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United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form

X New Submission ____ Amended Submission

A. Name of Multiple Property Listing

Hohokam and Euroamerican land use and settlement along the northern Queen Creek Delta, Arizona, ca. A.D. 700-1450 and ca. A.D. 1911.

B. Associated Historic Contexts

Land use and settlement along the northern Queen Creek Delta, Arizona, by Hohokam (ca. A.D. 700-1450) and Euroamerican (ca. A.D. 1911) population groups.

C. Form Prepared by

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (___ See continuation sheet for additional comments.)

See letter from Rita Rose Austin 5/11/95

Signature and title of certifying official **Date**

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Carol R. Shull 7/3/95

Signature of the Keeper **Date**

E. Statement of Historic Contexts

INTRODUCTION

Land use and settlement along the northern Queen Creek Delta and within the present boundaries of Williams Air Force Base (WAFB) is documented archaeologically for the prehistoric Hohokam and for Euroamerican homesteaders. The extent and longevity of occupation, use, and reuse of the area from the Prehistoric through the Historic periods suggest that the geologic and physiographic setting of the region was of particular importance in developing and maintaining a sizable number of habitation and agricultural sites, in addition to resource procurement and processing loci. The prehistory of the area spanned at least three periods of the Hohokam sequence, from the Colonial period through the Classic period (A.D. 700-1450) (Dean 1991). Evidence of an earlier Pioneer period is lacking, either masked by the intensity of later use or it was never present. Similarly, archaeological evidence for a Piman occupation of the area is limited, although identified by the presence of a few isolated sherds and two incomplete potbreaks observed or collected from sites with a later historic use. Archival investigations located claims for original homesteads for parcels within the present base boundaries. Homestead claims were filed as cash entries. A 1911 General Land Office map (Rudolf 1911) is the first record that provides information about historic use within the boundaries of the base, showing 17 houses.

Seven sites located within the boundaries of WAFB are eligible for listing on the National Register of Historic Places (NRHP) under Criterion (d), the potential to contribute information about Hohokam prehistory along the Queen Creek Delta. Historic resources include a component at one of these sites, plus an eighth site. These sites are eligible for inclusion to the NRHP under Criterion (a), their association with events that have made a significant contribution to the history of settlement patterns in the area.

PREVIOUS ARCHAEOLOGICAL RESEARCH

The earliest archaeological research documenting land use along the Queen Creek Delta within the vicinity of Williams Air Force Base (WAFB) near Higley, Arizona, was conducted by Omar Turney (1929), who identified a large prehistoric canal system along Queen Creek and across the Queen Creek Delta. Turney (1929:146-148) also described prehistoric sites within the present boundaries of WAFB that archaeologists recognize as ballcourts and reservoirs associated with the Midvale Site (AZ U:10:24, ASU) (Gasser, Weaver, and Bruder 1984:12). Frank Midvale (Gladwin and Gladwin 1929) also identified numerous sites in the Queen Creek drainage south and southeast of WAFB while studying the distribution of Hohokam remains; Gasser, Weaver, and Bruder (1984:12) believe that the Midvale Site, a National Register property, was one of those recorded.

The Midvale Site was later recorded by Schroeder (Gasser, Weaver, and Bruder 1984:13), who conducted the first systematic work in the area as part of the Salt River Stratigraphic Survey sponsored by the WPA (Schroeder 1940; also see Bostwick 1993). Additional surveys of the Queen Creek Delta region were conducted by Frank Midvale (n.d.) between 1929 and 1952; Midvale also recorded the site named after him, but Kelley's map (1939) is the first to detail the entire site. Cumulatively, the early work by Turney, the Gladwins, Schroeder, and Midvale was responsible for recording numerous sites, including the Sand Dune, Rittenhouse Ruin, Manchester, Massera, and Mescal Butte sites, the Sonoqui complex, the Southwest Germann Site, and the Northeast Germann Site (see Gasser, Weaver, and Bruder 1984).

Since the 1970s, there have been a number of archaeological projects within the base boundaries (Greenwald, Anduze, and Walsh-Anduze 1994: Table 1.2), four of which involved limited testing of the Midvale site (Brew 1980; Faught and Whittlesey 1988; Gasser, Weaver, and Bruder 1984; Schoenwetter, Gaines, and Weaver 1973). The Midvale Site was recommended for nomination to the National Register of Historic Places in 1973 by Schoenwetter, Gaines, and Weaver based on the existence of significant subsurface deposits and it was added to the National Register in 1988.

THE ENVIRONMENT

WAFB is located in the Queen Creek Delta between the Salt and Gila rivers near Higley, Arizona, and is situated in the creosotebush association of the Southwestern desertscrub biotic community (Lowe 1964:11-14) of the Basin and Range physiographic province. The dominant form of vegetation is creosotebush (*Larrea tridentata*). Prior to historic modifications, mesquite (*Prosopis juliflora*), ironwood (*Olneya tesota*), paloverde (*Cercidium floridum*), cholla cactus (*Opuntia* spp.), saguaro (*Carnegiea gigantea*), other cacti, forbs and grasses, and shrubs, may

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also have been scattered throughout the region. Climatic conditions are affected by the bimodal pattern of rainfall (see Gasser, Weaver, and Bruder 1984:5-6). The greatest amount of moisture is received during the winter months; summer storms, known as monsoons, provide less moisture, although they can be quite violent.

It is unlikely that the Queen Creek Delta was a perennial stream during the prehistoric occupation of the area because its watershed was restricted to the slopes of the Superstition, western Pinal, and Santan mountains. These mountains provide the majority of parent material for the generally deep alluvial soils deposited by Queen Creek and its numerous tributary washes. The deep soils of the alluvial fan were highly suitable for agriculture, while the lower bajada colluvial soils provided suitable conditions for cacti and other plants that require a coarse substrate. These conditions support the notion that the Queen Creek Delta could have sustained large habitation sites prehistorically. In fact, prehistoric canals have been recorded along the upper reaches of Queen Creek (Brooks and Vivian 1978; Dart 1983, 1989; Midvale n.d.; Turney 1929), and soils patterns have been examined that are thought to have developed as a result of irrigation activities on the alluvial fan of the delta region (Dart 1989).

The sites within the base boundaries are located immediately southwest of the interface of the lower bajada and the alluvial fan between the 100-year and 500-year floodplain, allowing for the exploitation of both ecological zones. The distribution of sites, however, may suggest important settlement and functional differences among the sites, because the larger and apparently more complex sites are located in the southern half of the project area, while the smaller sites that may have had more specific functions are located along the toe of the lower bajada.

HOHOKAM CULTURE HISTORY

The proliferation of archaeological sites and cultural manifestations associated with the distribution of red-on-buff pottery found throughout the Salt-Gila Basin is defined as the Hohokam regional system (Crown 1991; Wilcox 1979, 1991). The Hohokam are not defined as a specific population or ethnic group; rather, the culture is defined based on subsistence and settlement patterns and a specific adaptation to and manipulation of the desert environment they inhabited (Masse 1991). Hohokam origins and the associated Hohokam chronology are controversial topics (e.g., Cable and Doyel 1987; Dean 1991; Eighmy and McGuire 1988; McGuire 1982:199-209; Schiffer 1982; Wallace, Heidke, and Doelle 1994; Wilcox 1979; Wilcox and Shenk 1977), but there is now consensus that the Hohokam culture developed out of an earlier Archaic adaptation (see Doyel 1991:236-253; Wallace, Heidke, and Doelle 1994) rather than as an immigrant culture from Mesoamerica (Haury 1976).

The Hohokam sequence begins with the recently accepted Red Mountain phase (Morris 1969), which is believed to date prior to A.D. 300 (see Cable and Doyel 1987; Eighmy and McGuire 1988; Schiffer 1982; Wilcox and Shenk 1977). The Red Mountain phase, which is placed at the beginning of the Pioneer period, is characterized archaeologically by flexed inhumation burials, basin metates, corner-notched projectile points, small, square pit houses, and plainware and redware pottery (Crown 1991:144; Doyel 1991:237). During the subsequent phases of the Pioneer period, especially the Vahki, Estrella, and Sweetwater phases, Hohokam sites were relatively small and located along the major rivers such as the Gila; however, population growth by the later Snaketown phase probably accounts for larger sites and dispersement to some peripheral areas (Wilcox 1979, 1991; Wilcox and Shenk 1977).

The Pioneer period Hohokam lived in relatively large pit houses, which has been taken to indicate that households were organized around the extended family (Haury 1976:68). The homogeneous distribution of material culture items has been cited as evidence of an egalitarian society during this time (Wilcox 1979; Wilcox, McGuire, and Sternberg 1981:204; Wilcox and Sternberg 1983:230). However, some of the larger structures, especially Vahki phase dwellings, may have combined ceremonial functions (Gladwin 1948:118) or community structures (Gladwin et al. 1965:82). Cable and Doyel (1987:65) suggest that the large structures would have served as meeting places for large gatherings of people, whereas Snaketown phase and later structures were built for smaller groups.

Hohokam subsistence during the Pioneer period included domestic crops such as corn (*Zea mays*) and beans (*Phaseolus* spp.). Canal irrigation was present by the end of the Snaketown phase (Wilcox 1979) and, along with the increased number of structures, is generally believed to indicate an increase in resource utilization, an expanded population, and a more complex level of organization. Wilcox (1979:101) suggests that villages located along the canal systems were involved in mating networks for cooperative (exchange) purposes and that the social system did not become complex until much later.

Evidence of weaving technology first appears during the Vahki phase, and decorated ceramics were produced as early as the Estrella phase (Haury 1965). During the Sweetwater phase, a larger number of smaller houses was constructed, possibly in relation to a change in function and increasing population segmentation (Doyel 1991:243). Other cultural manifestations that occurred during the Pioneer period include worked and unworked marine shell and turquoise and clay figurines, which reflect Mesoamerican affinity (Haury 1976; see also Doyel 1991:244-245). During the earlier phases of the Pioneer period, mortuary customs included both inhumation and cremation burials; however, cremation became the established ritual by the Snaketown phase (Doyel 1991:246).

The earliest occupation of Hohokam sites in the WAFB project area occurred during the Gila Butte phase of the Colonial period, ca. A.D. 700-900. In general, the Colonial period, compared to the preceding Pioneer period, was characterized by dramatic population growth and concomitant expansion of the existing settlement and subsistence systems (Doyel 1991:246-252; Fish 1989:29-31), including physical expansion and elaboration of irrigation systems and increase in site size. Site settlement involved clear patterning, with social groups inhabiting distinctive village segments. Subsistence continued to focus on agriculture, with the addition of some cultivars (such as agave) and weedy plants to the diet.

The growing populations also fostered the expansion of trade networks, so that by the middle of the Sedentary period (ca. A.D. 900-1150), the Hohokam regional system (Crown 1991; Wilcox 1979, 1991) was at its maximum. During this time, there was an increase in the number and types of public architecture such as ballcourts and platform mounds; an increase in the number and types of crafts produced (Doyel 1991; Wilcox 1991); and possible specialization in ceramic production (Haury 1976:193-197). The increased construction and wider distribution of ballcourts is believed to be directly related to trade and the integration of villages. Doyel (1980) and Wilcox (1979, 1991) have argued that Hohokam society was not differentiated until the Sedentary period, when there was a dramatic increase in site size and population growth leading to a concurrent intensification of resource exploitation. They postulate the existence of a tribal level of organization, based on the hierarchical distribution of sites and canal networks, the distribution of ballcourts and platforms, and the first appearance of status differences in material culture items associated with burials.

A reorganization in settlement patterns and Hohokam society, probably in response to various stresses related to over-population and drought (see Masse 1991:218-220), occurred around A.D. 1150; this marks the beginning of the Soho phase of the Classic period (ca. A.D. 1150-1400). This was a time of major changes in pottery styles, burial patterns, and architecture. The painted pottery of the preceding periods was displaced by polished redwares and polychromes, the dominant mode of burial became inhumation, and pit house architecture gave way to above-ground, pueblo-style houses. There was a general contraction from outlying areas, and population aggregation is seen at large village sites within the Salt-Gila core area. Irrigation canals reached their maximum extent during the middle of the Classic period. Subsistence intensification is evident with the increase in irrigation canals, and other types of water-control features are found at non-riverine sites (Masse 1991). Maize, beans, squash, and cotton dominated agricultural production, and a wide variety of cultivars and wild-plant resources were exploited.

Accompanying the changes in pottery, architecture, and burial styles was the disappearance of ritual artifacts (e.g., palettes, stone censers, etc.). Artificial mounds (i.e., platform mounds) become much more formalized, and there is evidence for residential structures on the summits. Multi-storied structures ("big houses") also occurred at some sites, notably the Casa Grande Ruins on the Gila River and Pueblo Grande on the Salt River. The recently proposed Polvorón phase represents the terminus of the Hohokam cultural sequence. During this phase, population decreased, social structure reverted from complex to simple, settlement patterns became more dispersed, agricultural production and canal irrigation systems became simpler or declined in intensification, architectural construction returned to pit houses, craft production lessened and became simple, and a change in mortuary/ritual practices is postulated (Chenault 1993:137). After A.D. 1450-1500, evidence of Hohokam occupation in the Southwest is scant.

The Midvale Community Network

Archaeological sites in and surrounding the WAFB project area may be viewed as individual entities or as part of a larger system, here suggested as the Midvale community network in which inhabitants from different sites interacted for various social, political, religious, and/or economic reasons (following Masse 1991). Masse (1991:202) defines community networks as "larger political and economic units comprising two or more focal village communities"; he cites the irrigation community network as the most conspicuous archaeological example. The premise for the existence of such relationships is based on the concept of the Hohokam regional system (Wilcox 1979), which emphasizes "systemic relations and interactions" throughout Hohokam prehistory. Further, Judge (1984:8) defines a regional system as "a number of interacting but geographically separate communities that were dependent on each other through the exchange of goods and services." Although the nature and extent of the Midvale community network have yet to be demonstrated, inferences about community relationships can be made based on environmental factors (including physiography and the exploitation of natural resources) and the distribution of cultural manifestations such as irrigation canal systems, reservoirs, ballcourts, and pottery.

Based on the lack of cultural manifestations and the relatively limited distribution of decorated ceramics, Pioneer period Hohokam sites in the Queen Creek area are believed to have been primarily small and seasonally used (Weaver 1973; 1984). There is no evidence of a Pioneer period occupation in the WAFB project area. Permanent habitation sites first occurred in the region, including the WAFB project area, during the Colonial period, possibly in response to population growth and migration from the Salt and Gila river valleys (see Weaver 1973, 1984).

A settlement pattern dichotomy has been noted relative to the proximity of sites to Queen Creek (Crown 1984; Weaver 1973, 1984). As noted by Crown (1984:101), "the deciding factors in the placement of permanent habitation units seem to have been a reliable domestic water source and proximity to irrigable land." The association of reservoirs was also noted at most sites (Crown 1984:101). Smaller, temporary sites were generally located away from the drainage. This pattern is repeated at WAFB, where the habitation sites are located on the floodplain and the resource procurement and processing sites are located on the lower bajada.

The first community network(s) in the Queen Creek region might have developed during the Colonial period (possibly as late as the Santa Cruz phase), when irrigation canal systems and reservoirs were first constructed. Masse (1991:199) notes that villages with public architecture (such as canal irrigation systems and reservoirs), or "focal villages," "served to integrate, both socially and economically, the residents of nearby farmsteads, hamlets, and small nonfocal villages; likewise, these villages were probably the focus of interaction on a broader regional scale." Although Hohokam sites did not attain a village level of organization until the Sedentary period (Wilcox 1979, 1991), the earlier (Colonial period) presence of irrigation canals and reservoirs at sites such as the Midvale Site does suggest a level of complexity not far removed from what Masse describes as necessary for the development of a community network. The Midvale Site did become a large village, it should be noted, during the Sedentary period (Gasser, Weaver, and Bruder 1984), one that might be considered a "focal village" as defined by Masse (1991).

The presence of a prehistoric canal segment at one site, AZ U:10:68(ASM) (presumed to be part of the Midvale irrigation system, although its source of origin is presently unknown), the relative proximity of sites in the WAFB project area to the Midvale Site, and the apparent absence of reservoirs (and overall complexity) at these sites are cited as evidence to infer the existence of socio-economic relationships within the Midvale community network during the pre-Classic periods. Other relevant factors that have yet to be tested include the distribution of material items such as red-on-buff pottery. Buffware pottery recovered from these sites during testing (Greenwald, Anduze, and Walsh-Anduze 1994) are contemporary with the occupation of the Midvale Site (Walsh-Anduze 1994). Other (unknown) sites in the region may also have participated in this network, and there may have been at least one other focal village (unidentified) operating within this network during the pre-Classic periods to meet population needs.

The distribution of ballcourts has also been considered as a basis for defining relationships within a community network. However, prevailing evidence suggests that Hohokam ballcourts were not present in the Queen Creek Delta (Dart 1983; also see Wilcox 1991; Wilcox and Sternberg 1983), including at the Midvale Site, although only one potential ballcourt (see Schoenwetter, Weaver, and Bruder 1984) has been tested. Gasser, Weaver, and Bruder (1984) tested the so-called "northern ballcourt" and determined that it was a reservoir based on the deposition of clay layers. Weaver (1973:157) originally postulated that similar features (unexcavated) throughout the Queen Creek Delta distributed among drainage sites were ballcourts, but these features are, more likely, reservoirs, with their distribution related to the permanent habitation settlement patterns (Dart 1983). The apparent absence of ballcourts in the Queen Creek Delta suggests this region was a peripheral area that developed in response to over-population and over-exploitation in the core areas of the Salt-Gila Basin. Sites in the region, including the Midvale community network, must have participated in a larger interaction sphere. During the Colonial and early Sedentary periods, the closest ballcourt sites were located in the Gila Butte-Snaketown region, including Snaketown (AZ U:13:1[ASM]), Hospital-Turnkey (AZ U:13:27[ASM]) (following Wilcox 1991:Table 6.1), and possibly the Gila Butte site (Motsinger 1993; Wilcox and Sternberg 1983).

During the late Sedentary period, the number of ballcourt sites increased, and the interaction sphere of the Queen Creek Delta sites could have extended into these other areas (see Wilcox 1991:Table 6.2). If no shifts in settlement patterns or external relationships occurred, then Snaketown and/or the Gila Butte site may have been the focal villages for sites in the Midvale community network (and possibly elsewhere in the Queen Creek Delta) during the entire pre-Classic sequence, because Snaketown and Gila Butte were the only known sites in proximity to have a ballcourt during that time.

Finally, population density and increasing stress on the natural resources (e.g., over-exploitation of wild plants) by the end of the Sedentary period resulted in a reorganization of the settlement system. During the Classic period the WAFB project area possibly saw a change in settlement patterns: although a portion of the Midvale Site was still inhabited, other sites were abandoned with their populations perhaps aggregating at the Southwest Germann Site, AZ U:10:25(ASM), and elsewhere (e.g., Sonoqui Pueblo) where there is some evidence for the presence of compound architecture (Greenwald, Anduze, and Walsh-Anduze 1994).

In sum, settlement patterns in the Queen Creek Delta, and specifically in the WAFB project area, suggest the organization of community networks for the distribution and control of water and possibly other natural and cultural resources. The presence of an irrigation system, including reservoirs, at the Midvale Site, and the level of complexity the site attained during the Sedentary period, suggest that the Midvale Site may have been one of the focal villages in a community network. The contemporary occupation of sites in the WAFB project area, the absence of associated reservoirs at these sites, and their apparent lack of complexity all suggest that they would have been included in the Midvale community network. Finally, the absence of ballcourts in the Queen Creek Delta suggests that inhabitants of the region participated in a larger interaction sphere in the core area, possibly at Snaketown.

EUROAMERICAN LAND USE AND SETTLEMENT

Historically, the first systematic documentation of the WAFB area occurred during the General Land Office geographic survey conducted between 1866 and 1868 by W. F. Ingalls and William H. Pierce (Ingalls and Pierce 1869) to establish township, range, and section boundaries in the region. This survey was probably conducted in response to the land reform movement sweeping the nation since the discovery of gold and silver opened up the western frontier during the mid-1800s. The Homestead Act of 1862 and the Desert Lands Act of 1877 were created by Congress as a means for allowing settlers to obtain public lands; one of the stipulations of the acts was that the lands available were surveyed prior to settlement. The survey map and accompanying notes indicate that the WAFB project area was not occupied at the time of the survey by Ingalls and Pierce, as no houses or ranches are plotted or mentioned.

The Homestead Act of 1862 entitled any head family member or individual of 21 years or older with citizenship to 160 acres of land for $1.25 an acre or 80 acres of land for $2.50 an acre. The settlers had to make efforts to cultivate the land and prove continued residence for five years (Gates 1968:394-395). In comparison, the Desert Land Act of 1877 allowed settlers to claim 320 acres of nontimbered, nonmineral, arid land for 25 cents an acre with improvements for irrigation to be made by the end of three years. At the time the entry was made, a map showing the proposed irrigation project and reclaimed lands was to be presented. At the end of the three year period, there was a balance due of one dollar an acre (Gates 1968:401, 638-639). Revisions made in 1909 allowed for an increase in the amount of land to 480 acres if a 320 acre claim had already been filed (43 CFR 2520.0-1). Another amendment in 1912 allowed for a three year

extension if it could be proved that the delay was beyond the control of the settler (43 CFR 2522.4).

A resurvey of the WAFB project area and surrounding region was conducted by Fred Rudolf (1911) to re-establish the previously surveyed boundaries. The resurvey was apparently done in conjunction with a large number of homestead and cash entry patents filed in the area the same year. This second survey plots houses in almost every section currently occupied by WAFB, with associated roads, wells, and water holes. On the 1911 GLO map (Rudolf 1911), 17 houses are shown within the base boundaries. For each house the map provides the name of the individual who had filed a homestead claim. Survey notes made in 1911 state, "There is no farming operations [sic] being carried on at the present time, with the exception of the patened [sic] land of Buchanan and he has a reservoir to furnish water for irrigation." Buchanan's reservoir lies northeast of the base. The other residents, according to the survey notes, are "clearing land but have not put up many fences" (Rudolf 1911:Book 2342, p. 27). Neither survey makes mention of prehistoric or potentially prehistoric features, and both discuss the homesteads solely as bearing points.

It is possible that the impetus for settlement in the Higley area was related to the passage of the National Reclamation Act and ultimately the construction of several irrigation canals. The National Reclamation Act was passed in 1902, which encouraged large-scale irrigation projects with grants made available from the sale of public lands in an effort to reclaim the arid western lands (Hill and Goff 1970; Salt River Project n.d[a].:4). The Salt River Valley Water Users' Association was established in 1903 under the provisions of the National Reclamation Act. This group of landowners was responsible for settling local water disputes and dealing with the government. These landowners also pledged their land as collateral for the federal loan. The agreement between the federal government and the Salt River Valley Water Users' Association was signed on June 25, 1904 (Salt River Project n.d.). Construction of Roosevelt Dam, the Associations' first major project, began in the following year. The Association took over the operation of the Salt River Project dams and irrigation canals in 1917.

A number of canal companies flourished during the late 1800s, developing irrigation canals along the Salt River in the greater Phoenix area. Two canals that may ultimately have helped foster the growth and development of the Higley area were the Consolidated Canal and the Eastern Canal (Salt River Project n.d.[b]. Construction of the Consolidated Canal began in 1891 by the Consolidated Canal Company, owned by Dr. A. J. Chandler. The Eastern Canal was funded by the federal government and was built in 1909. Together, these two canal systems helped bring water to the southeast portion of the valley. The WAFB project area is situated approximately two miles east of the Eastern Canal's southern extension.

F. Associated Property Types

I. Name of Property Type: Habitation Site

Description

Habitation sites include all sites occupied seasonally or permanently and exhibit evidence of a formal house structure (following Masse 1991:198). Their association with other cultural manifestations, such as canals, ground stone, or pottery, help define their function, length of occupation, spatial relationships, and temporal association(s).

Significance and Registration Requirements

Hohokam habitation sites are eligible for the National Register of Historic Places under Criterion (d) because they have the potential to address historic contexts regarding land-use and settlement patterns, subsistence practices through time, demography, and exchange relationships. As locations where daily activities were repeatedly conducted, habitation sites have the potential to provide important information regarding settlement composition (i.e., how households were arranged, how they made use of available space, and how they related to and interacted with other households). Furthermore, the location of habitation sites relative to surrounding natural environmental features often reveals important information regarding land-use strategies employed by the Hohokam. Subsistence practices can be examined through the study of tools and the analysis and identification of plant remains recovered from various proveniences, such as from house floors and interior features, from extramural pit features and trash areas, and from burial context. Information on Hohokam demography can be gathered from detailed study of the burial population and from an examination of available living area and related activity areas. Health, disease, age, stress, and other pathological conditions can be assessed through studying the physical condition of the burial population. Exchange and interaction between the Hohokam and other Southwestern groups can be approached through analysis of the various material culture items that are recovered during archaeological investigations. Recent advances in ceramic studies have allowed exchange and acquisition patterns to be defined on a local or intra-regional level. It is well-known that the Hohokam participated in an extensive exchange network in the Southwest; it is also becoming evident that exchange relationships were established between villages, between communities, and at the regional level. Therefore, the significance of Hohokam habitation sites lay in their potential to provide important information on a variety of aspects about Hohokam daily life, subsistence strategies, population size, age, and health, and interaction at both the local and regional levels.

II. Name of Property Type: Agricultural Site

Description

Agricultural sites and associated features such as irrigation canals and ditches define the land area used for crop production. Agricultural sites may also contain temporary structures (field houses) that were used in association with fields and for canal maintenance.

Significance and Registration Requirements

Prehistoric and historic agricultural sites recommended as eligible for the National Register have the potential to yield information important to our understanding of prehistoric and historic land-use patterns. Prehistoric canals associated with the Hohokam have the potential to provide information on farming strategies and land-use patterns. Examination of canal morphology and gradient can provide information on their volume or capacity, which in turn can be used to estimate the extent of arable land that could be served by the canal. Duration of use and modification of systems may suggest the success of such systems. Reliability of the system also may have been affected by the source: permanent streams provided greater reliability than collection or diversion systems that relied on direct precipitation and runoff. Rodgers (1985; see also Masse 1991:208-211) reviewed various farming methods used by the Hohokam along the margins of floodplains, finding that floodwater farming and irrigation were the primary methods used. Irrigation is generally easily recognized by the occurrence of canals; floodwater farming generally lacks such obvious features but may include check dams or earthen berms to help direct and retard runoff on field areas. Both systems exhibit field houses. The basin margins lack intricate canal systems but often contain small canals or ditches designed to collect runoff and channel it to field areas a short distance away. Termed "basin irrigation" (Rodgers 1985:295), such systems occur along secondary drainages of the Salt and Gila rivers where narrow terraces contain deep alluvial soils. At WAFB, basin irrigation systems can be expected in the northern and northeastern margins, where water sources include Siphon Draw and smaller, unnamed drainages.

Historic canals and ditches at WAFB first appear after 1910 in association with homestead claims and cash entry patents. Various sources of water were available to these homesteaders, including well water and water diverted from Queen Creek or from smaller drainages in the area. As with Hohokam canals, historic irrigation features can provide information on farming strategies, intensity of land use, estimated acres farmed, and reliability of such systems. The study of agricultural sites also provides insight into the technological development and social organization or complexity of a population group.

III. Name of Property Type: Resource Processing Site

Description

Resource processing sites provide information about a population's subsistence strategies, including activities related to food processing and cooking. The sites are defined based on the presence of cooking features such as hornos or roasting pits and/or storage areas, which are often associated with botanical remains.

Significance and Registration Requirements

Within WAFB, one resource processing site (AZ U:10:66[ASM]) has been recorded. Although activities associated with resource processing were noted at other WAFB sites, including the Midvale Site, use of AZ U:10:66(ASM) appears to have been limited to processing food resources rather than for a variety of functions. The site is dominated by the large refuse area (over 20 m in diameter) that has resulted from repeated use of a large earth oven or "horno." Hornos, found throughout the Hohokam occupation of the Salt-Gila Basin, were used for roasting or steaming corn, cholla, and agave, with weedy species also present (for example, see Kwiatkowski and Smith 1993:403-404). The importance of resource processing sites in Hohokam research is directly related to subsistence information and land-use strategies. Hornos occur at habitation sites and as isolated features in various physiographic settings. Their presence as isolated features has been associated with procurement and processing of resources prior to their transport to habitation areas for storage and consumption. At habitation sites, foodstuffs were transported to the hornos, where they were processed and then stored for consumption. The horno apparently was used for the processing of a variety of resources. The volume (based on the size of the hornos) of the resources that could be processed and the location of the hornos relative to habitation features have been used to argue that they were used cooperatively by multiple households (Howard 1988). Ethnographic accounts of Yavapai subsistence (Gifford 1936) indicate cooperative use. Horno sites have been documented in a variety of physical settings, including floodplains and alluvial valleys (Howard 1988; Chenault, Motsinger, and Ahlstrom 1993; Haury 1945), bajada settings (Greenwald, Anduze, and Walsh-Anduze 1994), and colluvial slopes (Greenwald 1987). Resource processing sites are eligible for inclusion to the National Register of Historic Sites at WAFB under Criterion (d) as they relate to Hohokam subsistence practices, resource exploitation strategies, and social organization.

G. Geographical Data

The geographical area of the Multiple Property Nomination is within the present boundaries of Williams Air Force Base in Mesa, southeast Maricopa County, Arizona.

H. Summary of Identification and Evaluation Methods

The multiple property listing of prehistoric and historic cultural resources within the boundaries of WAFB, Arizona, is based on the results of archaeological survey and testing as part of the requirements of the Defense Base Closure and Realignment Act of 1990. A Class III pedestrian survey of approximately 2000 acres within the base resulted in the identification of nine new sites and location of two previously recorded sites. Site boundary definitions were based on the surface distribution of artifacts and exposure of cultural features on the surface, which also led to the revision of boundaries for the two previously recorded sites. Another site, the Midvale Site, was listed to the NRHP in 1988 and was not resurveyed. Cultural resources recorded as sites met Arizona State Museum (ASM) standards; cultural manifestations not meeting these standards were recorded as isolated occurrences.

In total, approximately 24% of the base, or 949 acres, is now defined as site area (excluding the Midvale Site). Of this total, 176 acres were within the boundaries of the two previously defined sites; 452 acres comprised the nine new sites located during survey. Because site boundaries were often difficult to delineate during survey (due to surface alterations such as surface leveling, facility construction, and historic and recent farming), resources were recorded as sites only after the recorded information was plotted and all the data examined. Consequently, boundaries for the new sites were literally drawn around large, spatially distinct clusters of artifacts and/or features, then field checked for confirmation. In all cases, the ASM definition of a site was met. A systematic testing program was developed to delineate the actual site boundaries through subsurface test excavations, wherein the boundary definition for each site could be confirmed or refined by the presence/absence of subsurface features.

The testing approach was developed (1) to determine the spatial extent of each site and (2) to determine whether these resources possessed qualities that satisfy criteria for inclusion to the NRHP. Testing investigations were primarily conducted with a systematic placement and excavation of backhoe trenches at each site. The general approach was to place trenches at the recorded site boundaries so that some trenches fell inside the boundary while others fell outside. This approach provided an increased level of coverage because additional trenches were dug to further confirm or deny the presence of subsurface remains and deposits.

Additional information related to the multiple property listing was obtained from various reports and maps and from archival studies that identified historic homesteads in the survey area.

The identification and recording of artifact concentrations and cultural features present either on the modern surface or in trench profiles was used to define specific site types or functions and their boundaries. The presence and distribution of diagnostic pottery helped define the temporal component of prehistoric sites, while datable historic items provided the historic chronology. Collectively, these data were used to determine the associated historic context.

Archaeological testing provided significant information about the preservation, composition, and extent of the sites, all aspects that are considered when evaluating NRHP eligibility. Likewise, the presence of intact cultural features and deposits, along with the high density of surface artifacts, suggests that these resources have the potential to yield information important to our understanding of the prehistory and history of the area.

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