

Appendix A
ANNOTATED BIBLIOGRAPHY

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Richard H. Wilshusen, Mark D. Varien, and William D. Lipe

Adler, M. A.

- 1996a Fathoming the Scale of Anasazi Communities. In *Interpreting Southwestern Diversity: Underlying Principles and Overarching Patterns*, edited by P. R. Fish and J. J. Reid, pp. 97-106. Anthropological Research Papers No. 48. Arizona State University, Tempe.

Adler discusses Puebloan communities in the northern San Juan, A.D. 1000-1300. He addresses the archaeological definition of community (a not-insignificant problem when settlement is dispersed) and the scalar limitations on community size. Data are analyzed on the changing sizes of the Goodman Point and Sand Canyon communities in Montezuma County, located in the McElmo-Monument drainage unit.

- 1996b Land Tenure, Archaeology, and the Ancestral Pueblo Social Landscape. *Journal of Anthropological Archaeology* 15(4):337-371.

Adler develops a middle-range theory of agricultural land tenure, based on cross-cultural data. As intensity of agricultural labor increases, there is an increase in community size, and access group size first increases, then decreases. The model is applied to survey data from the Sand Canyon area of Montezuma County.

Adler, M. A., T. Van Pool, and R. D. Leonard

- 1996 Ancestral Pueblo Population Aggregation and Abandonment in the North American Southwest. *Journal of World Prehistory* 10(3):373-436.

This paper attempts, not always successfully, to develop a general theoretical framework for considering both regional abandonment/relocation and the formation of aggregated villages displaying long-term sedentism. The primary Southwestern case discussed is aggregation of dispersed northern San Juan communities into villages in late Pueblo III, followed by regional depopulation.

Berry, M.

- 1982 *Time, Space, and Transition in Anasazi Prehistory*. University of Utah Press, Salt Lake City.

Berry compiles radiocarbon and tree-ring dates to support an argument that occupation of the northern Southwest was episodic, with population repeatedly moving in and out of the region. Thus, the Pecos Classification periods represent times of heavy occupation, separated by times when population was low.

Billman, B. R. (editor)

- 1997 *The Archaic Period Occupation of the Ute Mountain Ute Piedmont*. Publications in Archaeology No. 21 (Draft report). Soil Systems, Inc., Phoenix, AZ.

This draft report synthesizes evidence from data recovery operations undertaken at 16 Archaic and Basketmaker II sites in an area south of Ute Mountain. Chapters by various authors discuss the research design, field operations at the sites, bioarchaeology, and material culture. Billman provides a thorough introductory chapter and a concluding evaluation of the research questions.

1998 *The Puebloan Occupation of the Ute Mountain Piedmont*. Publications in Archaeology No. 22. (Draft Report). Soil Systems, Inc., Phoenix, AZ

This report describes the results of data recovery studies at 42 Pueblo period sites that were carried out as part of the Ute Mountain Ute Irrigated Lands Archaeological Project (UMUILAP). The project was designed to mitigate some of the effects of constructing irrigated fields on Ute Mountain Ute tribal lands on the southern piedmont of Sleeping Ute Mountain. In investigating the Puebloan occupation of this area, UMUILAP archaeologists conducted excavations at 17 habitation sites. Limited Phase I data recovery was carried out at 5 additional habitation sites and 20 limited activity sites. Evidence is presented indicating repeated attempts by Puebloan people to colonize the southern Ute Mountain piedmont between the early A.D. 600s and the late A.D. 1200s. Use of the area was heaviest between middle Pueblo II and late Pueblo III. The multi-volume report includes descriptions of the sites and analyses of the various kinds of artifactual and ecofactual materials recovered. When the final version is published, it will stand as a major source of information regarding Pueblo period archaeology of the Ute drainage unit.

Blinman, E.

1988 *The Interpretation of Ceramic Variability: A Case Study from the Dolores Anasazi*. Unpublished Ph.D. dissertation, Department of Anthropology, Washington State University, Pullman.

A comprehensive review of ceramics in the Dolores area, A.D. 600-920. Blinman considers changes in ceramic production technology, organization of ceramic production and distribution, functional change in vessel use, and interregional exchange of vessels.

Blinman, E., C. J. Phagan, and R. H. Wilshusen (compilers)

1988 *Dolores Archaeological Program: Supporting Studies: Additive and Reductive Technologies*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

This volume synthesizes the material culture studies in 22 chapters by various authors. An introductory chapter assembles data on chronological variation in material culture and architecture. The lithic studies focus on projectile points, changes in subsistence tools, microwear analyses of flaked stone artifacts, and changes in stone and bone tool kits. Included is a statistical analysis of projectile points and a comparison of the results with intuitively derived typologies. The ceramic studies include sourcing studies of local clays, definitions of non-Mesa Verde-type ceramics, local ceramic production and exchange prior to A.D. 800, production and exchange of smudged and glaze painted pottery, vessel form and function, and the use of fugitive red pigment. The chapters on chronometric analyses examine ceramic calibration and archaeomagnetic dating. The final chapters summarize studies of architectural change, household social organization as witnessed in architecture, structural abandonment, protokivas, and a reexamination of the notion of the pithouse to protokiva transition.

Bradley, B. A.

1988 Wallace Ruin Interim Report. *Southwestern Lore* 54(2):8-33.

Located near Cortez in the McElmo-Monument drainage unit, Wallace Ruin is a multistory Chacoan-style great house built and occupied in the late A.D. 1000s and early 1100s, and reoccupied in the 1200s. Bradley reports on excavations since 1969 of 29 rooms (14 ground story and 15 second story) and 3 kivas.

1993 Planning, Growth, and Functional Differentiation at a Prehistoric Pueblo: A Case Study from SW Colorado. *Journal of Field Archaeology* 20:23-42.

Bradley reports and interprets results of excavations in 6 architectural units at Sand Canyon Pueblo, a large Pueblo III site constructed and occupied in the middle and late A.D. 1200s, and located in Montezuma County in the McElmo-Monument drainage unit. The walled site has an estimated 420 rooms, 90 kivas, 14 towers, a plaza, a D-shaped two-story structure, and a great kiva. Bradley argues that residential, public, and specialized (often ritual/ceremonial) spaces can be identified and that site construction followed a general plan established at the beginning of occupation.

Breternitz, D. A. (compiler)

1984 *Dolores Archaeological Program: Synthetic Report, 1978-1981*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

The *Synthetic Report, 1978-81* is an interim report of the Dolores Archaeological Program (DAP) that is in more an administrative than a research report. It has some important, though short, chapters on historic studies, probability sampling, experimental gardens, and activity area analyses.

Breternitz, D. A., C. K. Robinson, and G. T. Gross (compilers)

1986 *Dolores Archaeological Program: Final Synthetic Report*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

If one could own just one of the Dolores volumes, the *Final Synthetic Report* would be a good choice. It reviews the research design and offers key summaries of the reductive technologies (lithic tools, debris, and ground stone), additive technologies (ceramic sherds and woven vegetal items), and environmental studies. There are innovative treatments of the cost of “doing business” in Dolores and exchange and interaction and a fine summary of the prehistory of the area by Al Kane. Finally, there is a fitting point and counterpoint series of chapters by Kane and Lipe debating the merits and demerits of the two explanatory models used by researchers at Dolores. These models—a least-cost economic model and a social power model—are now seen as flawed in many of their assumptions, but they provide interesting filters for the Dolores data. The volume is thick reading in places, and it is clear that having to write conclusions at the immediate end of the project left little time to ponder all the data generated by this immense project. The volume is a good beginning point for someone wanting to use the Dolores data.

Breternitz, D. A., A. H. Rohn, Jr., and E. A. Morris (compilers)

1974 *Prehistoric Ceramics of the Mesa Verde Region*. Ceramic Series No. 5. Museum of Northern Arizona, Flagstaff.

This volume has been the standard resource for the description of pottery types for the Mesa Verde region since it was published. A summary of each traditional type provides detailed descriptions of the following: construction, finishing method and temperature, core, surface, shape and size, decoration, probable function, the bases for description, bibliographic data, time of manufacture and use, derivation and affiliations, varieties and deviations, and comparisons with other types. This reference is the place to begin for those who want to understand the basis of Mesa Verde region pottery types.

Brew, J. O.

1946 *Archaeology of Alkali Ridge, Southeastern Utah*. Papers of the Peabody Museum of American Archaeology and Ethnology Vol. 21. Harvard University, Cambridge, MA.

This remains one of the few monographs of enduring value from the archaeological work in the 1930s. The report is distinguished both for its careful documentation of Pueblo I and II sites in southeastern Utah and for its discussion of archaeological method and theory. The site reports in the volume document one of the first large Pueblo I villages to be extensively excavated (Brew's site 13) and also offer focused investigations of the architectural and ceramic developments in the Pueblo II period. Brew's introductory chapter on "The Use and Abuse of Taxonomy" remains a thoughtful discussion of how archaeologists must thoroughly understand the assumptions—and question the utility—of their classificatory systems. In hindsight, one can criticize Brew for being right for the wrong reasons, but the fact that he got so many things right almost 70 years ago makes this report required reading for any archaeologist working in the northern Southwest.

Cameron, C. M.

1990 Pit Structure Abandonment in the Four Corners Region of the American Southwest: Late Basketmaker III and Pueblo I Periods. *Journal of Field Archaeology* 17:27-37.

Cameron examines abandonment data for 88 pit structures dating to the Basketmaker III and Pueblo I periods to see if there are general patterns of modes of abandonment between pit structures and sites. She concludes that pit structure roofs are oftentimes dismantled so that the timbers can be reused and that burning of pit structure roofs may be more commonly the result of intentional ritual destruction rather than warfare or accidents.

Cameron, C. M. (guest editor)

1995 Special Issue: Migration and the Movement of Southwestern Peoples. *Journal of Anthropological Archaeology* 14(2).

This volume is a collection of nine papers that examine population movement in the Southwest. A brief introduction by Lekson is followed by a paper where Cameron examines the intellectual framework within which migration studies developed in the Southwest. Four papers examine the final migration from the Mesa Verde region (the authors are Ahlstrom, Van West, and Dean; Lipe; Roney; and Lekson and Cameron), and one examines migration in the thirteenth century

Tonto Basin (by Stark, Clark, and Elson). Cordell examines migration from the perspective of the receiving end, or where Pueblo peoples are located today. A final paper by Tessie Naranjo of Santa Clara Pueblo offers a perspective on migration.

Cattanach, G. S., Jr.

1980 *Long House, Mesa Verde National Park, Colorado*. Publications in Archeology No. 7H. Wetherill Mesa Studies. National Park Service, Washington, D.C.

This monograph reports on the excavation of Long House, the largest cliff dwelling investigated during the Wetherill Mesa project. Long House consists of approximately 150 rooms, 21 kivas, and a plaza that is interpreted as functioning as a great kiva; the primary period of occupation was between A. D. 1200 and 1300. It is one of the major reports to come out of excavations at Mesa Verde. The following are described: architecture, burials and associated funerary objects, ceramics, stone artifacts and minerals, bone and antler artifacts, perishable materials, pollen analyses, and refuse, which includes plant material, faunal remains, stone chipping debris, and other refuse. The report concludes with a discussion of the construction sequence and tree-ring dates and a summary of the key interpretive points. The monograph is extremely well illustrated, with 452 photographs and figures.

Cordell, L. S.

1975 Predicting Site Abandonment at Wetherill Mesa. *The Kiva* 40:189-202.

Cordell's summary article of her dissertation is one of the first attempts to quantitatively understand the "rules" governing settlement patterning in relation to climatic change. Cordell used ethnographic literature on Southwestern corn farming, environmental studies from Mesa Verde, and dendroclimatic data to create a sophisticated simulation of how settlement location should change on Wetherill Mesa for four archaeological phases between A.D. 700 and 1300. It is interesting that the comparison between the simulation results and the actual survey results show great congruence except for the Ackmen phase (A.D. 900-975), an interval that now appears to be characterized by significant regional population decline.

1997 *Archaeology of the Southwest*. 2nd ed. Academic Press, New York.

Each generation of archaeologists has a text that is used in introductory Southwestern archaeology classes. For almost 15 years, Cordell's *Prehistory of the Southwest* has been the most widely used Southwestern text. The *Archaeology of the Southwest* is Cordell's revised and updated edition of this text and the revisions help to reestablish the preeminence of this introduction.

Dean, J. S.

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

This volume reports the tree-ring dates from the Colorado W quadrangle, roughly the eastern half of the study area considered in this context document. All tree-ring dates from this area that were analyzed before the mid-1970s are included, which entails dates from approximately 60 sites.

1996 Demography, Environment, and Subsistence Stress. In *Evolving Complexity and Environmental Risk in the Prehistoric Southwest*, edited by J. A. Tainter and B. B. Tainter, pp. 25-56. Proceedings Vol. 24, Santa Fe Institute Studies in the Science of Complexity. Addison-Wesley, Reading, MA.

In this paper Dean presents a model of adaptive change in human sociocultural systems that is appropriate to studying change in horticultural societies in the American Southwest. He argues that adaptive change is most likely to occur in "situations characterized by resource stress and/or economic uncertainty, both of which disrupt ecological and social relationships that had been achieved by previous adaptive adjustments" (Dean 1996:51). Dean states that the quality of the archaeological, chronological, and paleoenvironmental records in the Southwest permit archaeologists to use this model to identify such stresses and to study sociocultural and demographic responses to them. Included in the paper is an excellent summary of relevant paleoenvironmental data based on tree-ring studies.

Decker, K. W., and L. L. Tieszen

1989 Isotopic Reconstruction of Mesa Verde Diet from Basketmaker III to Pueblo III. *Kiva* 55:33-47.

This important article, written just before Decker's untimely death, reports on the isotopic analysis of bone collagen from 35 individuals from burial populations of Mesa Verde National Park (n=31) and the Ute Tribal Park (n=4). Temporal periods represented include the following: Basketmaker III (n=1); Pueblo I (n=6); Pueblo II (n=9); Pueblo II-III (n=15); Pueblo III (n=4). The results indicate that maize was a heavy and constant portion of the diet, contributing 70 to 80 percent of the diet during the entire period of occupation.

Dykeman, D. D.

1986 *Excavations at 5MT8371, an Isolated Pueblo II Pit Structure in Montezuma County, Colorado*. Studies in Archaeology No. 2. Division of Conservation Archaeology, San Juan County Archaeological Research Center and Library, Bloomfield, NM.

This contract report documents a single pit structure dating to approximately A.D. 935-950. It is distinguished by being one of few sites clearly dating to between A.D. 900 and 950 in the Mesa Verde region.

Eddy, F. W.

1966 *Prehistory in the Navajo Reservoir District, Northwestern New Mexico*. Papers in Anthropology No. 15(I). Museum of New Mexico, Santa Fe.

These volumes, which include site reports and a synthesis of the Navajo Reservoir archaeological project in the late 1950s, is fundamental literature for understanding the prehistory of the upper San Juan River basin. In this two-volume work, Eddy wrote a comprehensive, phase-based cultural history of the area for A.D. 1-1050 and A.D. 1550-1775. He proposes a model where Basketmaker and later Pueblo people are in the area for almost 1,100 years. The continuity of this occupation has been challenged by more current research, but Eddy's chronology and proposals

about settlement remain fundamental to understanding the Basketmaker II, Pueblo I, and Navajo occupations of this area.

1972 Culture Ecology and the Prehistory of the Navajo Reservoir District. *Southwestern Lore* 38(1 & 2):1-75.

In this article and in a slightly later 1974 *American Antiquity* article, Eddy argues that climate change and river erosion precipitated upstream movements of populations in the Pueblo I period. A leapfrog pattern of population movements is proposed to explain both the Navajo Reservoir settlement data and avoidance of violent conflict over scarce agricultural resources. The article is an exemplary treatment of cultural systems seeking to remain in equilibrium with environmental and population changes. Though Eddy's thesis is well explicated, the main problems at present are whether the environmental and archaeological data actually support the model and whether cultural explanations should depend on equilibrium or far-from-equilibrium models.

1977 *Archaeological Investigations at Chimney Rock Mesa: 1970-1972*. Memoir No. 1. Colorado Archaeological Society, Boulder.

This monograph reports on intensive survey and the partial excavation of three sites in the Chimney Rock Mesa area of southern Colorado; it is one of the most important studies of a Chacoan community conducted in the northern Southwest. Survey identified 65 sites with 217 architectural structures and 27 transient camp/workshop locations. These were grouped into seven clusters; each is interpreted as a community and analyzed in terms of local ecological variables. Excavations at Chimney Rock Pueblo, interpreted as having been constructed by a Chacoan colony, are reported. Excavations were designed to prepare previously excavated (in 1921 and 1922) portions of the site for stabilization, and to investigate unexcavated portions of the site to obtain tree-ring dates and associated pottery. Two small sites were also excavated, documenting the local style of domestic architecture. The report concludes with a series of environmental studies and interpretations grounded in cultural-ecological framework.

Errickson, M.

1993 *Archaeological Investigations on Prehistoric Sites, Reach III of the Towaoc Canal, Ute Mountain Ute Reservation, Montezuma County, Colorado*. Four Corners Archaeological Project Report No. 13. Complete Archaeological Service Associates, Cortez, CO.

This report details the results of data recovery excavations at eight sites in the western part of the Ute Mountain Ute reservation, undertaken to mitigate the effects of the construction of the Towaoc Canal, which was designed to deliver Dolores Project irrigation water to newly-developed farm fields on the Ute Mountain Ute reservation. There were 13 components represented at the 8 sites; they were distributed among periods as follows: Basketmaker III (2); Pueblo I (1); Pueblo II (5); and Pueblo III (5). All five components classed as habitations dated to the Pueblo II and III periods; the other components included fieldhouses, seasonal habitations, and limited activity loci. In addition to the site reports, there are chapters on ceramics (Errickson), flaked stone (D. Irwin), ground stone (R. Prueitt), fauna (S. Stratton), burials (M. Dice), macrobotanical remains (C. Brandt), and pollen analysis (2 chapters, one by L. Cummings on 7 sites and one by J. Gish on 1 site). Four sites yielded large numbers of human bones possibly showing evidence of cannibalism; the analysis of these remains is reported in a separate short monograph by Dice (1993b).

1995 *Archaeological Excavations on Reach II of the Towaoc Canal*. Four Corners Archaeological Project Report No. 20. Complete Archaeological Service Associates, Cortez, CO.

Errickson reports on data recovery excavations at five sites located south of Cortez, in the northwestern part of the Mancos-Mesa Verde drainage unit. The excavations were done to mitigate adverse effects of the reconstruction of an existing canal, part of a larger project designed to deliver Dolores Project water to the Ute Mountain Ute reservation to the southwest. The 8 components that were identified were distributed as follows by period: Basketmaker III (1); transitional Basketmaker III-Pueblo I (1); Pueblo I (2); Pueblo II (2); transitional Pueblo II-Pueblo III (1); and Pueblo III (1). There were 4 habitation components, 1 seasonal habitation, 2 fieldhouses, and 1 small set of burials. Stockades were associated with the three habitation sites that dated to the Basketmaker III and/or Pueblo I periods. Artifacts and faunal remains are discussed with the individual site reports; in addition, there are appendices devoted to archaeobotanical remains (C. Brandt), pollen analysis (L. Cummings), and human remains (P. Nickens).

Fetterman, J. E., and L. Honeycutt

1987 *The Mockingbird Mesa Survey, Southwestern Colorado*. Cultural Resource Series No. 22. Bureau of Land Management, Colorado State Office, Denver.

This archaeological survey of Mockingbird Mesa remains a model for the importance of large-scale reconnaissance of public lands for research, management, and protection of cultural resources. Fetterman and Honeycutt inventoried 3,976 acres (1,610 hectares) of land on a mesa between Negro and Sandstone canyons, which both drain into Yellow Jacket Canyon. This mesa-top survey to the north of Yellow Jacket Canyon still serves as one of the best data sources for investigations of changing regional settlement, population, and land use. The relatively slim volume also provides summary data for 684 sites recorded by the survey.

Fewkes, J. W.

1909 *Antiquities of the Mesa Verde National Park: Spruce-Tree House*. *Bulletin* 41. Bureau of American Ethnology, Washington, D.C.

This slim monograph reports on the excavation of Spruce Tree House, the second largest cliff dwelling in Mesa Verde National Park. The report is divided into two main sections: "major antiquities," which is largely a description of the types of architectural features present on the site, and "minor antiquities," which describes the artifacts recovered from the site. Description is not rigorously systematic, often focusing on attributes that are considered extraordinary. The volume is well illustrated, with 21 photographs and 37 drawings.

1911 *Antiquities of the Mesa Verde National Park: Cliff Palace*. *Bulletin* 51. Bureau of American Ethnology, Washington, D.C.

This monograph reports on the excavation of Cliff Palace, the largest cliff dwelling in Mesa Verde National Park. An interesting history of the then-recent exploration of Cliff Palace is presented first. This is followed by a description of the architectural features, with the greatest attention given to the 22 kivas present at the site. Descriptions of the types of artifacts recovered

and the human burials encountered complete the report. The report is well illustrated with 35 photographs and four figures.

1919 Prehistoric Villages, Castles, and Towers of Southwestern Colorado. *Bulletin 70*. Bureau of American Ethnology, Washington, D.C.

This monograph presents a synthesis of southwestern Colorado archaeology in which Fewkes seeks to identify the features that characterize the Mesa Verde region as a distinct culture area. They include Fewkes' investigations in Mesa Verde National Park and reconnaissance surveys elsewhere in the region, including McElmo Canyon, Yellow Jacket Canyon, and along the Colorado-Utah border. Fewkes begins by summarizing previous research, including that of Jackson, Holmes, Prudden, and Morley and Kidder. The bulk of the report is a series of short site descriptions that include many of the largest villages in the Mesa Verde region and smaller sites that illustrate the variation in site types recognized by Fewkes. There are also descriptions of reservoirs, rock art, artifacts, and a brief mention of historic remains. In the conclusions, Fewkes interprets the Mesa Verde region in the context of the larger Southwest.

Force, E. R., and W. K. Howell

1997 *Holocene Depositional History and Anasazi Occupation in McElmo Canyon*. Arizona State Museum Archaeological Series No. 188. University of Arizona Press, Tucson.

This volume reports on the fluvial geomorphology of McElmo Canyon in southwestern Colorado. Archaeological sites that are exposed in the stratigraphic sequence are used to identify and date periods of stream aggradation and degradation that occurred between A.D. 500 and 1300. Erosional events occurred in the Pueblo I and late Pueblo III times. The study demonstrates that both depositional and erosional events were diachronous, and the authors estimate the rate of deposition and the rate of upstream arroyo cutting. The authors discuss what might have triggered changes in the depositional environment and how these changes may have affected Puebloan farmers in the region.

Fuller, S. L.

1984 *Late Anasazi Pottery Kilns in the Yellowjacket District, Southwestern Colorado*. Papers No. 4. Complete Archaeological Service Associates, Cortez, CO.

The excavation of eight ancient pottery firing kilns and the surface collection of a ninth are described in this report. The kilns were located on Woods Mesa in the area between Yellow Jacket Canyon and Woods Canyon. In addition to the detailed description of each kiln, there is an analysis of the pottery recovered from their excavation. There is a useful ethnographic overview of pottery firing technology. The report concludes with a synthesis that discusses the excavated kilns in terms larger regional context and reconstructs the firing process.

1988 *Archaeological Investigations in the Bodo Canyon Area, La Plata County, Colorado*. UMTRA Archaeological Report 25. Complete Archaeological Service Associates, Cortez, CO.

This report details the results of excavations at nine sites dating to the Late Archaic, Basketmaker II, and late Basketmaker III-early Pueblo I periods. Though there has been considerable excavation by archaeologists and amateurs in the Durango area, the Bodo Canyon investigations are important because they represent characteristic sites for this area, and because—unlike most other prior Durango-area investigations—the results are reported. Fuller argues that this particular area was occupied during relatively narrow windows of time when warm and relatively dry regional weather patterns offered greater opportunity for corn-based agriculture in this area than some other locales in the Four Corners.

Glowacki, D. M., H. Neff, and M. D. Glascock

1998 An Initial Assessment of the Movement of Thirteenth Century Ceramic Vessels in the Mesa Verde Region. *Kiva* 63(4):217-240.

This is a descriptive article reporting the results of the chemical sourcing of Mesa Verde Black-on-white and Corrugated pottery and clays from the Menefee, Mancos, Dakota, and Morrison formations using neutron activation analysis. The results indicate that the local production of Mesa Verde Black-on-white was occurring at Long House and Mug House on Mesa Verde as well as at Sand Canyon and Castle Rock pueblos. Vessels were being moved between Sand Canyon and Castle Rock, as well as between the two villages up on Mesa Verde and the Sand Canyon locality.

Gooding, J. D. (editor)

1980 *The Durango South Project: Archaeological Salvage of Two Late Basketmaker III Sites in the Durango District*. Anthropological Papers No. 34. University of Arizona, Tucson.

The Durango South project is the only published literature on an early Pueblo I (A.D. 750-800) community in what is now Bodo Industrial Park at the edge of Durango. Pit structure architecture is the focus of this report and there is only limited investigation of extramural features at sites 5LP110 and 5LP11. It may be that Gooding's report will be the primary glimpse of a community that once had 20-40 pit structures (based on an unpublished 1975 survey by Hibbets).

Gregg, S. A., F. E. Smiley, and L. Folb (editors)

1995 *Archaeological Sites and Surfaces. Animas-La Plata Archaeological Project. 1992-1993 Investigations in Ridges Basin, Colorado*. Submitted under Contract No. 1425-2-CS-40-11730, U.S.D.I., Bureau of Reclamation, Upper Colorado Region. Animas-La Plata Archaeological Project Research Paper No. 1. Department of Anthropology, Northern Arizona University, Flagstaff.

Archaeological research in Ridges Basin near Durango, Colorado is reported in this monograph. This is the first in a series for four volumes; the emphasis in this volume is on the analysis and interpretation of surface remains. Forty-two sites were surface collected and mapped. Most sites date to two periods: preceramic, Basketmaker II sites that likely date between A.D. 1 and 350, and early Puebloan sites that likely date between A.D. 750 and 825. There is a brief evaluation of each site, and the analysis of the surface remains is used to interpret the sites in terms of period of occupation and site function, and to provide information for mitigation, land management, and site monitoring and stabilization. The report is illustrated with 68 figures, including maps

showing the distribution and density of surface artifacts at each site. A concluding chapter by Smiley discusses the site structure, settlement patterns, and demography in Ridges Basin.

Greubel, R. A.

1991 *Hovenweep Resource Protection Zone Class III Cultural Resource Inventory, Montezuma County, Colorado, and San Juan County, Utah*. Alpine Archaeological Consultants, Montrose, CO. Submitted to Bureau of Land Management, Colorado and Utah.

The Hovenweep Resource Protection Zone is a 4,090-acre (1,656-hectare) area surrounding or adjacent to four units of the Hovenweep National Monument. This volume reports the results of an intensive survey of the area, resulting in the identification and recording of 372 archaeological sites and 710 isolated finds. A total of 225 sites was evaluated as being eligible to the National Register of Historic Places. Most sites date to the Pueblo II and III periods, although earlier Anasazi, Archaic, and historic sites are also identified. The report is exceptionally thorough and well organized, making it one of the most useful survey reports in the Mesa Verde region.

Gross, G. T.

1992 *Subsistence Change and Architecture: Anasazi Storerooms in the Dolores Region, Colorado*. *Research in Economic Anthropology* Supplement 6:241-265.

Traditional investigations of prehistoric civilizations have placed great emphasis on the beginnings of agriculture. Gross emphasizes that the storage of foodstuffs, by reducing subsistence risk and increasing the possibility of sedentism, may be equally important. The increasing size, construction costs, and attention to location of Dolores-region storerooms between A.D. 600 and 900 are tied into a larger model of subsistence change.

Gross, G. T., and A. E. Kane (compilers)

1988 *Dolores Archaeological Program: Ac ceramic and Late Occupations at Dolores*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

This volume is the last published in the DAP series, and it is something of a stew of all the reports that remained to be published. It brings together 10 small site reports ranging from the limited number of small late Pueblo habitations and Archaic sites to two protohistoric burial sites. The final chapters are short, but important, examinations of the patterning of the late Pueblo pottery in the project area.

Hayes, A. C.

1964 *The Archeological Survey of Wetherill Mesa, Mesa Verde National Park, Colorado*. Archeological Research Series No. 7-A. National Park Service, Washington, D.C.

Though somewhat dated, Hayes' survey of Wetherill Mesa remains one of the most important surveys in the region. He spells out many of the needed details in this settlement history of the 16.3 km² (6.3 mi²) of the mesa. Though key details such as the means whereby Hayes estimated his phase-based room numbers are left unexplained, the survey remains highly useful.

Hayes, A. C., and J. A. Lancaster

1975 *Badger House Community, Mesa Verde National Park*. Publications in Archeology No. 7E. Wetherill Mesa Studies. National Park Service, Washington, D.C.

The Badger House investigations summarize the results of archaeological excavations at two Basketmaker III pithouses (sites MV1616 and 1644), a large Pueblo I village (composed of sites MV1646, 1647, 1664, 1666, and 1676) and a Pueblo II and late Pueblo III site called Badger House (site MV1452). The report is most notable for its detailed discussion of a Pueblo I community on Mesa Verde proper. The Badger House report also offers one of the first lengthy discussions of a new pottery type, Cortez Black-on-white.

Hegmon, M.

1995 *The Social Dynamics of Pottery Style in the Early Puebloan Southwest*. Occasional Paper No. 5. Crow Canyon Archaeological Center, Cortez, CO.

This volume is a revised version of Hegmon's Ph.D. dissertation. She compares pottery designs on Pueblo I period pottery from the Mesa Verde region with designs on pottery from the Black Mesa region. Mesa Verde pottery comes from DAP sites and from the Duckfoot site; Black Mesa pottery comes from sites excavated as a part of the Black Mesa archaeological project. Hegmon uses the structure and diversity of pottery design to examine the social dynamics in these two different areas of the Southwest. This volume is an important contribution to the literature on style and stylistic analyses. In addition, it is a well-designed comparative study that draws on material from three of the most important archaeological projects yet conducted in the northern Southwest, thereby providing new insights into the variation in social dynamics in this area.

Hegmon, M., J. R. Allison, H. Neff, and M. D. Glascock

1997 Production of San Juan Red Ware in the Northern Southwest: Insights into Regional Interaction in Early Puebloan Prehistory. *American Antiquity* 62:449-463.

This article presents the results of a neutron activation analysis of San Juan Red ware pottery and clays that were likely used in the production of this pottery. The study shows that production of San Juan Red ware was concentrated at a limited number of locales within southeastern Utah, suggesting the possibility of specialized pottery-making communities. Within southeastern Utah, production appears to be concentrated along Montezuma Creek, although San Juan Red ware was produced in other areas as well. The distribution of San Juan Red ware and its association with ritual contexts suggest that it had high exchange value and that it had an important role in the social, political, and economic life of Puebloan communities in the Mesa Verde region, especially in the ninth century.

Hester, J. J., and J. L. Shiner

1963 *Studies at Navajo Period Sites in the Navajo Reservoir District*. Papers in Anthropology No. 9. Museum of New Mexico, Santa Fe.

Hester and Shiner's study of 10 early Navajo sites in the Pine River, La Jara, and Rosa drainages of Navajo Reservoir marks the beginnings of modern Navajo archaeology. These sites represent two multi-hogan habitation sites (each with three to five hogans), two pueblitos, and five

rockshelter sites. The study helped to confirm the characteristics of the Dinetah and Gobernador phases and was one of the first modern studies of Gobernador phase sites.

Holmes, W. H.

1878 Report of the Ancient Ruins of Southwestern Colorado, Examined During the Summers of 1875 and 1876. In *Annual Report of the United States Geological and Geographical Survey of the Territories, Embracing Colorado and Parts of Adjacent Territories; Being a Report of Progress of the Exploration for the Year 1876*, by F. V. Hayden, pp. 381-408. Government Printing Office, Washington, D.C.

Holmes joined the Hayden Survey as an artist but became involved in recording both geological and archaeological data. Later in his career, he worked for the U.S. Geological Survey and then served as director of the Bureau of American Ethnology. He is well-known for his pioneering surveys of prehistoric American pottery and stone tools and for effective critiques of proposed paleolithic tool industries in the Americas. This report dates from the beginnings of his career as an archaeologist. In it, he describes cliff dwellings, towers, and large open sites located on or near the main watercourses of the La Plata, San Juan, Mancos, and McElmo. He also includes a reasonably accurate map and description of the ruins at "Aztec Spring" (Yucca House). In addition, he presents quite accurate illustrations of a number of examples of pottery and stone artifacts from the study area, as well as a sampling of figures from several rock art panels.

Huckleberry, G. A., and B. R. Billman

1998 Floodwater Farming, Discontinuous Ephemeral Streams, and Puebloan Abandonment in Southwestern Colorado. *American Antiquity* 63(4):595-616.

This article has two important lessons for archaeologists working in the northern Southwest. First, it provides alluvial stratigraphic and chronometric data to show that periods of prehistoric drought do not uniformly equate to arroyo-cutting across a whole region. Second, it provides some of the first published data on the Ute Mountain Ute irrigation project, the first major investigation in many decades in the Towaoc area.

Hutchinson, A., and J. E. Smith (compilers)

1994 *Proceedings of the Anasazi Symposium, 1991*. Mesa Verde Museum Association, Mesa Verde National Park, CO.

This volume contains the papers presented at the 1991 Anasazi Symposium, which was dedicated to James Allen (Al) Lancaster, includes a keynote address by David E. Stuart. The remaining 23 papers are organized into the following sections: Agriculture: Technology and Productivity; Population Dynamics and Culture Change; Habitation Choices and Climatic Factors, Social Organization and Land Use; Miscellany, and Physical Anthropology's Turn. Most of the contributions are the spoken versions of the papers, which was at the request of the compilers of the volume who sought to preserve the spirit of the original conference.

Jackson, W. H.

- 1876 Ancient Ruins in Southwestern Colorado. In *Annual Report of the United States Geological and Geographical Survey of the Territories, Embracing Colorado and Parts of Adjacent Territories; Being a Report of Progress of the Exploration for the Year 1874*, by F. V. Hayden, pp. 367-381. Government Printing Office, Washington, D.C.

This is the official report of the archaeological work of the Hayden Survey for 1874, published in 1876. Another version of this report appeared in 1875 in the *Bulletin* series, which was designed to bring selected aspects of the findings of the Hayden survey to a wider audience. William H. Jackson is best known as a pioneering photographer of the West and was employed by the Hayden Survey as a photographer. However, his reports on archaeological observations made in 1874 provide the first systematic descriptions of sites in the study area. Although he did not visit the Mesa Verde proper, he describes and illustrates cliff dwellings in Mancos Canyon and elsewhere in the region. He also describes the site now known as Castle Rock (then Battle Rock) and other Pueblo III sites in the McElmo and lower Yellow Jacket drainages (he referred to the latter as the Hovenweep). In addition to cliff dwellings, he describes and illustrates masonry towers and open canyon-rim sites.

Kane, A. E.

- 1989 Did the Sheep Look Up? Sociopolitical Complexity in Ninth Century Dolores Society. In *The Sociopolitical Structure of Prehistoric Southwestern Societies*, edited by S. Upham, K. G. Lightfoot, and R. A. Jewett, pp. 307-361. Westview Press, Boulder, CO.

Kane's analysis of data from Pueblo I villages in the Dolores area suggests that although Dolores society was probably egalitarian, political and ritual power may have been increasingly controlled by particular individuals or groups of individuals. Kane's presentation of data on available village resources, population aggregation, distribution of public facilities, variability in architectural facilities and village layout, and nonlocal goods is one of the best summaries of these data.

Kane, A. E., and G. T. Gross (compilers)

- 1986 *Dolores Archaeological Program: Anasazi Communities at Dolores: Early Anasazi Sites in the Sagehen Flats Area*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

The Sagehen Flats area of Dolores was one of the first dam construction borrow areas that had to be excavated at Dolores, and in a sense these investigations defined the excavation and recording styles that characterized the whole project. Nine sites are reported in this volume and two of the sites became type sites for two of the DAP subphases: Tres Bobos (5MT4545) was a critical site for understanding the mid-to-late Basketmaker III occupation and Dos Casas (5MT2193) was a similarly important site for the early Pueblo I occupation of the area. Seven of the sites are hamlets and two are field houses. All date between A.D. 625 and 950.

Kane, A. E., W. D. Lipe, T. A. Kohler, and C. K. Robinson (compilers)

- 1986 *Dolores Archaeological Program: Research Designs and Initial Survey Results*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

The general research design for the DAP identified archaeological questions that could be answered by the Dolores investigations and provided a standardized excavation design for these investigations. Five problem domains were identified: 1) economy and adaptation, 2) paleodemography, 3) social organization, 4) extraregional relationships, and 5) cultural process. These domains demanded that the many different sites within the mitigation area be excavated with different intensities of documentation, and the volume explains the tracking system used by the DAP to allot different investigative resources to specific sites. The volume also offers preliminary survey results for portions of the research area.

Kane, A. E., and C. K. Robinson (compilers)

1986 *Dolores Archaeological Program: Anasazi Communities at Dolores: Middle Canyon Area*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

The two volumes of the Middle Canyon area gather the excavation reports for four Pueblo I sites on the east side of the Dolores River. Two of the sites—Rio Vista and House Creek—are important villages that were tested to provide comparative material for the more extensively excavated McPhee and Grass Mesa villages. Rio Vista is a four-room block village that was investigated with an extensive probabilistic sample and a limited amount of judgmental sampling. House Creek was similar in size but sampled in a very different manner. A single-room block and pit structure were completely excavated and a small portion of the largest room block saw limited testing. The final two sites reported in the volume, Periman Hamlet and Singing Shelter, are an 18-room Pueblo I hamlet and a Pueblo I great kiva. Singing Shelter is distinguished by being the largest Pueblo I great kiva on record, with a surface area of approximately 850 m².

1988 *Dolores Archaeological Program: Anasazi Communities at Dolores: McPhee Village*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

McPhee Village is hands-down the largest village in the DAP area. With at least 21 separate room blocks and a primary occupation lasting 50 years or less (A.D. 830-880), McPhee Village provided a difficult archaeological target. As with other large Pueblo I villages, the habitation area is more akin to a modern trailer court than to a multistory apartment complex. Because the room blocks within the village were originally recorded as separate sites, it is difficult to keep one's focus on the village setting. However, the entire village must have been an impressive settlement in A.D. 850, when it may have had a population of more than 500 people. Extensive excavations were conducted at a number of room blocks within the village, most notably McPhee Pueblo, Masa Negra Pueblo, Aldea Alfareros, and Weasel Hamlet. The chapters at the end of the volume discuss the evidence for resource depletion, economic intensification, and possible specialization. McPhee provides the most extensive look at a Pueblo I village currently available.

Kent, S.

1991 Excavations at a Small Mesa Verde Pueblo II Anasazi Site in Southwestern Colorado. *Kiva* 57:55-75.

This article is a mini site report for the Gnatsville site, a small Pueblo II residential site that is tree-ring dated to A.D. 1035. The sampling at Gnatsville includes excavations in a small rubble mound, a kiva, two trash middens, and several extramural features. The site is important because it is single component and well dated; it therefore provides excellent architectural and artifact data that can be confidently assigned to the early 1000s. The article reports the tree-ring dates and provides the results of rudimentary analyses of pottery, lithic artifacts, fauna, and botanical remains. These results are compared with other excavated sites in the Mesa Verde region.

Kenzle, S.

1997 Enclosing Walls in the Northern San Juan: Sociophysical Boundaries and Defensive Fortifications in the American Southwest. *Journal of Field Archaeology* 24:195-210.

Masonry enclosing walls are common features that appear quite suddenly with late Pueblo III sites. They clearly indicate changes in social relations as they delimit the boundaries of sites and may have served as one means to defend these sites. Kenzle's study assembles data on 88 late Pueblo sites, 41 of which are walled and 47 of which are unwalled. She suggests that increasing levels of violence in Pueblo III probably contributed to the increased presence of enclosing walls at large sites.

Kidder, A. V.

1962 *An Introduction to the Study of Southwestern Archaeology, with a Preliminary Account of the Excavations at Pecos* (with a Summary of Southwestern Archaeology Today, by I. B. Rouse). Reprinted Yale University Press. New Haven, CT. Originally published 1924, Yale University Press for the Department of Archaeology, Phillips Academy, Andover, MA.

Kidder began his long campaign at Pecos Pueblo in 1915. Between then and 1929, he excavated during a total of 10 field seasons at Pecos and nearby sites. The 1924 "Preliminary Account" was the first monographic report of the work. Approximately the last seventy percent of the monograph was devoted, however, to a survey of the historic Pueblos and a synthesis of what was known of Southwestern archaeology. Kidder viewed this latter part of the book as providing a context for the publications on the research at Pecos that were to follow. This was the first detailed area synthesis in American, as well as Southwestern, archaeology. Kidder devoted the major part of the archaeological overview to the San Juan culture area, which was the best-known part of the Southwest at that time. He was familiar with the northern San Juan, having done his first fieldwork in the McElmo Canyon in 1907 under the very general direction of Edgar Hewitt. In his 1924 synthesis, Kidder treats Chaco Canyon, Mesa Verde, and Kayenta as sub-cultures of a general San Juan culture. There also are briefer discussions of the archaeology of the Rio Grande and "Eastern Periphery," the Little Colorado, the Upper Gila, the Lower Gila, and the Mimbres. In his discussion of the San Juan, he provides a four-stage chronological scheme, which was one of the precursors to the Pecos Classification of 1927. The 1962 edition of the book has a long introduction by Irving B. Rouse, which capably summarizes developments in Southwestern archaeology between 1924 and the early 1960s.

Kohler, T. A.

1992 Fieldhouses, Villages, and the Tragedy of the Commons in the Early Northern Anasazi Southwest. *American Antiquity* 57:617-635.

Kohler consider whether Garrett Hardin's thesis of the "tragedy of the commons" applies to a period of population increase and Pueblo I village formation in the northern Anasazi Southwest. In the tragedy of the commons there is an inherent conflict between an individual's desire to maximize self interest and a community's right to share certain resources in common. Kohler argues that the increased construction of field houses in the Pueblo I Period indicates that agricultural land became increasingly scarce with the aggregation of population into villages and that field houses represent visible claims to the use of particular parcels of land.

1993 News from the Northern American Southwest: Prehistory on the Edge of Chaos. *Journal of Archaeological Research* 1(4):267-321.

Kohler's summary of the prehistory of the northern Mogollon and Anasazi areas of the American Southwest is a masterful synthesis. It brings together a great deal of contract archaeological research, academic research, and topics of debate from the 1980s. Kohler's primary emphasis is on the pre-A.D.1150 archaeology, and his theoretical orientation is on complex adaptive systems. His large bibliography and fascinating discussion of critical changes in social complexity make the article worth the search to find it.

Kohler, T. A., W. D. Lipe, and A. E. Kane (compilers)

1986 *Dolores Archaeological Program: Anasazi Communities at Dolores: Early Small Settlements in the Dolores River Canyon and Western Sagehen Flats Area*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

This volume reports on the intensive excavations at six relatively small habitation sites, which primarily date to Basketmaker III or Pueblo I. The sites range in size from very small to large hamlets. Pozo Hamlet, a late Basketmaker III pithouse with four associated surface structures, is the smallest, and Prince Hamlet, which has a late Pueblo I occupation consisting of two pit structures and a room block with 20 rooms, is the largest. Site excavations are thoroughly described and there are standard output tables detailing the associated artifacts. There is also a report of 18 sites tested in the Grass Mesa locality.

Kohler, T. A., and M. H. Matthews

1988 Long-term Anasazi Land Use and Forest Reduction: A Case Study from Southwest Colorado. *American Antiquity* 53:537-564.

Kohler and Matthews used changes in frequencies in woody taxa in macrobotanical samples from three village areas in Dolores to support the proposal that the Anasazi deforested their local landscape. They argue that the impact is to be seen in a shift from woody species to more brushy plants primarily between A.D. 750 and 900. Though their interpretations of the data are open to debate, the immense amount of data they offer allow future researchers a model of how to design research to test the deforestation explanation.

Kohler, T. A., and C. R. Van West

1996 The Calculus of Self-Interest in the Development of Cooperation: Sociopolitical Development and Risk Among the Northern Anasazi. In *Evolving Complexity and Environmental Risk in the Prehistoric Southwest*, edited by J. Tainter and B. Tainter, pp. 169-196. Proceedings Vol. 24. Santa Fe Institute Studies in the Science of Complexity. Addison-Wesley, Reading, MA.

This article uses microeconomic theory to argue that people were likely to share their agricultural goods during good times and avoid sharing during bad times. The authors argue that aggregated settlement would facilitate sharing and dispersed settlement would be a strategy employed to avoid sharing. Data from the Mesa Verde region are used to test this theory. Periods of aggregated versus dispersed settlement are identified, and Van West's reconstruction of agricultural productivity is used to identify periods of high productivity versus low productivity. The authors compare the archaeological record to their model and conclude that some periods conform to the expectations of the model but other periods do not. Increasing regional population density is identified as a factor that may result in the lack of fit between the model and the archaeological data.

Kuckelman, K. A., and J. N. Morris (compilers)

1988 *Archaeological Investigations on South Canal*. 2 vols. Four Corners Archaeological Project Report No. 11. Complete Archaeological Service Associates, Cortez, CO.

This is a two-volume monograph that reports on the excavations at 11 sites along the South Canal, which is a part of the delivery system for the Bureau of Reclamation Dolores Project. Extensive excavations were conducted at eight sites, delineating two Basketmaker III habitations, one Pueblo I habitation, one Pueblo I field house, and five Pueblo II habitations. Limited excavations occurred at a late-Archaic/Basketmaker II camp, a possible Pueblo II field house, and a probably Basketmaker III/Pueblo I and Pueblo II habitation. Field methods resulted in almost 100 percent recovery of structures and features. Twelve pit structures, 33 surface rooms, and 1,050 features were investigated; approximately 14,000 artifacts were recovered. A thorough introductory chapter is followed by eight chapters on the sites with extensive excavations and a single chapter for the three sites with limited excavations. The site descriptions are followed by a synthetic chapter and individual appendixes on the following: ceramic analysis, macrobotanical analysis, faunal analysis, the analysis of a single burial, and pollen analysis from six sites. This report received limited distribution, which is unfortunate because the excavation, analysis, and reporting are exemplary. Among other notable achievements, the South Canal project presents the best documentation available for habitation sites in the central Mesa Verde region that date throughout the A.D. 1000s.

Lancaster, J. A., J. M. Pinkley, P. F. Van Cleave, and D. Watson.

1954 *Archeological Excavations in Mesa Verde National Park, Colorado, 1950*. Archeological Research Series No. 2. National Park Service, Washington, D.C.

This volume reports on the excavation of three sites located on Chapin Mesa in Mesa Verde National Park. These sites are a part of the "Ruins Road loop," which provides the park visitor with the best interpretation of architectural change through time. Sites reported in this volume include two Basketmaker III pithouses at the Twin Trees Site; Site 16, a multicomponent Pueblo

II site; and Sun Point Pueblo, an early Pueblo III habitation. The results of this project did a great deal to further the understanding of chronological issues in Mesa Verde archaeology, and the clear descriptions ensure that the volume remains useful today. In a particularly useful section of this report, the authors use tree-ring dating and stratigraphy to discuss the architectural development of the kiva.

Lekson, S. H.

1988 The Idea of the Kiva in Anasazi Archaeology. *The Kiva* 53(3):213-234.

Lekson challenges the traditional interpretation of ancient kivas as buildings that had specialized ritual use by a male sodality. He argues that this interpretation became fixed early in the history of Southwestern archaeology before the field was characterized by systematic, self-critical research. He further argues that the traditional interpretation was influenced by a political concern for modern Pueblos and in opposition to government policy toward the Pueblos. Lekson uses kiva-to-room ratios to argue that ancient kivas functioned as domestic architecture analogous to earlier pithouses.

Lightfoot, R. R.

1988 Roofing an Early Anasazi Great Kiva. *The Kiva* 53(3):253-272.

Lightfoot uses a partially excavated great kiva from Grass Mesa Village to develop a roof design for a Pueblo I great kiva. This design is used to calculate the size of the timbers needed for the roof-support columns and the primary and secondary beams; based on these requirements it appears that the necessary timbers were locally available. Replicative building experiments are used to calculate construction costs, which total approximately 8,850 person-hours. These labor estimates are combined with population estimates for Grass Mesa Village to conclude that the great kiva could have been constructed in five weeks. This time estimate would be reduced if a larger work pool was recruited from the population in the surrounding region.

1993 Abandonment Processes in Prehistoric Pueblos. In *Abandonment of Settlements and Regions: Ethnoarchaeological and Archaeological Approaches*, edited by C. M. Cameron and S. A. Tomka, pp. 165-177. Cambridge University Press, Cambridge.

This study applies a computer simulation approach to a case study of abandonment at the Duckfoot site. The strength of this analysis is the remarkable preservation and thorough excavation of Duckfoot. This resulted in accurate estimates of the following: the total amount of discarded pottery at the site, the number and type of vessels in the household inventory, and the length of time the site was occupied. The simulation is used to determine if the pottery left behind on the floors of structures represents a full household assemblage, or if that assemblage was depleted when the site was abandoned. Results indicate that vessels with the highest replacement cost—large jars, large ollas, and bowls—were likely removed and curated as a part of the process of site abandonment.

1994 *The Duckfoot Site, Volume 2: Archaeology of the House and Household*. Occasional Paper No. 4. Crow Canyon Archaeological Center, Cortez, CO.

The Duckfoot Site was a 19-room, 4-pit structure, Pueblo I hamlet that was completely excavated by Crow Canyon Archaeological Center. This study by Lightfoot is unprecedented in its use of architectural construction patterns, the presence of particular features, and the refitting of artifacts from a totally excavated residential site to construct an argument about the organization, size, and nature of prehistoric households. Lightfoot's investigations into the discard equation (i.e., the average amount of trash we expect a household to produce over a distinct interval of time) is ground-breaking work that laid the foundations for some of Varien's (1997) work on the use lives of Pueblo III sites. A first volume in the Duckfoot series describes the archaeological work and presents detailed results and analyses.

Lightfoot, R. R., and M. C. Etzkorn

1993 *The Duckfoot Site, Volume 1: Descriptive Archaeology*. Occasional Paper No. 3. Crow Canyon Archaeological Center, Cortez, CO.

Duckfoot is the most completely excavated and best dated Pueblo I site yet investigated in the Mesa Verde region. The occupation of this small residential hamlet dates between A.D. 850 and 880. This volume provides the description and interpretation of the excavations at Duckfoot. A chapter on the excavations includes a discussion of the research design and a thorough description of each architectural and excavation unit. Separate chapters discuss the analysis of the pottery, stone and mineral artifacts, perishable artifacts, carbonized plant remains, fossil pollen, faunal remains, and human remains. The volume concludes with a synthetic chapter and six appendixes, which provide additional information on the analyses. The volume includes 130 illustrations and 153 tables.

Lipe, W. D. (editor)

1992 *The Sand Canyon Archaeological Project: A Progress Report*. Occasional Paper No. 2. Crow Canyon Archaeological Center, Cortez, CO.

This edited volume is a progress report on the Sand Canyon archaeological project, a long-term research project initiated by the Crow Canyon Archaeological Center. An introductory chapter presents the research design and history of research. This is followed by separate chapters on the upper Sand Canyon archaeological survey, the lower Sand Canyon survey, the Goodman Point historic land-use study, the site testing program, intensive excavations at the Green Lizard site, intensive excavations at Sand Canyon Pueblo, the environmental archaeology program, and modeling prehistoric climate and agriculture in southwestern Colorado. The volume concludes with an exceptionally useful synthetic chapter that addresses the questions identified in the project research design, using the results of the Sand Canyon project research to address questions relevant to the larger Mesa Verde region and beyond.

Lipe, W. D., and M. Hegmon (editors)

1989 *The Architecture of Social Integration in Prehistoric Pueblos*. Occasional Paper No. 1. Crow Canyon Archaeological Center, Cortez, CO.

This edited volume, the first in the Crow Canyon Archaeological Center's Occasional Paper series, examines architectural features that were important in the integration of ancient Puebloan settlements, including a focus on the question of how small kivas were used. Each chapter makes

a strong contribution to the understanding of these issues. A series of introductory chapters sets the stage by defining the objectives of the volume, presenting a broad theoretical overview, and providing a historical review of how architecture has been used to analyze social integration in ancient communities. This is followed by an important cross-cultural analysis of socially integrative architecture and a seminal essay by Lipe that updates Julian Steward's classic article that examines the social scale associated with the use of ancient Puebloan kivas. This is followed by six detailed cases studies of social integration in the northern Southwest; these studies employ architectural and ceramic data. The volume concludes with two separate commentaries on the papers, one by Stephen Lekson and the other by T. J. Ferguson.

Lipe, W. D., J. N. Morris and T. A. Kohler,

1988 *Dolores Archaeological Program: Anasazi Communities at Dolores: Grass Mesa Village*. 2 vols. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

Grass Mesa Village was the second large village that was extensively investigated by the DAP. It is on a high point overlooking the juncture of Beaver Creek and the Dolores River and was excavated with a combination of probability and judgmental sampling. Grass Mesa Village, though not the largest of the villages in the Dolores area, had the highest density of structures and artifacts of the four villages investigated by the DAP. This situation created difficulties in understanding the contemporaneity of surface structures and pit structures. The long occupation and frequent rebuilding, the superposition of pit structures, heavy disturbance by pothunting, the erosion of structural remains, and the heavy reliance on a testing program rather than extensive horizontal stripping all contributed to the difficulty of understanding the site. In spite of these difficulties, the site provided the best evidence of village formation with Grass Mesa beginning as a large hamlet dating to approximately A.D. 750-800, an early Pueblo I great kiva, and a multi-roomblock village dating to approximately A.D. 825-885. In addition, the abandonment of Grass Mesa Village provided a striking contrast to the rest of the project area. In the final decade of occupation, Grass Mesa Village, which had been centered around multihousehold pit structure-room block plazas, was reconfigured into a village of possibly 100 small pithouses. The final occupation of the site, the Grass Mesa subphase, has in recent years been revised to be a shorter, more intense, occupation that concluded by approximately A.D. 890.

Lister, F.

1993 *In the Shadow of the Rocks: Archaeology of the Chimney Rock District in Southern Colorado*. University Press of Colorado, Niwot.

This volume synthesizes current knowledge about Chimney Rock Pueblo, its place as a center for a local community, and the place of this community in the larger Chaco Anasazi cultural landscape. The book begins with a description of the dramatic local setting, which is followed by a history of early archaeological research in the area. The Chimney Rock area is then put in a larger regional context by reviewing the results of the Navajo Reservoir project, Charles Adams' dissertation research on the upper San Juan River drainage, and recent salvage excavations at Navajo Reservoir. Next is a summary of the results of the Mesa Verde Research Center-University of Colorado Chimney Rock project supervised by Frank Eddy. The final chapter reports on the protohistoric and historic period occupation of the Chimney Rock area.

1997 *Prehistory in Peril: The Worst and Best of Durango Archaeology*. University Press of Colorado, Niwot.

A person seeking an introduction to the Basketmaker II archaeology of the Durango area has only a few good sources of information. Florence Lister's recounting of the excavation of the Falls Creek Shelters and Talus Village, as well as the contentious struggle for control of the items from these excavations, is one of the best introductions and certainly is the most readable text. She tells both the story of the archaeology and the archaeologists who investigated this area. The detailing of the tangled histories of "Zeke" Flora and Earl Morris in researching the high-country Basketmakers, as well as the inclusion of important new research in the area, make this an important contribution to the archaeological literature of the region. Archaeologists should not discount this work just because it is more accessible than most of the literature the rest of us produce.

Lister, R. H.

1964-1968 *Contributions to Mesa Verde Archaeology: I-V*. Studies in Anthropology Nos. 9, 11-13, 15. University of Colorado, Boulder.

Four monographs and an edited volume describe some of the most important excavations conducted in Mesa Verde National Park. The excavations were conducted by the Department of Anthropology of the University of Colorado during two periods: sites 499, 875, and 866 were excavated between 1953 and 1956; the salvage excavations described in No.15 were conducted between 1965 and 1968. Volume 9, 11, and 12 describe the excavation of three sites in the Far View community: sites 499, 875 (which has two superimposed pueblos), and 866. In addition the excellent description of the excavations at these sites, volume 12 includes a synthesis of the cultural sequence at sites 499, 875, and 866. Volume 13 is a brief description of the excavations at site 1086, an above-ground kiva located in the Morefield Canyon area. The final volume, 15, reports on salvage excavations conducted at 17 sites, which range from a concentration of burned rocks to a pueblo consisting of 17 rooms and two kivas.

Luebben, R. A.

1982 Two Pueblo III Kiva Complexes Associated with Subterranean Rooms, Southwestern Colorado, *The Kiva* 48(1-2):63-81.

This article reports the excavations of two Pueblo III sites, the Ismay and Watson sites, which are located south-southwest of Yucca House National Monument. Both sites have associated tree-ring dates; the latest date for the Ismay Site is a noncutting date of A.D. 1144 and the latest date for the Watson site is a cutting date of A.D. 1204. This article describes the sites and the excavations, focusing on completely subterranean rooms that were linked to kivas by tunnels.

Luebben, R. A., and P. R. Nickens

1982 A Mass Interment in an Early Pueblo III Kiva in Southwestern Colorado. *Journal of Intermountain Archeology* 1(1):66-79.

This article, published in the short-lived *Journal of Intermountain Archeology*, describes a mass interment at the Grinnell site, a small Pueblo III habitation consisting of two kivas, a tower, a small surface room block, and extramural features. The site is located just southwest of Yucca House near the Ute Mountain Ute Reservation and the modern town of Towoac. The mass interment includes the remains of at least seven persons; the skeletal remains demonstrate spiral fracturing, charring, and cutting. The article reports on the provenience of the remains, which were found in several contexts within Kiva 2, and presents an osteological analysis. Provenience and osteological data are used to interpret the circumstances that resulted in the mass interment. This is one of the first studies from southwestern Colorado where a systematic analysis led to the interpretation that violence and possibly cannibalism were implicated in the deaths of the individuals.

Madsen, D. B.

1994 Mesa Verde and Sleeping Ute Mountain: The Geographic and Chronological Dimensions of the Numic Expansion. In *Across the West: Human Population Movement and the Expansion of the Numas*, edited by D. B. Madsen and D. Rhode, pp. 24-31. University of Utah Press, Salt Lake City.

The origins of the Ute tribes require much more research. However, as Madsen argues in this paper, the larger body of evidence about the Numic expansion across the Great Basin currently supports a post-A.D. 1000 migration of ancestors of the Ute into the Mesa Verde region. For more on the potential timing of the proto-Ute arrival in this area, see Alan Reed's article in the same edited book.

Malville, J. M., and G. Matlock (editors)

1993 *The Chimney Rock Archaeological Symposium*. USDA Forest Service General Technical Report RM-227. Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.

This edited volume presents a series of papers that were presented at a symposium on Chimney Rock, a Chacoan outlier located near the Piedra River. The original conference was held at Fort Lewis College and was sponsored by the Colorado Archaeological Society, the Forest Service, and Fort Lewis College. The contents of the volume include five introductory chapters, three chapters on recent research on Chimney Rock, seven chapters that discuss the larger Chacoan phenomenon, and a summary chapter.

Martin, P. S.

1929 The 1928 Archaeological Expedition of the State Historical Society of Colorado. *The Colorado Magazine* 6(1):1-35.

Here, Martin describes work conducted west of Ackmen, Colorado (northwest of Cortez in the Monument-McElmo drainage unit). Brief descriptions of 14 sites are presented under "Reconnaissance Work." These represent the "largest and most interesting" sites encountered. Among these are the Clawson (now Lancaster), Herren, Ray or Wright, Little Cow Canyon, Lowry, Cottonwood, and Cutthroat Castle ruins. Under "Excavations," Martin reports on extensive work at Herren Farms and at Charnel House Tower (a late Pueblo II and/or Pueblo III structure 28 feet in diameter which contained the remains of a number of individuals who had

“...probably been killed or who had all died at the same time from other causes” (Martin 1929:26). He considered the Herren Farms site to be representative of the unit pueblo or small-house type, but it is evident from his description, maps, and illustrated artifacts that it was a Pueblo III aggregate composed of several room blocks, each having several kivas and towers and partial enclosing walls. A systematic analysis of artifacts is not presented, although a number of whole pottery vessels are illustrated.

1930 The 1929 Archaeological Expedition of the State Historical Society of Colorado in Cooperation with the Smithsonian Institution. *The Colorado Magazine* 7(1):1-40.

Martin’s 1929 fieldwork was conducted in the same general area northwest of Cortez (in the Monument–McElmo drainage unit) where he had done a reconnaissance survey in 1928). During this reconnaissance, Martin had become interested in “rim rock ruins.” In 1929, he spent approximately half of the field season excavating a portion of Beartooth Pueblo, an evidently late Pueblo III site located on the rim of the upper part of Ruin Canyon. Twenty-two rooms and two kivas were excavated. The remainder of the season was spent at the Little Dog Ruins, where evidence of superposed Pueblo II and/or III period roomblocks was discovered. In addition, several pit structures that Martin assigned to Basketmaker III or Pueblo I were fully excavated. As in the earlier report, artifacts are only briefly described. A few bone and stone items are illustrated, in addition to complete pottery vessels.

Martin, Paul S. (with reports by Carl Lloyd and Alexander Spoehr)

1938 *Archaeological Work in the Ackmen-Lowry Area, Southwestern Colorado, 1937*. Anthropological Series Vol. 23(2). Field Museum of Natural History, Chicago.

This volume presents the results of the first year of fieldwork sponsored by the Field Museum Archaeological Expedition to the Southwest. Fieldwork resulted in the excavation of four small sites located in the area surrounding Lowry Pueblo; Martin viewed each as a snapshot in the historic development of the Mesa Verde region and critical to understanding larger, multicomponent sites like Lowry Pueblo. When Martin wrote the report, he did not get results from the tree-ring samples he collected. The samples were subsequently dated, and the dating inferences made by Martin in this volume proved to be wrong. Cutting dates are not present at all sites, but based on the available tree-ring dates and the pottery illustrated by Martin, it appears that the four sites were occupied sometime between A.D. 950 and 1150. The volume describes the excavations at each site, discusses the artifacts that were recovered, presents the results of a survey conducted in the area around Lowry Pueblo, and concludes with a synthesis that interprets the findings in a cultural-historical framework. Carl Lloyd’s defense of archaeological survey and his discussion of survey methods has historical value in understanding the development of archaeological method and theory. The reports were exceptionally thorough for their time, and remain useful today. The volume is well illustrated with abundant photographs, figures, and maps.

Martin, P. S. (with a report by John Rinaldo)

1939 *Modified Basket Maker Sites, Ackmen-Lowry Area, Southwestern Colorado, 1938*. Anthropological Series Vol. 23(3). Field Museum of Natural History, Chicago.

This volume presents the results of the final year of fieldwork in the Ackmen-Lowery area that was sponsored by the Field Museum and supervised by Paul Martin. Martin sought to excavate sites earlier than those investigated in previous seasons, which dated between A.D. 950 and 1150. He accomplished this by excavating two habitation sites that were identified during survey as dating to the Modified Basket Maker period. Both sites have multiple structures, including an early great kiva, and several building periods. Several structures at each site burned, resulting in numerous tree-ring dates; these have been redated since Martin published this report. Based on tree-ring dates, pottery, stratigraphy, and architectural style, it is now known that these sites have components dating primarily to the early and late Pueblo I period, with some Basketmaker III and early Pueblo II components represented as well. The report presents a description of the excavations and architectural features encountered at both sites, along with a discussion of the artifacts recovered. A synthesis uses these sites and the results of previous fieldwork in the Ackmen-Lowery area to evaluate the cultural-historical sequence in the region. As with all of Martin's reports, it is exceptionally well illustrated with excellent photographs and maps.

Martin, P. S. (with reports by Lawrence Roys and Gerhardt von Bonin)
1936 *Lowry Ruin in Southwestern Colorado*. Anthropological Series Vol. 23(1). Field Museum of Natural History, Chicago.

This volume presents the results of Martin's excavations of Lowry Pueblo, which were sponsored by the Field Museum and conducted in 1930-1931 and 1933-1934. Although Martin made many contributions to the archaeology of southwestern Colorado, the Lowry Pueblo excavations remain as his most enduring legacy. Martin identified 37 ground-floor rooms, eight small kivas, and a great kiva at Lowry. This volume provides detailed description of the excavations, architectural features, and artifacts. There is a detailed analysis of the masonry by Lawrence Roys, and Gerhardt von Bonin provides a similar treatment of the human bone. In the synthesis, Martin presents a detailed analysis of the building sequence at Lowry. This report was one of the best archaeological reports for the time and it remains an invaluable resource for anyone interested in the archaeology of the northern Southwest. It is exceptionally well illustrated with more than 110 photographs and 58 figures and maps.

Matson, R. G.
1991 *The Origins of Southwestern Agriculture*. University of Arizona Press, Tucson.

This is the best synthesis available that discusses the beginnings of agriculture in the northern Southwest. It is based to a large degree on his extensive work on Cedar Mesa in southeastern Utah, but data from throughout the region are synthesized to create a model that applies to the larger Colorado Plateau. Matson begins by reviewing the Archaic and Basketmaker II periods in the northern Southwest. He then presents an evolutionary model of maize use that focuses on the evolutionary changes from teosinte to corn; the characteristics of Chapalote, the earliest corn in the Southwest; and the changes in agricultural technology needed to transform farming practices from floodwater irrigation farming into rainfall-dependent dry farming on the plateau. Matson presents evidence to support the hypothesis that early farmers in the northern Southwest migrated into the region from areas to the south.

McNitt, F.

1957 *Richard Wetherill, Anasazi: Pioneer Explorer of Southwestern Ruins*. University of New Mexico Press, Albuquerque.

McNitt's biography of Richard Wetherill, along with Florence and Bob Lister's biography of Earl Morris (1968), stands as one of the great accounts of the early archaeological work in the northern Southwest. Wetherill has been much maligned by archaeologists, but McNitt's biography paints a wonderfully rich picture of life in the Four Corners at the end of the nineteenth century and offers a balanced view of Richard Wetherill's contributions.

Mills, P. R.

1993 An Axe to Grind: Functional Analysis of Anasazi Stone Axes from Sand Canyon Pueblo Ruin (5MT765), Southwestern Colorado. *Kiva* 58(3):393-413.

This article presents the analysis of 44 stone axes from Sand Canyon Pueblo and seven replicated axes. The replicated axes were employed in various tasks and the wear on the replicated axes was compared to the wear on the ancient axes. The wear on the majority of axes from Sand Canyon Pueblo most closely resembled the wear produced by chopping sagebrush at ground level with the replicated axes. Only six ancient axes displayed wear similar to that produced by chopping trees.

Mobley-Tanaka, J. L.

1997 Gender and Ritual Space During the Pithouse to Pueblo Transition: Subterranean mealing Rooms in the North American Southwest. *American Antiquity* 62(3):437-448.

This article examines subterranean mealing rooms found in the Mesa Verde region. Thirty subterranean mealing rooms at nine different sites are inventoried and their characteristics discussed. Associated artifact assemblages are reviewed and intrasite and intersite patterning is identified. The subterranean nature of the rooms, their spatial link to kivas, and consistency in their mode of abandonment leads Mobley-Tanaka to conclude that there was a ritual element to their use. She sees this as important evidence for female participation in ritual and discusses this conclusion in terms of the larger development ritual in Puebloan society.

Morley, S. G.

1908 The Excavation of the Cannonball Ruins in Southwestern Colorado. *American Anthropologist* (new series) 10:596-610.

This article is the only published description of the 1908 excavation of Cannonball Ruin, a thirteenth century village constructed around the head of a canyon on Cannonball Mesa, approximately 20 miles (32 km) west of Cortez, Colorado. Morley excavated a portion of the village that he terms the "South Pueblo"; this includes the excavation of seven kivas, 30 rooms, and a tower. Morley discusses how the building grew by accretion and provides a brief account of the construction sequence. Architectural details are discussed and there is a general description of the artifacts, including human remains.

Morris, E. H.

- 1919 Preliminary Account of the Antiquities of the Region Between the Mancos and LaPlata Rivers in Southwestern Colorado. In *Thirty-third Annual Report of the Bureau of American Ethnology*, pp. 155-206. Washington, D.C.

Though long out-of-date, Morris's early account of his work on Ute lands is still of use to archaeologists. It contains the first clear descriptions of excavations at Pueblo I sites in the Southwest and important descriptions of the Pueblo III cliff dwellings in Lion Canyon. These excavations provided much of the information for early Pueblo change that Kidder used to construct the Pecos Classification in 1927. As an early reconnaissance of Ute lands, it provides a glimpse of an area that is still not well known archaeologically, but that has a high density of prehistoric Pueblo sites. As with many BAE volumes, the report is well illustrated with artifact photos.

- 1919-1924 *The Aztec Ruin*. Anthropological Papers 26(1-4). American Museum of Natural History, New York.

After the abandonment of Chaco Canyon, it is possible that Aztec Ruin and the community of sites around it became the center of the northern Anasazi world. Morris, Kidder, and other early researchers recognized this possibility. After reading Morris's multivolume report on Aztec, it is clear why the site and its environs impressed them. Both the site of Aztec and Morris's early report deserve the careful attention of any researcher interested in the last centuries of occupation of the northern San Juan region. Despite its old-fashioned prose, the report still has important information for current researchers.

- 1939 *Archaeological Studies in the La Plata District, Southwestern Colorado and Northwestern New Mexico*. Publication 519. Carnegie Institution of Washington, Washington, D.C.

The immense scope of Morris's La Plata District investigations still boggles the mind. The work reported in this publication is the equivalent in scale as the Wetherill Mesa investigations, but it was largely accomplished by one man with a crew of farm hands. Though Morris's archaeological methods have not stood the test of time, his 45-page introduction and summary of prehistoric change between the Basketmaker II and Pueblo III periods still may prove useful to contemporary archaeologists. His descriptions of artifacts are particularly useful and Anna Shepard's appendix on the technology of La Plata pottery is an unquestioned classic. The report is well illustrated with high-quality site and artifact photos.

Morris, E. H., and R. F. Burgh

- 1954 *Basket Maker II Sites Near Durango, Colorado*. Publication 604. Carnegie Institution of Washington, Washington, D.C.

This report describes excavations conducted in 1938 and 1940 at North and South Rockshelters on Falls Creek and the nearby Talus Village site. These remain some of the most thoroughly excavated and reported Basketmaker II sites in southwestern Colorado. This is an important contribution because there are few excavated Basketmaker II sites in southwestern Colorado. The description of the excavations, archaeological features, and artifacts is concise, thorough, and clear, ensuring that this report will always be of use to archaeologists.

Morris, J. N.

1986 *Archaeological Excavations on Reach II of the Dove Creek Canal*. Four Corners Archaeological Project Report No. 9. Complete Archaeological Service Associates, Cortez, CO.

This volume reports on the mitigation of sites that were impacted by Reach II of the Dove Creek Canal, which is part of the delivery system of the Dolores Project. Thirteen sites were investigated. Six of these were found to be predominantly outside the canal right-of-way or were so ephemeral that they could not be relocated; no data were collected from these sites. The remaining seven sites include four artifact scatters with associated features that date to the Late Archaic, and three sites that were small artifact scatters dating to the Basketmaker III or Pueblo I period. A one-room field house was found at one of these sites and tree-ring dates indicate that it was constructed in A.D. 788.

1991 *Archaeological Excavations on the Hovenweep Laterals*. Four Corners Archaeological Project Report No. 16. Complete Archaeological Service Associates, Cortez, CO.

Neal Morris's report on the Hovenweep Laterals contains some of the best archaeological work that has been done in the Four Corners in the last two decades. His synthetic chapter, which focuses on Basketmaker III, Pueblo II, and Pueblo III, is the best summary of Yellow Jacket district archaeology that exists—especially for the Basketmaker III and Pueblo II periods. The site report on Knobby Knee Stockade, a multicomponent Basketmaker III and Pueblo III habitation site, is a model of what contract site reports can be. Morris's discussion of heretofore poorly understood features such as stockades, field houses, and field-tending sites provides examples of how much can be still be learned through careful fieldwork, serendipitous site preservation, and careful comparison with other archaeological work in the region. It is a shame that this report received such limited distribution.

Nickens, P. R.

1981 *Pueblo III Communities in Transition: Environment and Adaptation in Johnson Canyon*. Memoirs No. 2. Colorado Archaeological Society, Boulder.

This slim volume presents the results of Johnson-Lion Canyon project, which occurred between 1972 and 1975. The project was conducted to inventory, preserve, and analyze ruins in what has become the Ute Mountain Ute Tribal Park. Archaeological fieldwork included the following: excavation at Lion House and Hoy House; a sample survey of the area surrounding these cliff dwellings to inventory both the cultural and natural resources; stabilization; and an inventory of the tree-ring resources in the cliff dwellings. The report focuses on an analysis of the modern ecosystem and on reconstructing the paleoenvironment. These data are used to develop an ecosystemic adaptation model to interpret the archaeological record, particularly a series of inferred demographic movements by the Johnson Canyon communities.

Nordenskiöld, G.

1979 *The Cliff Dwellers of the Mesa Verde, Southwestern Colorado: Their Pottery and Implements*. Translated by D. Lloyd Morgan. Rio Grande Press, Glorieta, New Mexico. Originally published 1893 by P. A. Norstedt and Soner, Stockholm.

This volume represents one of the earliest descriptions of archaeological fieldwork in southwestern Colorado. The Swedish explorer Nordenskiöld, guided by four of the Wetherill brothers, conducted archaeological field work at a variety of sites on Mesa Verde in 1891; Nordenskiöld ensured himself an important place in the history of American archaeology through his careful investigation and the prompt publication of the results. The descriptions of excavations were exemplary for the time but not up to modern standards; however, the photography, maps, and drawings remain an important resource for southwestern Colorado archaeologists.

O'Bryan, D.

1950 *Excavations in Mesa Verde National Park, 1947-1948*. Medallion Papers No. 34. Gila Pueblo, Globe, AZ.

This monograph describes the excavation of four sites in Mesa Verde National Park: sites 1, 34, 102, and 145. The sites include a small Basketmaker III habitation (site 145); small Pueblo I habitations (the early component at site 102, and a room block at site 1); two Pueblo II habitations (site 1 and the late component at site 102); and a large pueblo located in a dense concentration of residential sites (site 34). The site descriptions are followed by descriptions of artifacts and a synthesis that incorporates the results of these excavations to refine the chronological sequence of occupation in the Mesa Verde region. There are several useful appendixes, including all of the tree-ring dated ruins in Mesa Verde National Park.

Orcutt, J. D., E. Blinman, and T. A. Kohler

1990 Explanation of Population Aggregation in the Mesa Verde Region Prior to AD 900. In *Perspectives on Southwestern Prehistory*, edited by P. E. Minnis and C. L. Redman, pp. 196-212. Westview Press, Boulder, CO.

This important paper proposes that there are several different intervals of village formation in the Mesa Verde region prior to A.D. 900. The authors suggest that villages form in periods of above-average precipitation and collapse in droughty periods. The article draws together key information from the Dolores Project and is a good introduction to some of the key issues of Pueblo I archaeology.

Osborne, D. (assembler)

1965 *Contributions of the Wetherill Mesa Archeological Project*. Memoirs No. 19. Society for American Archaeology, Salt Lake City, UT.

This volume reports selected findings of the Wetherill Mesa archaeological project, which involved fieldwork on Wetherill Mesa in Mesa Verde National Park between 1958 and 1963. Twenty-nine papers in this volume are presented in the following sections: Introduction, Anthropology, The Natural Sciences, and Techniques. The articles present the results a wide variety of analytical studies, including many that represent methodological innovations. For example, Rohn's use of architectural evidence to reconstruct socioeconomic groups was one of the earliest examples of this type of research.

Petersen, K. L.

1988 *Climate and the Dolores River Anasazi: A Paleoenvironmental Reconstruction from a 10,000 Year Pollen Record, La Plata Mountains, Southwestern Colorado*. Anthropological Papers No. 113. University of Utah Press, Salt Lake City.

Petersen's paleoenvironmental reconstruction for southwestern Colorado is a fundamental study of changing climate and its potential effects on human occupation. His model of environmental change depends primarily on a series of pollen cores from lakes high in the La Plata Mountains. By studying potential shifts in pollen frequency, tree-line limits, and other environmental data, Petersen is able to construct a sophisticated model of how shifting climate potentially played havoc with human settlement history. These data later led Petersen to argue that a cool, dry Little Ice Age was one of the key causes of the ultimate Pueblo migration from the region in the A.D. 1280s.

Petersen, K. L., V. L. Clay, M. H. Matthews, and S. W. Neusius (compilers)

1985 *Dolores Archaeological Program: Studies in Environmental Archaeology*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

This is the first of two DAP volumes devoted to environmental studies. The studies range from modern vegetative studies to paleoenvironmental reconstructions for the period A.D. 200-1920. The report provides general introductions to the DAP studies of fauna, botany, geology, and climate, and is especially useful for understanding the geological setting of the study area. Though there is important introductory and overview information here, most readers will find the later volume on *Settlement and Environment* more useful because it offers the conclusions of the DAP research on faunal and botanical resources and prehistoric climate.

Petersen, K. L., and J. D. Orcutt (compilers)

1987 *Dolores Archaeological Program: Supporting Studies: Settlement and Environment*. U.S. Department of the Interior, Bureau of Reclamation, Engineering and Research Center, Denver.

The first half of the volume is largely focused on paleoclimatic and vegetative reconstructions. By estimating relative changes in summer precipitation, warmth, droughts, and cold air drainage, and combining this information with knowledge of other abiotic and biotic local resources, it was possible to estimate changes in prehistoric agricultural potential and productivity. The second half of the volume is a hodgepodge of special faunal, geological, and botanical studies, a massive summary of the physical anthropology studies, and various settlement pattern studies. This is an important volume in the Dolores series, but because of the variety of views in these studies, it is sometimes difficult to find a unifying theme to the studies.

Pitblado, B. L.

1998 Peak to Peak in Paleoindian Time: Occupation of Southwest Colorado. *Plains Anthropologist* 43(166):333-348.

Pitblado examines 166 Paleoindian projectile points from surface contexts in southwestern Colorado and uses these data to evaluate existing models of Paleoindian adaptation to the Rocky Mountain environment. She concludes that early Paleoindian sites may be truly rare in southwestern Colorado, but that later Paleoindian occupation was more common and that the lack of evidence may be due in large part to inadequate sampling. She further concludes that the evidence from southwestern Colorado supports the model of a unique adaptation to a mountainous environment in the Paleoindian period. Limited evidence supports the interpretation that the roots of this tradition are to the west and Great Basin and not eastward to the plains.

Potter, J. M.

1997 Communal Ritual and Faunal Remains: An Example from the Dolores Anasazi. *Journal of Field Archaeology* 24(3):353-364.

Potter used the detailed microfiche data for the faunal remains from various room blocks in McPhee Village, a large Pueblo I village in the Dolores area, to examine evidence for ritual feasting. He found distinct patterns in the distribution of artiodactyl, lagomorph, aves, and carnivore remains that probably correspond to differences in the cultural practices of different room blocks of the village. This pioneering study deserves replication and careful consideration.

Prudden, T. M.

1903 The Prehistoric Ruins of the San Juan Watershed in Utah, Arizona, Colorado, and New Mexico. *American Anthropologist* (new series) 5(2):224-288.

Prudden produced three articles that are classics in the history of Mesa Verde region archaeology. This is the first and it reports the results of a reconnaissance survey conducted in the Four Corners region. Prudden presents detailed maps of the region and a description of the geography. He then describes the variety of ancient sites recorded during his survey and presents a rudimentary classification of site types. It is in this article that Prudden first identifies the unit pueblo as the most common form of habitation site and notes the standardized layout of these sites. The article provides some of the earliest descriptions of some of many important sites in the region, and these are illustrated with a number of photographs.

1914 The Circular Kivas of Small Ruins in the San Juan Watershed. *American Anthropologist* (new series) 16(1):33-58.

This article continues Prudden's investigation of unit pueblos. He was one of the first to focus on small sites and not the larger villages for which the Mesa Verde region had already become famous. Prudden reports on the excavation of four unit pueblos from Montezuma Valley. He pays particular attention to the excavated kivas at these sites, but also describes some of the artifacts and other features encountered during his excavations. Prudden's excavations demonstrate the similarity between the kivas found at unit pueblos and those found in the larger villages, leading him to conclude that unit pueblos were the basic building block of the larger village sites.

1918 *A Further Study of Prehistoric Small House Ruins in the San Juan Watershed*. Memoirs 5(1). American Anthropological Association.

Prudden reports his continued research into small sites in this article. He does this through the excavation of three additional unit pueblos. His purpose was to excavate ruins in more distant parts of the region to see how they compared with previous excavations conducted by him and by others. He accomplishes this and notes the similarity in architectural details in structures from across the region. He concludes this article by using the materials recovered during excavation to reconstruct ancient life ways in the Mesa Verde region.

Reed, A. D.

1994 The Numic Occupation of Western Colorado and Eastern Utah During the Late Prehistoric and Protohistoric Periods. In *Across the West: Human Population Movement and the Expansion of the Numa*, edited by D. B. Madsen and D. Rhode, pp. 188-199. University of Utah Press, Salt Lake City.

Reed's summary of sites possibly associated with a Numic expansion in the northern and central parts of western Colorado is a key reference for anyone trying to understand the early Ute presence on the northern Colorado Plateau. Based on Reed's interpretation that possibly Numic sites to the north of the study date as early as A.D. 1100, it is possible that early Ute groups, who primarily were hunters and gatherers, shared this area along the upper Colorado River for some time with Fremont cultural groups that were more sedentary and tied to agriculture.

Reed, A. D., J. A. Hallasi, A. S. White, and D. A. Breternitz

1979 *The Archeology and Stabilization of the Dominguez and Escalante Ruins*. Cultural Resource Series No. 7. Bureau of Land Management, Colorado State Office, Denver.

This report has three parts. In the first section, Reed describes the excavation of the Dominguez Ruin, a McElmo phase unit pueblo near the Escalante site. The Dominguez Ruin is worthy of note because of an elaborate burial that was found there. In the second section, Hallasi describes the excavation of Escalante Ruin, which is located atop a small butte above the west side of the Dolores River. Escalante is one of the few excavated Chacoan outliers in the Mesa Verde region. In the final section, White and Breternitz report on the stabilization of these two ruins.

Reed, E. K.

1958 *Excavations in Mancos Canyon, Colorado*. Anthropological Papers, No. 35. Department of Anthropology, University of Utah, Salt Lake City.

This is a slightly-revised version of Erik Reed's 1944 doctoral dissertation at Harvard. It reports on excavations done in 1942 at five sites in Mancos Canyon that had been or were soon to be affected by road construction. Funding was provided by the National Park Service under an agreement with the Office of Indian Affairs. This was one of the first "salvage" excavations undertaken in the Southwest. The five excavated sites included components that Reed assigned to the Basketmaker III through Pueblo III periods. The excavations are briefly described, with the majority of the report being given over to discussions of architecture, burials, pottery, stone implements, and other artifacts. The principal goals are taxonomic and chronological. A synthesis of the La Plata, Piedra, Mancos, McElmo, and Mesa Verde foci (phases) characterizes the pottery, house type, burial type, and other material culture associated with each focus. As in Reed's other publications, there are a number of comparisons and interpretations based on familiarity with

Puebloan ethnography and the Southwestern archaeological literature. There are brief appendices: skeletal remains by T. Dale Stewart; dendrochronology by E.T. Hall; vegetal remains by Volney Jones; and faunal remains by R.W. Gilmore, H. Friedmann, and Reed.

Reed, L. S., and P. F. Reed (editors)

1992 *Cultural Diversity and Adaptation: The Archaic, Anasazi, and Navajo Occupation of the Upper San Juan Basin*. Bureau of Land Management, New Mexico State Office, Santa Fe.

This BLM volume gathers together a disparate collection of papers that generally report the results of contract work in the Animas and La Plata areas of New Mexico. Among the papers are a summary of Archaic sites in the area by Kearns, an important synthesis of the Diné phase by Brown and Hancock, a notable reanalysis of the dates and significance of Gobernador Polychrome by Reed and Reed, and a regional analysis of the locations of Navajo pueblitos by Jacobson and others.

Roberts, F. H. H.

1930 Early Pueblo Ruins in the Piedra District, Southwestern Colorado. *Bulletin* No. 96. Bureau of American Ethnology, Washington, D.C.

This report (despite its 1930 date) reports work that Roberts did in the 1920s in the upper Piedra near Stollsteimer Mesa. There are glaring faults due to Roberts' relative inexperience when he conducted the investigations (e.g., likely pit structure depressions are labeled as reservoirs), but the report remains useful because of the paucity of later archaeological work in this area and because of Roberts' clear manner of reporting. The majority of the sites date to the Pueblo I period.

Robinson, W. J., and B. G. Harrill

1974 *Tree-Ring Dates from Colorado V: Mesa Verde Area*. Laboratory of Tree-Ring Research, University of Arizona, Tucson.

This volume presents the tree-ring dates for the Colorado V quadrangle in the southwestern most corner of Colorado; this is the western portion of the study area covered in this context document. The dates come from 158 sites that were investigated before 1974. Dates from the Wetherill Mesa Project are not included in this report; instead, they can be found in the *Tree-Ring Bulletin* 28(1-4) published in 1967.

Rohn, A. H.

1963 Prehistoric Soil and Water Conservation on Chapin Mesa, Southwestern Colorado. *American Antiquity* 28(4):441-455.

Rohn's body of work comprises one of the most important contributions to southwestern Colorado archaeology. This is one of his earliest articles and it presents data obtained during an intensive archaeological survey of Chapin Mesa in Mesa Verde National Park. The article reports on soil and water conservation features including check dams, farming terraces, field houses, and a reservoir. In this article, Rohn argues that water was stored in a reservoir, Mummy Lake, and

channeled through a long ditch to a cluster of cliff dwellings located in Cliff and Fewkes canyons. This interpretation has been subsequently disputed and remains unresolved. The article remains one of the earliest and most complete descriptions of Pueblo II and III farming systems in the Mesa Verde region.

1971 *Mug House, Mesa Verde National Park - Colorado*. Archeological Research Series No. 7-D. Wetherill Mesa Excavations. National Park Service, Washington, D.C.

This monograph reports on the excavation of Mug House, a cliff dwelling with approximately 94 rooms and eight kivas that was excavated as a part of the Wetherill Mesa archaeological project. The Mug House monograph is a classic excavation report; there are many innovative analyses that represent pioneering efforts in archaeological method and theory. Rohn describes the architectural features and uses the spatial arrangement of these features to make interpretations about social organization at the site. Artifacts and ecofacts are used to reconstruct the ancient economy and life ways. A professional photographer was employed for photographs taken in the field and in the lab, and this remains one of the best-illustrated archaeological reports ever produced.

1975 A Stockaded Basketmaker III Village at Yellow Jacket, Colorado. *The Kiva* 40(3):113-119.

Rohn embarked on an ambitious excavation program in the Yellow Jacket area of southwestern Colorado that sought to completely excavate residential sites of regular age intervals. This article reports on the Gilliland site, the oldest of the sites excavated during this project. Rohn correctly identified a shortcoming of previous excavations in the Mesa Verde area: they focused only on the main architectural features. His complete excavation included the excavation of extramural activity areas and a wooden stockade that surrounded the residence, providing some of the first descriptions of these features.

1977 *Cultural Change and Continuity on Chapin Mesa*. The Regents Press of Kansas, Lawrence.

This volume reports the results of the intensive archaeological survey on Chapin Mesa in Mesa Verde National Park. The fieldwork for this project was directed by James A. Lancaster; Rohn conducted testing, collated the survey data, and conducted artifact analyses from the survey and testing. Results are presented in the following chapters: habitation sites; nonhabitation sites; ceramics; other remains; cultural sequence; significant continuities and changes; postulation of localized social groupings; and conclusions and perspective. The survey is important for providing the basic published data on settlement on Chapin Mesa, but it is also notable because it is one of the first attempts at trying to identify communities based on the clustering present in an otherwise dispersed settlement pattern.

1989 Northern San Juan Prehistory. In *Dynamics of Southwest Prehistory*, edited by L. S. Cordell and G. J. Gumerman, pp. 149-177. Smithsonian Institution Press, Washington, D.C.

This article provides a synthesis of northern San Juan archaeology. The region is defined as the area north of the San Juan River, from Comb Ridge in southeastern Utah on the west to the headwaters of the San Juan River on the east, and bounded on the north by the arc of mountains

that includes the Abajos, La Salles, San Miguels, La Platas, and San Juans. The synthesis begins with chronology and a discussion of how residential architecture and settlement changed through time. This is followed by a discussion of population dynamics and a discussion of settlement and the environment. The article closes with suggestions for future research.

Schlanger, S. H.

1988 Patterns of Population Movement and Long-term Population Growth in Southwestern Colorado. *American Antiquity* 53:773-793.

Schlanger's analysis of population changes in different locales in southwestern Colorado between A.D. 600 and 1250 remains an important study for this area. By examining population estimates for three different locales (Dolores, Mockingbird Mesa, and Woods Canyon) at 10 different intervals over 650 years, she was able to show that local population fluctuation was measurable at a relatively fine temporal scale and that agricultural intensification could not be well explained by a population circumscription model. Schlanger's work demonstrated that regional archaeological data were sufficient to finally build quantifiable models that incorporate population change, economic intensification, and climatic fluctuation. Her analyses show that population movement responds to climatic change in the manner expected for the period A.D. 600-950, but population movement does not conform to expectations in the period A.D. 950-1300.

1991 Of Manos, Metates, and the History of Site Occupations. *American Antiquity* 56(3):460-474.

This article examines the distribution of one-hand manos, two-hand manos, and trough metates at sites excavated as part of the DAP. In her analyses of these artifacts, Schlanger compares three distinct types of archaeological deposits: floors and surfaces; trash; and secondary, reworked and mixed deposits. The analyses focus on four questions: the overall distribution of manos and metates in general excavation collections; the identification of site function based on surface collections; the effect of occupation duration on assemblage variability; and the effect of abandonment behavior on assemblage variability. Schlanger demonstrates that the assemblage composition of these grinding tools is affected by excavation methods, duration of occupation, and abandonment processes, and illustrates how comparative analyses of assemblage composition in different contexts can aid in the interpretation of site function.

1992 Recognizing Persistent Places in Anasazi Settlement Systems. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 91-112. Plenum Press, New York.

In this paper, Schlanger seeks to link the distribution of individual artifacts (isolated finds) to the distribution of archaeological sites (concentrations of artifacts). To do this, she develops the concept of a persistent place which is repeatedly used during the long-term occupation of a region and examines the distribution of surface finds at these places. In particular, she uses temporally diagnostic ceramics to identify multicomponent occupations and projectile points to discuss the changing function of these places. Schlanger concludes that persistent places remained a part of the cultural landscape even when they were abandoned as residential sites and that their use may have extended claims to ownership during periods of withdrawal and provided an important focus for eventual reoccupation.

Schlanger, S. H., and R. H. Wilshusen

1993 Local Abandonments and Regional Conditions in the North American Southwest. In *Abandonment of Settlements and Regions*, edited by C. M. Cameron and S. A. Tomka, pp. 85-98. Cambridge University Press, Cambridge.

This short paper proposes that there were episodic site abandonments in the Dolores area between A.D. 600 and 900 during droughty periods that would have made corn farming difficult. Archaeological migrations are interpreted as either local or long-distance moves based on the patterned treatment of pit structure roofs and the nature of pit structure floor assemblages during particular intervals. Based on the evidence from 28 abandoned pit structures, it appears that roofs are burned and more artifacts are left on the floors of structures when longer-distance migrations might have occurred. In local abandonments, it appears more likely that roofs and floor artifacts might be salvaged over a period of time.

Smith, J. E.

1987 *Mesas, Cliffs, and Canyons: The University of Colorado Survey of Mesa Verde National Park, 1971-1977*. Mesa Verde Research Series Paper No. 3. Mesa Verde Museum Association, Mesa Verde National Park, CO.

This monograph reports on the archaeological survey of Mesa Verde National Park conducted by the University of Colorado (CU) between 1971 and 1977. The survey focused on areas that had not been previously surveyed (i.e., Chapin and Wetherill mesas); the CU surveys covered approximately 156 km² (60.2 mi²), or 74 percent of the park. A total of 1,897 sites was recorded, including 96 historic sites and 1,801 ancient sites. Presentation of the survey results is organized by spatial subdivisions of the Park. Each subarea is briefly described, and identified sites are listed in a table by site type. A subsequent chapter discusses general changes in the settlement pattern for each successive archaeological phase. This is followed by a chapter on the historic sites. A concluding chapter identifies questions that need to be addressed by future research. Appendix A provides a brief description of the archaeological systematics and Appendix B describes an archaeological reconnaissance of Wildhorse Mesa.

Smith, J. E. (compiler and editor)

1983 *Proceedings of the Anasazi Symposium 1981*. Mesa Verde Museum Association, Mesa Verde National Park, CO.

This volume is a collection of 24 papers that were presented at a conference at Mesa Verde National Park. A few of the papers were revised from the spoken version, but most are essentially as presented. Questions and answers that followed the presentation of each paper are included and are an interesting feature of this volume. The papers are organized into the following six sessions: Anasazi: toward a redefinition and clarification; Anasazi origins: the Archaic or Basketmaker I; An Anasazi miscellany; Environment and the Anasazi; Anasazi culture: success and failure; and The Anasazi and their external relations.

Stiger, M. A.

1979 Mesa Verde Subsistence Patterns from Basketmaker to Pueblo III. *The Kiva* 44:133-144.

Stiger examines coprolite samples from three cliff dwellings (Step House, Hoy House, and Lion House) to compare Basketmaker III and Pueblo III diet. He documents an increasing use of seed crops and plants and animals that thrive in disturbed areas. Stiger concludes that shifts in subsistence strategies were due to population pressure and human impact to the environment from swidden farming. Some flotation, pollen, and faunal analyses are used to support these interpretations.

Swannack, J. D., Jr.

1969 *Big Juniper House, Mesa Verde National Park - Colorado*. Archeological Research Series No. 7-C. Wetherill Mesa Excavations. National Park Service, Washington, D.C.

This monograph describes and interprets the excavation of Big Juniper House, a late Pueblo II-early Pueblo III residential site with approximately 30 rooms and three kivas. Stratigraphic analysis indicates that the site grew by accretion; occupation was divided into five components. Analyses of stratigraphy, architecture, and tree-ring dates indicate the most intensive period of occupation between A.D. 1080 and 1130 and extended, less intensive, occupation between the late A.D. 900s and the late 1100s. Separate chapters describe the architecture, ceramics, stone artifacts, bone artifacts and textile remains, refuse material, and burials (n=24).

Thompson, I. M.

1993 *The Towers of Hovenweep*. Mesa Verde Museum Association, Mesa Verde National Park, CO.

This volume was designed to provide the general public with a description and interpretation of ruins in Hovenweep National Monument. Thompson's review of the existing literature on Hovenweep and the surrounding Mesa Verde region makes it a valuable resource for research archaeologists as well. The prose is lucid and inspired; the photographs, especially the aerial photographs by Tom Baker, are stunning. Thompson discusses the major ruins at Hovenweep, weaving them into the themes of community, movement, and change. His eloquent text is complemented by a variety of Native American perspectives, which are usually presented as sidebars to the main text.

1994 *The Escalante Community*. Southwest Natural and Cultural Heritage Association, Albuquerque, NM.

In this discussion of the Escalante community, Thompson follows the format that he established with the book on Hovenweep. Escalante has been interpreted as a Chacoan outlier, and Thompson places the site in the context of the larger community. His thorough review of the archaeological literature and the incorporation of new research (i.e., Dean Wilson's analysis of ceramics) makes this volume an important research contribution as well as excellent public interpretation.

Towner, R. H. (editor)

1996 *The Archaeology of Navajo Origins*. University of Utah Press, Salt Lake City.

The title suggests that this book is primarily about Navajo origins, or what archaeologists would call the Dinétah phase and Navajo people consider the emergence into the fifth world, but the

majority of the papers in this edited volume are actually about a later period in Navajo prehistory. This later period, called the Gobernador phase by archaeologists, is remembered as the period of the gathering of the clans in the oral history of the Navajo. This volume is an important presentation of recent contract and government archaeology work on early Navajo sites in northwestern New Mexico.

Van West, C. R.

1994 *Modeling Prehistoric Agricultural Productivity in Southwestern Colorado: A GIS Approach*. Reports of Investigations No. 67. Department of Anthropology, Washington State University, Pullman, and Crow Canyon Archaeological Center, Cortez, CO.

This is a revised version of Van West's Ph.D. dissertation, which received honorable mention for the 1992 Society for American Archaeology Dissertation Prize. In this work Van West models agricultural productivity for an 1,816 km² area in the central Mesa Verde region. To calculate agricultural productivity, Van West classifies soils for each 4-hectare (9.9-acre) unit within this study area and uses tree-ring-data to calculate the Palmer Drought Severity Index—a measure of available soil moisture—for each unit. Historic crop yields are used to determine the relationship between agricultural productivity and particular PDSI values, resulting in a reconstruction of the agricultural productivity of every 4-hectare unit in her study area for every year between A.D. 901 and 1970. Van West reaches a number of important conclusions as a result of this study, including the observation that there was adequate production even in the worst droughts to feed many thousands of people; drought alone does not appear to be a sufficient cause for the migration from the region in the thirteenth century.

Varién, M. D.

1999 *Sedentism and Mobility in a Social Landscape: Mesa Verde and Beyond*. University of Arizona Press, Tucson.

This book is a revised version of Varién's Ph.D. dissertation, which won the 1997 Society for American Archaeology Dissertation Prize. Varién critiques existing models of sedentism and mobility, arguing that they focus exclusively on the ecological determinants of mobility to the exclusion of social factors, and that they characterize hunter-gatherer mobility but are inadequate for societies with domesticated food production. He analyzes the frequency of household and community movement in the Mesa Verde region and uses this study to develop an alternative model where sedentism and mobility are seen as complementary rather than opposing strategies. He concludes that household residential movement was relatively frequent, ranging between approximately 15 and 75 years, and that the frequency of household movement decreased from Pueblo II to Pueblo III times. This relatively frequent household movement occurred in a social landscape comprised of relatively fixed communities that were occupied for at least a century and perhaps as long as three centuries.

Varién, M. D. (editor)

1999 *The Sand Canyon Archaeological Project: Site Testing*. CD-ROM, Vers. 1.0. Crow Canyon Archaeological Center, Cortez, CO (distributed by University of Arizona Press, Tucson).

This volume reports on the testing of 13 archaeological sites in the Sand Canyon locality; the testing was conducted as one part of the larger Sand Canyon archaeological project. Site testing was designed to bridge the gap between the archaeological survey of the locality and the intensive excavations of two sites, Sand Canyon Pueblo and Green Lizard. An introductory chapter presents the research design for the project; this is followed by 13 chapters that describe the excavations at each site. Next are separate chapters on the analyses of artifacts, macrobotanical remains, pollen, faunal remains, and human remains. The volume concludes with three chapters. The first provides a dating summary of each site, the second places the tested sites in a regional context, and the final chapter summarizes and interprets the results of the site testing program. The careful attention to sampling, which ensured comparability among the 13 sites, makes this project the most detailed study available for Pueblo III communities in the Mesa Verde region.

Varien, M. D., W. D. Lipe, M. A. Adler, I. M. Thompson, and B. A. Bradley
1996 Southwestern Colorado and Southeastern Utah Settlement Patterns: A.D. 1100 to 1300. In *The Prehistoric Pueblo World, A.D. 1150-1350*, edited by M. A. Adler, pp. 86-113. University of Arizona Press, Tucson.

This article summarizes what is known about settlement in the Mesa Verde region during the late Pueblo II and Pueblo III periods. The study area is divided into 13 subareas to examine spatial and temporal variation within the region. The authors synthesize the existing literature and compile two new data sets: population density estimates for each of the subareas, and an inventory of all aggregated villages, which are arbitrarily defined as sites with more than 50 structures. Settlement patterns are examined for four successive 50-year periods. The interpretive focus of the article is on the processes that resulted in population aggregation and the eventual migration from the region.

Varien, M. D., and B. J. Mills
1997 Accumulations Research: Problems and Prospects for Estimating Site Occupation Span. *Journal of Archaeological Method and Theory* 4(2):141-191.

This paper develops a method for using the accumulation of artifacts to estimate the length of site occupation. The history of accumulations research is reviewed with special attention to ethnoarchaeological, experimental, and archaeological studies that focus on pottery accumulations. The article presents a particularly useful synthesis of cross-cultural data on vessel use life and the number of vessels in a household pottery assemblage. Varien and Mills conclude that cooking pots are the ideal artifact class for accumulations research aimed at estimating occupation span. They review the use of the discard equation and conclude that strong archaeological cases provide the best data for developing accumulation rates of cooking pot sherds. The authors use the Duckfoot site to establish an annual household accumulation rate for cooking pot sherds in the Mesa Verde region. This rate is used to estimate the occupation span of several sites excavated by the DAP.

Varien, M. D., and J. M. Potter
1997 Unpacking the Discard Equation: Simulating the Accumulation of Artifacts in the Archaeological Record. *American Antiquity* 62(2):194-213.

This article uses a computer simulation to examine the formation of cooking pot assemblages and how well the discard equation quantifies the accumulation of cooking pots. Data from the Duckfoot site are used in the simulation. Working through the simulation produced four general results. First, the simulation demonstrates how the accuracy of the discard equation is affected by the artifact use life and the size of the household assemblage, and that these two variables are not independent of one another. Second, the simulation quantifies the difficulties encountered in modeling short-term occupations. Third, the simulation demonstrates that the factors which make it difficult to accurately quantify accumulations at sites with short-term occupations have little effect at sites with longer occupations. Finally, the simulation illustrates why strong archaeological cases are better than cross-cultural data for modeling accumulations.

White, T. D.

1992 *Prehistoric Cannibalism at Mancos 5MTUMR-2346*. Princeton University Press, Princeton, NJ.

In this book, White examines the issue of cannibalism past and present and whether it occurred in the Mesa Verde region. He presents painstaking comparative analyses of the human bone and animal bone from a variety of sites in the Mesa Verde region, with a focus on the human bone recovered from a small habitation site located in the Mancos River valley. White concludes that the human remains were processed in the same manner as the animal remains. Based on these analyses, he argues that nearly 30 men, women, and children were butchered and consumed at the site.

Wilshusen, R. H.

1991 *Early Villages in the American Southwest: Cross-Cultural and Archaeological Perspectives*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Colorado, Boulder.

This dissertation is primarily useful for its summary of cross-cultural ethnographic literature on prestate villages. The dissertation proposes that Pueblo I villages were larger, shorter lived, and more disparate in their social organization than traditional models of Pueblo I settlement and organization suggest. The dissertation synthesizes both HRAF data and data from the DAP in its discussion of villages. This is a very useful, though not always clearly written, introduction to the Pueblo I villages of this region.

Wilshusen, R. H. (compiler)

1995 *The Cedar Hill Special Treatment Project: Late Pueblo I, Early Navajo, and Historic Occupations in Northwestern New Mexico*. Research Papers No. 1. La Plata Archaeological Consultants, Dolores, CO.

The Cedar Hill work, though in New Mexico, pertains to southwestern Colorado because it provides supporting evidence for Wilshusen's contention that there was a massive breakup of Pueblo I villages and a population migration to the south and southeast in the A.D. 890s. He documents two communities in the Cedar Hill area made up of approximately 30 hamlets each and argues that they date to A.D. 885-915. The report is also important as an example of an alternative mitigation strategy in which a large block survey with a specific research focus and

limited right-of-way excavations was used in place of intensive excavations as the means to mitigate the adverse effects of extensive oil and gas development on public land.

Wilshusen, R. H., and E. Blinman

1992 Pueblo I Village Formation: A Reevaluation of Sites Recorded by Earl Morris on Ute Mountain Tribal Lands. *Kiva* 57:251-269.

Wilshusen and Blinman remapped Morris sites 13 and 33 and demonstrated that Morris had not fully recognized the large size of these Pueblo I villages. They present a means of estimating prehistoric site population and argue that the four potentially contemporary Pueblo I villages in this area probably had a population of 600 people. The primary occupation of the sites is estimated at A.D. 830-850, based on the analysis of a large number of surface sherds.

Wilshusen, R. H., M. J. Churchill, and J. M. Potter

1997 Prehistoric Reservoirs and Water Basins in the Mesa Verde Region: Intensification of Water Collection Strategies During the Great Pueblo Period. *American Antiquity* 62(4):664-681.

Wilshusen, Churchill, and Potter report the findings of their limited excavations of a late Pueblo II-early Pueblo III water collection basin in the Woods Canyon area near Yellow Jacket. The report is most useful for detailing how these features may have worked and summarizing the basic data on 20 other reservoirs and collection basins in the area.

Wilshusen, R. H., and S. G. Ortman

1999 Rethinking the Pueblo I Period in the San Juan Drainage: Aggregation, Migration, and Cultural Diversity. *Kiva* 64(3):369-399.

This paper addresses three topics of interest for the Pueblo I period in the San Juan drainage basin. Previous research on village formation is synthesized, and suggests that the first significant episode of village formation in Pueblo history occurred in this area during the mid-ninth century. Population estimates are marshaled to suggest that large-scale population movements were also common during this period. Finally, ninth century villages on the two sides of the Dolores River valley are compared to argue that inhabitants of these villages came from at least two distinct cultural backgrounds.

Wilson, C.D. and E. Blinman

1991 *Ceramic Types of the Mesa Verde Region*. Handout prepared for the Colorado Council of Professional Archaeologists Ceramic Workshop, Boulder, CO.

This report represents the most up-to-date survey of pottery types common in the Mesa Verde (northern San Juan) region. Types representing Mesa Verde Gray Ware, Mesa Verde White Ware, San Juan Red Ware, and Mesa Verde Red Ware are thoroughly described and illustrated. A useful section on ceramic dating proposes a fine-grained framework for the chronological placement of site components based on associated pottery complexes. This section on ceramic dating was also published in *The Sand Canyon Archaeological Project: Site Testing* (Varien, editor, 1999).

Winter, J. C.

1975-1977 *Hovenweep 1974-1976*. Archeological Reports Nos. 1-3. San Jose State University, San Jose, CA.

This series of reports received limited distribution; they are important because they are the only published account of the findings of the Hovenweep project. The project investigated ruins in and around Hovenweep National Monument and focused on reconstructing ancient agricultural systems in the Hovenweep area. The three volumes report on three successive field seasons. Volume 1 is an introduction to the Hovenweep project and the Hovenweep area; the results of an archaeological survey and the analysis of surface collections comprise the bulk of the volume. Volume 2 presents the results of additional survey, artifact analyses, and environmental studies designed to better understand the farming systems at Hovenweep. Volume 3 reports the results of test excavations at 30 sites on Cajon Mesa and continued environmental studies.

1981 *Anasazi Agriculture at Hovenweep, II: The Development and Use of Towers*. *Contract Abstracts and CRM Archeology* 2(2):28-36.

Winter begins the paper with a brief review of the literature regarding functional interpretation of towers in southwestern Colorado and southeastern Utah. He then presents a brief synopsis of the results of his test excavations at 8 towers in 7 sites in or near units of Hovenweep National Monument. These excavations were conducted in 1976 in conjunction with a regional sampling survey of Cajon Mesa, located between the McElmo and Montezuma Creek drainages in the Colorado-Utah border area. Winter's tests encountered evidence of a variety of activities. He concludes that some tower rooms were used ceremonially, others for food grinding, processing, or tool manufacture, while others may have been cooking or living areas. His sample is perhaps somewhat unusual in including several large multi-room towers, but his general conclusion is worth noting—that "the tower category is actually an architectural rather than a functional classification" (Winter 1981:33).