

**INVESTIGATIONS OF SMALL STRUCTURES
IN THE CITADEL DISTRICT
OF
WUPATKI NATIONAL MONUMENT:
REPORT OF TEST EXCAVATIONS AT EIGHT SMALL SITES
JUNE 2000 – DECEMBER 2001**

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SUMMARY REPORT

TO

WESTERN NATIONAL PARKS ASSOCIATION

SPMA GRANT # 98-14

SEPTEMBER 30, 2002

INTRODUCTION

This report summarizes fieldwork that was conducted from June 2000 through December 2001 to investigate small structures in the vicinity of the Citadel Ruin at Wupatki National Monument, Arizona. The complete field results are provided in the final field report. Grant support from the Western National Parks Association (SPMA Grant # 98-14) is most gratefully acknowledged. The field work results described here are part of a larger dissertation project that investigates the prehistoric settlement in the Citadel District through the study of small single space sites that are usually labeled 'field houses' and are currently assumed to be associated with agricultural activities.

The conventional definition of a "field house" refers to one or two room masonry structures that were seasonally occupied and located adjacent to agricultural fields and/or features (Woodbury 1961). Field houses are generally believed to be 1) small, 2) possess limited numbers and kinds of artifacts, 3) lack internal features such as hearths, 4) have limited trash deposits, and 5) have a greater number of artifacts associated with agricultural activities. Explanations for the appearance and distribution of field houses include adaptive responses to changing environmental conditions (Pilles 1978, 1979), responses to aggregation (Haury 1956) and intensification (Wilcox 1978), reduction in transportation costs to fields and work efficiency (Chisholm 1968;), "inconvenience" factors of operation from the permanent occupation site (Moore 1978), competition over resources (Preucel 1990) and symbols of land ownership (Kohler 1992). In addition, Southwestern ethnographic studies cite examples of small structures and agricultural use at Hopi (Bradfield 1971; Forde 1931; Kennard 1979), Zuni (Ladd 1979), and Laguna (Ellis 1979). However, other ethnographic examples have documented a range of non-agricultural uses for small structures related to hunting, social customs, storage and craft activities (Ellis 1978, 1979; Crown 1985; Moore 1978). These ethnographic examples provide a basis for formulating models for other possible prehistoric small structure use.

Some studies support some of the assumptions related to field houses but many of these assumptions need to be critically reviewed and tested. The small sites are often numerous and the identification of their possible uses and duration of occupation provides a basis for different interpretations of the total settlement pattern. The Citadel District data from Wupatki National Monument provide an opportunity to evaluate these assumptions about seasonal structure use and to supplement the descriptive information for the interpretation of the prehistoric settlement pattern.

PROJECT METHODS

Utilizing previously developed models and ethnographic information, a use and duration of occupation matrix for agricultural and non- agricultural activities was devised for this project. A series of steps to evaluate structure use were used. These included: 1) initial categorization of project area sites using existing data; 2) collecting site location data; 3) developing a chronology using ceramic data; and 4) conducting test excavations at selected sites. Approximately 145 sites met the study criteria within the Citadel District project area and about 75 sites were visited to determine testing potential. Eight sites with 16 structures were tested for the project. Data from architecture, artifacts, pollen and macrobotanical remains were used to develop structure and site interpretations. Field methods included establishing UTM coordinates, detailed site mapping and surface inventories, analytical sample protocols, establishment of an off site control unit for comparative purposes, and detailed testing protocols.

INTERPRETATION AND SUMMARY OF FIELD RESULTS

A summary of the field results for structures at the tested sites is listed below. The following table summarizes these results based on the matrix for structure use and duration of occupation. Two

categories within the matrix were not identified during this project. These included permanent non-agricultural and agricultural structures. These structure types were not anticipated in this project, due to the criteria of small site selection. A complete description of the field testing and interpretations are included in the final field report of the tests excavations.

**STRUCTURE USE AND OCCUPATION
BY SITE NUMBER AND STRUCTURE NUMBER**

USES	DURATION OF OCCUPATION			
	Occupied			Not Occupied
	Day	Seasonal	Permanent	Other
Agricultural	Site 1651- St.2;	Site 2112 – St.1; Site 1595- St.1, 2; Site 1651- St1; Site 227- St. 1; Site 1609- St.1; Site 138 – St.2, Lv 4; Site 138- St. 3- Lv 1-3	Not identified on this project	Site 2112 – St.2; Site 1741- St.1,2; Site 1609- St.2; Site 138- St. 1; Site 138- St. 2, Lv 1-3
Non-agricultural	Site 1676- St.1;	Site 138- St.2, Lv5; Site 138- St. 3, Lv. 4	Not identified on this project	Site 227- St.2;

SITE WS 1676

One structure, a rock shelter, was tested at this site. The structure is interpreted to be a day use non-agricultural structure possibly used as a hunting blind. Remains of maize and cholla were found within the structure along with considerable lithic materials in all stages of reduction.

SITE WS 2112

Two structures were excavated at this site. Structure One is interpreted as a seasonally occupied agricultural structure that is associated with the field and alignments down slope. Botanical data indicate the structure was roof, there were no interior features, and remains of maize, cotton, squash were found in the structure. The paucity of artifacts suggests that the structure may not have been in use for an extended period. Structure Two is small storage structure related to agriculture that was not occupied. There were few artifacts and no interior features. Charred food remains (cotton and Amaranthus) was found inside. The structure was probably contemporaneously with the adjacent Structure One..

SITE WS 1741

Two structures were tested at this site, both structures appear to have been related to agricultural activities and were used as garden areas. Botanical data indicate that Structure two contained maize, Cheno-Am, cotton, charred juniper, cactus and tobacco seeds. The possible garden areas are nestle within black basalt boulders and the basalt mesa. This setting may have provided radiant heat that permitted a longer gardening season.

SITE WS 1595

Two structures were tested at this site. In addition, possible terrace growing areas located within the mesa slope debris were tested. Structure One on the mesa top appears to have been used as a seasonal occupation that was related to agricultural uses, possibly associated with the garden terrace areas and garden plots located on the mesa slope below. The structure contained an apparent storage alcove, but no other interior features were identified in the excavated portion of the structure. Structure Two is located on the mesa slope and appears to have been a limited occupation structure that contained a storage feature (the cist) and an ephemeral ash pit. The structure appears to be related to the agricultural activities that were conducted in the immediate vicinity of the garden terraces and garden plots below the retaining wall.

SITE WS 1651

A structure and the adjacent wing wall area were tested at this site. In addition, a series of rock alignments to the south were also samples for pollen remains. Structure One appears to have been used as a roofed storage area for foodstuffs with possible limited occupation. There is evidence of the remnants of a prepared clay floor and entrance, and substantial double walls suggesting that the structure was used over time as a storage area. Structure Two appears to have been a three sided space that may have been roofed in a ramada fashion. The presence of several plant taxa and the presence of macro and pollen remains from maize suggest that this may have been a wind and sun sheltered processing area adjacent to Structure One.

SITE WS 227

Two structures were excavated at this site. Structure One is an oval limestone field house that contained a central hearth, ceramics, lithics and agricultural hoes. The structure was used for a period of time and then buried by Sunset Crater cinders. Remains of maize were found in the hearth. The adjacent Structure Two is a water catchment area constructed on limestone bedrock with a single course dam to help contain water.

SITE WS 1609

A basalt structure and a possible water catchment area were tested at this site. Structure One (basalt structure) was a roofed structure used for food processing, storage and possibly food consumption. There were remnants of a compacted clay surface at bedrock suggesting relatively frequent use of the structure. The lack of interior features and the jagged irregular bedrock, argue against habitation. Botanical data indicate domesticates (cotton and maize), a number of encouraged weedy plants (Chenopodium, opuntia, cholla, tomatillo), and were recovered. In addition, cacti areoles with attached spines appear to have been removed to process the pads (or barrels) for food consumption. Structure Two appears on the surface to be a water catchment area. Excavation revealed that the 'dam' was resting on cinders rendering the structure ineffective to retain water. However, the structure was effective in retaining cinders (about 75 centimeters) suggesting it was used to retain subsurface moisture for planting.

SITE WS 138

Three structures were excavated at this site. Structure One appears to have been an open planting area where soils were churned and there was considerable midden-like material. Ceramic stratigraphic data is mixed suggesting churning, possibly to enhance garden productivity. Structure Two appears to have been an area that was first used as an archaic camp area based on lithic remains and a slab lined hearth. In later time, the structure had a prepared floor and a large slab lined hearth. Sunset Crater cinders

were deposited during this phase. The final use of the structure was as a planting area that was filled with midden materials. Structure Three was an adjacent area partially under a rock overhang. The earliest use of the structure area was archaic based on lithic materials (bifaces), lack of agricultural remains and ash pits. The second use of the structure was agricultural with a series of hearths, ash pits, and a collapsed roof. Remains of maize were encountered under the roof and in the features. The final use of the structure occurs after the deposition of Sunset Crater cinders and is agricultural in nature.

CONCLUSIONS

Based on the fieldwork conducted, the following preliminary conclusions are offered.

- 1) Field work provided important information on the interpretation of the structures at the project sites. The subsurface data provides new data that clarifies previous structure interpretations that were based on surface remains. In some incidences, the subsurface information confirms the surface interpretations but in others, structure interpretation have changed. One example, is the 'water catchment' constructed on cinders rendering it ineffective to retain water, but successful as a planting area.
- 2) The results of fieldwork suggest that the initial unit of analysis should be the structure rather than the site. The site distinctions were established during the Wupatki Archaeological Survey (WAS) in the 1980s or earlier (Steen 1949) based on the surveyors' assessment of related surface manifestations. While the surface remains may appear to be contemporaneous, preliminary subsurface ceramic data from this project indicate that structures and or features included within a site designation may not be contemporaneous. Data from some sites suggest that these structures were in use at different times at the sites. Understanding the use and chronology of the settlement pattern in the study area requires that the initial unit of analysis is the structure or feature. Information is lost if these data sets are combined during analysis.
- 3) Structure use appears to have changed over time. Subsurface data from architectural, artifactual, and botanical sources indicates that structures were re-used over time and that these uses varied. The assumption that all small structures were continuously used as 'agricultural field houses' is not supported by the sample structures from this project.
- 4) Field results also indicate that the majority of the structures tested were related to agricultural activities as shown on Table 82, but some were used for other purposes. Field results also indicate a large number of structures that were not occupied but were associated with agricultural activities. The use of some structures for purposes other than occupation provides important information for a general understanding of the subsistence in the past.
- 5) The remains of domesticates (corn, cotton, and squash) and wild and encouraged plants (tobacco, beeweed, prickly pear, cholla, cheno-am, sunflower family) were recovered from samples from structures and exterior growing areas such as terraces and behind alignments. These remains suggest that wild and encouraged plants supplemented the traditional domesticates at the project sites.
- 6) Surface assemblages appear to represent greater time spans than the subsurface materials. While subsurface materials appear to represent distinct time spans, the surface materials seem to represent much longer periods. This suggests that while the use of the structure may be short lived, the use of the general area was much longer.

In conclusion, the fieldwork described in this report provides initial information for a better understanding of the prehistoric settlement in a small area of Wupatki. Structure use, duration of occupation and chronology of structures are critical pieces of information to understand these cultural remains.