah

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For the last two decades, archaeological research in Utah has been dominated by Steward's cultural ecology, Binford's middle-range theory, and evolutionary ecology. These paradigms have been employed to develop new methodologies and economic models and have contributed to our understanding of past diet, mobility, foraging and farming strategies, and resource processing and discard behavior. Key research areas include variability in diet and mobility, ethnoarchaeological and experimental studies and their implications for site structure and discard behavior, faunal analysis and taphonomic studies, Fremont Studies, Numic studies, and chronological issues.

Theory and Method in Utah Archaeology: 1988 to 2008

It has been nearly thirty years since Jesse Jennings retired, and more than twenty since David Madsen and James O'Connell issued a "clarion call" for Great Basin archaeologists to develop more robust environmental reconstructions and begin to employ archaeological methodologies informed by theories about behavior. They argued that archaeologists had fallen short in understanding diachronic and synchronic variability in behavior and material remains, and that even though greater control of chronology and cultural histories were needed, these data alone would not be sufficient to answer questions about the causes of cultural variation and change. They advocated ethnoarchaeology and evolutionary ecology as key methodological and theoretical constructs for understanding past human behavior and its material consequences (O'Connell and Madsen 1982). Other influential studies that set the stage for the direction of research in Utah Archaeology from 1988 to 2008 included Madsens' (1979, 1982) *The Fremont and the Sevier: Defining Prehistoric Agriculturists North of the Anasazi* and *Get it Where the Getting's Good…*, Binfords' (1980, 1983) *Willow Smoke and Dog Tails* and *In Pursuit of the Past*, Thomas' (1983) ambitious study of Monitor Valley, and Simms' (1986, 1987) *New Evidence for Fremont Adaptive Diversity* and *Behavioral Ecology and Hunter-Gatherer Foraging: An Example from the Great Basin*. Thus evolutionary ecology was proposed as the newest, most informed "new archaeology" at a time when Julian Steward's culture ecology provided an ecological perspective of behavior and Lewis Binford's "middle-range theory" promised to link those behaviors to the archaeological record. It was in this somewhat polarized environment—as the last of Jesse Jennings' students were starting careers, being hired into positions at Utah's state colleges and universities, and beginning to train the next generation of Utah archaeologists—that the Utah Archaeology journal began. A continuing shift in focus from exceptional, though primarily descriptive, archaeological reports to studies that are markedly behavioral and often innovative with a strong focus on adaptation and the environment is the hallmark of Utah archaeology today. Binford's proposed methodology appears to have received almost unanimous support from Utah's practicing archaeologists, but there remains somewhat of a rift between those who consistently produce some of the best on-the-

ground archaeological fieldwork and reports and those who are primarily involved in theoretical debates. In fact, many principal investigators and archeological researchers in Utah appear to be in one of two theoretical camps: evolutionary ecology, or not evolutionary ecology. The latter appears to be largely a culture ecology perspective revisited with middle-range methodology.

Key contributors to archaeological theory and method in Utah in the last two decades include Steven Simms (1987, 1993, 1999, 2008; Simms et al. 1997; Simms and Heath 1990), David Madsen (Madsen and Rhode 1994; Madsen and Schmitt 1998; Madsen and Simms 1998), Joel Janetski (1997, 2002; Janetski and Madsen, ed. 1990; Janetski et al. 1991; Janetski et al. 2000; Janetski et al. 1999), James O'Connell (1993, 1995; O'Connell et al. 1988, 1990, 1991, 1992) and a cadre of researchers, students and CRM archaeologists from Utah and across the west. Utah archaeologists have made significant theoretical contributions in human behavioral ecology, particularly in central-place foraging, and equally important methodological advances in ethnoarchaeology and experimental archaeology. In the last decade, graduate students from Utah's universities have also been involved in the application of new methodologies, including specialized types of data collection and analyses and sophisticated lab techniques to solve problems unique to the prehistory of Utah. In fact, during the last twenty years Utah archaeologists have had a significant impact on archaeological method and theory beyond the Great Basin and Greater Southwest, with contributions to anthropology on a global scale. Standout contributions in the literature include Madsen and Rhode's (1994) *Across the West: Human Population Movement and the Expansion of the Numa*; O'Connell's (1995) *Ethnoarchaeology Needs a General Theory of Behavior*; Geib's (1996a) *Glen Canyon Revisited* Madsen and Simms' (1998) *The Fremont Complex: A Behavioral Perspective*; Beck's (1999) *Models for the Millennium: Great Basin Anthropology Today*; and Brigham Young University's Museum of Peoples and Cultures Occasional Papers, especially the Wetlands volume (Madsen and Janetski 1990), Steinaker Gap (Talbot and Richens 1996), the Clear Creek Archaeological Project (Janetski et al. 2000), and Matheny's (2004) rock art volume.

Unfortunately, women and minorities have not yet joined the ranks of archaeologists viewed as major players in theory in Utah archaeology, and there is a noticeable shortage of Native American archaeologists in this arena. In this respect Utah archaeology remains unfortunately parochial. We need greater diversity in the archaeological community and more representation of diverse viewpoints in the theoretical and methodological literature. There is no shortage of capable women in Utah archaeology, and the contributions of several Utah archaeologists who happen to be women are significant in local and international literature; either opportunities for them to play a more active role in Utah archaeology have been limited or we have not made enough effort to attract successful women and minority scholars to our academic institutions. Consider the success of males with Utah PhDs gaining tenure-track academic positions at Brigham Young University, Utah State University, the University of Utah, Weber State University, and Salt Lake Community College. Women archaeologists with Utah PhDs, in contrast, have been forced to settle for non-academic or non-tenure track positions or seek jobs elsewhere. For the first time in Utah, two women are finally employed in tenure-track positions in archaeology. Both were recently hired at Utah State University from neighboring states, one several years ago and one in the last few months. Let us hope this is the beginning of a trend, but minority and Native American archaeologists have yet to gain tenure-track academic positions in Utah.

Cultural Ecology and Its Continuing Role in Utah Archaeology

Julian Steward's cultural ecology continues to be a driving theoretical perspective in Utah, promoting strong conceptual links between

environment and behavior and providing a model that invites discourse about the environmental correlates of temporal and spatial variation in archaeological assemblages. "It is human ecology or the modes of behavior by which human beings adapt themselves to their environment. Any adaptation necessarily involves an interaction of two elements: The natural environment and the particular cultural devices, invented or borrowed, by which the environment is exploited" (Steward 1938: 2; but see Blackhawk 1997). Thus, Steward's view of the adaptive nature of culture—both material remains and institutions—is likely still the dominant perspective among Utah archaeologists. The primary difference between this perspective and evolutionary ecology is that in cultural ecology adaptation is expected to occur without specific mechanism and often is thought of as an adaptation by the society for the sake of the society, whereas human behavioral ecology is decidedly Darwinian, assuming that natural selection is a consequence: the natural outcome of genetic and behavioral differences between individuals within a population.

In the last two decades we have learned much about the archaeological record of Utah from these studies, although it is difficult to identify projects or research that explicitly employ culture ecology as the grounding theoretical perspective. Cultural ecology is sometime implied by methodology, and most research designs and cultural resource management reports in Utah are driven to some extent by Stewardian assumptions. This has been a driving perspective in Utah archaeology since the days of Jennings (e.g., Jennings and Norbeck 1955). Each report includes a section on environmental context, or the backdrop against which prehistoric behavior is described, and the main body of the report usually comprises thorough, descriptive, detailed analyses of standard classes of artifacts and features of the range of site types and assemblage compositions, or the cultural elements encountered during the study. Researchers routinely explore relationships between the environment and the archaeological assemblages under investigation, and it is standard practice to discuss how the various site types correlate with different ecological zones in the project area. Some discussions are rigorous and thoughtful, others are tentative forays into the likely behavioral associations of material remains, and yet others remain primarily descriptive, with little attempt to build links to specific behavioral hypotheses. Studies often include methodologically complex statistical tests, GPS maps and informative graphs with artifact contours, or inter-site comparisons of the percentages of various assemblage characteristics. In the end, however, behavioral conclusions are generally based on the author's ideas about what observed patterns may mean, and involve comparison with a few supporting cases rather than a rigorous attempt to falsify the original hypothesis. In using this approach the author runs the risk of assuming the very thing she is trying to learn about prehistoric behavior. In short, the data collection, analyses, and reporting techniques associated with cultural ecology are excellent tools, and we have come a long way in identifying patterning in these data, but more rigorous methodologies are still needed to interpret past lifeways and understand the cultural differences of the peoples who created these assemblages.

Cultural ecology is very important and has provided the theoretical base for significant research in Utah and the Great Basin (e.g., Thomas 1983). Cultural ecology dictates that highly mobile hunter-gatherer lifeways in the Great Basin were adaptive, and so its constructs would lead us to predict that prehistoric transitions to Formative economies in the eastern Great Basin where also adaptive. These hypotheses are certainly plausible, and appeal to common sense. However, cultural ecology lacks critical linking tools, theoretical and methodological, for archaeologists to test such hypotheses at the explanatory level. Its strength is its origin in behavioral observation; but when projected into the past or used for cases without an ethnographic record for comparison, the theoretical underpinnings of some arguments

may be based on untenable, or at least unproven, assumptions about both the causes of variation in subsistence and settlement strategies and the material consequences of those actions. This may be one reason that some archaeologists find the methodologies inherent in evolutionary ecology appealing.

Evolutionary Ecology and Economic Modeling

Evolutionary ecology, sometimes called behavioral ecology, has not provided the "silver bullet" or answer to all mysteries of past human behavior as advocated by its zealots, nor has it been the tautological exercise in futility that its opponents suggest. It has provided a number of very useful theoretical tools to Utah archaeologists and has been successfully employed to develop inferences about resource choice among Great Basin foragers (e.g., Simms 1987), the Archaic to Formative transition and variation in the importance of maize farming among the Fremont (e.g., Barlow 1997, 2002, 2006), site location and settlement in the Great Basin (e.g., Zeanah 1996, 2000; Zeanah et al. 1995), ceramic production strategies in the Great Salt Lake region (e.g., Simms et al. 1997), and the environmental correlates and archaeological consequences of variable strategies of resource extraction, processing and transport (e.g., Barlow and Heck 2002; Barlow and Metcalfe 1996; Metcalfe and Barlow 1992). Utah archaeologists have been key players in developing methodologies that bridge evolutionary ecology models with the material record of behavior.

Two decades ago the first application of evolutionary ecology to Utah archaeology per se had been Simms' (1987) use of the diet breadth model, which included a series of experimental studies to determine how native foods ought to be ranked or their expected order of preference in prehistoric subsistence. Additional work by Utah archaeologists since that time has included additional collection experiments and investigations of the effects of mass collection or processing decisions on return rates and prey choice (Barlow and Metcalfe 1996; Cannon 2003; Jones and Madsen 1991; Madsen and Kirkman 1988; Madsen and Schmitt 1998; Ugan 2005a), transport studies (e.g., Jones and Madsen 1989; Rhode 1990), and modeling the energetic returns for farming versus foraging (Barlow 1997, 2002, 2006). However, the most rigorous, complex archaeological applications of the diet breadth, prey choice, or patch choice model develop expectations about foraging and settlement patterns on a regional scale, likely reflecting the range of resources and extraction areas that would affect prehistoric foraging behavior (e.g., Raven and Elston 1989; Zeanah 1996, 2000). These modeling exercises were largely developed and applied by archaeologists working in the Great Basin of Nevada (e.g., Raven and Elston 1989; Zeanah et al. 1995), though they clearly have implications for understanding foraging behavior throughout Utah. It is puzzling, then, that while the diet breadth model has proved to be an extremely useful heuristic tool, most Utah archaeologists have only used it sparingly when evaluating archaeological assemblages. This suggests that by itself this model may lack the predictive and therefore explanatory power to generate testable archaeological hypotheses about variation in human diet across time and space, at least on a scale that is useful for archaeologists, or perhaps that the exercise is more complicated than most Utah researchers are willing to undertake. Certainly inter-site assemblage variability associated with site function, chronological issues, and taphonomic and site formation processes would have to be addressed; nevertheless, a rigorous application of the diet breadth model to a regional assemblage in Utah with Archaic, Formative, and post-Formative components (in either the Fremont or Ancestral Pueblo region), and/or a comprehensive comparison of faunal and macrofossil remains from contemporaneous, Formative-age sites in the Great Basin proper versus contemporaneous Fremont assemblages associated with large sedentary agricultural villages and smaller, high-mobility assemblages, perhaps even contrasted

with Puebloan assemblages from the Four-Corners regions, would likely be very informative.

One of the most remarkable contributions to Utah archaeological method and theory between 1998 and 2008 was a new formal model in human behavioral ecology designed to predict variation in discard location and assemblage composition. The field-processing/transport model (Metcalfe and Barlow 1992) is the first optimal foraging model developed specifically for archaeology. It can be employed to predict resource handling at field camps versus base camps or habitation sites for any resource that requires processing prior to use or consumption (e.g., plant foods, lithics, animals, shellfish, wood), and the archaeological consequences of those behaviors (Barlow 1993; Barlow and Heck 2002; Barlow and Metcalfe 1996). This model has been employed to predict processing and discard behaviors among modern foragers (Bird and Bliege-Bird 1997), and used by archaeologists to develop inferences about how field-processing resources for transport should affect patterning in plant macrofossils, lithic assemblages, shellfish middens, and the distribution of sites associated with logistic forays to collect and process these resources (Barlow 1993; Barlow and Heck 2002; Barlow and Metcalfe 1996; Beck 2008; Beck et al. 2002; Bettinger et al. 1997; Bird 1997; Thomas 2008). The field-processing/transport model is a special case of optimal foraging called central-place foraging (Stephens and Krebs 1986) in which individuals are expected to collect resources at varying distances from a particular site or location on the landscape that they use as a home base rather than simply taking or ignoring resources that they encounter randomly in the environment (i.e., the diet breadth model).

In central-place foraging, dietary choices are imbedded within a larger set of behaviors which include both travel effort and appropriate time spent processing or handling the resources away from home, in addition to overall efficiency, or caloric returns with respect to a central location. The forager must decide which resources and collection areas to use and where to locate the home base (e.g., Barlow and Heck 2002; Zeanah 1996), and the relative ease or difficulty with which resources can be processed into high utility loads will strongly affect the locations of different site types. That is, resources which can be quickly processed into high utility loads, such as large animals, can be efficiently exploited at a distance, whereas resources that require larger processing investments to increase load utility, such as grasses and other small seeds, will strongly influence the locations of home bases (Barlow and Heck 2002; Barlow and Metcalfe 1996). The location of the home base will in turn affect both the range of resource procurement areas exploited logistically and field-processing/transport strategies, or the types of camps, processing facilities, and waste discarded at each of the respective resource patches and processing facilities and waste materials discarded at the home base. In Utah and beyond, this evolutionary ecology model and several other central-place foraging models have been employed in a variety of archaeological investigations (e.g., Barlow 1993; Barlow and Heck 2002; Barlow and Metcalfe 1996; Beck 2008; Beck et al. 2002; Bettinger et al. 1997; Bird 1997; Cannon 2003; O'Connell 1995; Thomas 2008; Zeanah and Simms 1999).

"Middle-Range" Theory: Ethnoarchaeology and Experimental Studies

Some of the most important theoretical and methodological contributions of Utah archaeologists have been made in "middle-range theory," proposed by Lewis Binford as the crucial link between prehistoric human behavior and its material consequences, and perhaps the most important tool for archaeological interpretation of assemblage composition (e.g., Binford 1980, 1983). Subsequent studies by James O'Connell among the Alyawara and Hadza (e.g., O'Connell 1987, 1993; O'Connell and Marshall 1989; O'Connell et al. 1988, 1990, 1991, 1992) have been employed by archeologists worldwide to better understand patterning in behavior and the archaeological record of hunter-gatherers,

and by Utah archaeologists in several cases to develop inferences about site structure or intra-site patterning in prehistoric activity areas among Great Basin foragers and Fremont agriculturists (Metcalfe and Heath 1990; Simms and Heath 1990; Tipps 1993).

Significant contributions also include Lupos' analyses of Hadza faunal assemblages and ethnoarchaeological studies among the Aka, Lupo and Schmitts' taphonomic studies and studies of Great Basin faunal assemblages (e.g., Lupo 1994, 1995, 2006; Lupo and Schmitt 2005; Schmitt and Lupo 1995; Schmitt et al. 2002), and Jones and Metcalfes' experimental studies with faunal remains (Jones and Metcalfe 1988; Metcalfe and Jones 1988). Indices of the prey types found in archaeological assemblages (Broughton 1994), including variation in the proportions of medium or large ungulates vs. lagomorphs or other small, local prey types, have also been an important contribution in methodology used by Utah archaeologists to identify hunting pressure or prey depressions, and perhaps population increase and increasing diet breadth among prehistoric foragers and farmers (e.g. Broughton 1997; Broughton and Grayson 1993; Broughton and Ugan 2004; Cannon 2003; Janetski 1997; Ugan 2005b).

Far more than simple pattern recognition, these studies have greatly advanced our understanding of the "whys" of variation in resource use, processing and discard, site use and abandonment, and consequently the causes of variability in inter- and intra-site assemblage composition. In fact, it is this line of inquiry that initially led to the formulation of a formal evolutionary ecology model to understand the environmental factors that influenced prehistoric discard behavior and assemblage composition, i.e. the field-processing/transport model discussed above (Barlow and Heck 2002; Barlow and Metcalfe 1993: 25-43, 1996; Metcalfe and Barlow 1992). More ethnoarchaeological studies, particularly among horticulturists and agriculturists and among women, with attention to both the causes of variation in time spent in activities and patterning in the material consequences of those behaviors, are needed.

Area Studies

Some important contributions have come from relatively large, complex cultural resource management projects. These studies include compelling methodological exercises, new data that speak to local issues in prehistory, and often important theoretical contributions as well. It is precisely these types of projects that are, or should be, the testing ground for archaeological method and theory. Simms' (1999) work with sites exhumed during the flooding of the Great Salt Lake resulted in contributions to new methodologies in dietary analyses (e.g., Coltrain 1993; Coltrain and Stafford 1999), DNA studies (e.g., O'Rourke et al. 1999), a new model for understanding variability in ceramic assemblages (Simms et al. 1997), and one of the first and best cases of developing a successful methodology for working with NAGPRA (e.g., Simms 1993). Janetski's contributions are numerous and include the Fish Lake Project (Janetski et al. 1999), the Clear Creek Project (Janetski et al. 2000), and the excavation of Aspen Shelter (Janetski et al. 1991). Janetski's work with Ute and Paiute collaborators on the Fish Lake Project is an important model for Native American partnerships in archaeology, and the Clear Creek Project produced methodological contributions in chronology (e.g., Talbot and Wilde 1989) and important studies in site structure, faunal analysis, exchange, and social organization (Janetski et al. 2000, Janetski 2002). Tipps and Schroedl report on methodologies developed during several large scale cultural resource inventories, including the Tar Sands Project (Schroedl 1988; Tipps 1988) and the six-year Canyonlands Archaeological Project (e.g., Tipps 1995; Tipps et al. 1996). These investigations include developing and testing a predictive model for site location, investigations of settlement and mobility (sensu Binford 1980), lithic procurement strategies, and an application of the diet breadth model. In perhaps one of

the most compelling and informative volumes published in Utah during the last 20 years, Geib's Glen Canyon study (1996a, 1996b) provides theoretical and methodological contributions in "settlement-subsistence" studies, mobility, site use, and petrographic analyses of Fremont ceramics. Geib also presents thought-provoking discussions about Archaic mobility, Formative transitions, and Fremont/Anasazi boundaries.

Fremont Studies

Some of the most significant theoretical and methodological advances have come from research documenting variability in Fremont lifeways. Investigations include studies documenting early strategies of wild seed and maize storage at the Formative transition (e.g., Gruebal 1998; Talbot and Richens 1996); diet, assemblage variability, mobility, and the relative importance of farming vs. hunting and foraging during the Fremont period (e.g., Barlow 1992, 2002, 2006; Barlow et al. 2008; Coltrain 1993; Coltrain and Leavitt 2002; Janetski 1997; Spangler 2000; Simms et al. 1997); variation in granary use and storage strategies (Barlow et al. 2007, 2008); social complexity and exchange (Janetski 2002; Janetski et al. 2000; McDonald 1994); chronology (Geib 1996; Geib and Bunghart 1989; Massimino and Metcalfe 1999; Talbot and Wilde 1989; Towner et al. 2008); and comparative human skeletal and DNA studies (e.g., Carlyle 2005; Carlyle et al. 2000; Loveland and Gregg 1994; Loveland et al. 1992; O'Rourke et al. 1999; Roberts 1997).

Other important theoretical and methodological contributions include investigations of Numic lifeways and the Numic Spread (Arkush 1999; Madsen and Rhode 1994; Simms 1994; Young and Bettinger 1992), projectile points as chronological markers in the Great Basin (e.g., O'Connell and Inoway 1994), paleoenvironmental studies (e.g., Grayson 1993; Grayson and Cannon 1999; Madsen and Rhode 1990; Rhode 1999; Salzer et al. 2008; Schmitt et al. 2002), and finally, rock art studies (Chaffee et al. 1994; Cole 2004; Geib and Fairly 1992; Matheny, ed. 2004).

Conclusions: Progress, or Are We Just Spinning Our Wheels?

Have we made significant progress in understanding the causes of major transitions in Utah prehistory? In other words, have we answered the big questions about culture chronology and cultural change? More investigations of Archaic cultural diversity as adaptive diversity "writ large" in terms of regional and local variation in diet, mobility, material culture, and behavioral adaptations are needed, as well as studies that will enable us to "engender" the past and investigate the strategies of women and men and their respective roles in prehistory. We have likely identified some of the factors that led to the Formative transition in Utah circa 200 B.C.–A.D. 300 (likely associated with the foraging decisions/strategies of women) but still have not addressed variation in the timing and details of this process in different regions, i.e., the Great Salt Lake area vs. the Sevier Desert, the Vernal area or the San Rafael. We need more investigations into the timing and causes of apparent abandonment of sedentism and maize farming in different regions of Utah during the Late Prehistoric period. We have yet to identify and understand variation in social and political complexity in different regions during the Formative period in Utah and variability in the religious systems of these prehistoric foragers and farmers. For these kinds of questions we may need to look beyond optimal foraging theory; perhaps game theory or other multiple-player or frequency dependent models of behavior could provide new insights. What do we really understand about rock art? Historic migrations and conflicts and the cultural/behavioral processes that resulted in the marginalization of Utah's native peoples in the nineteenth century?

These questions are not rhetorical, but are inquiries about what we have accomplished in the last twenty years and consequently the theoretical and methodological directions we should consider for the next several decades. What are the important research questions, and

which theories and methodologies will likely be most productive in identifying, collecting, and analyzing the archaeological and behavioral data that speak to these issues? Clearly cultural ecology, ethnoarchaeology, and human behavioral ecology have contributed greatly to our understanding of the past. Perhaps we should continue to engage in these and pursue new methodologies and theoretical paradigms as well.

To accomplish the goals of both cultural ecology and human behavioral or evolutionary ecology, Utah archaeologists should also continue to develop research programs and partnerships in paleoenvironmental studies—not just coarse reconstructions of climate change, but local and regional perturbations in rainfall, temperature, and the prehistoric distribution of resources—at a scale that can inform us about potential changes in foraging success and maize harvests and how this likely affected the foraging/farming decisions of prehistoric people. Madsen, Grayson, Rhode and others have contributed much, and the next generation of archaeologists will be challenged to link future studies to methodologies with strong theoretical underpinnings and the potential to predict and explain cultural variation (sensu Grayson and Cannon 1999).

Symbolism and Understanding the past

This fourth and newest goal of archaeology has passed us by. This may reflect a lack of diversity in Utah archaeology and an absence of emic perspective in most interpretations of archaeological assemblages (but see Janetski et al. 1999; Simms 1993). While many view archaeology as a deductive, objective, scientific pursuit (and such studies are certainly important) other viewpoints are also valid and necessary. The volume *History of Utah's American Indians*, edited by Forrest Cuch (2000), is a step in the right direction with respect to the oral histories of Utah's Native American people, but this perspective is nearly non-existent in archaeological studies. We need more Native American archaeologists and diversity in perspectives if we are to develop a more balanced approach to the past and embrace the range of theoretical and methodological tools that will help us to understand prehistoric behavior. ■

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Human Ecology and Social Theory in Utah Archaeology

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Utah includes portions of both the Southwest and Great Basin culture areas. Although many Utah archaeologists work in both areas, most have a tendency to focus on one or the other. Southwestern and Great Basin archaeology have developed different research traditions, with large differences in what are considered mainstream theoretical approaches in each region. Southwestern archaeologists usually focus on small-scale horticulturalists, while Great Basin archaeologists more often emphasize hunter-gatherer archaeology. Despite the evidence that horticulture was important to Fremont peoples, archaeologists studying the Fremont have often relied on theoretical concepts and assumptions that emphasize human ecology and are rooted in Great Basin hunter-gatherer studies. Human ecology has been important in studying Southwestern horticulturalists, but Southwestern archaeologists have employed more socially oriented theoretical approaches that have been highly successful in documenting a history of social and adaptive change. In contrast, the predominantly ecological bent of Fremont studies has led to a focus on variability in subsistence and settlement strategies with relatively little attention to temporal change, and descriptions of subsistence and settlement variability have sometimes been exaggerated beyond what the archaeological record supports. Fremont studies would benefit from consideration of a broader range of theoretical approaches and a combination of ecological and social perspectives.

Utah archaeology straddles the boundary between the Great Basin and Southwestern culture areas and research traditions[1]. Southwestern archaeology is mostly the archaeology of farmers while Great Basin archaeology is much more focused on hunter-gatherer archaeology, although many farmers lived in the eastern Great Basin and left numerous sites there. Many Utah archaeologists work on both sides of the Southwest/Great Basin divide, and many study both farmers and hunter-gatherers, but there is a tendency for most of us to emphasize one or the other.

Southwestern and Great Basin archaeology have developed divergent research traditions. These distinct differences are partly a consequence of differences in the numbers and kinds of sites present in each area, but also, and probably more importantly, these differences are a result of the history and sociology of archaeology in each region. Distinctly different research trajectories have resulted in major differences in what are considered mainstream theoretical approaches in each area, and different theoretical approaches have led to corresponding differences in the questions archaeologists ask and the way research is conducted. Utah archaeologists hold very different views about how archaeology should be done, what is most important to know about the past, and what kinds of questions are even answerable with archaeological data. This theoretical diversity *could* be a strength of Utah archaeology, although in practice that has rarely been the case because productive discussion of the underlying theoretical differences has been rare.

My primary argument is that archaeologists studying the Fremont have too often relied on theoretical concepts and assumptions rooted in Great Basin hunter-gatherer studies. Fremont archaeologists would benefit from increased awareness and use of the theoretical and methodological approaches prevalent among those who specialize in the archaeology of Southwestern farmers[2]. To support my argument, I first discuss theory in general terms, and then describe some of the differences between the archaeological research traditions of the

Southwest and Great Basin. Then, in order to demonstrate the potential of the approaches used by Southwestern archaeologists, I sketch a picture of social and adaptive change in the northern San Juan region of the Southwest from about A.D. 600–1300 and discuss hints that similar processes may have been important in Fremont society.
I then critically examine the concept of Fremont adaptive diversity (Madsen and Simms 1998; Simms 1986). Fremont peoples clearly pursued a variety of subsistence and settlement strategies, but some of the details of precisely how the Fremont are often said to be adaptively diverse are unproven and probably wrong. The application of theoretical perspectives common in Great Basin hunter-gatherer archaeology to the archaeology of Fremont farmers has predisposed some practitioners to assume variability in Fremont subsistence and settlement behavior beyond what is evidenced in the archaeological record.

What Is Theory?

Theory is a word with many definitions, but in this article I use it to refer to "a system of assumptions, principles, and rules of procedure devised to analyze, predict, or otherwise explain the nature or behavior of specified phenomena" (Houghton Mifflin 1993:1406). *Archaeological* theory refers to the ideas, assumptions, and predispositions that lead archaeologists to ask certain questions, to find certain interpretations more or less plausible, or to regard some statements about the past as well-established facts and others as unprovable speculation.

Theory is pervasive in archaeology, although theoretical assumptions often go unstated. Archaeologists often disagree about fundamental theoretical concepts due to differences in training, experiences, and personal interests. This, in turn, leads them to disagree about the answers to important archaeological questions and even to disagree about which questions to ask. Because the archaeological record is fragmentary, conclusions derived from it are often underdetermined. In other words, archaeological data are often consistent with more than one interpretation, and the 'conclusions' derived from the archaeological record are sometimes based as much on theoretical assumptions as on the data. As Bentley and Maschner (2008:2) say, "There is no way to escape the fact that, given some archaeological evidence, how we narrate the past and what we think is important about it depends on us."

Some Observations on Theory in Great Basin and Southwestern Archaeology

This short essay cannot adequately describe the diversity of current theoretical approaches, much less the complex history of archaeological thought, in either the Great Basin or the Southwest, and any attempt at broad generalization (like the one I am about to make) carries the risk of oversimplification and misrepresentation. Nevertheless, several generalizations are possible. First, a strong interest in human ecology is, and long has been, important in both Southwestern and Great Basin archaeology. That is, archaeologists have been concerned with the relationship between the ancient inhabitants of these mostly arid regions and the changing, unpredictable environments in which they lived. Southwestern archaeology differs from Great Basin archaeology, however, in placing a much greater emphasis on human social interactions. Concepts like community, history, social identity, ritual, religion, social organization, inequality, migration, violence, etc., are central to questions asked by Southwestern archaeologists[3], and they have accumulated considerable evidence that the social interactions, behaviors, and processes described by these concepts were important in shaping the lives of ancient Southwestern people and the archaeological record they left behind. These and similar concepts are not absent from Fremont archaeology, or Great Basin archaeology in general, but they play a much reduced role. Instead, Great Basin archaeologists tend to focus more narrowly on human ecology than do Southwesternists.

This contrast in approaches between the Great Basin and the Southwest is apparent in a great deal

of archaeology completed with little or no explicit reference to theoretical concepts, but is especially obvious when archaeologists advocate particular theoretical approaches. Since the early 1980s, Great Basin archaeologists have increasingly drawn on various forms of evolutionary theory and focused strongly on reconstructing subsistence and settlement behavior (Grayson and Cannon 1999; Zeanah and Simms 1999). In the eastern Great Basin specifically, a number of archaeologists have embraced human behavioral ecology and related models of subsistence and settlement behavior (e.g., Barlow 1997, 2002; Bright et al. 2002; Janetski 1997; Madsen and Simms 1998; O'Connell et al. 1982; Simms 1987; Ugan 2005a, 2005b).

Southwestern archaeologists, however, have often advocated what Hegmon (2003) calls "processual-plus" approaches, which combine a generally processual approach to archaeology (with interests in human ecology and generalization) with an interest in concepts previously associated with post-processualism such as gender, meaning, and agency. More specifically, many Southwesternists (e.g., Eckert 2008; Spielmann et al. 2006; Varien 1999; Varien and Potter 2008a) have advocated what archaeologists sometimes call "agency theory" (Dobres and Robb 2000; Gardner 2008), but which is more properly referred to as structuration or practice theory[4]. Behavioral ecology and practice theory share some insights and potential compatibilities, but they also differ in fundamental ways.

Human Behavioral Ecology

Human behavioral ecology is concerned with the relationships between human behavioral variability and specific ecological and social contexts. Behavioral ecologists begin with the assumption "that natural selection has designed organisms to behave in ways that tend to enhance fitness" (Broughton and O'Connell 1999), and that humans have the capacity to adjust their behavior in response to local conditions in ways that tend to maximize their reproductive fitness. As Boone and Smith (1998) say, "[i]n colloquial terms, the evolutionary ecological position is nothing more than a claim that organisms have problem-solving abilities at various levels (physiological, morphological, behavioral) and scales (short-term, developmental, lifelong)." This leads behavioral ecologists to view human behavior as plastic, adapting as necessary to changes in local conditions.

Behavioral ecologists typically "begin with a specific question about behavior," and "answers typically involve the use of formal optimality models" (Broughton and O'Connell 1999:153). These optimality models

> . . . require hypotheses about a possible fitness-related goal for the behavior of interest, the alternate strategies to achieve that goal (including constraints that limit the field of possible strategies), the costs and benefits associated with each strategy, and the currencies in which those costs and benefits are to be measured. Combined in model form, these hypotheses predict an optimal pattern of behavior [Broughton and O'Connell 1999:153-154].

The hypotheses are then tested by comparing the predictions to behavior that is either observed directly (in contemporary ethnographic settings) or inferred from archaeological remains. "Any mismatch implies that one or more hypotheses involving the available strategies, constraints, costs and benefits of different strategies, or currencies is false" (Broughton and O'Connell 1999:154).

In theory, human behavioral ecology can consider behavioral responses to a wide variety of conditions, both ecological and social. Kelly (1997:8), for example, suggests that "behavioral ecology provides models that permit one to explore why there might be, for example, gender differences in food targets (and what effect those might have on gender relations); or how one can determine if a people reject a food for purely energetic reasons or if a food's symbolic weight affects choice; or how foraging affects group composition and, consequently, power relations."

This is apparently the basis for his statement that "it is wrong to allege that ecological approaches ignore nonecological factors" (Kelly 1997:5).

In practice, however, behavioral ecologists have often focused on studies of settlement and subsistence using models based on optimal foraging theory (e.g., the diet breadth and patch choice models), which allow prediction of optimal strategies from knowledge of the resource structure of the environment. There has also been a strong tendency for behavioral ecologists doing archaeology in the Great Basin to model the behavior of individuals in isolation from social contexts, although there are several exceptions (e.g., the incorporation of gender-based differences in foraging strategies into optimal foraging models [Elston and Zeanah 2002; Zeanah 2004], or the much-debated attempts to use costly-signaling theory and the concept of prestige hunting to explain increases in large-mammal procurement [Broughton and Bayham 2003; Codding and Jones 2007; Hildebrandt and McGuire 2002, 2003; McGuire and Hildebrandt 2005; McGuire et al. 2007]).

This narrow focus in applications derives in part from the reductive nature of human behavioral ecology. Winterhalder and Smith justify the reductionism by emphasizing the simplicity of the models used by human behavioral ecologists:

> Emphasizing generality, most HBE [human behavioral ecology] models strive to be as simple as possible. They seek to capture the essential features of an adaptive problem, and neglect to some degree the myriad ancillary variables of concern in the more particularist tradition of anthropology. HBE assumes that complex socioecological phenomenon [sic] are most fruitfully studied in a reductionist rather than holistic fashion [Winterhalder and Smith 2000:52].

Practice theory

The practice theory advocated by some Southwestern archaeologists is less reductionist and in fact assumes that "complex socioecological phenomena" are best understood in a holistic way. It is based on the ideas of Bourdieu (1990; 1998), Giddens (1979; 1984), and others (e.g., Ortner 1984; Sahlins1981; Sewell 2005) and is concerned with the relationship between structure (usually understood as some combination of social rules, learned behavior, habit, and available resources) and agency (the actions and choices of individuals). Practice theorists attempt to explain how the actions of knowledgeable human agents are influenced by the structural properties of their societies while the same actions reproduce and modify the structures. Practice theory conceptualizes "individuals whose actions are *in relation to* circumstances (but not mechanically determined by circumstances) and which in turn have an *effect on* circumstances (though usually not very large effects)" (Cowgill 2000:51).

These individual actions produce, reproduce, and change what anthropologists and archaeologists see as culture. As Simms (1999:106) describes it, "practice theory holds that the organizational principles and meanings of culture are constructed through the routines of daily life—the little things."

Practice theory usually does not lead to specific predictions about human behavior, but rather to a series of expectations about how behavior should vary within and between social contexts. In particular, it suggests that social behavior should be patterned at a variety of scales, from individuals or households to communities and regions. Within a community, individual actions and strategies are variable, but regular face-to-face interactions among community members lead to some patterned similarities in social practices. At increasing scales of analysis (which usually correspond to decreased frequency of interaction) practices within communities may appear relatively homogenous but distinct between communities, communities within regions will usually be more similar to each other than to communities in other regions, etc.

For practice theory, the proper focus of study is neither an archaeological "culture" such as the Fremont, nor the specific behaviors of particular individuals, "but social practices ordered across

space and time" (Giddens 1984:2). The major objectives are to document and explain the "persistent patterning of social life" (Giddens 1984:26) that results as social practices are reproduced or varied across time and space.

Practice theory implies that archaeologists should expect variation in material culture and behavior at the scale of individuals or households despite broadly similar patterns of behavior at the scale of the community or region. Individuals, households, communities, and regions all have their own histories, and these histories are an important part of the social structure within which people act. This suggests that, whenever possible, archaeological study should not be restricted to any particular point in time or space, but rather should contextualize data at multiple spatial scales and within a broad temporal range.

Similarities, Contrasts, and Critiques

Simms (1999:106) points out some ways in which practice theory resembles behavioral ecology. Both emphasize the variation within "cultures" and other kinds of social groups at various scales, and they both draw attention to the decisions and actions of individuals who have a variety of interests, opportunities, and understandings and therefore may behave in different ways. While the actions or decisions of individuals are rarely accessible archaeologically, we can study the consequences, both intended and unintended, of their actions and try to understand the motivations and strategies of different individuals (or groups of individuals), as well as the options available to them. Both behavioral ecology and practice theory focus attention on these issues, but they differ in the kinds of motivations and actions they highlight.

These theoretical approaches notably differ in the relative importance they place on simplicity, prediction, and testability, which are among the most important justifications behavioral ecologists cite in favor of their approach. There are undeniable advantages to theories and models that are simple and testable, but most practice theorists prefer not to sacrifice holistic understandings of human behavior in the interest of simplicity alone.

Optimal foraging models, a major tool of behavioral ecologists, are open to several kinds of criticism. For one, optimal foraging models are unrealistic simplifications; actually achieving optimality would require individuals to have a level of knowledge, rationality, and singleness of purpose no human is likely to achieve. In reality, people often act on incomplete or incorrect information, are not rational even when they have good information, and balance a large number of competing goals rather than maximizing any one goal.

Another criticism is that the assumed links between foraging efficiency and reproductive success are dubious. Bamforth (2002:438-439) argues that much behavior is directed toward somatic, rather than reproductive, success, and that "the assumption that measures of food intake or foraging efficiency can be taken as a proximate measure, or correlate, of fitness is problematic a priori . . . many individuals survive well, presumably foraging and eating, but do not reproduce. Adequate nutrition is obviously essential to reproductive success, but simply being well nourished does not guarantee such success."

While I generally agree with these critiques, it is not clear that they pose serious problems for behavioral ecology in general. The fact that optimal foraging models are somewhat unrealistic does not mean that they are not useful, as long as the process of seeking explanation does not stop with the simple, unrealistic models. And the fact that foraging efficiency fails to correlate with reproductive success reinforces the idea that more complex models are needed, but it does not necessarily invalidate behavioral ecology. If Bamforth (2002:439) is correct that "[t]he only aspect of human behavior that has been shown to be a cross-culturally valid predictor of fitness—that is, the only empirically documented correlate of fitness—is individual male status," that implies that behavioral ecologists should seek models that focus more on status building than on foraging efficiency. Given the myriad ways that status is defined in different social settings, however, this

suggests that behavioral ecologists would need to greatly increase their efforts to take particular social settings into account.

Stronger critiques of human behavioral ecology exist, however. The assumption that evolution shapes organisms to behave in ways that tend to maximize reproductive fitness is hardly controversial. But that does not mean, as behavioral ecologists often seem to assume, that individual human behavior is extremely plastic, with few or no limits on individuals' ability to modify their behavior in relation to changing ecological circumstances. An alternate view is that evolution has instead shaped humans as social beings and that social behavior, more than unfettered individual plasticity, has tended to maximize individuals' reproductive fitness and has therefore been selected for. Social behavior has adaptive advantages, in part simply because it enables people to live in groups, share tasks, etc., but also because it allows knowledge to be shared and maintained across generations. Social behavior must have, more often than not, translated into increased reproductive success in early human ancestors or humans would not have evolved the capacity for it. But some aspects of social behavior can lead people to resist change, even in cases where failure to change is maladaptive.

Resilience theory (Gunderson 2000; Holling 1973, 2001; Nelson et al. 2006; Redman 2005; Redman and Kinzig 2003) offers some insights into how social behavior can become maladaptive. Resilience theory is an integrative, interdisciplinary perspective based in evolutionary theory that identifies similarities in social, ecological, and combined social/ecological systems. Specifically, these systems all have in common adaptive cycles that involve periods of growth, stability, decline/collapse, and reorganization. These periods may be of different lengths, and transitions between them may be rapid.

Hegmon et al. (2008) draw on resilience theory to identify factors that lead individuals and social groups to resist change. They use the concept of rigidity, which refers to the loss of resilience due to various factors that limit the flexibility of individuals or groups to respond to changing conditions. Rigidity can result simply from attachment to traditional ways of doing things; in practice theory terms, "[t]he tendency for groups to persist in their ways due *inter alia* to the fact that they are composed of individuals with durable dispositions that can outlive the economic and social conditions in which they were produced, can be the source of misadaptation as well as adaptation . . ." (Bourdieu 1990:62). Other possible causes of rigidity include (among others): 1) the presence of social hierarchy, which limits the options available to lower status individuals; 2) pressure for social conformity, which can inhibit innovation; 3) integration, which may reduce the ability of individuals and small groups to act independently; and 4) path dependence, in which "the development of certain technologies, institutions, or land-use patterns . . . establishes a trajectory that becomes increasingly difficult to change" (Hegmon et al. 2008:321–322). In extreme cases societies may find themselves in a "rigidity trap" where options are limited and, despite efforts to resist change, change eventually comes with severe human costs. For example, relatively strong levels of integration and hierarchy in the Hohokam Classic period may be evidence of a rigidity trap, which led to a long, slow decline of Hohokam society after about A.D. 1300 during which "people stayed, in some cases enduring terrible health conditions for generations, until the social and physical infrastructure finally disintegrated" (Hegmon et al., 2008:321).

Practice theory in general offers more realistic models of human action than behavioral ecology, but it too is subject to criticism. For one, social theorists often tend to seek holistic understandings of complex social situations rather than to create testable models with general applicability. Because of this, many applications of practice theory are largely inductive and particularistic. Another more serious critique is that many applications of practice theory pay insufficient attention to human ecology and the way it constrains some choices while enabling others.

The lack of emphasis on the natural environment in practice theory probably results from the fact that it was originally developed by sociologists, including Bourdieu and Giddens, who studied contemporary societies in which technology largely insulates most people from environmental constraints. For archaeologists who work in the arid west, however, ignoring human ecology is not an option; clearly individuals, societies, and settlement patterns were and are shaped by the general aridity and variability of the natural environment, and advocates of practice theory in the Southwest have therefore stressed that "natural resources are an integral part of the structure that strategic actors draw upon . . ." (Varien and Potter 2008b:11).

Why Does Theory Matter?

Theoretical perspectives in the Southwest and Great Basin overlap to some degree, and a lot of archaeology in both regions makes little or no explicit use of theory. Interest in communities, social organization, and exchange is apparent in a number of recent Fremont studies (e.g., Janetski 2002; Seddon 2001; Talbot 2000a), and an interest in settlement, subsistence, and human ecology is important in the Southwest (e.g., Doyel and Dean 2006; Gumerman 1988; Kohler et al. 2007; Varien et al. 2007). But there are large differences in the modalities of theoretical positions in the two areas, and these differences have led to differences in the questions archaeologists attempt to answer, the way in which they reconstruct past human behavior, and the statements about that past behavior that they regard as plausible.

Two examples demonstrate the importance of theory. First, I summarize recent perspectives on the ancestral Puebloan occupation of the northern San Juan region of the Southwest. By asking questions about both human ecology and social interactions and sometimes (but not always) formally incorporating practice theory into their research, archaeologists have been able to reconstruct a relatively detailed sequence of social and adaptive change. In contrast, archaeologists working in the eastern Great Basin have relatively little to say about such changes undergone by Fremont farmers. Of course, differences in theoretical approaches are not the only explanation for this contrast. Differences in the kinds of sites, the numbers of archaeologists working in the northern San Juan region, and the much more developed chronological resolution for sites there also contribute to this contrast. But the broad range of questions Southwestern archaeologists are willing to address accounts for much of their success in reconstructing social and adaptive change.

The second example examines the idea of Fremont "adaptive diversity" and, more specifically, the evidence for some of the diverse adaptations sometimes claimed for the Fremont. While Fremont groups clearly pursued various subsistence and settlement strategies, I argue that the evidence is weak for some of the specific strategies claimed.

Example 1: Social and Adaptive Change in the Northern San Juan and Implications for Fremont Archaeology

The northern San Juan region of the Southwest includes much of southeastern Utah and southwestern Colorado (Figure 1). Recent research in this area identifies two cycles of colonization, growth, and depopulation (similar to the adaptive cycles described by resilience theory) that spanned the period from A.D. 600–1300 (Kohler et al. 2007; Varien et al. 2007). During each cycle, ancestral Puebloan societies underwent a series of transformations, including population growth and changes in settlement pattern, community structure, ritual practices, and intercommunity relationships.

The First Population Cycle

The first of these cycles began at approximately A.D. 600. During the A.D. 600s, a number of dispersed communities appeared, evidenced archaeologically by clusters of habitations associated with communal, apparently ritual, architecture in the form of an oversized pit structure or great kiva. In southeastern Utah,

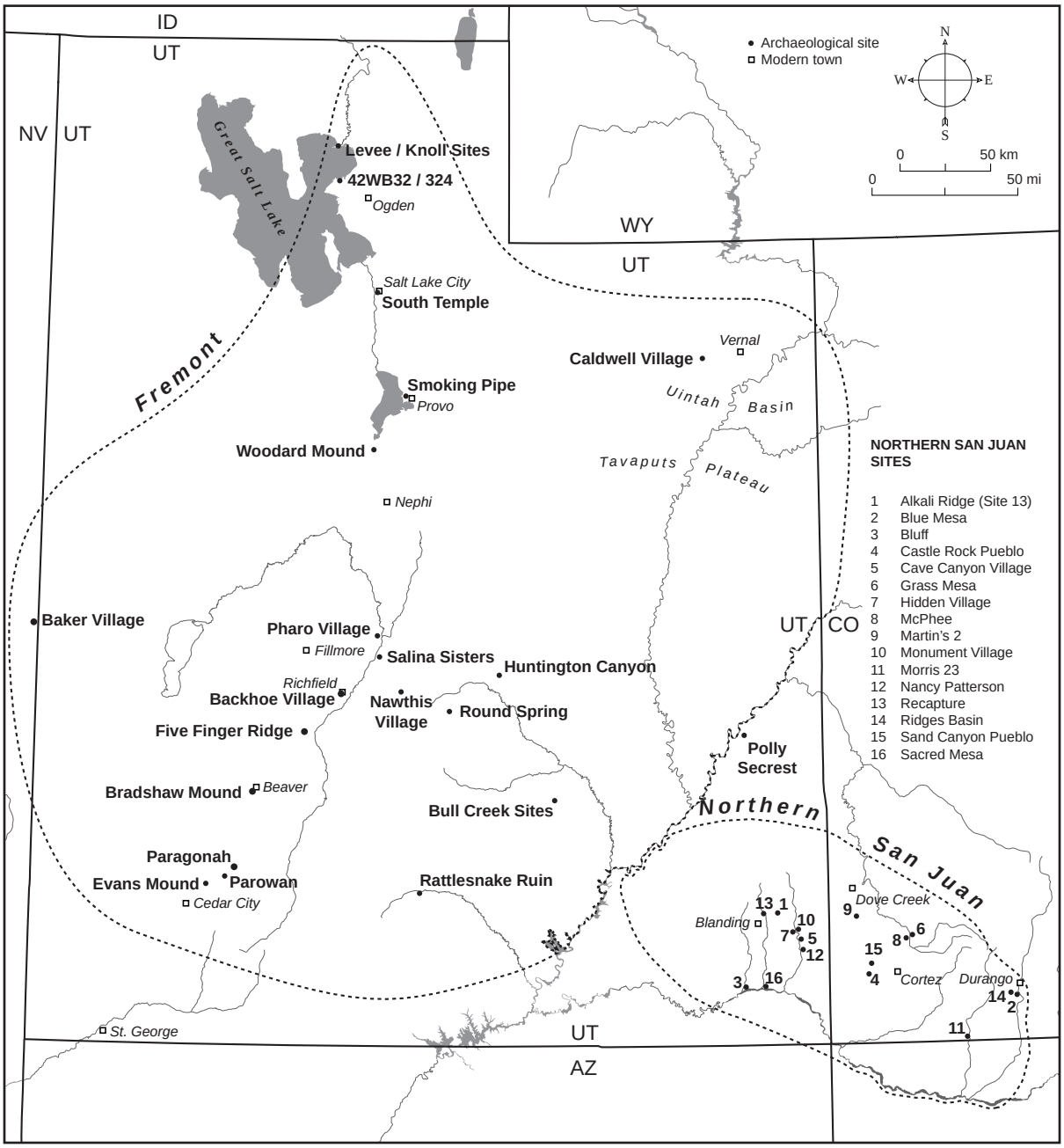

Figure 1. The northern San Juan and Fremont regions, showing sites mentioned in the text and selected other Fremont sites.

such communities are known in the vicinity of Recapture Dam, north of Blanding (Jacklin 1984; Nielson et al. 1985); along the highway just west of Bluff (Neily 1982); and in Montezuma Canyon (Christensen 1980; Montoya 2008; Nielsen 1978).

Shortly after A.D. 750, many people in the western part of the northern San Juan region moved into large villages with contiguous surface rooms (Figure 2). In southeastern Utah, the most notable example is Site 13 on Alkali Ridge (Brew 1946), which probably was home to about 200

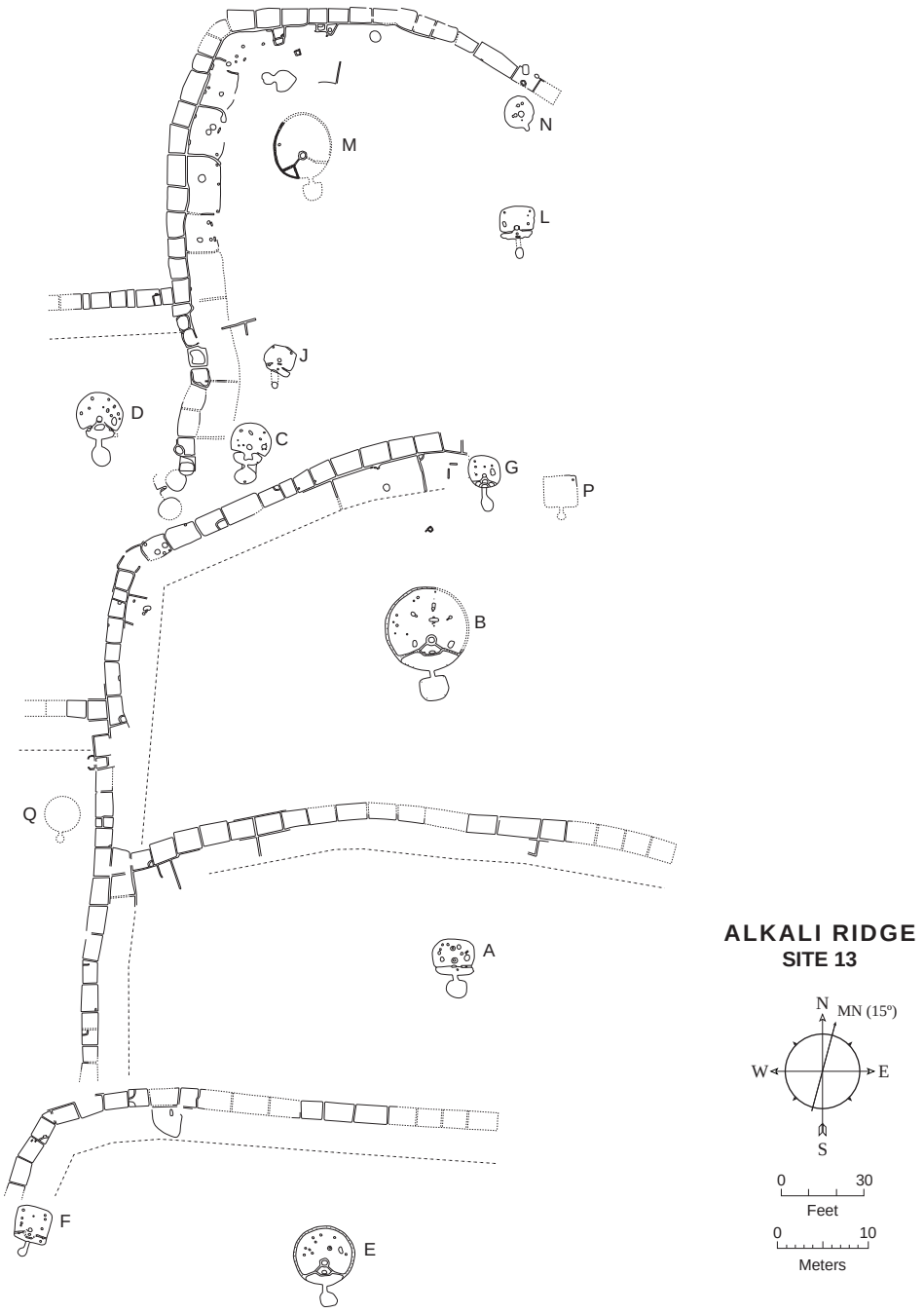

Figure 2. The early Pueblo I (A.D. 750-780) village at Alkali Ridge Site 13, near Blanding, Utah.

people during a short occupation lasting from the late A.D. 750s to about A.D. 780. Similar, but smaller, late A.D. 700s villages include Monument Village in Montezuma Canyon (Patterson 1975) and Martin's Site 2 in southwest Colorado (Martin and Rinaldo 1939). By far the most common decorated pottery at these three villages is Abajo Red-on-orange, which

is decorated in a distinctively non-local design style whose closest analogues are found in the southern part of the Southwest (Allison 2008a; Washburn 2006). This suggests that the residents of these villages included immigrants from at least several hundred miles to the south, although continuities in utilitarian pottery and some aspects of architecture suggest that the village residents also included people with local ancestry.

Farther east in Colorado, several other village-size aggregates date to the late A.D. 700s through the first decade of the A.D. 800s, including Grass Mesa Village, Morris 23, Sacred Ridge, and Blue Mesa (Chuipka 2008; Lipe et al. 1988; Morris 1939; Potter and Chuipka 2007; Potter and Yoder 2008). These eastern villages have diverse layouts but generally lack the long rows of contiguous surface rooms found at villages in the western part of the region. Architectural contrasts between villages in the eastern and western parts of the northern San Juan region probably reflect differences in social identity across the region.

Recent excavations in Ridges Basin near Durango, Colorado provide an unusually clear picture of social interactions at this time period. Starting around A.D. 750, the local population grew rapidly and Ridges Basin quickly became the site of dense settlement. The village of Sacred Ridge formed at this time, with a total of 22 pit structures (not all contemporaneous) and associated surface architecture (Figure 3). At the same time, much of the Ridges Basin population lived in more dispersed habitations. The rapid population growth after A.D. 750 resulted from significant immigration into the area. The newly arrived residents constructed pit houses in a variety of architectural styles suggesting diverse origins (Potter and Yoder 2008) (Figure 4). Sacred Ridge stands out from the contemporary dispersed habitations in Ridges Basin in several ways. Not only is it larger than other the other sites (which contained only one or two pit structures), but its residents built unusual architecture on the top of Sacred Ridge, including a tower and a large surface storage structure. The distinct social identities apparent in Ridges Basin apparently led to social tension and the Sacred Ridge occupation ended in tragedy; the mutilated remains of at least 35 people were found in one of the pit structures (Potter and Yoder 2008:37).

The earliest villages across the northern San Juan region all dissolved by about A.D. 810, but other villages formed shortly thereafter in different parts of southwest Colorado (e.g. Morris 1939; Wilshusen and Blinman 1992) coexisting with numerous smaller settlements (e.g., Lightfoot and Etzkorn 1993). In contrast, villages dating from the mid A.D. 800s are difficult to identify in southeastern Utah, although some may be buried under later occupations. By the late A.D. 800s, a large number of people concentrated into a cluster of villages near Dolores, Colorado, including Grass Mesa Village and McPhee Village (Breternitz et al. 1986; Wilshusen 1999; Wilshusen and Ortman 1999). This cluster of villages probably was the largest concentration of population in the northern San Juan region at the time, but it was short-lived.

Soon after A.D. 880, the Dolores area villages were depopulated, ending the first population cycle in southwestern Colorado; sites that date to the A.D. 900s are rare there. One notable characteristic of the A.D. 600–900 period is that communities as a whole were mobile. Villages formed, lasted a generation or perhaps two, and then dissolved as people established new villages in other parts of the northern San Juan region. The abandonment of the Dolores villages differs from this pattern only in that there are indications that large numbers of people left the northern San Juan altogether; at the same time as the Dolores area was depopulated, population increased dramatically south of the San Juan River. The influx of immigrants from the northern San Juan into northern New Mexico contributed to the rise of Chaco Canyon (Wilshusen and Ortman 1999; Wilshusen and Van Dyke 2006), which became central to the Puebloan world for the next few centuries. Not everyone moved south, however. Populations persisted into the early A.D. 900s in parts of southeastern Utah (e.g., Allison 2004) and in the area around Dove Creek, Colorado (Coffey

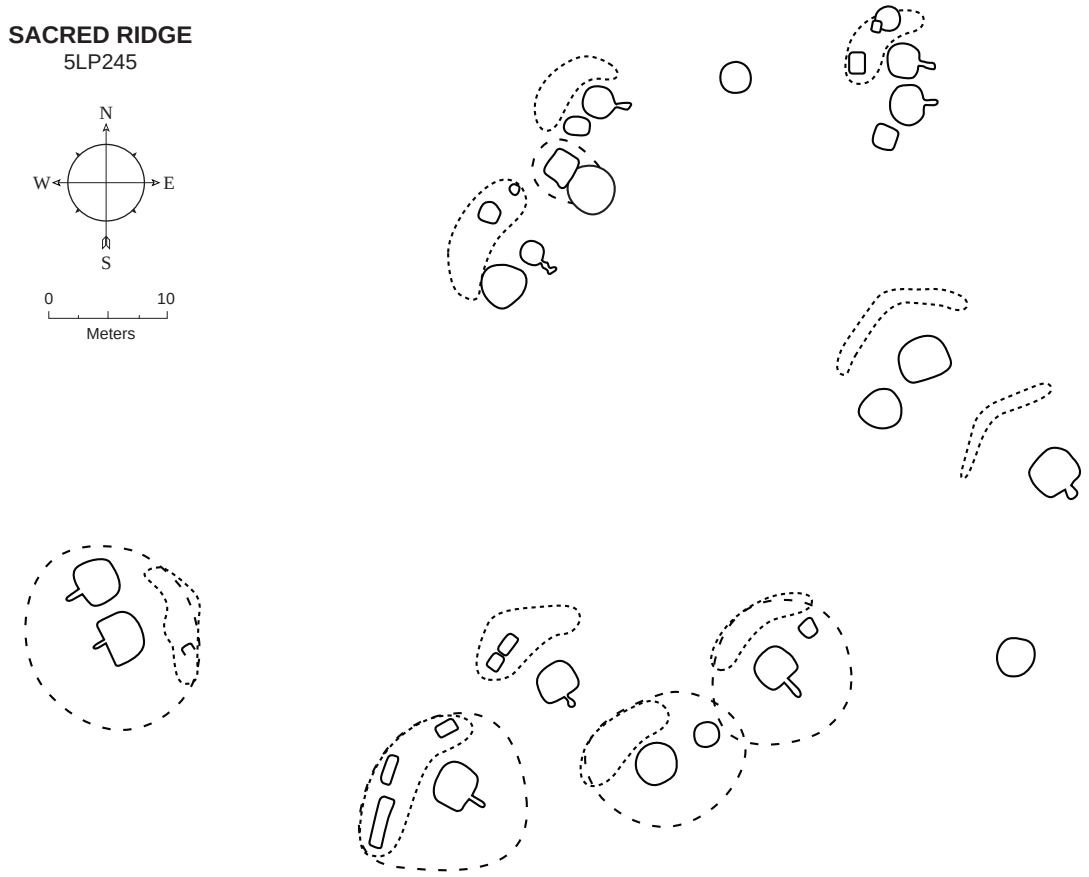

Figure 3. The early Pueblo I (A.D. 750-810) village at Sacred Ridge, located in Ridges Basin near Durango, Colorado.

2006). A few large sites in southeastern Utah persisted into at least the late A.D. 900s, including Nancy Patterson Village and Cave Canyon Village (Harmon 1979; Thompson et al. 1988).

The Second Population Cycle

After about A.D. 1050 population again grew rapidly in the northern San Juan region, probably in part reflecting an influx of people from south of the San Juan River (Varien et al. 2007). Community organization contrasts with earlier periods in several ways. For one, communities were more stable. Varien (1999) has argued that although individual sites were abandoned and new ones built, many communities established in the A.D. 1000s continuously occupied the same territories until the northern San Juan was depopulated at about A.D. 1280.

Changes in the forms of communities and community centers are important to understanding community organization and social change in the northern San Juan over the last two centuries of occupation. From about A.D. 1050 to 1150, many communities consist of loose clusters of small farmsteads and hamlets organized around community centers in the form of "great houses," which incorporated some of the architectural symbolism associated with Chaco Canyon. These great houses were larger than normal domestic structures and were often constructed in ways that emphasized their height and mass. Many great houses were associated with great kivas

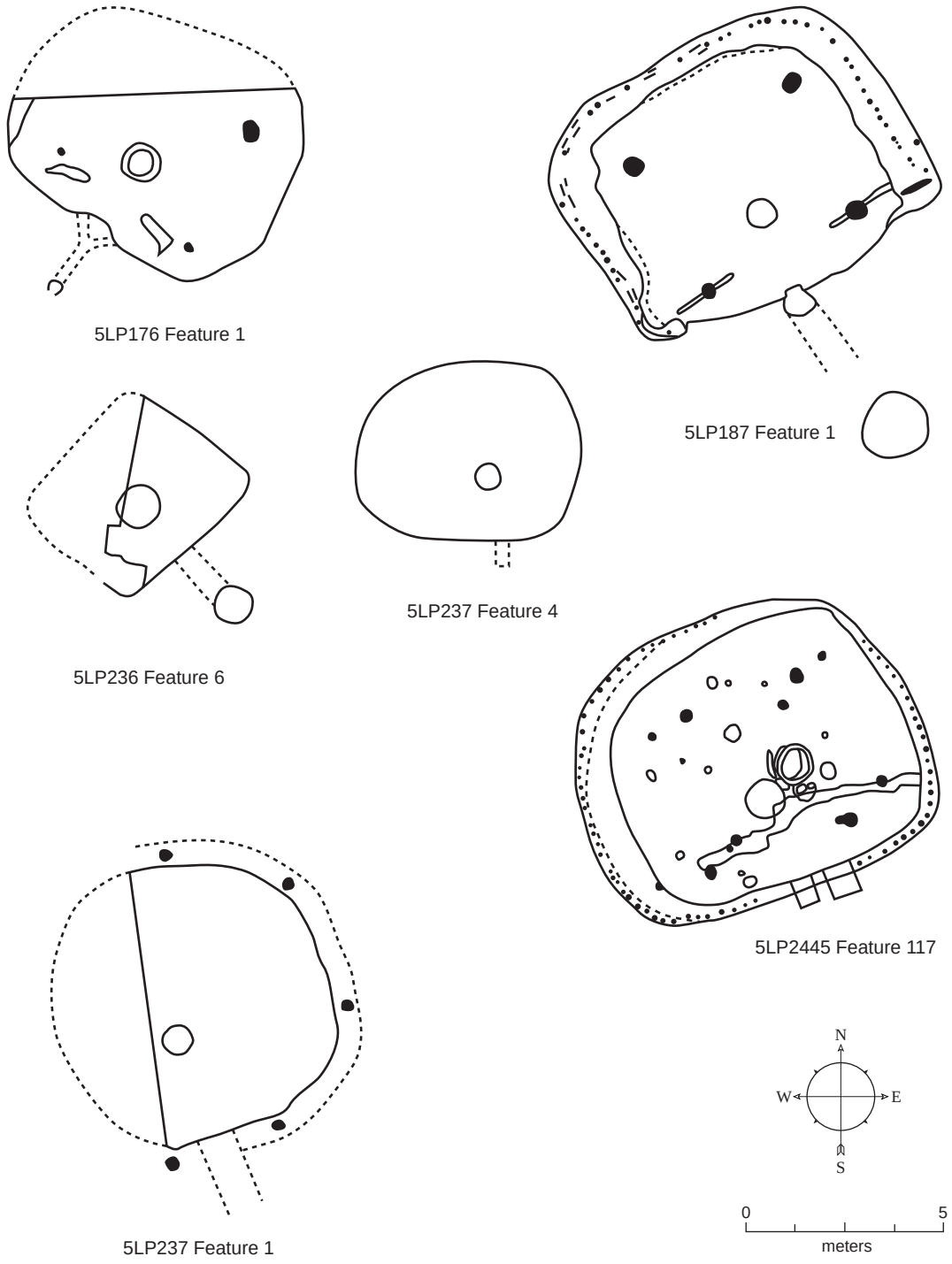

Figure 4. Examples of variation in pit house architecture from early Pueblo I (A.D. 750-810) sites within Ridges Basin.

and/or constructed roads. A number of great house-style community centers are found across the northern San Juan region, and several recent studies describe various aspects of these sites in southeastern Utah (Allison 2004; Cameron 2002, 2008, 2009; Hurst 2000; Jalbert and Cameron 2000; Mahoney 2000; Severance 1999; Till 2001; Till and Hurst 2009).

The period from about A.D. 1150 to 1280 was one of rapid social change. After about A.D. 1150, populations became increasingly aggregated. Community centers tended to incorporate "closely spaced linear roomblocks each containing several habitation units . . ." (Lipe and Ortman 2000). These community centers often either coalesced around earlier great houses or incorporated new buildings that may have served similar functions as the great houses. Both total population and the degree of aggregation continued to increase after A.D. 1150, with population peaking between about A.D. 1225 and 1260 in southwestern Colorado, where population trends are best documented (Varien et al. 2007). As population peaked, community centers across much of the northern San Juan region were relocated to canyon rims, adjacent to or surrounding springs. In a few specific areas, such as on Mesa Verde or on Cedar Mesa in southeastern Utah, villages were built in relatively inaccessible alcoves in cliffs. Many of the canyon rim villages had apparently defensive features such as site-enclosing walls and towers.

Paleoenvironmental reconstructions suggest that the early 1200s were a time of relatively low agricultural productivity due to unusually cold temperatures and numerous years with lower than normal precipitation, yet the population in southwestern Colorado continued to grow--probably due to immigration from areas where conditions were even worse, possibly including some portions of southeastern Utah (Kohler et al. 2007, 2008; Varien et al. 2007). Glowacki (2006:140) suggests that "in the West Mesa Verde [including most of southeastern Utah east of Comb Ridge] population starts to slightly decline after 1200, and by A.D. 1240, noticeable emigration began." One likely destination for the emigrants was southwestern Colorado, where they may have contributed to the mid 1200s population increases.

Changes in ritual architecture suggest multifaceted religious (and, probably, political) change during the A.D. 1200s. Great kivas were the predominant form of public architecture in earlier community centers; the canyon-rim villages that formed in the 1200s also often included great kivas, but they included novel forms of communal and/or ritual architecture as well, including plazas and multi-walled structures. The plazas probably represent an increased emphasis on communal ritual involving larger groups of people than could be accommodated in a great kiva. At the same time, the multi-walled structures—circular or D-shaped structures with narrowly spaced concentric walls surrounding small kivas—appear to reflect, in part, the development of exclusionary forms of ritual restricted to a small number of village leaders. These ritual changes likely were attempts to mitigate social tensions, but Glowacki (2006) argues that they may have had the effect of increasing tension and factionalism within communities.

By sometime in the A.D. 1280s, the entire Puebloan population of the northern San Juan region had apparently either died or emigrated. The occupation of at least two pueblos in southwestern Colorado ended in massacres (Kuckelman 2008; Kuckelman et al. 2002): a large portion of the population of the relatively small village at Castle Rock Pueblo may have been killed, and what was probably a remnant population at Sand Canyon Pueblo (mostly including people too old or infirm to emigrate?) also was wiped out. Explanations for the depopulation of the region have often focused on the "great drought" that hit in the A.D. 1270s, but recent research makes it clear that social tensions were high and emigration from the region began before the drought hit. Productivity estimates suggest that the drought, while severe, was not sufficient to cause the collapse of farming (Kohler et al. 2007; Varien et al. 2007; Van West 1994). The drought was

undoubtedly a factor in regional depopulation, but it was the final blow that ended a centuries-long process of demographic and social change, not the sole cause of these changes.

Discussion

So what does all this have to do with theory in Utah archaeology? For one thing, much of what I have just described *is* Utah archaeology. I have also relied heavily on data from southwestern Colorado, but the broad patterns described above are apparent (with variation in the details) across the entire northern San Juan region, including southeastern Utah. A number of factors make possible such a detailed reconstruction of social and demographic trends in the northern San Juan region, including large numbers of tree-ring dates, many well-preserved sites, and well-developed ceramic chronologies that allow sites to be dated even in the absence of other kinds of dating. But that is not the whole story.

A few of the studies I relied on in developing the above narrative focused strongly on human ecology, including using optimization models similar to those often used by behavioral ecologists (e.g., Kohler et al. 2007; Varien et al. 2007). In particular, the reconstructions of population trends and paleoproductivity are motivated by ecological questions. But other parts of my narrative are derived from studies that make explicit use of practice theory (e.g., Allison 2008; Glowacki 2006; Kuckelman 2008; Potter and Yoder 2008; Varien 1999), or a less theoretically specific interest in social dynamics. Archaeologists working in the northern San Juan region have been much more willing to ask questions about social and ritual change than archaeologists working on contemporary Fremont sites, and they have been able to get some answers.

Was Fremont society characterized by similar patterns of population movement, ritual change, aggregation, etc.? That is difficult to say, because Fremont archaeologists have so rarely asked those questions, but there are hints. We have long had evidence that at least a few Fremont sites were extremely large; despite attempts by some archaeologists to explain away the largest sites as accumulations of many small occupations over several hundred years, sites like Paragonah are unlikely to have resulted from occupations of one or a few households at a time, even if some of those sites were occupied for several centuries. Instead, sites such as Paragonah were likely long-lived villages that may have varied in size and degree of aggregation over several centuries of occupation. Other sites, such as Five Finger Ridge, appear to have been village-sized for a relatively short period of time.

Neil Judd's (1919; 1926) excavations long ago documented Fremont public architecture at Paragonah in the form of a plaza and several structures of the sort that Talbot (2000b) calls central structures (Figure 5). Talbot (2000b:139) lists eight other sites with known central structures, and at least two of those sites, the Bradshaw Mounds (Judd 1926) and Five Finger Ridge (Talbot et al. 2000) have plazas (Figure 6). Plazas and central structures likely hosted a variety of social gatherings and communal rituals, but Hockett's (1998) discussion of the central structure at Baker is the only serious attempt to identify the function of Fremont public architecture. Central structures at Five-Finger Ridge and Baker appear to date to the A.D. 1200s; other central structures have not been dated, but if they are exclusively late, it may be that (as in the northern San Juan), some Fremont experimented with new forms of ritual organization during the last decades prior to the demise of farming. The appearance of other unusual forms of architecture, such as adobe-walled surface houses and over-sized pit structures (Figure 6), may reflect changes in the nature of leadership and increasing inequality within Fremont communities.

Farming disappeared from the Fremont area close to A.D. 1300, at about the same time as the northern San Juan region was depopulated. Populations throughout the areas occupied by Fremont farmers decreased dramatically then, although it is not clear that depopulation was as

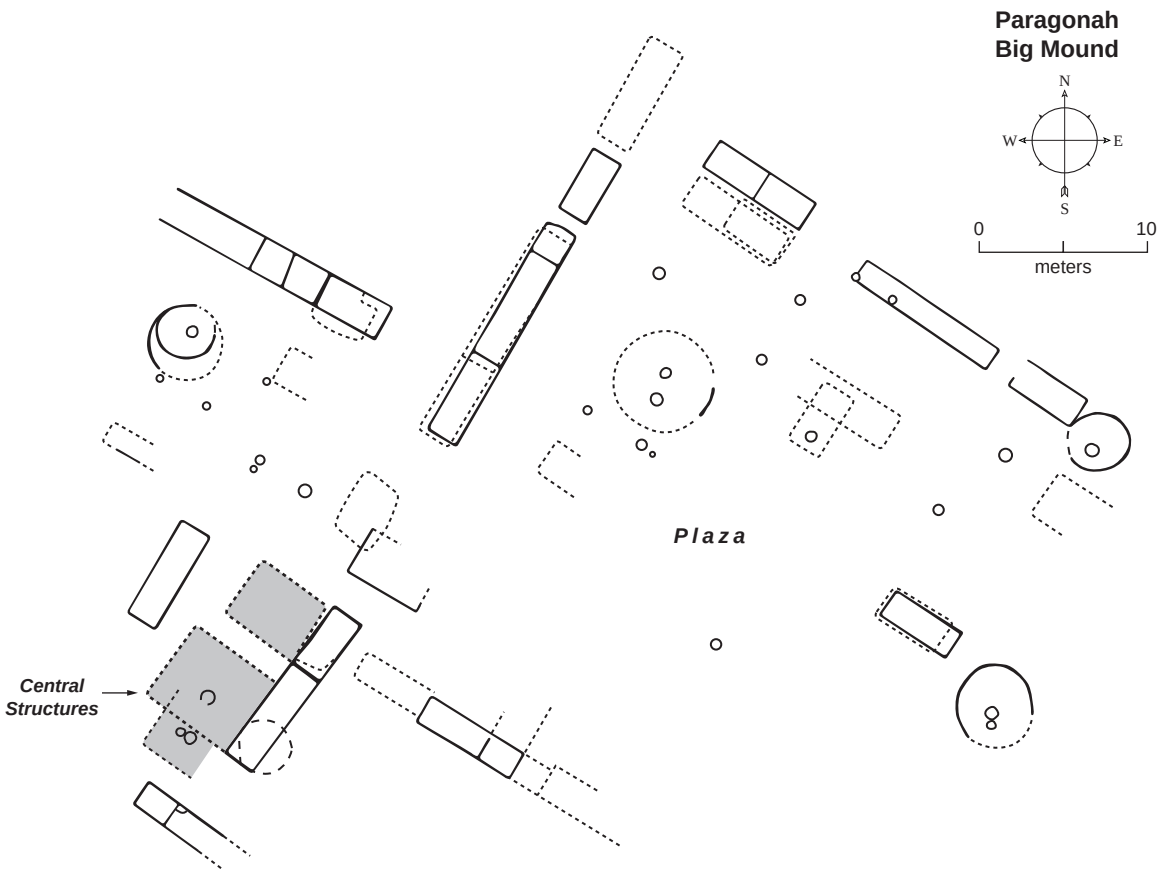

Figure 5. The "Big Mound" at Paragonah, showing the plaza and three partially superimposed central structures.

complete as in the northern San Juan (Allison 2009). There is also evidence of violence at several Fremont sites, including perimortem butchering of human remains at several sites (Novak and Kollmann 2000). It is thus possible that the Fremont underwent the kinds of dynamic social changes seen in the northern San Juan region, although with current data it is impossible to be sure. But the theoretical assumptions made by many Fremont archaeologists leave them disinclined to look for evidence of large-scale population movement, village formation, ritual change, etc., preferring instead to focus on subsistence and settlement.

Example 2: Fremont Adaptive Diversity

Theoretical assumptions derived from human behavioral ecology—specifically a focus on adaptation to local conditions and the view of human behavior implicit in optimal foraging models—have led many Great Basin archaeologists to accept (too readily, I believe) a picture of Fremont subsistence and settlement behavior as extremely malleable. Over the last twenty years, the concept of adaptive diversity, along with a series of more specific propositions about the range of variation in subsistence and mobility strategies, has become widely accepted in Fremont archaeology. Madsen and Simms state, for instance, that the Fremont included:

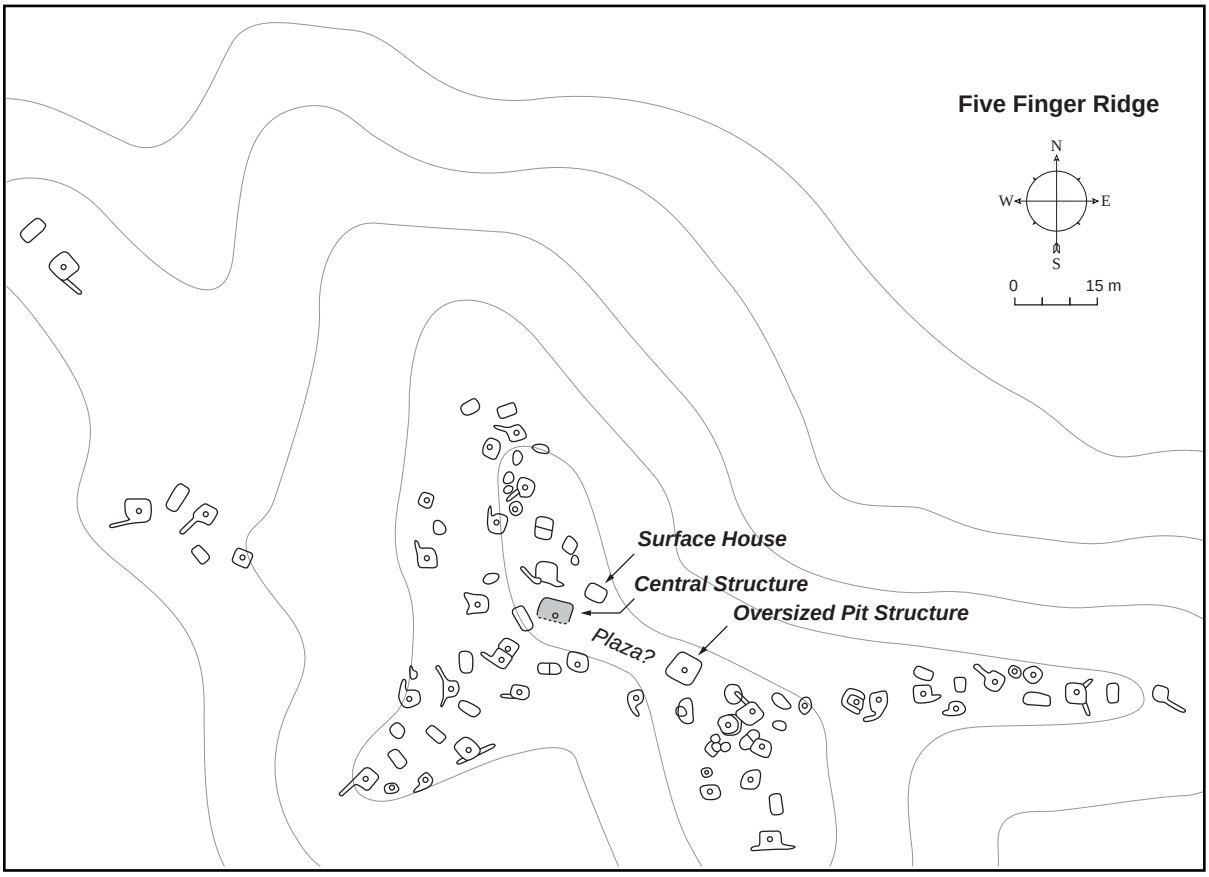

Figure 6. Five Finger Ridge, showing the locations of public architecture and other unusual structures.

> . . . full-time sedentary farmers, full-time mobile foragers, sedentary foragers, seasonal farmer/foragers, and people who could have been all of these at one time or another in their lives. [Madsen and Simms 1998:323].

As discussed below, there is good evidence that the diverse groups of people subsumed under the Fremont label did employ a range of subsistence practices, but it is not clear that the Fremont practiced the full range of strategies described in the above quote.

Farming

Many Fremont were committed, largely sedentary farmers. Village-sized settlements with abundant evidence of farming are found in a number of places (Talbot 2000c:216-217), and there are also a number of smaller settlements with evidence for a strong commitment to farming. It may be preferable to describe the residents of these sites as "committed farmers" rather than "full-time farmers," however; they clearly spent some of their time hunting game and collecting wild plant resources. Still, they were probably as committed to farming as most Southwestern farmers. Table 1 shows carbon isotope data from Fremont burials that have been reported by Coltrain (1993) and Coltrain and Leavitt (2002), along with estimates of the dietary contribution of C_4 plants (likely to represent primarily maize). The table includes only individuals with estimates of more than 60 percent C_4 plants; these individuals likely were committed farmers. Coltrain and Leavitt

Table 1. *^{13}C and inferred percent C_4 plants for Fremont burials with more than 60 % dietary reliance on C_4 plants

Site	$\delta^{13}C$	$\%C_4$	Comments
Backhoe Village	-7.4	85	–
Backhoe Village	-7.6	85	–
Evans Mound	-7.6	85	–
Polly Secrest	-7.7	84	Mean of two burials
Salina Sisters	-8.2	81	Mean of two burials
Caldwell Village	-8.2	81	–
Caldwell Village	-8.4	79	–
Evans Mound	-8.7	78	–
Caldwell Village	-8.8	77	–
Smoking Pipe	-9.2	75	–
Nawthis	-9.5	73	–
42SV1060	-9.5	73	–
42WB324	-10.0	70	–
42WB324	-10.2	69	–
42WB32	-10.2	69	–
Evans Mound	-10.2	68	–
42WB324	-10.8	65	–
Caldwell Village	-11.0	64	–
42WB324	-11.3	62	–

Note: Data from Coltrain (1993) and Coltrain and Leavitt (2002). The dietary percentage of C_4 plants is estimated using the equation in Coltrain (1993:50).

(2002:457) report similar data for individuals from the Southwest, although they report site means rather than individual measurements. The mean *^{13}C values for the Southwestern populations range from -7.0 to -9.2, implying a dietary contribution for C_4 plants of about 75-88 percent. Almost all the Fremont individuals from central and southern Utah fall within this range, and the range of values of Southwestern individuals is likely larger than the range based on site means.

Floral and faunal data indicate that Southwestern farmers always included wild plant and animal foods in their diets. During the late 700s-early 800s occupation of Ridges Basin, for instance, people exploited many wild plants including tansy mustard, pepper grass, ricegrass, purslane, sunflower, marsh-elder, beeweed, groundcherry, cactus, cattails, bulrush, and pinyon (Adams and Murray 2008:197-198). They also hunted a wide variety of mammals and birds including cottontails, jackrabbits, deer,

prairie dogs, prairie chickens, turkeys, marmots, elk, and a long list of other species (Potter and Edwards 2008).

Some 500 years later at Sand Canyon Pueblo, domestic turkeys had become an important source of protein and the mean $*^{13}C$ value for 20 individuals was -6.7. This implies a dietary reliance on C_4 plants of about 90 percent (higher than any of the populations reported by Coltrain and Leavitt, probably because the turkeys were fed on maize). Even then, people exploited a similarly long list of wild and weedy plants (Adams and Bowyer 2002; Adams et al. 2007) and hunted rabbits, hares, artiodactyls, and small mammals (Muir 2007). Other Southwestern sites have similar evidence that farming there was never quite full time; when Fremont sites yield abundant evidence of wild plant use and hunting (as at Five Finger Ridge [Talbot et al. 2000], for example) it should not be taken (by itself at least) as evidence that Fremont farmers were less committed to farming than contemporary Southwestern farmers.

Some Fremont farmers, however, notably in the Tavaputs Plateau region (Metcalfe 2008; Spangler 2000), seem to have had a mobile settlement strategy. It may be that these people are best described as seasonally mobile farmer/foragers rather than committed farmers, although their subsistence practices are not well documented.

Sedentary Hunter-Gatherers?

Identifying sites that housed sedentary foragers is problematic. The classic example of supposed sedentary foraging is Backhoe Village, underneath the town of Richfield, where the presence of concentrations of cattail pollen on structure floors, the presence of pollen from wild and weedy plants on grinding stones, and the scarcity of maize pollen on metate surfaces led the excavators to suggest "an overwhelming dependence on wild foods rather than on domestic plants" (Madsen and Lindsay 1977:88). But with the advantage of hindsight (including efforts to document the size of the settlement and subsequent excavation of small pieces of it), it seems clear that the original interpretation was wrong.

The argument for sedentary foragers at Backhoe Village reflects, in part at least, a desire to apply hunter-gatherer models to the Fremont, although it was published several years before the first behavioral ecology/optimal foraging applications in the Great Basin. The residents of Backhoe village were as committed to farming as any Fremont group, however, and apparently as committed as many Southwestern farmers. Even in Madsen and Lindsay's excavations the most common macrofossil type was maize, and subsequent excavations in parts of the settlement near the original excavations have shown that maize is abundant (Seddon 2001). Also, Talbot (2000c) has documented that the settlement was much larger than Madsen and Lindsay thought, raising doubts about whether wetland resources were abundant enough near the site to support a sedentary population with only minimal contributions from horticulture. But the most compelling reason to reject the idea that Backhoe Village residents were sedentary foragers is the stable carbon isotope data reproduced in Table 1, which suggests that the two analyzed burials from Backhoe Village had the highest dependence on maize of any analyzed Fremont individuals.

Mobile Hunter-Gatherers

That there were mobile hunter-gatherers living on the margins of the territory occupied by Fremont farmers (and possibly between some farming settlements), and interacting with farmers in various ways, seems certain. Whether the hunter-gatherers who interacted with Fremont farmers should also be considered Fremont or something else is a matter of definition. But if "Fremont" is taken to mean anyone who had access to Fremont pottery (as implied by Madsen's [1989:3] statement that "if you … find sherds of this distinctive gray pottery, you have found the remains of what we have come to call the Fremont"), then it is almost certainly accurate to say that some Fremont were sedentary farmers,

some were mobile farmers (or farmer/foragers), and some were hunter-gatherers.

Stable carbon isotope studies of burials from the Great Salt Lake wetlands show a range of $*^{13}C$ values from -19.8 to -10.0 (Coltrain and Leavitt 2002:460-461), implying that reliance on C_4 plants varied from almost 70 percent to about 10 percent. This in turn suggests that the population included some individuals who spent their lives as farmers, and others who ate little or no maize. Intermediate values could reflect farmers with varying degrees of reliance on wild foods, hunter-gatherers who obtained varying amounts of maize from farmers, or individuals who spent part of their life farming and other parts hunting and gathering.

Switching

The idea that individuals switched easily and fluidly among farming, seasonal farming/foraging, and full-time hunting and gathering has become a staple of Fremont archaeology (e.g., Madsen and Simms 1998). Ethnographic data on farmer-forager interaction (e.g., Spielmann and Eder 1994) suggests that some forms of residential movement between interacting populations are common. In particular, hunter-gatherer women frequently marry into farming villages. This should lead to (among other things) gene flow between hunter-gatherers and farmers. Farmers may also slough off lower-status lineages when faced with imbalances between resources and population (Connelly 1956). Many of those thus compelled to leave farming villages will seek out new places to farm (either founding new farming villages or joining others where conditions are better), but some may end up joining relatives or acquaintances among hunter-gatherers. The spread of agriculture to formerly hunter-gatherer populations, and any reversion to hunting and gathering as horticulture was abandoned also obviously require that some people switched strategies.

Switching has been used to refer to a variety of different behaviors, however, some of which probably should not be considered switching, and others of which are implausible. Madsen and Simms (1998:288) apply the concept of switching to hypothetical farmers who intensify their harvesting of pinyon nuts in years of agricultural shortfall. As noted above, however, Southwestern and Fremont farmers alike supplemented domesticates with wild resources, and varying the amount of time spent harvesting wild resources in response to variation in anticipated crop yields is probably best seen as a normal and predictable part of a mixed economic strategy rather than a shift in strategies.

Most problematic is the implication that people switched easily and fluidly from farming to full-time foraging and back again. It may have been possible for some individuals or small groups from a farming village to join hunter-gatherers for a year or two then return to the village to farm again, although doing so would probably lower their status and jeopardize their access to productive field locations. But for whole groups of farmers to abandon farming for a year or several and then return to it would entail significant challenges. In particular, how would they amass enough stored resources to feed themselves while putting enough effort into farming to produce a decent crop? It is not impossible to overcome these challenges (whenever hunter-gatherers adopted farming they had to deal with similar problems), but it is unlikely that people easily and fluidly switched strategies based on minor fluctuations in expected resource return rates.

Recognizing switching archaeologically is also problematic (except possibly in the general sense that genetic similarities between hunter-gatherers and farmers imply gene flow). Madsen and Simms (1998:289-290) suggest "variation in the size and complexity of sites," patterns of abandonment and reoccupation at farming sites, and "contrast in the sources of raw material in ceramics between temporary campsites left by foragers and farmers." But none of these unequivocally indicate switching. Southwestern farmers left sites that varied in size and complexity in contexts where there is no evidence that they shared the landscape with

hunter-gatherers. Also, while remaining farmers, Southwestern people moved their residences within communities, communities formed and dissolved, and populations shifted back and forth between different parts of the Southwest, resulting in numerous sites with discontinuous occupations. Reliable evidence that individuals or whole communities shifted from farming to full-time hunting and gathering and back again would require very precise dating of both farmer and hunter-gatherer sites, evidence that hunter-gatherer populations rose when farming populations fell, and vice versa.

Discussion

Fremont peoples clearly practiced a variety of subsistence/settlement strategies in various times and places, but statements that suggest that "full-time mobile foraging, sedentary foraging, seasonal farming/foraging, and full-time sedentary farming" coexisted and that people easily switched among these strategies owe more to the expectations and simplifications imposed by optimal foraging models than to the archaeological record.

The archaeological record of the Fremont clearly includes: 1) largely sedentary farmers who supplemented their diet with varying amounts of wild foods, much like Puebloan farmers; 2) more mobile farmers in some areas like the Tavaputs Plateau; 3) foragers in the Great Salt Lake wetlands who had access to Fremont style pottery and maize (in varying amounts); and 4) lots of small campsites with Fremont ceramics that are evidence either for hunting and gathering by Fremont farmers or for mobile hunter-gatherers who made or traded for Fremont-style pottery. That some forms of switching occurred is suggested by a lack of genetic contrasts between individuals with different levels of maize consumption (O'Rourke et al. 1999). But there is no good evidence for sedentary Fremont hunter-gatherers, nor is there evidence that switching included easy, frequent, and fluid movement back and forth between farming and hunter-gatherer strategies.

Conclusion

Early archaeologists included the farmers of the eastern Great Basin and northern Colorado Plateau within the Southwest, but beginning in the mid-twentieth century some Fremont archaeologists made a deliberate effort to pull away from Southwestern archaeology (Fowler and Jennings 1982; Rudy 1953:168-169), alleging that Southwesternists saw the Fremont as merely "country cousins" (Fowler and Jennings 1982:111) or "country bumpkin cousins" (Madsen and Simms 1998:268) of the Anasazi. As a result, Fremont archaeology has become isolated from the Southwestern research tradition and aligned with Great Basin perspectives that are more applicable to hunter-gatherers. But most Fremont archaeology is the archaeology of farmers who were, in many ways, like farmers in the Southwest. Most Fremont archaeology ignores theoretical and substantive developments in the Southwest, despite the fact that the more socially-oriented theoretical perspectives popular there have been very successful at developing detailed reconstructions of changes in demographics, settlement patterns, architecture, subsistence, etc., and at explaining those changes in terms of a combination of ecological and social factors.

Much recent Fremont archaeology has instead maintained a relatively narrow ecological focus and has dwelled primarily on subsistence and settlement. This research focus has allowed archaeologists to demonstrate that Fremont subsistence and settlement patterns varied in response to environmental and demographic changes, although, as I suggest above, that variability has sometimes been overstated. But Fremont archaeologists have largely minimized or ignored evidence of Fremont social change and neglected evidence that factors other than ecology and foraging behavior were important.

I do not intend to minimize the advances in archaeological knowledge that have come about through the application of foraging models, other research motivated by behavioral ecology, or a more general interest in human ecology. But I agree with Cowgill (2000:51) when he says that

"evolutionary ecology does not seem wrong, but I think it is needlessly limited . . . ." Behavioral ecologists have sometimes addressed social issues (Bird and O'Connell 2006) and nothing in the theory would necessarily preclude behavioral ecology approaches to Fremont social change. I am skeptical that behavioral ecology alone can make much progress on these issues, however. Understanding human social behavior requires social theory that includes explicit concepts to characterize social interaction, and these concepts are lacking in behavioral ecology and other evolutionary approaches.

Great Basin archaeologists, and especially archaeologists studying Fremont farmers, would benefit from greater knowledge of and integration with Southwestern archaeology. I agree with Talbot's (2000a:275–276) call to "reintegrate Fremont studies with those to the south . . . and to consider the Fremont tradition within the broader social and economic context of the greater Southwest." By combining ecological and social perspectives, Southwestern archaeologists have been highly successful at documenting and explaining dynamic patterns of social change. I see ample evidence that the Fremont also had a dynamic social history, but it has gone largely unremarked as archaeologists have focused too narrowly on human ecology. ■

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Endnotes

1. In using the terms ‘culture area’ and ‘research tradition’ I do not intend to imply that “Great Basin” or “Southwest”, or any subset of those regions, were homogenous cultural entities, or that archaeological practice in either area is homogenous. But there are tendencies for certain kinds of archaeological sites to be found more frequently in the Southwest than the Great Basin (and vice versa), and to a large degree Great Basin and Southwestern archaeologists graduate from different universities, move in different social circles, and have at least some different ideas about how to do archaeology. When I talk about the Southwestern culture area, I mean the area from the southern Colorado Plateau south into northern Mexico where most of the archaeological sites (or at least most of the most obvious sites) were left by people with a relatively strong commitment to maize farming, while the Great Basin culture area includes the hydrographic Great Basin and the northern Colorado Plateau, an area where most, but not all, of the archaeological sites were created by hunter-gatherers.

2. I think hunter-gatherer archaeology would benefit as well, but the case is easier to make for the Fremont. It is true, as Kelly (1999) suggests, that the archaeological record of mobile hunter-gatherers often limits the kinds of questions that archaeologists can address.

3. Even a partial list of recent publications in Southwestern archaeology which rely or elaborate on one or more of these concepts is too long to include here, but important examples from the last decade include a number of recent edited volumes, many single-authored books, and scores of journal articles. A similar list for the Great Basin would be much shorter, and, for Fremont archaeology at least, publications from the last decade that seriously deal with community, social organization, and the other concepts listed in the main body of the text would probably be limited to the Clear Creek Canyon reports (especially Janetski et al. 2000), Simms (2008), Janetski et al. (2005) and a smattering of journal articles and book chapters (Janetski 2002; Novak and Kollmann 2000; Simms 1999; Talbot 2000a). Including gray literature reports and MA theses would slightly expand the list (e.g., Berry and Berry 2001; Hall 2008; Jardine 2007; Seddon 2001; Watkins 2006), as would including earlier works. But still, the contrast is strong; concepts that are central to understanding the archaeology of Southwestern farmers (and, really, the archaeology of farming societies throughout the world) have been underutilized in Fremont archaeology.

4. In this article, I use “practice theory” to subsume the entire set of theoretical approaches that could be called practice theory, structuration, or agency theory.

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A Personal Perspective on the IMACS Site Form and the Next Generation of a Utah Site Database

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The Intermountain Antiquities Computer System (IMACS) site form has been the cornerstone of site recording in Utah and some of the surrounding states for more than 30 years. The history and utility of this paper-based site form is discussed in relation to 21st century database technology. The paper concludes with a dictum, based on decades of observation, about archaeological site recording in general.

Introduction

Archaeology has changed a lot over the last 20 years since the first volume of *Utah Archaeology* was published. During this time, some things have not changed that should have, like the Intermountain Antiquities Computer System (IMACS) site form and underlying data structure. This site form and the attendant encoding sheet developed in the late 1970s and early 1980s continues to be required documentation by state and federal agencies throughout the state of Utah. This paper reviews some of the history of the IMACS site form, identifies some of the form and encoding sheet shortcomings, and makes some recommendations about changing the site form that would align it more closely with the discipline as practiced today. Finally, it provides general recommendations for developing a relational database for statewide site data to replace the existing IMACS flat field database maintained by the Division of State History.

History of the IMACS Site Form

In his autobiography, Jesse Jennings (1994) details how he came to teach archaeology at the University of Utah in 1949 and shortly thereafter established the Utah Statewide Archaeological Survey. Sometime during the early 1950s, Jennings created a one-page site form entitled "Site Survey Sheet, Archeological Survey" that was adapted from the Smithsonian Institution's Missouri River Basin Survey Project forms from the late 1940s. His goal was to develop a standardized approach to site recording within the state of Utah. A previous generation of archaeologists (Elmer Smith, Julian Steward, and members of Harvard's Claflin-Emerson Expedition) had described sites in their journals or field diaries, but it was Jennings, his students, and assistants who started to systematically compile documentation on archaeological sites in the state (Jennings 1994:166). For the next two decades, the Site Survey Sheet was used to record thousands of Utah archaeological sites.

By the 1960s, other site forms were in use in Utah by archaeologists from other academic institutions such as Brigham Young University and the Museum of Northern Arizona. After passage of the National Historic Preservation Act in 1966, federal agencies, such as the Bureau of Land Management, developed their own site form, i.e. the Antiquities Site Inventory Form. By the late 1970s, private cultural resource management (CRM) firms sprang up in the state and also developed their own site forms.

From the 1950s through the 1970s, the central repository for archaeological site records from Utah was the Department of Anthropology at the University of Utah. Site records were stored in

file cabinets alphabetically by county and within each county by ascending number, following the Smithsonian Institution trinomial designation. The utility of a standardized site form became apparent during the Glen Canyon Project (GCP) in the 1950s, one of the largest archaeological projects in the West at that time (Jennings 1966). Almost 1700 sites were recorded by the University of Utah on the project.

Although not explicitly stated, the underlying purpose of the "Site Survey Sheet, Archeological Survey" during this period was to identify sites worthy of excavation for research purposes. Indeed, dozens of sites were selected for excavation in the GCP based on site information recorded on the Site Survey Sheet. Besides the determination of whether or not a site was worthy of excavation, other recorded information about the site was considered of little value at that time.

By the 1970s, the theoretical orientation of most archaeologists in Utah shifted from culture history to cultural ecology (cf. Steward 1955) and interests shifted from excavations at individual sites to understanding site distributions across the region. Archaeologists started adding environmental information to their site records because they were searching for environmental correlates of site location (Plog and Hill 1971). A site form was no longer simply an instrument to identify sites for excavation, but a potential reservoir of environmental information for understanding regional site distributions.

Within this new theoretical framework, it was recognized that information about site location and the geographic distribution of site types could have important archaeological research information relating to site distribution patterns, resource utilization, diachronic demographics analysis, and many other research topics, even if the sites were never going to be excavated. In fact, it was recognized that some of the research questions could never be answered by excavating individual sites. Within this new theoretical framework, accurate site location data became essential (Plog and Hill 1971:34).

Utah was not immune to concerns about accuracy in recording site locations and the changing theoretical landscape. In 1976, I conducted a project on behalf of the National Park Service to field check some of the sites from the original GCP. I took a crew to Lake and Moqui canyons in the Glen Canyon National Recreation Area in southern Utah to validate previously recorded location data and determine what biases (if any) there were in the information documented on the Site Survey Sheets some 15 to 20 years earlier (Schroedl 1976). Numerous discrepancies were discovered.

Small artifact scatters and open sites were under-reported in the site records because these sites were generally not thought suitable for excavation. The re-survey of Lake and Moqui canyons also showed that location errors were common, although this was unsurprising given the poor base maps available to the original crew. Because of the massive amount of data from the GCP, the actual number of sites recorded in Utah on the GCP (Schroedl and Newsome 2000) was not calculated until more than 30 years after the project summary by Jennings in 1966 due to the inability to cross-check for duplicate site records, mechanically or digitally tabulate sites and site types, and overlay base maps of different scales. Although Jennings estimated in 1966 that more than 2000 sites were recorded, in actuality only 1635 sites were recorded by the University of Utah on the GCP (Schroedl and Newsome 2000:42).

During this same time period in the mid- to late-1970s at the University of Utah, several graduate students, including me, were experimenting with using computer technology for statistical analysis and crude database management of archaeological data (Jennings et al. 1980). The benefits of the use of computer technology to manage site form data were apparent to all of us. There were spirited discussions in the Department of Anthropology about how to develop and implement a computerized database of site information and site locations to provide easy accessibility to site data to eliminate some of the

data management problems I discovered in the GCP site data and, more importantly, to provide a framework for collecting site location data and information to answer research questions relating to cultural ecology.

Over the next several years, the staff at the University of Utah Archaeological Center created a simple database structure for archaeological site data and developed an encoding form for these data. Because of the cultural ecological orientation, environmental variables, particularly on-site vegetation, were added to the site forms. This interest in the environmental context of each site became more important throughout the 1980s as land management agencies, such as the Bureau of Land Management, sought ways to reduce the costs of archaeological inventory through predictive modeling (Judge and Sebastian, ed. 1988).

Once the initial database structure was created in the late 1970s, the Site Survey Sheet was revised for the first time in over 25 years, resulting in the initial IMACS site form. This initial revision included environmental variables and also included spacing for the computer encoding of the data. Later, the encoding page became a separate attachment. Several years later during the early 1980s, federal and state agencies from Utah and surrounding states banded together with the University of Utah to standardize variables that would be recorded throughout the Intermountain region—hence the name "Intermountain Antiquities Computer Systemt (IMACS)." Outside of a few minor changes and additional item codes, the IMACS site form and encoding sheet have been essentially static since the 1980s.

Shortcomings of the IMACS Site Form

The IMACS site form and encoding sheet are in need of a twenty-first century makeover because of new technologies (such as global positioning system (GPS) and geographic information system (GIS) data) that did not exist when the form was created and because the primary purpose of collecting site data has changed. As noted above, the earliest goal of site recording in Utah was to recognize sites that were worthy of excavation. The development of the IMACS site form in the 1970s and 1980s took site recording in a new direction based on the theories and models current at that time. The IMACS site form has changed little since the late 1970s to early 1980s. Its decreasing utility is understandable in light of theoretical perspectives and management needs that have changed since the form was created.

Similarly, the underlying database structure that the encoding form is based on has not changed either. The original data structure was based on a flat file format. But with the advent of powerful desktop computers, the IMACS database structure has not kept up.

Site Management Data and the IMACS Site Form

Today in the twenty-first century, as development spreads and populations grow, there are tremendous pressures on cultural resources everywhere. Site recording for academic purposes is almost non-existent. Almost all of the site recording that is done today is related to federal or state mandates.

Federal and state agencies must make management decisions based on information recorded on the IMACS site forms. These decisions directly relate to whether a site is significant and worthy of preservation or whether it should be allowed to be destroyed or neglected.

As noted above, the current IMACS site form was not designed to provide management information to federal and state agencies, information these agencies might need to make decisions regarding preservation or disposition of archaeological and historic sites. While federal agencies were quick to hire archaeologists and begin compiling site records after the passage of the 1966 National Historic Preservation Act, the implications of the Act and the concepts of significance and National Register eligibility were slow to permeate the academically dominated archaeological community in the 1970s and 1980s. The IMACS site form today still only

has one or two entries devoted to data that can help agency managers make informed decisions regarding site protection and mitigation. It is time to revise the form by placing a greater emphasis on management data.

Recording Site Locations and IMACS Site Forms

The greatest technological innovation in the last 30 years in Utah archaeology has been the development and availability of GPS technology to accurately locate archaeological sites, features, and artifacts. With the public availability of GPS technology in the mid-1990s and the removal of Selective Availability in 2000, a site datum or an individual artifact can be mapped and later relocated with an error factor of a few centimeters. However, in the early days of Utah archaeology, a compass, a map, and a clipboard were the only tools that field archaeologists had to accurately plot, locate, and relocate sites within the state.

Utah was actually one of the last states to receive complete United States Geological Survey (USGS) topographic map coverage. In the late 1970s and early 1980s, there were portions of the state of Utah for which topographic maps did not exist, and in many areas only 15 minute topographic maps were available. It is a testament to the abilities of earlier generations of archaeologists that many thousands of sites were mapped with limited amounts of error. The availability of GPS technology today, inexpensive enough to equip every field archaeologist with a unit, almost makes the map and compass method of locating sites obsolete.

Locating project areas and finding access to known sites has now become a trivial task using GPS and up-to-date satellite imagery data. These georeferenced images are usually current and show the latest developments, roads, powerlines, and other cultural features of the landscape. Coupled with GPS technology, field archaeologists and land managers can use these maps and data to quickly travel to project areas and visually confirm the location of any individual site. This contrasts sharply with the necessity, in the recent past, of having to navigate to a project area using outdated topographic maps that only show cultural features as they existed 25 or 30 years earlier. In a world of $150 GPS units and freely available high resolution imagery, it is a waste of time and resources to add written driving and walking directions to a particular site, yet the IMACS site form still requires a detailed narrative of how to reach the site from a nearby town or landmark. This item needs to be removed from the IMACS site form.

As an aside, the availability of GPS technology today can also have a negative effect on archaeological practices. It can blunt observational skills that were common among the field archaeologists prior to the use of GPS technology. The use of a map and a compass forced an earlier generation of archaeologists to be cognizant of their immediate geographic and environmental surroundings. Earlier field archaeologists were required to be sensitive to the cardinal directions, changes in terrain, topography, and vegetation. They relied on situational awareness to stay within the project areas and to make sure they did not get lost. Sensitivity to the immediate surroundings and local environmental factors gave these earlier field archaeologists a better appreciation for environmental factors that may have influenced the site selection process of prehistoric peoples, although predictive models and site catchment analysis have not been as theoretically or methodologically useful as they were originally envisioned. With GPS units, a new generation of field archaeologists has lost the incentive to pay attention to the immediate surroundings or local geography during a field inventory.

Environmental Page of the IMACS Site Form

When the "Part A, Environmental Data" sheet of the IMACS site form was developed in late 1970s and early 1980s, the goal was to collect and correlate environmental data with archaeological site locations. Recording on-site and near-site environmental attributes at the time of site recording was the *only* method of obtaining

that data. The quality of the environmental data recorded for each site was entirely dependent on the cross-disciplinary training of the field archaeologist.

Many years ago, Alan Lichty, then of the University of Utah Archaeological Center, confided that when he ran a series of correlations on the environmental variables of the IMACS data set, the only significant correlation he noted was a correlation between vegetation types and the CRM company that recorded the site, demonstrating that company employees learn vegetation categories from their fellow employees and that employees of the same company tended to use the same codes. Based on this anecdotal story, the quality of the data recorded on the environmental portion of the site form must be considered suspect and probably does not have sufficient validity to answer any significant research questions about site locations and environmental setting.

Besides biases in the currently collected data, the maturation of GIS software in the last decade and the wide availability of georeferenced environmental and biological data have made the Environmental Data page of the IMACS site form obsolete. These vast sets of data are not subject to inaccurate coding; they have been compiled by specialists and professionals in their own discipline, such as botanists, geographers, geomorphologists, cartographers, etc. The availability of all kinds of GIS data layers, including satellite imagery, plant distributions, hydrologic features, 3-D terrain, topography information, etc., can provide accurate and unbiased results regarding the correlation of site locations with critical environmental variables. It is now a trivial computer task to integrate archaeological site locations (based on GPS locations) with detailed environmental data sets and conduct sophisticated geospatial statistical analyses without referring to any data collected or compiled from the Environmental Data page of the IMACS site form.

Given the availability of all of these data sets, there is no research benefit of continuing to collect environmental data on this obsolete form. Elimination of this portion of the IMACS site form will result in enormous savings in paper and in field and laboratory time, time that could be better spent applying new technologies (such as GIS data) to questions about environmental correlates of site types and site locations.

The IMACS Encoding Form

The current IMACS encoding form associated with the site form is basically unchanged from the original encoding form in the early 1980s. The oddities associated with the encoding form, such as the limited number of fields; the strictly delimited spacing in the fields; and the use of single or double letter codes for artifact types, classes, and quantities, have their origins in the 80 column Hollerith punch card (Figure 1). Each physical card has 80 vertical columns. Each column has 12 small locations from which the paper could be removed or punched out, leaving small rectangular holes. The number of holes in each column and the vertical location of those holes denoted either a number from zero to nine, an alphabetic character, or some other symbol or operator, such as a comma, ampersand, forward slash, etc.

The punched holes on these cards could be read and interpreted by a punch card reader, and the data stored on some kind of magnetic medium. In the 1970s, only large universities, corporations, and government agencies had mainframe computers, punch card readers, and permanent magnetic storage devices such as drum storage. Storage on these devices was measured in terms of bytes—not the megabytes, gigabytes, and terabytes that are common today.

The cost of permanently storing archaeological information on magnetic devices was exceptionally high in the late 1970s and early 1980s because it was new technology. Storage charges were assessed for each byte of storage. Because each byte equates with a single letter or number, the storage costs were computed on the actual number of numerals or characters stored on the drum.

Figure 1. An example of an 80 column punch card.

The IMACS encoding form, with its cryptic entries that we continue to use today, is a direct result of the need in the 1980s to minimize online storage costs of archaeological site data. The price of data storage has dropped almost logarithmically in the intervening period. Yet even though the deficiencies of the database structure and coding format have been apparent for at least the past decade, there has never been a concerted effort to modify this form or the database structure to increase stored site data content to efficiently utilize the inexpensive twenty-first century mass storage technology that is currently available.

The IMACS encoding form should be eliminated. It is a travesty and a waste of paper that the State Historic Preservation Office (SHPO) and federal agencies continue to require the IMACS encoding form as part of the official submission of site data. The encoding form requirement of state and federal agencies perpetuates the poorly-designed flat file database that was initially developed 30 years ago. While the Division of State History has managed to computerize almost all of the site location data for the sites in Utah, the flat file format of the existing database offers no real research capabilities or management tracking information.

Recommendations for a Relational Database

The previous discussion about the ills of the IMACS site form is a prelude to my recommendations for the implementation of a true relational database for archaeological site data in Utah. Since the late 1970s, the Utah Division of State History has been tasked with the management and storage of archaeological site information within the state of Utah. Since that time, the archaeological community has been promised that the site data would be gradually moved to a computerized data file suitable for both management and research purposes.

I have had an opportunity to evaluate this computerized database through the online version at geoserv.utah.gov. While the Division of State History has translated almost all of the site location data in the state to a computerized database, it is still largely structured in a late twentieth-century flat file database, which is basically a glorified spreadsheet. The data that is entered into this 'spreadsheet' is apparently still derived directly from the IMACS encoding form. From the sampling of sites that I recently reviewed, almost none of the original encoding fields have been entered into the database. It is unfortunate that after 20 years of development

and the expenditure of hundreds of thousands of dollars from federal agencies, the archaeological community in Utah still does not have access to a useable relational database populated with archaeological data.

A simple example from the IMACS encoding form will suffice to illustrate the problem with a single flat file spreadsheet-style database. The current IMACS encoding form only has space for enumerating a total of 12 lithic and ceramic items for prehistoric components on a site. What does one do in a real-life recording situation on large, complex sites where there can be many different classes and types of artifacts (e.g. various ceramic types), chipped stone implements (i.e. bifaces, projectile points, unifaces, scrapers, eccentrics), and groundstone such as anvils, metates, motars, manos, etc.? When more than 12 classes and types are present on a site, how should they be added to the encoding form? Should the archaeologist pick the 12 most abundant categories, or should the 12 most unique items be included? Of course, the site form will have all items listed under Part B, but if the data fields in the database can only accept 12 entries, who decides which items should be coded? A temporary summer intern doing data entry at the Division of State History?

Compounding the problem with 12 artifact types is that, although the encoding form allows for the identification of two prehistoric components on the site, the flat file database will not indicate which of the 12 artifact classes are associated with which component. To be useful for management and research purposes in the twenty-first century, an archaeological site database in Utah must be extensible. It must allow for the entry of an unlimited number of artifacts, features, or components on a single site and it must allow those features and artifacts to be distinguished by components. This is only possible with a fully relational site database.

Below I will discuss, in some detail, a conceptual design for a relational database that could be implemented for site information for the state of Utah.

This section is somewhat exhaustive, so the reader can skip over it and go to the final section without missing any of the important points of this article.

This database discussion is derived partly from databases that we have been using at P-III Associates, Inc. for more than a decade and generally follows the database terminology associated with the Microsoft Access database program. I am offering this structure to help jump-start the development of a useful relational database for site information in Utah.

The initial starting point for any kind of relational database is the development of a series of sparse tables that can be linked or joined through multiple key fields. The primary linking data field in this conceptualized site database is the Final Site Number (discussed further below) based on the Smithsonian trinomial site numbering system. Compared to some other states, Utah is far ahead on site numbering. Utah has a consistent site number system throughout the state, and most federal and state agencies within the state have adopted the Smithsonian trinomial site number as the official site identifier for referencing, recording, and evaluating archaeological sites within the state.

Figure 2 graphically depicts the two major components of the relational database that I propose, the GIS Data Components and the Archaeological Data Components. The GIS Data Components (including environmental data sets as discussed above) will not be discussed here but, in general, the linkage to the GIS Data Components and the site-specific information is straightforward with links or joins based on the site number.

The Archaeological Data Components consists of, at a minimum, five separate groups of tables, as depicted in Figure 2. These groupings of tables are presented as separate entities for discussion purposes but are not separately distinguished in the database structure. All data tables (and GIS data tables as well) are integrated into a single database and have equal standing. The rationale

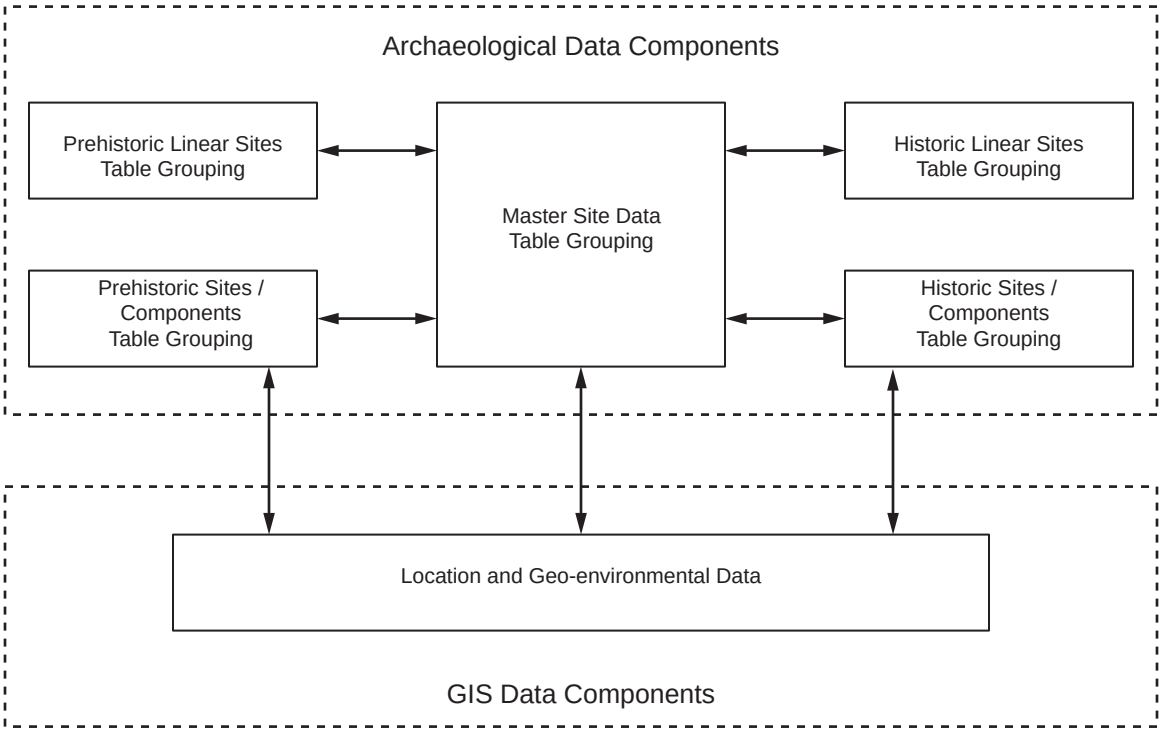

Figure 2. Main components of a modern site database.

for distinguishing these groupings derives from the fact that historic and prehistoric sites are mutually distinctive and independent site types. While historic and prehistoric components are often recorded at the same geographic location, they represent independent, disconnected occupations. A prehistoric component at a specific location does not foreordain the presence of a historic component. Likewise, a later historic occupation at a locale in no way influences or affects the choice prehistoric peoples made when selecting that same site location hundreds or thousands of years earlier. For this reason, historic and prehistoric sites, even if they occupy the same geographic location, must be disjoined in a relational database.

Secondly, linear sites, both prehistoric and historic, must be segregated from other discretely bounded sites in the database. Linear sites pose a significant challenge in a site database because they cannot be associated with a particular geographic spot on the ground. The most significant practical issues with such linear sites are the recordation of multiple individual segments within the same county, often with different site numbers, and the assignment of different Smithsonian site numbers across different counties for the same continuous linear site. For brevity, the specific data tables necessary for prehistoric and historic linear sites will not be discussed here. Similarly, details of tables for the Historic Sites/Components Table Grouping will not be discussed. However, the structure of the tables for these historic sites/components parallels those for prehistoric sites/components, which are discussed in more detail below.

Figure 3 depicts the schematic arrangement of several specific data tables that comprise the Master Site Data Table Grouping and the three data tables that are linked in the Prehistoric Sites/ Components Grouping. Each of these tables is briefly discussed below and hypothetical sample

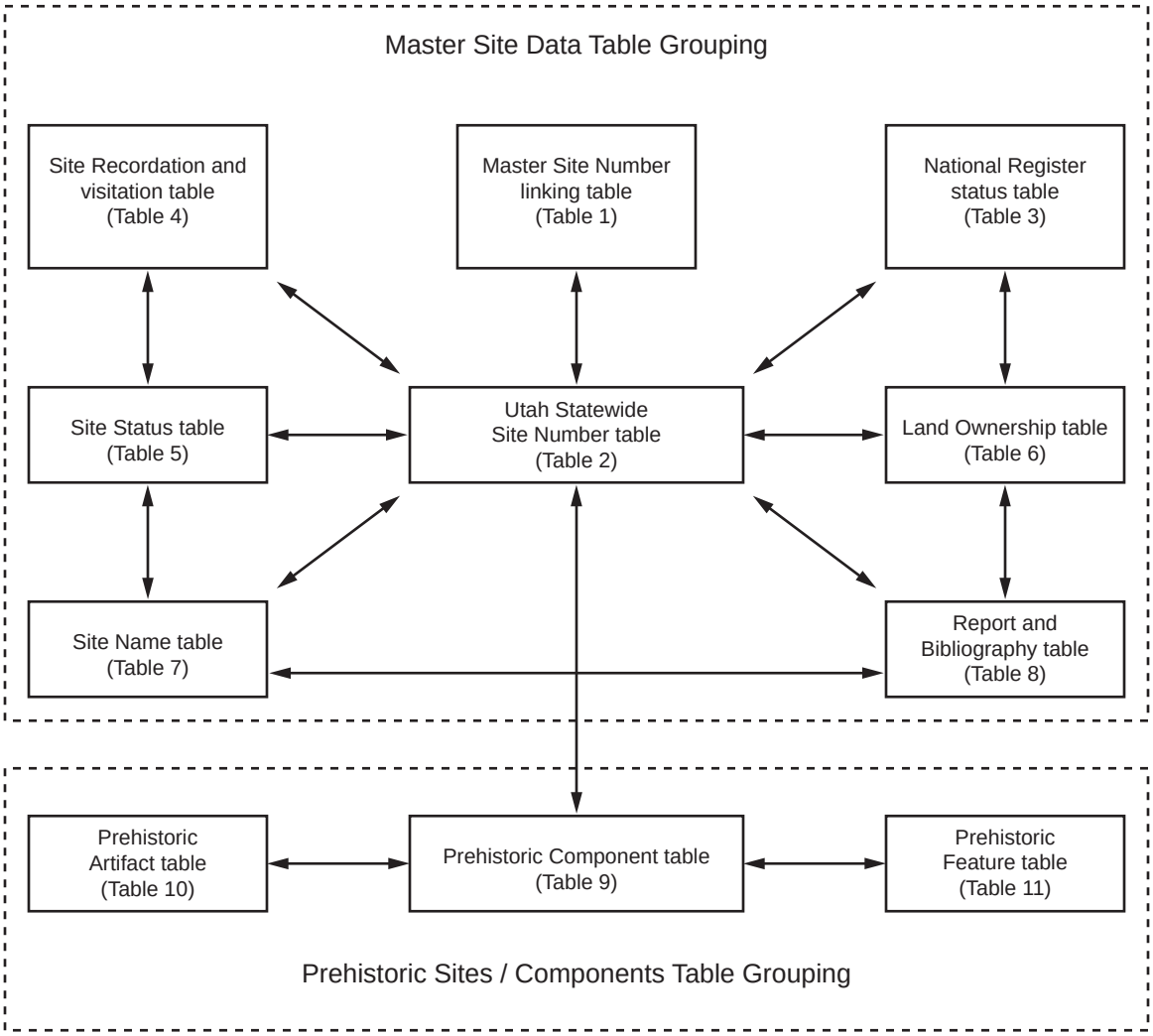

Figure 3. Schematic database grouping of tables.

excerpts from some of these tables are presented in Tables 1-11.

The primary utility of any database is always dependent on accurate and consistently encoded or spelled entries. There are a host of problems with quality control and data validation for data entry that must be overcome for any database, not just a site information database. For the purposes of this discussion, I am going to assume that data can be correctly and accurately entered and checked for quality and cross-validated before it is incorporated into the database tables.

The single most important tenet for a Utah site information database is the requirement that any specific spot on the ground, i.e. geographic location, where there is a concentration of recordable artifacts and features can only be referenced by a single unique Smithsonian trinomial site number. Simply put, for one site location there should be one unique site number, which I refer to here as the Final Site Number. It does not make any difference how many times a single site is recorded with different site numbers, but for the database to function properly, each

separate geographic location with artifacts and/or features *must* be referenced by only one unique site number. That unique site number would be listed in the Utah Statewide Site Number Linking Table and would be the primary link between all other data tables.

So how are sites handled that have been recorded multiple times or a single site that has been subdivided and rerecorded as two sites? A correspondence table, which I am calling here the Master Site Number Linking Table, needs to be created. It has every site number that has ever been assigned in the state in one data field (Assigned Trinomial Number). In the correspondence data field, labeled the Final Site Number, the Smithsonian trinomial site number is entered that will be used to link to all of the archaeological information about this site throughout the database. It is this Final Site Number that is the primary joining field for the database and connects the tables in the database.

It is important to note that when there is conflicting information about multiple site records and forms, the assignment of a particular Final Site Number requires a human decision based on professional experience and knowledge of existing data for a site. Should the earliest (and often the most poorly recorded) site information be used as the Final Site Number or should the most recently assigned site number with accurate GPS data and detailed notes and photographs be used? The responsibility of reconciling multiple site numbers to a single Final Site Number should fall to the archaeologists and database specialists, ideally working with curators at the Division of State History because the earliest (and poorest) recording may be that which generated artifact collections. In these cases of uncertainty, someone must take responsibility to ensure that only one single unique site number is assigned to each geolocation in the state with artifacts and features.

There are several things to note about the Master Site Number Linking Table that are exemplified in the sample excerpt table (Table 1). First, querying this table will allow the identification of any site number that was later determined not be a site. Second, sites that have been recorded multiple times will always refer back to the single Final Site Number under which one can find all of the site data associated with a specific geolocation, regardless of the site number used in the reports for the same site. Third, large sites that have been rerecorded into two or more separate sites can be tracked in this table. It is important to note that this correspondence table does not have a primary key, which is not required. Multiple entries of the same site number can occur in both the Assigned Trinomial Number data column and the Final Site Number data column. The only requirement is that each time the same site number occurs in the Final Site Number column, it refer to the same geographic location with the same set of artifacts and features.

Another table, called the Utah Statewide Site Number Table, is the table that links all of the other data tables together (Table 2). This table has a primary key, the Final Site Number. It will have every location in the state that is a site referenced by a single unique trinomial number (linear sites in each county will only be assigned one site number through the Master Linking Table noted above). Each Final Site Number will be unique and will only appear in the table once. Each Final Site Number will refer to only one geolocation in the state that manifests artifacts and other features.

As noted in the sample Utah Statewide Site Number Table (Table 2), there will be gaps in the site numbers; some sites will have been combined, and other numbers removed, based on the Master Site Number Linking Table, because they were not sites. This is the most important table in the database. It represents an exact tabulation of the total number of the sites in the state at any given time. Once all the tables in the database are completely populated and working, a researcher collecting data about a single site with an assigned Final Site Number can be assured that there is not any other site data in the database that is associated with the site he or she is researching.

Table 1. Sample Excerpt from a Master Site Number Linking Table

Trinomial Number	Final Site Number	Comments	Utah Report No.	Citation
42SE100	42SE100	—	U-XXXX-XXXX	—
42SE101	42SE101	—	U-XXXX-XXXX	—
42SE102	—	Not a site	U-XXXX-XXXX	—
42SE103	42SE103	—	U-XXXX-XXXX	—
42SE104	42SE101	Misrecorded as a separate site, now 42SE101	U-XXXX-XXXX	—
42SE105	42SE105	—	U-XXXX-XXXX	—
42SE106	42SE105	42SE105 expanded to include this site	U-XXXX-XXXX	—
42SE107	42SE103	North half of site now 42SE103	U-XXXX-XXXX	—
42SE107	42SE108	South half of site now 42SE108	U-XXXX-XXXX	—
42SE108	42SE108	—	U-XXXX-XXXX	—
42TO6	42TO6	—	—	Jennings 1957
42TO638	42TO638	—	—	Fike and Headly 1979

Table 2. Sample Excerpt from a Utah Statewide Final Site Number Table

Final Site Number (Primary Key no duplicates)	Site type	Geocoordinates for Centroid	Linear Site
42SE100	Prehistoric	Lat XXXXX, Long XXXX	No
42SE101	Prehistoric and Historic	Lat XXXXX, Long XXXX	No
42SE103	Prehistoric	Lat XXXXX, Long XXXX	No
42SE105	Historic	Lat XXXXX, Long XXXX	No
42SE108	Prehistoric	Lat XXXXX, Long XXXX	No
42SE110	Historic	—	Yes

There are several other tables in the Master Site Data Table Grouping, including a National Register Status Table (Table 3) and a Site Recordation and Visitation Table (Table 4). These are necessary separate tables in a relational database because a static flat file database cannot track chronological changes over time. For example, National Register eligibility status can and does change over time. A site could shift from unevaluated to eligible to non-eligible status over time as the sample table indicates. The National Register Status Table provides the ability to track changes in status over time while always providing the current status of the site at the time of query. The timing of the review process and status changes of the National Register is important for both the SHPO and the agencies. A similar argument applies for having a chronological record of all visits by professional archaeologists to a site using a Site Recordation and Visitation

Table 3. Sample Excerpt from a National Register Status Table

Final Site No.	Status	Owner	SHPO Consult	Date	Comments
42SE100	Not Eligible	BLM	Agree	04/01/1990	
42SE101	Unevaluated	USFS	None	12/10/1998	
42SE101	Not Eligible	State	Agree	06/15/1999	Reassessed on land transfer
42SE103	Elgible	Private	None with Federal Agency	03/04/2000	Private land owner request
42SE105	Eligible	BLM	Agree	07/23/2002	
42SE108	Unevaluated	State	None	08/01/2003	
42SE108	Eligibile	State	Agree	03/15/2004	Tested 2003
42SE108	Not Eligible	State	Agree	07/12/2007	Site destroyed by vandals

Table 4. Sample Excerpt from a Site Recordation and Visitation Table

Final Site No.	Recording Date	Contractor	Recorded As	Site Form
42SE100	03/01/1990	Kidder Consultants	42SE100	Original
42SE101	11/28/1998	Budweiser Group	42SE101	Original
42SE101	03/13/1999	Beehive State CRM	42SE101	Update
42SE101	10/09/1999	Budweiser Group	42SE104	Corrected GPS error
42SE103	12/02/1999	Beehive State CRM	42SE103	Original
42SE103	04/04/2004	Arrowheads Inc.	42SE107	Correct error
42SE105	06/18/2002	Kidder Consultants	42SE105	Original
42SE105	08/23/2002	Arrowheads Inc.	42SE106	Re-recorded by mistake
42SE108	06/01/2003	Beehive State CRM	42SE108	Original
42SE108	01/23/2004	Beehive State CRM	42SE107	Incorporate other site number
42SE108	06/18/2007	Budweiser Group	42SE108	Vandal update

Table as presented in the sample table. Such a table allows researchers and administrators to track the different archaeological activities that occurred on a site over time, especially if the table is linked through the report number and Final Site Number to a comprehensive Report and Bibliography Table (see below). In general, any time there is a need to track chronological changes in data or a sequence of events, a separate table is required in a relational database.

At least two other tables are also necessary, a Site Status Table (Table 5) and a Land Ownership Table (Table 6). A Site Status Table could, at a minimum, identify whether a site is unexcavated, tested, excavated, or destroyed. Again, because these are not mutually exclusive categories (e.g. a site can be first tested, then excavated, and later possibly destroyed by development), a separate table is required. A flat file database can only record the most recent status of the site. Also, a Land Ownership Table is necessary because some sites, especially large ones, can encompass land owned by several different entities.

Several other tables identified in the Master Site Data Table Grouping are critical for a functional research database of site information in

Table 5. Sample Excerpt from Site Status Table

Final Site No.	Site Status	Date	Utah Report No.	Citation
42SE100	Recorded	1957	—	XXX
42SE101	Recorded	1999	—	XXX
42SE103	Recorded	1999	—	XXX
42SE103	Tested	2000	—	XXX
42SE105	Recorded	2002	U-XXXX-XXXXX	XXX
42SE108	Recorded	2003	U-XXXX-XXXXX	Kidder 2003
42SE108	Rerecorded	2004	U-XXXX-XXXXX	Kidder 2004
42SE108	Tested	2004	U-XXXX-XXXXX	Kidder 2004
42SE108	Destroyed	2007	—	XXX

Table 6. Sample Excerpt from Land Ownership Table

Final Site No.	Landowner
42SE100	BLM
42SE101	State of Utah
42SE103	Private
42SE105	BLM
42SE108	State of Utah

Utah. Many sites discussed in the archaeological and historical literature of the state are only referenced by a site name. A Site Name Table (Table 7) would link each named site to the site's Final Site Number and then link to the Report and Bibliography Table (Table 8). A separate table is required because some sites can have multiple names, and many named sites can be linked or referenced to more than one primary data source.

A Report and Bibliography Table is an obvious requirement for any kind of serious research use of the site database. Such a table would not only include inventory reports submitted to the SHPO, but also a bibliography of all archaeological research related to the site, including testing and excavation reports where the information in the report can be linked to a particular Final Site Number. Imagine the utility of knowing the Smithsonian trinomial site number or the name of a site and printing out a list of all of the primary sources on the testing, excavation, and analysis of data from that site.

The discussion to this point has been directed at the administrative tables within the Master Site Data Table Grouping associated with a relational site database. So far, I have not even touched on "real" archaeological data that is recorded on site forms - artifacts and features. I wanted to discuss the administrative aspects of a relational site database first to show the inherent complexity of a workable and useful relational database. A flat file database that simply enumerates artifact counts and feature types for a site with a Smithsonian trinomial site number cannot begin to be a useful research database.

However, it becomes a trivial task to compute and track artifacts and features by component on any site in the state once the structure for a relational statewide site information database is established. For prehistoric sites, only three tables are needed, as shown in Figure 3: a Prehistoric Component Table (Table 9), a Prehistoric Artifact Table (Table 10), and a Prehistoric Feature Table (Table 11). A separate component table is required because a site may have more than one prehistoric

Table 7. Sample Excerpt from a Site Name Table

Name	Final Site No.	Primary Reference	Utah Report No.	Report status
Danger Cave	42TO13	Jennings 1957	—	Excavation Report
Sudden Shelter	42SV6	Jennings et al. 1980	—	Excavation Report
Old Over Shoe	42SE108	Kidder 2003	U-XXXX-XXXXX	Testing Report
Old Over Shoe	42SE108	Kidder 2004	U-XXXX-XXXXX	Vandal Report
Simpson Springs Pony Express Station	42TO638	Berge 1980	—	Testing Report

Table 8. Sample Excerpt from a Report and Bibliography Table

Final Site No.	Utah Report No.	Author	Year	Citation	Report Type
42TO13		Jennings, J. D.	1957	XXXX	Excavation
42SV6		Jennigs et al.	1980	XXXX	Excavation
42SE108	U-XXXX-XXXXX	Kidder, A. E.	2003	XXXX	Testing
42SE108	U-XXXX-XXXXX	Kidder. A. E.	2004	XXXX	Testing
42SE101	U-XXXX-XXXXX	Beehive, J. O.	1999	XXXX	Inventory
42SE101		Beehive, J. O.	2000	XXXX	Testing
42TO638		Berge, D.	1980	XXXX	Excavation

Table 9. Sample Excerpt from a Prehistoric Component Table

Final Site No.	Prehistoric Component	Component No.
42SE100	Fremont	1
42SE101	Unknown	1
42SE103	Paleoindian	1
42SE103	Archaic	2
42SE108	Numic	1

Other Fields: Size, Cultural Affiliation, Age, Dating Methods

component. And, as discussed above, separate artifact and feature tables are necessary to allow for the entry of any number of artifact types or classes and any number of features. The data unit in these two tables is an individual artifact and an individual feature, respectively. Each artifact (and its associated descriptive information) and each feature (and its associated information) are entered individually. No artifact or feature counts are ever entered; the counts of artifacts and features are computed within the program, so there is no human error in the enumeration of artifacts or features from a site. Obviously, by linking through the Prehistoric Component Table, individual artifacts and features can be associated with a specific component. The current IMACS encoding form and the database output I reviewed from the Utah Division of State History cannot associate specific artifacts or features with specific components on a site when more than one component is present.

Table 10. Sample Excerpt from a Prehistoric Artifact Table

Final Site No.	Artifact Type	Component No.	Site Map Identifier
42SE100	Snake Valley Gray bowl	1	C-1
42SE100	Biface	1	Bif - A
42SE101	Biface	1	Bif - B
42SE103	Crescent	1	tool
42SE103	Clovis point	1	PT-1
42SE103	Humboldt point	2	No 1
42SE108	Shoshone Knife	1	x

Other Fields: Artifact class, Length, Width, Material, Comments, Geocoordinates

Table 11. Sample Excerpt from a Prehistoric Feature Table

Final Site No.	Feature Type	Site Map Identifier	Component No.
42SE100	Pit house	A	1
42SE100	Pit house	B	1
42SE101	Reduction locus	RED LOC 1	1
42SE103	Slablined firepit	SLPIT	2
42SE108	Hearth	1	1

Other Fields: Length, Width, Depth, Description, Comment, Geocoordinates

Having separate artifact and feature tables for the entire state of Utah opens up endless possibilities for research. Linking these artifacts or features, through the Final Site Number, to the GIS data would answer complex questions such as "Does the average length of fluted points decrease as distance to the source location increases?" or "Are slablined firepits more common on Archaic sites in the Great Basin than on Archaic sites on the Colorado Plateau?" With a properly designed and populated relational database for site information in Utah, such research questions could easily be answered.

The conceptual database and resulting tables I have discussed above represent the minimum database structure that I think is necessary for Utah to have a viable functional and useful site database for management and research purposes. For 30 years, other researchers and I have been waiting for the reality of a useable statewide site database. It is perhaps time that researchers, CRM specialists, state, tribal, and federal officials band together to make such a database a reality.

Final Observations

When I was working on the 1976 National Park Service project organizing the site data from the GCP, I contemplated what I thought were the limitations of using the one-page site survey form on which all of the GCP sites were recorded. I naïvely asked Jesse Jennings, who directed the original GCP, why he thought the one-page Utah archaeological survey site form, with only 19 entries, was sufficient to recover important archaeological information from sites that were to be inundated by hundreds of feet of water by Lake Powell. I wondered how he could justify such limited data recording on sites that would only be visited once and that no archaeologist would be able to visit in the future. Jennings simply looked at me, harrumphed, and said, "The best site form is a blank sheet of paper. A well-trained archaeologist with a sharp pencil will record all

the information that is necessary." He went on to explain that the 19 data entry lines on the site form were only there so the field archaeologist did not become intimidated by a blank sheet of paper: "A well-trained archaeologist will know what to write."

In light of 30 years of reflection on Jennings' comments, the implications are clear. The development of complex, multipage site forms with numerous checkboxes, lists, and required attachments do not improve the site recording process at all. What is necessary is that the field recorder be well trained, understand the local history and prehistory, and have hands-on experience with the range of features, artifacts, and site types common in the local area. The observational skills and abilities of the field archaeologist, coupled with strong academic training and a foundation in the methods and theories of archaeology, are the critical factors in having site information accurately and properly recorded for posterity.

Finally, in the context of CRM, field archaeologists must understand that the ultimate purpose of a field inventory is to record 'sites,' not artifacts or features. Frequently, field personnel believe their highest priority is to find and record every artifact that is visible, to search endlessly for additional features or diagnostic tools. A 'site' is a theoretical archaeological construct based on empirical data; it is not simply a collection of artifacts and features in a spatially delimited area. Too often, site definitions are determined by fiat from a SHPO or a government agency. Instead of allowing field personnel the flexibility to define a site based on a working definition such as "a locus where identifiable and interpretable behaviors occurred in the past," some arbitrary minimum number of flakes, sherds, or cans in a precisely circumscribed area becomes the required definition. Field archaeologists need to be given the latitude to make professional judgments about what constitutes a site at the time of discovery and recording. There is a hidden presumption that field archaeologists are not qualified to make judgments, that they are only capable of ticking off boxes and filling in blanks on a preprinted site form. If these field archaeologists cannot be trusted to make professional decisions, and are reduced to robotic automatons counting flakes and checking off boxes, then the discipline of archaeology has failed to train these individuals properly and reviewing agencies have failed to treat these field archaeologists as professionals. The burden of site identification and site definition needs to be returned to the judgment of field archaeologists conducting the fieldwork.

With all of the modern encroachments and developments, field archaeologists usually have only one chance to discover and record sites before they are lost. Field archaeologists in Utah in the twenty-first century need to be given the best technological tools and the best academic training to do their job efficiently and effectively. To do this, it is time to bring the IMACS site form into the twenty-first century. It is also time to use twenty-first century software and hardware technology to develop a relational database that can take all of the IMACS site information that has been collected over the past 30 years and make it user friendly, easily accessible, and relevant for research and management purposes. ∎

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Comment on Alan R. Schroedl's "A personal perspective on the IMACS site form and the next generation of a Utah site database."

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Alan Schroedl has written an interesting and insightful history of the IMACS system and offers some thoughtful suggestions for improving the system. We welcome the opportunity to provide some additional information and address some of the significant issues raised.

First, we want to point out that the IMACS system is currently used not only by Utah, but by Nevada as well, and for some time was used in Wyoming also. We consider Utah to be fortunate in that we have a consistent site-recording system that has been in place for well over 25 years; while IMACS has its faults, the fact that we have been using nearly the same form and recording nearly the same information throughout that time is remarkable. Data users from other states have often expressed regret at having to use records systems that have been changed frequently over the years.

Shroedl points out many shortcomings of the IMACS form, including its requirement for information that might now be available elsewhere, and while we do not disagree that there is room for improvement, we do think some of the categories of information still retain value for the archaeologist. Recording the vegetation community might seem like a waste of time, for example. While vegetation maps and related GIS data for the state are widely available, we all know that gross-scale maps obscure local variation; a patch of prickly pear or ricegrass might be important to understanding the site. We think that prompting the recorder to observe aspects of the local environment has value in enriching the recording and enhancing its completeness.

Likewise, locational information is available from satellites, but directions are not; the person who found the site will often be the best source of information about how to find it later. We have all likely experienced difficulty in relocating a previously-recorded site, and many have found that often the best information is in the location and access narrative, not in the map plot or UTM coordinates, even if that data is accurate.

We are also happy to report that Schroedl's most pointed discussion of the problems with IMACS, the structure of the database, is a thing of the past. With the newly-developed Utah Division of State History's ArcGIS Server application, all fields on the site form (not just the encoded information) are stored and available in a relational database. The first release was introduced in September 2008. The second release currently under development will use newer technologies to dramatically improve performance and usability. As the system matures, it will also incorporate tools to help guide future development based on business requirements. This system has been in development for years with considerable work in database design and implementation in consultation with database professionals. The new database and subsequent online service has been produced at significant cost to the state and its partners, and we are very excited to see it to completion. We think most archaeologists, including Al Schroedl, will be pleased. ■

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Balance

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The legal protections afforded archaeological and cultural sites are regularly examined by legislators and representatives of those affected by the statues to determine if the strictures might be too harsh, and be hindering development. Sometimes these examinations result in attempts to realign the statutes, to make them less restrictive, to bring them into "balance." This essay discusses the notion of balance in cultural resource protection, and illustrates some of the ways special interests seek to reconcile the seemingly conflicting goals of development and preservation. Examples are drawn primarily from recent attempts to alter the balance of cultural resource protection in Utah.

For the last 20 years I have been employed by the State of Utah to more or less look after archaeological sites—to see that they are given consideration when threatened by development, to see that those who record and excavate them are qualified according to some standard, to keep site and project records, to accord important sites some form of protection and notice, to help agencies manage archaeological sites under their care, and to educate our citizens about our archaeological heritage.

These duties came about as a result of the passage of several state and federal laws, including the State of Utah Antiquities Act of 1973 and the National Historic Preservation Act of 1966. It seems that some 60 years after the passage of the Antiquities Act of 1906, sentiment regarding protection of archaeological sites crept up on Washington and the various statehouses, and in a period of about ten years, many protections were granted to cultural resources at the federal and state levels all across the country. In Utah, the Antiquities Act of 1973 was primarily due to the efforts of Professor Jesse D. Jennings of the University of Utah and George Tripp, a Bountiful pharmaceutical salesman and founding member of the Utah Statewide Archaeological Society. Jennings and Tripp crafted and helped pass a statute that gave Utah its first State Archaeologist, defined the Antiquities Section, and revived procedures for issuing permits for archaeological work, which had at one time been under the purview of State Parks. The general purpose was to protect archaeological sites from unnecessary damage, a worthy enough goal, although drawing the boundaries around what is considered necessary or unnecessary has proven time and again to be problematic.

Utah's relationship with its past

A few years ago, while meeting with my counterparts from around the country at the annual meeting of the National Association of State Archaeologists, I learned that State Archaeologists in several states struggled when legislative initiatives threatened the protection of archaeological resources. I felt very lucky to have had no such difficulties, and told them so. "It may seem odd that in Utah, a state known for conservative politics, our legislature cares deeply for heritage resources," I said. "Utah has a rich and very visible archaeological record, and Utahns love and respect our heritage." I told them how the legislature had recently increased the penalties for archaeological vandalism and clarified laws that protect the sanctity of ancient

burials, how a conservative Republican legislator had led efforts to start and fund an archaeological stabilization program in southeastern Utah, how a Republican senator had worked hard to preserve a large archaeological site in the Salt Lake Valley as part of open space protection, how the Quality Growth Commission had provided funds for the purchase of the extraordinary cultural and natural resources of Range Creek, and how the state legislature had provided funding for archaeological studies and protection of the sites there. I told them of how Republican Governor Walker had visited Range Creek and had taken steps to protect it from vandalism.

I was proud of our state and its leaders for taking an active role in preserving our past and for making certain that we didn't unnecessarily damage these vestiges of ancient civilizations, historic cabins, and fabulous art galleries that decorate our canyon walls. I was proud that our state recognized the value of these resources, not only as sources of information about the past, but as economic resources, as assets, as treasures that our citizens and tourists come to see.

I thought it was a combination of two factors that led to this unusual and wonderful attitude toward our past. First, I attributed it to the deep appreciation the founders of this state had for their own heritage, an appreciation that continues today. Utahns are very interested in those who came before. We have perhaps the best libraries in the world for researching family and personal histories. We recognize that knowing the past is a key to understanding the present. Utahns also have a strong appreciation for the heritage of the Native Americans, as the history of the New World is a significant element in the beliefs of many of our citizens.

I also thought that because of the high visibility of the archaeology of the state, and its striking and mysterious beauty, our citizens were more aware of the deep history of our region than were people who lived in places where archaeology was less obvious, hidden beneath forests, or paved over by modern civilization. I thought that we recognized the value of the archaeology for tourism and for the education of our own children, and that we therefore cared that it be protected and handed down for the appreciation of coming generations.

I really thought that I was the luckiest State Archaeologist in the country. I felt blessed because my state has some of the most wonderful archaeological resources in the world, and that our citizens and even our legislators and leaders recognize and appreciate our wonderful heritage.

Too far to the left

Unfortunately, the picture has darkened and few things have changed since then, all arising from differences of opinion over what kinds of destruction of cultural resources might be considered unnecessary. More *apropos* to an evolutionary-economic way of thinking, the issue has largely become the costs and benefits of protecting sites as opposed to ignoring them. The thought behind the legislative acts of 1966 (Johnson-era) and 1973 (Nixon-era) was clearly too liberal for the Bush-era 2000s. One archaeologist testifying before a legislative committee expressed the attitude perfectly: "I've seen things [regarding protection of archaeological sites] shift too far to the left" (House Natural Resources, Agriculture, and Environment Committee, 2/3/2006).

This is of course nothing new. Those of us who have been around for a while remember well the vicious attacks in the early 1980s on archaeology in general and the Antiquities Section in particular by legislative bulldog and eventually dreadfully disgraced Republican representative C. McClain (Mac) Haddow. Haddow served in the Utah legislature only two years (1981-1982), but he caused State Archaeologist David Madsen and the archaeological community untold trauma. Archaeologists from academia, government, and the private sector spoke with legislators and testified before committees in an attempt to thwart the assault. Ultimately Haddow was beaten back, but he had served notice to the community that archaeological sites are a

luxury and archaeologists are parasites sucking the blood from hard-working entrepreneurs and developers.

As an aside here, let me make it clear that the study of archaeology *is* a luxury, as its contribution to society is relatively subtle and not readily apparent to detractors. We do not often make contributions of obvious benefit to humanity, having made few life-saving, fitness-enhancing, wealth-generating, or crime-reducing breakthroughs recently. We don't find new ways to feed people or discover long-lost fountains of youth. We generally discover piles of rock and broken pots and bits of obsidian—not too exciting to the average citizen, no matter how much we insist otherwise.

Of course, we remain optimistic that our work will shed light on larger issues such as how to deal with climate change, warfare, starvation, and disease, and serious academic researchers are attempting to understand our motivations and decision-making processes by testing hypotheses on ancient peoples, but these arguments have little traction with the average citizen. If you want to be treated like a raving lunatic, just try to explain to your neighbor how studying the Fremont will help us cope with global warming. The glazed eyes and shaky nod will speak volumes. Trying that argument on a legislative committee is another exercise in futility. Legislators will not even give you a glazed look and a weak nod, as they are used to being approached by nuts; they'll thank you and probably cut your funding.

Who Cares?

The luxury of doing archaeological research is not why we have laws protecting archaeological sites. Despite the fact that legal protection is afforded archaeological sites primarily on the basis of their potential to yield information important in prehistory or history, legislators, managers, developers, and citizens care little about that. None of them are particularly crazy about information that is important to prehistory or history.

But they do care about pretty things. And mysterious things. They are intrigued by the unknown, the weird, the other. They are titillated by it, and frightened a little. And they are warmed by it, thinking about how nice it must have been back then, not to have to worry about a mortgage or the outcome of the Utah-BYU game. They have fantasies about the past that may have nothing to do with reality or with information. They love the art on the walls of canyons, and they are intrigued by cliff dwellings. And Moki houses. And Indian burial grounds. And many of them have Cherokee Princess blood on their great-great-grandfather's side.

And they do not want to see those places they love ruined. Most citizens would recoil in horror at the sight of a cliff dwelling falling to the wrecking ball, or a rock art panel peppered with bullets. But would they care if a bulldozer chained an open lithic site, scattering the artifacts and disturbing the features? Would they protest the inundation of a pithouse village by the rising waters of a reservoir? Would they care if oilfield trucks coated petroglyphs with dust?

Bringing Balance

Maybe. None of us wants to see cultural sites unnecessarily destroyed, but it's that pesky definition of unnecessary that will forever dog us. Former Utah Representative Bradley Johnson, a Republican from Aurora, sponsored legislation in 2005 and 2006 aimed at restoring "balance" to archaeological decision-making in the state. His 2005 bill proposed moving the Utah Antiquities Section from the Division of State History to the Division of Wildlife Resources. Decried by even Republican legislators as a bill of retribution, as "punitive," the bill was amended to require a legislative Natural Resources Committee to study where would be the best place in state government for the Antiquities Section. The intent was to place the Antiquities Section under the control of an agency that would control it, to bring it back into "balance."

Representative Johnson's disdain for archaeology had been expressed five years earlier in a legislative hearing regarding a new archaeological training program being developed in southeastern Utah. During a very positive discussion of the program, he voiced his displeasure with archaeological protection. The exchange was recorded by a reporter from the *Deseret News*:

> But not all committee members were gung-ho. "How many arrowheads do we need?" said Rep. Brad Johnson, R-Aurora. The question ignited a passionate response from Jones. "To ask that is like asking, 'How many books do we need?'" he said. "Each one of those places is a one-of-a-kind record of the past . . . . Anytime you destroy an archaeological site, we destroy a (rare) book we've never read" [Toomer-Cook 2000].

Certainly Representative Johnson wanted balance, as did the archaeologist who thought things had swung too far to the left. Johnson spoke on several occasions of visiting a site where students and professors from BYU were scratching around on the ground and collecting bags full of pot sherds. He said that his wife wondered why they were spending taxpayers' money to collect those sherds when there were thousands of them back home on their ranch. And he wondered why as well.

Representative Johnson's story was about a visit he paid to the excavations prior to construction of I-70 in Clear Creek Canyon. The site he visited was Five Finger Ridge, perhaps the largest and most important Fremont site ever discovered and excavated. In relating this anecdote, Representative Johnson made clear his concept of "balance."

In the 2006 legislative session Representative Johnson decided that the Antiquities Section could stay in the Division of State History, but that its influence should be weakened. Spurred on by some agency archaeologists who felt that requiring field workers to have minimum qualifications was too costly, and a university archaeologist who agreed, Johnson sponsored legislation to place control of archaeological permitting in the hands of a special unit created in the governor's office, and to eliminate any requirements for field personnel. During the legislative session, the Executive Director of the Department of Community and Culture, who is over the Antiquities Section and State History, asked Representative Johnson what he really wanted. Johnson replied "The State Archaeologist's head on a platter." Thus Representative Johnson again made clear his concept of "balance."

Pushmi-Pullyu

In the long run these changes may or may not have any real effect on the quality of archaeological work done in the state. Most of the compliance-related work is done under federal laws and regulations and is not affected much by state statute. I think the change in permitting standards has already had a negative effect on the quality of work, as it is easier for less-conscientious consultants to send cheaper, marginally-trained field crews out on projects. Most firms and researchers will be unaffected. Archaeology now costs the state more, as Utah has added another bureaucratic position to oversee archaeological permitting.

Oh well. Like Dr. Dolittle's Pushmi-Pullyu, archaeological protection will always be subject to pressures from preservationists on one side and developers and agencies that facilitate or participate in resource extraction on the other. Preservation and protection take time and resources. Many citizens appreciate our cultural resources and want them to be cared for, but citizens, developers, bureaucrats, and legislators do not often understand or appreciate the kinds of knowledge that can be gained from archaeology—they only understand the artifacts, the beauty, the mystery. We as archaeologists need to constantly educate our constituents about the value of archaeology, and make use of the mystery and beauty inherent in archaeological resources to try to ward off future assaults by those seeking to restore "balance."

One such assault is currently underway in Utah with a large energy company waging an expensive public relations campaign asserting that archaeological protection is out of "balance." A sample letter provided to supporters to send to their legislators stresses balance:

> As a citizen of Utah, I am concerned about rising energy prices and our state's ability to meet the challenges posed by current economic conditions. However, I recognize the importance of balancing economic growth with the preservation of the natural resources that make Utah such a great place to live.

I urge you to endorse this project by asking key state officials what more can be done to support the BLM permitting of the West Tavaputs Full Field Development plan. Utah's future depends upon it. (Bill Barrett Corporation).

Some people may send this letter to a legislator, but I think we generally have citizens on our side. What weakens protection of archaeological sites is when "archaeologists" assist the attackers because less regulation will make their work easier, will help them in their task of "making the sites go away."

Luckily most archaeologists know better. ■

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The Good, the Bad, and the Ugly: An Essay Exploring Recent Legislative Changes to Cultural Resource Law in Utah*

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[2] *Utah Public Lands Policy Coordination Office and the University of Utah*

Our insights regarding Utah's archaeological foundations have a shallower time depth relative to several of the other contributors to this special volume; as such, our intent in this essay is to address issues that have come about and continue to be viable during our more recent tenures as Presidents of the Utah Professional Archaeological Council (UPAC), namely, the changes that occurred in 2006 with the passage of House Bill 139 (HB 139). We will share our unique perspectives as some of the individuals tasked with implementing changes mandated by HB 139 and as individuals employed by the Public Lands Policy Coordination Office (PLPCO) to ensure that these changes result in positive effects for how cultural resources are managed in Utah.

During the 2006 general Utah legislative session, Representative Bradley Johnson sponsored HB 139. The bill was cosponsored by Senator Michael G. Waddoups and proposed various amendments to State Antiquities and Historic Sites statutes. Despite vehement outcries from the archaeological community, including letters and emails of opposition from national and out-of-state groups (the Society for American Archaeology, the Register of Professional Archaeologists, the American Cultural Resource Association, the Archaeology Channel, the Council of Councils, and groups as far away as the Council of South Carolina Professional Archaeologist), and local groups (Utah Statewide Archaeological Society, Utah Rock Art Research Association, the UPAC Executive Committee and many members), the bill passed and was signed into law by Governor Jon Huntsman on March 17, 2006. The most striking changes included an overhaul of Utah Code (UC) § 9-8-305, the statute that governs the State's archaeological permitting process. The changes went into place only months later on July 1, 2006. Some of the major changes to the permitting process include:

1. A change in the permitting authority from the Antiquities Section, under to Division of State History to the Public Lands Policy Coordination Office (PLPCO), under the Governor's Office of Planning and Budget;

2. A change in the responsible entity from institutions to individuals;

3. A change in required qualifications from accreditation by the Register of Professional Archaeologists, unless grandfathered, to criteria defined by the legislature, and more precisely interpreted by a small group of Utah archeologists, and;

4. A change from permitting both Principal Investigators and Field Supervisors to only permitting Principal Investigators.

As our title suggests we will explore the "good, the bad, and the ugly" outcomes of changes that resulted from HB 139 statutory amendments, implementing Rule 694-1, and other statute that was amended to remain consistent with the new legislation.

The Good

In retrospect, not all of the permutations were bad; some consequences have had positive impacts to how archaeological resources are

managed by the State of Utah. There are several potentially positive outcomes; here we will highlight three.

One of the "hidden gems" written into HB 139 was a subtle change to UC § 9-8-404, the state statute synonymous with Section 106 of the National Historic Preservation Act. The change added "expenditures" to undertakings and more explicitly required state agencies to provide the State Historic Preservation Officer with a *written* evaluation of the expenditure's or undertaking's effect on historic properties. While it is true that over 75 percent of the lands in Utah are administered by federal agencies like the Bureau of Land Management, the State also oversees actions on a large portion of land. The changes to UC § 9-8-404 were a significant clarification in the responsibilities of state agencies to take into account the effects of their actions on historic and archaeological resources and to take responsibility for managing and preserving these resources. Unfortunately, some state agencies are better at complying with this law than others; fortunately, other statutory amendments were included in HB 139 that allow for assistance and direction for those agencies that lack cultural resource expertise.

One such change was the addition of UC § 63J-4-603(1)(d), which outlines the duties of PLPCO, stating that "*consistent with other statutory duties, encourage agencies to responsibly preserve archaeological resources*." This gives PLPCO authority to "encourage" state agencies to comply with UC § 9-8-404 and allows them an opportunity to assist and direct agencies in a manner that is independent from the role played by State History. In the past, state agencies sought direction from the Utah Division of State History, which may have been perceived as a conflict. The role of the State Historic Preservation Office (SHPO) is to provide comment on the determinations made by agencies under UC § 9-8-404 and Section 106; it would be a conflict of interest if the SHPO were to make determinations for agencies and then comment on those determinations. Further, the role of the Antiquities Section is arguably strengthened by the loss of their authority to issue permits, in that they can now advocate for cultural resources and act as a "watch dog" rather than an "enforcer."

Finally, HB 139 formalized the concept of "joint analysis" into UC § 9-8-404. Joint analysis has been interpreted by some as a tool for PLPCO to reign over SHPO; however, in practice, joint analysis has been used informally to address situations where the SHPO does not concur with an agency's determination. In this role, PLPCO's function is very similar to the role played by the Advisory Council on Historic Preservation (ACHP) in Section 106 except in two distinctive ways. First, PLPCO is sanctioned by the Governor's office and potentially has more authority over state agencies than the ACHP would have over federal agencies. Second, PLPCO must consider a broader suite of issues than purely preservation and responsible management of cultural resources, and unlike the ACHP it may in some cases consider more than preservation.

The Bad

Prior to the passage of HB 139 and implementation of the changes provided for by that legislation, archaeological permits to conduct work on state land were issued in a two-tiered system similar to that currently employed by the Utah Bureau of Land Management (BLM). This two-tiered system provides 1) a qualifications review of institutions and the individuals from institutions responsible for conducting archaeological work and 2) provides an operational review of project-specific plans when those plans involve testing and/or data recovery excavation. Utah's current permitting system still provides for both qualifications review and project-specific review, but the focus of qualifications review has changed dramatically. Permits to conduct archaeological work on Utah state land are now issued to individuals, not institutions, and the Principal Investigator is the only permitted position. While this current permitting system does provide a review of qualifications for those ultimately responsible for the successful execution

of an archaeological project, it does not recognize the division of labor that typically characterizes archaeological fieldwork.

Principal investigators are responsible for all project decisions and are ultimately responsible for the quality of fieldwork performed under authority of their permit. Under Utah's current permitting system, implemented as a result of HB 139, Principal Investigators are expected to take an active role in fieldwork decisions, including making determinations of whether observed resources constitute a site and if said site is eligible for the National Register of Historic Places. Accordingly, the argument goes, Principal Investigators should be given the latitude to make decisions regarding field personnel and to insure independently that persons performing or supervising fieldwork are fully qualified to perform such work.

On-the-ground archaeological fieldwork is routinely supervised directly by an individual with the title of Field Supervisor or Crew Chief. Indeed, job postings seeking archaeologists often refer to the need to recruit a field supervisor, and the Utah BLM permit structure differentiates Principal Investigators from Field Supervisors. Field supervisors are those who typically interface directly with archaeological resources and are those who make critical initial observations about site characteristics, National Register eligibility, and ultimately the disposition of most archaeological sites. While Principal Investigators are responsible for decisions made in the field, the Principal Investigator's decisions are oftentimes reliant on recommendations and observations made by field supervisors.

Administrative rules implementing the permit requirements outlined by HB 139 incorporate by reference the Code of Conduct and Standards of Research Performance adopted by the Register of Professional Archaeologists (RPA). These ethical guidelines, to which every permitted Principal Investigator are responsible for upholding, repeatedly admonish archaeologists to refrain from undertaking research for which they are not qualified. It is reasonable to assume that this means too, that those responsible for research should not assign critical tasks to those who are not qualified.

Unfortunately, not all Principal Investigators assume responsibility or truly direct the work done under their permit. To date, PLPCO and SHPO have been made aware of multiple instances where Principal Investigators have indeed assigned individuals to act as field supervisors who would not have met the former Field Supervisor permit requirements and who were arguably unqualified for the tasks they were performing. Further, it has become clear that many Principal Investigators are not making or even being consulted in fieldwork decisions. In some cases, Principal Investigators may not even be reviewing the reports bearing their names.

There are disciplinary processes in place to address failures by permitted Principal Investigators to fully comply with their responsibilities as outlined by statute and administrative rule. But permits are very difficult to suspend or revoke. Statute and rules reference ethical guidelines and not objectively quantifiable qualifications. Failure of a permitted Principal Investigator to comply with the RPA Standards of Research Performance by assigning unqualified individuals to carry out critical field supervisory tasks produces poor quality work and is a disservice to the archaeological record. Assessing "quality" work and demonstrating failure to comply with RPA standards, however, is subjective and does not provide a consistent and clearly definable framework within which to evaluate alleged violations. Subjective assessments of "right" and "wrong" are common in our American legal system; still, without clear written guidelines outlining the qualifications for individuals supervising work, it is difficult to charge that they are unqualified and that a breach of RPA standards has been made.

Certainly, the majority of professional archaeologists perform their work in an ethical and responsible manner, but "ethical responsibility" is subjective and may vary from individual to individual, project to project, and of course role

to role. Standards and qualifications are set for one primary reason, not for the majority that are genuinely concerned with producing quality work, but rather for the small minority that may be tempted to cut corners or perform in a less than ethical manner. We are not making the argument here that the current permitting process be changed to include issuing Field Supervisor permits. Instead we contend that a set measure of in-the-field supervisor qualifications would be appropriate.

The Ugly

Regardless of outcome, most would agree that the 2006 changes took place in an "ugly" manner that did not unite, build trust, or consensus among members of the archaeological community. HB 139 was not the first or only legislation aimed at altering archaeological law and authority in the state of Utah. During the 2005 Legislative General Session, Representative Johnson and Senator Waddoups introduced HB 308, entitled "Archaeological Resources Amendments." As introduced, the bill proposed to move supervisory authority of the State Antiquities Section from the Division of State History, in the Department of Community and Economic Development to the Division of Wildlife Resources in the Department of Natural Resources. This legislation may have been a reaction to a perception that there was not a clear divide between compliance with Utah Code 9-8-404 and the issuance of archaeological permits. Some felt that if archaeologists did not comply with the preservation wishes of the Antiquities Section, they would suffer from punitive actions associated with their Antiquities permit. At that time, archaeological concurrence under Utah Code 9-8-404 and the issuance of archaeological permits were both statutory duties of the Antiquities Section; however, different individuals oversaw the respective tasks. There was also a perception that permits were being assigned arbitrarily and managed by uneven standards. Discussions and dissatisfaction regarding permitting standards was the topic of the 2003 Winter UPAC business meeting and comments in a 2006 UPAC Newsletter. After three substitutions, the final Enrolled Copy of the HB 308 declared that historic preservation "must be kept in balance with the other uses of land and natural resources which benefit the health and welfare of the state's citizens." Toward this end, HB 308 introduced the concept of "joint analysis" and directed the Legislature's Natural Resources, Agriculture, and Environment Interim Committee to conduct a study and make recommendations to the Legislature as a whole regarding the Antiquities Section and its roles. During this interim period, Representative Johnson, on behalf of the interim committee, endeavored to further investigate the alleged problems that prompted HB 308. In addition, a legislative audit of the Antiquities Section was initiated and conducted by the Office of Legislative Auditor General.

During the 2006 General Legislative Session, Representative Johnson and Senator Waddoups introduced a new version of archaeological reform, in the form of HB 139. Motivations for this 2006 legislation likely stemmed from earlier perceptions regarding permitting issues and the Antiquity Section that may have been further exasperated by a belief that there was not an avenue that could be used to address the perceived problem. Proposed language was vetted during numerous meetings involving representatives from state agencies, UPAC, and select consultants. HB 139 passed though the Legislature with one substitute and was signed into law. Findings from the legislative audit were released after HB 139 had passed, and reported that its passage remedied the concerns that were expressed. However, the audit failed to discover evidence substantiating perceptions that permitting authority was being abused.

Representative Johnson is not, nor has ever been a supporter of archaeology; partnering with him to invoke "positive change" was risky at best. If positive change was indeed necessary and the goal of the bill, it is a shame that it was unable to develop and transpire in a more transparent fashion with input from the community before it became a legislative action. Archaeologists are arguably in a better position to draft positive

change than legislative attorneys. Opinions regarding HB 139 spiked bitter divide between some of the most prominent members of our community. The UPAC Yahoo listserv blazed with posts concerning opinions regarding HB 139. Unfortunately, bitterness, division and mistrust still pollute our community today. Are sentiments of division, mistrust, and disrespect unique to our Utah community or is this problem more widely spread among archaeologists? Rhetorically, why don't we consider or at least respect differing opinions and approaches? Further, shouldn't we be capable of engaging in productive, non-emotional, ego-free dialogs that better our practice? How can we foster a community that is capable of coming together and developing archaeological policy in a respectful manner?

Conclusion

Good, bad, or even ugly, the changes resulting from HB 139 are proverbial "water under the bridge." Most likely, we all don't agree on what is or was "good, bad, or ugly," but hopefully we can work together in an open-minded, affirmative, and transparent manner to make the best of what we have, and where possible, enact positive change.

As noted above, Utah is fortunate to have state cultural resource compliance laws that resemble federal preservation laws. We should continue to encourage state agencies to not only consider the effects of their actions to their cultural resources but to appreciate the value of those resources. All of us in our various roles must remember that cultural resource legislation is not always popular and is often held up as the bottleneck delaying project implementation and even economic development. It is critical for all of us to take every opportunity to educate agency managers and developers regarding the benefits of these laws (state and federal) and the values that they balance. These laws are not simply something that agencies must comply with in order to minimize the risk of litigation, but rather, they allow us to balance the development and implementation of our current culture with the heritage and remains of our shared human past. When considered early, and done in accordance with outlined procedures, these laws rarely result in delays and most often provide for development *and* preservation and interpretation of the irreplaceable remnants of our heritage.

Adjusting to and accepting change is always difficult. Some of the changes to the permit system will simply take some "getting used to" and will eventually become more accepted through continued education by PLPCO and State History. On the other hand, some of the change may truly be detrimental to historic and archaeological resources. In these instances, we must work together as a community to affect those things we can change, by implementing rules and/or policy that may better define how legislation is carried out. Future improvement and updates are healthy and necessary and will hopefully occur in a transparent and informed manner.

Ideally, the archaeology community should strive to be a self-permitting and self-regulating profession like medical doctors (American Medical Association) or attorneys (American Bar Association). The Register of Professional Archaeologists (RPA) is definitely a positive step toward this goal. One of the primary concerns against tethering Utah archaeological permit requirements to RPA accreditation was that RPA measures lacked flexibility. Some feel that extensive field or research experience should serve as a substitute for an advanced degree, but RPA endorsement requires an advanced degree in archaeology, anthropology, art history, classics, history, or another germane discipline with a specialization in archaeology. On the other hand, completion of an advanced degree provides training that may not necessarily be gained in the field and conversely field experience may not be gained through completion of an advanced degree—one does not translate into the other. Also, there are some who argue that stipulations requiring advanced degrees assist archaeology and cultural resource management with garnering respect and with being taken seriously as professionals. We are not proposing a solution,

nor should it be decided by the few, but rather we advocate for a united approach that is not about a single opinion but the inclusion of many voices and perspectives to achieve a balance. ■

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The Miracle of CRM on Trust Lands

Kenneth L. Wintch

Utah School and Institutional Trust Lands Administration

Cultural resource management was extended to Utah school and institutional trust lands a couple of years after this journal's birth. From my perspective, this development is the most positive event to occur in Utah government/politics during the last two decades and beyond (i.e., since the early 1970's). The way that this particular development occurred, however, is both historically interesting and instructive about what factors are required to gain agency compliance—both at the beginning (i.e., as agency management decides to begin to comply with relevant statute) and thereafter.

In my mind, the single greatest development in Utah government/politics during the life of this journal is the state land grant managers and beneficiaries agreeing to actively engage in cultural resource management (CRM)[1] circa 1991. I admit to being biased in this opinion, having been employed by the two agencies that have managed the state's school and institutional trust lands portfolio since that important threshold was crossed. Nonetheless, I believe it was an important development for two reasons. First, the purpose and history of trust lands made the process of coming into compliance with the state's equivalent of Section 106 (§106) a much more delicate, complicated matter than is normally the case. Like it or not, trust lands have come to us with a fundamentally different purpose than public lands and are not, by definition, "public" lands. Furthermore, the ultimate yardstick for judging the successful management of trust lands is how much money is made from those lands--period. The management of trust lands is fundamentally more like private enterprise than not. The second reason is because it resulted in the addition of essentially federal-level protection to cultural resources on roughly 3.7 million acres of mostly rural, undeveloped land. The school and institutional trust lands portfolio is composed of thousands of scattered square-mile sections of school trust lands spread across most of rural Utah, along with a few dozen blocked-up polygons of trust lands, some of which are more than 100,000 acres in size. The amount and distribution of state trust lands in Utah is significant. Adding CRM to the trust lands portfolio has come to represent the largest single expansion of cultural resource consideration to lands within Utah's borders since the late 1960s to early 1970s, when the large federal land management agencies developed CRM programs (Donaldson 2004, Hanks 2004).

Beyond the above facts, however, I believe the story below also illustrates two important points that are often unappreciated or unknown but are nonetheless timeless and nearly universal truths in CRM. The first of these is the critical, never-ending importance of having someone among us offering practical, helpful solutions to agency managers who are struggling with difficult CRM-related decisions (including whether to begin to undertake CRM at all). The second point is that, much like everything having to do with political matters, public opinion matters greatly, and our success in arguing for appropriate treatment of the archaeological record may well depend on an educated public that is willing to speak out on behalf of the record (cf. Lipe 1974: 216-222).

Why Trust Lands Are Different

As I mentioned above, state trust lands are not considered "public" lands and their purpose is fundamentally different than those of most other government lands. When Utah joined the Union in 1896, the state received millions of acres of land from the federal government that were dedicated to the sole purpose of providing financial support for the state's public schools. The State of Utah took these lands as trustee for the public school system (now the state Office of Education) and 11 other institutional beneficiaries. Importantly, two of these 11 beneficiaries are the state's largest public institutions of higher education—the University of Utah and Utah State University. As a trustee, the state is legally bound to follow the terms of the federal grant, found in the relevant congressional legislation (Utah Enabling Act, Act of July 16, 1894, 28 Stat. 107), as well as the state's terms of acceptance, found in the Utah Constitution. Since statehood the Utah Legislature has assigned the task of managing state trust lands to a succession of state agencies; the most recent of these is the School and Institutional Trust Lands Administration (SITLA).

The land grant portfolio includes both surface and mineral estates, both of which are to be managed on behalf of the land grant beneficiaries. The management directive is to provide full market value of those assets to the 12 beneficiaries over the long and the short term. Examples of legitimate revenue-producing uses include leasing the surface and mineral estates and selling portions of the surface estate. The net cash proceeds (i.e., the gross revenue received minus the state's management costs) belong to the beneficiaries. The purpose of state trust land is to generate money for the 12 beneficiaries—nothing more, nothing less.

The practice of deeding federal land to states at statehood for specific purposes goes well back in United States history. With the exception of the original 13 colonies, all other states have held trust lands under varying terms of grant. Understandably, the passage of time has seen tension and controversy in many quarters over what constitutes the appropriate legal use of state trust lands. This tension is the result of conflicting paradigms: the view discussed above versus the perspective that trust lands should be considered public lands and managed for public purposes. A number of lawsuits and the generation of much case law has been the result. Importantly, case law has come out strongly in favor of the trustee's unwavering responsibility to generate financial support for the land grant beneficiaries. Case law has defined the states' responsibilities quite clearly. Utah's land grant beneficiaries (primarily the Office of Education) understand this and have historically monitored the management of school trust lands to actively ensure that their financial best interests are indeed fulfilled.

Utah has had its fair share of tension and controversy over what constitutes the appropriate use of trust lands. One source of tension has been the nature and extent of cultural resource protection on trust lands. We all know that CRM costs money—sometimes *lots* of money. This is particularly true when the undertaking involves a lot of land (e.g., an entire mile-square school section), a relatively high frequency of archaeological sites (a common phenomenon in many parts of rural Utah), or great potential to physically damage sites or cause the loss of legal protection for sites (e.g., leases for industrial plant sites or the sale of surface estate). It's not hard to understand why the state's land grant managers and beneficiaries would resist engaging in CRM. It could be quite an expensive proposition. A lot of money that would otherwise go to the beneficiaries would suddenly be diverted into archaeological investigations and CRM administration. It would probably also add delays and difficulties to the consummation of easements, leases, and sales transactions. Even beyond those immediate concerns, however, is the more general concern of suddenly losing the competitive business edge you enjoyed over the federal agencies (because you did not require CRM while they did), compounded by the loss of competitive parity that you have enjoyed with private landowners (who still have no need to

require CRM of their customers). For all these reasons, as well as the trustee's fiduciary duty to the beneficiary and the weight of case law mentioned above, the trust lands managers and the primary beneficiary strongly resisted the call for CRM on trust lands. And why wouldn't they? From a business perspective, taking on a legally questionable financial and administrative encumbrance makes absolutely no sense. Without legal and political direction to the contrary, prior to 1991 Utah trust lands managers ultimately felt that they could not embrace CRM without being sued by the beneficiaries for failure to optimally perform in their financial best interests.

Relevant History

To my knowledge, the tension between trust lands managers and archaeologists began in the autumn of 1979, when a San Juan County rancher secured federal assistance to chain a square-mile section of school trust land on the eastern edge of Cedar Mesa. Just inside the eastern margin of this section lies one of the most photogenic and engaging Ancestral Puebloan (or Anasazi culture) archaeological sites in the state: Cave Towers.[2] At that time, Cave Towers was also one of the most well-loved sites in the state. While the tower features themselves were not directly harmed by the chaining, dozens of other Anasazi sites on this school trust section were badly damaged, if not completely destroyed, by the chaining. The public uproar that ensued consisted of dozens of letters to the governor and the director of the agency managing trust lands at the time, the Division of State Lands and Forestry. A number of letters also went to officials in the assisting federal agency and beyond. Numerous media articles followed, as well as letters to the editors of Salt Lake's two main newspapers. This public outcry had two immediate results. First, the federal agency that was involved in the chaining hired their first professional archaeologist and began making more efforts to comply with §106. Second, the State Land Board, the trust lands managers in State Lands and Forestry, and the land grant beneficiaries (hereafter "the trust lands community") learned that the public cared deeply about cultural resources and wanted those resources protected in the future. However, given the above-mentioned logical and financial hazards, the trust lands community did not immediately embrace the idea of compliance with the state's version of §106 (now known as *Utah Code Annotated [U.C.A.]* §9-8-404, then codified as *U.C.A.* §63-18-37).

Indeed, throughout the 1980s trust lands managers continued to sell and lease surface estate without any tangible protection actually being given to historic and archaeological resources. For example, during the 1980s State Lands and Forestry would inform the State Historic Preservation Officer (SHPO) of their intent to sell, lease or allow development of a particular piece of surface estate, then allow (or perhaps even pay) the Antiquities Section to inventory the land in question. Ultimately, however, the results of the inventory (if one was even conducted) were disregarded and the undertaking was consummated without any further concern for the harm that might befall cultural resources. As time went by, the ranks of Utah's archaeological community became increasingly irate about this pattern of behavior and its effects on the archaeological record. Interestingly, while chaining was the undertaking that put state trust lands on the archaeological community's "radar screen," it was the sale of trust lands that eventually galvanized the community into taking a series of concrete actions during the late 1980s.

If I remember correctly, these actions began with an effort to halt what was perceived to be a gradual erosion of state statutes, policies, and procedures protecting cultural resources. This action was not directed at state trust lands *per se*, but is relevant in that it led to a 1989 legislative change bringing the language of *U.C.A.* §63-18-37 more in line with §106. Some time thereafter, the Utah Professional Archaeological Council (UPAC) joined in a lawsuit against State Lands and Forestry that alleged non-compliance with

U.C.A. §63-18-37 in regard to the proposed sale of trust land in southeastern Utah. An injunction granted to the plaintiffs had the effect of halting all sales of trust land until the matter was resolved.

Needless to say, the injunction grabbed the attention of the trust lands community. The media picked up on the story and the state quickly began to wear the metaphorical black eye that typically comes with bad press. Understandably, the governor's office became concerned enough to begin putting pressure on the trust lands community to satisfactorily resolve the matter as soon as possible. An attorney within the governor's office was tasked with finding a global resolution of the matter, if possible. Importantly, three anthropology professors at the University of Utah and Utah State University began to actively promote the idea within their institutions that cultural resources should be given adequate consideration, if not equal weight, during the course of generating revenue from trust lands. Numerous members of the archaeological community wrote letters to state officials and newspaper editors and began actively lobbying their legislators. Finally, earnest discussions were undertaken between the governor's office, the trust lands community, and the Division of State History (the state archaeologist, in particular).

It is important to note here that things were now progressing on two different avenues: legal and social/political. First there was the legal question of whether trust land management could be forced to comply with *U.C.A.* §63-18-37 in light of the previously mentioned weight of trust case law and the logical primacy of the Utah Constitution over statute. Second was the social and political drama, wherein a portion of Utah's population clearly wanted cultural resources on trust lands protected and were actively making their desires known through whatever means available, including the media. As is usually the case, resolution of the conflict took place away from the limelight.

The efforts by the university professors paid huge dividends when a white paper titled the "Educational Trust Beneficiaries' Position Statement" was jointly released by the Office of Education, the University of Utah, and Utah State University. This historically important document, while not binding and ultimately advisory in nature, was a watershed event because it spoke directly to the issue of cultural resources on school and institutional trust lands. It represented clear direction from three prominent beneficiaries to the state that archaeological resources on trust lands *were* important enough to "be managed in a manner consistent with Section 106" because those resources offered "unique educational benefits" that were worth preserving "insofar as possible within Trust principles." The vital importance of a chorus of beneficiaries instructing the trustee of their desire for an adjustment in portfolio management cannot be underestimated, especially when the chorus contains the primary beneficiary's voice.

No less significant were the state archaeologist's efforts to persuade the trust lands managers that they really *could* accede to the public's demand for CRM without failing in their fiduciary duty to provide financial support to the beneficiaries – that there *really was* a "middle path" of sorts that was available to them. A critical component of his message to the trust lands community was that the cultural resource compliance system clearly allowed for them to keep control of their business process and their own destiny. Equally important was that he offered an understandable process for scientifically yet efficiently recovering data and collections from trust lands so that the proposed mining, leasing, and sales of surface estate could take place. He convinced them that they could keep the cost of doing CRM fairly low while continuing to produce the revenue that acts as yardstick for trust lands management success. In my mind, it was the state archaeologist's well-measured message and helpful demeanor that provided the metaphorical grease and know-how necessary to fit the power take-off gear of CRM to the engine that is trust lands management (which could not have happened in the first place without the university professors' efforts and the resulting Educational Trust Beneficiaries'

Position Statement). The various components of the compromise regarding cultural resources and CRM on trust lands were put in place by the introduction and passage of what was, in my mind, the most important piece of Utah legislation since the early 1970s (cf. Gregonis and Hardy 2004: 26).[3]

Senate Bill 128 (S.B. 128) was passed by the Utah Legislature during their 1992 General Session. Importantly, S.B. 128 enacted Utah's Native American Graves Protection and Repatriation Act (found in *U.C.A.* Title 9, Chapter 9, Part 4). But more important to this essay is that it gave specific legislative direction to the trust lands community regarding the value of cultural resources on trust lands and the manner in which they should be managed. This language, found in *U.C.A.* §9-8-301(1) and 301(2), artfully articulates the legislature's declarations that (1) "the public *and* the beneficiaries of the school and institutional land grants have an interest in the preservation and protection of the state's archaeological and anthropological resources and a right to the knowledge derived and gained from scientific study of those resources" (emphasis mine), that (2)(a) "policies and procedures for the survey and excavation of archaeological resources from school and institutional trust lands are consistent with the school and institutional land grants," and that (2)(b) "the preservation, placement in a repository, curation, and exhibition of specimens found on school or institutional trust lands for scientific and educational purposes is consistent with the school and institutional land grants." All things considered, and in light of our more recent legislative history (cf. Hunsaker and Beck, this volume), I continue to be impressed by S.B. 128 and by the practical compromise that was gained through skillful diplomacy, statesmanship, and goodwill. To me, it was—politically speaking—the Utah archaeological community's finest hour.

Final Thoughts

The moral of this story is that the issue was satisfactorily resolved on social and political grounds, not on strictly legal grounds. Clearly, the trust lands community, the governor's office, and the legislative branch were brought to the bargaining table by the lawsuit, the negative media coverage, and public pressure. However, it was the combined efforts of the university professors and the state archaeologist to logically, effectively, and productively argue on behalf of cultural resources that made the difference. It was, in retrospect, the perfect social/political storm that swept the legal issues aside and allowed for a practical compromise to be worked out short of a winner-take-all court judgment.

As I mentioned earlier in this essay, all too often we tend to be blithely unaware or unappreciative of the absolutely critical importance of having someone among us who fulfills the state archaeologist's role in this story—that is, the presence of a journeyed yet "neutral" (or at least unthreatening) archaeologist who helpfully and unpretentiously offers the kind of practical, "do-able" solutions necessary for agency management to fulfill their primary responsibilities while also satisfying the public's demand for CRM. This seems to be especially true when an agency is just beginning to comply with §106 or its state equivalent. But this role is just as important thereafter as agency management deals with the ever-present subtleties and nuances of §106 or *U.C.A.* §9-8-404 compliance. Quite often, this role is played by agency archaeologists who do much good every day by working productively with their managers to find solutions to difficult conflicts between proposed development and the archaeological record. But whether one is inside an agency or not, *someone* among us must do the often thankless and always challenging task of working productively with agency managers and developers – some of whom are distrustful of us and disdainful of the laws we are trying to help them comply with. But CRM simply cannot successfully function without someone among us being willing to do what it takes to *just work it out* on behalf of their client,[4] the compliance system, the public and the archaeological record.

As I also mentioned early on, we must constantly remember that public opinion matters

greatly. Our efforts to conserve the archaeological record for future generations will live or die by public opinion today and tomorrow. We *have* done much to educate the public since Lipe's (1974) seminal essay, but we clearly have much more work to do in this regard. As this story also shows, an educated public that is willing to speak out in defense of the archaeological record is perhaps our greatest political ally in securing a healthy and viable future for the archaeological record. ■

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Endnotes

1. The term "cultural resource management" as used herein implies a holistic concern for all historic and archaeological resources under the agency's charge, not unlike that presented by Hanks (2004) for the BLM. However, we all know that every agency's single greatest concern within this holistic perspective is compliance with Section 106 of the National Historic Preservation Act of 1966 (§106) or its state equivalent.

2. This site has been known by a number of names over the years (e.g., Mule Canyon Towers, Muley Towers, Seven Towers, and Cave Towers) and has received more than one permanent site number. The site consists primarily of the still-standing or collapsed remains of seven masonry towers located around a canyon-head pour-off that contains one of the better springs to be found on Cedar Mesa.

3. See also the "History" notes at the end of each section of U.C.A. Title 9, Chapter 8, Part 3.

4. Which includes by definition the agency for whom one is employed.

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The Past and Future of Cultural Resource Management Practice in Utah

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Engagement of the public in the practice of cultural resource management (CRM) has the potential to expand our understanding of archaeological heritage in Utah. While the professional CRM community tends to focus on documenting and protecting archaeological sites, incorporating a wider range of interests can enrich our practice, and enable us to return the value of these sites to the public. In this paper we examine the current practice of cultural resource management archaeology in the state, focusing on factors that have led to a good system for identifying sites that appears to be coupled with a poor system for assessing the values of these sites. We provide suggestions for changes to the structure of CRM practice and the approach which could lead to a better assessment of the value of archaeology for Utah.

Introduction

We believe that cultural resource management (CRM) practice within regulatory frameworks in Utah could produce more meaningful cultural knowledge and preserve more effectively Utah's archaeological heritage if our professional community placed more emphasis on public engagement. As scientists who have spent most of our careers working in this field in multiple states, we have observed that much of CRM-driven archaeology in Utah is geared towards documenting and protecting archaeological sites. Incorporating the interests of the public in the identification and evaluation of their heritage needs should receive greater attention in the practice of CRM, and the value of these sites should be returned to the public. Below we examine the current practice of cultural resource management archaeology in the state, focusing on factors that have led to a good system for identifying sites that appears to be coupled with a poor system for assessing the values of these sites. We provide suggestions for changes to the structure of CRM practice and an approach which could lead to a better assessment of the value of archaeology for Utah.

Since the passage of the National Historic Preservation Act in 1966 and the subsequent Utah Antiquities Act (Utah Code 9-8-404), the number of archaeologists working to identify, evaluate, and take into account Utah's archaeological heritage has grown tremendously. Our ability to find and document Utah's rich archaeological record has also grown exponentially, and substantial progress has been made in ensuring that archaeological sites are present for future generations.

Over the last 20 years in particular, CRM archaeology in Utah has settled into paradigmatic practice. Like in nearly every other state, the past two decades have seen significant increases in the number of archaeologists practicing in federal and state agencies, and the consulting industry has developed accordingly to respond to the needs of cultural resource regulatory compliance. As a result, every year thousands of archaeological sites are recorded in Utah. Prior to 1966, hundreds of these sites would have simply been destroyed in the course of development, but similar sites are now often easily avoided through routine compliance with federal and state law. These laws are critical to the preservation of cultural heritage, as is the hard work done by the archaeological professionals working in state agencies, federal agencies, and private consulting firms across Utah.

Documentation and preservation of Utah archaeology is clearly a valuable practice. However, there are further steps that can be taken in the production of meaningful knowledge about the past. We question whether the growth in number of CRM practitioners in Utah over the last 20 years has returned a proportional amount of archaeological heritage to the public. Cultural resource management laws were initially developed to manage *heritage*, which only exists through a consideration of shared cultural values. Heritage sites, whether they are buildings, landscapes, traditional cultural places, or archaeological sites, have been protected by law because they are valued by the public. Consequently, it is assumed the public is generally in favor of the financial implications associated with addressing these resources during project development—much in the same way that the public is willing to shoulder the costs of safety enforcement, environmental considerations, and other protected values.

As professionals engaged in the "business" of archaeology, we find ourselves writing this essay during the worst economic downturn in recent history. The practice of CRM is influenced by the state of the economy. In times such as these, the public, as well as policy makers, increasingly weigh costs and calculate whether the return on investment is reasonable. Ultimately arguments over whether or not to protect sites center on assessing the values and returns of heritage management to the public. The debates that have erupted in recent years over projects such as the West Tavaputs gas development project or over increased protection for archaeological sites on Cedar Mesa in agency resource management plans have necessitated a discussion of values. What sites are worth protecting? How should we weigh archaeological protection efforts against other kinds of resources? We fear there is a growing disjuncture between how funds are spent in the execution of cultural resource management and the return that the public sees for protection of their heritage. The resolution of these concerns is important to the future of viable cultural resource management practice in Utah.

In this essay, we will broadly discuss the relationship between CRM practice and public heritage values in Utah. Although archaeology is admittedly only one component of cultural heritage, this essay will concentrate on historic and prehistoric archaeological resources. We will first discuss the current state of CRM in Utah, focusing primarily on what we view as challenges in our practice. We argue that a lack of effective broad-scale input, involving both non-CRM archaeologists and the general public, is reducing the effectiveness of CRM archaeology and contributing to growing challenges to the preservation of archaeological heritage. We conclude with general and specific suggestions for making CRM archaeology a meaningful and viable enterprise in Utah in the years to come.

"We have no friends" – Archaeological Heritage Management in Utah *Today*

During the state legislative sessions of 2005 and 2006, attempts were made to radically alter the Utah Antiquities Code and to reduce the amount of protection it afforded to archaeological sites. Significant changes were made, such as transferring authority for state archaeological permitting from the Division of State History to the Public Lands Policy Coordination Office. The position of "State Archaeologist" was also removed from state code. Other more drastic changes were averted, and in some ways the code was ultimately strengthened. However, during the course of the debate, Wilson Martin, the State Historic Preservation Officer, said that as he and the director of the Division of State History, Phil Notarianni, attempted to fend off the changes, they went looking for allies in other state agencies and among state legislators and "we found we didn't have any friends" (personal communication, Martin to Seddon, 2006).

We believe this statement captures a troubling aspect of CRM archaeology in Utah today: it is a practice by archaeologists for archaeologists. This apparent lack of integration into the broader

community discourse surrounding resource management exacerbates the loss of support in the public sphere. Our perceived reluctance as a professional community to value broader opinions has consequences: despite a strong interest in archaeological heritage, the public perceives that archaeological resources receive special (and undeserved) treatment. We believe that this lack of integration has several specific characteristics that merit individual discussion.

Academic and CRM Archaeology

It is our observation that the practice of consulting archaeology in Utah is not as closely tied to local academic departments as in other states. The nascent CRM program at Utah State University and the Brigham Young University Office of Public Archaeology are notable exceptions, both being driven by committed professionals. Yet overall, it seems that academic and CRM communities lack an overarching collaborative framework. We do not see an overwhelming number of academic Utah archaeologists participating in professional forums, utilizing CRM-generated data, or engaging in policy discussions. CRM archaeologists do not often consult academic archaeologists concerning research questions and design. While the CRM-academia divide is not unique to our state, Utah appears to suffer from it. In Arizona, for example, close research collaboration exists between the anthropology departments of the three state universities and local CRM firms, which are heavily staffed with graduates of the universities' MA and PhD programs.

Greater collaboration would enhance the ability of the archaeological community to define its own values. Local professional discourse concerning what the overarching and critical prehistoric research questions are or ought to be, and appropriate methods and theories for addressing them, would be extremely valuable to CRM practices, as would the identification of competing theories that could be tested by a broad community of research practitioners. There is no program of academic historical archaeology in Utah, despite the fact that well over half of the resources now recorded fall into this category. Utah's academic institutions need to realize that many of their graduates will work in CRM archaeology and therefore close ties with CRM practitioners will benefit their programs. CRM professionals need to realize that research-driven archaeology and theoretical developments in the academy will strengthen their own approaches.

Within our regulatory environment, consulting archaeologists currently record anything that falls into the category of "cultural and old" because it might be important under a guiding research framework that does not seem to exist. Many of these recorded sites are suggested to be eligible to the National Register, even in the absence of discourse in the professional community concerning what constitutes valuable research topics. Lacking an overarching framework or a field of agreed-upon research issues and questions, agencies and thus consultants record and protect sites and resources in idiosyncratic ways. Better integration of academic archaeology--the source of theory and synthesis--into CRM research frameworks is desperately needed. Academic archaeologists need to explicitly recognize the value of CRM data production and the probability that their students are likely to work in CRM. Archaeologists working in CRM need to consider ways to integrate academics into their overall research approach.

Public Input

The implementing regulations for the National Historic Preservation Act require the involvement of the public in decision making (cf. 36 C.F.R. §§ 800.3(e), 800.3(f), 800.4(a)(3), 800.4(d)(1), 800.5(c), 800.6(a), 800.6(a)(4)). These regulations are rather specific; they require an agency to have a "plan to involve the public," to identify consulting parties "and invite them to participate" in the process, to "seek information, as appropriate, from consulting parties, and other individuals and organizations

likely to have knowledge of, or concerns with, historic properties in the area" of a project, and to allow these parties to participate in eligibility determinations and negotiations of mitigation. In other words, the regulations specify that the general public receive as much of an opportunity to comment and provide input as tribes or the SHPO. Nevertheless, in most federal undertakings in Utah the public is not consulted at all. With a few notable exceptions (such as the public consultation on the Milford Flat Fire Cultural Resources Survey or the belated invitation of consulting parties on the West Tavaputs project), even when the public is consulted they are often not provided with a context for their input. Often, the only public scoping with respect to archaeology occurs under the auspices of the National Environmental Policy Act (NEPA). In this context, there are opportunities to comment on cultural resources, but the undertaking itself is naturally the focus. Heightened discourse concerning cultural resources in the NEPA scoping process may occur when the area is particularly visible to the public (e.g. Nine Mile Canyon), but little discourse is invited and generated concerning the more common archaeological resources—which make up most of our work.

This failure to solicit public input has consequences beyond violating the letter of regulations. Without a sense of what is truly valuable to the Utah public about regional history, we risk expending considerable effort and financial resources on marginal concerns and missing opportunities to contribute meaningfully to knowledge. Does the public know how much time and money is spent recording historic can scatters? Would they feel that was a sensible expenditure when legal obligations under Section 106 could be met with a different approach that generated different knowledge about the past? Because agency and consulting archeologists largely do not know what the public considers valuable material elements of their heritage, the direction of our efforts can be viewed as suspect. Despite our efforts to preserve every site for future generations, the public does not see the CRM community as representing their values.

Because of requirements regarding Native American consultation under the 36 C.F.R. § 800 regulations, and legal cases centering on these regulations, federal and state agencies have become more aware of the need to solicit input from tribal communities and to incorporate this input into the project consideration process. However, in the vast majority of cases, consultation consists of a letter request for information and a follow-up phone call. Does this common method truly seek input on heritage values for the tribe in question? While input from tribes is sought more regularly than input from the general public, rarely does this consultation seek to identify cultural values and incorporate them in a meaningful manner into research design and data collection. How often do survey designs incorporate Native American input? How often are the cultural values of an affiliated tribal community mentioned in eligibility justifications? Just as seeking broad public input has the potential to make CRM practice more valuable, a commitment to greater cultural understanding with respect to tribal communities will ultimately render the information we generate more meaningful.

Where Are We Now?

Tremendous gains have been made over the last 20 years in the identification and preservation of archaeological sites in Utah. Given this, we suggest that we are in an excellent position to begin a more critical examination of what we are choosing to preserve, and why. CRM practitioners, academic archaeologists, Native Americans, policy makers, and the public as a whole have interests and values concerning Utah heritage that could inform and shape the decisions we make concerning these resources.

As CRM practitioners, we believe that overarching research questions, theoretical frameworks, hypothesis testing, and a clear understanding of public values should drive our

work. Funding for archaeological research that is made available as a result of the National Historic Preservation Act should be guided by broadly informed research frameworks and value-driven questions, particularly in an economic downturn when project funding is subject to intense public scrutiny. Without some consideration of our accountability to public heritage values, we are vulnerable to political attacks concerning expenditure of resources.

Towards a Value-Driven CRM Archaeology

The public clearly values archaeology and turns out in droves to learn about the past. The implementing regulations for the National Historic Preservation Act provide us with all the procedural means we need to better assess values, better relate to the public, and produce an archaeology that is relevant and engaged with current public policy.

To be clear, we do not mean to imply by our argument here that only public values should be considered in CRM archaeology or that the role of professional archaeologists in determining how to identify and evaluate archaeological resources and mitigate effects to those resources should be eliminated. We are the professionals, we have the training, and we understand aspects of archaeological resources (the cumulative value of data, the way our methods improve over time, the way statistical analysis yields results, etc.) that the general public generally does not understand. The public expects us to, and we should rightly, be a strong and major voice in the management of archaeological resources. Furthermore, it is conceivable that some public interests could not be identified or explored in the archaeological record. Any person who works with the public can attest that some members of the public have odd ideas about what archaeology might be able to say about the past. We are not arguing that the general public should replace professional archaeologists within CRM archaeology. Rather, we feel that archaeologists should be making a more systematic and consistent effort to talk to the general public and to utilize the interests and values of the public in shaping our practice where feasible and appropriate.

Ideally, we need formal mechanisms whereby archaeologists fully consider the interests of the public and simultaneously defend archaeological interests and educate the public. On the Milford Flat Fire project, for example, members of the general public (such as representatives of the Utah Rock Art Research Association and the Great Basin Heritage Area) were brought directly into meetings where the potential eligibility of specific sites in the project area were openly debated amongst agency archaeologists, consultants, and the public. During these meetings we archaeologists were often forced to explain our evaluations of sites, and the public also had an opportunity to indicate that they were concerned about some of the types of sites (historic sites in particular) that were frequently found not eligible to the National Register. We learned, for instance, that the Great Basin Heritage Area representatives were very interested in any historical archaeological sites that could illustrate the settlement of the area, and we therefore afforded more attention to sites with such potential. The archaeologists made minor adjustments to their approach and the public both learned from the project and extended endorsement to the decisions.

The Milford Flat Fire project, while an example of successful integration of public input, is also a unique example, and one that was highly intensive in terms of time commitment by all parties. We suggest that we need to develop a combination of tools for involving the public and considering their input that can balance the need for this input and endorsement in a reasonable manner with the cost of doing so. The development of better mechanisms for internal dialogue and explicit changes to standard CRM practice that will acknowledge the value of meaningful public input may well create positive changes at a time when we may increasingly need friends outside of our professional community. To conclude this

essay, we have suggested some avenues for the future of CRM in Utah.

Develop Community and Context

Formal mechanisms for integrating the archaeological community and the public have great potential to increase discourse and reach common understandings of what we value. For example, interagency and legislative mechanisms could be drawn upon to create a CRM advisory board. The board could consist of a rotating group of agency archaeologists, academics, members of the public, tribes, and the SHPO. We suggest that ideally the board would be legislatively designated and that the SHPO be required to consider board recommendations in evaluating consultation requests (thus providing authority to the board without usurping the role of agency regulators or the SHPO). The mission of the board would be to develop an overarching vision for key issues in Utah archaeology. Funding for such a body could come from the legislature or a number of public and private sources, particularly if the mission of the group is to provide meaningful solutions to problems recognized by a broader public. By including members of the public as well as academic researchers, face-to-face discussion and dialogue regarding archaeological issues and values would be increased. Increasing dialogue and generating responsive solutions to certain tangible concerns has significant value to CRM businesses and the public. Issues that could benefit from the work of such an advisory board include:

- **Developing research contexts for key geographic areas and resource types.** Contexts developed with broad input from academics, CRM practitioners, the public, and tribal communities will yield meaningful insights that may lead to greater public support. Currently, a number of states have developed contexts for both areas and resource types. These serve as useful guidance for identifying and evaluating resources. We suggest that as much as they are used as vehicles for summarizing past archaeological research and future research needs, that the contexts explicitly include relevant input from the public. Archaeologists should be able to translate reasonable public research interests into research goals. We may not be able to find Atlantis, but we may be able to answer other questions the public might have that we may never think of on our own.

- **Providing research and guidance on "troublesome" CRM-specific issues**. What are the effects of chaining and other vegetation treatment activities on sites and are there any better approaches to cultural resource management in these situations? Do seismic exploration projects have adverse effects on all archaeological sites? What types of indirect effects to sites can occur from creation of new roads and new access into areas?

- **Defining key resource issues and common archaeological goals**. Are there resources that are receiving disproportionate attention and level of detail in their recording? What are the key data gaps in our understanding of the past, and how can we better fill those gaps?

- **Defining appropriate sampling strategies and identification efforts**. Does the professional community need to revisit the blanket application of 15-meter transect intervals? Are we missing important resources by not including subsurface testing in our inventory efforts?

Incorporate Public Values in CRM Practice

We believe relatively minor changes in CRM practice could have revolutionary effects in assessing and responding to public values of heritage resources. Existing regulations provide ample guidance for the assessment of public values in the Section 106 process. Strategies to achieve this outcome can include:

- **Undertaking open-ended public dialogue on archaeological values**. Some large federal agencies undertake general, on-going, and non-specific dialogue with Native American tribes regarding their interests, concerns, and values. A similar effort could be directed at the general public and would meet the requirements

of 36 C.F.R. § 800.3(e) to have a plan to involve the public. This may be an arena where the SHPO, with their broad mandate to represent the interests of the State and its citizens, could provide leadership. This dialogue could take the form of annual (or biannual) meetings in different parts of the state, where the public is invited to come and offer their views on what they want to learn and gain from the past in their area. The public could also be invited to provide information on what types of specific projects, or what specific project locations, they would like to be further consulted about. If coordinated with federal agencies and with their involvement, such meetings could serve the purpose of public input for many subsequent smaller projects. In other words, rather than attempting to undertake case-by-case consultation for small projects, they would utilize periodic broad-based meetings for such input. In such a manner, agencies would comply with the requirements of the regulations and, in many cases, get better information about public concerns than can be obtained in the heat of a specific project.

- **Considering public input part of the background research for larger or more complex projects.** Soliciting public input during the literature and file search phase of larger and/or more complex projects could become a part of this preliminary information-gathering process. While such work would be unwieldy for the multitude of smaller projects around the state, it would be directly relevant for large scale projects, complex projects, or projects in sensitive resource areas. Currently, agencies tend to consider the very open-ended input taken in the NEPA process (e.g. "Do you have any concerns?") to meet this need. However, this input is generally so broad and the questions so general that we believe that the public is frequently unaware they are being solicited for cultural resource information. Considering the public a direct source of background information rather than simply a box to be checked off will better meet the requirements of the regulations for cultural resources and should produce better information. We recommend very direct and targeted questions: "Do you know of any historical or archaeological resources in this area?" "What parts of your past do you value, and are they represented in this project area?" "What things about the past would you like to learn?"

- **Ensuring return to the public.** We believe that all CRM practitioners would agree that projects that have a public outreach or public archaeology product are the exception rather than the rule. While we do not suggest that every minor project or every small scale or negligible adverse effect should result in an enormous expense, we do believe that any mitigation project of any scope should expect to include public returns as part of the mitigation. If public input into the project has been sufficient, the public output should be clear; consulting parties should have been involved, conveyed their interests, and offered potential mitigation strategies. We hesitate to prescribe specific public output products because, in fact, we believe that these products should emerge from the enhanced public involvement we are advocating. We can provide much more meaningful value to the public when we know what they want from talking to them, rather than from sitting around trying to imagine what they would want.

Conclusion: Drive our Practice with Values, Including Public Values

Ultimately, we advocate a shift in CRM practice that involves a stronger focus on heritage and values. As professional archaeologists, we carry the responsibility of communicating information about the past in a meaningful way to both our professional community and the public. In order for us to practice a value-driven CRM that truly incorporates shared notions of heritage, we have to solicit information and then allow those values

to shape our practice. Research designs, contexts, sampling strategies, recording methods, eligibility determinations, and mitigation strategies may be influenced and shaped by public values. If the public wants to know something about the past, our research designs should include those questions. If the public does not value a particular resource type (historic can scatters, non-diagnostic lithic scatters) we need to be able to clearly articulate its value to the discipline in terms they can understand and appreciate. Being accountable in this manner will help ensure that we develop defensible, scientific, and valuable research aims and goals.

What we advocate overall is a different approach. Currently, CRM practice in Utah consists of archaeologists talking to other archaeologists about how to approach a project. This has resulted in good identification of old resources and generally high levels of preservation. We don't mean to disparage the hard work to date. However, we are worried about the growing disconnect between CRM archaeologists and academic archaeologists and all archaeologists and the public. We feel the best way to solve this problem is to involve the public, in appropriate and scaled manners, as meaningful partners in the identification, evaluation, and mitigation of resources. If we can consider public values in a meaningful and recognized way, we will ensure public support for CRM and archaeology long into the future.

The last 20 years of CRM archaeology in Utah have seen significant growth in numbers of practicing archaeologists and the preservation of archaeological resources. One goal for the next 20 years could be to take what we have learned and better define our values, and open our community to include the public. If the public has participated in shaping CRM practices, we can engage in public policy discussions with greater confidence in our representation of everyone's interests. ■

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Archaeology's Bottom Line: Making It Mean Something

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As archaeologists, we need to do better in fulfilling our commitment to cultural resources, to the public, and to each other. The archaeological community in general has diversified into a triad of professional subgroups: agency archaeologists, academicians, and consultants. These subgroups often have conflicting priorities and allegiances. While public curiosity about archaeology remains high, our collective influence in cultural resource protection and research is eroding. We need a return to earlier joint efforts to promote archaeology to the public, to agencies, and to clients. We also need to better support each other through more effective data sharing and use. Our bottom line should always be to make archaeology important to everyone, to make it mean something.

I often wonder if archaeology matters. Well, of course it matters, at least to the typical reader of *Utah Archaeology*. But are we making archaeology *mean something* to each other and, more importantly, to the public?

The archaeological community in Utah deserves a pat on the back. Despite political, economic, and other crises, the dedication of many professionals and avocationalists has pushed us forward. But we continue to be dogged by outside attitudes that are hard to change, questions that are sometimes difficult to answer, and challenges to professional ethics. A client, a supervisor, an agency head, a politician, or a proverbial man on the street asks why: Why do they have to pay for *this* survey? Why dig *that* site? Why does archaeology always get in the way? Why does it cost so much? Why don't we hear more about what is found and what it means?

I suggest that we need to do better. By taking that stance, the rest of this essay may come across as negative, even critical, but that is not my intent or my feeling in general. Much good has been and continues to be done. Rather, the perspective I take and the suggestions I make are directed toward a few procedural matters that all of us can work on. They come from a CRM and, more specifically, a contract archaeology viewpoint. Hence they may be naïve in many respects and circumstances, but I believe they are honestly shared by others and so are worthy of consideration. I propose that we redouble our efforts to make archaeology mean something.

Where We Were

Those who were around in the 1960s and 1970s, during the transition phase from archaeology that was primarily university-sponsored to archaeology that is compliance-driven, might pine for the old days when everyone who cared about archaeology knew or knew of everybody else. It was a small clique, a ragtag group of men and women who often sacrificed body and soul for a potsherd, a bone, or a broken point (and this is not just hyperbole!). As a group, they built the case for quality efforts at research and preservation. Back then, everyone had a copy of everything everybody else had ever written. They knew what work had been done, where it had been done, and by whom.

The 1980s were a learning period for archaeologists in Utah—learning to mesh the idealism of the past with the regulatory structure of the (then) present. The oneness of the past now became three in something of a social hierarchy—the distant university crowd, the up-start government agents, and the lowly

contractors. Yet the archaeological pool remained relatively small, and data generally continued to spread to those who were interested. There was public interest and excitement for this coordinated effort. Things were being done and things were being learned! UPAC was formed. Everyone still knew almost everyone else and the goals of quality research held sway, no matter whether one worked in contracting, agency oversight, or teaching. A new site form (IMACS) was created that had the potential to actually make the site data useful, to mean something. *Antiquities Section Selected Papers*, and then *Utah Archaeology*, began with the hope of providing new avenues for data dissemination. Making archaeology mean something to everyone was no longer an ideal, but rather a program starting to take shape. Compliance work was beginning to prove a useful endeavor, providing valuable information to researchers on an unprecedented scale. True, mistakes and shortcomings were common: opportunities were missed, important data were lost, and excavations of important sites were carried out with limited or sometimes no resulting publication of the data. But the overall momentum was forward.

Where We Are

How far have we come? The presentation of papers at UPAC meetings, regional and national conferences, and data dissemination in *Utah Archaeology* and elsewhere continues to provide encouraging signs of a commitment to learning and sharing what has been learned, at least to some degree and among a certain percentage of professionals. But there are many more professionals working in the state than there were 20 or 30 years ago, and the relatively small increase in data presentation seems well out of proportion to the increased professional presence and the amount of research and field work that is being done!

Professional sharing of data, on the surface, may seem a relatively minor issue in the murky quagmire within which archaeology now operates. Media coverage of occasional finds is good for a quick sound bite, stirring public interest, but it is quickly forgotten. Public events such as Prehistory Week or museum displays or lectures from classrooms to libraries and beyond continue to draw interested public while USAS, URARA and other groups actively promote and encourage public understanding. Yet the influence of public and private interests increasingly intimidates those who are supposed to be the watchdogs of the public trust; state politicians rewrite preservation laws and reorganize oversight agencies with seemingly little regard for protection of that trust, and federal agencies with no overt involvement in cultural resource protection usurp the power of those who do. Inter- and intra-agency squabbling often reveals where current priorities lie and how far the influence of cultural resources has fallen. Indeed, the voices for and influence of archaeology in some state and federal agencies increasingly seem token at best. There appears to be a general erosion of archaeologists' influence in the politico-bureaucratic spectrum, despite continued public interest.

Where we are today is a reflection of who we are. In the last two decades the distance between the triad of archaeological professionals has in some respects widened and compartmentalized. No longer does everyone know everyone else, and relatively few are conscious of the wide range of past and current projects. Contract archaeologists provide the labor force for compliance-related work and are by far the largest populace and producer of data relevant to learning. Some come and go in relatively rapid succession, and it is probably a sizeable understatement to say that the overall quality of contract work is highly variable. State and federal agencies are the guardians of that data and the producers of guidelines, rules and regulations; most are greatly caring and try to act as facilitators to other archaeologists, while outliers range from some who seem to no longer care to a few with seemingly monarchal tendencies. Universities house only a handful of scholars, those who (hopefully) continue to remind us of why we do what we do, and who

(hopefully) teach us the best ways to do it by word and example, with open minds and without regard for ego or tenure.

We Must Do Better

We seem to be focusing more on form and less on substance. I doubt many of us would want to return to the "old way" of doing things, and so we adapt as necessary to the "new way" that is currently in vogue. But at what cost? Has our commitment to the resource become secondary? If new ways of doing things devalue the resource in any way, we should not be doing them! Let's break the triad down.

The Bureaucratization of Archaeology

The CRM supervisory table is getting pretty full, what with (please excuse the use of acronyms) USHPO/Antiquities, ACHP, PLPCO, UDOT, USITLA, BLM (with its various subunits), USFS (similarly subdivided), NPS, BOR, NRCS, and a bunch of others. In the last two decades archaeology has become fully bureaucratized, each agency its own clan with a separate infrastructure, initiation rites, and agenda. As entities are added to this long train of bureaucracy, as additional layers of regulation and oversight/consultation are piled on, and as evolving interpretations/applications of Section 106, NAGPRA, TCPs, and a host of others cloud the air, it feels like a long train slowly grinding to a halt as it struggles to climb a mountain. *Who is in charge?* We seem to have defaulted to a "leadership-by-committee" approach that is faltering, and when synergism does occur it is not always on the side of objectivity, fairness, and professional priorities. With bureaucracy comes entrenchment and compromise, hard pills to swallow when the fate of irreplaceable, non-renewable resources are on the line. Perhaps it is just a perception issue, but increasingly archaeology seems to be drawing the short straw in the on-going game of power and influence. Despite the dedication and efforts of most, agency archaeologists must do better.

Realistically, the committee approach is not going to change in the foreseeable future; the time of the archaeological "czar" is past. But will someone please take charge? Agency archaeologists, it is time to get everyone to the table and come up with a plan for strengthening the position of cultural resources in agency decisions. The rest of us depend on you as the voice—usually the only voice—to speak out in defense of the resource in agency decisions. Compromise may be a fact of life in your situation, but compromise usually sets a precedent. The downward slide of cultural resources' influence in many agency decisions suggests that too many of those compromises have not favored archaeology and that the resulting precedents will continue to diminish that influence. Can you, as a regulatory group, put aside personal and agency turf concerns and egos? Can you be the colleague and ally of the contractors and academicians, and trust and encourage them in method and process? Can you avoid playing the power game by not pushing your own agenda and research strategy (and sometimes conclusions) upon them? Can you form a unified front in applying the laws and regulations to *your own* agencies, in the face of efforts to compromise on protecting cultural resources?

Academia and Setting the Bar High

We come from diverse backgrounds, schools of thought, and experiences, but most of us crawled out of the same generic primordial soup called academia. Many academicians, though certainly not all, have remained somewhat aloof from much of the dirt and grind of CRM, but fortunately are still deeply concerned about the future of archaeology. Yet incomprehensibly there is also a disturbing trend of students graduating with little or even no field experience! In our online world, the skills of reading a map, using a compass, walking a straight survey line, thoroughly documenting sites, and taking appropriate notes (not to mention the art of using a trowel) are

easily lost. This translates into future contractors, agency archaeologists and, yes, academicians who can pontificate on theory yet have little practical concept of what most archaeologists do or how to do it. Sometimes this 'mental exercise-only' diet seems paradigmatically myopic, with little consideration of cutting-edge theory and methods elsewhere in the real world. Is the role of academia to simply take our tuition, blanket us with the basics, inculcate us with a particular paradigm, and then show us the door? Academicians must do better.

Like it or not, academia is the conscience of and, by and large, the voice for archaeology to the public. It is not hobbled by client or agency agendas and is therefore in an opportune spot to take the lead as an advocate for cultural resources. We expect our colleges and universities to set the standard for excellence in research, to be critical of their own paradigms, to consider new perspectives and apply new cutting-edge methods, to teach students to think critically for themselves and not just spoon-feed them a particular world view, and overall to set a high bar for the rest of us. Academic archaeologists: Are you getting the students' hands dirty, giving them practical and extensive field experience beyond the one- or two-day field trip? Are your field schools and lab classes methodologically up to par? Are you widely publishing the results of those field schools? Are you the first to insist on quality work, to demand the best out of agency archaeologists and contractors, and to lead by example? Are your 'research projects' producing anything besides tenure-applicable articles slightly reworked to fit multiple publishing formats, and hence giving the illusion of prolificacy? Can you be proactive in advocating archaeology in the face of public and private indifference or even hostility?

Contracting and the Bottom Line

It used to be that students who wanted to be archaeologists accepted that they would be forever poor, but at least happy in what they were doing; those who couldn't moved on to law school. No longer. Archaeological contracting is a business *par excellence*, and there are a lot of folks making a living at it, although few of them are rich. Indeed, lacking the job security that agency and academic archaeologists have, being successful at contracting is very important. For many the financial bottom line is make-or-break, with those contractors perpetually stuck in the frustrating cycle of "lowest bid" archaeology–fast and cheap. Other archaeologists are a small cog in a big environmental firm with its own internal politics and pressure on the bottom line. Critical thinking too often suffers, and boiler-plated technical reports are often cranked out faster than diplomas for an online medical school in Tijuana. But boiler plating contributes nothing. Failing to produce well thought-out and detailed final reports contributes nothing. True, many smaller projects are contributive only relative to the incremental increase in lands inventoried and sites recorded. But too many medium-sized and even larger projects are described only in the grayest of literature and lack the thought and effort the projects deserve. If our goal is Section 106 compliance and nothing else, we are shortchanging the resource, the public, and our profession. Contractors must do better.

With so many masters to serve, too many administrative hoops to jump through, and frighteningly thin budgets, there seems to be an inclination for many contract archaeologists to set the production bar very low. This cannot be. Contractors are the voice for archaeology to developers and other clients, those whose actions can affect the resources most directly and who, not surprisingly, usually have the most misgivings and even bitterness about having to do archaeology in the first place. They usually have the most direct and current access to new data. Contractors (and I include myself in this) must look beyond the financial bottom line and the temptation to devalue the resource. Are we proper advocates for the resource to the agency as well as to the client? Are we the most prolific in raising questions and issues that need to be addressed in protecting sites and data? Are we the

first and best ally to the agency archaeologist in demonstrating to agencies why archaeology is so important, and that it need not be a hindrance? Are we the first and best ally to the academicians in translating both old and new ideas and paradigms into productive, on-the-ground research questions, critiques, and studies? Can we avoid the boiler plate, particularly with regard to the assumptions and logic of the arguments we make? Are our efforts and our conclusions contributive?

Making It Mean Something More

Since *Utah Archaeology* began publication, the ideals and excitement of moving forward, of learning things, and of saving our past, seem to have drifted. Our compartmentalization of jobs has facilitated this drift with often conflicting loyalties and agendas. Perhaps this is the reality of archaeology in the twenty-first century. Perhaps "compromise" is the order of the day. But in the rush to compromise and be a good team player in some larger agenda, we cannot forget that the precedents we set now last long after our terms have expired. Archaeological sites are a diminishing resource no matter what decisions we make or agendas we follow in our respective careers. Either we save the resource and/or the data from it, or we allow it to be destroyed. Compromises on site "significance," on how much work to do at a site (if at all), and on how much protection a site deserves (if any), are simply a reflection of how much we as professionals value the individual bits and pieces of knowledge left to us by the quirks of fate—and on how much we think future archaeologists and the public will value those rare fragments of the past.

Our Responsibility to Archaeology

We are failing to properly share. New data is the fuel that keeps us moving forward, but we are often very wasteful of that rare, precious data. Word of mouth often reaches us of important sites, features, or artifacts that were found, yet we never hear more of it. An occasional site form pops up in a literature search with important data that all should know of but never will. The public brings intriguing artifacts to us for identification, sometimes with excellent provenience information, yet our focus is on condemning the finder rather than sharing with others what is found. We sometimes glean significant historical facts from obscure records unknown to the professional community, but then keep it buried in another gray literature report. These and other types of information could alter our current or future research questions and emphases, and so deserve wider distribution. But demanding schedules and priorities, hesitancy with the effort required for peer-reviewed publication, or perhaps just laziness prevent these data from ever seeing the light of day. We need an easy outlet to report these data.

We also all need more ready access to reports containing important comparative data, such as detailed artifact or other analyses, radiocarbon dates, geomorphology, botanical, or other studies. Technical reports may fulfill the requirements of Section 106, but for many projects they are inadequate for data dissemination. Preliminary reports are fine, but they should never fill in for final, synthetic reports. Papers and posters at a conference are good, but distribution of the paper/data to others is best. Broad treatises are interesting, but defining assumptions and methodological approaches and then showing us the hard data that the conclusions are based upon—so that we can judge for ourselves—is what separates science from fiction. And when we elect to preserve knowledge through survey and excavation but then bury that knowledge in the cemetery of gray literature or, worse, a file drawer to be purged only upon our retirement or death, only rarely is it ever exhumed. If every archaeologist in every CRM firm, every department, every agency, and every university takes responsibility for getting the results of their work out to each other we can move forward. Our combined "ponds" of datasets and information become an ever-expanding "lake" of knowledge. For example:

1. *Codify report standards into permit requirements, defining professional and/or private publication responsibilities*. Gray literature still has a place; we don't need access to every drill pad report. We should at least, however, expect to have better access to field reports where significant data recovery has occurred.

2. *Better distribution of published, peer-reviewed reports*. The occasional larger project reports are not making it out to everybody.

3. *An online Clearinghouse of reports*. This would provide easier access to the bulk of important non-peer reviewed, non-published data (gray literature or other data sitting in our file drawers) that may still be useful to researchers or other professionals. It could be an outlet for quick reporting of occasional finds, one that can point other researchers in the right direction of where to learn more.

4. *Lobby for increased funding of State History's expansion of online capabilities*. This is a logical home base for a Clearinghouse.

5. *Avoid the trap of thinking our data is not important enough and/or that the results are non-contributive*. Reports don't necessarily need to come up with amazing new insights and discoveries, or change long-held ideas, but they should be well thought out and plow deeper to address current issues.

Our Responsibility to the Public

What we share with the public—our constituency—must take a different form. Our "product" is knowledge. Knowledge does not begin in the classroom, on the museum shelf, or in front of the occasional camera. Knowledge begins with a well-thought-out research design and plan and takes its first steps when boots hit the ground or a shovel is stuck in the ground. Knowledge grows and spreads when we help our agency supervisors, our clients, our students, and the public see that archaeology does in fact produce a valuable and visible product. It spreads when we can point to studies that make our point–that irreplaceable pieces of the past deserve fair consideration for protection, equal with other non-renewable resources and certainly equal to, if not much greater than, the monetary or political value (or lack thereof) currently attributed to archaeology by those in power. We need to return advocacy to the public by getting the data back into the public hands, by writing to a broader audience in compelling ways, and then appealing to their concerns as owners of the cultural resources. Here are some ideas:

1. *Help the public understand the incremental nature of archaeology.* Many projects receive considerable local attention (stories in local newspapers, site visits by locals, etc). These should be used as opportunities for public education, with constant reminders that every piece of data is important, not just the pretty things that make the news.

2. *Avoid over-promoting.* Repetitive information from every little project might have a numbing effect that could be counterproductive. So also could the exaggeration or excessive hyping of particular sites, issues, or findings. Judicious sharing is best. There are many things the public (and sometimes other professionals) do not need to know, especially things that might endanger cultural resources further.

3. *Give the public access to published data, but Clearinghouse data to professional researchers only.* Other public information outlets may be more appropriate for many, or even most, projects–local lectures or other programs, site tours, school booklets, news articles, or lay reports.

4. *Create a UPAC/USAS outreach committee.* Such a committee could help to a) develop public programs; b) provide occasional focused archaeology stories to local or regional media outlets, including online outlets; c) present a "This Year in Archaeology" media release highlighting interesting developments and emphasizing the importance of incremental, seemingly trivial data to the long-term record; d) offer awards for Excellence in Outreach by agency, CRM and research archaeology programs; e) offer awards for Excellence in Preservation by public and corporate groups; f) develop talking points that address common issues and prob-

lems agency officials face relative to cultural resources; f) recognize local or regional agencies/officials who are proactive in cultural resource protection and management programs.

An Archaeological Clearinghouse

The concept of a Clearinghouse as mentioned above has, I believe, particular merit. We need a return to the old days where everybody knows everything that is or has been done. *Utah Archaeology* should continue to be an outlet for descriptive summaries of sites or thought-provoking analyses or other discussions, but we need more and easier access to the greater bulk of data that is being acquired daily beyond digging it out through file searches. That Clearinghouse needs to be available in an easy-to-use format, and it needs to be searchable. By so doing, a functional bibliography of Utah-related archaeological work becomes available. The Clearinghouse could also eventually be expanded to include a library of data sets and perhaps photographs, figures, on-going research abstracts, or other similar resources to which researchers could turn.

Once such a Clearinghouse is in place, we each need to take the responsibility of using the data! We are pursuing patterned behavior at different scales across a broad spatiotemporal landscape. The incremental accumulation of data, no matter how trivial, fine-tunes our knowledge of those patterns and allows us to ask new questions or re-examine old questions and assumptions. We are writing a book focused on the human experience, and every project from the smallest site test to the largest excavation contributes a letter, word, sentence, or paragraph to that book.

In particular, a Clearinghouse will help us to recognize the larger data gaps in this book. I know of nothing that is certain in archaeology other than we know there were people who lived in the past. Everything about those people is up for grabs and subject to study. We will never lack for data gaps, but some are much more obvious than others. Having a state-mandated historic or prehistoric "context" for archaeology which spells out data gaps, as is common in other states, never happened in Utah. Perhaps that is for the best, because such contexts can come with assumptions and biases that are not always productive, and that could possibly even be counterproductive. Perhaps the "free market economy" of professional thought in Utah can converge upon the information in a vibrant Clearinghouse of data and provide fluid and ever-expanding research contexts for us to grasp.

New data provokes thought and can return some of the mystery, or "we-don't–know" feeling to archaeology. Every time a reporter calls, the honest answer to most questions is, "We don't know, but we are trying to find out." Every time a camera is put in our face, the message should be that valuable pieces of our history are tragically disappearing–because it is a tragedy! Every time our agency supervisor, or our client, complains about archaeology being an obstacle, the response should be that these are pieces of our individual, family, and community past; that since we know so little about any of those, every piece is important and unique and, as a whole, cultural resources are endangered! And if done with enough foresight and planning, rarely would archaeology be an obstacle or be negatively viewed. We should be able to point to lay volumes, teaching aids, lectures, and other efforts at data dissemination that show that those pieces of the past are important to the public. And knowledge about Utah history and prehistory—that which is being taught in the public schools daily—must be knowledge that is forever marked with an asterisk stating that archaeologists only have a glimpse into the past, that what is being taught is our best guess for the moment, and that knowing more depends on gathering every piece of the past that we can.

Conclusion

Most of us probably do not take the time to ponder our responsibilities as much as we should. I found this out when I looked up the Register of Professional Archaeologists (RPA) Code of Ethics and Standards of Research Performance and felt twinges of guilt about various things

I need to do better. Outlined there are the archaeologist's responsibilities to the public, to colleagues and students, and to employers and clients. For the latter, particularly relevant to most of us, those responsibilities include 1) respect the interests of her/his employer or client, *so far as it is consistent with* the public welfare and this Code and Standards; and 2) refusing to comply with any request or demand of an employer or client which conflicts with the Code and Standard (http://www.rpanet.org – italics added for emphasis). I think I like the Hippocratic Oath better, though, which includes the admonitions to "never do harm," and to "preserve the purity of . . . my arts" (http://en.wikipedia.org/wiki/Hippocratic_Oath), wonderful counsel for archaeologists. In a more modern version of that oath the commitment is also made to "respect the hard-won scientific gains of those….in whose steps I walk, and gladly share such knowledge as is mine with those who are to follow" (http://www.pbs.org/wgbh/nova/doctors/oath_modern). Wise words indeed!

Far too often we as professionals undervalue cultural resources. We can falter in our role as advocate for those resources as career or other pressures get in the way. Looking back over the last two or three decades, I am as guilty as any, perhaps more so in many regards. *We must do better!* The bottom line is not that the contractor made money on the project, or that the agency archaeologist was a good team player or advocate in pushing the agency's or his/her own agenda, or that the academician achieved tenure. The bottom line is whether or not 1) we have done proper justice in the field to protecting the resource whenever possible; 2) when protection is not possible or is otherwise not the selected option, we have done proper justice to the resource through quality data recovery and analysis, from the beginning research design to the ending conclusions; 3) the information we have obtained from whatever work we have done, or have oversight for, becomes readily available to other professionals; and 4) that information, properly screened of all the tedious and otherwise sensitive data, filters down to the public in an enticing and easy-to-read format. Caring about the past, we hope, then becomes part of everyone and our efforts begin to mean something. ∎

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