Preliminary Investigations in Stillwater Marsh: Human Prehistory and Geoarchaeology. Christopher Raven and Robert G. Elston, eds. U. S. Fish and Wildlife Service, Region 1, *Cultural Resource Series* No. 1 (2 vols.), 1988, xxiii + 479 pp., 80 figs., 69 tables, 8 appendices, no charge (paper).

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These two volumes present findings and interpretations from archaeological test investigations at an extensive wetland in western Nevada. This is the first installment of results from a proposed four-part study that will also include land-use modeling, model testing, and summary research designs and findings.

Abnormally high water levels between 1982 and 1986, followed by an interval of decreased runoff, resulted in wave erosion and subsequent exposure of buried archaeological deposits throughout the Great Basin in Nevada, Oregon, and Utah (Tuohy et al. 1987; Raymond and Parks 1990; Cannon et al. 1990:178). Five such sites exposed on the eastern edge of the Carson Desert were tested over a ten-day field period to recover archaeological data and formulate management plans for the endangered cultural resources. Results from cultural resource management projects of this scope are all too often typified by "laundry-lists" of artifacts recovered with only minimal analysis and interpretation of contextual data. Some project reports are justifiably buried in the "gray literature."

Such is not the case for this project, however, because the principal investigator, Robert G. Elston, assembled an admirable research team that not only included technical specialists, but other Great Basin archaeologists affiliated with other institutions. These consultants included David B. Madsen and Steven R. Simms, who work in the eastern Great Basin, and Robert L. Kelly, who has conducted his own extensive research in the Carson Desert. The only archaeologist conspicuously missing from this "guest" lineup is Donald R. Tuohy who supervised the initial phase of this project (Tuohy et al. 1987). The contributions of these outside commentators enhance the value of the report by providing insights into some current trends in Great Basin archaeology.

Kelly's chapter (Chapter 2) on the archaeological context provides substantive and theoretical background data for the region, but not necessarily for this report. His presentation is, naturally, skewed toward his biases concerning the regional culture history and inferred lifeways. For example, the lack of features and paucity of surface survey data attributable to the "Devil's Gate Phase" (4,950 to 2,950 B.P.) are interpreted as indicating that the Carson Desert was used seasonally by mobile, task-specific groups during that interval (p. 11). Carson Desert utilization changed during the "Reveille Phase" (2,950 to 1,450 B.P.) when it was used by entire residential groups. During the "Underdown/Yankee Blade phases" (1,450 to 100 B.P.) there was a shift toward a more sedentary lifestyle documented in the sites examined in this study.

Both Kelly's use of the central Nevada archaeological-phase sequence and/or his

settlement/subsistence hypotheses are later questioned by Raven (pp. 29, 48), Madsen (p. 276), and Raven et al. (pp. 436-437). The apparent divergence in no way detracts from the report and adds an important dimension to the presentation. Each of the authors has a distinct theoretical bias and was able to pursue his line of inquiry within the framework of the report. I do, however, question the deployment of Kelly in this particular chapter.

Chapter 2, on the archaeological context, is supplemented in the following chapter (Chapter 3) by Christopher Raven with some project-specific background data and discussion of regional chronologies. The project goals and methods to achieve the goals are later presented by Raven in chapters 5 and 6. The proposed project goals and rationales for specific studies (pp. 42-43) are well-conceived and exemplify the emphasis that Great Basin archaeologists place on the environmental, especially geological, context of a site.

The geological context, with an emphasis on paleohydrology for the Stillwater Marsh, is presented in Chapter 4 by the late Keith L. Katzer and Donald R. Currey. This chapter is of extreme importance to the project because water availability and the resultant resource base are principal, limiting factors for human settlement. These authors stress that the paleohydrology of the Carson Desert is very complex and includes stream capture from the Walker River Drainage, overflow from the Humboldt River system, and the existence of multiple waterways flowing into three terminal drainage basins, including the Stillwater Marsh. Additionally, they also note that extensive historical modifications have occurred; these changes in particular have affected the modern status of the hydrology of the basin.

The data from the site investigations are divided into three parts that include site structure, artifacts recovered, and ancillary site studies. Each of the presentations in these individual chapters is well done. Apart from the burial data from earlier site investigations, few of the individual data sets are truly extraordinary by themselves, but the sites and their contents, as a whole, present a rare view of open occupation sites.

Chapters 7 to 11 present descriptions, features, stratigraphy, and dates for each of the sites investigated. These sites are surface sites on slight rises above the surrounding playas. The sites are somewhat unusual for the western Great Basin in that few previously reported surface sites have had the quantity of features, including burials, that occur here. Dates for occupation range from possibly 3,280 to 800 B.P.

Separate chapters (12-18) on artifact analyses are included: Flaked Stone Tools, by Robert G. Elston; Debitage, by W. Troy Tucker; Projectile Points, by Michael F. Drews; Ground Stone Artifacts, by Kenneth E. Juell; Bone Artifacts, by Dave Schmitt; Beads, by Michael P. Drews; and Baked Clay Pieces, by Juell. Projectile point series include Desert, Rosegate, Elko, Gatecliff and Humboldt. Twenty-three typeable shell beads (*Olivella* [n = 18], *Haliotis* [n = 2], *Margaritifera* [n = 1], and *Tivela* [n = 2]) were recovered from the sites. Among the baked clay artifacts are an effigy, a pot sherd, four balls, and five disks.

Additional studies grouped under Environmental and Subsistence Data include the following chapters (19-24): Mammalian Fauna, by Dave N. Schmitt; Avian Fauna, by Stephanie D. Livingston; Fish Remains, by Ruth L. Greenspan; Freshwater Mollusks, by Drews; Egg Shell, by Drews; and Plant Macrofossils, by Elizabeth E. Budy.

In Chapter 25, Schmitt discusses some potential impacts to the Stillwater bones and bone assemblages with carnivores, raptors,

and humans as taphonomic agents. Bones from two sites were examined for evidence that they were bones from scats comparable to modern control specimens collected in the area and attributed to coyotes (*Canis latrans*). Approximately 20 percent of the bones in the samples exhibit evidence that they were digested, and these bones were attributed to deposition at the site within carnivore scats. The roles of raptors and of human extractive technologies on bone assemblages from archaeological sites are discussed also.

Chapter 27, by Raven, is an attempt to treat certain circular depressions as an analytical data set. These circular, dark features vary in size and usually are depressed; they were hallmarks present at all of the sites. These features are divided into diameter and depth groupings that coincide with house floors, storage pits, hearths, and probable natural features. Nearest-neighbor analysis of these features yields differences that indicate nonrandom clustering for three sites and somewhat different use of space in the other two sites.

A site summary is presented in Chapter 28 by Raven. Included within this presentation are significance evaluations for each site based on National Register of Historic Places (NHRP) eligibility criteria.

A summary discussion of the geology and prehistory of the Carson Desert is presented in Chapter 26 by Elston, Katzer, and Currey. This chapter would seem more appropriately placed if it followed Chapter 28. In Chapter 26, data from the Stillwater project are used to supplement and to refute other archaeological and geological hypotheses for the region. This application of project data to regional synthesis is well executed. The authors also are commended for not feeling compelled to fit their sites into specific phases of one school of thought or the other. Presumably, this was because the settlement/subsistence data and the artifact assemblages exhibit no marked variation indicative of significant cultural change over the three to four thousand years represented at the sites. Instead, intervals corresponding to the occurrence of different projectile point styles are used to provide the requisite, descriptive, time divisions.

The site report is essentially complete by the end of Chapter 28. Chapters 29 to 31 present a discussion of various research strategies for future investigation and interpretation of archaeological materials from the Stillwater Marsh.

Madsen's discussion in Chapter 29 (p. 414) begins with an ominous warning that it will be "an intentionally general account" of Great Basin wetlands. Fortunately, the generalities only apply to lack of specific, supporting data for another subsistence/settlement model applicable to the Stillwater Marsh, called a "'best fit' adaptive strategy" (pp. 416-417). This model is based on subsistence economics, the "cost/benefit ratio" of procuring and transporting specific categories of food. In Madsen's view, wetlands are the most likely focus for occupation because they offer a large resource base of storable, winter comestibles. Contrary to Kelly's earlier presentation in Chapter 2, where he posits an episode of seasonal, transitory use for the Stillwater Marsh, Madsen hypothesizes (p. 417) that native Americans "should have lived in or near the marsh most of most years." He views wetlands as containing resilient habitats that readily adapt to changing water levels. Madsen concludes his discussion with a preview of foraging theory presented in more detail in the following chapter.

Simms presents a brief overview of subsistence modeling based on considerations proposed by Optimal Foraging Theory and evolutionary ecology (Chapter 30). Simms

(1984, 1985) has utilized this approach in Great Basin archaeological studies, and recommends that any Stillwater Marsh subsistence/settlement reconstructions consider specific economic variables related to food procurement, especially between contrasting locales, such as pinyon-juniper woodlands vs. marshes. Once subsistence variables are defined, then behavioral alternatives (models) can be formulated for the area. Simms echoes Madsen's belief that Kelly's hypothesized pre-1,500 B.P. limited use of the Stillwater Marsh by Native Americans does not fit with other data bases.

The final chapter (31) by Raven, Elston, and Katzer presents recommendations for further research with more systematic methodology and theoretically oriented framework. Although not explicitly stated in this chapter, it is hoped that the earlier caveat of Katzer and Currey (Chapter 4) regarding potential historical modification of the environment is heeded. Any proposed settlement/subsistence model for the Stillwater Marsh using historical hydrologic data for comparisons must consider a number of factors, including: diversion of about half of the Truckee River's flow into the Carson Desert for agriculture; breaching of the Humboldt Bar by the railroad and resultant easier inflow of Humboldt River water into the basin; the extensive system of levees to maintain the Stillwater Marsh; and water diversion features for agricultural areas in the valley.

Brief conclusions for this investigation also are presented in this final chapter. Again, Kelly's proposed settlement/subsistence hypotheses for the area are disputed. There is reference to an uncited alternative hypothesis by Raven and Elston that is based on the water budget for the Carson Desert.

Perhaps the only major criticism of these volumes is in Kelly's role as an author of a background chapter, rather than as a discussant. If Kelly's hypotheses concerning the cultural chronology of the Carson Desert are at odds with those of the project leaders, then why was he chosen to present those data as the background for the project? He has been treated as a "straw dog" by Madsen, Simms, Raven, and possibly Elston in various chapters. At least, Kelly's response to the critiques of his principal hypotheses should have been included in the discussion section. I admired the inclusion of these other senior archaeologists in the project, but believe that Kelly should have been given a more equitable forum for participation.

The presentation of the data, ranging from site archaeology to each cultural assemblage, is well done. The project was quite thorough in environmental studies, and provides a valuable data base for other Great Basin prehistorians. It would have been preferable if more of the findings and conclusions from these individual studies, besides artifact counts, could have been incorporated into a project-specific conclusion chapter to learn what the project directors thought was special about the sites at this stage of the project. Their orientation, however, was directed more toward proposed future research (Chapter 31) and NRHP site significance (Chapter 28). More synthetic interpretations will have to await subsequent volumes in the series.

The technical aspects of the publication are very good. There are a few typographical errors, misplaced maps, and inconsistent styles, but none of these is serious enough to detract from the overall quality of the report. Not only do Raven and Elston deserve credit for their presentation, but the U.S. Fish and Wildlife Service is commended for supporting publication of one of its projects.

As a final note, one should be aware also of other publications related to the Stillwater sites. Raymond and Parks (1990) presented an overview of the Stillwater sites and their

setting. The findings from the earlier salvage archaeology at the Stillwater Marsh were presented by Tuohy et al. (1987). This paper includes important data on 33 human burials and additional skeletal remains, some from the sites investigated in this report. Further analysis of the skeletal remains from these sites is presented by Brooks et al. (1990).

REFERENCES

Brooks, S. T., M. B. Haldeman, and R. H. Brooks
1988 Osteological Analyses of the Stillwater Skeletal Series, Stillwater Marsh, Churchill County, Nevada. Portland: U.S. Department of the Interior, Fish and Wildlife Service, Region 1, Cultural Resource Series No. 2.

Cannon, W. J., C. C. Creger, D. D. Fowler, E. M. Hattori, and M. F. Ricks
1990 A Wetlands and Uplands Settlement-Subsistence Model for Warner Valley, Oregon. In: Wetland Adaptations in the Great Basin, J. C. Janetski and D. B. Madsen, eds., pp. 173-182. Brigham Young University, Museum of Peoples and Cultures, Occasional Papers No. 1.

Raymond, A. W., and V. M. Parks
1990 Archaeological Sites Exposed by Recent Flooding of Stillwater Marsh, Carson Desert, Churchill County, Nevada. In: Wetland Adaptations in the Great Basin, J. C. Janetski and D. B. Madsen, eds., pp. 33-61. Brigham Young University, Museum of Peoples and Cultures, Occasional Papers No. 1.

Simms, S. R.
1984 Aboriginal Great Basin Foraging Strategies: An Evolutionary Analysis. Ph. D. dissertation, Department of Anthropology, University of Utah.

1985 Acquisition Cost and Nutritional Data on Great Basin Resources. Journal of California and Great Basin Anthropology 7:166-175.

Tuohy, D. R., A. J. Dansie, and M. B. Haldeman
1987 Final Report on Excavations in the Stillwater Marsh Archaeological District, Nevada. Report on file at the Nevada State Museum, Carson City.

Proceedings of the Society for California Archaeology, Volume 1. Susan M. Hector, Lynne E. Christenson, G. Timothy Gross, and Martin D. Rosen, eds. San Diego: Society for California Archaeology, 1988, 415 pp., $15.00 (paper).

Proceedings of the Society for California Archaeology, Volume 2. Susan M. Hector, Martin D. Rosen, Lynne E. Christenson, and G. Timothy Gross, eds. San Diego: Society for California Archaeology, 1989, 226 pp., $15.00 (paper).

Proceedings of the Society for California Archaeology, Volume 3. Martin D. Rosen, Lynne E. Christenson, and G. Timothy Gross, eds. San Diego: Society for California Archaeology, 1990, 386 pp., $15.00 (paper).

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These three volumes are a series that purportedly report the papers presented at the annual meetings of the Society for California Archaeology. Volume 1 contains papers presented at the 1987 annual meeting at Fresno, Volume 2 contains papers presented at the 1988 annual meeting at Redding, and Volume 3 contains papers presented at the 1989 annual meeting at Los Angeles. The goal of the Proceedings series as stated in Volume 1 (p. iii) is ". . . to act as a needed outlet for the timely publication and distribution of research in California archaeology." "The SCA Proceedings is meant . . . to include any well-written scholarly paper presented at an SCA Annual Meeting" (p. 411).

The SCA Proceedings series was initiated during the presidency of Susan M. Hector. The proposal for a publication series was presented in the SCA Newsletter and an oppor-