DRAFT

The People of Southern Arizona, Past and Present

Sonoran Desert Conservation Plan

May 2000

Pima County Board of Supervisors
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County Administrator
Chuck Huckelberry

MEMORANDUM

Date: May 10, 2000

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator

Re: ***The People of Southern Arizona, Past and Present***

Background

The attached report entitled *The People of Southern Arizona, Past and Present,* is one of several deliverables from Statistical Research Inc., written to develop the Cultural and Historic Resources Element of the Sonoran Desert Conservation Plan. Divided into four parts, the report summarizes available information that reflects the experience of (1) ancient peoples of Southern Arizona; (2) indigenous peoples; (3) non-indigenous peoples of the historical period; and (4) Pima County today.

Ancient Peoples of Southern Arizona

Pages 2 through 35 of the report provide a chronology of various cultures and a description of the residents of the land base that is now Southern Arizona, covering the years 9,500 B.C. to about 1,500 A.D.

Paleoindians: The oldest archaeological records describe a group of people who were in Arizona as long as 11,500 years ago. Referred to as Paleoindians in the scholarly literature, these residents were highly mobile hunters, who pursued animals that have since gone extinct, such as the dire wolf, huge bison, and mammoth. Sites have been found in the San Pedro River valley, including "kill" sites with mammoth remains. Sites do not include evidence that would indicate the Paleoindian peoples built homes or made ceramic containers.

Archaic Ancestors: Recent excavations have added to a body of knowledge that describes cultures and lifeways of people living in Southern Arizona during a time span of about 6500 years, beginning in 6,500 B.C. One of the late stages of this period, called the Archaic Period, was studied through a site excavated at the Santa Cruz Bend. Residents are thought to have occupied a site of over 8 hectares from 760 to 200 B.C.: 183 pit structures were identified and it is predicted that as many as 500 pit structures may have originally been present on the landscape. The mobile residents of this area are thought to have foraged, and survived on a diet of wild plant crops and game. Grinding stones called metates, and hand held tools called manos probably helped with seed and bean grinding. Maize is thought to have been introduced some 3000 years ago in the Southwest. Santa Cruz Bend houses lacked inside hearths and only one outside hearth was found in the excavation. Clay beads, figurines and crude clay containers have been found from this time period.

Formative Period: Early residents of Southern Arizona became more sedentary and dependent on agriculture at the same time ceramic pots and containers become evident in the cultural resource record. The authors of the attached report state that: "Ceramic containers began to appear in southern Arizona by around A.D. 1, and by A.D. 200, a well-developed ceramic-container technology was in place. Technologically sophisticated pottery appeared at settlements such as the Houghton Road site, El Arbolito, the Square Hearth site, the Valencia site, and several others." (P. 9)

Painted pottery in the Southern Arizona cultural resource record dates back to around A.D. 650. Increasing attention to detail, fine lines and designs soon became the mark of Hohokam pottery -- and a proxy for settled village life.

The Hohokam: Pages 12 through 24 of the attached report describe the ancient people of the Santa Cruz, Salt and Gila River Valleys. These "masters of the desert" developed irrigation canals to support extensive farming endeavors, created an elaborate art style, and grew by adjusting to the demands of desert life and maximizing water uses.

Pages 24 through 35 describe other cultures that lack a written record, but are evidenced through archaeological work, including the Salado culture, the Trincheras culture, the Patayan culture, and a time referred to as "protohistoric," which marks the passage to written documentation of events -- which in Southern Arizona occurred in the 1500s and 1600s, with the arrival of Spanish explorers to the Southwest.

Indigenous Peoples

Pages 35 through 64 of the attached report provide an outline of the experiences of the O'odham, Apache and Yaqui peoples in Southern Arizona.

The O'odham

Traditional lands for the O'odham people extended well beyond the current boundaries of the Nation, from the San Pedro River to the Colorado River and Gulf of California; and from Magdalena and the Sonora River of Mexico to the Gila River. Proximity to water might explain the adjective "Akimel" in relation to the O'odham who reside near the river, just as the "Tohono" O'odham reside in the desert. A more detailed description of the experience of the Tohono O'odham is found on pages 43 to 47.

The Apache

Relative newcomers to the region, the Athapaskan speaking Apache residents of Southern Arizona arrived around 1500 A.D. Pages 55 through 59 detail the years of conflict that Southern Arizona residents experienced with Apache lifeways.

The Yaqui

The dramatic story of the Yaqui people is outlined on pages 60 through 64 of the report. Campaigns against the Yaqui in the seventeenth century were staved off, but led to the introduction of the Jesuits to Yaqui culture, and subsequent conversions to Christianity. The Spanish colonial world found Yaqui people in mining and ranching endeavors. Jesuits departed from the Yaqui lands in 1767, and were replaced by Franciscans, who are said to have less successful relations with the Yaqui people. Escalating disputes in Mexico led to the displacement of some Yaqui people to Arizona in the early 1900s. More than 9000 Pascua Yaqui people live in Southern Arizona today. In 1982 they received federal recognition and in 1988 the first constitution was ratified.

Non-indigenous Peoples of Southern Arizona

Pages 64 through 87 of the report describe the path taken by four groups to Southern Arizona: the Hispanic people of the region; the Mormon residents; Chinese members of the community; and African Americans in Southern Arizona.

The Hispanic Presence in Southern Arizona

Pages 66 through 76 divides the description of Hispanic presence in Southern Arizona into three parts based on the nation exerting most influence at the time: 1539 to 1821 is designated as the Spanish Colonial period; 1821 to 1854 is called the Mexican period; and 1854 to the present is referred to as the U.S. period. Some highlights from the report include these points:

- "Although Fray Marcos de Niza, Fransisco Vasquez de Coronado, and perhaps other Spanish explorers passed through southern Arizona in the sixteenth and early seventeenth centuries, no physical trace of their presence here has ever been found. ... The next wave of Spaniards to enter the region -- Jesuit missionaries and their military escorts in the late seventeenth century -- were the first Europeans to ... establish a way of life in the region that lasted, in different versions, until the Gadsden Purchase." (P. 68)

- "In 1732, priests were once again assigned to the Santa Cruz village of Bac ... Among the visitas under San Xavier del Bac was a small village on the west bank of the Santa Cruz River, at the foot of Sentinel Peak ("A" Mountain). This was San Cosme de Tucson, the antecedent of modern Tucson, which Father Kino first noted by that name in 1698. [P]riests were installed in their respective missions and guaranteed protection by Captain Juan Bautista de Anza." (P. 69)

- "The mission settlements at Tumacacori and San Xavier del Bac remained predominantly Native American, but Hispanic people were now a presence at Tumacacori, the Tucson presidio, and Tubac, which in 1787 had once again become a presidio. The total Hispanic population was nonetheless very low: an official census taken of the Tucson presidio and surrounding area in 1804 counted 1,015 gente de razon. At Tubac that

year, the same census listed 88 soldiers and their families, plus 8 civilian households. At Tumacacori, 88 gente de razon were listed. With the gradual increase in the Hispanic population ..., the occasional family attempted farming, ranching, or mining in outlying areas such as Arivaca and the San Pedro Valley, but most Spaniards continued to congregate in or near the three Santa Cruz Valley settlements." (P. 73)

- "The latter half of the nineteenth century saw the emergence in Tucson of 'an oasis of middle-class Mexican society.' (Sheridan 1986), including merchants and entrepreneurs, artists and intellectuals, and politicians of statewide and national influence. Even in the late 1800s, as Anglo-Americans increasingly excluded Mexican Americans from everyday life, Mexican Americans retained prominent roles in Tucson's economic and political life, and the Mexican-American community continued into the twentieth century as a vital, culturally distinctive entity." (P. 67)

Mormons, Chinese, and African American Residents of Southern Arizona

Pages 76 through 87 offer insights into the experiences of the first Mormon settlers in Binghampton; the Chinese emigration and experience in the early economy of Tucson; and the unheralded achievements of African-Americans, which include the work of Esteban as the first guide for the Spanish friar Marcos do Niza in 1539, and the discovery made by George McJunkin, an African American cowboy who found the first Paleoindian site in 1927.

Conclusion

Cultural and historic resources are preserved under a regulatory scheme that, by itself, does not explain the richness of the resource it seeks to protect. The attached report is one in a series of such reports that will be issued in the next few weeks that attempt to lead members of the Steering Committee for the Sonoran Desert Conservation Plan to a better understanding of the field itself, and more importantly, toward a greater appreciation of the importance of these resources in light of their relation to Tucson's past and present community members.

Regional Synthesis of Cultural and Historical Resources

Pima County Sonoran Desert Conservation Plan

The People of Southern Arizona, Past and Present

Submitted by

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P.O. Box 31865
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May 2000

The People of Southern Arizona, Past and Present

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Southern Arizona is now and always has been home to a rich intermingling of diverse peoples and ethnic groups. This was true in the ancient past as well as the historical past and the present. Despite its somewhat remote location relative to centers of culture and population density, Arizona was linked by ties of economy, kinship, and interaction with its immediate neighbors, with peoples elsewhere in North America, and in historical times, with the rest of the world. We must remember, as Thomas Sheridan reminds us, that "Arizona has never developed in isolation, not even during precolumbian times. Other cultures, other centers of power, and other economic and political demands have always shaped the people living here" (Sheridan 1995:xv).

This chapter considers the people of southern Arizona from prehistory to the present. Because details about their lives and landscapes are presented in other chapters, each culture or ethnic group is simply summarized here. We provide information about chronological periods and archaeological or historical models, cultural systematics, origins, important sites, and lifeways. We also provide information about abandonment and descendants of peoples, if relevant. Our organization is chronological—we begin with the earliest prehistoric peoples, and conclude with Pima County today.

There are four broad sections of this overview that differ in content and approach. The first section, "Ancient Peoples of Southern Arizona," discusses the prehistoric cultures defined by archaeological research. It concludes with a section on the end of prehistory and native peoples at time of European contact, providing an introduction to the indigenous peoples of the early historical period, covering the time usually known as the Protohistoric period, that are described in the second section. This section, "Indigenous Peoples of the Historical Period," is more anthropological than archaeological, and describes the native O'odham, Yaqui, and Apache peoples who lived in the region at the time of first European contact and remain in southern Arizona today. It is based largely on ethnographic research and documentary history rather than on archaeology. The third section, "Those Who Came Later: Non-indigenous Peoples of the Historical Period" covers the Hispanic, Mormon, African-American, and Chinese peoples who came to southern Arizona in the historical period. It is largely based on documentary evidence and some previous historical-archaeological work. The fourth and concluding section is "Pima County Today," which covers the ethnic composition of our county in the twenty-first century. Each part of this overview of past and present inhabitants concludes with suggested readings that the reader may seek out for more detailed information.

Ancient Peoples of Southern Arizona

Archaeologists have identified and labeled a number of prehistoric occupations in southern Arizona that we generally label "cultures," and readers should understand that the archaeological conception of culture is different from the way ethnographers and indigenous peoples use this term. The archaeologist's culture is defined largely on the basis of material

culture—pottery types, architecture, flaked and ground stone tools, design styles, and technology—and on adaptation to their environment, including ways of making a living and farming. Thus our discussion of the prehistoric cultures is different from subsequent sections of this overview dealing with indigenous and other peoples of the historical period.

The best-known prehistoric occupants of southern Arizona were the Hohokam, and we devote most of this section to them. Preceding them in time were Paleoindian and Archaic peoples and the earliest ceramic-producing cultures of the Early Formative period. Contemporaneous with the Hohokam in large part and overlapping in geographic distribution were the Trincheras and Patayan cultures. Because a discussion of the Hohokam must include with the Salado issue, we include a brief section on the Salado culture. Our review of ancient peoples concludes with what little we know of the native peoples of southern Arizona at the time of first contact with Europeans.

The First Peoples

The first people to live in southern Arizona—at least, the first we have good archaeological information about—were mobile hunters of now-extinct animals, who faced mammoth, dire wolf, and huge bison with equanimity. The general label for these peoples is Paleoindian. Archaeologists divide them into two groups based on the kinds of animals they hunted and their material culture. The Clovis culture represents hunting peoples whose primary prey was the mammoth, and their sites date to around 11,500 years ago. Their fluted, beautiful flaked spear points have been found throughout the Americas as far as the tip of South America. Following the Clovis people around 9,000 years ago were people of the Folsom culture, who hunted primarily a now-extinct form of bison with smaller, fluted spear points. No periods or phase systems have been devised for the Paleoindian period other than the general Clovis and Folsom subdivisions.

Numerous Clovis sites are found in the San Pedro River valley at places such as Lehner Ranch, Naco, and Murray Springs. Most of these are "kill" sites, where remains of mammoths have been found associated with spear points and other tools. By contrast, little evidence for Paleoindian occupation has been unearthed in the Tucson area. Only isolated spear points have been found (Agenbroad 1967; Ayres 1970; Doelle 1985; Huckell 1982). Bruce Huckell (1984b) suggests that this was not because the Tucson area was unattractive to these big-game hunters, but because erosion has removed evidence of their presence. A Clovis-like occupation was found at Ventana Cave (Haury 1950), and Clovis points have been recently found during surveys of the Papaguería, suggesting that Huckell may be correct. Julian Hayden always believed in the great antiquity of human beings in the Sierra Pinacate, Papaguería, and elsewhere in the western deserts (Reid and Whittlesey 1997), and recent discoveries help to support his ideas.

Almost no evidence of Folsom occupation has been found in southern Arizona, even in the San Pedro River valley. Only two possible Folsom-style points have been found (Whittlesey et al. 1994:109). This speaks to some extraordinary shift that has yet to be explained by archaeologists. It may be related to climatic change and the distribution of ancient bison. Or it is possible that the lifestyle archaeologists have labeled the Folsom culture was a specialized lifeway confined to the North American plains, never reaching southern Arizona.

The reader may wonder why so little is known of the Paleoindian hunters of southern Arizona. The answer is not simple. As Huckell (1984b) suggests, part of the problem is the great antiquity. Deeply buried by thousands of years of geological accumulations, Paleoindian sites are difficult to see except when exposed by erosion of arroyos or other activities that cut into the deposits. Another part of the problem is the ephemeral nature of sites. Paleoindians did not build brush pit houses or stone pueblos, and they did not make ceramic containers. Their houses and their tools were simple equipment often made from perishable materials that decayed over the course of the millennia. And last was their lifestyle. Mobile peoples who followed the hunt, they did not farm or stay in any one place for long. Few traces of their passing are left on the landscape. Because of these reasons, the number of Paleoindian sites that have been found in the San Pedro Valley is all the more remarkable.

Suggestions for further reading: The reader may consult the chapter on Paleoindian cultures in Reid and Whittlesey (1997).

Archaic Ancestors

The term "Archaic" refers to both culture and time. Archaeologists use the label to refer to early cultures that followed the Paleoindians and preceded the appearance of ceramics and better-known cultures such as the Hohokam. They also use the term for the span of time during which these peoples occupied Arizona (Reid and Whittlesey 1997).

The Archaic period has long been relatively poorly known, and understanding of the Archaic period occupation of the Tucson Basin is based almost solely on extremely recent excavations. Before 1982, no professional excavations had been carried out at Archaic sites in the Tucson area, making it possible for Doyel (1977b, 1984) to hypothesize that the Tucson Basin was an empty niche that was filled by Hohokam agriculturists. Recent work has dispelled such notions, increased the number of known sites vastly, and added enormously to the corpus of information about this crucial period in southwestern prehistory. As so often happens with archaeology, the vast increase in data has also spawned reconfigurations and reconceptualizations of the Archaic period and not a little confusion.

Cultural Systematics and Terminology

Largely because of new information, labels for the preceramic peoples of southern Arizona have changed over the decades since the Cochise culture was first defined in 1941 by Sayles and Antevs of Gila Pueblo Archaeological Foundation. Because of this terminological confusion, we briefly review the changes here.

The first conception of the southern Arizona Archaic was that of the Cochise culture as defined by archaeologists of Gila Pueblo (Sayles and Antevs 1941). Amargosa, a term borrowed from work in southern California and western Arizona, was occasionally used as well (Haury 1950; Rogers 1939). For some reason, conceptions developed in the 1950s and 1960s, such as Jennings's (1957) Desert Culture and Irwin-Williams's (1967) Picosa culture, never became accepted in southern Arizona. In the 1980s, the first relabeling of the southern Arizona Archaic occurred. Huckell (1984a) argued that the Cochise culture could be subsumed under a broader rubric that he called the Southwestern Archaic. The term "Archaic" was borrowed from eastern North American archaeology and reflected an adaptive mode as well as a time span. Willey and Phillips (1958:107) defined the Archaic as "the stage of migratory hunting and gathering cultures continuing into environmental conditions approximating those of the present," thus distinguishing this stage from the preceding Paleoindian adaptations of the Pleistocene.

Huckell's argument for using Archaic rather than Cochise was based on the latter's perceived lack of widespread applicability. The Cochise label was originally defined for a small sample of sites evidently adapted to riverine settings along the San Pedro River. Huckell argued that logically "Cochise" could therefore be applied only to the limited range of sites and material culture for which it was originally defined, and could not be extended to the diverse range of sites outside this small portion of southeastern Arizona (Huckell 1984a:204). Huckell further divided the Southwestern Archaic into Early, Middle, and Late periods. The Early Archaic period spanned the time between 10,500 and 6,800 years B.P., the Middle Archaic between 6,800 and 3,500 years B.P., and the Late Archaic between 3,500 and 1,650 years B.P. These correlate roughly with the original Sulphur Spring, Chiricahua, and San Pedro stages of the Cochise culture (Sayles and Antevs 1941).

Beginning in the 1990s, terminology shifted again. During the 1980s, Huckell had been working at several Late Archaic period sites in exceptionally rich, riverine environments, including the Milagro site in the eastern Tucson Basin and sites in Matty Canyon along Cienega Creek, first investigated by Frank Eddy in the 1950s (Eddy and Cooley 1983). These sites yielded abundant maize (corn) remains, architecture, bell-shaped storage pits, ceramic beads and figurines, and other materials suggesting that they represented settlements of an agriculturally dependent, residentially stable, farming culture. With this background and an emphasis on the semisedentary, agricultural character of Late Archaic occupations in southern Arizona, Huckell (1995:16) exhumed a label first suggested at the 1953 Pecos Conference

and proposed that "Early Agricultural period" should replace Archaic. Huckell's Early Agricultural period was thought to encompass San Pedro Cochise as well as other preceramic cultures and spanned the time from 1500 B.C. to A.D. 200 (Huckell 1995:16). Unfortunately, Huckell also proposed that the Archaic label be retained. "In southern Arizona," he wrote (Huckell 1995:16), "the Archaic period may be redefined as the preagricultural part of the preceramic period, equivalent with the former Early and Middle Archaic periods." He also proposed that "Late Archaic" might be used "for those preceramic groups that did not adopt agriculture."

This usage not only conflates characteristics of ancient lifeways such as agriculture with temporal units, it is difficult to use. If we do as Mabry (1998:12) suggests, which is to apply "Early Agricultural" "only to sites yielding evidence of agricultural activities," reserving "Late Archaic" for "hunting and gathering sites coeval with the farming sites," the labels can only be applied to excavated sites for which we have information about subsistence. It cannot be applied to unexcavated sites found on survey, for example. Moreover, although farming was certainly important to Late Archaic peoples, not all settlements of the "Early Agricultural period" exhibited evidence for agriculture. Some relatively large and permanent Late Archaic sites, such as the Coffee Camp site in the Santa Cruz Flats northwest of the Tucson Basin, have yielded no evidence for maize whatsoever (Halbirt and Henderson 1993; Whittlesey 1996:46). Although new terminology that does not conflate time and adaptation is needed, this task is far beyond the scope of this review. For these reasons, the Early, Middle, and Late Archaic labels are used here.

Culture Sequence and Sites

No phases have yet been defined for the Early and Middle Archaic periods. In the Tucson area, a local phase sequence for the Late Archaic period has been adopted only recently. The Late Archaic period is currently divided into two phases. The San Pedro phase extends from 1200 to 800 B.C., and the Cienega phase follows between 800 B.C. and A.D. 150 (Mabry 1998:Table 1.4). Both phases were defined for the Tucson Basin. It is unclear if the material signature of these phases also occurs elsewhere in southern Arizona. Moreover, the 1,000-year or so Cienega phase is probably too long. Although the pace of cultural development was slow in the Archaic period, further research will no doubt provide additional evidence for subdividing this phase.

Occupation of the Tucson area was evidently sparse during the Early and Middle Archaic periods, although substantial occupations occurred nearby in the Picacho Reservoir area (Bayham et al. 1986) and the Santa Cruz Flats northwest of Tucson (Halbirt and Henderson 1993). Early Archaic finds are limited largely to projectile points (e.g., Dart 1986; Huckell 1984b). Middle Archaic sites have been found on the slopes of the Catalina Mountains and elsewhere in the Tucson Basin (Dart 1986; Douglas and Craig 1986; Fish et al. 1986; Masse 1979; Rankin and Downum 1986; Roth 1988; Simpson and Wells 1983, 1984; Stacy and

Hayden 1975) and in the Santa Rita Mountains (Huckell 1984a). Middle Archaic occupation has also been recorded in the Papaguería (Haury 1950) and southeastern Arizona (Sayles and Antevs 1941; Waters 1986; Whalen 1971; Windmiller 1973), as well as in the Picacho Reservoir–Santa Cruz Flats area (Bayham et al. 1986; Halbirt and Henderson 1993).

A Middle Archaic component was recently investigated at the Los Pozos site along the Santa Cruz River just south of its confluence with the Rillito River (Gregory 1999). Six Middle Archaic features, representing five pits and one oxidized depression, and four possible features were excavated (Gregory and Barr 1999:23). Radiocarbon dates placed the occupation between 2700 and 1900 B.C. (Gregory and Barr 1999:28).

Use of a wide range of environmental locales in and near the Tucson Basin by Late Archaic peoples has been documented. There was dense occupation along the Santa Cruz River (Doelle 1985; Elson and Doelle 1987; Huckell 1988:65; Huntington 1986). Upper and lower *bajada* settings (P. Fish et al. 1992; Huckell 1984a, 1987; Masse 1979:149–151; Roth 1996), sand dunes in the Avra Valley (Rankin and Downum 1986), and floodplain settings along secondary streams (Huckell et al. 1995) were all used for habitation and specialized purposes. Some archaeologists have posited a dual settlement system, in which the same kinds of settlements were duplicated in riverine and *bajada* settings where the necessary resources and water were available (S. Fish et al. 1992). The *bajada* settlements were smaller than those along the river, however.

A portion of a Late Archaic site was excavated at the Santa Cruz Bend site, a large settlement buried in the floodplain of the Santa Cruz River south of Los Pozos. Santa Cruz Bend was occupied between about 760 and 200 B.C. during the Cienega phase. Mabry (1997) estimated that the site may have covered at least 8 hectares, and as many as 500 pit structures may originally have been present. Of 183 pit structures identified, 63 were excavated (Mabry and Archer 1997:26). Extramural pits, inhumations, animal burials, and other features were also investigated

Lifeways

The Archaic lifestyle, as indicated by the adoption of Willey and Phillips's (1958) term, was one of mobility and foraging. People followed a seasonal round as various wild plant crops ripened and filled in their diet with game, particularly rabbits and deer. Seeds of wild plants were processed with grinding equipment called metates and manos. The metates, or bottom grinding stones, were typically basin shaped, and the hand-held manos were small, round tools used in a circular and reciprocal motion in the metate basin. Mesquite beans might be pounded in deeper stone mortars with a pestle. Mortars were often pecked into bedrock outcrops near dense stands of mesquite, and the beans were processed on the spot.

Sometime around 3,000 years ago, maize was introduced to the Southwest as a cultivated plant. Maize was the only cultivated plant identified among macrobotanical remains at the Santa Cruz Bend site, although cucurbit (squash) pollen and a single grain of cotton pollen were found (Fish 1998:161; Huckell 1998:120). Twelve of 20 samples (60 percent) yielding pollen produced maize (Fish 1998:161), a relatively high percentage. There was considerable agricultural sophistication, and a variety of farming techniques were employed. Farming may have been new to Late Archaic peoples, but they adopted it wholeheartedly.

We are unsure exactly how corn was prepared. It definitely was not boiled in a pot, for ceramic containers had not yet been adopted. Mostly likely corn was roasted in the ear, a technique that leaves behind abundant charred kernels and cob pieces, which is precisely what we find in the archaeological record. But few hearths or roasting pits for preparing corn in this manner have been found. The absence of hearths inside houses at Santa Cruz Bend is notable. Although a few possible hearths and oxidized areas were noted, no formal hearths were identified among the 63 excavated houses (Mabry and Archer 1997:225), and only a single extramural hearth was excavated (Mabry 1997:17).

Fired-clay figurines and beads were made during the Late Archaic period (e.g., Huckell et al. 1995). By the Cienega phase, crude clay containers had made their appearance. Coarse, crudely made and fired ceramics were found at the Coffee Camp site dating between 200 B.C. and A.D. 1 (Halbirt and Henderson 1993; Kisselburg 1993), and at the Santa Cruz Bend, Wetlands, Clearwater, and Los Pozos sites (Heidke et al. 1998:497) in the Tucson Basin.

These ceramics were poorly made and finished, with extremely variable thickness and surface color and characteristic rough surfaces. Some sherds had impressions from basketry or other fiber objects, and others were incised (Heidke et al. 1998:498). The incised designs are similar to those of the Western Archaic rock art tradition (Wallace and Holmlund 1986). These crude "ceramics" could not have been functional containers for cooking, storage, or other purposes. They were too crudely made and fired to withstand repeated heating and cooling, and they were too small to have served as adequate containers. The average aperture was only 6.3 cm, about the size of a baseball (Heidke et al. 1998). The early pottery may have arisen through experimentation with mud-lined basketry containers (Kisselburg 1993) and probably served a nondomestic function.

Suggestions for further reading: Additional information can be found in the chapter on Archaic ancestors in Reid and Whittlesey (1997).

Early Formative Period

As with the Archaic period, our knowledge about the earliest ceramic-producing occupation of southern Arizona is largely based on recent findings, and it is equally controversial. As we have seen, the Late Archaic people understood the technology of turning mud into fired clay

artifacts. This "pottery" lacks the twin hallmarks of a developed ceramic industry, however—diversity in vessel shapes and proficiency in manufacturing techniques. The mechanisms promoting development of ceramic-container technology and the possible sources of this innovation are questions that remain to be answered.

Ceramic containers began to appear in southern Arizona by around A.D. 1, and by A.D. 200, a well-developed ceramic-container technology was in place. Technologically sophisticated pottery appeared at settlements such as the Houghton Road site in the eastern Tucson Basin (Ciolek-Torrello 1998; Whittlesey 1998a), El Arbolito (Huckell et al. 1987), the Square Hearth site (Wöcherl and Clark 1997), the Valencia site (Huckell 1993), and several others. The occupation labeled Early Formative or Early Ceramic period emerged.

Different terms are used to describe this time. Most archaeologists working in the Southwest use the term "Formative" as a shorthand label for ceramic-producing, sedentary, agriculturally based peoples. Other archaeologists, uncomfortable with the fact that southwestern societies never developed beyond the Formative stage in its traditional sense (Willey and Phillips 1958), eschew the term and use the "Early Ceramic period" label (Mabry 1997:6). As with the terminology of the Late Archaic period, archaeologists need to rethink their labels and their connotations. This review uses the traditional label "Early Formative period."

Chronology and Culture Sequence

Deaver and Ciolek-Torrello (1995) divided the Early Formative into two "horizons" based on salient ceramic characteristics. The Plain Ware horizon extended from about A.D. 1 to 425, and can be described essentially as a continuation of Late Archaic lifeways with the adoption of ceramic container technology and increasing formalization of architecture (Whittlesey 1996). These lifeways evidently were widespread across much of the Southwest, hence Deaver and Ciolek-Torrello's use of "horizon"—meaning material culture that was distributed across a broad region at the same time (Willey and Phillips 1958).

In the Tucson Basin, the Plain Ware horizon is represented by the Agua Caliente phase (Ciolek-Torrello 1995, 1998). The technological, material, subsistence, and settlement characteristics of this time are extraordinarily similar to those described for early Mogollon settlements of east-central Arizona and west-central New Mexico (e.g., Anyon and LeBlanc 1980; Haury and Sayles 1947; Martin and Rinaldo 1947; Wheat 1955), including bean-shaped domestic architecture, large communal houses, semiflexed inhumation, and a mixed subsistence strategy. Indeed, these aspects of ancient lifeways at the El Arbolito site on the *bajada* of the Santa Rita Mountains, one of the first Plain Ware horizon sites to be investigated, led Huckell (1987) to label it Early Mogollon. Coeval occupations in the Phoenix area have been labeled the Red Mountain phase (Cable and Doyel 1987; Morris 1969). In southeastern Arizona, the occupation is termed the Peñasco phase (Sayles 1945).

Around A.D. 425, red-slipped pottery was introduced to the ceramic assemblage, ushering in the Red Ware horizon. Deaver and Ciolek-Torrello ended the horizon at A.D. 650. The Tortolita phase, which was defined at the Lonetree site (Bernard-Shaw 1990), represents this period in the Tucson Basin. The equivalent Phoenix Basin occupation is labeled the Vahki phase; Red Ware horizon occupations also occurred in southeastern Arizona (Sayles 1945). The Tucson and Phoenix Basins appear to have diverged rather markedly in Red Ware horizon times, with Phoenix beginning to exhibit many of the material traits that are recognized as Hohokam.

Some time around A.D. 650, painted pottery appeared in southern Arizona. Brown ware ceramics painted with bold, broadline geometric motifs appeared in the Mimbres Valley of New Mexico and the San Simon Valley of southeastern Arizona (Anyon et al. 1981; Sayles 1945) and the Phoenix area, where they are called Estrella Red-on-gray (Haury 1937). This was the last time that Hohokam and Mogollon ceramics were essentially indistinguishable (Whittlesey 1996). This horizon is represented poorly in the Tucson region, consisting mostly of isolated sherds lacking architectural context (Deaver and Ciolek-Torrello 1995:486). Not long thereafter, fine-line painted pottery decorated with distinctive hachured designs appeared in southern Arizona. Recognized as Snaketown Red-on-buff (Haury 1937), this pottery introduced what was recognized as indisputably Hohokam, and the developmental trajectory toward settled village life begun much earlier in the Archaic period was complete.

Early Formative Sites

Plain ware horizon occupations ranged across the Tucson Basin and in adjacent areas. In addition to El Arbolito, Agua Caliente phase occupations were present at the Houghton Road site, the Square Hearth site (Wöcherl and Clark 1997), the Stone Pipe site, (Swartz and Lindeman 1997), and possibly at one locus of the Valencia site (Huckell 1993).

Red Ware horizon occupations have been identified at Houghton Road, the Rabid Ruin in the western Tucson Basin (although not recognized as such [Slawson [1990]), the Dairy site, El Arbolito, the Valencia Road site, and no doubt elsewhere in the Tucson area. The Dairy site, named after the Shamrock Dairy, which used to occupy the property, is an important site with an Early Formative component as well as earlier Archaic and later Hohokam occupations. It was investigated first by the Arizona State Museum (ASM) (P. Fish et al. 1992) and later by Statistical Research, Inc. (SRI) (Altschul and Huber 1995; Deaver 1996). The active alluvial-fan setting of the Dairy site was highly conducive to floodwater farming, although water-conveyance devices were used later in the early Pioneer period (Deaver 1996).

Lifeways

Early Formative peoples further developed the semisedentary, farming lifeways begun during the Late Archaic period. Cultivated plants other than maize appeared with increasing frequency during the Red Ware horizon and agricultural techniques became more sophisticated. Architecture became more formalized—houses were bigger and more substantially built. Houses began to be used for activities other than storage, such as cooking. This suggests that the Early Formative people were increasingly sedentary, perhaps staying in settlements throughout most of the year rather than continuing to move about constantly. Instead of "residential mobility," where people moved their homes in the seasonal round, they adopted what archaeologists call "logistical mobility," meaning that people moved in shorter, seasonal movements from a home base to procure wild plant foods, to hunt, or to farm.

The earliest pottery containers were thin-walled, sand-tempered, brown plain ware constructed by coiling and hand modeling and finished by scraping. Vessel forms were primarily hemispherical bowls and neckless or so-called "seed" jars with narrow openings, suggesting a storage rather than cooking function for the first containers. The red-slipped pottery of the Early Formative period has a deep red, usually extremely well-polished slip that often exhibits finger impressions or "dimpling" from polishing over the pinched coils while they were still damp. These attributes of Early Formative pottery are similar to the earliest Mogollon pottery, prompting assignment to the Alma Plain tradition of the Mogollon rather than the Gila Plain tradition of the Hohokam (Whittlesey 1998b).

The Early Formative occupation of the Tucson Basin is much like contemporaneous occupations across much of the southern Southwest. Sites with similar material culture, architecture, and inferred lifeways occur from the Petrified Forest region in northern Arizona and as far south as Chihuahua. Similar Plain Ware horizon sites have been excavated in the Tonto Basin (Elson and Lindeman 1995), the Forestdale Valley (Haury and Sayles 1947), and in western New Mexico. The similarities of all these widespread occupations, which crosscut different environmental zones and were separated by hundreds of miles, suggest the possible existence of a widespread, "basal" culture from which the later Mogollon, Hohokam, and Anasazi cultures emerged. Charles Di Peso of the Amerind Foundation had called this culture the O'otam (Di Peso 1953, 1956).

Suggestions for further reading: For additional information, the reader is referred to Reid and Whittlesey (1997). A special issue of Kiva *(Vol. 60, 1995) was devoted to the Archaic-Formative transition and contains several articles about the Early Formative period. Ciolek-Torrello (1998), Whittlesey and Ciolek-Torrello (1996), and Whittlesey et al. (1994) are readable reports written for archaeologists.*

The Hohokam

The Hohokam were among the original Arizonans, and these prehistoric peoples not only called the Sonoran Desert their home, they adapted to it extraordinarily well. These ancient people lived in the Santa Cruz, Salt, and Gila River valleys, in the desert interior around the Phoenix and Tucson metropolitan regions, and in the Papaguería. The Hohokam were masters of the desert. Their sophisticated farming techniques, including miles of irrigation canals along the rivers and tributaries, helped create a richly detailed fabric of life enriched by an elaborate art style, a unique ideological and symbolic system, and a ceremonial-ritual system unlike any other in the Southwest (Reid and Whittlesey 1997).

The name "Hohokam" was first given to this culture by the archaeologists at Gila Pueblo. The word was an O'odham expression that is usually translated "those who have gone before" or "all used up." Because, like all other prehistoric southwestern peoples, the Hohokam did not have a written language, they did not leave behind any information about their own language or what they called themselves. It was archaeologists who named them (Reid and Whittlesey 1997).

Origins

Some of the finest minds in southwestern archaeology have grappled with this topic, and there has been no consensus to emerge from the controversy. There are two basic hypotheses about Hohokam origins. The Hohokam may be descended from the original Archaic and Early Formative period inhabitants of the region, or they may be immigrants who traveled from a home somewhere in what is today Mexico to settle in the Gila River valley. When the Hohokam culture was first described in 1937, there had been no intensive investigations of Archaic period sites in southern Arizona. It was thought until as late as 1984 that southern Arizona was an empty, uninhabited place (Doyel 1984). It was possible, therefore, for Emil Haury and his colleagues to speculate that the Hohokam were migrants who brought with them a fully developed technology and a sophisticated lifestyle (Gladwin et al. 1937). The long sequence of occupation at Snaketown, then thought to extend back to 300 B.C., supported this notion.

Later, excavations at Ventana Cave yielded an unbroken stratigraphic sequence from Archaic to Hohokam, implying an equally unbroken, continuous cultural sequence. Haury (1950) suggested that the Hohokam developed from the local Archaic ancestors on the basis of this evidence. Di Peso (1956) favored a similar point of view, but believed that the local people were not Hohokam but O'otam, a basic culture descended from Archaic ancestors that was widespread across the Southwest and from which the Mogollon and other cultures developed. Di Peso also viewed the Hohokam as Mexican immigrants who supplanted the Hohokam. Later, as Hohokam culture collapsed, the O'otam were able to reassert themselves.

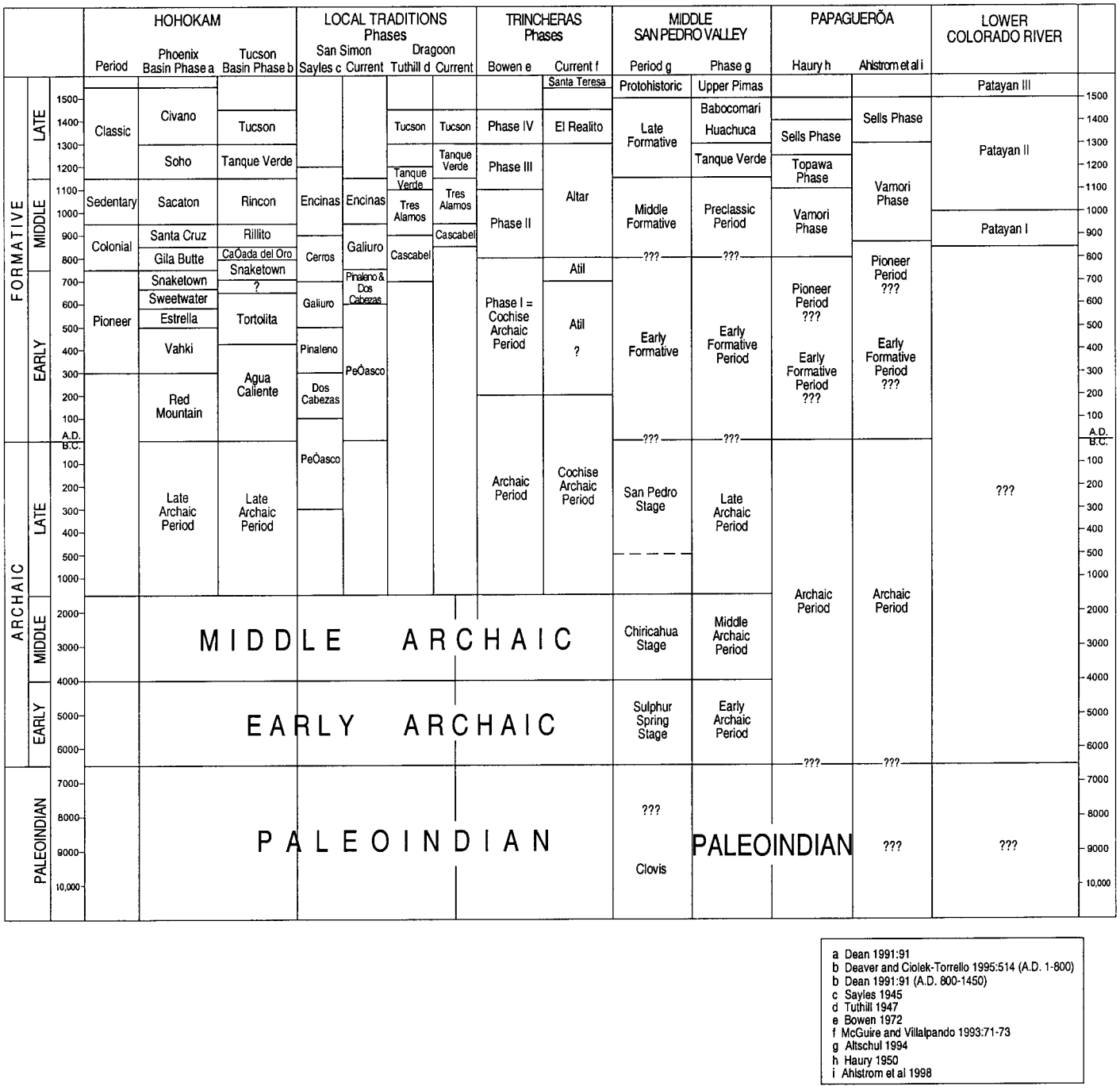
After he worked at Snaketown once again in the 1960s, Haury changed his mind and returned to his original point of view. He maintained (Haury 1976) that the Hohokam were immigrants and held to this interpretation even as younger archaeologists were taking up his original view. Many aspects of Hohokam material culture and lifeways support the notion of a Mexican origin. These include the exotic vessels forms, such as tripod vessels, effigies, and censers; ceramic figurines; stone sculpture; iconography; ball courts and platform mounds; and canal irrigation.

Recent discoveries in the Santa Cruz River valley and elsewhere in southern Arizona indicate the indisputable presence of relatively densely settled, Late Archaic and Early Formative occupations and lend credence to the notion of Hohokam descent from Archaic ancestors. Archaeologists who enthusiastically accept the Archaic–Early Formative–Hohokam continuum and seek to push back the origins of Hohokam culture to preceramic times must grapple with thorny issues of cultural evolution and cultural affiliation, however. How do we recognize prehistoric cultures? Can we differentiate between them on the basis of ceramics and other material culture, or is it lifeways that are determining factors? And because ethnically distinct people may exploit the same environment in similar ways, as well as differently, subsistence and settlement alone may not be good criteria. Most crucially, the processes by which cultures grow and change through time in sophistication and complexity are not easy to deal with archaeologically. In short, we do not have a good answer to the questions—how early were the Hohokam living in southern Arizona, and where did they come from? Much remains to be done.

Chronology and Culture History

Archaeologists divide the Hohokam culture sequence into periods and phases (Figure 1). The same overarching period system is used for the Phoenix and Tucson Basins, the Papaguería, and elsewhere in southern Arizona, but the phases differ. The dating of the culture sequence has long been a topic of controversy, largely because it has depended primarily on relative rather than absolute dating techniques. Today, archaeomagnetic dating has helped to refine the chronology. We now know that the sequence is much shorter than the framework developed by Gila Pueblo archaeologists on the basis of excavations at Snaketown (Gladwin et al. 1937). It is now thought to begin around A.D. 750 rather than the 300 B.C. as originally proposed. Archaeologists have yet to come to grips with regional variability in the culture sequence. It is likely that changes did not take place simultaneously across the entire Hohokam region, but that there were temporal disjunctures and discontinuities. This remains an important problem for future work.

The Hohokam ceramic sequence parallels the phase sequence; there was a single painted type corresponding to each phase. This applies to the Phoenix and Tucson Basins alike. Changes in the ceramic sequence enabled Haury (1937) to date the Hohokam culture at Snaketown



a Dean 1991:91
b Deaver and Ciolek-Torrello 1995:514 (A.D. 1-800)
b Dean 1991:91 (A.D. 800-1450)
c Sayles 1945
d Tuthill 1947
e Bowen 1972
f McGuire and Villalpando 1993:71-73
g Altschul 1994
h Haury 1950
i Ahlstrom et al 1998

Figure 1. Comparative prehistoric culture-historical sequences for southern Arizona.

and divide the sequence into periods and phases. Indeed, pottery remains a useful dating tool in Hohokam archaeology, although archaeomagnetic dating has assisted greatly in supplying absolute dates. Hohokam plain ware and red ware pottery is less easily categorized into types, and the plain ware in particular lasted through the entire sequence, making it of little utility for dating purposes. Some characteristics of Hohokam pottery appear to have temporal significance. For example, a unique shoulder shape called the Gila shoulder—sharply angular, and likely resulting from the way the pot was made—appeared during the Sedentary period.

The pre-Classic period is a label generally embracing all periods and phases from Sweetwater to Sacaton in the Phoenix Basin and those preceding the Tanque Verde phase in the Tucson Basin. In the Tucson Basin, no phases preceding the Cañada del Oro phase have been defined; there are no local Pioneer period phases. Pottery and sites dating to this time have been found, however, and a label is needed for this early Hohokam occupation. This is a task for archaeologists to undertake. The pre-Classic period was the time when Hohokam culture was represented in its "purest" form. The original view of Hohokam culture history (Gladwin et al. 1937) proposed the Colonial period as a time of expansion, during which the Hohokam established colonies in many areas of the Arizona deserts, as expressed in the name for the period. Although there is undeniable evidence for population growth in the core Hohokam region and expansion into outlying areas at that time, the mechanisms by which "colonies" were established and the root causes of such expansion remain unknown.

The Classic period was a time of sweeping changes to the fabric of Hohokam life. There were marked shifts in settlement and community organization, accompanied by changes in architecture, material culture, subsistence, and mortuary practices. The designs, technology, and forms of locally made painted pottery changed dramatically in the Classic period. Tanque Verde Red-on-brown pottery was the primary painted type in the Tucson Basin, and was distributed throughout the neighboring regions and into the Papaguería. The signature of the Classic period, however, is Gila Polychrome pottery. The presence of Gila Polychrome pottery is usually sufficient to date sites to the late Classic period, as the pottery is well dated by tree-ring dates from other regions.

The latest Classic period phase in the Phoenix Basin is the Polvorón phase, and it was marked by a return to pit house architecture and abandonment of platform mounds or their conversion to nonceremonial uses (Crown and Sires 1984). We are unsure if such an occupation was present in the Tucson area and the Papaguería.

The Papaguería has its own phase system, developed from the excavations at Ventana Cave and other investigations by Emil W. Haury's Papaguería project (see Figure 1). The existing phase system is in need of revision. As Ahlstrom et al. (1998) observe, the pottery types that gave their names to the phases are no longer used by ceramicists. Ahlstrom et al. (1998) have suggested a revision of the phase system on this basis, essentially dropping the Topawa phase, but this stop-gap measure seems insufficient, and the original phases are retained in

Figure 1. Salvage excavations by Wasley and Johnson (1965) in the Gila Bend area did not result in definition of a local phase system but borrowed instead the phase and cultural sequence from the Phoenix Basin. The Papaguería must be seen as a unique desert region with its own local history, although it was hardly isolated and certainly had contacts with Trincheras and Hohokam peoples. One reason for its unique character is the position of this region between the Hohokam and the Patayan core areas. The Papaguería was influenced particularly by the latter culture area. Current investigations in the western Papaguería, such as ongoing studies for the Barry M. Goldwater Air Force Range (BMGR), may resolve some of these issues.

Territory and Settlement: Regional Systems, Peripheries, and More

Archaeologists have coped with regional variability in Hohokam culture in various ways. The original dichotomy between Desert and River Hohokam developed at Ventana Cave (Haury 1950) was one means of attributing variability to environmental factors. The core-periphery model was based on economic and political factors that were dubiously applicable to the prehistoric Southwest. Wilcox's (1979) Hohokam regional system was an attempt to introduce objectivity into the discussion by deleting culture from consideration. All of these models have merits and deficiencies, and archaeologists are still trying to define and explain regional variability.

Whittlesey (1998c) attempted to unpack the components of Hohokam culture into manageable units. She argued that what archaeologists see as a single Hohokam "culture" actually reflected local populations in different regions adopting various components of lifeways to differing degrees of intensity. There are several bases of "culture"—geographic, religious, economic, and social—when defined in this fashion, and archaeologists can look at these bases individually. For example, whereas people in some parts of Arizona might adopt all aspects of the Hohokam lifestyle, others might take up only the ball-court complex (the religious basis of Hohokam culture); others might use painted ceramics made in the Phoenix Basin and bury their dead with the cremation mortuary complex, but not adopt the use of ball courts. Only by looking at the distribution of regional culture in this way is it possible to explain certain unusual facts, such as the absence of ball courts in some regions where Hohokam populations evidently lived, like the Tonto Basin. Otherwise, archaeologists would have to create several different Hohokam "cultures" to explain this variability (see also Doelle and Wallace 1991).

Most archaeologists would agree that the Tucson Basin expression of Hohokam was an important regional variant. Its local, painted ceramic tradition in the Hohokam style—the only one identified to date in central Arizona—its unique developmental trajectory, and its dense population living along desert streams all point to a local cultural tradition with deep roots in the region. McGuire (1991:368) has labeled this culture the O'otam, after Di Peso (1956), to distinguish it from the Hohokam of the Phoenix Basin.

An important problem for archaeologists is to determine when the regional variants of Hohokam culture, particularly in the Tucson Basin, first developed. One of the most pressing issues is when ceramics were first made locally in the Tucson Basin. Isabel Kelly's original ceramic sequence for the region began later, during the early Colonial period (Kelly et al. 1978). No locally made Pioneer period ceramics have yet been identified, although paste characteristics have suggested to some ceramicists that Snaketown Red-on-buff and possibly earlier Pioneer period types were indeed locally made (e.g., Deaver 1989; Heidke 1989). A local painted pottery tradition was clearly well developed by the Cañada del Oro phase, when Isabel Kelly (Kelly et al. 1978) began the Tucson Basin painted ceramic series.

We are less sure about the people living in the desert margins of southern Arizona, such as the Papaguería. The lack of dense settlement, the overall "impoverished" nature of the material culture that Haury (1950) first observed, and the dearth of ball courts everywhere except in the Gila Bend area suggests a transient population linked to population centers elsewhere, who may have used the region as a resource-procurement zone rather than a permanent residential area. One such resource may have been marine shell. The Papaguería lies between the Phoenix Basin and the major source of shell, the Gulf of California. Hohokam or Trincheras people may have crossed this remote and arid region to procure shell, returning to villages in the Santa Rosa Wash area and the Santa Cruz Flats to fashion shell jewelry in commercial quantities (see McGuire 1991).

Lifeways

The Hohokam sequence is one of change, development, and growth through time, although the basic lifestyle remained much the same. The Hohokam lifestyle was predicated upon innovative adaptation to the Sonoran Desert. They were farmers first and foremost, although they also relied on wild plant foods, particularly mesquite and cactus, to a great degree (Fish and Donaldson 1991). The Hohokam approached farming with technological sophistication and a good understanding of how to use rainfall, floodwater, and river water to grow corn, beans, squash, tobacco, and cotton and to cultivate nondomesticated, wild plants such as agave (mescal).

The Hohokam of the Tucson area depended more on floodwater farming and less on irrigation than their neighbors in the Phoenix area. The Santa Cruz River did not have permanent, surface flow along its entire length. Instead, water came to the surface only a few places. The Tucson stretch maintained surface flow from Point of the Mountain at the end of the Tucson Mountains to Punta de Agua south of Mission San Xavier del Bac. The Hohokam constructed irrigation canals along this stretch (e.g., Mabry et al. 1997). Elsewhere, they used floodwater, diverting it to their fields from the slopes with brush and rock check dams, or from secondary streams with simply irrigation ditches. To cultivate agave, they relied on rainfall, and retained moisture by building rock piles around the growing plants (Fish et al. 1985).

The Hohokam apparently prepared a variety of foods based on ground corn. Grinding tools were typically made of vesicular basalt and were formally shaped. Trough-shaped metates were used with large, rectangular manos to grind corn. The development of pottery containers tough enough to withstand cooking over an open fire enabled the Hohokam to prepare stews and gruels with corn and depend on beans, which are notoriously difficult to cook without high, moist heat. These changes in preparation techniques increased the nutritional value of corn and enabled the Hohokam to depend on a corn-based diet in contrast to their predecessors, and permitted beans to be eaten more frequently (see discussion in Whittlesey [1998a]).

As would be expected of an agriculturally dependent people, the Hohokam were residentially stable compared to their Archaic predecessors, living in moderately sized villages occupied throughout most of the year. Individual families no doubt used farmsteads—small, short-term residences—as temporary habitations during the summer for tending and harvesting crops or collecting wild plant resources. Using historical- period peoples for comparative purposes, we would liken the Hohokam lifestyle to that of the Akimel O'odham (Gila River Pima) and the Archaic lifeway to the way the Western Apache people once lived.

The ceremonial system was complicated and incorporated a cremation mortuary ritual, sacred ball courts, and caches. Ritual destruction and burning were involved in many religious activities. Ball courts were probably used to play a semisacred game not unlike the Mesoamerican game. Indeed, this was one of the features initially suggesting that the Hohokam culture originated in what is today Mexico. Hohokam ball courts were large, oval structures with earthen berms, which differed from the I-shaped Mesoamerican courts built of stone. The dead were cremated in special crematoria and then buried, either in pits or placed in ceramic vessels with covers. Caches of figurines, often deliberately broken and burned, appear to have been offerings.

Hohokam pottery was spectacular, beautifully fashioned and decorated. Constructed by coiling and finished by the paddle-and-anvil-method, the painted pottery is a buff color with red designs. Figures drawn from life—birds, animals, reptiles, and humans—or repeated, small geometric designs dance across the buff background of flare-rimmed bowls and graceful, globular jars. The swirling designs often give the impression of motion and reflect the probable origin of such designs in basketry motifs. The plain ware pottery used for cooking and storage purposes was tempered with crushed, micaceous-schist rock, giving it a shiny, reflective, and glittering surface sheen. Whittlesey (1998d) has suggested that this was meant to symbolize water and express Hohokam cultural identity. We are only beginning to use special techniques to study the source of the clay used to make pottery, but it looks likely that Hohokam buff ware and plain ware were manufactured in a number of restricted locations in the Gila River Valley where micaceous schist was available.

Whereas Phoenix Basin pottery was distinguished by a porous, buff-colored paste and use of micaceous schist temper, pottery in the Tucson Basin was made of a denser, brown ware paste tempered with sand and sometimes with crushed gneiss or schist rock available in the Santa Catalina and Rincon Mountains. Similarities in design and vessel forms linked the Tucson and Phoenix ceramic traditions (Whittlesey 1996:58), but the local expression differed from the Phoenix Basin in its developmental trajectory and in specific changes.

Ceramic technology was elaborated during the Rincon phase, and there were changes in design layout and execution that marked the maturity of the Tucson Basin ceramic tradition and set it apart from the ceramics of the Phoenix Basin and other neighboring regions. Red-slipped pottery was made in quantities far outstripping the limited production of red ware in the Phoenix area. Experimentation with slips and pigments—black paint, red and white slips, and smudging (Deaver 1984)—led to the appearance of polychrome ceramics, possibly one of the earliest polychrome traditions in the Southwest. Changes in layout and design during the Rincon phase in the Tucson area have been labeled variously as separate styles of Rincon Red-on-brown pottery (Deaver 1984) and subtypes of Rincon Red-on-brown (Wallace 1986).

By the late Sedentary period, marked changes in the Hohokam way of life brought an end to the apparent prosperity and population growth. Ball courts fell into disuse, central villages were abandoned, and locations of hamlets shifted. The degree to which social and environmental factors contributed to these changes has yet to be assessed adequately.

In the Classic period, platform mounds replaced ball courts, and the number of villages with such ceremonial facilities appears to have declined from the previous period, suggesting increasing community interaction and ceremonial integration concomitant with population aggregation. The Classic period witnessed many changes in ceramic technology and design. Brown-paste pottery made by coiling and finished by scraping replaced the paddle-and-anvil pottery of the pre-Classic period. It was tempered with sand, often smudged and polished, and the bowls were typically shaped into hemispherical forms. The red-painted pottery was decorated with rectilinear, geometric designs. All of these features contrasted with the pottery of the pre-Classic period, with its micaceous, crushed-rock temper, curvilinear and life-form designs, and flared-rim bowls. Only the red paint remained the same. The lack of variation observed in the designs of this pottery, called Tanque Verde Red-on-brown, is consistent with a model of production in which a few settlements produced the bulk of the pottery (Whittlesey 1987, 1988).

The distinctive character of the Tucson Basin ceramic tradition, so obvious during the Rincon phase, continued during the Classic period. Locally made painted pottery was abundant, in contrast to the Phoenix Basin where buff ware production declined precipitously. Little red-on-buff pottery, which was made in the Phoenix area and imported to the Tucson Basin and elsewhere, was present in Classic period ceramic collections. By contrast, red ware pottery

was far less abundant than in the Phoenix area. Another difference was corrugated pottery, which appeared for the first time during the Classic period and was evidently produced in quantity in the eastern Tucson Basin (Gregonis 1996).

Gila Polychrome appeared after A.D. 1300, becoming dominant and replacing Tanque Verde Red-on-brown at some sites during the Tucson phase. Gila Polychrome was a coil-made, scrape-finished pottery decorated in flamboyant black designs on red and black slips. It also differed in shapes, design, and technology from the previously dominant red-on-buff pottery. Gila Polychrome and Tanque Verde Red-on-brown pottery appears to represent distinctive and broadly distributed horizon styles. The meaning of these horizon styles has yet to be assessed adequately, although traditional wisdom suggests a symbolic or ideological function.

The controversial topic of the pre-Classic–Classic transition continues to be hotly debated. Some archaeologists continue to believe that there was continuity between the two periods of culture, and others think it was the product of influences, if not actual migration, from other cultures. Today the role of Chihuahuan cultures, particularly Casas Grandes or Paquimé, in creating the changes once attributed to the Salado invasion has become an increasingly important topic.

Sites and Settlement

Pioneer period occupation in the Tucson area was apparently sparse, although few sites have been excavated. Pioneer period components identified to date have been found primarily in the northwestern Tucson Basin, at sites such as the Hodges Ruin near the confluence of the Rillito and Santa Cruz Rivers (Kelly et al. 1978; Layhe 1986) and the Dairy site (Altschul and Huber 1995; Deaver 1996; P. Fish et al. 1992), and also in the Avra Valley at the Hawk's Nest site (Czaplicki and Ravesloot 1989a). Artifactual evidence for Pioneer period occupation has been found at the Julian Wash site located in the southern Tucson Basin, a multiple-component site with Pioneer, Colonial, and Rincon phase occupations, but no architectural features dating to this time were located (Whittlesey 1999). Evidence for Pioneer period occupation also was found in the San Pedro River Valley, at Redington Village, the Sosa Wash Ruin, and the Big Ditch site (Masse 1980b). A Snaketown phase pit house was excavated at the latter site. In the Cienega Valley, evidence for late Pioneer period occupation was found at two sites (Eddy and Cooley 1983; Masse 1980b).

Neither Danson (1946) nor Frick (1954) noted evidence for Pioneer period occupation in surveys of the middle Santa Cruz River valley. A handful of Pioneer period sherds was recovered from sites in the northern Santa Rita Mountains (Deaver 1984:285) and along the middle Santa Cruz River (Brown and Grebinger 1969; Grebinger 1971). Some of these sites may have represented relatively large, permanent habitations, but the limited sample precludes a firm interpretation.

By the Colonial period, more substantial occupation was present throughout the Tucson Basin. In the Tucson area, large habitations with ball courts, such as the Dakota Wash site (Craig 1988), were found in the southwestern Tucson Basin. The ball court at this site appears to have been built during the middle Colonial period and abandoned prior to the Sedentary period. Colonial occupation occurred at smaller sites lacking ball courts, such as the Valencia site (Doelle 1985) and the Julian Wash site. Several Cañada del Oro phase pit structures were excavated by SRI at the latter site (Whittlesey 1999). Other Cañada del Oro phase components were found at the Hodges Ruin and at sites in the eastern and northwestern Tucson Basin, suggesting that Cañada del Oro phase occupation extended across the entire Tucson area.

Evidence for early Colonial period occupation was also found in adjacent areas, including the San Pedro River valley at Redington Village and Sosa Wash Ruin (Masse 1980b), the northern Santa Rita Mountains south of Tucson (Ferg et al. 1984), and the Picacho Pass site northwest of the Tucson Basin (Greenwald and Ciolek-Torrello 1987). In the Papaguería, occupation was most intensive in the Gila Bend area, where there was a Gila Butte phase occupation at several sites (Wasley and Johnson 1965).

Increasing settlement density and village complexity characterized the succeeding Rillito phase (Whittlesey et al. 1994:144). Rillito phase sites have been found from the Picacho Pass and Brady Wash areas northwest of the Tucson Basin southward as far as the Arivaca area. The Tucson Basin was evidently the center of Colonial period occupation extending westward into the Papaguería and eastward to the San Pedro River valley. Rillito phase sites were located in the Tucson Basin proper and on the peripheries in the Santa Rita Mountains (Ferg et al. 1984) and the Avra Valley (Czaplicki and Ravesloot 1988, 1989b), as well as in the basin itself. Water World and Fastimes were two Rillito phase sites located in the Avra Valley and were excavated by ASM as part of the Tucson Aqueduct Phase B phase of the Central Arizona Project (Czaplicki and Ravesloot 1988, 1989b).

In the Papaguería, there were Santa Cruz phase occupations at several sites in the Gila Bend region (Wasley and Johnson 1965). Most information comes from Valshni Village, where 18 Vamori phase houses were excavated (Withers 1973). These were typical Hohokam-style houses (McGuire 1982:187), suggesting that there was no distinctive architectural tradition in the region. At Gu Achi in the Santa Rosa Wash area, Masse (1980a) excavated houses, reservoirs, and a possible canal dating to this time.

The Sedentary period, consisting of a single phase—the Rincon phase beginning around A.D. 1000—is the best-studied time in Tucson Basin prehistory. More sites are known, and more have been investigated intensively, than those dating to any other period. The Sedentary period was traditionally viewed as a time of stability and security for the Hohokam (e.g., Haury 1976). With their territorial expansion complete, the Hohokam were able to intensify

agricultural production and maximize resources. The Rincon phase appears to represent such processes well. Perhaps most striking is the proliferation of sites dating to the Rincon phase. This alone appears to suggest population expansion, although changing settlement patterns may also be implicated.

At this time, there were shifts in community centers, especially in those villages centered on ball courts (Doelle 1988; Doelle and Wallace 1986:80–81). Traditionally, these changes have been seen in the context of a burgeoning local population and associated socioeconomic shifts. Some parts of the far northern Tucson Basin, however, seem to have undergone significant population reduction during the Sedentary period (Ciolek-Torrello 1988a:803).

The largest single Rincon phase settlement in the Tucson Basin that has been excavated with modern techniques is the West Branch site (Altschul et al. 1996; Huntington 1986). Much of our understanding of household organization, craft production, and other important issues derives from the intensive excavation that has been carried out at this site. In the absence of data from other sites of comparable size, occupation duration, and excavation intensity, we cannot be certain if our inferences about what took place at West Branch are representative of broader patterns in the Tucson Basin, or if West Branch might indeed be unique.

In the Papaguería, Valshni Village also had a Sedentary period (Topowa phase) occupation, and several sites in the Santa Rosa Wash area had components dating to this time (Masse 1980a). At Gila Bend, ball courts dating to this time are reported at several sites (Wasley and Johnson 1965). A platform mound, two ball courts, and a canal were investigated at the Gatlin site, thought by its investigators to be an empty ceremonial center (Wasley and Johnson 1965).

The Classic period, which began around A.D. 1150 or 1200, ushered in new lifeways, organization, and material culture. This was a time of marked organizational and settlement change throughout the Southwest, and the Classic period of the Tucson Basin and its margins were not exceptional. Large villages occupied during the Sedentary period were abandoned or experienced dramatic depopulation by this time, and new villages were established in other locations. Such settlement shifts are most clearly seen in the northern Tucson Basin and its perimeter, such as the Picacho Mountains area (Ciolek-Torrello 1988a:802–805). At Marana, a densely settled community occupied six environmental zones stretching from the *bajada* of the Tortolita Mountains to the Santa Cruz River in an area of sparse pre-Classic period occupation (S. Fish et al. 1992). The Marana community was extremely short-lived, experiencing explosive growth, decline, and abandonment—all within the relatively short span of the Tanque Verde phase.

Most platform mounds evidently were built in the early Classic period (Ciolek-Torrello 1988a:808; Fish et al. 1988:227), although at least one, at University Indian Ruin, was constructed during the late Classic period (Hayden 1957). Only two late (Tucson phase) platform mounds are known within the Tucson Basin proper, at University Indian Ruin and Martinez Hill Ruin (Gabel 1931) on opposite sides of the basin.

The Classic period phenomenon in the Tucson Basin apparently was short lived, as little evidence for Tucson phase occupation has been found. One important site with a late Classic period occupation is the Dairy site. There, an adobe-walled compound excavated by SRI yielded abundant Gila Polychrome pottery (Altschul and Huber 1995; Deaver 1996). The excavated portion probably represents only a small area of what was evidently a large settlement.

It is not known if a phenomenon similar to the Polvorón phase of the Phoenix area was present in the Tucson Basin. A Polvorón-like manifestation was found in the Picacho Mountains area (Ciolek-Torrello 1988b) and the Santa Cruz Flats (Henderson 1993). Several late architectural features at the San Xavier Bridge site were extremely informal and suggest such a possibility (Ravesloot 1987).

In the Papaguería, there were changes in architecture and ceramics as elsewhere. Shifts in population were not uniform across the western desert. Whereas Gila Bend appears to have experienced population reduction, population in the Sells area increased (Haury 1950). The Jackrabbit Ruin was a Sells phase village with rectangular, surface jacal houses (Scantling 1940). Numerous hamlets and limited-activity locales were distributed throughout the Santa Rosa Wash, Slate Mountains, Cabeza Prieta, and Quijotoa Valley (Whittlesey et al. 1994:203). Late Classic period occupation was spare to nonexistent. Only five sites in the vicinity of Painted Rock Reservoir in the Gila Bend area had Gila Polychrome pottery (Dart et al.1989:12), and none was reported in the Quijotoa Valley by Rosenthal et al.(1978:Table 7).

Abandonment and Descendants

Although the end of Hohokam culture at the close of the Classic period is accepted, the fate of the Hohokam is unknown. The ancestors of the present-day Native Americans populating southern Arizona have been suggested to be Hohokam (Haury 1976), O'otam (Di Peso 1956), Amargosans (Hayden 1970), and Sonoran Indians (Masse 1980a:312). A Hohokam-Piman continuum has not been demonstrated conclusively, although there is some evidence that certain parts of southern Arizona were not completely abandoned at A.D. 1450 (Ciolek-Torrello 1988b:314; Henderson 1993:86). It is critical to identify and study closely the protohistoric Sobaipuri occupation of the Tucson Basin, discussed below, for it speaks directly to questions concerning the Hohokam-Piman continuum, the decline of the Hohokam culture, and related issues.

Suggestions for further reading: A review of the Hohokam culture written for the general reader can be found in Reid and Whittlesey (1997). A thorough discussion for archaeologists can be found in Whittlesey et al. (1994).

The Salado Culture

When we begin to speak of the Salado culture we also open the proverbial can of worms. The nature of the Salado culture has been one of the most controversial and most debated topics in southwestern archaeology, and today we are probably no closer to understanding it than when it was first proposed some 60 years ago. As Reid and Whittlesey (1997:230) wrote, "Salado stands as a testament to the intractability of the often mute past and the difficulties encountered when we attempt to make it speak." The history of the investigations concerning the Salado culture also helps us to understand how archaeologists strive to reconstruct the past.

The Salado culture was originally defined by Gila Pueblo archaeologists to refer to adobe-walled sites in the Tonto and Phoenix Basins dating to the Hohokam Classic period. Today, archaeologists use the term Salado to label much broader manifestations ranging from western New Mexico to Chihuahua as well as in Arizona. They generally apply Salado to a cultural complex consisting of adobe architecture, platform mounds, and ceramics including Pinto, Gila, and Tonto Polychrome (Roosevelt Red Ware, or the so-called "Salado Polychromes"—not all of which are polychrome). The time range of Salado culture was between A.D. 1200 and 1450.

This time, of course, is also that of the Classic period of the Hohokam culture. As we have seen, Salado was the label originally given to the dramatic changes of the Hohokam Classic period. According to Harold Gladwin, Emil Haury, and others, the sweeping changes of the Classic period were attributed to an "invasion" or migration of puebloan people who originated somewhere on the fringes of the Colorado Plateau (e.g., Haury 1945). In the 1970s, the cycle of archaeological opinion changed, and these changes were viewed as an internal product of the Hohokam culture. In the 1990s, largely as a result of work carried out by for the Central Arizona Project and associated work in the Tonto Basin, archaeological opinion came full circle. Once again, at least some sites in the Tonto Basin were being attributed to immigrants from the north (Reid and Whittlesey 1997:230–231).

The Salado-as-Hohokam notion was originally developed by William Wasley, an archaeologist who worked for ASM and directed their highway salvage program. He proposed that many of the traits that were thought to represent the Salado migration either occurred much earlier, before the Classic period began, or originated from elsewhere (Wasley 1966). Wasley's notions appealed to archaeologists who were then in the grip of the revolution that has been called "new" or processual archaeology and who were tired of such timeworn notions as migration and diffusion in explaining culture change. Wasley's conclusion that "Classic period

Hohokam was influenced primarily from Mexico" (Wasley and Doyel 1980:351) was forgotten by archaeologists who focused on the slight evidence that traits such as red-slipped pottery and adobe construction were developed during the Sedentary period (e.g., Doyel 1977a).

Today we are beginning to see that neither explanation (Salado as a migration from the north, Salado as Hohokam) is adequate. Instead, what has been perceived as Salado was a complicated mixture of different phenomena that also differed from place to place. In the Tonto Basin, we have good evidence for puebloan people (Anasazi, Mogollon, or a combination of cultures) moving down from the fringes of the Colorado Plateau and building new homes along the Salt River and Tonto Creek. This can probably be attributed to environmental deterioration on the Colorado Plateau, which drove Anasazi people first into the mountains and then south into the Tonto Basin (Reid and Whittlesey 1997). There were also platform mounds, which most archaeologists generally have attributed to Classic period Hohokam (Doelle et al. 1995). The pottery complex of the late 1200s and 1300s was a variable mixture of Colorado Plateau, mountain Mogollon, Classic period Hohokam, and local ceramic wares. At least one type, Pinto Polychrome, exhibited designs and technology derived from the Colorado Plateau. This mixing of architectural, ceramic, and other material items is what originally led Whittlesey and Reid (1982) to suggest that the Tonto Basin was a melting pot, a mixture of people who originally hailed from diverse places.

In the Phoenix Basin and Tucson Basins, platform mounds were built and the inhumation mortuary complex that is often attributed to the Salado was present, but the pottery types and mortuary practices also vary from site to site and between the two areas (Whittlesey et al. 1994). In the Tucson Basin, for example, there is little slipped and polished red ware, but Gila and Tonto Polychrome pottery and corrugated pottery is often abundant at late sites (Deaver 1996; Gregonis 1996).

At least some Classic period Hohokam-Salado sites appear to represent a population influx from outside the Tucson Basin. This is well represented at the Gibbon Springs site in the eastern Tucson Basin (Slaughter and Roberts 1996). There, adobe architecture, non-Hohokam architectural traits, and abundant corrugated pottery that apparently was not made locally indicated a movement of people into the basin in the middle A.D. 1200s. These people may have been part of a larger population movement using the San Pedro River valley as a travel corridor. Sites clearly representing Kayenta Anasazi people occur in the lower portion of the river and in the Safford area, for example (Di Peso 1958; Woodson 1995).

What "Salado" probably represents was a reorganization of life around a different ceremonial and ritual complex (represented by platform mounds) and a heavy dose of influence from Chihuahua, Mexico, where indeed the ceremonial complex may have originated. Many of the architectural traits seen in "Classic period Hohokam sites" are similar to those of Chihuahua, at sites such as Casas Grandes or Paquimé—the resemblances that Wasley (1966) first noted. In addition to platform mounds and solid-walled, surface adobe architecture, these traits

include pillars or "piers" within and supporting platform mounds, T-shaped doorways, rock-ringed roasting pits, and jacal granaries with cobble bases. The designs on Gila and Tonto Polychrome pottery strongly resemble those of locally made Casas Grandes wares. The platform mound ceremonial system probably arose at a time when the previous Hohokam ball-court system was for unknown reasons in disarray, and it appealed to people who were then in the throes of widespread environmental deterioration (the so-called "Great Drought" of A.D. 1276–1299) and the social, demographic, and economic disorganization it caused (Whittlesey and Ciolek-Torrello 1992b). The Tonto, Phoenix, and Tucson Basins all participated in this system to some degree.

Not all archaeologists accept these ideas. The jury is still out on the Salado. An acceptable definition of the Salado is still forthcoming, and archaeologists will probably continue to debate the Salado well into the new century.

Suggestions for further reading: The best review of Salado culture for the general reader can be found in Whittlesey and Reid (1997).

The Trincheras Culture

The Trincheras culture of northern Sonora and the extreme portion of southern Arizona is enigmatic. Research has been limited, there has been little excavation, and much confusion exists concerning the traits that define the culture in time and space. The label "*trincheras*" has been applied to three different phenomena: unique, purple-painted pottery; dry-laid rock constructions or terraces that give the culture its Spanish name; and the culture of northern Sonora centered on the Altar and Magdalena River valleys (Whittlesey 1996:67; Whittlesey et al. 1994:212). The distributions of these phenomena are not coterminous (Whittlesey 1996:Figure 4.11), and current evidence suggests that not all of these traits may have been produced by a single culture or ethnic group.

Origins and Cultural Systematics

Archaeologists have traditionally viewed the Trincheras culture in one of two ways: as either a variant of the Hohokam culture (Haury 1945:548; Johnson 1960), or as a Mexican culture centered in Sonora with connections to other areas (Bowen 1972; Di Peso 1979:158). The weight of the current evidence favors the latter notion, although there is much work to do.

The earliest painted Trincheras pottery appears to have been contemporaneous with the earliest painted pottery in the Mogollon and Hohokam culture areas and shared many of the same design and technological features. This suggests that the Trincheras culture, like the others, may have arisen from a local population who had inhabited northern Sonora and southern Arizona since the Archaic period. The site of La Playa in Sonora apparently

represents an intensive, local Archaic occupation combined with later ceramic-period occupations, giving credence to the notion of local development from an Archaic period base (Sanchez de Carpenter et al. 1996).

McGuire and Villalpando C. (1993:90) resurrected Di Peso's O'otam concept to refer to the later portions of the Trincheras sequence, which they believed to be separate from the earlier Hohokam tradition and also from the Salado tradition. This may be a better way to view the Trincheras culture—as the local culture of Sonora—than as a variant of some other culture, such as the Hohokam. Regardless of how we view Trincheras, it remains mysterious, and we need to do much more work to discover who these ancient people were and how they related to other people of southern Arizona. In particular, archaeologists need to be careful to keep the three manifestations that have been labeled "Trincheras" separate, as present evidence indicates that they may not represent a single people or culture.

Chronology and Culture Sequence

The current phase sequence for Sonora (see Figure 1) was developed from survey data (McGuire and Villalpando C. 1993), and the phases are probably too long. It is likely that excavation will provide further information for subdividing these long phases. The initial ceramic period, beginning around A.D. 200, is called the Atil phase (see Figure 1). It is likely that, like elsewhere in the southern Southwest, the cultural sequence was characterized first by the adoption of plain ware ceramic containers and that painted pottery was added much later, around A.D. 700 or so (Whittlesey 1996:68). Early Formative sites in Sonora basically represent Archaic sites with the addition of ceramics (Bowen 1972; McGuire and Villalpando C. 1993:71).

During the Altar phase beginning at A.D. 800 (see Figure 1), polychrome pottery appeared and, according to McGuire and Villalpando C. (1993), *cerros de trincheras*, or terraced hillsides, also began to be constructed. The dating of initial appearance of these features. At least one, in Chihuahua, dates to the Archaic period (Roney 1996). The majority of *trincheras* sites in Sonora and Arizona appear to date to the Classic period of the Hohokam sequence, or after A.D. 1200, based on painted pottery types.

The El Realito phase that began around A.D. 1300 (see Figure 1) was not unlike the Classic period in southern Arizona with which it was contemporaneous. There was no painted pottery in this phase, as initially observed by Hinton (1955). Tanque Verde Red-on-brown, so common at contemporaneous sites in the Tucson Basin and the Papaguería, is absent in the Altar Valley (McGuire and Villalpando C. 1993:72).

The Santa Teresa phase (A.D. 1450–1690) exhibited the same cultural characteristics as contemporaneous, protohistoric period remains from southern Arizona that have been attributed to the Sobaípuri (Ahlstrom et al. 1998:3-41). These include thin brown ware with "wiped" surfaces, similar to what has been called Whetstone Plain; small, triangular points with basal notches; and cobble outlines that mark brush structures (McGuire and Villalpando C. 1993:72).

Lifeways and Sites

Trincheras pottery is distinctive from Hohokam pottery in technology, forms, and design. Many of these attributes are similar to Mogollon pottery (Heckman 2000). The pottery was made by the coiling method and finished by scraping. The interiors of jars often have distinctive scraping marks left by the use of a tool, such as a bundle of grass stems, to scrape the interior smooth. The color combination—purple paint on a unslipped or red-slipped background—is unique in the Southwest. The polychrome pottery used purple and red paint on a white slip. Often the purple paint appears glittery, resulting from the use of a specular iron in the paint mixture. The designs of Trincheras pottery reflect many of the overarching horizon styles that swept much of the Southwest at particular times (Heckman 2000).

We have little information on architecture and lifeways, largely because of the lack of excavation. The two best-known sites in Sonora are La Playa, first investigated by Johnson (1960), and the nearby site of Las Trincheras, a *cerro de trincheras* currently being investigated by a combined team of American and Mexican archaeologists. La Playa is an enormous site covering square miles of acreage. Limited investigations to date have yielded flexed and semiflexed inhumations interred in mounds of fire-cracked rock, dog burials, roasting pits, abundant and varied ground stone tools, and refuse, suggesting long-term and intensive habitation (Sanchez de Carpenter et al. 1996). An Early Formative occupation is likely present at La Playa, given the presence of thin, polished brown ware pottery along with other traits suggestive of the early ceramic period (Whittlesey 1996:68).

A site excavated by SRI at Arivaca (Whittlesey and Ciolek-Torrello 1992a) indicates that Trincheras architecture and subsistence may have been quite different from that of the Hohokam. The single excavated structure was a large, surface house much like those described for the earliest Atil phase, which are shallow pit houses (Whittlesey 1996:69). Subsistence was also different in its emphasis on acorns and other collected plant foods of the hills and grasslands (Whittlesey and Ciolek-Torrello 1992a).

In addition to Las Trincheras, some well-known *cerros de trincheras* include Cerro Prieto northwest of Tucson (Downum et al. 1993), the Linda Vista Hill component of Los Morteros in Tucson (Downum 1986), and the Fortified Hill site near Gila Bend (Greenleaf 1975). The functions of *cerros de trincheras*, regardless of their dating, are enigmatic. These terraced hillsides, inevitably of dark basalt or other igneous volcanic rock, often have rectangular

enclosures, rooms, linear alignments, and *corrales*, or subrectangular enclosures, in addition to the terraces that give them their names. Traditionally these sites have been seen as defensive in nature (Stacy 1974). Evidence for cultivation of maize and other crops has been found at some trincheras sites (Fish et al. 1984). At others—including Las Trincheras, Linda Vista Hill, and Cerro Prieto—rooms clearly used for habitation have been excavated (Downum 1986, 1995; Downum et al. 1993; Whittlesey 1996:70). Downum et al. (1993) have proposed the intriguing hypothesis that *cerros de trincheras* were ceremonial sites, part of a ritual system that was distinct from the platform mound system of the Hohokam Classic period.

It has been suggested that Trincheras peoples were intimately involved in the procurement and distribution of marine shell from the Gulf of California. They may have served as middlemen, procuring shell at the coast and bringing it to Hohokam settlements involved in shell-manufacturing activities. They may have manufactured shell jewelry themselves; Villalpando (1997) also reports that specialized sites for the production of shell bracelets were located near Bahía Kino in Sonora. Certainly there was an important role in shell procurement and exchange, but like the Trincheras culture itself, the particulars of this involvement have yet to be determined.

Abandonment and Descendants

Unfortunately, we know even less about these aspects of Trincheras culture than we do about ceramics, architecture, subsistence, and settlement. On the basis of his survey of the Altar Valley, Hinton (1955) originally proposed that a group of Piman-speaking people moved into the Altar Valley late in time. He based this inference on the presence of only plain and red ware pottery at sites dating to this time, along with an attenuated trait list and *cerros de trincheras*. These protohistoric O'odham were thought to be the ancestors of contemporaneous Piman-speaking populations in Sonora. This hypothesis needs to be tested with further study.

Suggestions for further reading: Please consult Whittlesey (1996) and Whittlesey and Ciolek-Torrello (1992a) for additional information.

The Patayan Culture

The Patayan or prehistoric Yuman culture is much less well known than the Hohokam. There are several reasons for this, including the lack of intensive archaeological work in the western deserts and the character of desert archaeology itself. The kinds of sites encountered in western Arizona tend to be ephemeral rock features, difficult to date and to assign to a time period or culture (Reid and Whittlesey 1997). This brief review is provided to introduce readers to the prehistoric culture of the western desert.

The Patayan culture is usually divided into two groups, lowland and upland, which correspond to environmental regions as well as to two divisions among the modern Native American peoples of Arizona and California (Reid and Whittlesey 1997). The lowland region borders the lower Colorado River and the surrounding desert. Today this area is inhabited by the Delta and River Yumans. The upland region consists of the canyon-cut plateaus of the middle Colorado River, occupied by Upland Yumans such as the Havasupai, Hualapai, and Yavapai. Not corresponding to these divisions are the Maricopa, a Yuman-speaking people who left their original home along the Colorado River in historic times to join with Pima people living along the Gila River in what is today's Phoenix area (discussed in a later section). The lowland Patayan culture is of concern to our review of southern Arizona's prehistoric peoples. The lowland Patayans occupied the western deserts from Yuma eastward toward Tucson, although their sites become progressively more rare moving from west to east.

The Patayan culture sequence is based on ceramics (Waters 1982), as few excavations producing stratified deposits and chronometric dates have been undertaken. The three-period sequence—Patayan I, II, and III (see Figure 1)—relies on diagnostic ceramic traits that correspond to each period. No early Archaic or Early Formative phases have been defined, and the sequence begins at A.D. 850, although some archaeologists begin it earlier, around A.D. 700. Patayan III embraces the protohistoric and early historical periods as well as the end of the prehistoric sequence (Ahlstrom et al. 1998:3-38). No doubt these dates will be revised as ongoing work in the Papaguería produces new information.

Patayan ceramics are buff-colored, sometimes decorated with red paint, and made by paddle-and-anvil technique; they are distinct from Hohokam ceramics despite these similarities. The pottery was made from a fine, sedimentary clay, sometimes left untempered, but when tempered usually containing fine sand. Tiny shells sometimes are present and indicate the sedimentary origin of the clay. Vessel forms are unique, including jars with high, angular shoulders (the so-called Colorado shoulder); globular jars with high, straight, narrow necks; and teardrop-shaped neckless jars. Sometimes the pottery was slipped red or painted in broad-line designs, and occasionally a stucco coating was used on the bases of the pots (Waters 1982).

Patayan sites represent sherd scatters, lithic scatters, and several kinds of rock features. So-called "sleeping circles" are most ubiquitous. These are cleared areas on the desert pavement outlined by stones that probably represent short-term campsites. Patayan sites along the Colorado River and in California probably represent habitations of some duration. They may have large middens suggesting long-term residence. Many Patayan sites have undoubtedly been removed and destroyed by erosion and flooding along the river.

The most striking features that have been attributed to the Patayan culture are the intaglios, geoglyphs, and other earth figures that result from clearing the rocks of desert pavement. These are most common in the far western portion of the Papaguería and along the lower

Colorado River. These enormous figures representing animals, humans, and geometric figures may be sacred features linked to a system of interconnecting trails. The desert can be seen as a map of the sacred world and the ways in which the Patayans related to that world. They may have carried out rituals and reenacted sacred pilgrimages using these figures and trails (deBuys 1998; Reid and Whittlesey 1997:127).

The Patayan settlement and subsistence system evidently involved great mobility, a pattern of seasonal movement between uplands and lowlands, and long-term, friendly contact and exchange with Hohokam peoples. Desert and riverine resources were used with equal intensity, although at different times of the year. Interpreting who used the western Papaguería, however, is a difficult problem. Archaeologists have identified a ceramic boundary of sorts, with Patayan ceramics occurring in the west and Hohokam ceramics on the east (although there are many sites with mixed collections) (Homburg et al. 1993). Although this may represent an ethnic-linguistic boundary, it may not, because in not all cases do "pots equal people." For example, the Hia C'ed O'odham, once called Sand Papago, are desert dwellers of the western Papaguería who are linguistically and ethnically O'odham but obtained their pottery from Yumans living along the Colorado River (Ezell 1955:372). Similarly, we need to try to determine whether the sites with mixed Hohokam and Patayan ceramics represent uses by different people at the same time or sequential use by different people at different times.

Suggestions for further reading: An overview of Patayan culture for the general reader can be found in Reid and Whittlesey (1997). An overview for archaeologists is McGuire and Schiffer (1982), which includes a chapter by Julian Hayden on geoglyphs. Ezzo and Altschul (1993) present a descriptive monograph on geoglyphs of the Yuma area written for archaeologists. A short article on the Patayan landscape is deBuys's (1998) "Dreams of Earth."

The End of Prehistory and Native Peoples at Time of Contact

The so-called "Protohistoric" period is a poorly understood and inconsistently defined time spanning the end of true prehistory and the beginning of history in southern Arizona. History, of course, begins with the introduction of written documents, which in the New World occurred with the arrival of the Spanish. The first Spanish explorers to cross the Southwest and presumably Arizona were Fray Marcos de Niza in 1539 and Francisco Vásquez de Coronado in 1540. The records of their journeys are incomplete and leave out many details, and we really do not know the actual routes that they traveled; we can only make educated guesses (Whittlesey and Reid 1989). Sustained colonization of southern Arizona did not begin until the late 1600s, when Padre Eusebio Kino began the Jesuit missionization program in Sonora and what is today Arizona—Pimería Alta, or the land of the Upper Pima. Given the documentary gap spanning the period between 1539 and the arrival of Padre Kino, most archaeologists define the protohistoric period as that time just before the arrival of Spanish

explorers and extending to the point of sustained contact by Europeans, or approximately 1700. Some extend the end date even later, to the establishment of the presidios in southern Arizona beginning in the 1750s (see Majewski and Ayres 1997; Ravesloot and Whittlesey 1987; Whittlesey et al. 1994).

Significant changes to native lifestyles came in the 1500s, when Spanish explorers first arrived in the Pimería Alta. Cabeza de Vaca's party was the first to reach the Southwest in the 1500s. Fray Marcos de Niza, accompanied by Estevan, the Barbary slave belonging to Dorantes of the Cabeza de Vaca expedition, met the Sobaípuri in the late 1530s. At that time, the Sobaípuri occupied the main and tributary valleys of the San Pedro and Santa Cruz Rivers. Fray Marcos took possession of what became known as Pimería Alta in the name of the King of Spain in 1539. He attempted a venture into Zuni country with some Sobaípuri, but turned back when Estevan, who had traveled ahead, was killed by the Zuni (Bolton 1919; Burrus 1971; Di Peso 1953; Fontana 1994; Smith et al. 1966). The Fray Marcos venture is controversial, and some scholars believe that he never actually traveled as far as Zuni.

Don Francisco Vásquez de Coronado was the most famous Spanish conquistador to cross the Southwest, traveling from Compostela north to Zuni country in 1540. The route taken by the expedition is highly disputed (Reid and Whittlesey 1997). The expedition chronicler, Castañeda, documented the people of southern Arizona as the same people they had encountered in Sonora, having the same dress, language, habits, and customs. Following Coronado, no Spanish explorers returned to southern Arizona in an organized fashion until the latter part of the seventeenth century, when their collective quest changed from wealth to Christianity (Bolton 1919; Burrus 1971; Di Peso 1953; Fontana 1994; Smith et al. 1966).

There were two broad groups of indigenous peoples living in Pimería Alta in the mid-1500s, distinguished by language and lifestyle. One group consisted of Piman speakers or O'odham peoples, who were agricultural to a greater or lesser degree depending on local environmental conditions. The Piman-speaking peoples were divided into additional groups according to linguistic and lifestyle distinctions. The second group was the Apache, highly mobile Athapaskan speakers who were primarily hunter-gatherer-raiders and farmed little. In addition, there were the Yaqui, who lived south of the Piman speakers in Sonora; and the Opata living in the Sonora River valley and the Sierra Madres. Traveling through the region to reach sacred places and trade were the Zuni, who resided in the high, arid Colorado Plateau region of present-day New Mexico. Coronado's expedition passed through two areas considered to be uninhabited or deserted—*despoblados* in Spanish. The smaller extended north of the headwaters of the Río Sonora to the headwaters of the San Pedro River, and the larger was north of the Gila River, encompassing much of the central mountains of modern Arizona (Di Peso 1953; Reid and Whittlesey 1997). Whether these areas were truly uninhabited, or their occupants simply hid from the Spanish conquistadores, is unknown. The Spanish labels for these Native Americans vary, and because the Spanish chroniclers were less concerned with anthropology than with gold and saving souls for God, it is difficult to sort out the differences among the native peoples as they once existed.

Spicer (1962:119) estimates there may have been as many as 30,000 Piman speakers living in the Pimería Alta in the late 1600s. According to Spicer, The Spanish seemed to think of the O'odham peoples speakers in terms of four major subdivisions. The people they called "Pimas" without any qualifying adjectives lived in the southeastern part of the region, as far south as the upper San Miguel and Sonora rivers of modern Sonora. In the southwestern area were the "Soba Pima," so called because their leader was named Soba. These first O'odham encountered by the Spanish lived along the Altar River, a place regarded by the Tohono O'odham as the source of their culture (Underhill 1979). As disease and encroachment took their toll, the surviving Soba joined other O'odham groups (Erickson 1994). In the eastern and northeastern Pimería were the Sobaípuri, who lived along the San Pedro River (then called the Río Quiburi or the Río de San Joseph de Terrenate) and the Santa Cruz River (then called the Río de Santa María) as far north as the Gila River and for some distance along it. They too lost ethnic identity in the 1700s as they were relocated among other peoples and were devastated by disease. Occupying the desert areas to the west and northwest were the Papago or Papabota.

The limit of Kino's travels and missionary efforts was the Gila River. Traveling as far north as the Casa Grande—Kino was probably the first European to see it—Kino referred to the people of the Gila River simply as "Pimas" (Bolton 1948). They became known as the Gileño or Gila Pima, and today are known as the Akimel O'odham. Kino noted that there were people speaking a different language living to the west as far as the Colorado River, and on friendly terms with the Pima. These people he called the Opas and Cocomaricopa (Bolton 1948). They were undoubtedly the Yuman-speaking Maricopa.

Apache raids and the Spanish policy of *reducción*, or gathering the dispersed *ranchería* populations into centers of Spanish colonization, acted in concert to move Native American populations away from these traditional territories, relocate them, and eventually relabel them. The Sobaípuri in particular were devastated by disease, the spread of which was hastened by *reducción*, and eventually these people became extinct. Many of the desert-dwelling people the Spanish labeled "Papagos" also relocated to the Santa Cruz River valley.

In historical-period times, when ethnographers had come to record their lifeways, the O'odham people themselves recognized three major divisions based largely on lifestyle, which may approximate much more closely the subdivisions of the protohistoric period than the labels applied to them by the Spanish. These were the "No Villagers" (Fontana 1983b), the Hia C'ed O'odham or Sand Papago, who were the most mobile and least agricultural of the O'odham, living in the western deserts as far south as the Gulf of California. The "Two Villagers" (Fontana 1983b), who shifted between summer farming villages and winter encampments, were the Desert People, the Tohono O'odham, those people whom the Spanish had called the Papagos. The "One Villagers" (Fontana 1983b), people who stayed year-round in permanent villages along the Gila River, were the Akimel O'odham, the River People. We discuss O'odham lifeways in a following section.

The Apache peoples of southern Arizona were also given many different labels by the Spanish. Unfortunately, the tendency was to call any nomadic people "Apache" whether they were Athapaskan speakers or not, the niceties of ethnography and linguistics not being considered by the Spanish explorers and missionaries. The Jocomé and Suma occupied what was Chiricahua Apache territory in southeastern Arizona and extreme southwestern New Mexico (Spicer 1962:237). Farther to the east were the Janos Manso, and Jumano, who occupied Chihuahua as far east as the Rió Grande. Although the Jocomé were probably Apache, Spicer does not think that the Suma were Athapaskan speakers. They more likely were related to the semisedentary people ranging into the plains, the Jumano. Spicer suggests that the Jano were likely a band of Chiricahua or Mimbreño Apache. Schroeder (1974a, 1974b) thinks that the Jano and Jocomé were not Apache, and that no Apache peoples occupied the region south of the Gila River before the 1680s. Almost nothing is known of the Manso, because they were missionized in the vicinity of El Paso in the 1700s and changed over from their former nonagricultural lifestyle (Spicer 1962:231).

To the north, beyond the Gila River, were simply "Apache." Apachería was the term Kino applied to the land lying between the lands of the Pima and those of the Hopi and Zuni to the north, according to Opler (1983:402). As Basso (1983:465) told us, these people were probably what became known as the Western Apache. By 1700, he thinks, the Western Apache had successfully laid claim to an extensive territory that stretched south from the Mogollon Rim across the Natanes Plateau to the Gila River—essentially the country that Coronado's chronicler Castañeda had called a *despoblado*.

Other names that were used include Querecho, applied by Castañeda to the nomadic people encountered by Coronado and later applied to Apache groups living near Acoma; and Apaches de Gila or Xila, a vague term by which the Spanish referred to Apaches living in southeastern Arizona and southwestern New Mexico. Opler (1983:402) thinks that some of the Querechos may have belonged to the Eastern Chiricahua Apache band.

It is extremely difficult to recognize protohistoric period sites, for a number of reasons. First, archaeologists have little information from the documentary sources on which to model lifeways and material culture. Some of the better descriptions were written after the O'odham of southern Arizona had been extensively changed by contact with Europeans. In addition, the misinterpretation of some early-historical-period sites has created confusion about the material characteristics that identify protohistoric period peoples. Second, it is difficult to date protohistoric period sites. No archaeomagnetic chronology has been constructed for this period, and radiocarbon dates are typically returned with too wide a range to be useful (e.g., 1500–1950 would not be unusual). Third, the lifeways of at least one of the peoples to occupy southern Arizona, the Apache, were not conducive to leaving a dense and recognizable record.

We do know that the Akimel O'odham (Gila Pima) and Sobaípuri at the time of European contact were agricultural and lived in brush houses covered with mats, not unlike Hohokam pit houses. Captain Manje, who accompanied Padre Kino on his travels, provided the following description of San Agustín de Oiaur, one of the largest settlements in the area of modern Tucson:

> Here the river runs a full flow of water, though the horses forded it without difficulty. There are good pasture and agricultural lands with a canal for irrigation. The Indians harvest corn, beans, and cotton from which they make cloth to dress themselves. Squash, melons and watermelons were also raised. We counted 800 souls in 186 houses (Karns 1954:92).

It is difficult to reconcile this view of early Pima life with the picture painted by archaeology. Sites that have been attributed to the Sobaipuri in southern Arizona are ephemeral, with little refuse deposition and few artifacts, indicating short-term occupation. They are characterized by oval or subrectangular houses marked by single courses of cobbles presumably used to foot or brace the brush superstructure. Moreover, virtually nothing is known of the lifeways of early Apache peoples in southern Arizona, and no unequivocal early Apache sites have been located.

Locating and identifying protohistoric Apache and O'odham sites is one of archaeology's most significant challenges for the new millennium. Without additional archaeological information to compare with the documentary evidence, we will not be able to reconstruct past lifeways with any certainty, nor address questions about continuity between prehistoric and historical-period peoples and Native American claims to affinity.

Suggestions for further reading: Additional details of Sobaípuri and Apache lifestyles are found in the appropriate sections below. Reviews of the protohistoric period peoples can be found in Doelle (1984), Ravesloot and Whittlesey (1987), Whittlesey et al. (1994), and Majewski and Ayres (1997). Masse (1981) provides the best overview of material culture. Spicer (1962) provides a dense but thorough discussion of the impact of Europeans upon Native American peoples of the Southwest.

Indigenous Peoples of the Historical Period

In the following section we describe the two major linguistic and cultural divisions of indigenous peoples living in southern Arizona, the O'odham and Apache. The O'odham peoples are presented in terms of the groupings these people themselves recognize based largely on dialect and lifestyle differences. Following a discussion of the shared lifestyle aspects of the many groups that make up the O'odham, five of these groups—the Sobaípuri, the Akimel O'odham, the Kohatk, the Tohono O'odham, and the Hia C'ed O'odham—are discussed in detail. We discuss two groups of Apache, the Western and Chiricahua Apache peoples. Information is also provided on the Yaqui.

The O'odham

The O'odham were the most populous group of Native Americans living in southern Arizona at the time of initial European contact. These largely agricultural peoples comprise several groups that have been classified linguistically as Upper Piman. Although the Spanish made basic distinctions between the people of the western and eastern portions of the region (Griffith 1992), the resident tribal groups identified themselves collectively as O'odham, meaning "the people." They distinguished themselves with adjectives that characterize those parts of the region in which they concentrated their lives (Figure 2).

The Akimel O'odham from the eastern and northern parts of the Pimería Alta along the San Pedro and Gila Rivers were the "River People" (Russell 1975), and have been called by Euroamericans the Gila River Pima. The Tohono O'odham from the central part of the region were the "Desert People," whom the Spanish distinguished from the Pima, calling them "Papago" (Underhill 1939). This name, generally thought to mean "bean eaters," was evidently derived from the sound of the O'odham word for bean and is today considered inappropriate and demeaning. Farther west were the Hia C'ed O'odham or "Sand People" (Erickson 1994; Griffith 1992), originally called Sand Papago. Although a dialectical division of O'odham, their lifestyle was also distinct. The Hia C'ed O'odham were included in the Spanish designation of "Papago."

The Sobaípuri and Kohatk were dialect- and lifestyle-based subgroups that were destroyed by disease and raiding in the 1800s. Their remnants were absorbed into the larger O'odham population, merging their once distinctive identity with that of other O'odham people. The Sobaípuri once had many villages along the San Pedro River from its headwaters in Mexico to its confluence with the Gila River. These people were most closely related to the Akimel O'odham and, along with the latter, considered themselves distant cousins to the Tohono O'odham. The Kohatk were more closely related to the Tohono O'odham, although they intermarried with the Akimel O'odham. They lived in a north-central part of the Pimería Alta that straddled part of the Santa Cruz River and extended westward beyond the present day Ak-Chin Reservation (Erickson 1994). Upper Piman is one of the Tepiman group of Sonoran languages, which in turn are part of the larger Uto-Aztecan language group. Dialectic distinctions within the O'odham language group include the Sobaípuri, Hia C'ed O'odham, and Kohatk (Figure 3). The Hia C'ed O'odham were further distinguished by northern and southern dialects, with the southern Hia C'ed more closely related culturally to their Yaqui neighbors to the south (Erickson 1994).

The traditional lands of the O'odham extended from an area between the Magdalena and Sonora Rivers of Mexico northward to the Gila River, and from the San Pedro River westward to the Colorado River and Gulf of California (Figure 4). The northern part of this region was known as the Pimería Alta and the southern part as Pimería Baja. Much of this region was shared by several tribal groups, including the Yaqui and Mayo in the southern end of the area (Di Peso 1953; Griffith 1992).

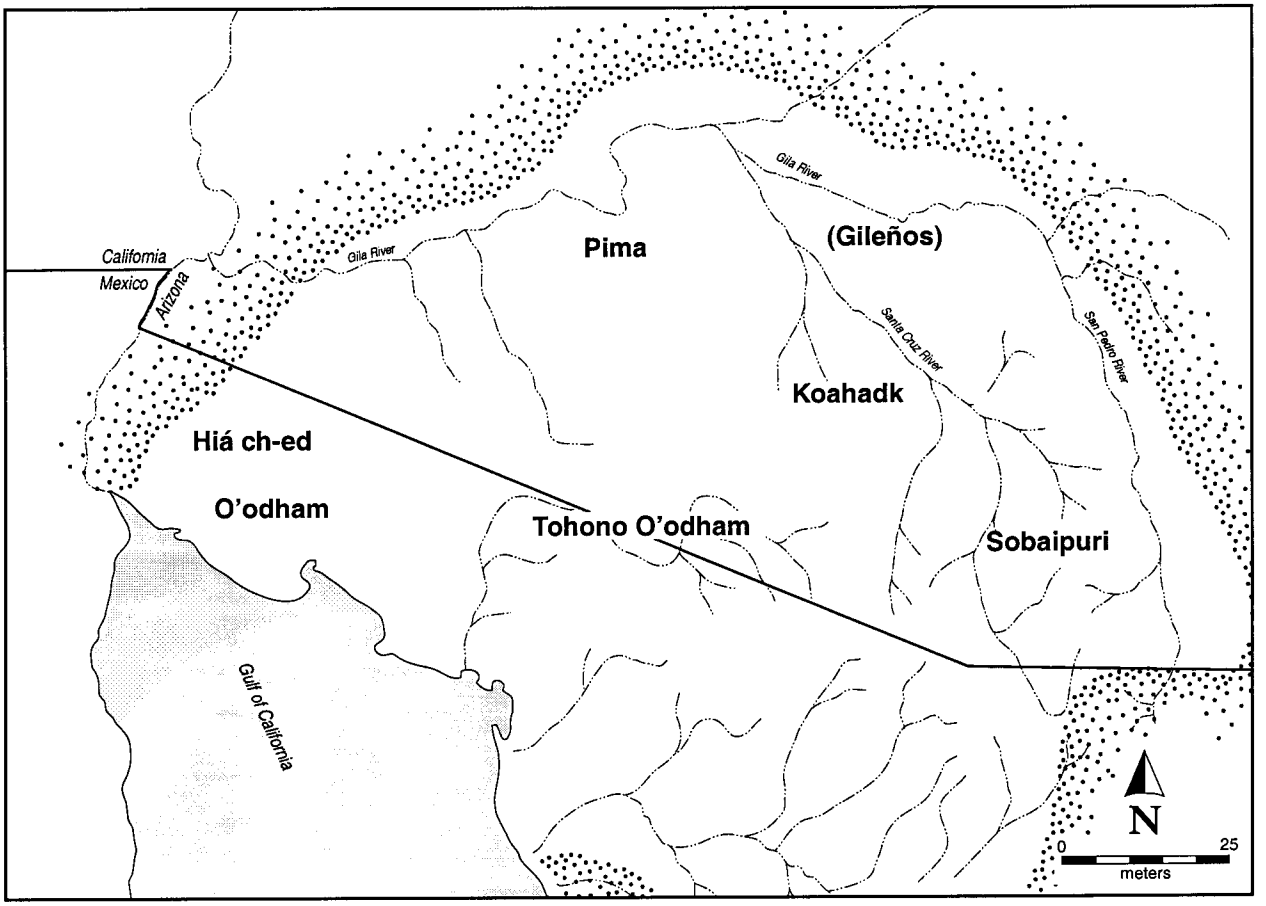


Figure 2. Northern Piman Groups (after Rea 1998).

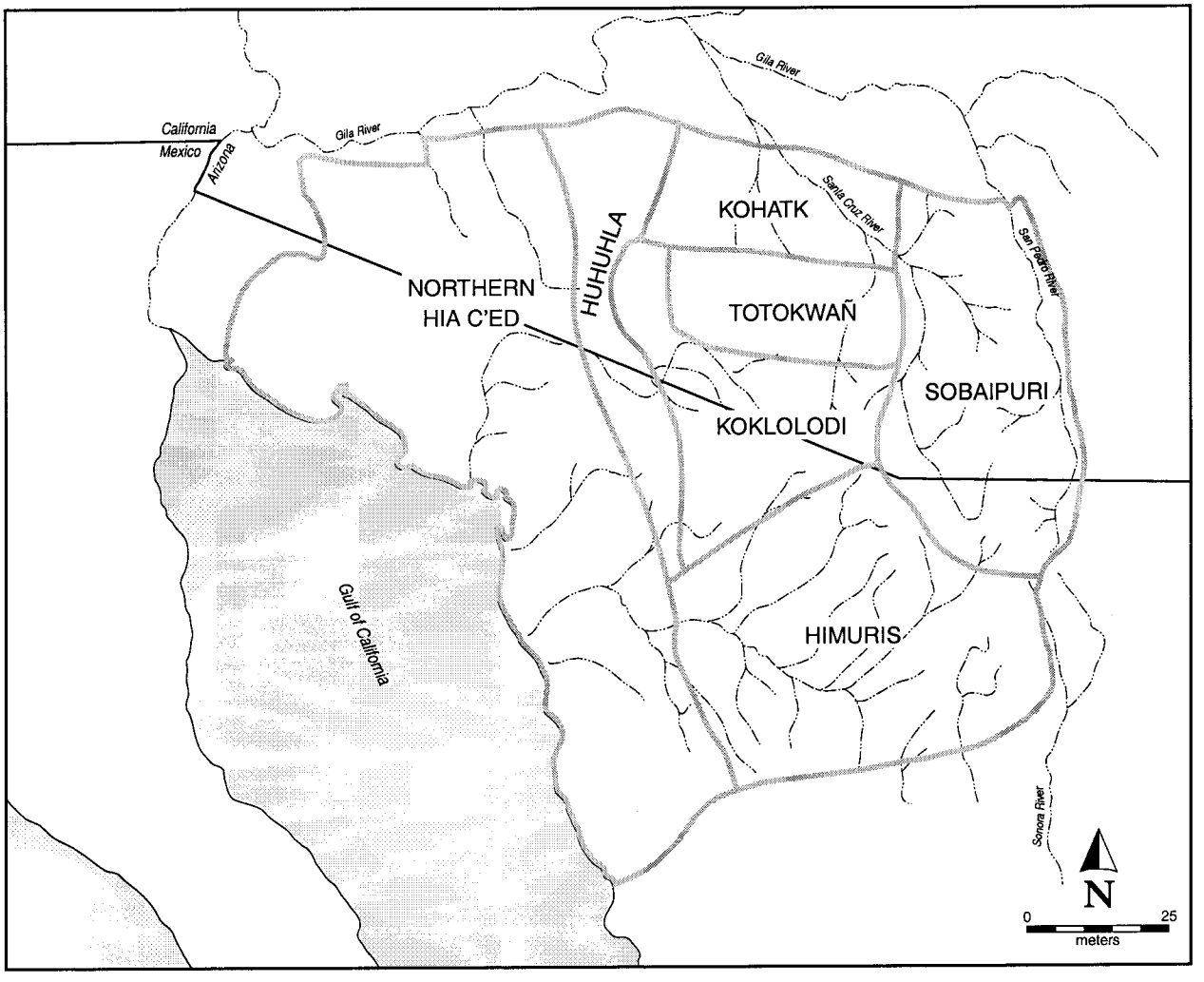


Figure 3. Tohono O'odham dialects (after Erickson 1994).

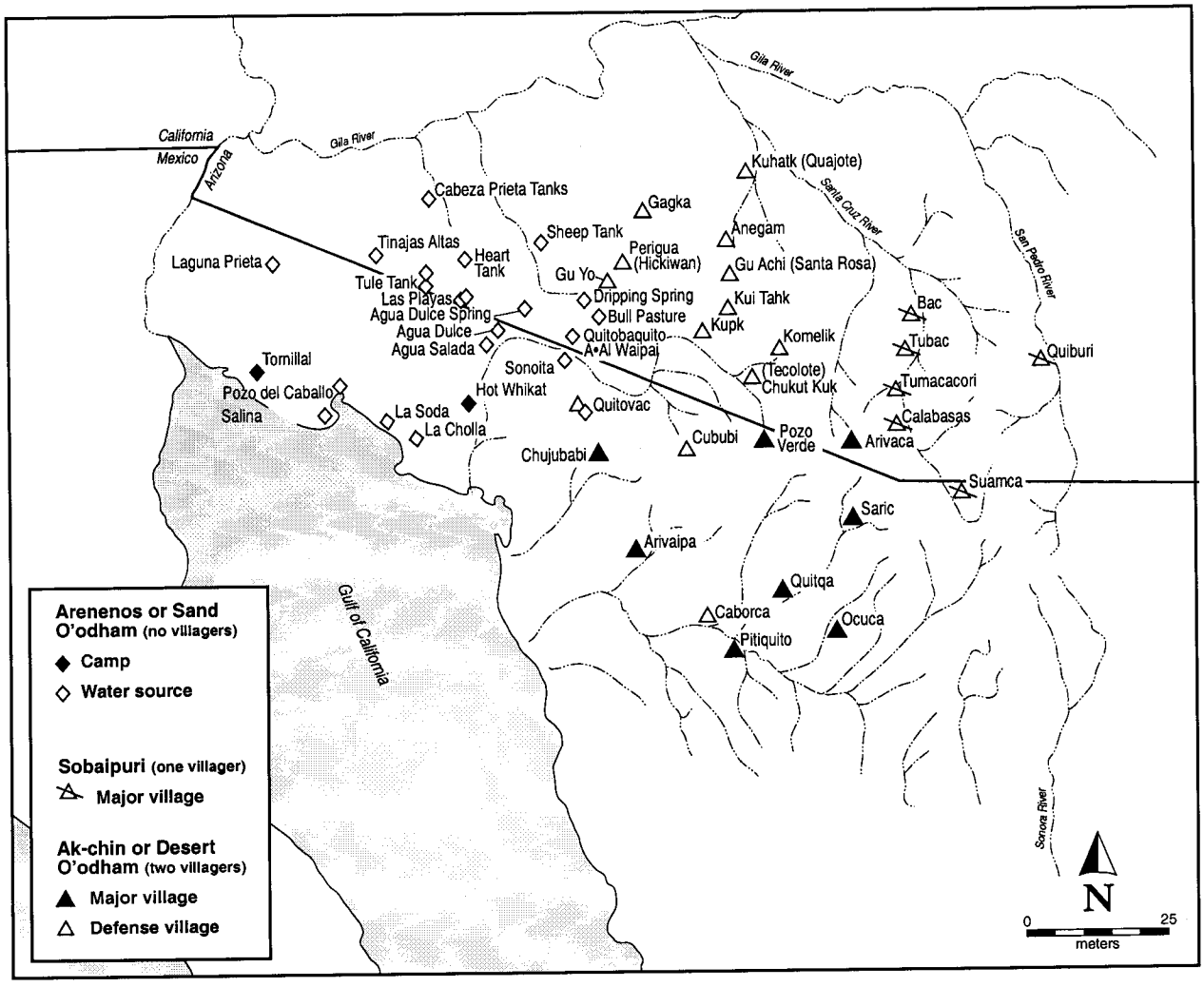


Figure 4. Traditional O'odham homelands (After Erickson 1994).

Anthropologists are uncertain about the timing of the arrival of O'odham peoples in southern Arizona. On the one hand, the history of the O'odham may have begun in prehistoric times. The broad distribution and diversity of Sonoran languages with its implication of considerable time depth lends support to the notion of a long-term, regional tradition. Documentation by Europeans in the sixteenth century that the O'odham were well adjusted to the desert habitats further supports a long residence in the area and affiliation with prehistoric people (Haury 1976; USDA Forest Service 1996).

On the other hand, a break in the distribution of Tepiman languages may indicate that the O'odham arrived much later, sometime within the last millennium (Miller 1983; USDA Forest Service 1996). This further suggests a lack of relationship between the prehistoric people of southern Arizona and the present-day O'odham. That the Tohono O'odham consider the Altar River to be the source of their culture (Underhill 1979) may indicate a gradual northward spread of Piman speakers from present-day Sonora into Arizona. Much more research is needed to study this issue.

Lifestyle

The O'odham were not united politically but were linked through a shared sense of belonging that came from similar traditions and lifeways, language, related legends, and the experiences of surviving the challenging environment of the Sonoran Desert. The O'odham developed several adaptive strategies based primarily on the amount of available water, which decreases dramatically from east to west. The Sobaípuri and Akimel O'odham were agriculturists who occupied the best-watered country, remaining in their stream-side villages year-round and supplementing their harvests with native plants and animals. The Tohono O'odham and Kohatk were transhumant farmers who lived in field villages where they could capture or direct runoff from the mountains in the summer. They would move to well villages in the winter to be near relatively reliable water sources. Although they used plants and animals, they relied on wild, native foods more in the winter and supplemented these with cultivated foods stored from their summer harvests. The Hia C'ed O'odham lived in the most arid region. By necessity, they obtained water from springs, natural tanks or *tinajas,* and runoff for water, but only a few places had sufficient water for crops. Consequently they relied year-round on native plants and animals, ranging from the Gila River to Seri country in Mexico and from the Colorado River to almost midway across the Pimería Alta in their quest for sustenance (Erickson 1994; Spicer 1962).

Before contact with Europeans, the O'odham relied on palo verde, ironwood (*palo fierro*), and mesquite for a variety of uses. Ironwood was used for hand tools and arrow points. Mesquite pods and palo verde seeds were ground into meal (Erickson 1994). Other native plants (wild and cultivated plants not introduced by Europeans) used by the O'odham included maize, squash or pumpkins, beans, saguaro fruit, mesquite pods, amaranth seeds, and spiny cholla buds.

Division of labor was according to age and gender. Older girls were responsible for bringing water to the villages every morning, and the women were responsible for food preparation and storage, as well as helping with planting and harvesting. Women also made baskets and pottery. The men did most of the tilling and hoeing, hunted, and made decisions about daily activities and moving. The role of "medicine man" was usually held by a man (Erickson 1994; Spicer 1962; Underhill 1979).

In the late 1600s and early 1700s, Jesuit priests traveled throughout the Pimería Alta making contact with the various O'odham groups, converting them to Christianity and building missions. Many of these efforts were led by Padre Eusebio Francisco Kino and began along the Yaqui, San Pedro, and Santa Cruz Rivers, gradually spreading north to the Gila River. Generally speaking, the O'odham, who had more contact with Europeans, developed closer alliances with them against the Apache. They also became more involved with wage labor in the mines and on the ranches later established by the Europeans (Bolton 1919; Burrus 1971; Fontana 1994; Smith et al. 1966; Spicer 1962).

The Akimel O'odham

The great distances between the Sonoran settlements and the Gila River country delayed initial contact between Spanish missionaries and the Akimel O'odham, known then as the Gileño or Pima, and protected them from the impacts of Spanish influences. Padre Kino first encountered the Akimel O'odham when he reached Casa Grande in 1694. He returned several times over the next eight years, but following his death in 1711, the Akimel O'odham had little if any contact with Europeans until 1736, when Padre Ignacio Javier Keller visited Pima villages along the Gila River. By this time, the *rancherías* that Kino had encountered had dispersed. From the 1770s to the Gadsden Purchase of 1854, contact with Europeans remained limited, with only sporadic trading at the presidio in Tucson or when small trading parties traveled to the Gila River villages (Russell 1975).

The O'odham's neighbors to the west, the Yuman-speaking Maricopa, originally lived along the lower Gila and Colorado Rivers and were constantly at war until 1825, when they migrated toward the Pima villages along the Gila River to the east. The O'odham helped them to fend off their enemies, after which the Maricopa lived alongside them in peace and prosperity (Salt River Pima-Maricopa Indian Community [Community] 1996c; *Edition* 1999d).

U.S. military troops found the Akimel O'odham to be particularly friendly and helpful. The Akimel O'odham scouted for and fought the Apache as an aid to the early pioneers venturing into the Southwest. As more non-Indians traveled through the Southwest, they came to rely on the Akimel O'odham whose villages were conveniently located along the Gila Trail. The Akimel O'odham provided supplies, grain and hay for stock, and protection when needed (Russell 1975). Around 1864, Mormon settlements were established at Tempe and Lehi by settlers from Utah. Often at the mercy of the Apache, the Mormons requested assistance

from the Akimel O'odham and Maricopa, some of whom moved to Lehi to provide security for the settlers. The land on which they lived later became part of a reservation for the Maricopa Tribe (Community 1996a). European settlement patterns continued to displace the Akimel O'odham as with other people in the Pimería Alta. By the early part of the nineteenth century, the Akimel O'odham were reduced to eight villages on the Gila River, mostly on the south side (Russell 1975). It is ironic that the Akimel O'odham villages, which once served as the breadbasket for southern Arizona, were deprived of water and reduced to poverty in the late 1800s as non-Indian farmers in the Phoenix area diverted their water to their own fields (DeJong 1992).

Prior to Spanish contact, the Akimel O'odham lived in village or smaller settlements known as *rancherías*. Their pole-and-thatch houses were positioned generally within sight but not sound of each other. They raised corn, beans, melons, squash, cotton, and gourds. Whether they practiced irrigated agriculture before the eighteenth century, diverting water for irrigation from the Gila River to their fields by means of ditches, is the topic of controversy. There is no mention of irrigation in accounts by Kino and Manje, who did mention the use of irrigation by the Sobaípuri; the first mention occurs in Spanish accounts of the mid-1700s. It seems likely that the Akimel O'odham would certainly have used the Gila River as a source of water for their crops (see discussion in Whittlesey [1998e]).

The men cleared, planted, and irrigated the fields that were harvested later by the women (Community 1996b; *Edition* 1999d; Russell 1975). The diet was mixed but predominantly plant based, with saguaro fruit and mesquite pods being the most abundant and available native foods. During water shortages, the Akimel O'odham were forced to rely more on wild foods, even seeking plants and animals in Apache territory. Around the turn of the nineteenth century, when the ethnographer Russell described the Akimel O'odham, floods occasionally would destroy the irrigation canals and crops, forcing the Akimel O'odham to rely entirely on wild resources (Russell 1975).

Russell (1975) identified 65 native food plants providing edible stems, leaves, flowers, seeds, roots, bulbs, nuts, fruits, and berries. Food plants included saltbush (*â'nûk i'avak*), cottonwood (*a'opa hi'âsik*), agave (*aot*), ironwood (*hait'`kam*), mesquite mistletoe (*hâ'kowat*), pumpkin (*halt*), tree cholla (*ha'nûm*), saguaro (*ha'rsany*), mesquite (*koi*), palo verde (*ko'kitc uhûtaki*), screw bean (*ko'ûtcilt*), watermelon (*me'la*), prickly pear (*naf'*), catclaw (*o'-opat*), beans' (*pavf(i)*), wild onion (*rsat*), muskmelon (*si'etcu*), cotton (*tâki*), squash (*tapkalt*), pepper (*tcil'tipin*), and acorns (*to'a*). The Akimel O'odham also used many of the food plants— particularly several shrubs, trees, gourds—for medicinal needs, and employed willow shoots, cattails, and devil's claw for basket weaving (Russell 1975; Community 1996b, 1996c).

The Akimel O'odham used many wildlife species from the *bajada*, river, and mountains to supplement their plant diet. Animals hunted, fished, and trapped included fish (*vatop*), peccary (*kâ'-âtci*), badger (*kaf*), antelope (*ki'-ovik*), mountain lion (*ma'vit*), ground squirrel (*rsu'lik*), deer (*si'-ik* and *wh'ai*), a variety of birds (*ta'matâlt*), rabbits (*tâpi, tcok tcof*, and *to'a tcof*), mountain sheep (*tcirsâny*), and raccoon (*va'owok*). Eagles and hawks were kept for their feathers, which were used by the medicine men. The villagers caught lizards and other small animals to feed these birds (Russell 1975).

As did other indigenous groups, the Akimel O'odham adopted many of the new plants and animals introduced by the Spanish. Wheat and sorghum were added to their indigenous crops. Winter wheat enabled them to grow two crops in a single season. Cattle, horses, burros, mules, and poultry greatly increased their domestic animal population, which had previously been limited to dogs (Russell 1975).

The Akimel O'odham reside today on 372,000 acres in Maricopa and Pinal counties that were established as the Gila River reservation by Congress in 1859 (Figure 5). The Salt River Pima-Maricopa Reservation, created in 1879 by President Rutherford B. Hayes by Executive Order, occupies 52,600 acres in Maricopa County. The Gila River Indian Community located 40 miles south of Phoenix is home to 11,550 Pima and Maricopa. They continue to depend on an agricultural economy, raising cotton, wheat, millet, alfalfa, barley, melons, pistachios, olives, citrus, and vegetables. The Salt River Pima-Maricopa community, home to over 5,700 *Onk Akimel Au-Authm* (Pima) and *Xalchidom Pii-pash* (Maricopa), abuts the boundaries of Mesa, Tempe, Scottsdale, Fountain Hills, and metropolitan Phoenix. Although the Pima and Maricopa speak different languages, they share the same cultural values and rely on an agricultural economy of cotton, watermelon, honeydew, casaba, cantaloupe, potato, brown onions, carrots, and other agricultural products. The community also maintains 19,000 of its acres as a natural preserve (Community 1996c; *Edition* 1999b, 1999d).

The Tohono O'odham

The Tohono O'odham occupied a large part of the north-central Pimería Alta. Their lifestyle, a combination of agriculture, hunting, and gathering, was biseasonal and transhumant. They spent the summers farming in the lower field villages and winters in the well or spring villages of the mountains where they lived off the land and stored crops, hence their name "Two Villagers" (Fontana 1983b). The Tohono O'odham established villages along the flanks of mountain slopes, such as the Baboquivari range, where they could practice *ak-chin* farming, which involved placing brush in washes to disperse runoff from the mountains to alluvial fans where the crops were planted (Erickson 1994).

Their few possessions, which were limited by a philosophy to keep only what was needed for everyday uses, were freely shared. The Tohono O'odham worked together as groups of extended families in planting, harvesting, hunting, and gathering, and in moving from

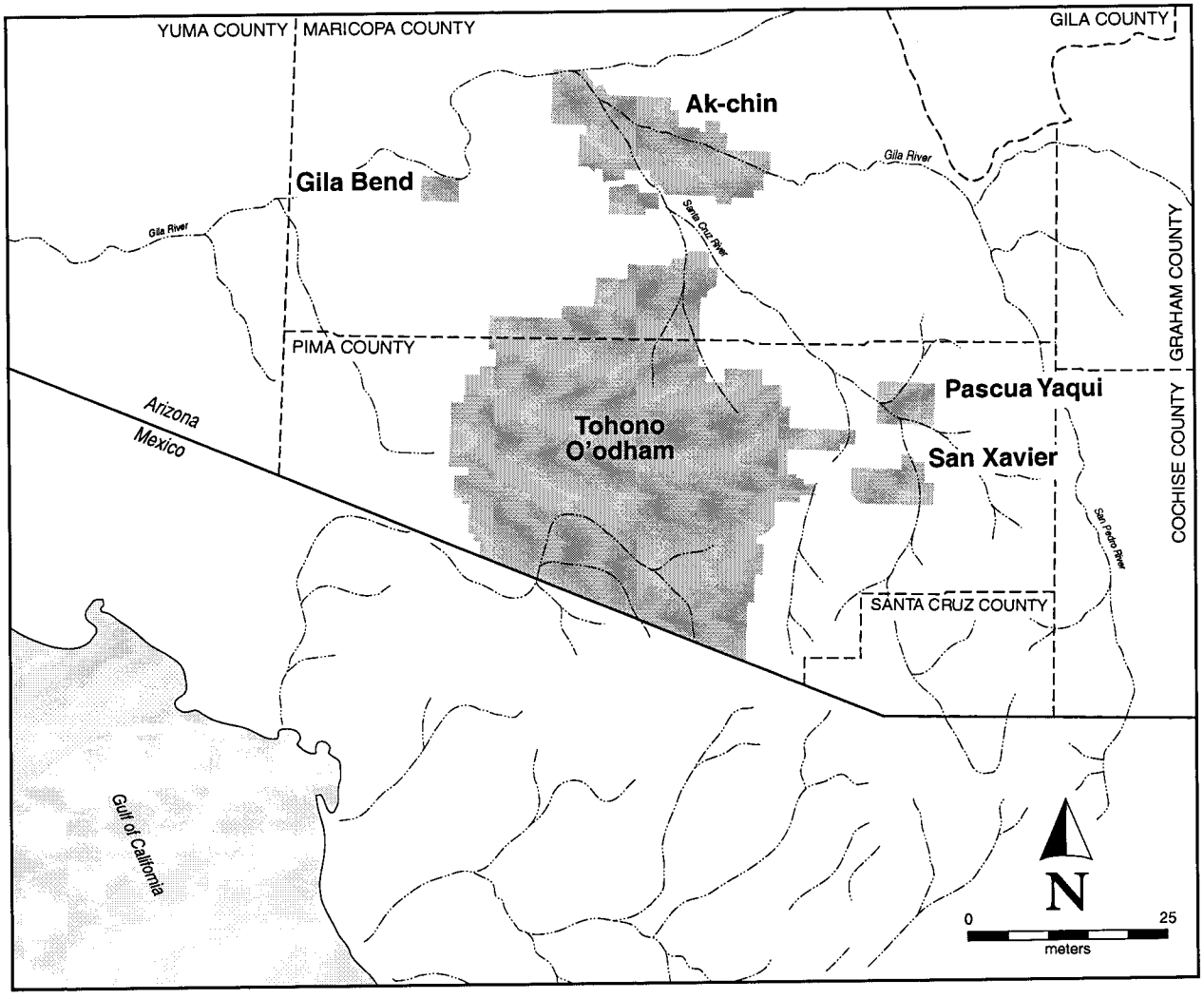


Figure 5. Contemporary O'odham Lands.

residence to residence and defending themselves as necessary (Erickson 1994). Tohono O'odham men and women were noted runners, traveling great distances for water, food, salt, and to escape Apache raiders (Underhill 1979).

Castetter and Bell (1942:57) estimated that collected plant foods and game constituted 75 percent of the Tohono O'odham diet. Saguaro, mesquite, prickly pear, and cholla were the most important plants. Each spring, the Tohono O'odham set up cactus camps to gather saguaro fruit, from which they made a variety of dried foods and wine. The wine ceremony was conducted to bring down the rain. Old men who knew the traditional procedures fermented syrup from the fruit while villagers gathered nightly to dance and sing for rain. When it was ready, the wine was served as a symbol of renewal of life, and participants would drink to the point of intoxication (Blaine 1981; Underhill 1979). The Tohono O'odham lived in pole-and-brush houses, slept on grass mats, and carried out many of their daily activities outdoors under *ramadas.* The house or *ki* was a dome-shaped structure not unlike Hohokam pit houses. Although best known for their beautifully detailed baskets made of devil's claw and grass, the Tohono O'odham were also excellent potters. Their manure-tempered ollas, or water jars—the manure fibers having burned out during firing, leaving a porous container that cooled water by evaporation—were used in virtually every household in Tucson, regardless of ethnicity, around the turn of the nineteenth century. Several painted types were made, including red-on-brown, white-on-red, and black-on-red pottery (Fontana et al. 1962; Whittlesey 1986). Saguaro syrup in narrow-necked jars was consistently traded to the Akimel O'odham in exchange for wheat and other goods (Russell 1975).

Tohono O'odham villages consisted of extended patrilineal families. Marriages were arranged with people from other villages and the wife would usually move into her husband's home, helping her mother-in-law with daily tasks (Underhill 1939). Sometimes the husband would move in with the wife's family, however, if they needed help. Although polygamy was allowed, close relatives could not marry (Erickson 1994). When villages became too large, they would split into daughter settlements that retained close social and ceremonial ties to the mother village.

Although the Tohono O'odham were not aggressive, they were fierce warriors skilled at defending themselves and proved to be not-so-easy targets for Apache and other attackers. The Tohono O'odham maintained amicable relations with most of their neighbors, including the Seri to the south, the Lower Pima and Opata to the southeast, the Akimel O'odham to the north, and the Cocopa and Yuma peoples living along the lower Gila and Colorado Rivers to the west. The Tohono O'odham traded with most of their neighbors, exchanging food items, hides, sleeping mats, pottery, and baskets. Songs, ceremonies, and labor also were traded on occasion for food and goods (Erickson 1994).

As they were closely related to the Akimel O'odham linguistically, economically, and socially, there was much trading, sharing, and intermarriage between these groups and especially

between the northern bands of O'odham and neighboring Pima peoples. The Akimel O'odham, distinguished by permanent houses and large irrigated fields, were wealthy by comparison with the Tohono O'odham. Tohono O'odham worked in Akimel O'odham fields for food during times of shortage, and food was also shared freely among both groups. The Yuman-speaking peoples to the west shared hunting areas with the Hia C'ed O'odham, traded with them, and occasionally quarreled over land use or occupancy (Erickson 1994).

The history of contact between neighboring O'odham peoples and Europeans was repeated with the Tohono O'odham. Padre Kino greatly influenced religious and subsistence changes among the Tohono O'odham. although cattle and rituals regarded as curing techniques spread more rapidly than Christianity (Spicer 1962). Kino's mission program took approximately 50 years to spread from Sonora to San Xavier del Bac. After the northern half of the traditional O'odham lands came under the control of the United States following the Gadsden Purchase in the mid-1800s, Tohono O'odham and Euroamericans developed stronger relationships based on the shared need to defend themselves from raiding Apache (Blaine 1981). The raids decreased significantly following a tragic episode at Camp Grant in 1871 (Erickson 1994), discussed later.

As Euroamericans continued to come to the Pimería Alta, they brought other changes to the Tohono O'odham. The Dawes Severalty Act of 1887 led to the conversion of adaptable, cooperative, semisedentary farmers to organized growers, stock raisers, and later individual wage earners. The Tohono O'odham shifted from depending on a system of sharing to that of a cash-based economy. By the 1890s, as a result of encroachment pressure from ranchers in the Altar and Magdalena Valleys, Mexican Tohono O'odham had migrated to Arizona, particularly to Tucson and San Xavier, seeking refuge where they could maintain their identity and lifestyle (Blaine 1981).

Another significant change came with the Reorganization Act of 1934 (25 U.S.C. 461 et seq.), which included a plan for self-government, for the establishment of Indian courts with local judgeships, and for the preservation of cultural traditions. The Tohono O'odham established new organizing principles in the *Constitution and By-laws of the Papago Tribe of Arizona* and formed 11 political districts based on nine grazing districts. Each district had an elected council, two members of which would serve as representatives to the tribal council that would also elect a chairman, vice chairman, secretary and treasurer. Although the U.S. Constitution was used as a model for the tribal constitution, the tribal bylaws were based on O'odham traditions, which encouraged communal use of land. The tribal council continued the practice of going to the villages to discuss problems and issues before they made decisions (Blaine 1981).

As the Tohono O'odham have struggled to maintain their traditions and identity through the changes that came to the Pimería Alta, they have developed a social and cultural system that combines old and new ways. The rodeo and fair celebrations, for example, were combined

into an annual event that came to have the importance of earlier intervillage games. Some of the old ways have been brought back including *ak-chin* farming, the harvesting of saguaro fruit, and the wine ceremony. Federal agencies have supported some of these efforts, allowing a few family cactus camps to be established on federal lands (Blaine 1981).

Cultural awareness programs in the schools and demonstrations of traditional music and dance are rebuilding the Tohono O'odham traditional lifeway (Blaine 1981). The Baboquivari Mountains, which bound the west side of the Altar Valley, continue to have special cultural significance for the Tohono O'odham people and other indigenous groups of the Pimería Alta. Baboquivari Peak is considered sacred by the Tohono O'odham because of the roles it plays in their creation story (Erickson 1994).

Tohono O'odham lands today comprise the main reservation of more than 2.7 million acres in parts of Pinal and Pima Counties and northern Sonora; the San Xavier reservation, consisting of approximately 71,095 acres located near Tucson; the Gila Bend reservation, made up of 10,409 acres north of the main reservation; and a small, 20-acre village near the city of Florence (see Figure 5). Tohono O'odham also live in the Ak-Chin Indian Community, located south of Phoenix in Pinal County, which they share with Akimel O'odham people (*Edition* 1999a, 1999e). Mexican Tohono O'odham travel to Sells, Arizona, for a variety of social services and cultural activities.

The Hia C'ed O'odham

The traditional lands of the Hia C'ed O'odham extended from the Gila and Colorado Rivers in the north through the Sierra Pinacate region of Sonora to the Gulf of California and southward to Seri country. They have also been called Sand Papago, Areneros, Areneños, and Pinacateños. Other O'odham have called them *Hiá Tatk Kuá'adam,* sand-root eaters, and *Otomkal Kuá'adam*, desert iguana eaters. Although this O'odham group was declared extinct in the early 1900s, and consequently denied rights to their traditional lands, approximately 1,300 individuals today identify themselves as Hia C'ed O'odham (Rea 1998).

The Hia C'ed O'odham were divided into northern and southern groups, the latter sharing land and cultural similarities with the Seri in Mexico. The northern group interacted with the Yuman peoples and shared similarities with them. The Hia C'ed O'odham were the most linguistically distinct among the O'odham, speaking faster and having exclusive terms, but were still easily understood by all other O'odham (Erickson 1994).

The Hia C'ed O'odham lands were the driest and hottest of the Pimería Alta and the least densely settled. With only a few places suitable for farming, which they carried out under the *ak-chin* system (Rea 1998), the majority of Hia C'ed O'odham lived as hunters and gatherers ranging over a large area in small family groups. The Hia C'ed O'odham were distinctive for their heavy use of native fish that could be harvested from tidal pools along

the Gulf of California. As a consequence of the lack of arable lands and sparse settlement, the Hia C'ed O'odham remained generally isolated from the influences of the Spanish culture as other areas were explored for farming and mining. These same characteristics also kept Apache raiding to a minimum (Erickson 1994).

The Hia C'ed O'odham suffered greatly during the 1850s and 1860s when disease epidemics devastated the population. Miners at Ajo and ranchers at Quitobaquito encroached on some of their most desirable land during this time, but the people managed to survive and found employment constructing the railroad through the Gila River basin. Today, they remain scattered and, although living among the Tohono O'odham, have never completely assimilated into the main body of O'odham people. In Mexico, the southern Hia C'ed O'odham met a similar fate, having been relocated by the government from the western end of O'odham lands to Quitovac and other inland areas. They too have joined with other O'odham people (Erickson 1994).

Another great impact to the Arizona Hia C'ed O'odham came when the BMGR was established in the 1940s, and they were prohibited from using that part of their traditional area. The establishment of Organ Pipe Cactus National Monument and the Cabeza Prieta Game Range left virtually no traditional lands in the United States for Hia C'ed O'odham use (Figure 6) (Erickson 1994).

The Kohatk

The Kohatk, also spelled Koahadk and Kwahatdk, were distinguished among Tohono O'odham as a dialect group (Erickson 1994) although they were closely related to the Akimel O'odham through intermarriage and trade (Erickson 1994; Rea 1998). Kohatk settlements extended as far south as the line between modern Santa Rosa and Tucson (Erickson 1994). They lived mostly between the Picacho Mountains and the Gila River Pima in the area today known as the Santa Cruz Flats, in villages scattered along the Vekol, Green, and Santa Cruz Washes. Important villages were Kohatk near the Slate Mountains, Ak-chin near Picacho, and Santa Ana de Cuiquiburitac east of the Santa Rosa Mountains (Fontana 1987; Russell 1975; Whittlesey et al. 1994:250). The Kohatk moved between *ak-chin* fields on the lower Santa Cruz River and adjacent washes to fields along the Gila River as opportunities allowed (Dobyns 1974; Rea 1998). They seem to have been neither "desert people" nor "river people," but O'odham who regularly moved between and used both environments (Whittlesey et al. 1994:252).

The documentary history and village locations are confusing (Whittlesey et al. 1994:249–251). What little is known of their cultural ecology parallels the practices of the other O'odham groups (Rea 1998), although they were noted for bringing cattle to the area in the 1820s (Ezell 1961; Rea 1998; Russell 1975; Whittemore 1893). Some desert

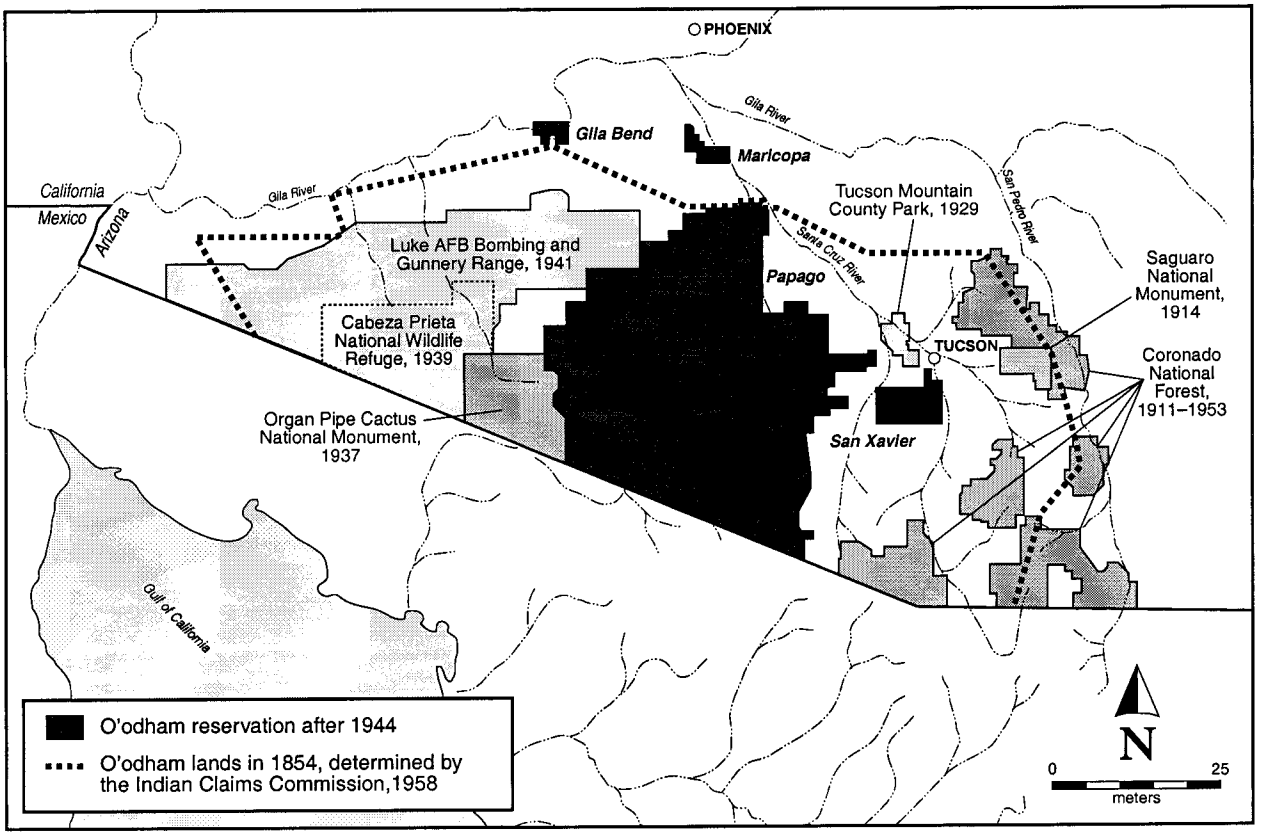


Figure 6. Modern encroachment on traditional O'odham lands (after Di Peso 1953)

settlements were sustained by artificial reservoirs, and Dobyns (1974:325) makes the point that the Kohatk also dug ditches as necessary to water their fields. Their ethnobiology, however, remains speculative.

Little is known about Kohatk social organization. If, as documentary sources suggest, the Kohatk were intermediate between Akimel and Tohono O'odham in economic organization and settlement practices, it may be appropriate to view them as socially intermediate as well (Whittlesey et al. 1994:255).

Kohatk material culture was generally similar to that of other O'odham. Historically, they were known as excellent potters (Russell 1975:124). The Akimel O'odham obtained many painted vessels from the Kohatk in exchange for Pima wheat and other foodstuffs. Apparently, Kohatk pottery was highly polished and more often decorated than other O'odham pottery (Fontana et al. 1962:107–109).

The Kohatk experienced little influence from the Spanish, although there were early attempts at missionization (Fontana 1987). Increased pressure from Apache raiding, which resumed after the Mexican regime came into power in 1821, forced the Kohatk to abandon their villages along the lower Santa Cruz River and take refuge among the villages of neighboring O'odham. Fontana (1987) indicates that the remnants of the Kohatk people settled across the Gila River from the Sacaton community, a village that eventually became known as Santan. Other members moved to the Salt River Reservation. By the early 1900s, the Kohatk had lost identity as an independent group and were assimilated into Akimel O'odham and Tohono O'odham communities (Rea 1998).

The Sobaípuri

Unfortunately, we know little about the Sobaípuri, who were once Pima County's most populous native group. Although it was the Sobaípuri who were described in Kino and Manje's accounts of the late 1600s, there is little if any overlap between the documentary and archaeological evidence for Sobaípuri occupation of southern Arizona. There are several reasons why this is so. Most importantly, the Sobaípuri were mingled with Tohono O'odham and other Piman-speaking peoples such that by the 1800s they had lost social and ethnic identity. The documentary evidence itself is difficult to interpret and understand. Sobaípuri *rancherías* were easily moved, and because the Spanish names for villages, including the saint's appellation, moved along with the villages, maps made at different times may show several places with the same names. It is difficult, therefore, to match an archaeological site with the location of a named Sobaípuri village.

With this caution, what we know of the Sobaípuri is that they once lived in the well-watered valleys of the Santa Cruz and San Pedro Rivers, farming and producing "plentiful crops" of "calabashes, frijoles, maize, and cotton" (Bolton 1948:I:170–171). Chroniclers of the Coronado expedition noted the Sobaípuri's use of turquoise and body painting or tattooing

of their faces and bodies. They came to be known, consequently, as Rsársavinâ, meaning "spotted." The Sobaípuri had few interactions with the Spanish until the latter part of the seventeenth century. They maintained trade relations, however, with the Spanish in the Río Grande Valley and presumably also with the Spanish of the Pimería Baja. In the early eighteenth century, the Spanish enlisted the Sobaípuri for military purposes; they provided an armed buffer against raiding Apache (Di Peso 1953). The Sobaípuri were fierce warriors, aggressive and accustomed to war given their proximity to and frequent encounters with the Apache (Erickson 1994).

From the late 1600s to approximately 1762, the landscape of the Santa Cruz and San Pedro River valleys was characterized by *rancherías*, larger villages, irrigation canals, wells, and cultivated fields (Griffith 1992). Sobaípuri villages appear to have been occupied briefly, and settlement locations shifted rapidly. Seymour (1989:215) suggests that the suitability of the floodplain for farming was the major determinant in locating villages. Inferred Sobaípuri sites in the San Pedro River valley are located on ridges and terraces above the river. There were at least 14 *rancherías* along the San Pedro River when Kino and Manje visited there in the late 1600s (Whittlesey et al. 1994:237). Approximately 100–500 people lived in each of the villages along the San Pedro River. South of Santa Cruz de Gaybanipitea (Di Peso 1953) were numerous villages where more than 2,000 people lived. Although villages had existed between the *rancherías* of Quiburi and Cusac, they were abandoned by the 1700s (Figure 7).

The Tucson Basin was densely settled, apparently because of intensive agriculture (Doelle 1984). The stretch of the Santa Cruz River between San Xavier del Bac to San Clemente (thought to be located at the northern end of the Tucson Mountains, or Point of the Mountain) was the center of Upper Pima culture at the time of Spanish contact with an estimated 2,000 residents (Doelle 1984:207). Other important villages were San Agustín de Oaiur (also spelled Oyaur, Oyaut), San Cosme del Tucson, and Valle de Correa in the north; and Guevavi, Tumacácori, and Calabazas in the south (Whittlesey et al. 1994:234–236).

Sobaípuri lifeways and material culture were evidently similar to those of other Pima groups in southern Arizona. They lived in oval or round structures built of brush, poles, and mats. Whether they built adobe structures as suggested in some documents (Burrus 1971; Treutlein 1989) is controversial. Some authors (e.g., Masse 1981) thinks that this was the product of Spanish influence. It is probable that the earliest Sobaípuri pottery was the thin, wiped brown ware called Whetstone Plain. Whetstone Plain is extremely different from known historical-period ceramics of O'odham manufacture, which are thick, well polished and often red slipped, and which often have black cores resulting from the use of manure temper. Sobaípuri pottery is puzzling for other reasons. Whetstone Plain pottery exhibits similarities to other protohistoric and early historical-period pottery over a vast region, including Patayan or Yuman ceramics, Apache pottery, Yavapai pottery, and the pottery made by Numic-speaking people, such as Shoshone and Paiute (Ravesloot and Whittlesey 1987). Differentiating among native peoples on the basis of their ceramics is a time-honored practice in archaeology, but is notoriously difficult for the early historical period. Archaeologists have their work cut out in explaining these differences and similarities.

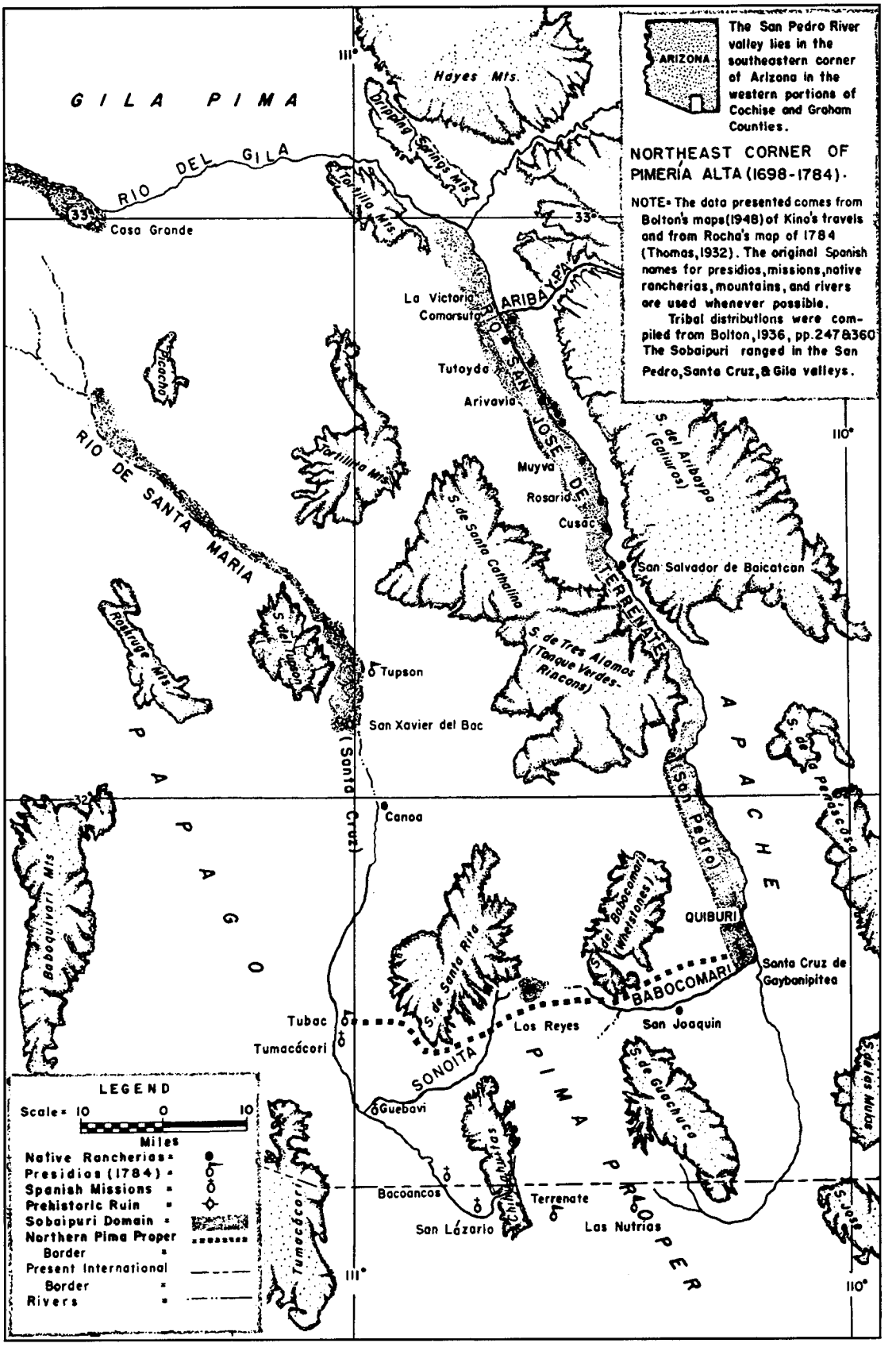


Figure 7. Northeastern Pimeria Alta 1698 to 1784 (after Di Peso 1953).

A particular type of projectile point with a deeply concave, indented base and serrated edges is attributed to the Sobaipuri (Masse 1981; Ravesloot and Whittlesey 1987). Points like this have also been attributed to the Yavapai (Pilles 1981). Other stone artifacts were relatively undiagnostic, although the raw materials are typically thought to be of better quality than those used in Hohokam stone tools (Brew and Huckell 1987:171).

Little is known of Sobaípuri farming techniques. Documentary evidence suggests use of irrigation ditches, which were simple, gravity-fed channels to divert water from the rivers and swampy areas and to the fields and wells, but no archaeological evidence of these has yet been found. The archaeological data indicate a low frequency of the ground stone tools, plant remains, storage facilities, and other materials indicating intensive reliance on agriculture. We do not know whether this reflects factors of preservation of other reasons. Prior to Spanish contact, the Sobaípuri raised maize, beans, squash, cotton, melons, and three kinds of gourds. Cotton was spun and woven into clothing. Following the arrival of the Spanish, they added wheat, barley, chili, sugar cane, sweet potatoes, and watermelons to their fields. The Sobaípuri used a wide variety of native wild plants for food, construction purposes, and medicine. Mescal or agave was used for food, drink, and in crafts; *chino* (mesquite) wood was used for construction and its beans were eaten; and cacti such as *tuna* (prickly pear) and saguaro were used for food. Many plants provided treatments for a variety of ailments (see Di Peso 1953). The Sobaípuri also added stock raising to their subsistence activities when the Spanish introduced cattle, sheep, goats, horses, donkeys, and mules. The introduction of these new foods brought changes to the allocation of labor and the value system in addition to subsistence.

Interactions among the Sobaípuri and their neighbors ran the gamut from hostilities to intermarriage. Spanish sources from the late 1600s indicated that, although Apache peoples lived east of the San Pedro River and along the banks of the Gila River, they had been raiding O'odham settlements for many years. Language was a common bond among the natives of the Pimería Alta, and the Sobaípuri maintained frequent communications with the Akimel O'odham and the Tohono O'odham. Their relations with the Akimel O'odham in particular included frequent trade and intermarriage. During the 1600s, the Sobaípuri evidently maintained friendly communication and commerce with their Hopi and Zuni neighbors to the north. Although Wyllys (1931, cited in Di Peso 1953) characterized the Sobaípuri as haughty and arrogant, they were looked up to by the other natives of the Pimería Alta, presumably because of their lack of malice. Citing Bolton (1948), Di Peso (1953) wrote that Kino also noted these temperament differences, adding that the Sobaípuri were generous in their poverty, sharing necessities with visitors as they were able. Opposition and rivalry between the Sobaípuri and other indigenous groups was expressed through fighting and later in races and contests.

Sobaípuri living along the Santa Cruz and San Pedro Rivers had a long history of intermarriage and cooperative action when the need arose. When Kino arrived, the Apache were already pushing hard against the eastern boundary of Pimería Alta. Recognizing the warlike reputation of the Sobaípuri, the Spanish sought to organize the villages of the San

Pedro Valley into a military alliance to defend the northern frontier of New Spain. This attempted militarization eventually had disastrous consequences (Fontana 1983a:137). The *reducción* policy and missionization actually increased Apache raiding, as the concentrated livestock, weapons, and stored food provided an additional lure (Ezell 1983:149).

After the Pima Revolt of 1751, many of the Sobaípuri were relocated in the Santa Cruz Valley at San Cosme and Bac. Contingents of Sobaípuri were brought in from the surrounding area during the 1760s, continuing the process of population aggregation that would eventually result in loss of ethnic identity (Dobyns 1976). Problems with Apache raiding became so great that in 1762 the San Pedro Valley Sobaípuri joined the Santa Cruz Sobaípuri at Santa María de Suamca, San Xavier del Bac (founded as a mission for the Sobaípuri in 1700), and San Agustín del Tucson, significantly changing the ethnic composition of the valley. This also left the San Pedro River valley—once a Sobaípuri barrier against the Apache—essentially defenseless and unprotected. There is controversy over the reasons that the Sobaípuri abandoned the San Pedro Valley. Some authors think that the Sobaípuri simply fled in the face of the hostile Apache (Kessell 1976), whereas others believe that Sobaípuri resettlement was by order of Spanish *reducción* policy and carried out by military officers (Dobyns 1976). Probably both processes were at work.

The densely settled villages of the Santa Cruz River valley quickly succumbed to epidemics against which the people had little if any resistance. The population of San Xavier del Bac, for example, was greatly reduced by 1773 as a result of epidemics and Apache raids. Tohono O'odham were brought to the mission in the early 1800s to replace the population lost to disease and war, and intermarried with the remaining Sobaípuri. Loss of Sobaípuri ethnic identity was inevitable. In 1776, the Tubac presidio was relocated to Tucson. Within the next quarter century, the Spanish population increased as ranchers and miners moved into the Santa Cruz Valley, contact between Spanish and Piman peoples increased, and the native population decreased (Bronitsky and Merritt 1986; Erickson 1994; Ezell 1983; USDA Forest Service 1996; Whittlesey at al. 1994). No Sobaípuri remain today.

Major sites that have been attributed to Sobaípuri occupation include England Ranch Ruin, located along the Santa Cruz River south of Tucson (Doyel 1977b); Santa Cruz de Gaybanipitea, excavated by Di Peso (1953); three sites in the Santa Rita Mountains excavated during the ANAMAX-Rosemont project (Huckell 1984c); and Alder Wash Ruin on the San Pedro River (Masse 1985). Some of these sites have objects of European manufacture, such as glass beads and metal tools, but others do not. There are other isolated finds and components at sites that have been attributed to the Sobaípuri, including a late occupation at the San Xavier Bridge site (see review in Ravesloot and Whittlesey [1987]). Several flexed inhumations with Sobaípuri-style projectile points and unusual accompaniments, including a shell trumpet, a golden eagle skeleton, and arrow-making kits, were found at the site (Ravesloot 1987). Excavated sites that Charles Di Peso attributed to the Sobaípuri—the supposed village of Quiburi in the San Pedro Valley (Di Peso 1953) and San Cayetano in the Santa Cruz Valley (Di Peso 1956)—probably were not the native Sobaípuri settlements as their excavator claimed. The former is the site of the Spanish

presidio of Santa Cruz de Terrenate, and although some Sobaípuri may have lived at or near the presidio, the structures that Di Peso excavated and attributed to them probably were not Sobaípuri but Spanish (Gerald 1968; Masse 1981; Seymour 1989; Whittlesey 1994; Whittlesey et al. 1994:239–241); the latter is a Classic period Hohokam site with evidence for some later (probably middle or late 1800s) O'odham occupation (Whittlesey 1994; Whittlesey et al. 1994:241; Wilcox 1987). It is unfortunate that, although there have been excavations at the locations of several Sobaípuri villages in the Santa Cruz Valley, including San Xavier del Bac, Guevavi, and Tumacácori, few if any traces of the late 1600s–early 1700s occupation have been found. Instead, the evidence indicates much later occupation in the 1800s.

Suggestions for further reading: Please consult Bahr et al. (1994); Doelle (1984); Joseph et al. (1949); McCarthy (1985); Nabhan et al. 1989; Ortiz (1983); Rea (1997); Russell (reprinted 1975); Underhill (1936, 1938 [recently reprinted], 1939, 1940, 1946); and Whittlesey et al. (1994) for additional information about O'odham peoples.

The Apache

So unlike the industrious, village farmers such as Hopi and Akimel O'odham in lifestyle, the Apache were one of the Southwest's most enigmatic peoples. The names of their great leaders—Cochise, Geronimo, Victorio, Mangas Coloradas—remain household words synonymous with courage, freedom, and determination. Unlike the farmers of the river valleys, the Apache were a mountain people. Mountains defined their traditional territories, provided food and shelter, represented sacred landmarks and a spiritual bulwark; in times of conflict, mountains were their refuge. Mounted and moving swiftly and unseen through the mountains, the Apache were able to elude their pursuers long after other native peoples had surrendered to reservation life. "Once I moved about like the wind," said Geronimo at his surrender. "Now I surrender to you and that is all" (Roberts 1994).

The Apache were relatively recent migrants into the Southwest, although the timing of their entry has been widely debated. Most scholars agree that the Apache, who are classified linguistically as Southern Athapaskan speakers, moved southward from an original home in Alaska or southern Canada sometime around A.D. 1500, if not earlier. Their language, culture, and lifeways reflect this distinctive origin and comparatively recent history. All Apache peoples were highly mobile and made their living by a combination of hunting, collecting wild plant foods, raiding, and some farming. These lifeways brought them into frequent and often violent contact with the settled Native American farming peoples and Euroamericans who came later. The unfortunate history of relations among Apache, other indigenous peoples, and Euroamericans is a sad, violent, and bloody chapter in the chronicle of the American West.

Ethnographers place the Apache peoples, not all of whom lived in Arizona, into several groupings on the basis of recognized territorial, linguistic, and cultural differences. The largest grouping was the tribe or division, further subdivided traditionally into smaller groups and bands. Two groupings whose traditional territories overlapped into southern Arizona are most important to our discussion. These are the Aravaipa Band, part of the San Carlos group of the Western Apache tribe, and the Central Chiricahua Band of the Chiricahua Apache tribe.

The Aravaipa Band was called *tcéjiné* ("dark rocks people") for a region in the Galiuro Mountains around which they lived. As their name suggests, the Aravaipa Band made Aravaipa Valley their home base. Their territory included the lower San Pedro River valley as far north as the Gila River and the mountains bordering the valley—the Santa Catalina, Rincon, Santa Teresa, and Galiuro Mountains. Their seasonal round followed the cycle of the year and the ripening of wild crops. Family groups separated from the main band in search of wild foods, usually bringing back the prepared crop for consumption and storage. In the late spring they planted corn at Aravaipa Canyon. In summer, they lived in the mountains overlooking Tucson and the Santa Cruz River valley. The fruit of the saguaro brought them to the San Pedro Valley in July, and they gathered acorns near Oracle in the fall. Fall was harvest time, and after the crop was brought in they lived in secure winter camps located in the Galiuro and Santa Teresa Mountains, from which the men made raiding sorties into Mexico. One of the most important traditional foods was mescal or agave. The hearts of the plants were roasted in huge pits near the growing sites, and the prepared mescal was brought back to camp. In addition to food, mescal provided a fermented drink, fibers for sewing, and a fibrous stalk for lance shafts and musical instruments.

Bands were composed of 3–12 local groups, which were the fundamental unit of Western Apache and Chiricahua Apache society. Chiricahua bands were smaller, consisting of 3–5 local groups, and the local group was named after some prominent natural landmark of its range or labeled by the name of its chief. Each local group consisted of 2–10 family clusters or *gota*, usually totaling 10–30 households, who returned each year to the group's farming site. Clans, or large kinship groupings, were nonterritorial and served to regulate marriage, extend kinship beyond the family, and provide economic and social support. Cutting across group and other boundaries, clans served to create an expansive web of kinship bonds. The minimal residential unit was the *gowa* or camp, a term referring to the house, its occupants, and the camp itself. Dwellings were dome-shaped or conical pole and brush structures often referred to as wickiups. The largest and most permanent structures were called *nesdango'wa* (ripe fruits wickiup) and were located at the farm sites. Archaeologically, *gowa* can often be recognized only by the rock rings that once formed the wickiup foundation. The Chiricahua Apache occasionally built tipis or hide-covered structures.

The Central Chiricahua Apache Band ranged around present-day Duncan, Willcox, Benson, and Elgin in southern Arizona, and they held mountains strongholds in the Dos Cabezas, Chiricahua, Dragoon, Mule, and Huachuca Mountains. Each local group had a "chief" or

"leader" who gained prominence because of his bravery, wisdom, eloquence, and ceremonial knowledge. The local group was important in regulating social and economic institutions, including marriage, raiding parties, and ceremonial events. The Chiricahua depended more heavily on wild plant foods, hunting, and raiding, and less on farming, than the Western Apache, who probably were the most farming-dependent of the Apache tribes. Mescal was also the Chiricahua's most important food plant. The tender stalk was roasted and the crown was dug up, trimmed, and baked in an underground pit oven. The baked mescal was sun dried and stored, supplying sweet and nutritious food for many months.

Apache ceremonialism was based on the acquisition and manipulation of supernatural power and complicated rituals for curing, protection against illness, success in hunting and warfare, and marking life cycle events. The most important of the latter were the girl's puberty ceremonials, which lasted four days and involved ritual songs and dances, dancing by masked impersonators of the mountain spirits, social dancing, and food redistribution.

An integral part of Apache culture, raiding was considered lawful and just. Grenville Goodwin, who lived among the Western Apache and was their principal ethnographer, wrote that "The size of the territory in Sonora over which the Western Apache raided is extraordinary. The Apache knew it like their own country, and every mountain, town, or spring of consequence had its Apache name" (Goodwin 1969:93). Raiding parties ventured as far as the Gulf of California. Raids brought the Apache horses, mules, cattle, hides, blankets, clothing, metal to fashion knives and arrow points, saddles and bridles, and firearms. O'odham, Mexican, and American farms in southern Arizona and northern Sonora, with their livestock and rich stores of grain, were frequent targets of Apache raids. Horses and mules were often killed and eaten during raids, forming a highly transportable food source as well as transportation and enabling the Apache to extend their raiding activities across considerable distances—as far as the Seri country along the Gulf of California.

As would be expected for such a mobile people, basketry, wood, and fiber products were used for the main containers and most domestic purposes, and ceramics were little emphasized. Pitch-coated baskets served as water containers. Cradleboards were made of wood, and these lightweight carriers enabled infants to accompany their mothers on resource-collecting parties. Beautifully fashioned carrying baskets were used in the harvest. Ceramics were typically dark gray or brown pots with conical bases, often with wiped surfaces and incised or finger-indented rims. During the historical period, bottle glass was often flaked to fashion arrow points, although metal was preferred. The Western Apache in particular were inveterate collectors and recyclers, often reusing grinding stones and other items collected from prehistoric sites (Whittlesey and Benaron 1998). This propensity and the emphasis on perishable material culture makes Apache sites difficult to see archaeologically.

The history of contact between Apache and other peoples was not peaceful. Their way of life brought conflict with other indigenous peoples and Euroamericans alike. When the Spanish first arrived in Arizona, Apache predations on the O'odham peoples were well established. Apache raiding crippled Spanish attempts to establish missions in Pimería Alta in the 1700s and was one reason for the abandonment of the San Pedro River valley by the Sobaípuri (Kessell 1976). The Spanish presidio of Santa Cruz de Terrenate along the San Pedro River near modern Fairbank was occupied for only four eventful years, beginning in 1775, before Apache raiding forced its abandonment (Sugnet and Reid 1994; Williams 1986).

The presidio at Tubac was relocated to Tucson in 1776, and as the Spanish population began to increase the pace of Apache raiding accelerated. Following an unprecedented Apache attack on the presidio in 1782, commander Don Pedro Allande began a vigorous campaign against them. Four years later, the Spanish Viceroy Bernardo de Galvez initiated a pacification policy combined with aggressive military action. A key point of this policy was the resettlement of friendly Apache, called Apaches de Paz (Dobyns 1976) or Apaches Mansos (Officer 1987), at the royal presidios. A contingent of more than 100 Apaches, primarily Western Apache of the Aravaipa Band, was settled at Tucson in 1793 (Dobyns 1976:98). Members of the Pinal band settled there in 1819 (Dobyns 1976:102). Few if any traces of this occupation remain today.

As Euroamerican miners and settlers spread rapidly into Arizona, the Apache found it increasingly hard to live by their traditional, mobile ways. No reservations had been established for them, and conflict was rampant. Soldiers and settlers kept the Aravaipa Apache on the move for many years, destroying their farms and camps. Beginning in 1866, several stations were set up to provide the Apache with rations, clothing, and protection from lawless settlers in exchange for their promise of peaceful behavior. Camp Grant was one such site, and the locale of one of the most shameful chapters in the history of Apache-American relations. The camp was established on the San Pedro River at its junction with Aravaipa Creek in the late 1850s and abandoned and reopened in response to federal policy after the Civil War. In 1871, the Aravaipa Band under the leadership of Eskiminzin and a number of Pinal Band Apache located near Camp Grant, then commanded by Lt. Royal Whitman.

Mistakenly believing that the Aravaipa people were responsible for raids on Tucson, Tubac, and Sonoita, and angered by what they perceived as the government's slow response to their requests for help and Whitman's supposed coddling of the "murderers," the people of Tucson targeted the Aravaipa of Camp Grant. In April, 6 Anglos, 48 Mexicans, and 94 Tohono O'odham from San Xavier attacked the Aravaipa Apache, mutilating and killing more than 100 Aravaipa and Pinal Apache, mostly women and children, and capturing 27 children. "It was slaughter pure and simple," writes Thomas Sheridan (1995:80), "because most of the Apache men were off hunting in the mountains or carrying out surreptitious raids."

President Grant insisted that the perpetrators be brought to trial. The sham deliberation lasted 19 minutes and ended with an acquittal. Whitman was court-martialed three times after the massacre.

The Camp Grant Massacre left all Apache people wary of claims of peace. It was also a stunning indictment of federal Indian policy. Following the massacre, General George Crook was installed as the head of the Department of Arizona. His campaign against the Apache and Yavapai was based on a sweeping offensive assisted by Indian scouts coupled with destruction of winter food supplies. Relationships between Western Apache and Chiricahua Apache always were somewhat strained, and worsened after some of the Western Apache allied with the U.S. Army in its campaign against the Chiricahua Apache.

Starvation and weakness took their toll, and by 1872 Crook's campaign began to succeed. The Apache leaders were ready to discuss peace. Many Apache were forced to move to the newly established reservation at San Carlos in 1875. After several unsuccessful attempts to relocate the Chiricahua Apache, including a particularly sad sojourn at San Carlos and a failed attempt to establish a reservation for them in southeastern Arizona, the Chiricahua continued to raid in Arizona, New Mexico, and Sonora. Peace was not established until Geronimo surrendered in Skeleton Canyon in southeastern Arizona in 1886, and the Chiricahua were deported to Florida. Crook's campaign and the bloody Apache wars have been the subject of numerous books; some of the best are listed below.

According to Basso (1983:480), four Apache reservations were hurriedly established between 1871 and 1872 as part of the federal government's "peace policy." The White Mountain Reservation was established in 1871 and an executive order in 1872 added the San Carlos Division to the reservation (Kelly 1953:23). The White Mountain and San Carlos Reservations were formally partitioned in 1897 (Majewski 1998:323). Many Aravaipa Apache also settled at Bylas on the Gila River in the late 1800s. The exiled Chiricahua Apache in Florida were transferred to a reservation at Fort Sill, Oklahoma, in 1894. In 1913 they were given full freedom, and some moved to New Mexico to share a reservation with the Mescalero Apache (Opler 1983:409). Today most Western Apache in Arizona live on the White Mountain and San Carlos reservations; the Chiricahua Apache have intermarried and relocated, dispersing the once-vigorous tribe.

Suggestions for further reading: The reader may consult the following sources on which this vignette is based: Basso (1983, 1996); Whittlesey and Benaron (1998); Buskirk (1986); Ferg (1987); Goodwin (1969); Opler (1983); Perry (1991); Roberts (1994); Schellie (1968); Sheridan (1995); Welch (1994, 1996); Whittlesey et al. (1994). Books dealing with the Crook campaign, some of which are personal reminiscences and must be evaluated as such, include Bourke (1971); Faulk (1969); Schmitt (1960); Sonnichsen (1986); and Thrapp (1964, 1967). A fictionalized but factual account of the Camp Grant Massacre is Enju: The Life and Struggle of an Apache Chief from the Little Running Water, *by Sinclair Browning (1982).*

The Yaqui

A discussion of the Yaqui must begin with their Sonoran origins before distinguishing between the Pascua Yaqui of Arizona and the Sonoran Yaqui of Mexico. The Yaqui are the native residents of northwestern Mexico. They are Piman-language speakers with dialects of the Cahita group of Uto-Aztecan language. They may be descended from the ancient Toltecs, who once ranged throughout northwestern Mexico and beyond. In the mid-1500s, the Yaqui occupied the banks of the Yaqui River in the southern part of Sonora (*Edition* 1999c; Moisés et al. 1971; Spicer 1980).

Yaqui territory included the rich valley lands of the Yaqui River in Mexico, broad areas on both sides of the river, and the adjacent Sierra Madre, a mountain source of food and refuge (Figure 8). The Yaqui Valley was vegetated with subtropical, thorn-thicket vegetation and dense canebrakes; the upper reaches of the river valley and lands bordering the lower valley on the north are Sonoran Desert vegetation. The dominant mesquite was interspersed with many species of cacti, cottonwoods, palo verde, *jito*, and other trees and shrubs. The main rainy season occurred in late June to September with another, less-intense season in December and January. The area was virtually frost free, with summer temperatures exceeding 100°F (Moisés et al. 1971).

The Yaqui were horticulturists living in scattered *rancherías* or small settlements in the Yaqui Valley when the Spanish first arrived. They were closely related linguistically, culturally, and physically to the Mayo tribe occupying the river valley to the south. Both spoke dialects of the Cahita language.

Initial contact with Europeans came shortly after 1519, when the Spanish landed in Veracruz. The interactions were brief and of little consequence to the Yaqui until the conquest of Sonora began in earnest in the early seventeenth century, when the Spanish captain Don Diego Martínez de Hurdaide headed three campaigns against the Yaqui. Although the Yaqui were victorious, the Jesuits entered Yaqui lands not long after and introduced the Yaqui to Christianity (Moisés et al. 1971).

The Yaqui had a social and political system that combined bilateral kinship with a strong sense of community and did not have clans or a hierarchical social structure. Family groups lived in scattered clearings along perennial watercourses in a *ranchería*-style pattern. The clearings were surrounded by tall, dense vegetation that promoted a lack of distinction between the social and natural worlds. This physical integration of the two worlds resulted in a lifestyle guided by the perception of being part of a sacred whole (Spicer 1980). Yaqui agriculture was tied to the natural flooding cycle of the river. They hunted various wildlife species with a special emphasis on deer, which had particular religious significance. Wild plants, including the *carrizo* cane and native woods such as mesquite, were used for food and as a construction material (Moisés et al. 1971).

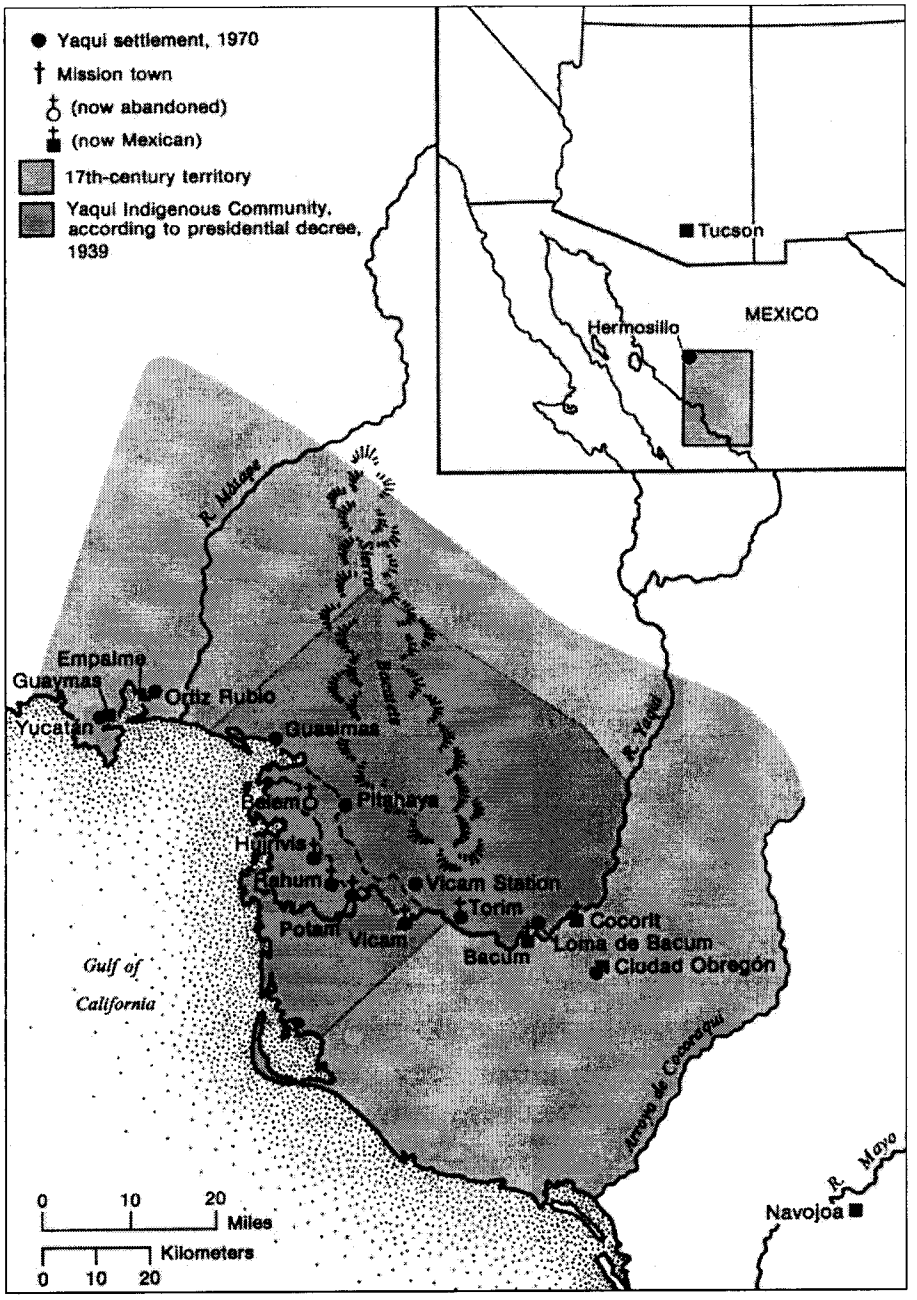


Figure 8. Traditional Yaqui Homelands (after Spicer 1983).

When the Jesuits came to Yaqui country in the seventeenth century, they established eight churches, and in the typical Spanish pattern consolidated the scattered *rancherías* around the missions (Moisés et al. 1971). By not treating the Yaqui as subordinates, the Jesuits achieved a rapid conversion to Christianity. Although many Yaqui relocated to the areas surrounding the mission, they insisted on retaining their scattered *ranchería* pattern, refusing to structure the new villages by the Spanish grid pattern (Spicer 1980). Not long after, the Spanish military followed the Jesuits into Yaqui lands (Moisés et al. 1971).

With a new focus on the missions as the center of their communities, the Yaqui developed highly productive and successful agricultural villages as they continued to work and farm for community benefit. Their acceptance of Christianity resulted in a blending of traditional ways with the adoption of Christ, the Virgin Mary, saints, and various ritual activities, particularly Lent and Easter. Although the Yaqui retained many of their former beliefs and much of their lifestyle, the blending of religions brought the beginning of separation between the social and natural worlds that had originally characterized Yaqui ideology (Spicer 1980).

The Yaqui were incorporated into the economy of the Spanish colonial world when they became engaged in production for the markets through their agricultural work at the missions. The Yaqui were soon recognized as hard workers and skilled miners (Moisés et al. 1971) and became engaged in wage labor for mining and ranching interests that took them away from their home bases (Spicer 1980).

The Yaqui's intimate knowledge of the Sonoran mountains and their ability to live off the land as well as become part of a peaceful work force provided them with certain military advantages over the Mexicans for several hundred years. Following the departure of the Jesuits in 1767, however, increasing pressures from encroaching Mexican settlement served to strengthen Yaqui religious beliefs, upon which they relied more and more as they resolved to protect their land and identity. In spite of this resistance, Yaqui land and water was eventually usurped (Moisés et al. 1971).

The Franciscans who soon replaced the Jesuits were not as successful with the Yaqui as their predecessors, and relations between Yaqui and non-Yaqui became strained. Relations worsened following the wars of Mexican independence in 1825 when the Mexican government tried to collect taxes from the Yaqui. Joining with the Mayo, Pima, and Opata, the Yaqui ran the Mexicans out of the region. The show of force, as in earlier events, was not sustained beyond that particular confrontation, and Mexican forces gradually returned (Moisés et al. 1971). In 1853, a period of intermittent warfare began that would continue into the twentieth century (*Edition* 1999c).

As control over the land and resources continued, factionalism developed among the Yaqui; some fought against the Mexicans while others fought with them. The division fell between those who accepted Mexican authority over the Yaqui and those who did not. By the late

1800s, following a variety of hostilities and smallpox epidemics, approximately 4,000 Yaqui lived under Mexican control in the eight Yaqui mission villages, although many more lived outside the Yaqui Valley. The skirmishes continued, but peace treaties and settlement programs gradually brought more and more Yaqui under Mexican control (Moisés et al. 1971).

Massacres of the Yaqui by the Mexican military at the turn of the nineteenth century led to deportation of many survivors. Others sought refuge in Arizona. Political turmoil continued into the 1920s when another wave of Yaqui refuges fled to Arizona. Since 1927, the Yaqui have continued their struggle to hold on to their lands, generally unsuccessfully, although a "reservation" was established that included the land north of the Yaqui River and the Bacatete Mountains (Moisés et al. 1971). The Yaqui who sought refuge in the United States brought with them a strong sense of community and retain many traces of their traditional culture as well as their folk Catholicism (Griffith 1992; Spicer 1980). Known today as the Pascua Yaqui, they maintain ties to and communications with the Sonoran Yaqui (Moisés et al. 1971).

Although the Pascua Yaqui retain many traditional cultural features, they have undergone much social change in Arizona. Here they are not the dominant population and culture as are the Sonoran Yaqui, nor do they retain the cohesiveness of their Sonoran relations. They have an unstructured village authority, weak social control, and an economy based on wage work and welfare. Their ceremonial lives are more individually based and are not coordinated with work as they are in Sonora. In spite of these changes, the *comadrazgos* (godparents) and the *cofradia* (brotherhoods) of *kotumbre* and *matachinis* are still important in Pascua life (Spicer 1940).

As a group, the Yaqui are deeply religious. Modern Yaqui religion is a fusion of aboriginal beliefs with Spanish and Mexican Catholic systems. The annual religious cycle functions through ceremonial societies, of which five are men's and two are women's. Although ceremonial cycles, feast days, and local patron saints differ from village to village, Easter is the major religious holiday for the Yaqui (Moisés et al. 1971). The cultural rituals and ceremonial events surrounding this religious season are complex.

For the Arizona Yaqui, ethnic status takes precedence over nationality, entitling them to build a house, to farm, or to graze cattle on Yaqui territory, and to use the wild natural resources found in Yaqui territory, whether in Arizona or Sonora. They also are able participate in the farming and fishing *sociedades* and cattle cooperatives. Ethnic status is but one of four characteristics of Yaqui polity and ethnicity that support persistence of the ethnic Yaqui (McGuire 1986): (1) the Yaqui are a corporate ethnic group rather than an ethnic population; (2) recognition of being Yaqui is ascribed through genealogy rather than achieved; (3) ethnic identity is understated; (4) the three dimensions of status—wealth, power, and prestige—are not connected.

Today, the Pascua Yaqui number more than 9,000 people. Many of them live in Pascua Village, which was annexed into the City of Tucson in 1952. Other Pascua Yaqui reside on the recently established New Pascua reservation approximately 15 miles southwest of Tucson (Figure 9). Following a long and difficult battle, they gained federal recognition from the U.S. government in 1982 and ratified their first constitution in 1988 (*Edition* 1999c).

Suggestions for further reading: Please see Spicer (1980).

Those Who Came Later: Non-indigenous Peoples of the Historical Period

The historical period in Arizona has been dominated by two groups of people of primarily European origin—speakers of Spanish and speakers of English. Neither group has ever had an exclusive presence in the region—for that matter, neither group has ever been as homogeneous as those two labels might imply—but it was the successive arrival and spread of Spanish speakers, followed by English speakers, into Arizona that prompted the most sweeping cultural and physical changes in the region in the last 500 years. Moreover, writing the history of Arizona has fallen largely to the English speakers, or more specifically, the white, male, well-educated, and generally privileged class of English speakers who have held most positions of power and influence in southern Arizona since the writing of its history became a serious pursuit a century or so ago.

For this reason, the history of Arizona was long equated with the history of the Anglo-American presence in the region, more specifically, the history of middle- and upper-class English-speaking white males that dominated public political and economic life. All of this has changed dramatically in the last few decades, as every sort of cultural, racial, ethnic, and socioeconomic subgroup in Arizona, as much as anywhere in the world, has become a legitimate subject of historical study. Perhaps the best evidence for a change in perspective among historians of Arizona is the range of subject matter in Thomas Sheridan's *Arizona: A History* (1995), which includes the usual narrative of events dominated by white, privileged Anglo-American males, but also considers the role of Native Americans, Mexican Americans, African Americans, and other previously neglected groups in the making of our modern state.

Nonetheless, because of the prominence of the dominant Anglo-American society in the events of Arizona history since the 1850s and in the historical retelling of those events, we have chosen in the present discussion to focus on four groups falling outside the Anglo-American mainstream. First we look at the Hispanic people of southern Arizona, who preceded Anglo-Americans in the region by three centuries, and then we look at three groups that came to southern Arizona after it became a part of the United States—Mormons, Chinese, and African Americans. Mainstream Anglo-America enters the discussion of all four groups, but much more information on the Anglo-American presence in southern Arizona will be found in a subsequent section of the cultural resources overview for the Sonoran Desert Conservation Plan (SDCP).

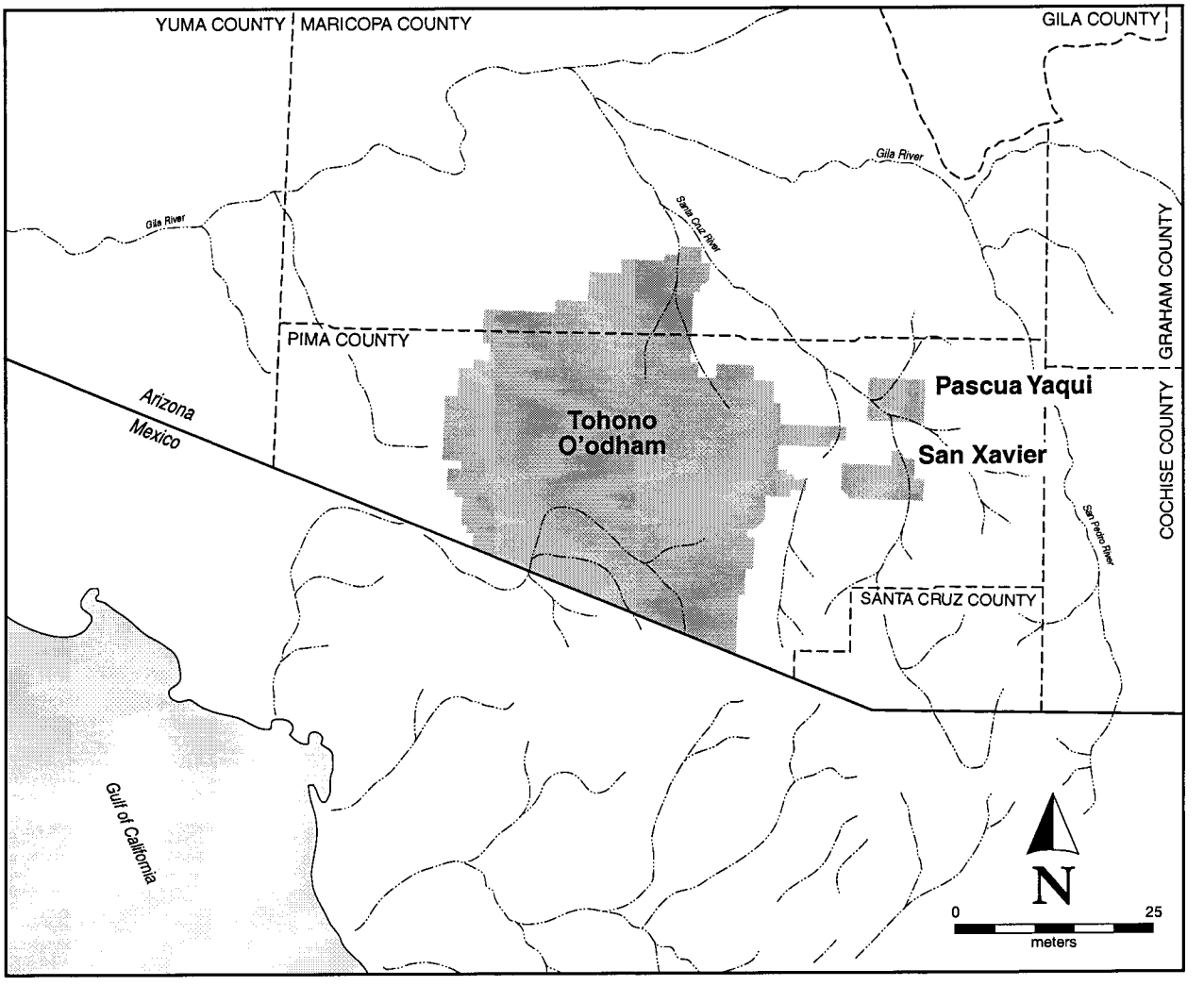


Figure 9. Contemporary Yaqui and O'odham reservations in Arizona.

The Hispanic Presence in Southern Arizona

The first Europeans to explore southern Arizona, to establish settlements there, and to interact, for better or worse, with the native peoples of the region, were Spaniards. For almost three centuries beginning in 1539, southern Arizona was a part of New Spain, the largest of the Spanish colonies, despite the fact that no permanent Spanish settlement existed there for the first century and a half. Until Mexico won independence from Spain in 1821, the only significant European presence in southern Arizona was a Hispanic one, and the Hispanic presence ceased to be the dominant, non-native presence in southern Arizona less than a century ago. Even today, although the largest segment of the population in the region is Anglo-American, Hispanic Americans are by far the largest (and fastest growing) minority and exert a major influence on every aspect of the modern milieu.

Time and Ethnicity

The Hispanic presence in southern Arizona is best summarized with reference to three major periods, corresponding to the three political regimes that have prevailed in the region: the Spanish Colonial period (1539–1821), the Mexican period (1821–1854), and the U.S. period (1854–present). The Spanish Colonial period is usefully divided into two shorter periods: a period of intermittent exploration extending to about 1690, and a subsequent period of more intensive exploration, missionization, and settlement.

The Mexican period begins with the Republic of Mexico winning independence from Spain in 1821 and ends with the Gadsden Purchase of 1854, when Mexico sold a large portion of what eventually became southern Arizona, including all of modern Pima County, to the U.S. government. The U.S. period, from 1854 onward, is characterized by the emerging dominance of Anglo-Americans in the region, punctuated by a series of important political transitions, including the establishment of Arizona Territory in 1863, and the granting of statehood in 1912.

By "Hispanic" is meant anyone of Spanish or Spanish-speaking descent, or of predominantly Spanish or Spanish-American culture, although not necessarily a speaker of Spanish. The closeness of Hispanic Arizona's affiliation with Spain has, of course, decreased radically through time, but a significant historical and cultural thread remains, connecting the Spanish-born explorers of the early sixteenth century with the bilingual (or strictly English-speaking) Hispanic natives of modern Tucson. The earliest visitors to southern Arizona in the colonial period were in fact born in Spain, or occasionally in another part of Europe, but by the end of the colonial period the *criollo*, or American-born Spaniard, was the dominant figure in southern Arizona, as elsewhere in Spain's American colonies. Living among the *criollos*, and outnumbering them, were the descendants of the unions between Spaniards and native people, between Spaniards and Africans, between Africans and native people, and between the descendants of any of these unions. The multitude of racial mixtures in Spanish colonial

society led to a similar multitude of racial labels—*castizo, mestizo, mulatto, coyote, lobo*—many of them pejorative, none of them of any real biological precision. When Mexico won its independence from Spain in 1821, all of these people became, first and foremost, and despite enduring sentiments about the importance of race and class, "Mexicans."

Southern Arizona was officially Mexican territory for only three decades, years that were characterized by what Thomas Sheridan (1995:49) has called "a desperate seesaw for survival." The Hispanic population of the region, never much larger than a thousand people, dwindled steadily as the newly formed and unstable Mexican government was obliged to neglect the formerly Spanish military and missionary systems of the frontier. This neglect led to a resurgence of Apache raiding, which nearly ended in the complete abandonment of the region by Mexicans. The neglect also opened the region to inroads by the vanguard of Anglo-American expansion from the north and east by trappers, traders, and eventually U.S. troops. Despite these difficulties, social and economic ties between southern Arizona and the rest of Mexico remained intact, and the cultural identity of the people on the frontier remained solidly Hispanic, if not always proudly Mexican. When Mexico lost most of its northern provinces to the United States in 1848, then sold away a further slice in 1854, most of the Hispanic people living in southern Arizona chose to stay in what was now U.S. territory rather than give up hard-won lands and ways of life. The old connections with the rest of Mexico remained intact for most people, and an essentially Hispanic culture not only survived the transition but came to flourish in southern Arizona, just as it did, in different ways, in the formerly Mexican territories of California, New Mexico, and Texas.

When southern Arizona became a part of the United States, the Mexican population in the region continued to pursue the same, basically agrarian way of life that had been practiced by Hispanic people throughout northern Mexico for some 200 years, a way of life now made somewhat less tenuous by the presence of a stable, national government. Tucson, previously an isolated outpost on the Mexican frontier, quickly became the economic, social, and cultural center of southern Arizona for the resident Mexican-American community as well as for the growing number of Anglo-American arrivals. To the benefit of the Mexican-American community, Tucson did not experience the immediate, overwhelming influx of Anglo-American immigration suffered by Mexican-American communities elsewhere in the Southwest. This circumstance, combined with proximity to the international border and a fairly steady flow northward of Mexican immigrants, enabled Tucson's Mexican Americans to maintain strong social and cultural ties with Mexico. The latter half of the nineteenth century saw the emergence in Tucson of "an oasis of middle-class Mexican society" (Sheridan 1986:2), including merchants and entrepreneurs, artists and intellectuals, and politicians of statewide and even national influence. Even in the late 1800s, as Anglo-Americans increasingly excluded Mexican Americans from everyday life, Mexican Americans retained prominent roles in Tucson's economic and political life, and the Mexican-American community continued into the twentieth century as a vital, culturally distinctive entity.

Despite the vitality of Mexican-American culture in southern Arizona, and at least partly because of it, the lives of Mexican Americans in the region have often been made difficult by the bigotry of Anglo-Americans. Bigotry became an inescapable fact of life for Mexican Americans the moment Arizona became a part of the United States, and it still has a palpable presence today. An understanding of the Mexican-American experience in southern Arizona includes recognition of the secondary status imposed on Mexican Americans long before they became a minority in the region. Unlike some ethnic groups in the Southwest (African Americans, most notably), Mexican Americans were never legally excluded from the benefits of membership in society, but a persistent belief among Anglo-Americans that Mexicans were indolent, violent, untrustworthy, or otherwise socially inferior led to what Thomas Sheridan has called "institutionalized subordination" (1986:272, Note 2), the often subtle process by which Mexican Americans were routinely denied equal access to jobs, education, services, and common human decency.

As Sheridan has documented so eloquently, the Mexican-American community in Tucson responded to discrimination by creating its own jobs, building its own schools, providing many of its own services, and supporting its own artists and intellectuals, all the while contributing its labor and talents to the dominant Anglo-American society. Despite such efforts, the Mexican-American community on its own could never match the general level of affluence available to Anglo-Americans. Tucson may have had a significant Mexican-American elite, and individual Mexican Americans might succeed economically, intellectually, or otherwise, but the majority of Mexican Americans in southern Arizona have been working-class men and women with little hope for advancement in a society that so often viewed them in ungenerous terms.

Places and Lifeways

Although Fray Marcos de Niza, Francisco Vásquez de Coronado, and perhaps other Spanish explorers passed through southern Arizona in the sixteenth and early seventeenth centuries, no physical trace of their presence here has ever been found. Their impact on the local landscape was momentary and did not include settlements, farms, public works, or anything else likely to survive today. The next wave of Spaniards to enter the region—Jesuit missionaries and their military escorts in the late seventeenth century—were the first Europeans to leave such remains, and to establish a way of life in the region that lasted, in different versions, until the Gadsden Purchase. Further discussion of the early Spanish *entradas* and on the expansion of the Jesuit mission system into southern Arizona is provided in another section of the cultural resources overview of the SDCP. The discussion here is limited to the places where the Hispanic presence in the region was centered, the role those places played in Hispanic life, and the way of life practiced in those places prior to the incorporation of southern Arizona into the United States. The section ends with a discussion of Hispanic places and lifeways in the region after the Gadsden Purchase.

The first Spanish attempt at settlement of what is now southern Arizona came in 1701 when the Jesuit father Eusebio Francisco Kino assigned a priest to the Pima village of Bac along the west bank of the Santa Cruz River, a few miles south of modern Tucson. The same year, Kino assigned a second priest to the O'odham village of Guevavi farther up the Santa Cruz, about 10 miles north of the present-day international border (Officer 1987:28). Bac, christened San Xavier del Bac by Kino, was one of the largest of several O'odham villages situated along the middle Santa Cruz River. Most of these villages were visited repeatedly by Kino in a series of exploratory journeys of the Pimería Alta at the end of the seventeenth century, beginning with his first journey in 1691. Unfortunately for Kino and the Spanish colonial enterprise, the priests at Bac and Guevavi soon abandoned their missions, leaving nothing of physical consequence behind (although the priest at Guevavi had built a small church, according to Kessell [1970:30]). No attempt was made to revive their efforts until 20 years after Kino's death in 1711. Somewhat ironically, considering his well-deserved status as the man who opened Arizona to Spanish missionizing, Kino never saw a permanent mission established there.

In the absence of missions, Native Americans living along the Santa Cruz River were still visited occasionally by Jesuits and encouraged to move southward to be served by established missions in what is now northern Sonora. In 1732, priests were once again assigned to the Santa Cruz villages of Bac and Guevavi, and also to Santa María Soamca on the river's headwaters, just south of the present-day international border. Each of these three missions served as a *misión cabecera*, or head mission, to a series of *visitas*, smaller villages where churches might be built but no priest was resident (Dobyns 1976:6–7; Kessell 1970:45–48; Officer 1987:30–31). Among the *visitas* under San Xavier del Bac was a small village on the west bank of the Santa Cruz River, at the foot of Sentinel Peak ("A" Mountain). This was San Cosme de Tucsón, the antecedent of modern Tucson, which Kino first noted by that name in 1698 or 1699 (Dobyns 1976:4; Barnes 1984:213). Among the *visitas* of Guevavi were Calabazas and Tumacácori, both nearby along the Santa Cruz River; Sonoita, located about a dozen miles northeast of Guevavi, along Sonoita Creek; and Arivaca, about 20 miles to the west. The three priests were installed in their respective missions and guaranteed protection by Captain Juan Bautista de Anza (the elder), commanding officer of the presidio at Fronteras in northern Sonora (Kessell 1970:48–50; Officer 1987:31).

In addition to the task of converting the local Piman-speaking people to Catholicism, the Jesuits in the Santa Cruz River valley, like their brethren elsewhere in Pimería Alta, were charged with transforming the O'odham way of life into a Hispanic one, based in permanent, year-round villages and raising Spanish crops and livestock. Their efforts met with only limited success. From the perspective of ordinary Spanish people on the northern frontier, however—people interested in new places to practice farming, ranching, and mining—the presence of the missions and the military protection afforded them suddenly made settlement of the region somewhat more feasible. Settlers in search of irrigable fields, grazing lands, and

minerals began to drift into the region, often establishing operations near the missions. This pattern of settlement received a boost when silver was discovered in 1736 at a place called Arizonac, a few miles southwest of modern Nogales. By the end of the 1730s, a fair number of Spanish families had settled in the immediate vicinity of Guevavi and Tubac, and there were likely other Spanish families farther north along the Santa Cruz (Kessell 1970:51–52; Officer 1987:32).

The discovery at Arizonac quickly panned out—the place name, slightly modified and now referring to an American state, has survived—but the modest influx in Spanish population prompted by the discovery created an increased demand for Spanish military protection of the region. It was clear even prior to the Arizonac discovery that the most persistent and vexing problem faced by the Jesuit missions, by the Pima people settled at the missions, and by the few Spaniards bold enough to settle along the far northern frontier, was unrelenting harassment by the Apache, who roamed unrestricted over a vast area to the north and east of Pimería Alta. Each new Spanish arrival in the Santa Cruz Valley and its vicinity represented another tempting target for Apache raids. The Spanish military responded in 1741 by establishing a presidio at San Mateo de Terrenate on the headwaters of the San Pedro River, at what was presumed to be the front lines of the Apache problem, but still some 50 miles southeast of Guevavi (Kessell 1970:76–78; Officer 1987:33). The new presidio did extend the Spanish military presence to the north and west of the presidio at Fronteras, but the Santa Cruz River missions remained isolated and poorly protected from Apache predations. Nonetheless, the number of Spanish settlers in the vicinity of the missions gradually increased.

As Spanish settlers trickled into the Santa Cruz Valley, the local O'odham population was increasingly obliged to share, or relinquish entirely, the limited arable lands available along the river. By the middle of the eighteenth century, following a variety of abuses by both settlers and Jesuits, the Pima had had enough. In 1751, under the direction of an O'odham leader who had earlier assisted the Spanish military in pacifying the Seri, they revolted, killing more than a hundred settlers and badly damaging the mission buildings at Guevavi, San Xavier del Bac, and most of the outlying *visitas*. The Spanish settlers in the valley retreated as a group to the presidio at Terrenate, abandoning their fields, herds, and belongings to the enraged O'odham. The uprising, now known as the Pima Revolt, was quelled within four months of the initial violence, but sporadic attacks by groups of disaffected O'odham continued to occur for several years afterward.

In 1752, as a direct response to the uprising, the Spanish military established a presidio at Tubac, about halfway between Guevavi and Bac, in an effort to better protect the Santa Cruz River missions. San Ignacio del Tubac thus became the first permanent, officially sanctioned Spanish settlement in what is now Arizona. By 1760, the first year for Juan Bautista de Anza (the younger) as *comandante* of Tubac, the problems with the O'odham had largely subsided, due in part to Anza's charismatic presence but also in great part to a

steady decline in the O'odham population through disease, relocation to avoid the missions, and flight from Apache depredations (Dobyns 1976:10–17; Kessell 1970: 102–109, 154–156; Officer 1987:35–39).

The Apache threat grew steadily from 1760 onward, abetted early on by the Spanish military in two unintentional ways. In 1762, as an effort to repopulate the dwindling Santa Cruz missions, the colonial government ordered the military to forcibly relocate the entire Sobaípuri population of the San Pedro River valley to O'odham settlements along the Santa Cruz River. This action removed the last buffer between the Santa Cruz missions and the Apache to the east, whose nearest targets for raids were simply moved one more valley to the west. Also in the 1760s, the attentions of the military force garrisoned at Tubac were diverted from the Santa Cruz missions by several extended expeditions to the south to help fight the resurgent Seri. With a weakened military force at Tubac, raids by Apaches in the Santa Cruz Valley escalated in frequency and ferocity (Dobyns 1976:19–23; Kessell 1970:161–162; Officer 1987:44–45).

The Jesuit tenure in southern Arizona came to an abrupt end in 1767, when the Jesuit order in its entirety was expelled from all Spanish territories by royal decree. Control of the northern missions transferred to the Franciscans, who soon sent friars to the Pimería Alta, that "unsolicited inheritance from the Jesuits" (Kessell 1976:3). The Franciscan order, founded in 1226, was much older than the Society of Jesus (founded in 1534) and also preceded the Jesuits in the New World by 67 years. The Franciscans were the first and most active order in the missionization of central Mexico, beginning their work in 1524, just three years after the fall of the Aztec capital of Tenochtitlan. The Franciscan friars assigned to the existing missions of Pimería Alta would build on the work of conversion and resettlement begun by the Jesuits, but they also brought two and a half centuries of prior missionizing experience elsewhere in Mexico with them. They would leave their own distinctive mark on the people and places of the northern frontier, a mark they eventually left on the many Franciscan missions of Alta California (McCarty 1996).

The expulsion of the Jesuits brought chaos to the already unstable missions along the Santa Cruz River. In the interim year preceding the arrival of the Franciscans, the chaos deepened as the mission O'odham, recently decimated by disease, abandoned many of the river homes and fields they had maintained under the Jesuits. When the Franciscans arrived, only a few dozen O'odham were still in residence at the *misiones cabeceras* of Guevavi and Bac, and the *visitas* were in comparable decline. Almost all of the Hispanic people in the region, a total of around 500 people, were settled at the Tubac presidio, largely as a defense against continuing Apache raids. Shortly after the first Franciscan friar settled at San Xavier, the mission suffered a devastating Apache attack, the first of countless Apache raids witnessed by the Franciscans during the 70-odd years of their presence in southern Arizona (Kessell 1976:11–25; Officer 1987:45–48).

Apache aggression made all lives difficult in the later eighteenth century and was the chief influence on the pattern of native as well as Hispanic settlement in the Santa Cruz Valley. In 1768, the *misión cabecera* at Soamca was completely destroyed in an Apache attack, never to be reoccupied. In 1770, the Sobaípuri that had resettled at Tucson were threatening to abandon the area for the Gila River because of Apache attacks. Fearing that the departure of the friendly Sobaípuri would mean a badly weakened Spanish presence on the lower Santa Cruz River, Anza persuaded them to stay by promising them help in building fortifications and a church. A large earthen breastwork and a church, presumably of adobe and soon dedicated to San Agustín, were completed by 1771, marking the first Spanish attempts at architecture in Tucson (Kessell 1976:56; Officer 1987:48; McCarty 1976:16–18).

Around the same time, farther up the Santa Cruz River, the Franciscans installed at Guevavi decided that life at the original *misión cabecera* had become too dangerous. Prompted by devastating Apache attacks on the *visitas* of Calabazas and Sonoita, the Franciscans transferred the *cabecera* downstream to Tumacácori, considerably closer to the presidio at Tubac (Kessell 1976:57). The Franciscans at Tumacácori and San Xavier, the two remaining *cabeceras* on the Santa Cruz, spent the next few years suffering further Apache raids, watching their already badly thinned O'odham population continue to dwindle from disease and desertion, and making largely unsuccessful attempts to coax the desert O'odham (Tohono O'odham, then called Papago) into converting and settling along the river (Kessell 1976:78–80; Officer 1987:48–50).

In 1775, the military organization of the entire northern frontier of New Spain underwent a transformation at the hands of Hugo O'Conor, an Irish expatriate and officer in the Spanish army, who had been assigned the task of modernizing and improving the presidial system of frontier defense, from the Gulf coast of Texas to the Pimería Alta (Moorhead 1975:47–74). For the presidio at Tubac, this meant transfer downstream to a site just across the river from the O'odham village at Tucson, a site marked out by O'Conor on August 20, 1775. The new presidio was christened San Agustín del Tucsón, a name it shared with the village across the river. By 1776, the garrison formerly stationed at Tubac was in residence at Tucson, and in 1777 the first fortification of the new site was erected, a wooden palisade with surrounding ditch. The palisade was eventually replaced by a massive wall of adobe, standing 10 or 12 feet high, measuring three feet wide at the base, and enclosing 300 square yards. The layout of the fortification followed (at least loosely) the specifications of a royal order for presidio construction (Dobyns 1976:56–61; Officer 1987:50–51; Williams 1988). Also in 1775, just a few days after O'Conor chose the site for the Tucson presidio, he chose a new site for the presidio at San Mateo de Terrenate, a location farther down the San Pedro River, not far from modern Tombstone. This second new presidio, named Santa Cruz de Terrenate, suffered unrelenting Apache attacks and crippling problems with supplies for a little more than four years before being abandoned in favor of its previous location in early 1780 (Whittlesey et al. 1994; Williams 1986).

From the establishment of the presidio to the early 1790s, the Spanish garrison at Tucson devoted almost all of its time and energy to fighting the Apache. The other Tucson, the O'odham village across the river, quickly became linked socially and economically with the presidio settlement and, of course, relied on it for its own defense from Apache attacks. A change in policy following the presidial reforms led the Spanish army to attempt pacification of the Apache through a combination of continuous military harassment and enticements to settle and live peacefully in the vicinity of the presidios. By 1793, the strategy had paid off, and pacified bands of Apaches began to settle just downstream from the presidio, ostensibly to take up the settled Hispanic way of life. But the Apache never became the agriculturists that the O'odham villagers across the river were, and their primary associations were always with the presidio. They depended heavily on the rations of grain, beef, and tobacco supplied to them by the garrison, provisions well spent in the garrison's view. The Spanish army continued its policy of alternating harassment and enticement of hostile Apache until the end of the colonial era (Dobyns 1976:82–105).

The period of relative peace that followed Apache pacification saw a continued decline in the O'odham population, the intermittent settling of Tohono O'odham in Akimel O'odham villages, and a modest but steady influx of *gente de razón* ("people of reason," Hispanic people of any racial admixture) into the region. By the start of the nineteenth century, the O'odham who had been the original impetus for Spanish missionizing in the Santa Cruz Valley had become scarce, largely supplanted by Tohono O'odham. The mission settlements at Tumacácori and San Xavier del Bac remained predominantly Native American, but Hispanic people were now a conspicuous presence at Tumacácori, the Tucson presidio, and Tubac, which in 1787 had once again become a presidio. The total Hispanic population was nonetheless very low: an official census taken of the Tucson presidio and the surrounding area (including San Xavier) in 1804 counted 1,015 *gente de razón*. At Tubac that year, the same census listed 88 soldiers and their families, plus 8 civilian households. At Tumacácori, 88 *gente de razón* were listed (Dobyns 1976:133–141; Kessell 1976:245–246; Officer 1987:77–82). With the gradual increase in the Hispanic population and the relative security afforded by Apache pacification, the occasional Spanish family attempted farming, ranching, or mining in outlying areas such as Arivaca and the San Pedro Valley, but most Spaniards continued to congregate in or near the three Santa Cruz Valley settlements (Officer 1987:82–83; Sheridan 1995:37–38).

Late in the colonial period, despite the decline of the O'odham population and a consequently tenuous labor force, the Franciscan missions at Tumacácori and San Xavier del Bac managed to replace their modest old churches with new ones. Recent Tohono O'odham converts contributed much of the labor. The church at San Xavier, which still stands, was begun around 1781 and finished by 1797 (the unfinished east bell tower visible on the church today was part of an uncompleted later addition to the church in the 1820s). At Tumacácori, a new church was begun in 1802, but because of financial difficulties and a shortage of labor it was not completed until 1828, and only then in a much reduced version of the

original plan. The remains of the church are now the primary attraction at Tumacacori National Monument (Schuetz-Miller and Fontana 1996:86–88, 90–94). Apart from these two architectural accomplishments—of which San Xavier del Bac was by far the most striking—the centers of the Hispanic presence in southern Arizona at the end of the colonial era were visually unimpressive. Tucson and Tubac were little more than "flat-roofed adobe buildings clustered beside a ragged patchwork of fields" (Sheridan 1995:38). But whatever its appearance, a Hispanic way of life was now well established on the northern frontier, albeit a way of life adapted to the harsh conditions of the Santa Cruz Valley—isolation, Apache predation, and limited water.

The end of the Spanish Colonial period came in 1821, when Mexico won its independence from Spain. The impact of independence on the far northern frontier was not immediate—the presidios accepted the transfer of power to the new government largely without issue—but it was ultimately decisive in the Hispanic struggle to retain control of the region. Because of the inability of the new government to continue providing support, financial or otherwise, to the northern frontier, independence from Spain brought with it the collapse of "just about every institution that had held the Spanish frontier together" (Sheridan 1995:45). The presidio at Tucson, soon weakened by lack of supplies, arms, and reinforcements, saw its most important weapon for Apache pacification—rations for the Apache living in peace nearby—withdrawn for lack of funds. Apache raiding throughout southern Arizona once again became a major threat and continued unabated throughout the Mexican era.

The missions, although escaping the secularization mandated for the rest of Mexico shortly after independence, were dealt a serious blow when all Spaniards were officially expelled from Mexico in 1828. The Spanish-born Franciscans at San Xavier and Tumacácori were ordered to leave, and no priest was ever again in residence at either mission during the Mexican era. Officially, the missions remained intact and were generally viewed as useful to the government's purpose of securing the frontier, but through a combination of official neglect and local coveting of mission property, the influence of the missions in the Santa Cruz Valley steadily declined. With the decline of the missions and a rise in the pressures put on mission lands by Hispanics, the Tohono O'odham who had come to depend on those lands suddenly became a problem in themselves, although never to the degree that the Apache were (Kessell 1976:Chapter 11; Officer 1987:100–104, 130–133; Sheridan 1995:44–47; Weber 1982:50–53).

During the turbulent decades of the Mexican era, the Hispanic population of southern Arizona actually declined somewhat. Despite the decline, the period saw a great increase in the number of land grants petitioned for and granted to Hispanic settlers in the region (the earliest large land grants were actually petitioned for under the Spanish government and eventually granted under Mexican law). Major land grants along the Santa Cruz and adjacent areas included San Ignacio de la Canoa (along the Santa Cruz River north of Tubac), San Rafael de la Zanja (along the headwaters of the Santa Cruz River), Tumacácori and Calabazas

(former lands of the Tumacácori mission), San Ignacio del Babocómari (in the San Pedro Valley) and San José de Sonoita (along Sonoita Creek). In some cases, these grants included lands "abandoned" by the missions (the official status of such lands was often not clear) and still farmed by Tohono O'odham associated with the missions. The granting of the land to a Hispanic rancher meant an end to its use by mission dependents, which was the major source of unrest among the Tohono O'odham. Although the land grants consisted of many thousands of acres and were in fact used to varying degrees for ranching by their owners, the constant threat of Apache raids kept any of them from thriving for long. Sheridan (1995:49) calls them "little more than adobe islands in a desert sea—isolated, vulnerable, easily destroyed." By the end of the Mexican era, most were either abandoned or barely hanging on. The most substantial impact of these large tracts of land came after they were bought by Anglo-American interests later in the century (Officer 1987:106–110; Sheridan 1995:127–129; Wagoner 1975:Chapter 7).

The settlements along the Santa Cruz River and its vicinity saw little direct evidence of the war waged between the United States and Mexico from 1846 to 1848. The sole visit to the Santa Cruz Valley by U.S. troops was a brief stop by the Mormon Battalion in December, 1846, which was en route to the Pacific coast. The battalion entered Tucson unopposed by the presidio troops, which had withdrawn to San Xavier to avoid a battle. The loss of a huge portion of Mexican territory with the Treaty of Guadalupe in 1848 also had no immediate impact on the people living along the Santa Cruz, whose status as the northernmost outpost of Sonora remained unchanged, and whose hard lives fighting the Apache and farming the desert went on as usual. The only substantial change in the last years of the Mexican era was the increasing number of Anglo-Americans passing through the area, most notably the sudden wave of Anglos headed to California during the 1849 gold rush. Even after the Gadsden Purchase was ratified in 1854, making all of what is now Arizona south of the Gila River a part of the United States, it was two years before the presidio at Tucson was abandoned by its Mexican garrison (Officer 1987:Chapter 14; Sheridan 1995:49–57; Wagoner 1975:Chapters 9 and 10).

Following the incorporation of southern Arizona into the United States, the Hispanic presence in the region became increasingly centered in Tucson, at the same time that the city was becoming the hub of Anglo-American settlement and enterprise. The most significant dimension of the Hispanic presence after the Gadsden Purchase was its essential continuity with pre-Gadsden days. Most of the families who had established themselves along the Santa Cruz River and outlying areas chose to remain there, and even many of the presidio troops, after first abandoning Tucson and Tubac for Mexican Sonora, came back to lead civilian lives in U.S. territory. For the erstwhile Mexicans, Tucson remained an extension of Sonoran culture and society. The Anglo-American population grew slowly but steadily in the first few decades after Gadsden, knitting itself, to a degree, into the existing Mexican social structure (intermarriage among Mexicans and Anglos was fairly common) and sharing the dangers of life in a region still under continuing Apache threat. But the Anglos quickly

dominated the regional economy, despite their minority status, owing in great part to the capital that they brought with them to an area that prior to their arrival was decidedly poor. Although the culture of the city remained predominantly Mexican, as did its population, Anglo-American traditions grew steadily stronger as Anglo-American money entered the region. In 1880, the year the railroad arrived, Anglo-Americans truly began to dominate life in Tucson, politically, economically, and culturally. Nonetheless, Mexican Americans remained in the majority in Tucson until shortly after the turn of the century. They remain a viable and distinctive presence today, despite a century and a half of imposed secondary status.

Suggestions for further reading: Although the principal sources for this summary of the Hispanic presence in southern Arizona are cited many times in the text, it is worth noting them individually here. Dobyns (1976) and Officer (1987) are the essential sources on the Spanish Colonial period, with Officer extending his coverage through the Mexican period. Kessell (1970) focuses particularly on the Jesuit mission at Guevavi but is also the fundamental source on the Jesuit portion of the Spanish Colonial period in southern Arizona as a whole. Kessell (1976) is the most detailed treatment of the period from the arrival of the Franciscans to the Gadsden Purchase. Weber (1982) considers the Mexican period as it played out across the vast area that would become the southwestern United States after 1848. Wagoner (1975) gives a useful synthesis of both the Spanish Colonial and Mexican periods. Sheridan (1986) is a unique and detailed study of the Mexican community in Tucson, beginning with the Gadsden Purchase and ending late in the twentieth century. For insightful summaries of all periods, see especially Sheridan (1995).

The Mormons

Mormons were among the first Anglo-Americans to settle in Arizona. They first entered the region that would become the modern state in the 1840s, explored scattered parts of it in the 1850s and 1860s, and made their first systematic attempt to establish permanent settlements there in the 1870s. Despite physical hardship, persistent religious persecution by non-Mormon Christians, and the failure of their earliest settlements, Mormons had a significant and rapidly growing presence in Arizona by the 1880s. Today, Mormons continue to be concentrated in the areas first settled in the nineteenth century by their predecessors, but they have long since become a part of mainstream American society and now form a significant part of the population in just about every part of the state (Brown et al. 1994:128–129).

"Mormons" is the name commonly applied to members of the Church of Jesus Christ of Latter-day Saints, a Protestant faith originating in the northeastern United States in the early 1800s. The common name alludes to the Book of Mormon, the sacred text delivered to the Latter-day Saints by their founder and prophet, Joseph Smith. A fundamental belief of the Saints, and the source of their optimistic name for themselves, is that they have been

chosen to prepare the world for the Second Coming of Christ. Two events that will precede the Second Coming, and accepted by the Saints as their special responsibility, are the restoration of the gospel of Christ and the "building up of Zion," the establishment of the ideal society and nation over which Christ will rule on his return (Church Educational System 1993:1). Since Joseph Smith's time, restoring the gospel has meant spreading the message of the prophet through missions, and building up Zion has meant living exemplary lives in towns and communities founded and organized according to the principles laid down by Mormon leaders.

Joseph Smith and his followers first attempted to establish communities dedicated to their faith in the Midwest, but the Mormon penchants for political autonomy and economic separatism, as well as certain faith-based practices such as polygamy, were met with mistrust and hostility by non-Mormons. The Mormons suffered repeatedly from persecution and eventually left the Midwest following the murder of Smith by a mob in Nauvoo, Illinois, in 1844 (Hansen 1998). In 1847, Brigham Young, successor to Smith as leader of the Mormons and the group's first president, settled the main body of the faithful at Great Salt Lake in what is now Utah. There the Mormons quickly flourished, spreading out from Great Salt Lake in orderly settlements, building irrigation systems and roads, and successfully farming land that most non-Mormon settlers would have passed over as useless. Building on Smith's ambitions, Brigham Young hoped to establish a Mormon kingdom in Utah that would serve as the center of the new Zion. Shortly after arrival to Great Salt Lake, Young and the Mormon leadership proposed creation of the state of Deseret (after the word for "honeybee" in the Book of Mormon), a vast area that included Utah and portions of eight other western States, including all of Arizona north of the Gila River. Deseret never became a state, but a pared-down version of it became Utah Territory in 1850, with Brigham Young as governor (Brown et al. 1994:90–91).

Early Settlements in Arizona

The Latter-day Saints in Utah would soon extend their colonization efforts into what is now Arizona, but the first Mormons to enter Arizona actually came a year before Brigham Young made it to Great Salt Lake. These Mormons came not as settlers but as a U.S. military expedition, charged with blazing a wagon trail from the Great Plains to the Pacific coast. The Mormon Battalion was a volunteer company of 500 Latter-day Saints assembled in the Midwest by church leaders in an effort to demonstrate the patriotism of the church and so defuse growing anti-Mormon sentiments in the region. The U.S. Army, responding to its recently declared war with Mexico, welcomed what would prove to be a dedicated and well-disciplined company. The trail to be blazed by the volunteers, from Fort Leavenworth, Kansas, to the Pacific Ocean, would connect the war effort with the biggest prize in the conflict, California. After a difficult trek, the battalion reached Tucson in December, 1846. Thanks to the judiciousness of both the battalion commander, Philip St. George Cooke, and the *comandante* of the Tucson presidio, Antonio Comadurán, the entry of the Mormons into

Tucson was peaceful and without incident, the Mexican troops having withdrawn to safety at San Xavier del Bac. The battalion continued west after a single night in Tucson (McClintock 1985:7–15; Officer 1987:194–203; Sheridan 1995:51–52).

Mormons made another brief appearance in southern Arizona during the period just prior to the Gadsden Purchase. In the fall of 1851, five years after the Mormon Battalion passed through Tucson, a party of Mormon settlers headed to California stopped in the Santa Cruz Valley. The settlers were offered land concessions at Tubac by the local *comandante* of the Mexican army, which had recently reoccupied the presidio site. Establishing themselves on irrigated lands near the presidio, the settlers plowed their fields and sowed their crops, assuming the river would supply water through the winter. That winter it did not, and the following spring the frustrated settlers moved on to California. The identity of the people in this small party and their exact place of origin in the east are unknown, but their time at Tubac represented the first Mormon settlement in what is now Arizona (McClintock 1985:56–57; Officer 1987: 255).

For the next three decades, Mormon entries into what is now Arizona came exclusively from the north as planned expansions of the colony in Utah. A steady increase in the population of Utah soon led Mormon leaders to seek out new lands to settle, and as with most things Mormon, the effort was deliberate and organized. In 1873, a scouting expedition was sent by Brigham Young to the Little Colorado River valley in northeastern Arizona with the hope of discovering suitable new lands. The expedition returned with news of a bleak and rugged area with little hope for settlement. A second expedition in 1875 reached a point farther up the same valley and returned with a more favorable report, prompting Young to send four parties of 50 men each and their families to found four settlements. The settlers were to live according to the principles of the United Order, a recently conceived Mormon plan for communal living that required the community to pool its resources and labor for the common good. The social experiment was largely a failure, as was this initial effort to settle along the lower Little Colorado. The temperamental river alternated between providing too little water and washing away carefully erected irrigation works, and after a few years of struggle three of the four towns were abandoned. Only St. Joseph survived, and only as a small group of families (McClintock 1985:138–148; Peterson 1973:15–23; Sheridan 1995:191–195).

But Mormons soon founded towns farther up the Little Colorado River, along its tributaries, and eventually farther south, along the Salt and Gila Rivers. Eventually, about 20 successful towns were established in the basin of the Little Colorado River, most of which survive today as predominantly Mormon communities. Along the Salt River, the town of Mesa was first settled in 1878 near a large, refurbished Hohokam irrigation canal. Thanks in large part to the agriculture made possible by the canal, Mesa was a relatively affluent community, a model of Mormon town planning, and soon the largest of several Mormon communities in what is now the Phoenix area (McClintock 1985:211–224). In 1927, a massive temple was dedicated at Mesa, still the only Mormon temple in Arizona, although a second Arizona

temple has recently been proposed for Snowflake, one of the early Mormon settlements along Silver Creek, a tributary of the Little Colorado River (Julien 2000).
Mormon settlement of southernmost Arizona occurred at about the same time as the settlement of the Salt and Gila Valleys, but the numbers of Mormons south of the Gila never compared with their numbers farther north. In 1877, a Mormon settlement party headed south from the Salt River Valley hoping to settle in either the upper Gila Valley or the San Pedro Valley. The party spent several months in the Santa Rita Mountains south of Tucson while the men worked in a sawmill. After earning enough money to buy more supplies and livestock, the group moved on to a spot along the San Pedro River about nine miles south of modern Benson. In 1880, after two years of hardship in a temporary camp, the settlers laid out the town of St. David, named for David Patten, an early Mormon martyred with Joseph Smith in Nauvoo. A second Mormon settlement, MacDonald, was established just up the river from St. David in 1882, and a third settlement, Miramonte, was founded nine miles west of St. David in 1913 (McClintock 1985:232–236).

The San Pedro settlements benefited briefly from the short-lived economic prosperity of nearby Tombstone, which enjoyed a mining boom in the early 1880s, but the settlements never became much more than small farming communities. They did, however, play an important role as stepping stones for Mormon colonization of northern Mexico. With the consent of Mexican president Porfirio Díaz, Mormon settlement parties began entering the Mexican states of Chihuahua and Sonora in 1886, establishing themselves in a series of colonies on large tracts of land purchased from or granted by the Mexican government. These colonies (named as such, e.g., Colonia Juarez, Colonia Oaxaca, Colonia Morelos) followed the typical Mormon pattern of settlement, with careful town plans, cooperative agricultural works, and schools, and were generally well received by the local Mexican population. But the Mormon tenure in the region came to an end with the Mexican Revolution, when the favors granted them by Díaz became a source of resentment for rebel forces, and their crops and livestock became constant targets of rebel confiscations. By 1915, halfway through the revolution, most of the Mormon settlers in Mexico had fled back to the United States (Burns and Naylor 1973; McClintock 1985:266–275).

The Mormon Community at Binghampton

One destination for the Mormons returning from Mexico was the small Mormon settlement of Binghampton, along the Rillito River six miles northeast of Tucson. Binghampton was unusual among Mormon settlements in Arizona in not having been settled as part of a planned effort directed by Mormon leaders in Utah. Accounts of the origins of the settlement are somewhat confused, but it is clear that it was first settled around 1898 by Nephi Bingham, a Mormon who had come to Tucson from Utah a few years earlier as part of a freighting expedition. He remained in Tucson in hopes of finding good farm land and eventually chose a parcel along the Rillito River, at the point where it is currently intersected by Dodge Boulevard. There he settled with his second wife and their children (his first wife remained in Utah), and he was soon joined by his father, Erastus Bingham, who arrived from Colorado with his entire family. Erastus settled along the north bank of the river on land

bought from the Davidson brothers, two local non-Mormons. Together the patriarchs of this large extended family, which included 35 children, cleared land for farming, built houses and a small adobe school, planted vegetable gardens, and, by 1905, had started a dairy operation. In 1899, a cemetery plot was designated on the north edge of the little settlement; the cemetery still exists and includes the grave of Nephi Bingham (Ciolek-Torrello and Homburg 1990:73–74; Day 1988).

The first extrafamilial additions to the community came in 1908, when a Mormon resident of Colonia Dublan in Chihuahua visited the Binghams and decided that he would transfer his family there. The move ultimately involved four (or possibly more) families from Chihuahua and led to more house-building, land-clearing, and irrigation works. An important example of the last, actually begun as early as 1901, was a gravity canal originating in Tanque Verde Wash, paralleling the north side of the river, and ending in a large reservoir at the Mormon farms. A school begun as early as 1905 on land donated by Alexander Davidson was also finished in this period. The school remained in Mormon hands until 1928, when it was taken over by Pima County. The original building still stands, although modified beyond recognition and incorporated into the auditorium of modern Davidson Elementary School (Ciolek-Torrello and Homburg 1990:73–74; Day 1988; Sterner 1996:16–17).

Most important among the changes following the initial influx of settlers was organization of the first branch of the Mormon church in Tucson in 1910. The organization proceedings and the ordination of Heber Farr as the first branch president were officiated by the president of the Mormon California Mission and took place in Nephi Bingham's home, right after Nephi and his family were baptized in the settlement's irrigation tank. The name chosen for the branch was Binghampton (Ciolek-Torrello and Homburg 1990:74; one source cited by Ciolek-Torrello and Homburg gives 1907 as the year).

Achieving the status of branch may have been part of the reason that Binghampton became a destination for Mormons leaving Mexico in the wake of the revolution, although, as noted above, a connection between Binghampton and at least one of the Chihuahua colonies was already established. In any case, the exodus from Mexico began to deposit Mormon families in Binghampton as early as 1911. By 1913, the branch membership had tripled. Many new families lived temporarily in tents along the south side of the Rillito and at Jaynes Station, a stop along the Southern Pacific Railroad near the confluence of the Rillito and the Santa Cruz Rivers. The Jaynes Station settlement arose in response to a company located there that employed the newly arrived Mormons in clearing land. After the work was completed, the Mormon families either settled at Binghampton or moved on to Mormon communities elsewhere in Arizona. The new arrivals at Binghampton eventually settled up and down the Rillito River, as far east as the confluence with Tanque Verde and Pantano Washes, and as far west as Country Club Road (Ciolek-Torrello and Homburg 1990:76).

Binghampton remained a small, largely self-contained Mormon community until the 1940s, when it finally began to be absorbed into the city of Tucson. By 1926, Binghampton Branch

had grown large enough to become a ward, the next level in the Mormon church hierarchy. A new church was completed at Binghampton in 1928, along Fort Lowell Road. Additions to the church in the period 1959–1962 and in the 1970s expanded it to its current size, and it now serves three Tucson wards. Although a few examples of early pioneer houses remain in the neighborhood and the original cemetery remains in Mormon control, Binghampton is no longer a Mormon settlement. Nonetheless, recognition of Binghampton as the original center of Mormon life in Tucson has prompted an ongoing effort by residents, former residents, and descendants of former residents to preserve the historic character of the area (Mann 1991).

Suggestions for further reading: The best starting point for a study of the Mormons in Arizona is Sheridan's (1995:187–199) short but insightful summary. McClintock (1985; originally published in 1921) is the standard synthesis, somewhat dated in tone but thorough and readable. Peterson (1973) gives a detailed account of the settlements along the Little Colorado River. An interesting study of the distinctive Mormon impact on the landscape, including Mormon architecture, town layout, and agricultural planning is provided by Francaviglia (1978). Brown et al. (1994) provide numerous useful maps depicting various aspects of Mormon history along with short narrative summaries.

Unfortunately, the history of the Mormon settlement at Binghampton has never been adequately researched. The most useful summary of the limited and scattered sources on the community is found in Ciolek-Torrello and Homburg (1990). A short article by Day (1988) provides interesting new oral-historical information on the community and summarizes earlier information.

The Chinese Community

Since they first arrived in southern Arizona in the latter half of the nineteenth century, the Chinese have never formed more than a small portion of the overall population in the region. Nonetheless, their early presence here was a significant one, both because of its connection to changes in the social and economic system of the region and because it was different in so many ways from that of any other group. The Chinese that came to Arizona in the late nineteenth and early twentieth centuries were almost all men, almost always responding to a specific, recently created demand for labor, and, more often than not, intent on returning to their homeland once they could afford it. These characteristics gradually changed, but because of them the early Chinese experience in southern Arizona was unique. It was also difficult, predictably enough, due in large part to the same kinds of intolerance experienced by other non-Anglo groups in the region.

The emigration of Chinese to the United States began around 1850 in response to political turmoil and economic uncertainty in China. In the second half of the nineteenth century, around 2.5 million Chinese, mostly men and most from the southeastern provinces of Guangdong and Fujian, left China in search of work in Southeast Asia and the Americas.

Most of the emigrants considered themselves sojourners, forced to give up their lives temporarily to earn money abroad, and always anticipating an eventual return home. Some 300,000 ended up in the western United States, beginning in the ports of California but soon dispersing eastward. The first Chinese came to work in the California gold rush, and mineral strikes elsewhere in the West spread Chinese miners throughout the region by the 1870s. As the demand for labor in mining declined, the Chinese became a major part of the labor force building railroads across the West. The railroad companies came to depend heavily on the Chinese as an abundant and cheap source of labor, recruiting them first in the mining camps and then directly from China. Once a railroad was built, the Chinese who found themselves laid off settled in Western towns and cities and turned to jobs as cooks, domestic servants, and laborers of every kind, or they began small, labor-intensive businesses such as laundries and restaurants (Fong 1980; Keane et al. 1992:5–6).

Anti-Chinese sentiment in the West began as early as the Gold Rush and became a major political issue within a few decades. In the 1870s, a period of difficult economic times across the country, the Chinese were increasingly perceived by Anglo workers as a competitive threat, a perception that eventually led to the Chinese Exclusion Act of 1882, a federal law barring the immigration of Chinese laborers for a period of 10 years. All Chinese in the United States were thenceforth required to carry identification papers. The act was renewed in 1892, with added restrictions, and a series of modified Exclusion Acts remained in effect until World War II. Although a limited amount of Chinese immigration continued throughout the period (including illegal immigration via Mexico), the net result was a steady decrease in the Chinese population throughout the country. At the same time, the Chinese in the West gradually abandoned rural areas and smaller cities and towns for the Chinese enclaves of the large coastal cities, most notably San Francisco (Keane et al. 1992:8–9).

The 1880 federal census is the first official record of Chinese people in Pima County. The census was taken in June of 1880, three months or so after the arrival of the Southern Pacific Railroad in Tucson. The railroad brought large numbers of Chinese laborers to Arizona, many of whom remained in Tucson as the railroad continued east. The census tabulated more than 800 Chinese in the county as a whole, and of these, 160 lived in Tucson (all but two of these were men). Most of the remainder were railroad laborers still at work extending the railroad eastward across the county. The 1870 census had not counted any Chinese in Pima County, but at least a few had come to Tucson by the mid-1870s, perhaps abandoning railroad work farther west or fleeing internal conflicts in the Chinese community in California (Lister and Lister 1989:1–3; Thiel 1997:5–6).

In the 1880s, most of the Chinese in Tucson lived in one of the oldest parts of town, near the intersection of Main and Alameda Streets, just southwest of the former presidio wall. This was a rundown area of poorly maintained adobe buildings that had until recently served as the first Anglo business district in Tucson. Although sometimes referred to as "Chinatown," the area never took on the predominantly Chinese character of well-known Chinatowns, due in part to a relatively small Chinese population. Other Chinese were

scattered elsewhere in the community, living in the back rooms of stores and laundries. Around 1900, a second Chinatown developed in the vicinity of Pearl and Ott Streets, and a few years later the original Chinatown was razed to make way for a new Tucson City Hall. Early on, a small number of Chinese settled outside of downtown, in the Fort Lowell and Tanque Verde areas, and on the west bank of the Santa Cruz River (Lister and Lister 1989:3–8; Thiel 1997:5–8).

In appearance and daily life, the early Chinese of Tucson were culturally conservative. For the first few decades, Chinese men continued to wear traditional clothing, shave their foreheads, and pull their hair back in queues (long, single braids). They ate many traditional Chinese foods and filled their lives with traditional Chinese material culture. These practices were made possible in large part by the presence of the railroad that many of them helped to build, which brought a wide variety of goods to Tucson from the Chinese enclaves in California, including many Chinese imports. They practiced their native religion, sometimes in small temples, established traditional Chinese social organizations, and spent their leisure time in traditional activities such as playing games, drinking, smoking, and using opium. Despite the disdain of the rest of Tucson, traditional practices faded slowly, in part because traditional culture served as a refuge for the Chinese, who were effectively excluded from much of mainstream Tucson society. The Chinese were also legally excluded both from U.S. citizenship and from marriage to non-Chinese women (although some Chinese men nonetheless managed to be married, often to Mexican-American women). Above all, the Chinese of Tucson worked long and hard at the jobs the Chinese typically filled throughout the West: in laundries, restaurants, and grocery stores, and growing vegetables for sale (Lister and Lister 1989:8–12; Thiel 1997:15–27).

Although many of the Chinese in Tucson hoped to return eventually to China, only a small number ever did. Many spent their entire lives in Tucson without ever accumulating enough capital to return home. Some enjoyed relative financial success, often as storekeepers, and chose to remain in Tucson, eventually bringing wives and family members from China to join them. Some of the descendants of these people still live in the Tucson area. The first generation of Chinese immigrants in Tucson gradually died off, and the small numbers of later immigrants generally chose to live away from the earlier arrivals. The surviving members of the first generation remained for many years in the downtown area, finally occupying a single house on South Main Avenue that would be destroyed by urban renewal in 1968 (Thiel 1997:36). Prior to its razing, the abandoned contents of the house were documented by the University of Arizona Department of Anthropology, then collected and stored at the Arizona State Museum. A study of the collection shows the enduring connections of the Tucson Chinese to traditional practices and material culture, connections that had sustained the Chinese community since the nineteenth century (Lister and Lister 1989).

Suggestions for further reading: Fong (1980) and Keane et al. (1992) provide useful overviews of the Chinese in Arizona. Lister and Lister (1989) give an excellent summary of information on the Chinese in Tucson, as well as a detailed look at the items of material

culture abandoned by the Chinese in the 1960s in buildings scheduled for demolition in the Tucson Urban Renewal project. Thiel (1997) provides a fascinating glimpse of Chinese life in late-nineteenth- and early-twentieth-century Tucson, including summaries of documentary data, quotations from newspaper articles of the period, and a variety of historical photographs. He also reports on excavations at a Chinese gardener's household on the west side of the Santa Cruz River, near Sentinel Peak. Trueba Lara (1990) gives an impassioned account of the injustices suffered by Chinese workers in Sonora during the late nineteenth and early twentieth centuries, injustices that culminated in the expulsion of the Chinese from Mexico in 1932. Many Chinese fled across the border to Arizona, most notably to the crossings at Bisbee and Doublas, only to be deported to China by the U.S. government.

African Americans

The history of people of African descent in southern Arizona begins at least as early as the history of Europeans in the region. In 1539, the expedition of the Spanish friar Marcos de Niza to the pueblo of Zuni passed through what is now southern Arizona, presumably traveling along the San Pedro River. With him was a black North African named Esteban who served as his guide. This was the same Esteban who had accompanied the shipwrecked Alvar Núñez Cabeza de Vaca on his famous trek across Texas and northern Mexico a few years earlier (Sheridan 1995:24–26). Esteban had the misfortune of dying at Zuni by native hands, but given his role as guide for Niza's expedition, it is reasonable to consider him the first non–Native American to set foot in what is now Arizona. As Lawson (1996:15) notes, it is something of an injustice that the only memorial to Esteban in Arizona is humble Esteban Park in Tucson, on Main Avenue between Second and Speedway.

Africans originally came to New Spain as slaves, as they later would to the British colonies, and although their treatment by sixteenth-century and later Spaniards was as inhuman as it later was in the United States, African and European genes were exchanged earlier and much more commonly in New Spain than they ever were to the north. As discussed earlier in the section on Hispanic people in southern Arizona, colonial society in New Spain consisted of diverse racial mixtures, each permutation having its special label. The more African heritage a person was believed to have, the lower his status, but the racial labels often reflected acquired status as much as any biological reality. This flexibility in racial designation meant that there was never a neat distinction between Africans and non-Africans in Spanish Colonial times, which makes it difficult to speak of a history of Africans in southern Arizona prior to the Gadsden Purchase, despite the undoubted presence of many people of at least partial African descent (Officer 1987:60–61).

This ambiguity largely disappeared with the arrival of Anglo-Americans in the region. White Anglo-Americans regularly considered anyone with any African ancestry a Negro, a practice that allowed for a more neatly defined lower class and, ironically, created a distinct subject of historical study. Unlike the other groups considered here—Hispanic Americans, Mormons, Chinese Americans—African Americans in southern Arizona have always been distinguished

from the dominant Anglo-American society primarily by race, rather than by language, culture, religion, or country of origin. By the latter half of the nineteenth century, when African Americans first become a distinguishable entity in southern Arizona, they were by and large monolingual English-speaking Protestants—not much different from most white Anglo-Americans in the region—no matter how diverse an African heritage had been obscured by the imposed anonymity of slavery.

African Americans were among the earliest American arrivals in southern Arizona following the Gadsden Purchase. They usually came as single men, accompanying parties of Anglo settlers from various parts of the country and working as cooks, barbers, and drovers. By the 1860s, a handful of African Americans, including at least one family, were living in Tucson (Harris 1983:3; Yancy 1933:14–15). This number increased only gradually during the next 40 years. In 1880, 76 blacks lived in Pima County; in 1890, there were 57; and in 1900, there were 118, of which 86 lived in Tucson (Yancy 1933:113–114). Throughout the period, the African Americans who came to the region continued to be mostly single men, usually finding work as cooks (often in mining camps), barbers (the most common occupation), domestic help, and ranch hands. A few men brought wives with them or married locally—marriages to Mexican women were common in a region short of African-American women—and a few bought homes or other property in and around Tucson (Yancy 1933:13–40).

During the late nineteenth century, a number of the African-American men living in Tucson and its vicinity were soldiers recently discharged from the U.S. Army (Yancy 1933:34–36). Most were Buffalo Soldiers, members of the all-black Ninth and Tenth Cavalries who had served in Indian wars in various parts of the West. The tag of "Buffalo Soldiers," applied in admiration by the Native Americans they fought, was used with pride by the black soldiers. The Buffalo Soldiers were active in southern Arizona in the 1870s and 1880s as part of the U.S. Army's effort to subdue the Apache (Leckie 1967). They were stationed at various times at forts and camps throughout the region, including Fort Huachuca in Cochise County (Harris 1983:11–20). As the largest town in southern Arizona, Tucson was a logical place for discharged black troopers to look for work after army life ended.

At least as early as the 1860s, a large number of African-American men were working throughout the West as cowboys. In fact, as many as 25 percent of all cowboys in the West in the latter half of the nineteenth century were black. Most of these men held the jobs of least prestige in a ranch outfit, such as cook and horse wrangler, but the many years of service of some men made their experience at virtually every position indispensable (Porter 1998). One famous black cowboy was George McJunkin, who discovered the first Paleoindian site in 1927 (Folsom 1992; Reid and Whittlesey 1997). Folsom, New Mexico, for which the Folsom culture is named, provided the first conclusive evidence for people living in North America at the time of extinct animals. Without McJunkin's keen observation, the discovery of Paleoindian materials might have been delayed.

Southern Arizona had its share of these black cowboys, and a number of them eventually settled in Tucson. Like the African Americans working in other occupations in the region in the nineteenth century, almost all of these men were unattached single men who would look for wives and other employment locally (Harris 1983:20–30; Yancy 1933).

The African American population of Tucson continued to grow in the early twentieth century. From 86 people in 1900, it grew to 222 in 1910, 346 in 1920, and 1,003 in 1930. Most of the growth came from people moving into Tucson from southern states, with Texas being the source of the largest percentage. By the 1930s, most blacks were concentrated in a few "Negro neighborhoods." The largest of these was bounded by Main Street, 9th Avenue, and Speedway, where 60 percent of Tucson's black population lived. A second neighborhood, with about 25 percent of the black population, was on 5th and 6th Streets between 4th Avenue and Stone Avenue. A third neighborhood, with about 10 percent of the population, was on 22nd, 23nd, and 24th Streets between 6th Avenue and the railroad. The occupations of these people continued to be largely the same as they had been for the previous 50 years. The most common occupations were cook, maid, common laborer, porter, janitor, chauffeur, waiter, bootblack, and barber. But there were also several teachers, a few preachers, two nurses, a doctor, and an engineer (Yancy 1933:41–50).

Racial discrimination was, of course, the chief reason that African Americans continued living in circumscribed areas and continued working in the lowest-paying jobs. Offsetting the effects of discrimination to some degree was the development of the African-American community's own support system, best exemplified by the efforts to build Dunbar School, named for the African-American poet, Paul Laurence Dunbar, and opened in the largest black neighborhood in 1918. Creation of the school was actually made possible in part by a state law requiring separate educational facilities for blacks and whites, and although it never received equitable funding and was an afterthought to most of the white educational establishment, Dunbar School was soon turning out a steady stream of graduates. It quickly became a kind of cultural center and symbol of pride for the African-American community (Lawson 1988; Zanders 1946).

African Americans continue to be a small but significant part (about 3%) of the population of Tucson, still living in parts of the traditionally black neighborhoods but also in neighborhoods throughout the city.

Suggestions for further reading: The best source on African Americans in southern Arizona, and one of the few sources available on the subject, is a master's thesis written by an African American at the University of Arizona in 1933 (Yancy 1933). It includes a summary of historical sources, analysis of census data, and, most importantly, notes on interviews with many of the surviving black pioneers living in Tucson in the 1930s. Lawson (1996) is a popular but nonetheless informative account of African Americans in Tucson. Harris (1983) is a useful popular account of African Americans in Arizona as a whole. Another master's

thesis by an African American at the University of Arizona (Zanders 1946) takes a close look at the educational system available to blacks in Tucson up to World War II. Lawson (1988) is a collection of reminiscences of life at Dunbar School.

The history of African Americans in the West as a whole is a growing field of historical study. Billington and Hardaway (1998) is an important collection of essays on African Americans in Western history. The Buffalo Soldiers are the subjects of numerous book-length studies. The classic account is that of Leckie (1967).

The People of Southern Arizona Today

The cultural composition of Pima County today, like that of any region in the country, is the end result of centuries of interaction among people of widely varying ethnic origins, and in this sense the county is simply part of the great national melting pot of the United States. A basic equivalence with the rest of the country is seemingly confirmed by the modern cultural landscape in the county, particularly in metropolitan Tucson. Granting certain differences in topography and vegetation, Tucson is barely distinguishable from dozens of other similarly sized U.S. cities, a result of the unrelenting expansion of a homogeneous Anglo-American culture over the last 50 years. Nonetheless, Pima County does have both discrete pockets of cultural distinctiveness—Tucson's Mexican-American community, though more dispersed than ever, remains the most important example—and an ethnically diverse general population. It is the nature of that diversity, combined with the historical circumstances that led to it, that makes Pima County unique.

With an estimated total population of around 800,000, the racial composition of Pima County is currently about 79 percent white, 3 percent black, 3 percent Native American, 2 percent Asian or Pacific Islander, and 13 percent other (Pima Association of Governments 1997). Tucson, with an estimated population of about 450,000, has a similar racial composition (Gaquin and Littman 1999:892). These racial data, collected by the U.S. Bureau of the Census (1990c), are only loosely indicative of cultural distinctions, but they do emphasize the small size of the African American and Asian populations of the region, especially when compared to the national averages of about 12 percent and 3 percent, respectively. The percentage of Hispanic people in the population is a more significant indicator of cultural composition, particularly in Tucson where the vast majority of Hispanics (Hispanics may be of any race) are Mexican Americans. In Pima County, the Hispanic percentage is 25 percent, and in Tucson 29 percent; both percentages are well above the national average of 9 percent.

Within the region's population as a whole, the dominant trends today are rapid growth, increasing diversity, and a high demographic turnover. According to City of Tucson demographer David Taylor, about 57,000 people moved into the county last year, 40,000 moved out, 11,600 were born here, and 6,600 died, for a net increase of 22,000. People

moving into Pima County from elsewhere in the country come in significant numbers from virtually every state, although the largest number come from Maricopa County, which is also the most common destination of people moving out of Pima County. As for diversity, Pima County boasts more than 200 claimed ancestry groups represented by at least 500 people each, as well as native speakers of a wide range of languages, including over 8,000 households that speak German. And there is little chance that Pima County's population will continue to be dominated by white Anglo-Americans. Population projections for the year 2050 put the Hispanic population at 40 percent, the white Anglo-American population at 40 percent, and the African-American, Native American, and Asian-American populations at 6 percent each (Taylor 1999).

It is impossible to list all of the ancestry groups reported by Pima County residents here, but the numbers of the most common non-Hispanic groups are worth noting (all data are based on samples analyzed by the U.S. Bureau of the Census [1990c]). Of a total of 810,780 individuals reporting a non-Hispanic ancestry group in Pima County, the most common individual ancestry is German (88,202), followed by Irish (55,716), English (54,684), Italian (17,215), French (16,630), and Polish (11,163). The other individual non-Hispanic ancestries were indicated by less than 10,000 people each.

Contemporary tribal groups in the area represent the remnants of the historical populations who once were the majority, and these urbanized Native Americans reflect the greatest impacts of cultural upheaval and assimilation. The urban population of Pima County includes approximately 18,000 Native Americans. There are several reservations located within urban Tucson, and more than 15,000 off-reservation Native Americans reside within the Tucson urban area. The majority of these people live within the Tucson city limits.

Approximately 45 percent of the Tucson-area Indian population are Tohono O'odham, 35 to 45 percent are Pascua Yaqui, and approximately 12 percent are Navajo (Tucson Indian Center [TIC] 1998). A community of predominantly Tohono O'odham homeowners and renters have resided in South Tucson since World War II (U.S. Bureau of the Census 1990a). Small groups of Pascua Yaqui homeowners live in the vicinity of 39th Street, and in the Old Pascua community located near Grant Road and First Avenue. The New Pascua Yaqui Indian Community, approximately 10 miles southwest of downtown Tucson, is home to more than 2,400 tribal members (U.S. Bureau of the Census 1990b). It provides many services, including a Head Start Program and child care, to the Pascua Yaqui living throughout the Tucson area. Small Pascua Yaqui communities are also found in Marana, Sahuarita, and Continental (TIC 1998).

There are several programs and organizations throughout the Tucson area that provide educational and wellness services to the Native American population (Arizona Region Resources 1998). These include the Traditional Indian Alliance and the Tucson Indian Center. Services at the University of Arizona include the American Indian Graduate Center, the

American Indian Language Development Institute, the American Indian Professional Training Program, the American Indian Studies Program, Cooperative Extension Programs, and the Native American Resource Center (University of Arizona Native American Resource Center 1991). Title IX Indian Education Programs operate in Amphitheater Public School, Marana Unified School District No. 6, Sunnyside Unified School District No. 12, and the Tucson Unified School District.

Economically, the urban Indian population ranges from dependence on welfare benefits to lower-middle-class income. The high-school-dropout rate is approximately 15 percent compared to 9 percent for other ethnic groups. Many urban Indians are unemployed, unskilled, uneducated, or undereducated by U.S. standards. The unemployment rate is around 35 percent compared to 4 percent for the county and 6 percent for the City of Tucson. Although these figures are higher than those provided by the Department of Economic Security, the latter misses the hidden population with which Tucson-area services work (TIC 1998).

The urban Indian population reflects the impacts of almost 400 years of cultural disruptions and the incompatibilities of an Euroamerican social system with the needs of indigenous people. In spite of the loss of cultural identity and lands, many urban Indians maintain relationships with family members and friends who still live and work on tribal lands. Although they continue some cultural practices within their urban environment, many return to tribal lands to participate in cultural events and ceremonies.

References Cited

Agenbroad, Larry D.
1967 The Distribution of Fluted Points in Arizona. *The Kiva* 32:113–120.

Ahlstrom, Richard V. N., Mark L. Chenault, and David Wrobleski
1998 Chronology and Culture History of the Papagueria. In *An Archaeological Overview of the Barry M. Goldwater Air Force Range: Living in the Western Papagueria*, edited by R. V. N. Ahlstrom, pp. 3-1–3-63. Draft report prepared for Luke Air Force Base (Project No. AZ 506.000). Geraghty & Miller, Phoenix, and SWCA, Tucson.

Altschul, J. H., T. Bubemyre, K. M. Cairns, W. L. Deaver, A. Della Croce, S. K. Fish, L. Fratt, K. G. Harry, H. Holmlund, G. Huckleberry, C. H. Miksicek, A. W. Vokes, S. M. Whittlesey, M. N. Zedeño, and L. F. Ziady
1996 *Archaeological Investigations at the SRI Locus, West Branch Site (AZ AA:16:3 [ASM]): A Rincon Phase Village in the Tucson Basin.* Draft report submitted to Pima County Department of Transportation and Flood Control District, W. O. 4BISCO. Statistical Research, Tucson.

Altschul, Jeffrey A., and Edgar K. Huber
1995 *Archaeological Testing Report and Treatment Plan for the Dairy Site (AZ AA:12:285 [ASM])*. Technical Report No. 95-8. Statistical Research, Tucson.

Anyon, Roger, Patricia A. Gilman, and Steven A. LeBlanc
1981 A Reevaluation of the Mogollon–Mimbres Archaeological Sequence. *The Kiva* 46:209–226.

Anyon, Roger, and Steven A. LeBlanc
1980 The Architectural Evolution of Mogollon–Mimbres Communal Structures. *The Kiva* 45:253–277.

Arizona Region Resources
1998 Directory of Indigenous Education Resources: WestEd Region. <http://www.wested.org /lcd/IndigenousEdDir/AZ/RSRC_AZPV.shtml>

Ayres, James E.
1970 Two Clovis Fluted Points from Southern Arizona. *The Kiva* 36:44–48.

Bahr, Donald, Juan Smith, William Smith Allison, and Julian Hayden
1994 *The Short, Swift Time of Gods on Earth: The Hohokam Chronicles*. University of California Press, Berkeley.

Barnes, Mark R.
1984 Hispanic Period Archaeology in the Tucson Basin: An Overview. *The Kiva* 49:213–223.

Basso, Keith H.
1983 Western Apache. In *Southwest*, edited by Alfonso Ortiz, pp. 462–488. Handbook of North American Indians, vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

1996 *Wisdom Sits in Places: Landscape and Language among the Western Apache.* University of New Mexico Press, Albuquerque.

Bayham, Frank E., Donald H. Morris, and M. Steven Shackley (editors)
1986 *Prehistoric Hunter-Gatherers of South Central Arizona: The Picacho Reservoir Archaic Project*. Anthropological Field Studies No. 13. Office of Cultural Resource Management, Arizona State University, Tempe.

Bernard-Shaw, Mary
1990 *Archaeological Investigations at the Lonetree Site, AA:12:120 (ASM), in the Northern Tucson Basin*. Technical Report No. 90-1. Center for Desert Archaeology, Tucson.

Billington, Monroe Lee, and Roger D. Hardaway (editors)
1998 *African Americans on the Western Frontier*. University Press of Colorado, Niwot, Colorado.

Blaine, Peter, Sr. (with Michael S. Adams)
1981 *Papagos and Politics*. Arizona Historical Society, Tucson.

Bolton, Herbert E.
1919 *Kino's Historical Memoir of Pimería Alta: A Contemporary Account of the Beginnings of California, Sonora, and Arizona, by Father Eusebio Francisco Kino, S.J., Pioneer Missionary Explorer, Cartographer, and Ranchman, 1683–1711.* University of California, Semicentennial Publications, 1868–1918.

1948 *Kino's Historical Memoir of Pimeria Alta, 1683-1711*. 2 vols. University of California Press, Berkeley.

Bourke, John G.
1971 *On the Border with Crook*. Bison Books, University of Nebraska Press, Lincoln (original edition Charles Scribner's Sons, 1891).

Bowen, Thomas
1972 A Survey and Re-evaluation of the Trincheras Culture, Sonora, Mexico. Manuscript on file, Arizona State Museum Library Archives, AT-94-85. University of Arizona, Tucson.

Brew, Susan A., and Bruce B. Huckell
1987 A Protohistoric Piman Burial and a Consideration of Piman Burial Practices. *The Kiva* 52:163–191.

Bronitsky, Gordon R., and James D. Merritt
1986 *The Archaeology of Southeast Arizona: A Class I Cultural Resources Inventory.* Cultural Resource Series 2. U.S. Department of the Interior, Bureau of Land Management, Arizona State Office, Phoenix.

Brown, Jeffrey L., and Paul Grebinger
1969 A Lower Terrace Compound at San Cayetano del Tumacacori. *The Kiva* 34:185–198.

Brown, S. Kent, Donald Q. Cannon, and Richard H. Jackson (editors)
1994 *Historical Atlas of Mormonism*. Simon and Schuster, New York.

Browning, Sinclair
1982 *Enju: The Life and Struggle of an Apache Chief from the Little Running Water.* Northland Press, Flagstaff, Arizona.

Burrus, Ernest J.
1971 *Kino and Manje: Explorers of Sonora and Arizona: Their Vision of the Future.* Jesuit Historical Institute, Rome.

Buskirk, Winfred
1986 *The Western Apache: Living with the Land before 1950.* University of Oklahoma Press, Norman.

Burns, Barney T., and Thomas H. Naylor
1973 Colonia Morelos: A Short History of a Mormon Colony in Sonora, Mexico. *The Smoke Signal* 27:142–180.

Cable, John S., and David E. Doyel
1987 Pioneer Period Village Structure and Settlement Pattern in the Phoenix Basin. In *The Hohokam Village: Site Structure and Organization*, edited by David E. Doyel, pp. 21–70. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science. Glenwood Springs, Colorado.

Castetter, Edward F., and Willis H. Bell
1942 *Pima and Papago Indian Agriculture*. University of New Mexico Press, Albuquerque.

Church Educational System
1993 *Church History in the Fulness of Times.* Church of Jesus Christ of Latter-Day Saints, Salt Lake City, Utah.

Ciolek-Torrello, Richard S.
1988a Conclusions. In *Hohokam Settlement along the Slopes of the Picacho Mountains,* vol. 2*: The Brady Wash Sites, Tucson Aqueduct Project*, edited by R. Ciolek-Torrello, M. M. Callahan, and D. H. Greenwald, pp. 800–812. Research Paper No. 35, vol. 2. Museum of Northern Arizona, Flagstaff.

1988b Conclusions. In *Hohokam Settlement along the Slopes of the Picacho Mountains,* vol. 6*: Synthesis and Conclusions, Tucson Aqueduct Project,* edited by R. Ciolek-Torrello and D. R. Wilcox, pp. 300–314. Research Paper No. 35, vol. 6. Museum of Northern Arizona, Flagstaff.

1995 The Houghton Road Site, the Agua Caliente Phase, and the Early Formative Period in the Tucson Basin. *Kiva* 60:531–574.

Ciolek-Torrello, Richard S. (editor)
1998 *Early Farmers of the Sonoran Desert: Archaeological Investigations at the Houghton Road Site, Tucson, Arizona.* Technical Series No. 72. Statistical Research, Tucson.

Ciolek-Torrello, Richard S., and Jeffrey A. Homburg
1990 *Cultural Resources Surveys and Overviews of the Rillito River Drainage Area, Pima County, Arizona.* Technical Series No. 20. Statistical Research, Tucson.

Community, Salt River Pima–Maricopa Indian
1996a *The Maricopa Tribe.* <http://www.saltriver.pima-maricopa.nsn.us/maricopa.htm>

1996b *The Pima Tribe.* <http://www.saltriver.pima-maricopa.nsn.us/pima.htm>

1996c Salt River Pima–Maricopa Indian Community Home Page. (<://www.saltriver.pima-maricopa.nsn.us/>).

Craig, Douglas B.
1988 *Archaeological Investigations at AZ AA:16:49 (ASM): The Dakota Wash Mitigation*. Anthropology Series Archaeological Report 14. Pima Community College, Tucson.

Crown, Patricia L., and Earl W. Sires, Jr.
1984 The Hohokam Chronology and Salt–Gila Aqueduct Project Research. In *Hohokam Archaeology along the Salt–Gila Aqueduct, Central Arizona Project*, vol. 9*: Synthesis and Conclusions*, edited by L. S. Teague and P. L. Crown, pp. 73–85. Archaeological Series No. 150, vol. 9. Arizona State Museum, University of Arizona, Tucson.

Czaplicki, Jon S., and John C. Ravesloot (editors)
1988 *Hohokam Archaeology along Phase B of the Tucson Aqueduct, Central Arizona Project*, vol. 2: *Excavations at Fasttimes (AZ AA:12:384), a Rillito Phase Site in the Avra Valley*. Archaeological Series No. 178. Arizona State Museum, University of Arizona, Tucson.

1989a Excavations at Hawk's Nest (AZ AA:12:484), A Late Pioneer–Early Colonial Period Hohokam Farmstead. In *Hohokam Archaeology along Phase B of the Tucson Aqueduct, Central Arizona Project*, vol.4: *Small Sites and Specialized Reports*, edited by J. S. Czaplicki and J. C. Ravesloot, pp. 51–61. Archaeological Series No. 178, Vol. 4. Arizona State Museum, University of Arizona, Tucson.

1989b *Hohokam Archaeology along Phase B of the Tucson Aqueduct, Central Arizona Project*, vol. 3: *Excavations at Water World (AZ AA:16:94), a Rillito Phase Ballcourt Village in the Avra Valley*. Archaeological Series No. 178. Arizona State Museum, University of Arizona, Tucson.

Danson, E. B.
1946 An Archaeological Survey of the Santa Cruz River Valley from the Headwaters to the Town of Tubac, Arizona. Manuscript on file, Arizona State Museum Library, University of Arizona, Tucson.

Dart, Allen
1986 *Archaeological Investigations at La Paloma: Archaic and Hohokam Occupations at Three Sites in the Northeastern Tucson Basin, Arizona.* Anthropological Papers No. 4. Institute for American Research, Tucson.

Dart, Allen, Stephen H. Lekson, and Henry D. Wallace
1989 *Historic Properties Management Plan for the U.S. Army Corps of Engineers, Painted Rock Reservoir Project, Southwestern Arizona*. Technical Report No. 88-6. Institute for American Research, Tucson.

Day, Susan
1988 Binghampton. *City Magazine* June, 1988:52–57.

Deaver, William L.
1984 Pottery. In *Hohokam Habitation Sites in the Northern Santa Rita Mountains*, by A. Ferg, K. C. Rozen, W. L. Deaver, M. D. Tagg, D. A. Phillips, Jr., and D. A. Gregory, pp. 237–419. Archaeological Series No. 147. Arizona State Museum, University of Arizona, Tucson.

1989 Ceramics. In *Excavations at Hawk's Nest (AZ AA:12:484), a Late Pioneer–Early Colonial Period Hohokam Farmstead. Hohokam Archaeology Along Phase B of the Tucson Aqueduct, Central Arizona Project,* vol. 4*: Small Sites and Specialized Reports*, edited by J. S. Czaplicki and J. C. Ravesloot, pp. 51–61. Archaeological Series No. 178, Vol. 4. Arizona State Museum, University of Arizona, Tucson.

1996 *Archaeological Excavations at the Dairy Site: A Preliminary Report*. Technical Report No. 96-6. Statistical Research, Tucson.

Deaver, William L., and Richard S. Ciolek-Torrello
1995 Early Formative Period Chronology for the Tucson Basin. *Kiva* 60:481–529.

deBuys, William
1998 Dreams of Earth. In *Reopening the American West,* edited by H. K. Rothman, pp. 3–23. University of Arizona Press, Tucson.

DeJong, David H.
1992 "See the New Country:" The Removal Controversy and Pima-Maricopa Water Rights, 1869–1879. *Journal of Arizona History* 33:367–396.

Di Peso, Charles C.
1953 *The Sobaipuri Indians of the Upper San Pedro River Valley, Southeastern Arizona*. Publication No. 6. Amerind Foundation, Dragoon, Arizona.

1956 *The Upper Pima of San Cayetano del Tumacacori*. Publication No. 7. Amerind Foundation, Dragoon, Arizona.

1958 *The Reeve Ruin of Southern Arizona: A Study of a Prehistoric Western Pueblo Migration into the Middle San Pedro Valley*. Publication No. 8. Amerind Foundation, Dragoon, Arizona.

1979 Prehistory: Southern Periphery. In *Southwest*, edited by Alfonso Ortiz, pp. 152–161. Handbook of North American Indians, vol. 9, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Dobyns, Henry F.
1974 The Kohatk: Oasis and Akchin Horticulturalists. *Ethnohistory* 21:317–327.

1976 *Spanish Colonial Tucson: A Demographic History*. University of Arizona Press, Tucson.

Doelle, William H.
1984 The Tucson Basin during the Protohistoric Period. *The Kiva* 49:195–211.

1985 *Excavations at the Valencia Site: A Preclassic Hohokam Village in the Southern Tucson Basin.* Anthropological Papers No. 3. Institute for American Research, Tucson.

1988 Preclassic Community Patterns in the Tucson Basin. In *Recent Research on Tucson Basin Prehistory: Proceedings of the Second Tucson Basin Conference*, edited by W. H. Doelle and P. R. Fish, pp. 277–312. Anthropological Papers No. 10. Institute for American Research, Tucson.

Doelle, William H., and Henry D. Wallace
1986 *Hohokam Settlement Patterns in the San Xavier Project Area, Southern Tucson Basin.* Technical Report No. 84-6. Institute for American Research, Tucson.

1991 The Changing Role of the Tucson Basin in the Hohokam Regional System. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest*, edited by G. J. Gumerman, pp. 279–345. Amerind Foundation, Dragoon, Arizona, and University of New Mexico Press, Albuquerque.

Doelle, William H., David A. Gregory, Henry D. Wallace
1995 Classic Period Platform Mound Systems in Southern Arizona. In *The Roosevelt Community Development Study: New Perspectives on Tonto Basin Prehistory*, edited by M. D. Elson, M. T. Stark, and D. A. Gregory, pp. 385–440. Anthropological Papers No. 15. Center for Desert Archaeology, Tucson.

Douglas, John E., and Douglas B. Craig
1986 *Investigations of Archaic and Hohokam Sites on the Flying V Ranch, Tucson, Arizona.* Archaeological Report No. 13. Pima Community College, Tucson.

Downum, Christian E.
1986 The Occupational Use of Hill Space in the Tucson Basin: Evidence from Linda Vista Hill. *The Kiva* 51: 219–232.

1995 Archaeological Investigations at Linda Vista Hill, 1980–1987. In *Archaeological Investigations at Los Morteros, a Prehistoric Settlement in the Northern Tucson Basin*, by H. D. Wallace, pp. 1155–1183. Anthropological Papers No. 17. Center for Desert Archaeology, Tucson.

Downum, Christian E., John E. Douglas, and Douglas B. Craig
1993 The Cerro Prieto Site. In *Between Desert and River: Hohokam Settlement and Land Use in the Los Robles Community,* by C. E. Downum, pp. 53–95. Anthropological Papers No. 57. University of Arizona Press, Tucson.

Doyel, David E.
1977a *Classic Period Hohokam in the Escalante Ruin Group.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

1977b *Excavations in the Middle Santa Cruz River Valley, Southeastern Arizona.* Contribution to Highway Salvage Archaeology No. 44. Arizona State Museum, University of Arizona, Tucson.

1984 From Foraging to Farming: An Overview of the Preclassic in the Tucson Basin. *The Kiva* 49:147–165.

Eddy, Frank W., and Maurice E. Cooley
1983 *Cultural and Environmental History of Cienega Valley, Southeastern Arizona.* Anthropological Papers No. 43. University of Arizona Press, Tucson.

Edition, The *Arizona Republic* On-line Newspaper
1999a Arizona Central: Living in Arizona—The Ak-chin Indian Tribe. <http://www.azcentral.com/depts/azliving/indian/profile01.shtml> Arizona Republic, Phoenix.

1999b Arizona Central: Living in Arizona—Gila River Indian Community. <http://www.azcentral.com/depts/azliving/indian/profile13.shtml> Arizona Republic, Phoenix.

1999c Arizona Central: Living in Arizona—Pascua Yaqui. <http://www.azcentral.com/depts/azliving/indian/profile19.shtml> Arizona Republic, Phoenix.

1999d Arizona Central: Living in Arizona—Salt River Pima–Maricopa Community. <http://www.azcentral.com/depts/azliving/indian/profile10.shtml> Arizona Republic, Phoenix.

1999e Arizona Central: Living in Arizona—Tohono O'odham Nation. <http://www.azcentral.com/depts/azliving/indian/profile20.shtml> Arizona Republic, Phoenix.

Elson, Mark D., and William H. Doelle
1987 *Archaeological Assessment of the Mission Road Extension: Testing at AZ BB:13:6 (ASM).* Technical Report No. 87-6. Institute for American Research, Tucson.

Elson, Mark D., and Michael Lindeman
1995 The Eagle Ridge Site AZ V:5:104/1045 (ASM/TNF). In *The Roosevelt Community Development Study, vol. 1: Introduction and Small Sites*, by M. D. Elson and D. L. Swartz, pp. 23–116. Anthropological Papers No. 13. Center for Desert Archaeology, Tucson.

Erickson, Winston P.
1994 *Sharing the Desert: The Tohono O'odham in History.* University of Arizona Press, Tucson.

Ezell, Paul H.
1955 An Archaeological Delineation of a Cultural Boundary in Papagueria. *American Antiquity* 20:367–374.

1961 *The Hispanic Acculturation of the Gila River Pima*. American Anthropological Association, Menasha, Wisconsin.

1983 History of the Pima. In *Southwest*, edited by Alfonso Ortiz, pp. 149–160. Handbook of North American Indians, vol. 10. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Ezzo, Joseph A., and Jeffrey H. Altschul (compilers)
1993 *Glyphs and Quarries of the Lower Colorado River Valley.* Technical Series No. 44. Statistical Research, Tucson.

Faulk, Odie B.
1969 *The Geronimo Campaign*. Oxford University Press, New York.

Ferg, Alan (editor)
1987 *Western Apache Material Culture: The Goodwin and Guenther Collections*. University of Arizona Press, Tucson.

Ferg, Alan, Kenneth C. Rozen, William L. Deaver, Martyn D. Tagg, David A. Phillips, Jr., and David A. Gregory
1984 *Hohokam Habitation Sites in the Northern Santa Rita Mountains*. Archaeological Series No. 147, vol. 2, part 1. Arizona State Museum, University of Arizona, Tucson.

Fish, Paul R., Suzanne K. Fish, Austin Long, and Charles Miksecek
1986 Early Corn Remains from Tumamoc Hill, Southern Arizona. *American Antiquity* 51:563–572.

Fish, Paul R., Suzanne K. Fish, and John H. Madsen
1988 Differentiation in Bajada Portions of a Tucson Basin Classic Community. In *Recent Research on Tucson Basin Prehistory: Proceedings of the Second Tucson Basin Conference*, edited by W. H. Doelle and P. R. Fish, pp. 225–239. Anthropological Papers No. 10. Institute for American Research, Tucson.

Fish, Paul R., Suzanne K. Fish, John H. Madsen, Charles H. Miksicek, and Christine R. Szuter
1992 The Dairy Site: Occupational Continuity on an Alluvial Fan. In *The Marana Community in the Hohokam World*, edited by S. K. Fish, P. R. Fish, and J. H. Madsen, pp. 64–72. Anthropological Papers No. 56. University of Arizona Press, Tucson.

Fish, Suzanne K.
1998 Cultural Pollen. In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analyses and Synthesis, Part II*, edited by J. B. Mabry, pp. 149–163. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.

Fish, Suzanne K., and Marcia Donaldson
1991 Production and Consumption in the Archaeological Record: A Hohokam Example. *Kiva* 56:255–275.

Fish, Suzanne K., Paul R. Fish, and Christian E. Downum
1984 Hohokam Terraces and Agricultural Production in the Tucson Basin. In *Prehistoric Agricultural Strategies in the Southwest*, edited by S. K. Fish and P. R. Fish, pp. 55–71. Anthropological Research Papers No. 33. Arizona State University, Tempe.

Fish, Suzanne K., Paul R. Fish, and John H. Madsen
1992 Early Sedentism and Agriculture in the Northern Tucson Basin. In *The Marana Community in the Hohokam World*, edited by S. K. Fish, P. R. Fish, and J. H. Madsen, pp. 11–19. Anthropological Papers No. 56. University of Arizona Press, Tucson.

Fish, Suzanne K., Paul R. Fish, Charles Miksicek, and John H. Madsen
1985 Prehistoric Agave Cultivation in Southern Arizona. *Desert Plants* 7:102–112.

Folsom, Franklin
1992 *Black Cowboy: The Life and Legend of George McJunkin*. Roberts Rinehart, Niwot, Colorado.

Fong, Lawrence M.
1980 Sojourners and Settlers: The Chinese Experience in Arizona. *Journal of Arizona History* 21(2):22–56.

Fontana, Bernard L.
1983a History of the Papago. In *Southwest*, edited by Alfonso Ortiz, pp. 137–148. Handbook of North American Indians, vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.

1983b Pima and Papago: Introduction. In *Southwest*, edited by Alfonso Ortiz, pp. 125–136. Handbook of North American Indians, vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.

1987 Santa Ana de Cuiquiburitac: Pimeria Alta's Northernmost Mission. *Journal of the Southwest* 29:133–159.

1994 *Entrada: The Legacy of Spain and Mexico in the United States.* Southwest Parks and Monuments Association, Tucson.

Fontana, Bernard L., William J. Robinson, Charles W. Cormack, and Ernest E. Leavitt, Jr.
1962 *Papago Indian Pottery*. University of Washington Press, Seattle.

Francaviglia, Richard V.
1978 *The Mormon Landscape: Existence, Creation, and Perception of a Unique Image in the American West.* AMS Press, New York.

Frick, Paul S.
1954 *An Archaeological Survey in the Central Santa Cruz Valley, Southern Arizona*. Unpublished Master's thesis, Department of Anthropology, University of Arizona, Tucson.

Gabel, Norman E.
1931 *Martinez Hill Ruins: An Example of Prehistoric Culture of the Middle Gila*. Unpublished Master's thesis, Department of Archaeology, University of Arizona, Tucson.

Gaquin, Deirdre A., and Mark S. Littman
1999 *County and City Extra. Annual Metro, City, and County Data Book.* 8th ed. Bernan Press, Washington, D.C.

Gerald, Rex E.
1968 *Spanish Presidios of the Late Eighteenth Century in Northern New Spain.* Research Records No. 7. Museum of New Mexico, Santa Fe.

Gladwin, Harold S., Emil W. Haury, E. B. Sayles, and Nora Gladwin
1937 *Excavations at Snaketown I: Material Culture*. Medallion Papers No. 25. Gila Pueblo, Globe, Arizona.

Goodwin, Greville
1969 *The Social Organization of the Western Apache.* University of Arizona Press, Tucson. Originally published 1942.

Grebinger, Paul F.
1971 *Hohokam Cultural Development in the Middle Santa Cruz Valley, Arizona.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

Greenleaf, J. Cameron
1975 The Fortified Hill Site near Gila Bend, Arizona. *The Kiva* 40:213–282.

Greenwald, David H., and Richard S. Ciolek-Torrello
1987 Picacho Pass Site, NA18,030. In *Hohokam Settlement along the Slopes of the Picacho Mountains: The Picacho Area Sites, Tucson Aqueduct Project,* edited by R. S. Ciolek-Torrello and D. R. Wilcox, pp. 130–216. Research Paper No. 35, vol. 3. Museum of Northern Arizona, Flagstaff.

Gregonis, Linda M.
1996 Cultural Interaction in the Northeastern Tucson Basin: The Gibbon Springs Ceramic Assemblage. In *Excavation of the Gibbon Springs Site: A Classic Period Village in the Northeastern Tucson Basin*, edited by M. C. Slaughter and H. Roberts, pp. 183–257. Archaeological Report No. 94-87. SWCA, Tucson.

Gregory, David A.(editor)
1999 *Excavations in the Santa Cruz River Floodplain: The Middle Archaic Component at Los Pozos.* Anthropological Papers No. 20. Center for Desert Archaeology, Tucson.

Gregory, David A., and Sam W. Baar IV
1999 Stratigraphy, Chronology, and Characteristics of the Natural and Cultural Deposits. In *Excavations in the Santa Cruz River Floodplain: The Middle Archaic Component at Los Pozos,* edited by D. A. Gregory, pp. 13–31. Anthropological Papers No. 20. Center for Desert Archaeology, Tucson.

Griffith, James S.
1992 *Beliefs and Holy Places: A Spiritual Geography of the Pimeria Alta.* University of Arizona Press, Tucson.

Halbirt, Carl D., and T. Kathleen Henderson (editors)
1993 *Archaic Occupation on the Santa Cruz Flats: The Tator Hills Archaeological Project.* Northland Research, Flagstaff.

Hansen, Klaus J.
1998 Mormonism. In *World Religions*, pp. 461–464. Macmillan Reference USA, Simon and Schuster Macmillan, New York.

Harris, Richard E.
1983 *The First 100 Years: A History of Arizona Blacks.* Relmo Publishers, Apache Junction, Arizona.

Haury, Emil W.
1937 Pottery Types at Snaketown. In *Excavations at Snaketown I: Material Culture,* by H. S. Gladwin, E. W. Haury, E. B. Sayles, and N. Gladwin, pp. 169–229. Medallion Papers No. 25. Gila Pueblo, Globe, Arizona.

1945 *The Excavation of Los Muertos and Neighboring Ruins in the Salt River Valley, Southern Arizona.* Peabody Museum of American Archaeology and Ethnology Papers Vol. 24(1). Harvard University, Cambridge, Massachusetts.

1950 *The Stratigraphy and Archaeology of Ventana Cave.* University of Arizona Press, Tucson.

1976 *The Hohokam: Desert Farmers and Craftsmen: Excavations at Snaketown 1964–1965.* University of Arizona Press, Tucson.

Haury, Emil W., and E. B. Sayles
1947 *An Early Pit House Village of the Mogollon Culture, Forestdale Valley, Arizona.* University of Arizona Bulletin 18, Social Science Bulletin 16. Tucson, Arizona.

Hayden, Julian D.
1957 *Excavations, 1940, at University Indian Ruin, Tucson, Arizona.* Southwest Monuments Association Technical Series No. 5. Gila Pueblo, Globe, Arizona.

1970 Of Hohokam Origins and Other Matters. *American Antiquity* 35:87–94.

Heckman, Robert A.
2000 *Prehistoric Painted Pottery of Southeastern Arizona.* Technical Series No. 77. Statistical Research, Tucson, in press.

Heidke, James M.
1989 Ceramic Analysis. In *Archaeological Investigations at the Redtail Site, AA:12:149 (ASM), in the Northern Tucson Basin,* by M. Bernard-Shaw, pp. 59–121. Technical Report No. 89-8. Center for Desert Archaeology, Tucson.

Heidke, James M., Elizabeth Miksa, and Michael K. Wiley
1998 Ceramic Artifacts. In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analyses and Synthesis, Part II,* edited by J. B. Mabry, pp. 471–544. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.

Henderson, T. Kathleen
1993 Site Chronology. In *Archaeological Investigations at the Hotts Hawk Site,* by M. Yeatts. *Classic Period Occupation on the Santa Cruz Flats: The Santa Cruz Flats Archaeological Project,* edited by T. K. Henderson and R. J. Martynec, pp. 53–91. Northland Research, Flagstaff.

Hinton, Thomas B.
1955 A Survey of Archaeological Sites in the Altar Valley, Sonora. *The Kiva* 21:1–12.

Homburg, Jeffrey A., Jeffrey H. Altschul, and Rein Vanderpot
1993 *Intermontane Settlement Trends in the Eastern Papagueria: Cultural Resources Sample Survey in the Northeastern Barry M. Goldwater Range, Maricopa County, Arizona.* Technical Series No. 37. Statistical Research, Tucson.

Huckell, Bruce B.
1982 *The Distribution of Fluted Points in Arizona: A Review and an Update.* Archaeological Series No. 147. Arizona State Museum, University of Arizona, Tucson.

1984a *The Archaic Occupation of the Rosemont Area, Northern Santa Rita Mountains, Southeastern Arizona.* Archaeological Series No. 147. Arizona State Museum, University of Arizona, Tucson.

1984b The Paleoindian and Archaic Occupation of the Tucson Basin: An Overview. *The Kiva* 49:133–145.

1984c Sobaipuri Sites in the Rosemont Area. In *Miscellaneous Archaeological Studies in the ANAMAX-Rosemont Land Exchange Area,* by M. D. Tagg, R. G. Ervin, and B. B. Huckell, pp. 107–146. Archaeological Series No. 147, pt. 4. Arizona State Museum, University of Arizona, Tucson.

1987 Summary and Conclusions. In *The Corona de Tucson Project: Prehistoric Use of a Bajada Environment,* by B. B. Huckell, M. D. Tagg, and L. W. Huckell, pp. 261–296. Archaeological Series No. 168. Arizona State Museum, University of Arizona, Tucson.

1988 Late Archaic Archaeology of the Tucson Basin: A Status Report. In *Recent Research on Tucson Basin Prehistory: Proceedings of the Second Tucson Basin Conference,* edited by W. H. Doelle and P. R. Fish, pp. 57–80. Anthropological Papers No. 10. Institute for American Research, Tucson.

1993 *Archaeological Testing of the Pima Community College New Campus Property: The Valencia North Project.* Technical Report No. 92-13. Center for Desert Archaeology, Tucson.

1995 *Of Marshes and Maize: Preceramic Agricultural Settlements in the Cienega Valley, Southeastern Arizona.* Anthropological Papers No. 59. University of Arizona Press, Tucson.

Huckell, Bruce B., Lisa W. Huckell, and Suzanne K. Fish
1995 *Investigations at Milagro, a Late Preceramic Site in the Eastern Tucson Basin.* Technical Report No. 94-5. Center for Desert Archaeology, Tucson.

Huckell, Bruce B., Martin D. Tagg, and Lisa W. Huckell
1987 *The Corona de Tucson Project: Prehistoric Use of a Bajada Environment.* Archaeological Series No. 168. Arizona State Museum, University of Arizona, Tucson.

Huckell, Lisa W.
1998 Macrobotanical Remains. In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analyses and Synthesis, Part I,* edited by J. B. Mabry, pp. 57–148. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.

Huntington, Frederick W.
1986 *Archaeological Investigations at the West Branch Site: Early and Middle Rincon Occupation in the Southern Tucson Basin.* Anthropological Paper No. 5. Institute for American Research, Tucson.

Irwin-Williams, Cynthia
1967 Picosa: The Elementary Southwestern Culture. *American Antiquity* 32:441–457.

Jennings, Jesse D. (editor)
1957 *Danger Cave.* Anthropological Paper No. 27. University of Utah, Salt Lake City.

Johnson, Alfred E.
1960 *The Place of the Trincheras Culture of Northern Sonora in Southwestern Archaeology.* Unpublished Master's thesis, Department of Anthropology, University of Arizona, Tucson.

Joseph, Alice, Rosamond B. Spicer, and Jane Chesky
1949 *The Desert People : A Study of the Papago Indians*. University of Chicago Press, Chicago.

Julien, Nephi
2000 Nephi Julien's Web Pages. Temples of the Church of Jesus Christ of Latter-Day Saints. Snowflake Arizona Temple. <http://www.nephi.com/temples/united_states/south_west/snowflake_arizona.htm>

Karns, Harry J. (translator)
1954 *Luz de Tierra Incógnita: Unknown Arizona and Sonora 1693–1721*, by Captain Juan Mateo Manje. Arizona Silhouettes, Tucson.

Keane, Melissa, A. E. Rogge, and Bradford Luckingham
1992 *The Chinese in Arizona, 1870–1950: A Context for Historic Preservation Planning.* Intermountain Cultural Resource Services Research Paper No. 3. Dames & Moore, Phoenix.

Kelly, Isabel T., James E. Officer, and Emil W. Haury
1978 *The Hodges Ruin: A Hohokam Community in the Tucson Basin.* Anthropological Papers No. 30. University of Arizona Press, Tucson.

Kelly, William H.
1953 *Indians of the Southwest: A Survey of Indian Tribes and Indian Administration in Arizona*. First Annual Report of the Bureau of Ethnic Research, University of Arizona, Tucson.

Kessell, John L.
1970 *Mission of Sorrows: Jesuit Guevavi and the Pimas, 1691–1767.* University of Arizona Press, Tucson.

1976 *Friars, Soldiers, and Reformers: Hispanic Arizona and the Sonora Mission Frontier, 1767–1856.* University of Arizona Press, Tucson.

Kisselburg, JoAnn E.
1993 The Tator Hills Ceramics: Perspectives on a Developing Technology. In *Archaic Occupation on the Santa Cruz Flats: The Tator Hills Archaeological Project*, edited by C. D. Halbirt and T. K. Henderson, pp. 279–304. Northland Research, Flagstaff.

Lawson, Harry
1988 *Dunbar School: Shared Memories of a Special Past.* Pima Community College and the Arizona Historical Society, Tucson.

1996 *The History of African Americans in Tucson: An Afrocentric Perspective.* Lawson's Psychological Services, Tucson.

Layhe, Robert W.
1986 *The 1985 Excavations at the Hodges Site, Pima County, Arizona.* Archaeological Series No. 170. Arizona State Museum, University of Arizona, Tucson.

Leckie, William H.
1967 *The Buffalo Soldiers: A Narrative of the Negro Cavalry in the West.* University of Oklahoma Press, Norman.

Lister, Florence C., and Robert H. Lister
1989 *The Chinese of Early Tucson: Historic Archaeology from the Tucson Urban Renewal Project.* University of Arizona Press, Tucson.

Mabry, Jonathan B.
1997 Introduction. In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Descriptions of the Santa Cruz Bend, Square Hearth, Stone Pipe, and Canal Sites*, by J. B. Mabry, D. L. Swartz, H. Wöcherl, J. J. Clark, G. H. Archer, and M. W. Lindeman, pp. 1–7. Anthropological Papers No. 18. Center for Desert Archaeology, Tucson.

1998 Introduction. In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analyses and Synthesis*, Part I, edited by J. B. Mabry, pp. 1–29. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.

Mabry, Jonathan B., and Gavin H. Archer
1997 The Santa Cruz Bend Site, AZ AA:12:746 (ASM). In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Descriptions of the Santa Cruz Bend, Square Hearth, Stone Pipe, and Canal Sites*, by J. B. Mabry, D. L. Swartz, H. Wöcherl, J. J. Clark, G. H. Archer, and M. W. Lindeman, pp. 9–228. Anthropological Papers No. 18. Center for Desert Archaeology, Tucson.

Mabry, Jonathan B., Deborah L. Swartz, Helga Wöcherl, Jeffrey J. Clark, Gavin H. Archer, and Michael W. Lindeman

1997 *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Descriptions of the Santa Cruz Bend, Square Hearth, Stone Pipe, and Canal Sites*. Anthropological Papers No. 18. Center for Desert Archaeology, Tucson.

Majewski, Teresita

1998 Historical Profiles of the Apache and Yavapai Reservations in Arizona. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 319–336. SRI Press, Tucson.

Majewski, Teresita, and James E. Ayres

1997 Toward an Archaeology of Colonialism in the Greater Southwest. *Revista de Arqueología Americana* 12:55–86.

Mann, Christine Toler

1991 *Binghampton Historic District: A Study of an Urban Neighborhood's Attempt to Gain Historic District Status.* Unpublished M.A. thesis, School of Renewable Natural Resources, University of Arizona, Tucson.

Martin, Paul Sidney, and John B. Rinaldo

1947 *The SU Site: Excavations at a Mogollon Village, Western New Mexico. Third Season, 1946*. Anthropology Series 32. Field Museum of Natural History, Chicago.

Masse, W. Bruce

1979 An Intensive Survey of Prehistoric Dry Farming Systems near Tumamoc Hill in Tucson, Arizona. *The Kiva* 45:141–186.

1980a *Excavations at Gu Achi: A Reappraisal of Hohokam Settlement and Subsistence in the Arizona Papagueria*. Publications in Anthropology No. 12. Western Archeological and Conservation Center, National Park Service, Tucson.

1980b The Hohokam of the Lower San Pedro Valley and the Northern Papagueria: Continuity and Variability in Two Regional Populations. In *Current Issues in Hohokam Prehistory: Proceedings of a Symposium*, edited by D. E. Doyel and F. Plog, pp. 205–223. Anthropological Research Paper No. 23. Arizona State University, Tempe.

1981 A Reappraisal of the Protohistoric Sobaipuri Indians of Southeastern Arizona. In *The Protohistoric Period in the North American Southwest, A.D. 1450–1700*, edited by D. R. Wilcox and W. B. Masse, pp. 28–56. Anthropological Research Paper No. 24. Arizona State University, Tempe.

1985 The Peppersauce Wash Project: Excavations at Three Multicomponent Sites in the Lower San Pedro Valley, Arizona. Manuscript on file, Arizona State Museum Library. University of Arizona, Tucson.

McCarthy, James
1985 A *Papago Traveler: The Memories of James McCarthy*. Edited by G. Westover. Sun Tracks and University of Arizona Press, Tucson.

McCarty, Kieran R.
1976 *Desert Documentary: The Spanish Years, 1767–1821.* Monograph No. 4. Arizona Historical Society, Tucson.

1996 Jesuits and Franciscans. In *The Pimería Alta: Missions and More*, edited by James E. Officer, Mardith Schuetz-Miller, and Bernard L. Fontana, pp. 35–45. Southwestern Mission Research Center, Tucson.

McClintock, James H.
1985 *Mormon Settlement in Arizona*. University of Arizona Press, Tucson.

McGuire, Randall H.
1982 Problems in Culture History. In *Hohokam and Patayan: Prehistory of Southwestern Arizona*, edited by R. H. McGuire and M. B. Schiffer, pp. 153–222. Academic Press, New York.

1991 On the Outside Looking In: The Concept of Periphery in Hohokam Archaeology. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest*, edited by G. J. Gumerman, pp. 347–382. Amerind Foundation, Dragoon, Arizona, and University of New Mexico Press, Albuquerque.

McGuire, Randall H., and Maria Elisa Villalpando C.
1993 *An Archaeological Survey of the Altar Valley, Sonora, Mexico*. Archaeological Series No. 184. Arizona State Museum, University of Arizona, Tucson.

McGuire, Randall H., and Michael B. Schiffer (editors)
1982 *Hohokam and Patayan: Prehistory of Southwestern Arizona.* Academic Press, New York.

McGuire, Thomas R.
1986 *Politics and Ethnicity on the Río Yaqui: Potam Revisited*. University of Arizona Press, Tucson.

Miller, Wick R.
1983 Uto-Aztecan Languages. In *Southwest*, edited by Alfonso Ortiz, pp. 113–124. Handbook of North American Indians, vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Moisés, Rosalio, Jane H. Kelley, and William Curry Holden
1971 *A Yaqui Life: The Personal Chronicle of a Yaqui Indian*. University of Nebraska Press, Lincoln.

Moorhead, Max L.
1975 *The Presidio: Bastion of the Spanish Borderlands*. University of Oklahoma Press, Norman.

Morris, Donald H.
1969 Red Mountain: An Early Pioneer Period Hohokam Site in the Salt River Valley of Central Arizona. *American Antiquity* 34:40–53.

Nabhan, Gary P., Wendy Hodgson, and Frances Fellows
1989 A Meager Living on Lava and Sand? Hia Ched O'odham Food Resources and Habitat Diversity in Oral and Documentary Histories. *Journal of the Southwest* 31:508–533.

Officer, James E.
1987 *Hispanic Arizona, 1536–1856.* University of Arizona Press, Tucson.

Opler, Morris E.
1983 Chiricahua Apache. In *Southwest*, edited by Alfonso Ortiz, pp. 401–418. Handbook of North American Indians, vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Ortiz, Alfonso (editor)
1983 *Southwest*. Handbook of North American Indians, vol. 10. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Perry, Richard J.
1991 *Western Apache Heritage: People of the Mountain Corridor.* University of Texas Press, Austin.

Peterson, Charles S.
1973 *Take Up Your Mission: Mormon Colonizing along the Little Colorado River, 1870–1900.* University of Arizona Press, Tucson.

Pilles, Peter J., Jr.
1981 A Review of Yavapai Archaeology. In *The Protohistoric Period in the North American Southwest, A.D. 1450–1700*, edited by D. R. Wilcox and W. B. Masse, pp. 163–182. Anthropological Research Papers No. 24. Arizona State University, Tempe.

Pima Association of Governments
1997 Population Handbook, 1997. Pima Association of Governments Web Site. <http://www.pagnet.org/Population/pop1997/popov6.html>

Porter, Kenneth W.
1998 Black Cowboys in the American West, 1866–1900. In *African Americans on the Western Frontier*, edited by M. L. Billington and R. D. Hardaway, pp. 110–127. University Press of Colorado, Niwot, Colorado.

Rankin, Adrienne G., and Christian E. Downum
1986 Site Descriptions. In *A Class III Archaeological Survey of the Phase B Corridor, Tucson Aqueduct, Central Arizona Project*, by C. E. Downum, A. G. Rankin, and J. S. Czaplicki, pp. 41–180. Archaeological Series No. 168. Arizona State Museum, University of Arizona, Tucson.

Ravesloot, John C. (editor)
1987 *The Archaeology of the San Xavier Bridge Site (AZ BB:13:14) Tucson Basin, Southern Arizona*. Archaeological Series No. 171. University of Arizona, Tucson.

Ravesloot, John C., and Stephanie M. Whittlesey
1987 Inferring the Protohistoric Period in Southern Arizona. In *The Archaeology of the San Xavier Bridge Site (AZ BB:13:14), Tucson Basin, Southern Arizona*, edited by J. C. Ravesloot, pp. 81–98. Archaeological Series No. 171. Arizona State Museum, University of Arizona, Tucson.

Rea, Amadeo M.
1997 *At the Desert's Green Edge: An Ethnobotany of the Gila River Pima*. University of Arizona Press, Tucson.

1998 *Folk Mammology of the Northern Pimans*. University of Arizona Press, Tucson.

Reid, Jefferson, and Stephanie Whittlesey
1997 *The Archaeology of Ancient Arizona*. University of Arizona Press, Tucson.

Roberts, David
1994 *Once They Moved Like the Wind: Cochise, Geronimo, and the Apache Wars*. Touchstone, New York.

Rogers, Malcolm J.
1939 *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas*. Papers No. 3. San Diego Museum, San Diego.

Roney, John R.
1996 Late Archaic Cerros de Trincheras in Northwestern Chihuahua. Paper presented at the 61st Annual Meeting of the Society for American Archaeology, New Orleans.

Rosenthal, E. Jane, Douglas Brown, Marc Severson, and John B. Clonts
1978 *The Quijotoa Valley Project*. U.S. Department of the Interior, National Park Service, Tucson.

Roth, Barbara J.
1988 *Late Archaic Settlement and Subsistence in the Tucson Basin.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

1996 *Early Formative Adaptations in the Southern Southwest*. Monographs in World Archaeology No. 25. Prehistory Press, Madison.

Russell, Frank
1975 *The Pima Indians.* University of Arizona Press, Tucson.

Sanchez de Carpenter, Guadalupe, María Elisa Villalpando Canchola, and John P. Carpenter
1996 Proyecto La Playa: 5000 Years of Occupation in the Boquillas Valley, Sonora, Mexico. Paper presented at the 61st Annual Meeting of the Society for American Archaeology, New Orleans.

Sayles, E. B.
1945 *The San Simon Branch: Excavations at Cave Creek and in the San Simon Valley,* vol. 1*: Material Culture*. Medallion Papers No. 34. Gila Pueblo, Globe, Arizona.

Sayles, E. B., and Ernst Antevs
1941 *The Cochise Culture*. Medallion Papers No. 29. Gila Pueblo, Globe, Arizona.

Scantling, Frederick H.
1940 *Excavations at the Jackrabbit Ruin, Papago Indian Reservation, Arizona.* Unpublished Master's thesis, Department of Anthropology, University of Arizona, Tucson.

Schellie, Don
1968 *Vast Domain of Blood: The Story of the Camp Grant Massacre.* Westernlore Press, Los Angeles.

Schmitt, Martin F. (editor)
1960 *General George Crook: His Autobiography.* University of Oklahoma Press, Norman.

Schroeder, Albert H.
1974a A Study of the Apache Indians, Part V: "Tonto" and Western Apaches. In *Apache Indians IV*, edited by D. A. Horr, pp. 327–645. Garland, New York.

1974b A Study of Yavapai History. In *Yavapai Indians*, by A. H. Schroeder and A. B. Thomas, pp. 23–354. Garland American Indian Ethnohistory Series, D. A. Horr, general editor. Garland, New York.

Schuetz-Miller, Mardith, and Bernard L. Fontana
1996 Mission Churches of Northern Sonora. In *The Pimería Alta: Missions and More*, edited by J. E. Officer, M. Schuetz-Miller, and B. L. Fontana, pp. 61–95. Southwestern Mission Research Center, Tucson.

Seymour, Deni J.
1989 The Dynamics of Sobaipuri Settlement in the Eastern Pimeria Alta. *Journal of the Southwest* 31:205–222.

Sheridan, Thomas E.
1986 *Los Tucsonenses: The Mexican Community in Tucson, 1854–1941.* University of Arizona Press, Tucson.

1995 *Arizona: A History.* University of Arizona Press, Tucson.

Simpson, Kay, and Susan J. Wells
1983 *Archaeological Survey in the Eastern Tucson Basin, Saguaro National Monument, Rincon Mountain Unit, Cactus Forest Area.* Publications in Anthropology No. 22(1). Western Archeological and Conservation Center, National Park Service, Tucson.

1984 *Archaeological Survey in the Eastern Tucson Basin, Saguaro National Monument, Rincon Mountain Unit, Tanque Verde Ridge, Rincon Creek, Mica Mountain Areas.* Publications in Anthropology No. 22(3). Western Archeological and Conservation Center, National Park Service, Tucson.

Slaughter, Mark C., and Heidi Roberts (editors)
1996 *Excavation of the Gibbon Springs Site: A Classic Period Village in the Northeastern Tucson Basin*. Archaeological Report No. 94-87. SWCA, Tucson.

Slawson, Laurie V.
1990 *The Terminal Classic Period in the Tucson Basin: Rabid Ruin, A Late Tucson Phase Hohokam Settlement*. Southwest Cultural Series No. 10. Cultural and Environmental Systems, Tucson.

Smith, Fay J., John L. Kessell, and Francis J Fox
1966 *Father Kino in Arizona*. Arizona Historical Foundation, Phoenix.

Sonnichsen, C. L. (editor)
1986 *Geronimo and the End of the Apache Wars*. University of Nebraska Press, Lincoln.

Spicer, Edward H.
1940 *Pascua: A Yaqui Village in Arizona*. University of Chicago Press, Chicago.

1962 *Cycles of Conquest: The Impacts of Spain, Mexico, and the United States on the Indians of the Southwest, 1533–1960*. University of Arizona Press, Tucson.

1980 *The Yaquis: A Cultural History*. University of Arizona Press, Tucson.

1983 REFERENCE STILL TO COME

Stacy, V. K. Pheriba
1974 *Cerros de Trincheras in the Arizona Papagueria*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

Stacy, V. K. Pheriba, and Julian D. Hayden
1975 *Saguaro National Monument: An Overview*. Western Archeological and Conservation Center, National Park Service, Tucson.

Sterner, Matthew A.
1996 *Schroeder's Well and the Davidson Flume: A Glimpse into Tucson's Mormon Culture.* Technical Report No. 96-5. Statistical Research, Tucson.

Sugnet, C. L., and J. Jefferson Reid (editors)
1994 *The Surface of Presidio Santa Cruz de Terrenate.* U.S. Bureau of Land Management, Tucson.

Swartz, Deborah L., and Michael Lindeman
1997 The Stone Pipe Site, AZ BB:13:425 (ASM). In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Descriptions of the Santa Cruz Bend, Square Hearth, Stone Pipe, and Canal Sites*, by J. B. Mabry, D. L. Swartz, H. Wöcherl, J. J. Clark, G. H. Archer, and M. W. Lindeman, pp. 281–417. Anthropological Papers No. 18. Center for Desert Archaeology, Tucson.

Taylor, David
1999 Pima County's Social Demographics. Paper presented at Pima County's Sonoran Desert Conservation Plan Education Session No. 3, July 24, 1999, Arizona-Sonora Desert Museum, Tucson, Arizona.
<http://www.co.pima.az.us/cmo/sdcp/sdcp2/ses/ses3.html>

Thiel, J. Homer
1997 *Archaeological Investigations of a Chinese Gardener's Household, Tucson, Arizona.* Technical Report No. 96-22. Center for Desert Archaeology, Tucson.

Thrapp, Dan L.
1964 *Al Sieber, Chief of Scouts.* University of Oklahoma Press, Norman.

1967 *The Conquest of Apacheria.* University of Oklahoma Press, Norman.

Treutlein, Theodore E. (translator and editor)
1989 *Ignaz Pfefferkorn's Sonora: A Description of the Province.* University of Arizona Press, Tucson.

Trueba Lara, José Luis
1990 *Los chinos en Sonora: una historia olvidada.* Cuadernos del Instituto de Investigaciones Históricas, Colección El Tejabán No. 2. Universidad de Sonora, Hermosillo, Sonora.

Tucson Indian Center (TIC)
1998 *Tucson Indian Center Survey*. Tucson Indian Center, Tucson.

Underhill, Ruth M.
1936 *The Autobiography of a Papago Woman*. American Anthropological Association, Menasha, Wisconsin.

1938 *Singing for Power: The Song Magic of the Papago Indians of Southern Arizona.* University of California Press, Berkeley. Reprinted 1993, University of Arizona Press, Tucson.

1939 *Social Organization of the Papago Indians*. Columbia University Press, New York.

1940 *The Papago Indians of Arizona and Their Relatives the Pima*. Education Division, U.S. Office of Indian Affairs, Washington, D.C.

1946 *Papago Indian Religion*. Columbia University Press, New York.

1979 *Papago Woman*. Waveland Press, Prospect Heights, Illinois.

University of Arizona, Native American Resource Center
1991 Student Performance Data. Native American Resource Center, University of Arizona, Tucson.

U.S. Bureau of the Census
1990a Population and Housing: Papago Reservation—Pima County, Arizona. U.S. Bureau of the Census, Washington, D.C.

1990b Population and Housing: Pascua Yaqui Reservation. U.S. Bureau of the Census, Washington, D.C.

1990c Selected Ancestry Groups and Persons in Selected Hispanic Origin Groups. 1990 Census of Population and Housing, Tucson MSA Report, Table 16. U.S. Bureau of the Census, Washington, D.C.

USDA Forest Service
1996 *Cultural Affiliations: Prehistoric Cultural Affiliations of Southwestern Indian Tribes.* USDA Forest Service, Southwest Region, Albuquerque.

Villalpando, María Elisa
1997 La tradición trincheras y los grupos costeros del desierto sonorense. In *Prehistory of the Borderlands: Recent Research in the Archaeology of Northern Mexico and the Southern Southwest*, edited by J. Carpenter and G. Sanchez, pp. 95–111. Archaeological Series No. 186. Arizona State Museum, University of Arizona, Tucson.

Wagoner, Jay J.
1975 *Early Arizona: Prehistory to Civil War.* University of Arizona Press, Tucson.

Wallace, Henry D.
1986 *Rankin Phase Decorated Ceramics in the Tucson Basin.* Anthropological Papers No. 1. Institute for American Research, Tucson.

Wallace, Henry D., and James P. Holland
1986 *Petroglyphs of the Picacho Mountains, South Central Arizona.* Anthropological Papers No. 6. Institute for American Research, Tucson.

Wasley, William W.
1966 Classic Period Hohokam. Paper presented at the 31st Annual Meeting of the Society for American Archaeology, Reno.

Wasley, William W., and David E. Doyel
1980 Classic Period Hohokam. *The Kiva* 45:337–352.

Wasley, William W., and Alfred E. Johnson
1965 *Salvage Archaeology in Painted Rocks Reservoir, Western Arizona.* Anthropological Papers No. 9. University of Arizona Press, Tucson.

Waters, Michael R.
1982 The Lowland Patayan Ceramic Typology. In *Hohokam and Patayan: Prehistory of Southwestern Arizona,* edited by R. H. McGuire and M. B. Schiffer, pp. 537–570. Academic Press, New York.

1986 *The Geoarchaeology of Whitewater Draw, Arizona.* Anthropological Papers No. 45. University of Arizona Press, Tucson.

Weber, David J.
1982 *The Mexican Frontier, 1821–1846: The American Southwest under Mexico.* University of New Mexico Press, Albuquerque.

Welch, John R.
1994 Ethnographic Models for Tonto Basin Land Use. In *The Roosevelt Rural Sites Study*, vol. 3: *Changing Land Use in the Tonto Basin,* edited by R. S. Ciolek-Torrello and J. R. Welch, pp. 79–120. Technical Series No. 28. Statistical Research, Tucson.

1996 *The Archaeological Measures and Social Implications of Agricultural Commitment*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

Whalen, Norman M.
1971 *Cochise Culture Sites in the Central San Pedro Drainage, Arizona.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

Wheat, Joe Ben
1955 *Mogollon Culture Prior to A.D. 1000*. Society for American Archaeology Memoirs No. 10.

Whittemore, Isaac T.
1893 The Pima Indians, Their Manners and Customs. In *Among the Pimas; or The Mission to the Pima and Maricopa Indians*, edited by C.H. Cook, pp. 51–96. Printed for the Ladies' Union Mission School Association, Albany, New York.

Whittlesey, Stephanie M.
1986 Restorable and Partial Vessels. In *Archaeological Investigations at AZ U:14:75 (ASM): A Turn-of-the-Century Pima Homestead*, edited by R. W. Layhe, pp. 74–102. Archaeological Series No. 172. Arizona State Museum, University of Arizona, Tucson.

1987 A Stylistic Study of Tanque Verde Red-on-brown Pottery. In *The Archaeology of the San Xavier Bridge Site (AZ BB:13:14), Tucson Basin, Southern Arizona*, edited by J. C. Ravesloot, pp. 117–147. Archaeological Series No. 171. Arizona State Museum, University of Arizona, Tucson.

1988 Variability in Tanque Verde Red-on-brown. In *Recent Research on Tucson Basin Prehistory: Proceedings of the Second Tucson Basin Conference*, edited by W. H. Doelle and P. R. Fish, pp. 373–385. Anthropological Papers No. 10. Institute for American Research, Tucson.

1994 Three Centuries of Pottery in the Pimería Alta. Paper presented at the symposium "Prehistoric and Historic Archaeology of the Borderlands," Arizona Archaeological Council Spring Meeting, Tucson.

1996 Culture History: Prehistoric Narratives for Southern Arizona. In *Cultural Resource Management Plan for the Fairfield Canoa Ranch Property*, vol. 1: *Background and Research Design for Prehistoric Archaeological Resources*, by C. R. Van West and S. M. Whittlesey, pp.45–80. Statistical Research, Tucson. Draft submitted to Fairfield Canoa LLC.

1998a Ceramics. In *Early Farmers of the Sonoran Desert: Archaeological Investigations at the Houghton Road Site, Tucson, Arizona*, edited by R. Ciolek-Torrello, pp. 127–167. Technical Series No. 72. Statistical Research, Tucson.

1998b Early Formative Stage Ceramics and Cultural Affiliation. In *Early Farmers of the Sonoran Desert: Archaeological Investigations at the Houghton Road Site, Tucson, Arizona*, edited by R. Ciolek-Torrello, pp. 209–228. Technical Series No. 72. Statistical Research, Tucson.

1998c Rethinking the Core-Periphery Model of the Pre-Classic Period Hohokam. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 597–628. SRI Press, Tucson.

1998d Toward a Unified Theory of Ceramic Production and Distribution: Examples from the Central Arizona Deserts. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 417–446. SRI Press, Tucson.

1998e The Vanished River: Historical-Period Impacts to Desert Landscapes and Archaeological Implications. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 29–57. SRI Press, Tucson.

Whittlesey, Stephanie M. (editor)
1999 *Archaeological Investigations at the Julian Wash Site (AZ BB:13:17 ASM), Pima County, Arizona.* Vol. 1: *Introduction and Results of Fieldwork*. Technical Report No. 99-27. Statistical Research, Tucson. Draft.

Whittlesey, Stephanie M., and Su Benaron
1998 Yavapai and Western Apache Ethnohistory and Material Culture. In *Vanishing River: Landscapes and Lives of the Lower Verde Valley: The Lower Verde Archaeological Project*, edited by S. M. Whittlesey, R. Ciolek-Torrello, and J. H. Altschul, pp. 143–183. SRI Press, Tucson.

Whittlesey, Stephanie M., and Richard Ciolek-Torrello
1992a *On the Frontier: A Trincheras–Hohokam Farmstead, Arivaca, Arizona*. Technical Series No. 30. Statistical Research, Tucson.

1992b A Revolt against Rampant Elites: Toward an Alternative Paradigm. *Proceedings of the Second Salado Conference, Globe, AZ,* edited by R. C. Lange and S. Germick, pp. 312–324. Occasional Paper 1992. Arizona Archaeological Society, Phoenix.

1996 The Archaic-Formative Transition in the Tucson Basin. In *Early Formative Adaptations in the Southern Southwest*, edited by B. J. Roth, pp. 49–64. Monographs in World Archaeology No. 25. Prehistory Press, Madison.

Whittlesey, Stephanie M., Richard S. Ciolek-Torrello, and Matthew A. Sterner
1994 *Southern Arizona: The Last 12,000 Years: A Cultural-Historic Overview for the Western Army National Guard Aviation Training Site*. Technical Series No. 48. Statistical Research, Tucson.

Whittlesey, Stephanie M. and J. Jefferson Reid
1982 Cholla Perspectives on Salado. In *Cholla Project Archaeology,* vol. 1*: Introduction and Special Studies*, edited by J. J. Reid, pp. 63–80. Archaeological Series 161. Arizona State Museum, University of Arizona, Tucson.

1989 The Rivers of Jaramillo: A Reappraisal of the Bolton Route. Paper presented at the Coronado Conference, Southwest Center, University of Arizona, Tucson.

Wilcox, David R.
1979 The Hohokam Regional System. In *An Archaeological Test of Sites in the Gila Butte–Santan Region, South-Central Arizona*, edited by G. Rice, D. Wilcox, K. Rafferty, and J. Schoenwetter, pp. 77–116. Technical Paper No. 3, Anthropological Research Papers No. 18. Arizona State University, Tempe.

1987 New Models of Social Structure at the Paloparado Site. In *The Hohokam Village: Site Structure and Organization*, edited by D. E. Doyel, pp. 223–248. Southwestern and Rocky Mountain Division of the American Association for the Advancement of Science, Glenwood Springs, Colorado.

Willey, Gordon R., and Philip Phillips
1958 *Method and Theory in American Archaeology*. W. H. Freeman, San Francisco.

Williams, Jack S.
1986 The Presidio of Santa Cruz de Terrenate: A Forgotten Fortress of Southern Arizona. *The Smoke Signal* 47–48:129–148.

1988 Fortress Tucson: Architecture and the Art of War (1775–1856). *The Smoke Signal* 49/50:168–188.

Windmiller, Ric
1973 The Late Cochise Culture in the Sulphur Spring Valley, Southeastern Arizona: Archaeology of the Fairchild Site. *The Kiva* 39:131–169.

Withers, Arnold
1973 Excavations at Valshni Village, Arizona. *The Arizona Archaeologist No.* 7. Arizona Archaeological Society, Phoenix.

Wöcherl, Helga, and Jeffery J. Clark
1997 The Square Hearth Site, AZ AA:12:745 (ASM). In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Descriptions of the Santa Cruz Bend, Square Hearth, Stone Pipe, and Canal Sites*, by J. B. Mabry, D. L. Swartz, H. Wöcherl, J. J. Clark, G. H. Archer, and M. W. Lindeman, pp. 229–280. Anthropological Papers No. 18. Center for Desert Archaeology, Tucson.

Woodson, M. Kyle
1995 *The Goat Hill Site: A Western Anasazi Pueblo in the Safford Valley of Southeastern Arizona*. Unpublished Master's thesis, Department of Anthropology, University of Texas, Austin.

Wyllys, Rufus K.
1931 Padre Luís Velarde's Relación of Pimería Alta. 1716. *The New Mexico Historical Review*, VI (2):111–157.

Yancy, James Walter
1933 *The Negro of Tucson: Past and Present.* Unpublished Master's thesis, College of Letters, Arts, and Sciences, University of Arizona, Tucson.

Zanders, Ida O. Williams
1946 *Negro Education in Tucson, Arizona.* Unpublished Master's thesis, Department of Education, University of Arizona, Tucson.