FARMING AT THE EDGE OF PARADISE: BASKETMAKER II EMERGENCE IN NEW MEXICO'S SAN JUAN BASIN

Leslie M. Sesler and Timothy D. Hovezak

ABSTRACT

The spread of agriculture onto the southern Colorado Plateau is inextricably linked to the early development of Ancestral Puebloan traditions. The archeological record of this vast region supports two major competing theories of the emergence of agriculture and attendant cultural changes: that of an immigrant maize farming culture, and the gradual assimilation of maize into the subsistence system of a resident Archaic population. That these two theories have survived side by side for a number of decades is a testament to the complexity and variability of the record, further suggesting that the transition to agriculture was not a unilineal phenomenon. Recent studies in northwest New Mexico's San Juan Basin provide an example of a transition with roots in the Archaic, and evidence of a possible antecedent to the better-known Basketmaker II occupations of the Durango, Colorado, area and Navajo Reservoir District in northwest New Mexico and southwest Colorado.

> It is ironic that the material discovered by Kidder, the initial proponent for the in situ evolution, is that most likely to be the result of a migration from elsewhere, and that the Durango material excavated by Morris and Burgh, the leading proponents for a migration, is most likely to have had a local antecedent.
>
> R. G. Matson 1991

INTRODUCTION

In the Pecos classification system, the Basketmaker II period is one of the key developments in the evolution of Ancestral Puebloan culture. Archeological remains defined as Basketmaker II occur throughout the southern Colorado Plateau and within a temporal framework of at least nine centuries. Given this long time span and large geographic area, it is reasonable to posit that multiple adaptations were employed, with varying degrees of success, and that more than one ethnic group may have been involved.

Significant differences between, as well as within, the various regional and temporal occupations defined as belonging to the Basketmaker II period have sparked controversy concerning the timing and processes that brought agriculture to the Colorado Plateau. This controversy has enshrouded Basketmaker II studies from the very beginning, when Morris and Burgh (1954) compared materials recovered from Talus Village near Durango,

Leslie M. Sesler ■ La Plata Archaeological Consultants, Box 41, Dolores, Colorado, 81323

Timothy D. Hovezak ■ P.O. Box 8, National Park Service, Mesa Verde National Park, Mesa Verde, CO 81330

Colorado, with those previously recovered by Kidder and Guernsey from sites in the Marsh Pass area of northeast Arizona (Guernsey 1931; Guernsey and Kidder 1921; Kidder and Guernsey 1919). Today, the meaning and significance of technological and stylistic differences in architecture and material culture, as well as the chronological underpinnings of these occupations, is framed by the hypothesis that some Basketmaker populations derive from San Pedro Cochise immigrants, whereas the Basketmaker variant of the Animas and San Juan river drainages developed from a resident Archaic tradition (Charles and Cole 2006; Matson 1991, 2006).

This article addresses the initial development of Basketmaker II peoples living to the east of the Chuska Mountains, at the New Mexico-Arizona border, and north to the Durango, Colorado, area, as currently defined in the archeological record (Cole, this volume: Figure 1). The record has become increasingly complex in recent years, but now offers the opportunity to explain how Late Archaic peoples with limited maize agriculture living along the San Juan River and its tributaries may have evolved into the classic Basketmaker II occupations that have been defined in the Durango, Colorado, area (Morris and Burgh 1954) and in the San Juan Basin of northwest New Mexico (Eddy 1961, 1966).

ARCHAEOLOGICAL BACKGROUND

Recent advances in chronometric resolution have helped to clarify that the Basketmaker II occupations in the upper San Juan drainage system are not completely contemporaneous, but instead offer the likelihood of temporal and cultural continuity among different geographic areas.

Earl Morris and Robert Burgh's early excavations at the Falls Creek shelters and Talus Village near Durango proved rich sources of information on the eastern Basketmaker II, and remain among the earliest tree-ring dated sites in North America. The tree-ring dates and radiocarbon dating of maize macrofossils from these sites identifies a lengthy early agricultural occupation in the Durango area, beginning in the third or fourth century B.C. and extending, perhaps intermittently, to as late as A.D. 370 or shortly thereafter (Breternitz 2002; Charles and Cole 2006; Dean 1975; Lister 1997; Morris and Burgh 1954; Smiley 1997).

Investigations in the 1950s and 1960s related to the Navajo Reservoir Project in northwest New Mexico resulted in the definition of a correlate to the Durango sites. This occupation, termed the Los Pinos phase, was assumed to date between A.D. 1 and 400, or coeval with the Talus Village occupation (Eddy 1966). The assumption was based on similarities in architecture and material culture, as well as reliance on the superior chronometric resolution for the Durango sites. Among other things, the Navajo Reservoir investigations added brown ware pottery to the list of eastern Basketmaker II attributes (Eddy 1961, 1966).

Dating for the Los Pinos phase was refined to the fifth and perhaps the early sixth centuries when the occupation was revisited in the 1990s as part of contract investigations related to Fruitland coal gas development (Sesler and

Hovezak 2002a). The chronological underpinnings of Fruitland Basketmaker sites were based on a large set of radiocarbon dates, including accelerator mass spectrometry (AMS) dates obtained from maize macrofossils and annual plant material. Similarities in architecture, site structure, and material culture, as well as the chronometric data, suggested classificatory contemporaneity between Los Pinos components excavated during the Fruitland project and those encountered during Navajo Reservoir investigations, both in New Mexico's San Juan Basin. More recent analysis of all the chronometric data from the region (Charles et al. 2006) and new information from excavations at the Darkmold site (Charles 2000, 2002; Charles and Gilliam 2003) and the Animas-La Plata Project (Potter 2008) in Colorado have provided some insight into the relationships between the Durango Basketmaker sites and those in the Navajo Reservoir District and the Fruitland project area (Hovezak and Sesler 2006).

The Fruitland project also introduced yet another element to the archeological record of the upper San Juan, consisting of a substantial complex of early agricultural open habitation sites on the lower benches, outwash fans, valley floors, and mesa escarpments of the San Juan River canyon and adjacent tributaries. Analysis of the record offers intriguing evidence that the occupation represents an antecedent to, or is approximately contemporaneous with, the earliest occupation of the Falls Creek shelters in the Durango area. The cumulative evidence suggests that this important occupation may represent a key linkage between a local Archaic tradition and that defined as Basketmaker II. This occupation, termed the *Archuleta* phase, is the focus of this paper.

EARLY AGRICULTURE

Matson (2006) asserts that the two different models of agricultural development on the Colorado Plateau, in-situ development versus migration, imply slightly different criteria for defining what is Basketmaker II. Agricultural dependency, primarily on maize, is seen as one of the essential keys in the definition of Basketmaker II for the migration model, basically assuming that agriculture was already fully developed and integrated into the culture before Basketmaker populations entered the Colorado Plateau. Alternatively, if maize agriculture was adopted by a resident indigenous Archaic population (through an hypothesized initial introduction by contact and acquisition of maize), then the dividing line between "Archaic" and "Basketmaker" becomes both less important and more indistinct, as this development is seen as a continuum, with "dependency" on maize having developed by degrees. Research in the San Juan Basin indicates that the shift from hunting and gathering to agriculture was neither instantaneous nor universally accepted, but rather was a long process that involved both successes and failures.

In order to assume that maize agriculture was an in-situ adaptation by an indigenous Archaic population rather than having arrived through an immigrant maize-growing culture, most obviously there must be a resident hunter and gatherer population willing to accept this new operational strategy. Cultural resource surveys conducted for large-scale energy and irrigation proj-

ects in the central San Juan Basin have documented literally hundreds of Archaic sites (Hogan and Winter 1983; Moore 1980; Moore and Winter 1980; Reher 1977; Vogler et al. 1982, 1983). The latest of these, the En Medio phase, was viewed by Irwin-Williams (1973) as an in-situ development that straddles the divide between adaptations that are defined as Archaic and those that are Ancestral Puebloan in nature.

Populations in the central San Juan Basin's low elevation grassland appear to have declined after 400 B.C., during the latter part of the En Medio phase. Rather than representing an occupational hiatus, Elyea and Hogan (1983) suggest a shift in occupation away from summer seed-gathering locales and toward the mid-elevation areas around the periphery of the basin for the purpose of maize cultivation. This hypothesis is supported by information gained during the Fruitland Data Recovery Project (Sesler and Hovezak 2002b), and has led to the definition of the Archuleta phase, a pre-ceramic, hunting and gathering, maize-growing occupation along the upper San Juan River (Charles et al. 2006; Sesler and Hovezak 2009).

Although within the temporal parameters defined for the En Medio phase, the Archuleta phase is seen as a brief period of adaptational changes that presaged the development of the eastern Basketmaker II. As such, we view this phase as a temporal and spatial refinement within the broad and virtually untested 1,300-year period that Irwin-Williams defined for the En Medio phase. The Archuleta phase is applicable to early agricultural populations occupying the upper San Juan during the final four to five centuries B.C. We are hopeful this approach will be useful to future researchers in defining the potential range of cultural adaptation and affiliation during the Basketmaker and late Archaic periods.

THE ARCHULETA PHASE

By about 500 B.C., populations along the San Juan River were engaged in a subsistence system based on hunting and gathering, and at least limited maize agriculture. This occupation was first intuited by the authors of the Fruitland Research Design (Hogan et al. 1991), and a number of these sites were investigated during the Fruitland Data Recovery Project (Sesler and Hovezak 2002b). These sites share many material culture attributes, and in multiple cases, even the same site setting, with more mobile hunting and gathering occupations that date only slightly earlier. Indeed, these two occupations were difficult to separate analytically on an individual site basis, but differences in the lithic technologies reflecting subtle changes in mobility and subsistence did emerge when the assemblages from the group of earlier sites without maize, dating prior to 800 B.C., were compared to the later set of sites. And while both groups appear to have occupied similar site settings, utilizing residential bases complete with rudimentary pole and brush structures, the earlier group of residences appear to represent winter occupations (Sesler and Hovezak 2002b:133), while the subset of maize-producing sites may have been occupied year-round (Sesler and Hovezak 2002b:131).

Comparisons between these and slightly later sites in the Durango area

TABLE 1. Fruitland Data Recovery Project Early Agricultural Sites (Archuleta Phase) (Sesler and Hovezak 2002b).

Site No.	Site Type	Forms of maize recovered	Dating method	Component date range
LA70667	Habitation, multiple structure	Cupules, kernels	Maize AMS radiocarbon	400±B.C.
LA72743	Habitation, single structure	Pollen	Wood charcoal radiocarbon	400–10 B.C.
LA72771	Habitation, multiple structure	Cupules	Wood charcoal radiocarbon	600–300 B.C.
LA73583	Habitation, multiple structure	Cobs, kernels	Wood charcoal radiocarbon	180 B.C.–A.D. 130
LA73587	Habitation, multiple structure	Cupules, pollen	Annual plant radiocarbon	191–90 B.C.
LA74191	Habitation, single structure	Kernels	Wood charcoal radiocarbon	380–150 B.C.
LA79500	Rock shelter	Cupules, kernels	Maize AMS radiocarbon	300 B.C.–A.D. 1

suggest that the Archuleta phase may represent the beginning of an agricultural focus in the San Juan and Animas drainages that persisted for nine more centuries, producing both the early Basketmaker II occupation in the Durango area, and the slightly later Basketmaker II of the Navajo Reservoir District.

The Archuleta phase dates derive from AMS dating of maize macrofossils at two sites, dating of charred annual plant material at one site, and conventional radiocarbon dates at four additional sites (Sesler and Hovezak 2002b). The majority of these sites appear to date between 400 B.C. and A.D. 1, and have maize macrofossils in various forms, or in the case of one site, maize pollen (Table 1).

The occupation is characterized by the fairly substantial nature of architectural units, the presence of extramural activity areas, substantial domestic middens, and functional richness in lithic assemblages (Hovezak and Sesler 2002). Overall, the character of the settlements suggest intensive use, resulting in a "lived in" appearance indicating year-round occupation at some of the sites, and at the least, overwintering at others (Sesler and Hovezak 2002b:123). While multiple structures were identified at several of these sites, stratigraphic evidence indicates that no more than one or two structures were occupied at the same time. The structures typically consist of small, subcircular basin floors about 4 m in diameter and up to 50 cm in depth, with conical-shaped pole superstructures that may have been closed with green branches, or earth in some instances (Figure 1). Most have centrally located hearths, but other intramural features are nondescript shallow pits. Internal features substantial enough to store a quantity of food grains or other comestibles were not identified in any of the excavated structures, though several such features were found in extramural contexts. Patterned work areas were identified between the hearths and entryways, sometimes continuing outside of the structures, suggesting the entryways served as sheltered work areas (Figures 2 and 3). Midden deposits totally or partially encompassed structures at half of the investigated sites, and were immediately adjacent to structures at the other sites. The patterns suggest that refuse was discarded immediately in front of the shelter openings and may have also been piled around the base of the structures. Midden volumes average 13.8 m^3 per structure, representing sizeable accumulations of domestic refuse.

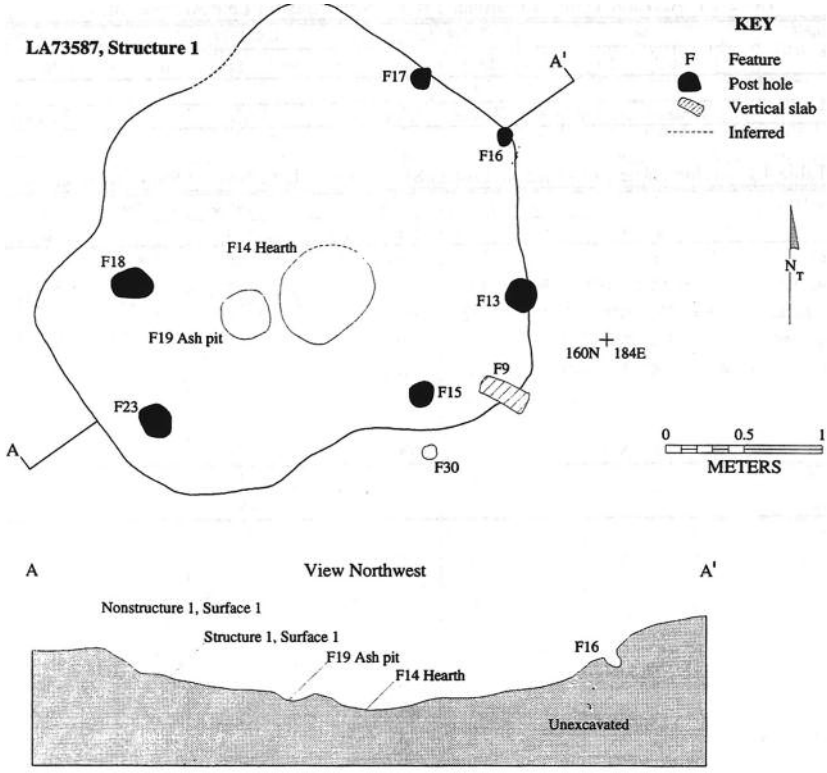

FIGURE 1. Archuleta phase structure plan and profile, Structure 1, site LA73587.

The early maize-producing sites are predominately located in canyon floor and lower bench settings. The settlement pattern indicates that residential bases were strategically positioned to take advantage of the area's most varied biotic zones: the riparian zones and adjacent benchlands along the San Juan River and its major tributaries. The sites also were positioned to provide easy access to upland resources of the mesa tops, and perhaps most importantly, they were situated very near floodplains, valley floor alluvial fans, or mesa-top alluvial valleys capable of supporting floodwater or subirrigated farming. There are, however, several lines of evidence that cultigens played a nominal role in the subsistence system. First, maize occurrences are rare, each consisting of only a few macrofossils or pollen grains, with maize ubiquity in productive flotation samples at about 15 percent. By comparison, ubiquity of charred annual plant seeds such as goosefoot and cheno-am exceed 35 percent (Sesler and Hovezak 2002b:Figure 5.4). Second is the lack of storage features or evidence of stored comestibles at most of these sites.

Biotic assemblages at the Archuleta phase sites suggest that a variety of wild plants were used, but one important resource for late hunter-gatherers in the Southwest, Indian ricegrass, is virtually missing from these assemblages. It may be that intensive ricegrass harvesting required seasonal relocation to the

FIGURE 2. Archuleta phase structure, site LA73587, showing floor artifact assemblage.

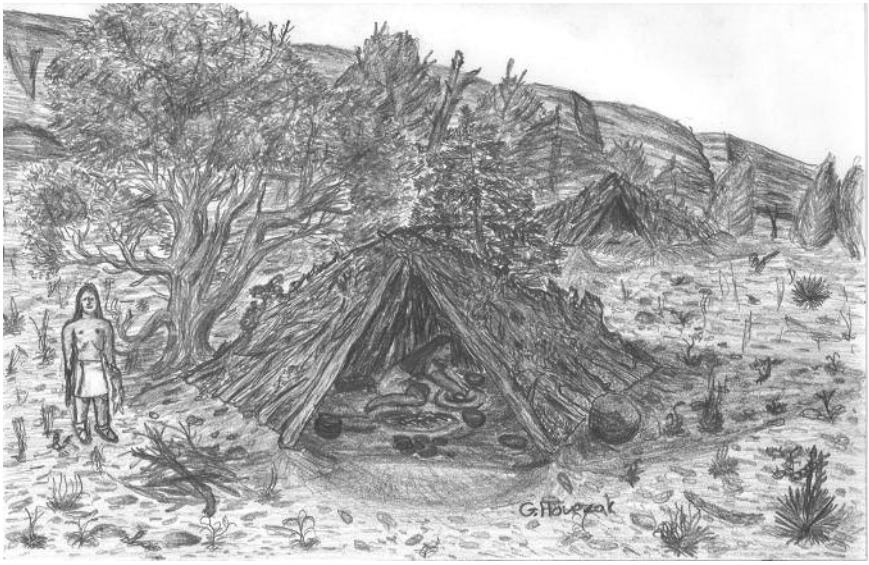

FIGURE 3. Artist reconstruction, Archuleta phase structures, site LA73587.

central San Juan basin, which introduced a scheduling conflict with the preparation of agricultural fields. These data suggest that maize production may have replaced some critical wild resources, such as Indian ricegrass, by the last half of the final millennium B.C., enabling the shift to a mixed horticultural and logistical foraging economy.

DISCUSSION

Although recent developments in Basketmaker II studies have greatly expanded our knowledge of the period and people, none of the current data are definitive in answering questions concerning the development of agriculture or the cultural and ethnic origins of the Ancestral Puebloans. It will be left to future archeologists to determine whether the inferences that we have made here will stand.

We have posited that a critical stage in the development of agriculture is evident in the archeological record as an adjustment in the seasonal foraging round of hunters and gatherers, whereby seasonal migrations between the grasslands of the central San Juan Basin and the mountain foothills were no longer necessary. The evidence suggests that by the fifth century B.C., people who occupied the San Juan canyon were able to eliminate early spring and summer collecting in the central basin in order to concentrate on the production of crops such as maize, and possibly disturbance-associated weedy annual plants such as tansy mustard and the cheno-ams. It is likely that favorable climatic conditions during the last centuries B.C. and the first centuries A.D. enabled these early horticulturalists to expand into the mountain foothills along the Animas drainage, where maize agriculture appears to have been successful (but perhaps sporadically so) for several centuries. The re-population along the San Juan River during the latter half of the fifth century likely represents a return to lower elevation settings reflecting deteriorating conditions for maize agriculture at higher elevations (Charles et al. 2006).

Future investigations, with attendant technological improvements in chronometric resolution and analytical techniques, will undoubtedly result in earlier dates for the introduction of cultigens to the Colorado Plateau, but current evidence suggests that the development of horticulture into economies fully dependent on food production came relatively late to the region. Thus far, the evidence supports a gradual northward progression for the spread of agriculture onto the Colorado Plateau. Further, it is the opinion of the authors that successful, fully agriculture-dependent subsistence systems in northwest New Mexico and southwest Colorado were sporadic, at least until the Basketmaker III period, especially given the short growing season, unpredictable weather, and short-term shifts in the winter/summer dominant moisture patterns that characterize this region (Schlanger and Wilshusen 1993). There is ample evidence of successful agricultural economies later in the archeological record and it is these successes that predicated the social transformations that allowed the development of Ancestral Puebloan culture.

REFERENCES CITED

Breternitz, D. A.
2002 Basketmaker II Site Investigations near Durango, Colorado, 1966. *Southwestern Lore* 68 (2):18–32.

Charles, M. C.
2000 *The Emergency Excavation of Eleven Human Burials From Archaeological Site 5LP4991, The Darkmold Site, La Plata County, Colorado.* Fort Lewis College, Durango.

2002 Durango Basketmakers Revisited. Paper presented at the 75th Annual Pecos Conference, Pecos, New Mexico.

Charles, M. C., and S. J. Cole

2006 Chronology and Cultural Variation in Basketmaker II. *Kiva* 72(2):167–216.

Charles, M. C., and M. L. Gilliam

2003 The Geoarchaeology of the Darkmold Site, 5LP4991: A Basketmaker II and Pueblo I Site in the North Animas Valley Near Durango, Colorado. Ms. on file, Fort Lewis College, Durango.

Charles, M. C., L. M. Sesler, and T. D. Hovezak

2006 Understanding Eastern Basketmaker II Chronology and Migrations. *Kiva* 72(2):217–238.

Dean, J. S.

1975 Tree-ring Dates from Colorado W, Durango Area. Laboratory of Tree-Ring Research, University of Arizona, Tucson.

Eddy, F. W.

1961 *Excavation at Los Pinos Phase Sites in the Navajo Reservoir District*. Museum of New Mexico Papers in Anthropology 4. Santa Fe.

1966 *Prehistory in the Navajo Reservoir District, Northwestern New Mexico*. Museum of New Mexico Papers in Anthropology 15 (1–2). Santa Fe.

Elyea, J. M., and P. Hogan

1983 Regional Interaction: The Archaic Adaptation. In *Economy and Interaction Along the Lower Chaco River: The Navajo Mine Archeological Program, Mining Area III, San Juan County, New Mexico*, edited by P. Hogan and J. C. Winter, pp. 393–402. Office of Contract Archeology and Maxwell Museum of Anthropology, University of New Mexico, Albuquerque.

Guernsey, S.

1931 *Explorations in Northeastern Arizona: Report on the Archaeological Fieldwork of 1920–1923.* Papers of the Peabody Museum of American Archaeology and Ethnology 12 (1). Harvard University, Cambridge.

Guernsey, S., and A. V. Kidder

1921 *Basket-maker Caves of Northeastern Arizona*. Papers of the Peabody Museum of American Archaeology and Ethnology 8 (2). Harvard University, Cambridge.

Hogan, P., J. M. Elyea, and P. N. Eschman

1991 *Overview and Research Design for the Fruitland Coal Gas Development Area*. Office of Contract Archaeology, University of New Mexico, Albuquerque.

Hogan, P., and J. C. Winter

1983 *Economy and Interaction Along the Lower Chaco River: The Navajo Mine Archaeological Program, Mining Area III, San Juan County, New Mexico.* Office of Contract Archeology and Maxwell Museum of Anthropology, University of New Mexico, Albuquerque.

Hovezak, T. D., and L. M. Sesler

2002 Prehistoric and Protohistoric Lithic Technologies in the Fruitland Study Area. In *Archaeological Investigations in the Fruitland Project Area: Late Archaic, Basketmaker, Pueblo I, and Navajo Sites in Northwestern New Mexico*, Vol. V: Material Culture, Bioarchaeological and Special Studies, compiled by T. D. Hovezak and L. M. Sesler, pp. 49–185. LAC Research Papers No. 4. La Plata Archaeological Consultants, Dolores, Colorado.

Hovezak, T. D., and L. M. Sesler

2006 New Data on Northwest New Mexico's Los Pinos Phase: A Classic Basketmaker II Occupation? *Kiva* 72(2):238–257.

Irwin-Williams, C.

1973 *The Oshara Tradition: Origins of Anasazi Culture*. Contributions in Anthropology 5 (1). Eastern New Mexico University, Portales, New Mexico.

Kidder, A.V., and S. Guernsey

1919 *Archaeological Explorations in Northeastern Arizona*. Bureau of American Ethnology Bulletin No. 65. Washington, D.C.

Lister, F. C.
1997 *Prehistory in Peril: The Worst and Best of Durango Archaeology*. University Press of Colorado, Niwot, Colorado.
Matson, R. G.
1991 *The Origins of Southwestern Agriculture.* University of Arizona Press, Tucson.
2006 What is Basketmaker II? Kiva 72(2):149–165.
Moore, J. L.
1980 Archaic Settlement and Subsistence. In *Human Adaptations in a Marginal Environment: The UII Mitigation Project*, edited by J. L. Moore and J. C. Winter, pp. 358–381, Office of Contract Archeology, University of New Mexico, Albuquerque.
Moore, J. L., and J. C. Winter (editors)
1980 *Human Adaptations in a Marginal Environment: the UII Mitigation Project*. Office of Contract Archeology, University of New Mexico, Albuquerque.
Morris, E. H., and R. F. Burgh
1954 *Basket Maker II Sites Near Durango, Colorado*. Carnegie Institution of Washington, Publication 604. Washington, D.C.
Potter, J. M.
2008 Chapter 31: Summary. In *Animas-La Plata Project Volume IX—Ridges Basin Excavations: Archaic, Basketmaker II, Pueblo I Limited Activity, and Undated Sites*, edited by J. M. Potter, pp. 299–319. SWCA Anthropological Research Paper Number 10. SWCA Environmental Consultants, Phoenix.
Reher, C. A. (editor)
1977 *Settlement and Subsistence Along the Lower Chaco River: The CGP Survey.* University of New Mexico Press, Albuquerque.
Schlanger, S. H., and R. H. Wilshusen
1993 Local Abandonments and Regional Conditions in the North American Southwest; In *The Abandonment of Settlements and Regions*, edited by C. M. Cameron and S. A Tomka, pp. 85–98. Cambridge University Press.
Sesler, L. M., and T. D. Hovezak
2002a Fruitland Site Chronology. In *Archaeological Investigations in the Fruitland Project Area: Late Archaic, Basketmaker, Pueblo I, and Navajo Sites in Northwestern New Mexico*, Vol. V: Material Culture, Bioarchaeological and Special Studies, compiled by T. D. Hovezak and L. M. Sesler, pp. 187–264. LAC Research Papers No. 4. La Plata Archaeological Consultants, Dolores, Colorado.
2002b Synthesis: Cultural and Adaptational Diversity in the Fruitland Study Area. In *Archaeological Investigations in the Fruitland Project Area: Late Archaic, Basketmaker, Pueblo I, and Navajo Sites in Northwestern New Mexico*, Vol. I: Introductory Chapters and Synthesis, by T. D. Hovezak, L. M. Sesler, and S. L. Fuller, pp. 109–240. LAC Research Papers No. 4. La Plata Archaeological Consultants, Dolores, Colorado.
2009 Farming at the Edge of Paradise: Tracking Changes in Early Agricultural Settlement. Paper presented at the symposium: East of Eden and North of Chaco: Untangling Early Puebloan, Chacoan, and Navajo Histories in the Upper and Middle San Juan Drainage. 74th Annual Meeting of the Society for American Archaeology, Atlanta, April 2009.
Smiley, F. E.
1997 Toward Chronometric Resolution for Early Agriculture in the Northern Southwest. In *Early Farmers in the Northern Southwest: Papers on Chronometry, Social Dynamics, and Ecology*, edited by F. E. Smiley and M. R. Robins, pp. 13–42. Animas-La Plata Archaeological Project Research Paper No. 7, Bureau of Reclamation, Upper Colorado Region, Denver.
Vogler, L. E., D. Gilpin, and J. K. Anderson (editors)
1982 *Gallegos Mesa Settlement and Subsistence: A Set of Explanatory Models for Cultural Resources on Blocks VIII, IX, X, and XI, Navajo Indian Irrigation Project, vol. I.* Navajo Nation Papers in Anthropology no. 12, Window Rock, Arizona.

1983 *Cultural Resource Investigations on Gallegos Mesa: Excavations in Blocks VIII and IX, and Testing Operations in Blocks X and XI, Navajo Indian Irrigation Project, San Juan County, New Mexico.* Navajo Nation Papers in Anthropology no. 24, Window Rock, Arizona.