

HOPI USE, OCCUPANCY, AND POSSESSION
OF THE INDIAN RESERVATION
DEFINED BY THE ACT OF JUNE 14, 1934:
AN ARCHAEOLOGICAL PERSPECTIVE

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INTRODUCTION

The Hopi people and their ancestors have occupied, used, and possessed most of northeastern Arizona for several hundred years. This area contains thousands of archaeological sites recognized by archaeologists and historians as ancestral to the Hopi. Hopi use, occupation, and possession of this area in 1934 is inseparably connected to their use, occupation, and possession in the preceding prehistoric and historic periods. As a people dependent prehistorically on agriculture, collecting of plants, and hunting of game, and (since the 1600s) the raising and herding of domestic animals, especially sheep, goats, cattle, horses, and burros, their very existence hinged on their knowledge of a vast area and their ability to utilize the various resources of that area without interference from others. This sustaining area the Hopi call "Tusqua." The boundaries of this land for the Hopi are defined by shrines or cairns. These boundaries were explained in 1939 and again in 1951 for the benefit of the federal government

CV-6417-201

by religious leaders from the Second Mesa village of Shungopavi.¹ The shrines marking these boundaries continue to be visited by Hopis as was reported in a 1982 article in National Geographic magazine.² A map showing the general outline of the Hopi "Tusqua" is presented as Figure 1. The Hopi feeling about this land was eloquently stated in the 1951 statement presented to the Commissioner of Indian Affairs and is quoted in part below:³

The Hopi Tusqua (land) is our love and will always be, and it is the land upon which our leader fixes and tells the dates of our religious life. Our land, our religion, and our life are one.

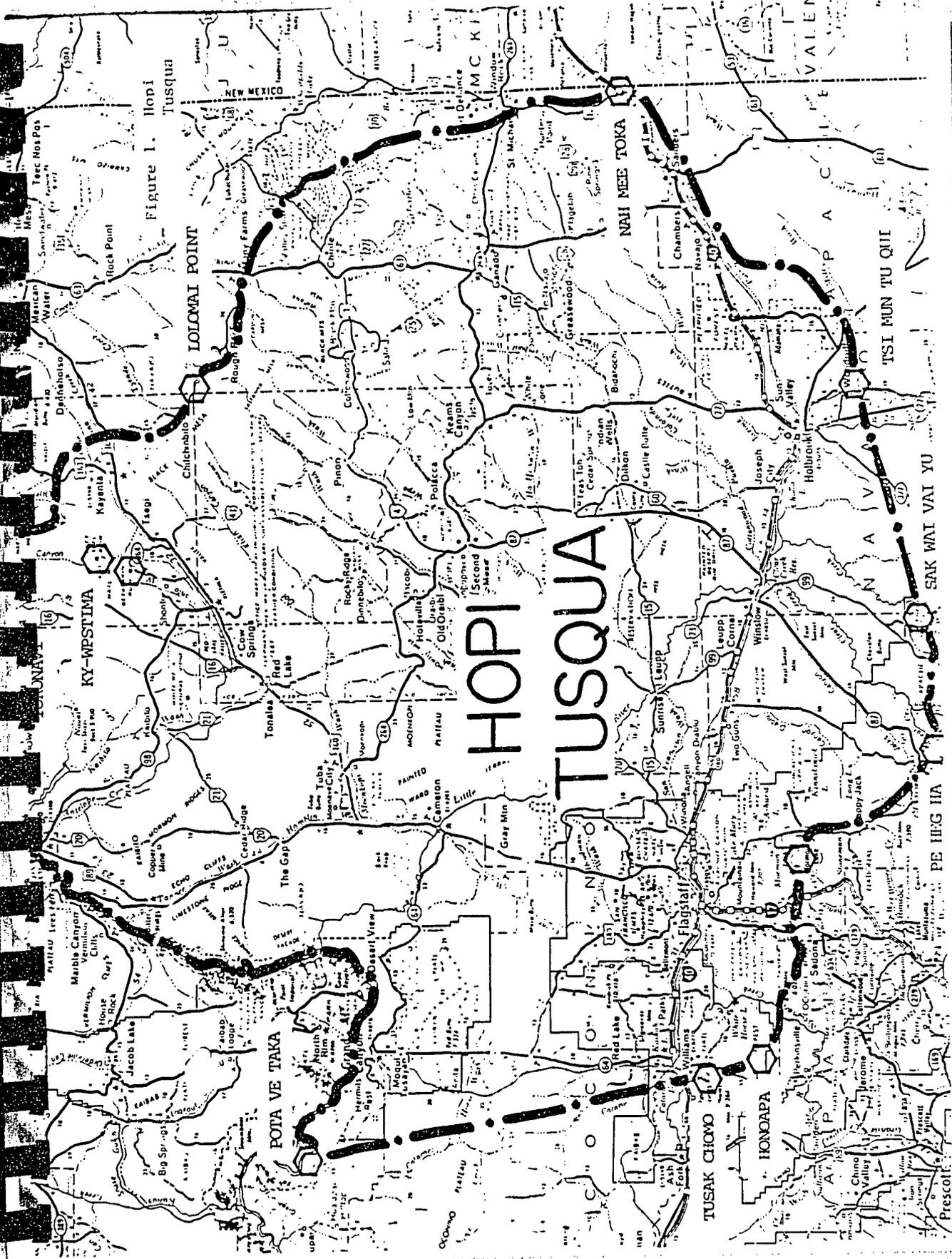
1. It is from the land that each true Hopi gathers the rocks, the plants, the different woods, roots, and his life, and each in the authority of his rightful obligation brings to our ceremonies proof of our ties to this land.

2. It is upon this land that we have hunted and were assured of right to game such as deer, elk, antelope, buffalo, rabbit, and turkey. It is here that we capture the eagle, the hawk, and such birds whose feathers belong to our ceremonies.

3. It is upon this land that we made trails to our salt supply.

4. It is over this land that many people have come seeking places for settlement, All the clan groups named their contribution to our

Figure 1. Hopi Tusqua



8. Tukuk navi (Navajo Mountain)
- 9&10. Ky westima (east of Keet Seel and Betatakin)
11. Nei yava walsh (Lolomai Point)
12. Nah mee taka (Lupton-mouth of canyon)
13. Tsi mun tu qui (Woodruff Butte)

This 1951 petition and 1939 and 1951 demarking of boundaries circumscribe an area identical to that indicated in 1982. The present and past use, occupation, and possession of this land and its importance to the Hopi are eloquently stated in the above quote. Hopi "Tusqua" includes nearly all of the 1934 Reservation boundaries. This report presents the physical evidence, the material culture, documenting Hopi use, occupation, and possession of the 1934 Reservation boundary area in and about 1934. To present this evidence in a meaningful context, a brief outline of Hopi involvement in this area from before A.D. 700 to 1940 will be considered.

**PREHISTORY AND HISTORY OF THE AREA WITHIN THE
1934 RESERVATION BOUNDARIES, PRE-A.D. 700 TO 1940**

This time period, pre-A.D. 700-1940, will be divided into four periods under three cultural designations. Although the prehistoric Pueblo period in northeastern Arizona has been termed "Anasazi" by archaeologists, the Hopi name for these people, "Hisatsinom," will be used in this report for the periods pre-A.D. 700 and 700-1300. Ancestral Hopi will refer to the A.D. 1300-1630 period; and historic Hopi, 1630-1940 (Fig. 2). The date 1630

marks the establishment of Spanish missions and visitas at the five Hopi villages existing at that time: Awatovi, Waipi, Shungopavi, Mishongnovi, and Oraibi. Awatovi was destroyed and abandoned in 1700.⁴ Walpi, Shungopavi, and Mishongnovi were moved from benches to mesa top locations between 1680-1700. Only Oraibi remains in the same place as it did in 1680.

The date 1300 marks the time when thousands of immigrants from northeastern Arizona moved to the Hopi Mesas.⁵ This time corresponds with what Hopi oral tradition refers to as the "gathering of the clans" and is related in most of the migration stories of the Hopi clans.⁶ In Hopi society the people belong to named clans. A clan is a group of people who believe they are related to a past real or mythical ancestor. Names for these clans can be animal: e.g., Bear, Coyote; insect: e.g., Butterfly, Spider; element: e.g., Water, Fire; or other. These clans can each trace their ancestry through oral histories. These histories tell of the travels of the clan, their relation to other clans, how they came into being, and how they arrived at the Hopi Mesas and in the particular villages. Frequently, these clan histories describe specific ruins in which the clan members lived, and according to their traditions, these ruins are to be visited regularly by the clan c: clans that claim them.

Oral histories intertwine truth with mythology, but in many cases ancestral Hopi occupation of specific sites has been supported by archaeological evidence. These archaeological sites identified all postdate A.D. 1100. However, archaeologists have

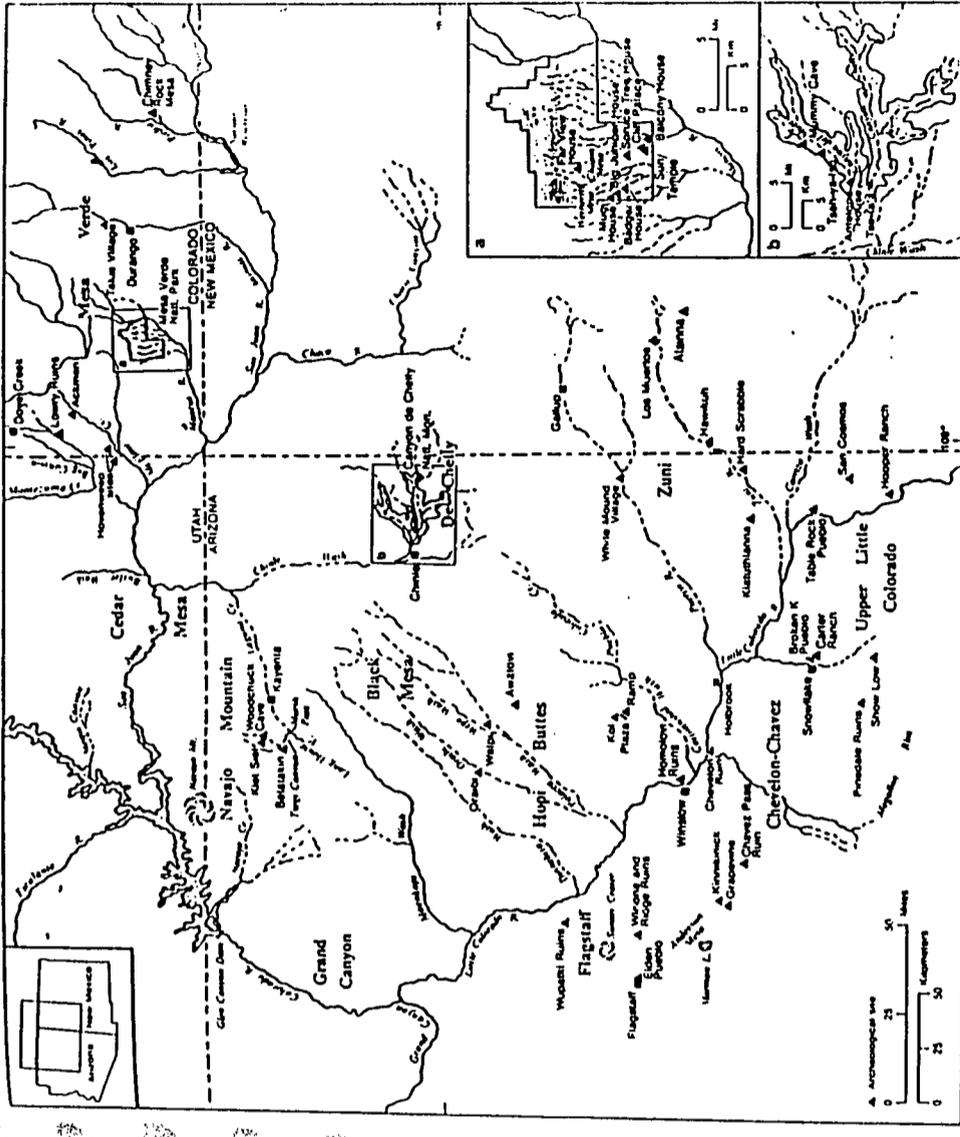


Figure 2. Provinces of the Western Anasazi.

been able to show continuity between the culture occupying sites postdating 1100 with those predating 1100. Continuity is displayed through occupation of the same site from before 1100 to after 1100, and the similarity of material culture extending back to before the time of Christ.

Use, Occupation, and Possession Within The
1934 Reservation Boundaries, to A.D. 700

The date A.D. 700 has been selected because material remains are more easily identified from this time forward in northeastern Arizona. The most readily identifiable remains of culture are pottery fragments, or pot sherds, and architecture: houses, religious rooms, and related structures.

Hisatsinom culture, the Pueblo culture occupying the Colorado Plateau of Arizona, New Mexico, Colorado, and Utah, is defined as a semi-sedentary to sedentary culture dependent on maize and squash agriculture.⁷ The people lived in villages comprised of one to twenty pit houses, more accurately described as houses built over shallow pits, that developed in this area by 600 B.C. In fact the earliest have been found in northeastern Arizona on the north end of Black Mesa in the 1934 Reservation and outside the 1882 Hopi Reservation boundary.⁸

The Hisatsinom people were closely tied to their environment. They exploited the full potential of the flora and fauna of this arid area and moved seasonally to take advantage of the best food yields in different places. Attention to plants and knowledge of the conditions necessary to produce greater yields may

have resulted in management of some of the wild plant resources and laid the foundation for experimentation and eventual acceptance of domesticated plants during the last two millennia B.C.⁹ Thus, in addition to domesticates, one finds abundant remains of such managed plants as Amaranth (Amaranthus sp.), sunflower seeds (Helianthus annuus), and tansy mustard (Descurainia sp.).¹⁰

From the first century A.D. onward to A.D. 700, these people, called "Basketmaker" by southwestern archaeologists, developed a more settled way of life. To the domesticated staples of maize and squash was added beans.¹¹ The turkey was domesticated providing a ready source of feathers, and meat in times of scarcity. The bow and arrow replaced the atlatl or spear thrower and the knowledge of pottery making was acquired.¹² This early pottery was gray with no design, but by the A.D. 600s basket inspired design motifs were being applied with black paint to the inside of bowls and, rarely, to the outside of jars.

The remains of the Basketmaker people, some ancient ancestors to the Hopi, are widely, if thinly, distributed in northeastern Arizona. Early preceramic Basketmaker sites, dated pre-A.D. 400-500, are difficult to find for archaeologists because of their antiquity, absence of pottery, smallness, and temporary nature of sites. Most of our evidence comes from dry caves, or alcoves, in the northeastern corner of Arizona. Such cave sites are common in the vicinity of Kawestima (Navajo National Monument)¹³ and Koltsaki (Canyon de Chelly)¹⁴ and recently several open sites have been excavated on the northeast of Black Mesa. In

the cave sites were corn cobs, squash, several wild plant varieties, and bones from several varieties of animals. Houses for these sites were round, shallow (0.3 m deep) pits over which the house structure was built. Associated with these houses were deep, stone-lined pits, or cists, used for food storage.

Basketmaker sites that date after the introduction of pottery, post A.D. 500, are more readily visible and are known to be widely distributed. They are found in caves in Canyon de Chelly and the vicinity of Navajo National Monument on the Shonto Plateau, Skeleton Mesa, and Black Mesa. Sites for this period have also been excavated south and east of Page, Arizona,¹⁵ in the Ma-piki-va (Klethla Valley) north of Black Mesa,¹⁶ on Black Mesa north of the Hopi villages,¹⁷ south of the Hopi Mesas in the Hopi Buttes district,¹⁸ along the Little Colorado River,¹⁹ and east in the Manuelito Canyon district along the Arizona-New Mexico state line.²⁰ Basketmaker sites with ceramics are also known from Navajo Canyon in the northwest corner of the 1934 Reservation.²¹ During the excavations at the historic site of Awatovi on Antelope Mesa in the 1930s by the Peabody Museum, Antelope Mesa and adjacent Jeddito Valley were surveyed, locating over 300 sites. These ranged in dates from the A.D. 500s to Awatovi in the 1600s.²² Several of the early sites were tested or excavated.²³ Typically, Basketmaker sites with ceramics had one to fifty or more pit houses.²⁴ The pit houses ranged from 0.3 m to over 1.0 m in depth. Associated with these villages were numerous storage pits. In addition to pottery on these later sites, metates and

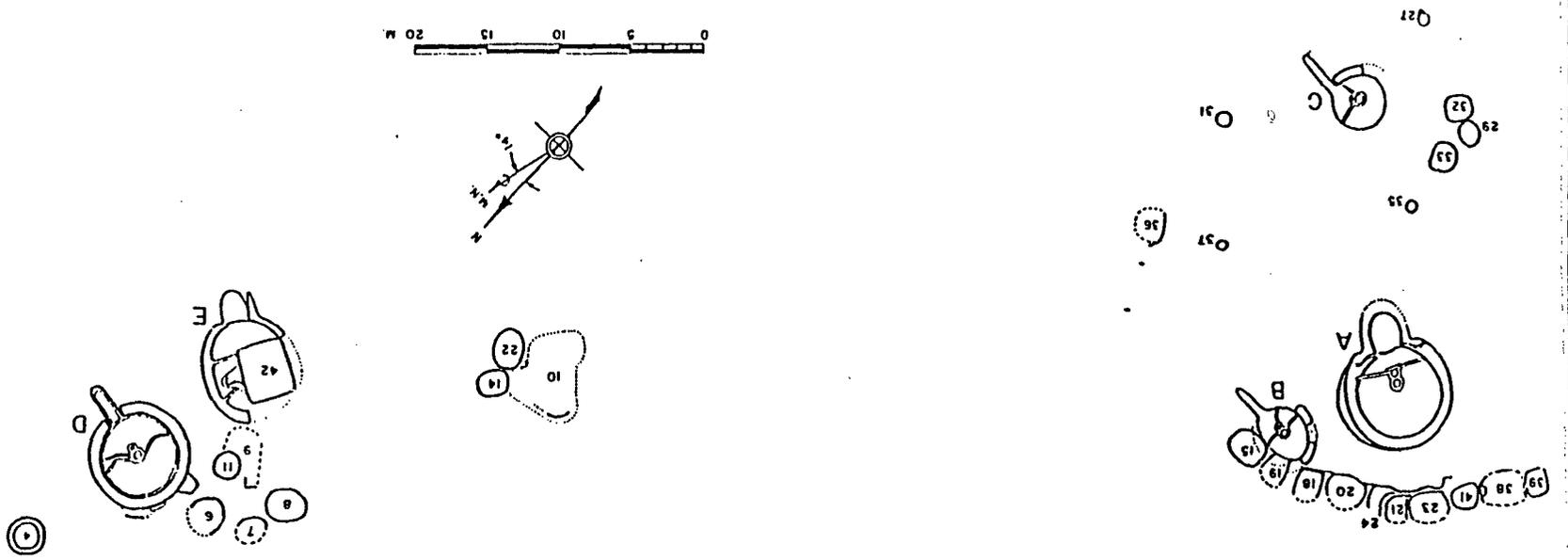
manos were found. As in historic Hopi society, these were probably used to grind corn and other seeds into meal. Corn pollen is also frequently recovered from Basketmaker sites indicating the importance of corn horticulture in permitting the sedentary life style of a settled village. Projectile points indicate the continued practice of hunting for meat and skins.

To summarize, the distribution of preceramic and ceramic Basketmaker sites is continuous in northeastern Arizona covering every area within the 1934 Reservation boundaries in which work has been done. The Basketmaker people, early ancestors to the Hopi and other Pueblo groups, display convincingly the length of time the Pueblo people have lived within and used the area known by the Hopi as "Tusqua" and in this case as the 1934 Reservation.

**Use, Occupation, and Possession Within The
1934 Reservation Boundaries, A.D. 700-1300**

A.D. 700 marks the beginning of definite village life within the Hopi Mesas area. Evidence of villages comes from the excavations associated with the Peabody Museum work at Awatovi and other nearby sites. The best reported early site is named Jeddito 264 which was comprised of six pit houses and 43 storage pits (Fig. 3). Jeddito 264 was occupied from the late 600s to the early 800s.²⁵ After A.D. 700, much of the gray pottery was slipped with a white clay and these bowls and jars were then decorated with black geometric lines. Decorations became more complex and covered a greater surface of the vessel as one moves forward in time from A.D. 700 to 1300. Also found on the early

Figure 3. Jeddito 264 site map.



CV-6417-201

sites are the familiar manos and metates, grinding stones used to convert maize kernels into meal. In the early part of the A.D. 700-1300 period, storage pits were associated with pit house architecture. At first these were random associations, but by the 700s most village sites had their storage pits in a contiguous grouping north, northwest, or west of the pit houses.²⁶

The period A.D. 700-1300 (and to the present) is called by archaeologists the Pueblo period in Hisatsinom cultural development. This is because in areas such as Mesa Verde in southwestern Colorado, Chaco Canyon in northwestern New Mexico, and in eastern Arizona around Canyon de Chelly and the Puerco River, the local people began building above-ground rooms. Initially these were used for storage only, but eventually were used for habitation. The Spanish word "pueblo," first used by Spanish explorers in the sixteenth and seventeenth centuries, has been maintained to describe the Hisatsinom people as occupants of these villages. Initially the villages were made of adobe or jacal (a woven stick and twig framework plastered with mud), but by A.D. 900, in the Hisatsinom areas from the west slopes of the Chuska Mountains eastward, southward, and northward, stone architecture was common. Examples of stone pueblos are found in the terraced villages of Chaco Canyon and in the cliff dwellings of Mesa Verde, Canyon de Chelly and Navajo National Monument.

Although the pueblo designation is applied to the archaeological periods of northeastern Arizona postdating A.D. 700-750, the architectural evolution of stone surface dwellings

CV-6417-201

associated with it at Chaco and Mesa Verde was not paralleled, except in the eastern and southeastern edges of the 1934 Reservation. Instead, pit houses were occupied in much of the area into the 1100s, with surface pueblo structures of jacal or jacal and stone becoming the rule only in the 1200s. From about 1000-1200 there was considerable mixture with some pit house villages and some stone or stone and jacal habitation structures.²⁷

By the 1000s, almost every large village contained a stone kiva, or ceremonial chamber. These kivas were always subterranean with a recess in the circular wall on the south, southeast, or east. Some contained benches with pilasters (stone columns used to support the crib roof), a firepit, deflector, ventilator, loom holes, and sipapu (symbolic entrance to the underworld). Kivas were probably entered via ladder through the roof and in great detail paralleled comparable structures still used by the Hopi for most of their ceremonies. Kivas apparently developed out of pit houses, which had many similar features, and were used for family ceremonies as well as habitation. By A.D. 900, when kivas first appeared as separate, ceremonial structures, their use had switched from family-oriented ceremonialism to small village or multiple family ceremonies.²⁸ Early kivas were not stone lined but had plastered dirt walls without a southern recess and were supported by four wooden posts.²⁹

In addition to villages, special use sites developed after A.D. 900.³⁰ These small one- to three-room surface structures were probably seasonal camp sites associated with small family

agricultural plots. Others located in pinyon-juniper forests may have been used as base camps for gathering pinyon nuts.³¹ The appearance of seasonal sites in association with multiple family village sites with kivas and trash accumulation indicative of longer term settlement all point to a more settled life style revolving around maize agriculture.³² Also, during the A.D. 900s, orange pottery appeared. This pottery was made from clays higher in iron compounds, possibly lower in organic impurities, and baked over a fire allowing freer circulation of air.³³ Manos and metates form an integral part of the material culture of village and seasonal sites and, by A.D. 1000, some of the villages have specialized rooms for grinding corn.³⁴ These mealing rooms become an integral part of the village in the 1200s.³⁵

Into the early 1100s, pit house architecture was the characteristic habitation structure (probably primarily for cold weather use) through much of northeastern Arizona. These houses ranged from 0.5-2.0 m deep. Typically, a village had three to ten pit houses, although single pit house sites are known.³⁶ Stone kivas were associated with the larger villages. Such pit house villages have been excavated in Ma-piki-va (the Kletthla Valley) north of Black Mesa³⁷ and in the Hopi Buttes area south of the Hopi Mesas.³⁸

On Black Mesa,³⁹ pithouse architecture lasted only to about A.D. 1000-1050, replaced by surface habitation structures of jacal and later stone. These surface structures followed the pattern established centuries earlier by being contiguous, but usually

only one or two rooms wide. Surface structures were divided into storage rooms and habitation rooms with the latter on the south and storage rooms on the north of two-room wide sets. Associated with these structures were one or more stone kivas and a semi-subterranean mealing room. By A.D. 1100, most of these sites had stone masonry. This pattern of architectural evolution also seems to apply on the Shonto Plateau and Skeleton Mesa to the north of Black Mesa⁴⁰ and in the vicinity of the Hopi Mesas and Jeddito Valley.⁴¹

In the Klethla Valley, southern Utah, the Paria Plateau in northern Arizona, and the Hopi Buttes area, contiguous surface storage rooms of jacal with a semi-subterranean mealing room were associated with the pit houses after A.D. 1050. This pattern continued until A.D. 1200-1250, when pit houses were finally abandoned and the surface jacal structures were used both for storage and habitation.

By A.D. 1250, a new pattern of occupation and architecture emerged.⁴² Black Mesa, the Hopi Buttes, most of southern Utah, and northern Arizona, were no longer occupied year-round. The people of the Hopi Buttes moved north to the Hopi Mesas or south to the Homolovi sites along the Little Colorado River near Winslow. The Black Mesa people moved south to the Hopi Mesa villages, or north to open sites in the Klethla Valley, Long House Valley, or cliff dwellings in the Tsegi Canyon area, part of which today is in Navajo National Monument. The people inhabiting the mesas and canyons along the Arizona and Utah border concentrated

CV-6417-201

on the flanks of Tokonavi (Navajo Mountain).⁴³ This post-A.D. 1250 settlement witnessed a geographically restricted concentration of people into fewer and larger pueblo villages of jacal or stone, with kivas.

Sites north of the Hopi Mesas are called Tsegi Phase sites because of their concentration in the Tsegi Canyon area, north of Black Mesa, in spectacular cliff dwellings. Tsegi Phase sites developed in the mid-1200s and were no longer used as habitations by A.D. 1300. Typically, the sites had several room clusters; each cluster probably occupied by a household comprised of a matrilineal extended family. Within the household complex were one or more habitation rooms, several storage rooms, and usually a courtyard. Also within the villages were several mealing or grinding rooms and one or more kivas.⁴⁴ A slightly different organization is found in sites near Tokonavi where the typical village plan was linear room blocks around a plaza.⁴⁵

Pottery types associated with this phase are orange and white decorated vessels, and gray utility vessels. Manos and metates, the latter usually in groups of bins in grinding rooms, are common. Cotton was added to the list of domesticated plants, probably first grown on the Colorado Plateau about A.D. 1100.⁴⁶ By A.D. 1300, the Tsegi Phase sites around Tokonavi, in the vicinity of Tsegi Canyon north of Black Mesa, and those along the southern end of Black Mesa were no longer inhabited. Indications are that these people moved south to the Hopi Mesas.

This evidence lies within nearly all prehistoric and historic sites on the Hopi Mesas in the form of pottery. The white, orange, and gray pottery traditions of the people of northeastern Arizona are found within and beneath Awatovi⁴⁷ and Waipi.⁴⁸ Conversely, pottery made at the Hopi Mesas area has been found in Tsegi Phase sites.⁴⁹ The number and size of the late thirteenth century sites on the Hopi Mesas increased dramatically. There are 48 sites in the Hopi Mesas area dating to the late 1200s.⁵⁰ These range in size from about 20 rooms to over 100 rooms with population of the area increasing substantially from A.D. 1100 to 1300.⁵¹

In the southeastern corner of the 1934 Reservation boundary and the eastern edge of this area from Canyon de Chelly south, the pattern of development follows more closely the development in architecture of the Cibola, or Zuni, area. From the period A.D. 700-900, the people lived in deep pit houses with jacal surface structures, used for storage, to the north or northwest of the pit houses.⁵² Masonry kivas were associated after A.D. 800. For the period A.D. 900-1100, the villages were made of above-ground masonry architecture with both habitation and storage units present. Masonry kivas are associated with most sites. These village sites tend to be smaller than the earlier period, having only a few families.⁵³ Size in the Canyon de Chelly area was one to eight rooms with most of the larger sites having kivas.⁵⁴ In general, the archaeological sites dated A.D. 700-1000 were concentrated in well-watered canyon locations having arable land. From

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A.D. 1050-1100s, annual precipitation increased and the plateau areas could be dry farmed and numerous small villages were briefly located in these areas.⁵⁵ Throughout the period A.D. 700-1100, the ceramics of the eastern 1934 Reservation from Canyon de Chelly southward were characterized by black-on-white decorated and plain gray pottery. Orange pottery was not locally made, but was imported from the north to Canyon de Chelly and after A.D. 1000 from the White Mountains area to the south.⁵⁶ The larger sites in the Canyon de Chelly area were partly the result of immigration from areas such as Chaco Canyon and possibly Mesa Verde after A.D. 1100.⁵⁷ Chaco influence and possible immigrants are also noted for the southeastern section of the 1934 Reservation.⁵⁸

From A.D. 1100 to the early 1200s, there was a retraction in number of masonry villages with the appearance of larger open sites and cliff dwellings in areas such as Canyon de Chelly. These sites ranged upward to over 100 rooms with multiple kivas.⁵⁹ After A.D. 1200-1250, there was further retraction into fewer, but substantially larger villages, a trend also noted in the Tsegi Phase in the north and northeastern sections of the 1934 Reservation boundary (Fig. 4). Sites from this period typically were large, masonry pueblos ranging from fewer than 10 to several hundred rooms. It seems likely that the small villages having fewer than 10 rooms were seasonal farming communities. Such a pattern characterizes most historic Pueblo communities and is found among the Hopi. After A.D. 1300, there no longer were

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villages in the eastern areas, and only a few villages in the southeast area, although these areas continued to be used.

The material culture of the large villages differs from that of earlier periods. There are indications of more trade with higher percentages of Tsegi Phase Orange wares in the eastern sites. Such trends in trade are also found in the western section of the 1934 Reservation. Orange wares are more common in the large sites in Wupatki National Monument (dating A.D. 1100-1250) southwest of the 1934 boundary, and in the few Tsegi Phase sites north and east of Wupatki. The northern Arizona white and orange wares in the Wupatki area probably result from actual Hisatsinom migration to the area.⁶⁰ Red wares, both locally produced and traded from the upper Little Colorado River sites west and north of the White Mountains, became predominant in such southern sites as Klagetö and Kintiel, located in northern drainages of the Little Colorado River. At the same time, ca. A.D. 1250, an orange ware tradition named Jeddito black-on-orange developed in the Hopi Mesas area with decoration showing relationships primarily to the north, among the Tsegi Phase sites, but also to the south, with the White Mountain Red Ware tradition.⁶¹

After A.D. 1250, as in the Navajo Mountain area, villages such as Kintiel were arrayed in linear roomblocks around a central plaza in which one or more kivas were located. These villages certainly contained lineages, social groupings of related females or males.⁶² In modern western Pueblo society, the relations are determined through the female, with matrilineal residence and

CV-6417-201

matrilineal descent. Thus the daughters will reside near or within the residence of their mother along with their husbands, children, unmarried brothers, and father. In large prehistoric villages it is even likely that the clan system, the basis of modern Hopi society, had developed.⁶³ A clan is comprised of several lineages who claim descent from a common ancestor, but whose exact relationship to one another is no longer remembered.

The basis to these villages was primarily dependence on domesticated maize, squash, and beans. The development of more sophisticated agricultural techniques, such as irrigation ditches, terraces, linear grids, field borders, and check dams,⁶⁴ allowed more intensive agricultural production and consequent aggregation of population. Higher producing strains of maize were also introduced from Mexico in the 1100s. The clan system of social organization could also facilitate the development and continuity of larger villages, although clans can be divisive when villages grow too large and the marginal clan members feel disenfranchised.⁶⁵

In the vicinity of the Hopi Mesas, pit house villages occurred in some areas to the 1100s, while concurrently, small pueblos first developed on Antelope Mesa as early as the tenth century. In fact, the roots to contiguous storage and habitation rooms on the surface developed as early as the 700s where at Jeddito 264 a series of 10 contiguous, slab-lined cists were built.⁶⁶ During the next two centuries this pattern developed in the mesas through the jacal and masonry stages with the pit houses being abandoned by A.D. 900 and circular stone kivas appearing

about this time. This pattern paralleled the architectural sequence on northern Black Mesa.⁶⁷ From A.D. 900-1100 there were numerous small masonry villages, most with a small plaza containing a kiva to the south of the roomblock. Average size for this period was 5-10 rooms.

The period A.D. 1100-1300 on the Hopi Mesas witnessed substantial changes in population. Many of the northern Black Mesa and the Hopi Buttes people moved to the Hopi Mesas ca. A.D. 1150.⁶⁸ This area was attractive because of the large tracts of farmable land and the numerous, productive springs in the area.⁶⁹

After A.D. 1250, the Hopi Mesas were one of the few areas containing habitation sites in northeastern Arizona. Others within the 1934 Reservation boundaries were the Navajo Mountain area, Tsegi Canyon area, Canyon de Chelly area, Moenkopi area, and the upper end of the northeastern drainages to the Little Colorado River, such as the Cottonwood-Pueblo Colorado system, Leroux-Wide Ruin System, and Puerco River (Fig. 4). All of these areas were characterized by good water supplies and arable land, necessary during a long period of aridity and erosion. All of these areas, except the Canyon de Chelly area, were further characterized by the manufacture of orange or red pottery with black or black and white designs, the latter called polychrome. These were manufactured in association with white pottery with black designs and gray utility ware, in the north, and brown utility or plain ware, to the south. The population in each area rose substantially due to immigration and these people were assimilated into larger

CV-6417-201

villages rather than more numerous smaller ones. While many areas of northeastern Arizona were no longer used as year-round residences, there is little doubt they continued to be utilized, although the archaeological evidence of scatters of pottery and stone are not distinctive enough in most cases to identify these uses. Undoubtedly, they were special use sites that probably functioned as hunting, gathering, ceremonial, or farm house locales.

Use, Occupation, and Possession Within The
1934 Reservation Boundaries, A.D. 1300-1630

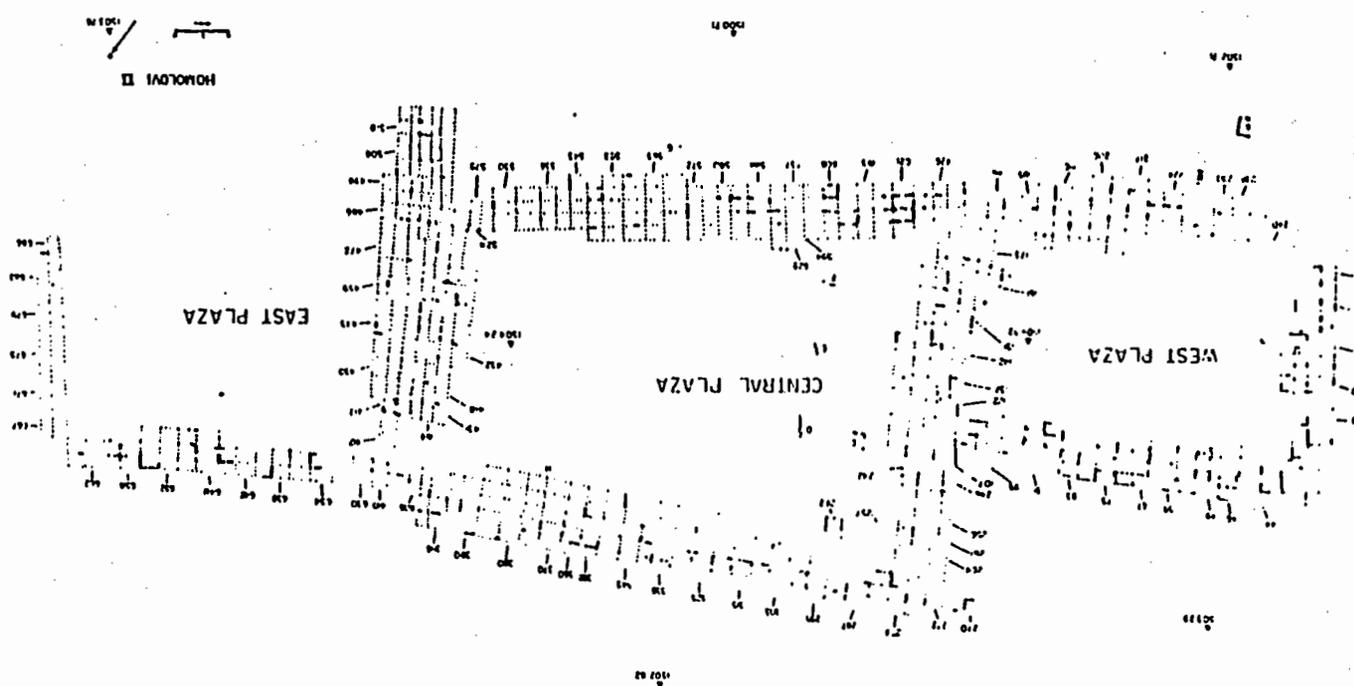
By A.D. 1300 with the continuing erosion cycle begun a quarter century earlier,⁷⁰ year-round habitation of most of northeastern Arizona was discontinued; however, wherever archaeological fieldwork has been done there is evidence of continued ancestral Hopi use of the area. The only areas with post A.D. 1300 villages on the 1934 Reservation and outside the 1882 Hopi Reservation are the Bidahochi area on a drainage of the Pueblo Colorado Wash and in the vicinity of Moenkopi. Just to the south of the 1934 Reservation, along the Little Colorado River, several large sites founded in the thirteenth century expanded greatly in size during the fourteenth century.⁷¹ On and around the Hopi Mesas, people from 36 of the 48 villages settled in the remaining villages and three new villages between 1250-1300.⁷² Although there were fewer villages, they were much larger than the previous period. In fact there appears to be a population increase in the Hopi area,

CV-6417-201

probably immigrants from the Tokonavi and Tsegi Canyon areas, and possibly from the Canyon de Chelly and Leroux Wash areas.

The villages occupied in both the 1934 Reservation and the 1882 Hopi Reservation after 1300 are characterized as large (ranging from 50 to over 1000 rooms, averaging over 200 rooms), multiple story villages containing one or more plazas (open areas) with rectangular kivas (Fig. 5).⁷³ These plaza areas were used as outside work and play areas, and it is probable the public aspects of ceremonies were performed in these plazas, much as they are today in the modern Hopi villages.⁷⁴ The architecture of these villages, their size and layout, and the kivas are quite similar to modern Hopi villages.⁷⁵ The most telling characteristic of these villages is their pottery. About A.D. 1300 the Hopi ancestors on the mesas began manufacturing yellow pottery. Instead of using a yellow clay fired in an oxygen-rich environment yielding the red pottery, a gray clay was used. It is also about this time that coal was first used in the firing of pottery and this may explain the seemingly sudden appearance of the yellow pottery.⁷⁶ Apparently this pottery was only made in the villages on the Hopi Mesas (including Antelope, First, Second, and Third Mesas) and possibly at Bidarochi along the Pueblo Colorado Wash,⁷⁷ but was traded throughout the Southwest. Its beauty and hardness (resulting from coal firing) were evidently widely sought-after attributes. Designs on this pottery frequently portrayed abstract birds or realistic figures of supernatural beings, plants, animals, and insects, as well as geometric designs.⁷⁸ They were

Figure 5. Plan view of Homolovi II, a Pueblo IV village.



CV-6417-201

executed in black, black and red, or black, red, and white designs. Where this pottery and its associated yellow plain ware (culinary ware) are the predominant or only types on an archaeological site, this indicates Hopi use of the site and nearby area between A.D. 1300 and A.D. 1630. Locations of archaeological sites occupied or used during this period within or near the 1934 Reservation boundary are depicted in Figure 6.

Other indicators of Hopi use from this period are petroglyphs and pictographs, or rock art. These bear distinctive designs, such as masked beings, after the 1300s when the katsina cult was introduced to the Hopi.⁷⁹ The change in pottery designs plus elaborate painted murals on the kivas of this period, some depicting masked supernatural beings similar to modern katsinas, also denote the katsina cult.⁸⁰ These rock art designs, as well as the murals and pottery, are easily identified.

The Hopi Mesas and other areas occupied after A.D. 1300 in northeastern Arizona are all characterized by having abundant, nearby, arable land and permanent sources of water. The water source on the Mesas and at Bidahochi were springs. At Moenkopi and along the Little Colorado River streams and rivers supplemented by springs were the water sources. The villages were dependent on maize crops supplemented by beans and squash. These villages were able to thrive in Hopi country due to a variety of ways to farm. Two of these involved flood-water farming. The first was where the major streams overflowed their banks during high water caused by summer cloudbursts. The second, the akchin

type, was where crops were planted in an area that water spread out at the mouth of an arroyo. The third type was dry farming where the crop was planted in a sand dune and depended solely on rainfall. The final type was irrigation. This took the forms of using ditches for irrigating fields at Moenkopi and along the Little Colorado River, of using ditches for irrigating terraces using spring water elsewhere, or hand-watering from springs.⁸¹ With the exception of hand-watering, which would leave no evidence, all of these have been found by archaeologists in association with pueblo sites postdating A.D. 1300 and predating A.D. 1700.⁸² The variety of areas in which maize was grown, and still is today by the Hopi, insured that at least some field would produce each year.

Modern Hopi use of their environment is not restricted to the area around their village. Farming villages, plant gathering and animal hunting areas, eagle gathering areas, shrines and rock art denoting land ownership, springs, salt collecting, and grazing areas all occur at distances ranging up to 75 miles (120 km) from the main village.⁸³ The community of Moenkopi was once a farming village for Oraibi⁸⁴ and is located 40 miles (65 km) from the mother village. With the exception of the grazing areas, these modern Hopi uses of land apply to their ancestor's use of the land. Indications of this use are the yellow decorated and plain Hopi pottery and rock art containing depictions of masked beings and other characteristic depictions postdating 1300, some found over 75 miles (120 km) from the nearest villages, which were on the Hopi Mesas.⁸⁵

During the A.D. 1300-1400 period, around the Hopi Mesas in the 1882 Reservation there were 15 villages occupied. After A.D. 1400, there were apparently only seven: Awatovi and Kawaika-a on Antelope Mesa, Koechaptevela (Old Walpi) and Sikyatki on First Mesa, Shungopavi and Mishongnovi on Second Mesa, and Oraibi on Third Mesa. Both Kawaika-a and Sikyatki were no longer inhabited by A.D. 1630. Discussion of the location of these residential sites is pertinent to this case in that most sites in the 1934 Reservation were used by individuals from the villages on the Hopi Mesas on a seasonal basis or for a relatively short period of time. One noteworthy aspect of the distribution of these Hopi remains is their association with sites or areas that are recorded within oral histories of clan migrations as ancestral homes.⁸⁶ Thus, the Tsegi Canyon area (Kawistema) is visited regularly by twentieth century Hopi of the Horn Clan⁸⁷ and is also visited annually as the location of one of the boundary markers to Hopi "Tusqua."⁸⁸ Sometimes Kawistema is specifically associated with the cliff dwelling known by the Navajo name of Betatakin.⁸⁹ Navajo Mountain (Tokonavi), location of Tsegi Phase sites, is also a boundary marker from whence migrated the Snake and Horn Clans.⁹⁰ Chaco Canyon and Mesa Verde are also recognized as ancestral homes.⁹¹ It is noteworthy that both Mesa Verde and Chaco groups were present in Canyon de Chelly in the twelfth and thirteenth centuries and that the Flute Clan claims to have migrated there from Mesa Verde.⁹² To the south, the Homolovi and Sakwaviupki (Chevelon) sites along the Little Colorado River near

Winslow were occupied from ca. A.D. 1250-1400 and are recognized as ancestral homes of the Water, Lizard, Sand, Rabbit, Tobacco, Squash, Sun, Eagle, and other clans.⁹³

In addition to oral histories of movement of Hopi people from late thirteenth century sites to the Hopi Mesas, archaeological data indicate continued Hopi visitation to, and use of, these areas. Long⁹⁴ notes 40 sites just north of the Utah border with yellow pottery. He also reports evidence of Hopi use after 1850. Mueller⁹⁵ notes Hopi sherds on the Paria Plateau just west of the Colorado River on the Arizona-Utah border. Turner⁹⁶ found five rock art sites on or just north of the Arizona-Utah border that have the style characteristic of ancestral Hopi sites. He feels the sherds and rock art indicate Hopi revisitation of the canyons in northeastern Arizona and southeastern Utah from the fourteenth century to the present (ca. 1960). On the Rainbow Plateau and Cummings Mesa in the northwest corner of the 1934 Reservation over 35 ancestral Hopi sites were recorded.⁹⁷ While most appear to be temporary farming or gathering sites, at least one had rooms and enough pottery to indicate permanent or long-term seasonal use.⁹⁸ This use began in the fourteenth century and may have continued into the seventeenth century.⁹⁹ Neely and Olsen¹⁰⁰ report 11 or 12 sites of the 166 they studied in Monument Valley were used after A.D. 1300, thus extending Hopi use during this period into the northeastern corner of the 1934 Reservation boundary. Twenty Hopi sites have also been found in Long House Valley between Tsegi Canyon and Black Mesa.¹⁰¹ Ancestral Hopi

snerds were also recovered from Inscription House ruin, a Tsegi Phase cliff dwelling in Navajo Canyon, northwest of Tsegi Canyon.¹⁰²

In Canyon de Chelly there are at least 48 known sites with Hopi ceramics in the monument.¹⁰³ Some of the sites had one or two rooms and ranged to four. Steen,¹⁰⁴ in his excavations at Tseta'a, found two Hopi burials and a corn crib possibly Hopi-built. Bradley¹⁰⁵ indicates evidence of Hopi additions to the White House ruin and others in the national monument. Use of Canyon de Chelly was probably by Hopi descendants of the Canyon de Chelly Hisatsinom. They practiced farming and, while most occupied the canyon only seasonally, some used it year-round.¹⁰⁶ This use probably extended throughout the A.D. 1300-1630 period coinciding with droughts or other stresses on the Hopi Mesas.¹⁰⁷ In the eastern corridor of the 1934 Reservation, very little archaeological survey has been done north of Ganado. Still, in the vicinity of Rough Rock and along the Chinle River, seven ancestral Hopi sites have been recorded,¹⁰⁸ while several others lie just to the east of the 1934 Reservation boundary. This high a frequency of Hopi sites in so small a sample indicates extensive use of the Chinle Valley since A.D. 1300 by ancestral Hopi. Of course, the number of sites in Canyon de Chelly is much higher because it has been almost completely surveyed.

Ancestral Hopi pottery has also been found at five sites in the Hopi Buttes area,¹⁰⁹ indicating continued use of this area throughout the A.D. 1300-1630 period, probably for farming,

CV-6417-201

hunting, and gathering. East of the Hopi Buttes is Bidahochi, an ancestral Hopi village dating to the 1300s and 1400s. Several other small fourteenth century villages were also occupied in the Pueblo Colorado area, near modern Greasewood and Ganado.¹¹⁰ Numerous small sherd scatters of ancestral Hopi pottery are known throughout the northeastern drainages of the Little Colorado River. These may lie along trails between the Winslow (Hcmolovi) sites, Hopi sites, and Zuni sites. Others are associated with arable land and were used for farming.¹¹¹

As in the east corridor, the west has been inadequately archaeologically investigated. Still, indications are that sherds of ancestral Hopi manufacture are scattered broadly, suggesting seasonal use of lithic (stone) resources, among several uses.¹¹² Concentrations of ancestral Hopi sites from A.D. 1300 to A.D. 1800 occur in the modern Moenkopi area. The well-watered Moenkopi and Pasture Canyon vicinity therefore has been used for agriculture for the past 700 years by Hopi ancestors, preceded by Hisatsinom dating A.D. 1000 and perhaps earlier.¹¹³ Old Moenkopi is a village just east of the modern village founded ca. A.D. 1400 and occupied to past A.D. 1800. It was abandoned due to the Ute and, possibly, Navajo raids in the middle 1800s.¹¹⁴ Euler has found several sites within the Grand Canyon with ancestral Hopi pottery. Rock art sites show Hopi use from the fourteenth century to the twentieth century along the Salt Trail originating on the Hopi Mesas and extending to the Little Colorado River where it intersects the Colorado River.¹¹⁵

Thus, wherever archaeological surveys and excavations have been conducted in northeastern Arizona within and extending north, east, south, and west of the 1934 Reservation boundaries, pottery sherds or rock art of ancestral Hopi manufacture have been found. The distribution of these sites is given in Figure 6. With the exceptions of Bidahochi and the Pueblo near Moenkopi, these sites were not large villages. Small pueblos were built in Canyon de Chelly and vicinity and in such distant reaches as Long House Valley on the northwest side of Black Mesa, on Cummings Mesa, and probably other areas north and south of the Arizona-Utah border at great distances from the Hopi Mesas. Even so, most of the sites were seasonal or special use. Ceramic containers were used to carry water or for cooking. Baskets or leather pouches could carry food and transport grain. Obviously, breakage or storage of ceramic vessels occurred, as their remains are found at the sites. Accumulations of pottery fragments, or sherds, would be associated with long-term use of a site (at least several days) or repeated use of a site over a period of years. Thus, seasonal use sites having pottery were probably lived in while farming. Indications of plant collecting and hunting camps are more subtle and may not always have pottery if the use was only for one or two days.

Rock art sites could have had several uses: religious, as trail markers, to mark nearby resources such as water, signatures of clan passage or ownership, and perhaps just doodling.¹¹⁶ Most indicate either permanent use due to occupation of a nearby site,

seasonal use, or long-term repeated use, as with a trail. Rock art could mark locations of shrines for expeditions, land boundaries (Tusqua), or clan-owned land or eagle collecting sites.¹¹⁷

In summary, of over 4000 prehistoric archaeological sites known within the 1934 Reservation, over 100 are ancestral Hopi dating to the A.D. 1300-1630 period. Thus, 2-3 percent of the archaeological sites in the area indicate Hopi use during that period. The remainder of the sites are Hisatsinom. In areas such as Long House Valley that have been completely surveyed, this percentage is accurate. Given that only 5-10 percent of the 1934 Reservation has been archaeologically investigated, a good estimate is that a total of 1500 ancestral Hopi sites occur in the 1934 Reservation area. With average use of one generation or 20 years, about 100 identifiable sites were in use in any one year. These were probably mostly farming sites. Gathering and hunting uses, if identifiable, would considerably increase these numbers. Wherever investigations have been thorough (along the Arizona-Utah border, within the Hopi Buttes, along the Pueblo Colorado, near Moenkopi-Moenave, and even in areas where the data are scarce, such as Rough Rock and Chinle), Hopi sites have been located. Archaeological data indicate the Hopi used the entire 1934 Reservation area from A.D. 1300-1630, primarily to sustain the mesa villages. These uses were farming, gathering, and hunting, while combining economic, religious, and social needs.

The dating of these remains is based on tree-ring dated¹¹⁸ pottery and stratigraphic relations found during

excavations.¹¹⁹ The yellow ware pottery, as earlier described, found on these sites is dated A.D. 1300-1630.¹²⁰ With few exceptions, it is difficult to date these sites to any finer time frame. If the yellow pottery has red (Sikyatki Polychrome), or red and white (Kawaika-a Polychrome) with the black designs, it postdates A.D. 1375, lasting to A.D. 1630.

In 1540, the Spanish made their first contact with the Hopi when a group, led by Pedro de Tobar and Juan de Padilla, was dispatched from Zuni by Coronado.¹²¹ Early contact, however, was sporadic and had little or no effect on the Hopi. Antonio de Espejo visited in 1583 and found the people living in five villages: Awatovi, Koechaptevelo (Old Walpi), Old Shungopavi, Old Mishongnovi, and Old Oraibi. There is no evidence that Espejo visited the Moenkopi area. The combined population of these villages exceeded 3000, with the population of Awatovi alone over 1000. Reduction to these five villages may have resulted from environmental pressure with a worsening of climatic conditions on Black Mesa from A.D. 1150-1450, culminating in A.D. 1450. Severe droughts occurred at the Hopi Mesas until A.D. 1465 and arroyos cut the valleys from A.D. 1300-1500.¹²² Espejo was presented with gifts of meat and corn plus 600 cotton blankets.¹²³ Early chroniclers also noted the villages were governed by a group of religious leaders, the organization still used today. Governor Onate, who established a local government and inaugurated the settlement of New Mexico by the Spanish, visited in 1598 and

assigned a missionary. However, a mission was not established until 1629.¹²⁴

With the building of missions at the villages of Awatovi, Shungopavi, and Oraibi between 1629 and 1633, the Hopi actually entered the historic period.¹²⁵ There were also visitas or chapels constructed at Koechaptevela and Mishongnovi that were administered by Awatovi and Shungopavi, respectively. The villages of Koechaptevela, Shungopavi, and Mishongnovi were located at the base of their mesas during this period and not at their present locations.

Although in total the Spanish little affected Hopi culture, they did significantly influence Hopi economy and material culture, especially their pottery.¹²⁶ Because of these changes, inaugurated around 1630, this date marks the end of the prehistoric and protohistoric period of the Hopi and thrusts them regularly into the historical records. The distinctiveness of the pottery, still a mainstay of the Hopi economy, during the following period allows the archaeologist to identify archaeological sites from this period and distinguish them from the A.D. 1300-1630 period.

Use, Occupation, and Possession Within the
1934 Reservation Boundaries, A.D. 1630-1940

During this 300-year period, documentary evidence of Hopi activities within their villages became more abundant, especially after 1880. Hopi activities and use of areas off the mesas were virtually undocumented prior to 1880. A good volume of evidence

exists for Hopi use off the mesas and outside the 1882 Reservation boundaries since 1880. The discussion below will concern itself with the documentary and archaeological history of the Hopi villages from 1630-1940. The archaeological data will come from the work at Awatovi, which covers the period 1630-1700,¹²⁷ and the work at Walpi, which covers the period 1690-1975.¹²⁸ Discussion of Hopi presence outside the 1882 Reservation and within the 1934 Reservation boundaries, as reflected in archaeological remains, will be discussed separately, referring back to this historical section.

The Period 1630-1700

The purpose of the Spanish mission program was directed culture change. Several domesticated plants and animals were introduced to promote the economic self-sufficiency of each village. Of course, the conversion of the natives to catholicism was a primary focus. This required the disruption of the traditional religious system and its replacement with catholic doctrine. Thus, the common practice was to build a church over a kiva to symbolize the preeminence of the new religion.¹²⁹ The geographic isolation of the Hopi area from the mainstream of Spanish domain in the Rio Grande River Valley helped to ameliorate the effects of the Spanish program. Logistical problems, plus the constant bickering between the Catholic church and the Spanish government, left the Hopi social, political, and religious systems little affected by the Spanish programs. The brevity of the Spanish

CV-6417-201

presence also helped. In 1680, the Hopi joined forces with the other Pueblo people in northern New Spain in revolting against the Spanish and forcing them from the Pueblo area. In the Hopi area the five Spanish missionaries were killed. This revolt effectively ended Spanish presence on the Hopi Mesas. An abortive attempt to reestablish a mission at Awatovi was made in 1700 and led to the destruction of the village by Hopi from other villages to rid Awatovi and the area of the Christian influence.¹³⁰ The mission complex at Awatovi was excavated by the Peabody Museum in the 1930s and is the subject of a detailed report by Montgomery, et al.¹³¹

Archaeological sites dating to the mission period (1630-1680) in northeastern Arizona should be distinguished by material remains introduced or influenced by the Spanish. Foremost, due to its preservation, is pottery. During the mission period to the early 1700s, San Bernardo Polychrome replaced the yellow wares of the ancestral Hopi period. San Bernardo Polychrome is often called mission ware because it was affected by European values introduced by the missionaries. European ceramic forms such as stew bowls (bowls having broadly outflaring rims), ring based vessels, soup plates, pitchers, and others appear.¹³² Other introductions were dung as a fuel for firing pottery and new designs. Of the latter, the eight-pointed star and Maltese cross were most common.¹³³ The rims of these vessels also are usually painted red, while they were left unpainted in the ancestral Hopi yellow wares.

These characteristic changes in form and design make San Bernardo Polychrome distinctive enough for identifying archaeological sites with a moderate ceramic assemblage. At Walpi and Koechaptevela at First Mesa, though, San Bernardo Polychrome may not be as common.¹³⁴ This could be due to the absence of a mission at First Mesa. Thus, all archaeological sites dating to this period may not be readily distinguishable from the preceding 1300-1630 period on the basis of pottery alone. A second problem, that also affects the subsequent Hopi types of Payupki Polychrome and Polacca Polychrome, is the archaeologist's ability to recognize San Bernardo Polychrome. These types were only superficially described¹³⁵ until detailed descriptions appeared recently.¹³⁶ Thus, in looking through some of the collections at the Museum of Northern Arizona, several sites were found to have historic Hopi types that went unrecognized by the individual in the field or laboratory who identified the remains.

Other material remains should help make the distinction, if present or preserved. These remains are bones from such domestic animals as sheep, goats, cattle, burros, and horses. Vegetal remains of domestic plants introduced by the Spanish, such as peaches and cantaloupe, would also be distinctive. Architectural remains unlikely to predate 1630 would be corrals or pens for cattle or sheep. Because these remains are perishable, they could deteriorate over the 300 years since the site's use and most would likely not be visible on the surface. Archaeological sites within the 1934 Reservation boundaries with San Bernardo Polychrome or

pottery resembling ancestral Hopi pottery and some or all of the above remains must date to the 1630-1700 period.

Only one possible site from this time period is known outside the 1882 Reservation, with the possible exception of other sites within Canyon de Chelly. This site lies near the Utah border in Arizona on Cummings Mesa in the northwest of the boundary area.¹³⁷ Within Canyon de Chelly, five non-Navajo sites postdating 1600 were recorded.¹³⁸ De Harport¹³⁹ felt the occupation of Canyon de Chelly coincided with a drought between 1727-1737. The ceramics the author is familiar with for the post-1630 period from Canyon de Chelly also postdate 1700, although the pottery could date as early as 1680-1700, putting it just after the Mission Period.

A scarcity of visible sites does not mean the 1934 Reservation was not used during this period. This is especially true when evidence points to use before and after this period. The brevity of the period, its less than distinctive pottery (easily confused with earlier and later periods), the lack of systematic survey in broad areas of the 1934 Reservation, general lack of knowledge about this period and material culture among archaeologists, and the perishable nature of related remains all mitigate the chances of discovery. Additionally, such activities as hunting, gathering, and even grazing might leave no archaeological remains. Again, earlier evidence of use and modern records of use imply these activities occurred through much of the 1934 Reservation during the Mission Period.

The post-Mission Period of 1700-1940 will be divided into three time periods. These time periods are easily defined by distinctive pottery. The period 1700-1800 is dominated by the decorated type called Payupki Polychrome; the period 1800-1900 by the type Polacca Polychrome; and the 1900-1940 period by the type Hano Polychrome.¹⁴⁰ Supplementing the native pottery after 1880 were Euroamerican manufactured ceramics and glass.¹⁴¹

The Period 1700-1800

Shortly after 1690, the villages of Walpi, Shungopavi, and Mishongnovi moved from the bases of their respective mesas to the mesa tops. Shipaulovi was also established on Second Mesa about this time. These locations were viewed as more defensible. The move was made in fear of Spanish reprisals for the 1680 revolt that were realized by the visit of Governor Diego de Vargas in 1692. Among the eastern Pueblos, de Vargas had forcefully re-established Spanish control and, presumably realizing this, the Hopi submitted voluntarily. Return of the Spanish, however, spawned subsequent revolts in New Mexico among the Tewa and Jemez in 1693 and again in 1696 among the Tewa, Tancs. and Keres.⁻⁴²

The New Mexico Pueblo rebels voluntarily or through force left their villages following the revolts. Some went north and west to join the Navajo, others went west to Zuni and on to Hopi or directly to Hopi. Whatever the route, by 1700, several hundred Pueblo refugees lived among the Hopi founding two new towns, Payupki on Second Mesa and Hano on First Mesa, while smaller

segments shared quarters with the Hopi in their traditional vil-
lages.¹⁴³ Evidence of these Tewa, Keres, and Southern Tiwa
refugees is reflected in Hopi pottery of the time. The isolation
of the Hopi region and the sheer numbers of anti-Spanish inhabi-
tants in the area prevented the Spanish from ever again establish-
ing a strong influence over the Hopi and their mesas. The few
military forays to Hopi were primarily for show.¹⁴⁴ These fail-
ures only added fuel to the fires of resistance.

From 1720-1780 there were numerous visits by Franciscan
missionaries to the mesas in hope of establishing a beachhead of
sorts in re-Christianizing the people. For the most part these
were failures; however, the padres usually kept journals and some
contain detailed insights into Hopi culture. Around 1750 the
village of Sichomovi was established on First Mesa due either to
overcrowding at Walpi or the arrival of eastern Pueblo peoples via
Zuni.¹⁴⁵ This brought to seven the number of villages occupied
after 1750 on the Hopi Mesas: Oraibi on Third Mesa; Shungopavi,
Mishongnovi, and Shipaulovi on Second Mesa; and Walpi, Sichomovi,
and Hano on First Mesa. Hano is occupied to this day by Tewa; the
other villages by Hopi. In 1748 Payupki was abandoned, the inhab-
itants persuaded by Franciscan missionary Migual Menchero to re-
turn to their homeland and settle Sandia, a southern Tiwa vil-
lage. Other refugees had been persuaded to return in 1742 by
Padres Carlos Delgado and Pedro Ignacio de Pino and again in 1743-
1744 by Delgado and Jose Trigo.¹⁴⁶ Several hundred of these
refugees were returned to their old villages or new ones near the

Rio Grande River Valley.¹⁴⁷ The return of the refugees was probably triggered by a decade-long drought in Hopi country, culminating in the 1730s, that made food supplies uncomfortably short. Food shortage, plus the lack of a strong enemy against whom to unite, served to weaken the alliance between the Hopi and the refugees, resulting in infighting.¹⁴⁸ As a result, the refugees willingly returned with the missionaries.

In 1775 Father Silvestre Velez de Escalante visited the Hopi Mesas.¹⁴⁹ He returned in 1776 with Father Francisco Antanasio Dominguez.¹⁵⁰ Earlier in 1776, Father Francisco Garces had also visited the mesas.¹⁵¹ Escalante was well received, but Garces was rebuked. None of the visitors succeeded in converting the Hopi nor persuading any of the remaining refugees to return to Sante Fe and the Rio Grande area. It is during the Dominguez-Escalante visit that the raiding by the "Navajo Apaches" is first described.

The years 1777-1780 were drought years in Hopi. Following a Hopi plea for food and help, and an indication that 40 families were ready to return to the Rio Grande, Governor Don Juan Bautista de Anza made what proved to be the final attempt to bring the Hopi into the Spanish fold in 1780. With reports of the drought and famine he felt that Hopi resistance would be weakened and that he could gain their friendship. He sought this friendship to insure that the Hopi would remain neutral in the Spanish campaign against the Apache and Navajo. He also wished to establish the Hopi towns as a station along the route from the Rio Grande to California and

Sonora. Finally, he wanted to return refugees and resettle Hopis in Rio Grande.¹⁵² In his company were 126 men, including 48 Indians and several priests.

Fray Andres Garcia preceded de Anza by six months and took 150 "converts" back with him to Santa Fe. De Anza succeeded in getting several others, both Hopi and refugees, to return with him. When de Anza arrived in Hopi, in September, 1780, he and his party were treated cordially, in part because the Hopi believed the drought was caused by their earlier poor treatment of Fray Garces.¹⁵³ Governor de Anza reported that only 798 Hopi remained, although this was probably an underestimate. It is reported that many Hopi had already left their villages for stays at Zuni, Sandia, and possibly Acoma, with the Havasupai in the Grand Canyon, and probably in Canyon de Chelly.¹⁵⁴ The drought broke in 1781, but that same year a smallpox epidemic struck the villages, killing many.¹⁵⁵ A final footnote to the Spanish period, which ended in 1821, came in 1818, when a delegation of Hopi went to Santa Fe to petition the Governor for help because of Navajo raids that threatened life as well as property. By then, due to civil war in Mexico, the Spanish were too weak to respond.

The Navajo did not enter Arizona much before 1700 and their archaeological remains in Canyon de Chelly postdate 1700.¹⁵⁶ Spanish reports indicate they certainly were present in de Chelly by 1786.¹⁵⁷ Movement westward by the Navajo began with renewed Spanish pressure in the 1770s, because of land disputes. It is the 1770s when Navajo are first noted by the Spanish as raiding

the Hopi. These hostilities continued until the 1860s, finally
ended by a concerted campaign by the United States government. ¹⁵⁸

The material remains from this time period are distinctive from preceding and succeeding periods in terms of pottery, but little else. The domestic plants and animals introduced to the Hopi by the Spanish in the preceding Mission Period were by now firmly entrenched in Hopi material culture. The dominant pottery type, Pay_pki Polychrome, is distinctive both in form and design from San Bernardo Polychrome and the later Polacca Polychrome. ¹⁵⁹ The difference stemmed from strong influence from the eastern Pueblos via the refugees living in Hopi country. Bowls were straight-sided until late in the period (ca. 1780) when the outflaring rim characteristic of the stew bowl form of San Bernardo Polychrome was reintroduced. Jar forms were modeled after contemporary forms in the Rio Grande Valley, especially Tewa and Keres pottery, in having a bulge at midheight giving a characteristic diamond shape configuration. ¹⁶⁰ As for designs, feather motifs were dominant, occurring on 80 percent of the vessels. Bowl interiors and jar exteriors were the areas decorated, with red rims characteristic of both forms. Black ticks occasionally occurred on these rims, as on San Bernardo Polychrome. ¹⁶¹ What is apparent with the changes in Hopi pottery was the systematic elimination of all Spanish-inspired forms and designs. These reappear after 1750 but are rare until after 1780 and then reflect influence from other Pueblos and not direct Spanish influence.

Utilit pottery, used for cooking or storage, also changed after or at the end of the Mission Period. The eighteenth century vessels are gray or dark gray 75 percent of the time, with the remainder varying from reddish yellow to reddish brown.¹⁶² Fillets of clay adorn the necks, a characteristic borrowed from the Spanish and retained to the twentieth century.

Architecture is another characteristic feature of sites from the 1700-1800 period found off the 1934 Reservation. Many of these sites (16 of 55 in Canyon de Chelly) had masonry architecture either of Hisatsinom origin reused by the Hopi occupants or newly built (Fig. 7).¹⁶³ James and Lindsay¹⁶⁴ indicate refugees from the eastern Pueblo of Jemez and the Hopi Pueblo Awatovi, following its destruction in 1700, moved into the area in the early 1700s. De Harport¹⁶⁵ believes migration into the area occurred between 1727-1737 during a severe drought. These immigrants were from the Asa and Badger Clans in Hopi, according to Hopi oral histories. James¹⁶⁶ notes a type "A" polychrome in the Canyon de Chelly area that is similar to Payupki Polychrome and may be evidence the Hopi moved to Canyon de Chelly during the 1777-1780 drought when many fled the Hopi Mesas. Pottery found in de Chelly from type "A" to later Navajo manufactured types is of the Payupki Polychrome tradition, indicating a substantial Hopi presence in Canyon de Chelly during the eighteenth century. Peach orchards and agriculture were the economic base to the Hopi living in the area. Remnants of these orchards are still visible in the canyon.¹⁶⁷ Navajo entry into the area and Spanish expeditions

CV-6417-201

served to drive the Hopi out of their residences there by the
early 1800s.¹⁶⁸

Another Hopi post-1700s settlement outside the 1882 Hopi
Reservation was an area around the modern village of Moenkopi
(Fig. 7). The farming village occupied during this period is Old
Moenkopi on the mesa just east of the modern village. At least
two other sites in the area, one on the same mesa as Old Moenkopi
and another near Moenave, contain pottery dating to the
1700s.¹⁶⁹ Another possible Payupki Period site was found near
Rough Rock (Fig. 7). This sparse site density is partly due to
problems of sampling and identification. As noted, less than 10
percent of the 1934 Reservation has been investigated. A greater
problem is the inability of most archaeologists to identify
Payupki Polychrome. On three of the four 1934 Reservation sites
with Payupki pottery, examined by the author, the pottery was not
correctly identified by the original investigators. The 100 years
of use of this type is also brief enough that site density would
not be substantial. The primary uses of this area by the Hopi for
gathering plants, hunting game, and herding livestock, except for
possible stone-walled corrals, would not leave any archaeological
evidence. For instance, in the fall of 1776, Frays Silvestre
Escalante and Francisco Dominguez noted several large herds of
Hopi cattle in the vicinity of where Moenkopi and Tuba City are
today.¹⁷⁰ No archaeological evidence remaining from this use has
yet been identified. Moenkopi, being a farming village of Oraibi
at this time, was presumably not occupied at this time of year.

CV-6417-201

In summary, while little archaeological evidence exists of Hopi use of the 1934 Reservation in the 1700s, Spanish accounts and archaeological evidence do reveal extensive use of the area around Moenkopi for farming and cattle grazing. Ethnographic accounts a century later¹⁷¹ indicate widespread use of the 1934 Reservation for gathering and hunting in addition to grazing. Such was probably the case in the 1700s.

The Period 1800-1900

The 1800-1900 period at Hopi is distinguished by the appearance of the bearers of Euroamerican culture, intensifying raiding of the Hopi Mesas by the Navajo up to their subjugation in 1864, and occasional contacts with Mexicans, Apaches, and Utes.¹⁷² In 1821, Mexico achieved her independence from Spain and the government in Santa Fe became Mexican rather than Spanish. The Mexican government was weak and little interested in Pueblo problems, especially with the Navajo and Apache. The Mexicans were having enough problems with these groups' raids on their own settlements.¹⁷³ However, with the Mexican-American War of 1846-1848, which ended with the treaty of Guadalupe Hidalgo, American government rule was extended over the Pueblo area. With this change of leadership, new policies were brought into effect. The Navajo problem was dealt with and government presence in and around Hopi was established in 1874.

The first non-Spanish Euroamerican contact to be documented occurred in 1826 and involved fur trappers. Individuals involved

in the fur trade as trappers or traders were the principal visitors until 1850. In that year James Calhoun, the first Indian agent responsible for the Hopi, met with them in Santa Fe to discuss the problem of Navajo raids. The 1850s and 1860s were characterized by several visits of U.S. government surveyors and inspectors. Most notable were those by P.G.S. ten Broeck, assistant surgeon of the U.S. Army, who made a detailed account of Hopi life in 1852; by a railroad route survey party under the leadership of Lt. A.W. Whipple in 1853; by Lt. J.C. Ives in 1858 who was surveying the Colorado River; and by a succession of government Indian agents beginning with John Ward in 1864. In 1864 the first Hopi Indian agent was appointed, but not until 1867 did one arrive in Arizona and establish residence at Fort Wingate, moving to Fort Defiance in 1871. The Hopi agency was established in 1870.¹⁷⁴ The agent was in residence at Keams Canyon from 1874-1882, except 1876-1878. This Indian agency was again combined with the Navajo in 1876 and remained as such until 1899. The agency was closed at Keams from 1882-1887 after which a boarding school was established at Keams Canyon. Day schools were founded at the three mesas in the 1890s.¹⁷⁵

With the end of Navajo raiding, villages were once again located at the bases of the mesas. In the 1880s and 1890s, Polacca was established below First Mesa and Kykotsmovi below Third Mesa, while the mesa top villages persisted. A village of Hopi developed around Keams Canyon in the 1870s and 1880s.

Moenkopi, 40 miles (65 km) west of Oraibi, was reestablished late in the 1870s.

Euroamerican material culture became available to the Hopi as early as the 1850s with occasional gifts of food and supplies from government Indian agents. Gift-giving became a common practice from the 1860s to about 1910. In exchange for these gifts, families were often expected to send their children to the government schools. Most common tools provided in the 1860s were axes, spades, and pickaxes. Garden seeds were also provided.¹⁷⁶ By the 1880s, clothing, wagons, harnesses, cook stoves, and farm tools were included for distribution.¹⁷⁷

The second principal source of Euroamerican culture was the trading posts. The first, near the Hopi Mesas, was established in 1875 by Thomas Keam in a canyon along Antelope Mesa, 12 miles (20 km) east of First Mesa. By 1910, seven traders were located on the reservation, four Hopi and three licensed white traders.¹⁷⁸ Initially, the trading post carried only general merchandise, dealing mostly in staples such as coffee, flour, sugar, canned foods, hardware, and cloth. By 1900, coffee, flour, and sugar were Hopi staples, and canned meats and vegetables were popular. More people were wearing Euroamerican clothes and metal tools were in common use.¹⁷⁹ In the late 1880s Euroamerican cultural influence could be seen in Hopi homes. Some American furniture was being used and glass began to replace selenite window panes. Doors in side walls replaced roof entries.¹⁸⁰ Kerosene lamps also became more common.

Native material culture, especially pottery, remained a necessity through the 1800s. Euroamerican metal and ceramic replacements were available by the 1880s, but were not affordable or generally available until 1900. Thus, Donaldson¹⁸¹ reports that in 1891 there were 428 potters equally divided among the three mesas. This represents over half the female population over the age of six at the time. For the most part, these women made plain orange or reddish brown culinary pottery and white slipped decorated varieties.

White slipping was learned from the Zuni, and possibly Acoma, who were slipping all of their decorated pottery at the time. The Hopi brought the technique home with them when they returned from Zuni and other Pueblos in 1777-1780, following a severe drought.¹⁸² The technique of white slipping caught on among the Hopi potters until, by 1800, most decorated serving and storage vessels had white slips with black or black and red designs. These types are named Polacca Black-on-white or Polacca Polychrome by archaeologists. Polacca pottery went through a number of design changes during the nineteenth century allowing archaeologists to date many pieces to within 20-40 years of manufacture.¹⁸³ This is a valuable tool in dating Hopi sites containing only pottery. After 1880, some Euroamerican material culture began to appear on these sites, becoming common by 1900. Shortly after 1900 everyday use of native-manufactured pottery by the Hopi all but ceased, replaced by Euroamerican manufactured metal and ceramic vessels.¹⁸⁴ Also soon after 1900, native pottery

CV-6417-201

manufacture ceased altogether at Hopi, except where it remained as a tourist item. In the late 1880s, a new, unslipped variety was developed through the encouragement of Thomas Keam. The inspiration was the prehistoric yellow ware in the nearby ruins, such as Sikyatki Polychrome.¹⁸⁵ While some of this pottery was, and still is, for everyday use, principally for ceremonies, its manufacture after 1900 has been mostly commercial.

During this period, large herds of livestock were reported by Indian agents and other government and nongovernment visitors to the Hopi Mesas. This widespread use of the land for herding as well as farming after 1864 is in sharp contrast to the use from ca. 1780-1864 when Navajo and Ute raiding took such tolls that sheep were grazed only near the mesas during the day and kept in pens next to the mesas at night.¹⁸⁶ The raiding grew so bad that in 1837 the entire village of Oraibi was forced to scatter due to a Navajo raid.¹⁸⁷ Few cattle were kept. Horses and burros probably numbered less than 100 immediately prior to 1864.¹⁸⁸ After 1864 the Hopi returned to their traditional pattern of land use reported by Escalante in 1776, when he observed large herds of cattle near Moenkopi. From a population of under 5000 sheep, 100 burros, horses, and mules, and a few cattle before 1864, the animal population had grown to 10,600 sheep; 1430 burros, horses, and mules; and 154 cattle in 1883 (Table 1).¹⁸⁹

Immediately prior to 1864 all domestic livestock was kept close to the mesas for protection from raids. The area around the mesas was severely overgrazed and not suitable for grazing after

1864. Since the period 1865-1904 was generally a drought period,¹⁹⁰ the grasses and forbs usually grazed on did not have an opportunity to recover. As a result, Hopi herdsmen grazed their livestock at considerable distances from the mesas, while farming generally was restricted to areas near the mesas. A second factor causing herd relocation after 1864, was local availability of water. Large herds could not be kept near the village because the water they consumed would take away from human and crop needs.¹⁹¹

After the Navajo were placed on their reservation in 1868, they remained there and to the east of the Hopi until 1876, when some moved westward and southwest into Hopi lands. At this time, Hopi grazing lands were considerably smaller than from the period preceding Navajo and Ute raids because of reduced livestock herds from past raids and continued fear of Navajo raids.¹⁹² By 1884 a few men began gathering herds of cattle, and sheep herds were increasing.¹⁹³ Whereas in 1884, 154 Hopi-owned cattle were counted, by 1887 they numbered 300.¹⁹⁴ As noted by Page,¹⁹⁵ sheep herds usually ranged in established areas and closer to corrals which were near the village (within a 10 to 12 mile radius). These traditional areas were used because during Navajo raiding the sheep were brought to corrals adjacent to the mesas on which the villages were situated for protection.

With the founding of modern Moenkopi in the 1870s, the major use of the area was for agriculture which was situated primarily in the Moenkopi Wash and Pasture Canyon areas. Some isolated fields were also probably already situated in the Bakalo

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area and nearby areas to the south and east of Moenkopi before 1900. Mormon use of the Moenave and Tuba City area precluded renewed Hopi use until after 1900. But because the Mormons gave the Hopi a feeling of security, they did not mind sharing the area.¹⁹⁶ This protection was probably felt necessary because of raiding by some Navajos who escaped the roundup by the army led by Kit Carson in 1863-1874. At this time, the Navajo numbers were small.

Some sheep herding and a minimum amount of cattle herding occurred around Moenkopi prior to 1900, but was limited in scope due to small herds and concentration on agriculture. Before 1900, because most areas around Moenkopi still had good rangeland and herds were small, they were not grazed far from the village. Sheep corrals usually were situated in natural rock enclosures so that stone or post barricades could complete the corral. Accowski was an elderly sheep herder from Moenkopi in the late 1800s who had corrals in the Castle Butte area seven miles (11 km) northeast of Moenkopi. He grazed his sheep throughout this area on the mesa north of Tuba City, from Tuba Butte to Castle Butte and south of the Moenkopi Wash area on Tohnali Mesa and the Moenkopi Plateau. Corrals belonging to Accowski were located in the Moenkopi Wash where the sheep were wintered. Sheep camps and corrals were also in the Bakalo area about the turn of the century.

The most visible material culture remains from grazing activities are the stone wall corrals and corrals of long use with substantial deposits of dung. Dating of these remains is

difficult unless accompanied by a camp site: a temporary or permanent dwelling with accompanying trash. Until the 1870s this trash was almost solely native. Beginning with Mormon presence in the Moenkopi area and traders in Keams, Second Mesa, Polacca, Oraibi, Ganado, Black Mesa (Mountain), Blue Lake, Tonalea, Cedar Springs, and others and through Indian agent distributions in the 1875-1900 period, substantial Euroamerican manufactured remains began to appear in both Hopi and Navajo sites. A cash book from the Indian Service in 1878 illustrates the early diversity of Euroamerican goods available to the Navajo and the Hopi (Table 2). As a result after 1880 more Euroamerican goods characterize the material culture of both groups replacing items, such as pottery, distinctive to one or the other group. By 1900-1910, little native pottery was used, having been replaced by metal frying pans, pots, and containers; and to a lesser extent by ceramic and glass containers.¹⁹⁷ Canned goods of baking powder, vegetables, fruits, meats, and dry goods were available from the trading post and became especially popular early in such isolated areas as sheep and cattle camps and temporary farm shelters. Bridle, saddle, and riding gear for roundup would be expected. In more permanent summer or winter houses, stoves, cooking utensils, wagon parts, blacksmithing implements, dimensional lumber, glass window panes, Euroamerican clothing, and cloth were common additions.

These artifacts are useful in dating the use and occupation of a structure or an area. For identifying a structure as Hopi or

Navajo, the building materials are distinctive. Permanent or semi-permanent structures built by Hopi are made of stone and are square or rectangular (with rare exceptions).¹⁹⁸ Where lumber is available, Navajo houses are always made of wood. If lumber is scarce, their walls can be partially to totally stone.¹⁹⁹ Doors to hogans are always faced to the east. Doors on Hopi houses may be to the east, southeast, or south. Navajo hogan sites also always have sweathouses while Hopi sites do not. If native pottery is found on the site, it can easily be distinguished as Hopi or Navajo. They differ in shape, decoration, and many other characteristics as described by Tschopik.²⁰⁰ In the Hopi area, and over almost all the 1934 Reservation, with perhaps the exception of the far east and southeast sections, Navajo vessels do not have painted decoration. Decorations are always applique or by incision. Hopi decorated pottery during the nineteenth century almost always is white slipped with black or black and red designs. Hopi culinary vessels are more globular and much wider than Navajo vessels. Both groups' culinary vessels may have rim fillets or collars.²⁰¹

For corral structures, Hopi almost always used stone walls (where stone was available) to close off partially natural enclosures during this and the subsequent period, although post and wire fences were favored after 1900. The Navajo preferred wooden post fences, but, if wood was not locally available, could also use stone. Navajo corrals occur in the open, preferably near a wood source, and do not seem to use natural rock enclosures as do

the Hopi in the Moenkopi area. Whether in hogans or corrals, Navajo use of stone occurred only where wood was unavailable. Unless herding was a full-time occupation or a long distance from home, Hopi seldom built permanent structures near corrals, preferring instead to return to the village each night.²⁰² The Hopi and Hopi-Tewa frequently employed Navajo to tend their herds, both at First Mesa and Moenkopi.²⁰³ Because the Navajo might live with the herd, the Hopi owner or the Navajo employee might build a hogan nearby. If built by a Hopi, the hogan was made of stone. During the next century, square or rectangular houses were built for some Navajo by Hopi. These apparently occur only in the Kaibito Plateau area.

A good indicator of use of these corrals and occasionally even date of use, can be derived from associated rock art. Both Hopi and Navajo made markings in the rock which, before 1900, were usually pictorials by Navajos and clan symbols by Hopi.

Finally, a unique aspect of many Hopi areas, and most Hopi use areas, is the building of shrines. These can be piles of rock with prayer feathers nearby, and occasionally pottery and stone. Usually, however, they are built of stone slabs. These are placed upright in the ground forming three sides of a square or rectangle, leaving the south or east side open. A fourth slab covers the others. Within the stone box, or shrine, prayer feather offerings are left. Prayer sticks with feathers are made in the kivas and bear prayers to the Hopi deities for favorable conditions for them to grow and thrive. Some are for fertility and

protection and are placed in corrals near the livestock. Other shrines are marked by rock art and the offerings are buried in the earth.²⁰⁴ These would be impossible to locate without a knowledgeable informant to point them out.

Virtually the entire 1934 area was used by the Hopi during the nineteenth century for gathering and hunting. Hunting of antelope and other large game was restricted after Navajo entry into the area, primarily after 1868, the return from Fort Sumner and the establishment of a Navajo Reservation. This is because the Navajo, and local Euroamericans, killed the wild game and overgrazed areas formerly used by these animals.²⁰⁵ Only in the areas north and northwest of the Hopi Mesas, such as Kaibito Plateau and Shonto Plateau, did game remain plentiful. This is due to low native populations of Paiute and Ute and late Navajo entry into the area.²⁰⁶

As noted by Whiting,²⁰⁷ plants are obtained by the Hopi as far south or southwest as the San Francisco Peaks, 75 miles (120 km) distant, or 30-40 miles (50-75 km) north on the north end of Black Mesa in high altitude areas characterized by pine and Douglas fir. The Moenkopi area and the area between Moenkopi and Oraibi were thoroughly used.²⁰⁸ Whiting²⁰⁹ discusses uses of numerous plants in the 1934 area, especially to the south. Such plants are the giant sand grass, a rare variety of sage, and bear grass.²¹⁰ Locating these use areas through archaeological remains is nearly impossible. Documentary sources are the best bet and

work by Whiting, Hough, Fewkes, and Stephen²¹¹ will substantiate areas of Hopi use.

In terms of archaeological remains, Hopi sites dating to the 1300s were identified by the presence of Polacca Polychrome. A total of five sites within the 1934 Reservation area had Polacca Polychrome and one had a Hopi utility ware, Walpi Plain, that could date to this period (Fig. 7).²¹² One other Polacca Polychrome site was east of the 1934 Reservation near the entrance to Canyon de Chelly. It occurs with Navajo utility pottery and may or may not be Hopi. Historic (Euroamerican) trash was associated with three of the five sites within the 1934 Reservation boundaries. This and the designs on the pottery date all three to the 1875-1900 period. The other two sites and the utility pottery site have no associated Euroamerican trash. From designs on the vessels, one site dates 1800-1840 and the other two 1800-1875.

Four of the sites are in the Long House Valley on the northwest side of Black Mesa, one is 8 miles (13 km) west of the Chinle Valley, and the utility pottery site is west of Moenkopi village in the Kerley Valley. With the possible exception of the Chinle area site, all lie in fertile valleys near permanent springs or washes. Thus, it is probable all were agricultural sites, probably field houses associated with agricultural plots. Given archaeological coverage of the 1934 Reservation, about 100 Polacca period sites could be expected or, given a 20-year use span, about 20 sites per year. This figure is probably low in terms of identifiable Hopi sites because in general,

archaeologists are not familiar with historic Hopi pottery and are likely to misidentify it. This is especially true of Polacca Polychrome which has a white slip like most of the prehistoric (pre-1300) Hisatsinom decorated ceramics in the area.

Paiutes and Utes in the Colorado and San Juan River Plateau and Canyon country of southern Utah and northern Arizona probably prevented extensive Hopi use of the area for other than hunting or gathering, and occasional grazing. Although Spanish reports indicate cattle and sheep were grazing on the Kaibito Plateau, no ceramic sites of the Polacca period have been found in surveys of the area. Their absence may only indicate absence of agricultural use, which was associated with the other ceramic sites, and not an absence of other uses of the area that did not include ceramics. Uses such as gathering, hunting, and possibly even herding would not likely be identified by archaeologists. Many nineteenth century herding sites would probably be attributed to the Navajo, who may have reused many Hopi sites, rather than to their original Hopi owners and users.

What the archaeological data reveals is Hopi use of arable land areas in the 1934 Reservation surrounding the present villages. These uses were probably relatively widespread and continuous, given the range of Hopi sites throughout the nineteenth century. Known hunting and gathering areas have mostly been poorly surveyed. Even those areas with relatively good coverage do not reveal Hopi use, even though contemporary documents prove it existed.²¹³ The above site figures do not include Hopi trails

or rock art sites in use during the last quarter of the nineteenth century, such as the Hopi Salt Trail or the trail to the Winslow area from the mesas.²¹⁴

The dating of three sites to post-1875 might indicate Hopi re-expansion into areas previously unused following Navajo subjugation and placement on a reservation in 1868. Such expansion is noted in the documents of the period. The projected 50 identifiable Hopi sites in use during this 25-year period implies upward of 40 sites (primarily farming) in the 1934 Reservation during an average year.

Stebbins,²¹⁵ in her sample of 48 Navajo sites north and west of Black Mesa, found none that could be dated pre-1900. Tree-ring studies of Navajo hogan sites on Black Mesa by Dean²¹⁶ indicate none was occupied before 1800. Thus, Navajo occupancy of the region north of the Hopi Mesas postdates 1800. Movement to the west of the Hopi Mesas apparently postdates 1860. Hopi use of the area was probably restricted after 1900 by Navajo presence. Of course, Navajo presence on Black Mesa was primarily on the Hopi 1882 Reservation, a problem the government did not face until the 1930s.

The Period 1900-1940

Although it is recognized that the period 1900-1940 is of principal concern for this case, the foregoing discussion points out the long span of Hopi use, occupation, and possession of the entire area and the relatively late development of the Navajo and

Hopi co-use and co-occupancy characterizing the twentieth century. Nevertheless, large segments of the 1934 area were still used exclusively or almost exclusively by the Hopi during this period, while most of the remainder of the 1934 area continued the long tradition of Hopi use overlain by Navajo use.

The 1900-1940 period among the Hopi is one of continued change and adjustment to the presence both of Anglos (Euroamericans) and Navajos in the area. The Navajo Reservation was expanded four times, in 1900, 1901, 1907, and 1917, at the expense of territory formerly used exclusively by the Hopi, and shared with a few Paiute in pockets on the north and west. This expansion, encouraged by the federal government, led to the establishment in 1901 of the Western or Tuba City Agency that administered both the Navajo and the Moenkopi Hopi until 1934. In 1902, the Mormons were bought out of the area and in 1903 the Blue Canyon school was moved to Tuba City.²¹⁷ This attracted Navajo to the area. In 1907, the Leupp area in the southwest portion of the 1934 Reservation was added to the Reservation and in 1917 the area west of the Little Colorado River was added, all consolidated under the 1934 Act.

Thus, after the turn of the century, Navajo continued to expand into areas still used by the Hopi. The expansion of government services through the Tuba City (Western Navajo) Agency, schools, trading posts, and development of water resources for livestock encouraged Navajo expansion. The government also

developed dipping vats for Navajo sheep, further encouraging Navajo expansion.

Euroamerican presence, principally through the federal government, also continued to expand in its effect on the Hopi. New day schools were established at Shungopavi in 1910 and Hotevilla-Bacavi in 1912; the hospital at Keams Canyon was opened in 1913.²¹⁸ New trading posts dotted both the Hopi Reservation²¹⁹ and adjoining areas in the early 1900s²²⁰ expanding Hopi and Navajo access to white culture. By the early 1900s, traditional cultural items were rapidly being discontinued in favor of Euroamerican counterparts.

From 1900 to 1934, gradual change in Hopi material culture took place as a comparison of the cashbook inventory from 1878 at Keams Canyon (Table 2) to the trading post inventories at Oraibi in 1934 (Table 3) amply illustrates. A victim of the access to an expanding inventory was Native American manufactured items, both for the Hopi and the Navajo. For the Hopi, by 1910 only a few families still used pottery for everyday use and by 1930 pottery use was converted primarily to a tourist craft item.

Traditional clothing was worn only by the elderly, particularly women, for everyday by the 1930s, being relegated to ceremonial attire before World War II.²²¹ With few exceptions all other aspects of traditional Hopi material culture had taken a back seat to or been replaced by Euroamerican manufactured materials.

At this point it would be most useful to identify some of the traditional Hopi items that were in use during the 1930s. These can be identified from work at Walpi Pueblo which had a major component dating to the 1930s,²²² photographs from the period showing artifacts still in use, and ethnographies of the period concerned with Hopi material culture.²²³ Because our major evidence of use stems from economic activities rather than ceremonial, these will be emphasized.

In terms of food preparation, still in use were the piki stone, mano, and metate. Native foodstuffs were corn, beans, squash, peaches, chilis, and mutton. Rarely, a ceramic cooking vessel was used. For planting food a scapula (bone) or wood hoe was used to clear the field and a digging stick for planting. Winnowing of seeds used baskets. Pottery and baskets were still employed in storing food, primarily underground. Plant and mineral pigments were gathered and both were ground on stone palettes and moistened for application on pottery or put in boiling water for textiles and basketry.

Houses made of hand-quarried and shaped stone with viga (primary) beams of pine, fir, or juniper and earthen roofs were still commonly built, especially as field or farm houses. These buildings were nearly always square or rectangular with the door facing to the east or southeast. Other features, discussed later, were the pudding oven, corn roasting pit, and shrine. Of the above artifacts, the pottery, piki stone, basketry, housing, and

other features were all unique to the Hopi and distinguishable from the Navajo.

The increased use of trucks and cars by the Hopi, beginning in the late 1920s, significantly increased their access to outlying areas, especially for herding, that formerly they used less frequently due to distance. As a result, some Hopi land uses actually expanded in the 1900s, particularly so during the 1920s. Expansion was due in part to encouragement from the government and especially to better roads and vehicles. Wagons were used from 1900-1940 and trucks and autos after about 1925. Documents from the period reflect this expansion, as do informants and physical remains. The latter will be expanded upon in future sections.

In a report filed in 1939 and provided to the Indian Claims Commission by Harold S. Colton, Byron P. Adams described Hopi land use of the period.²²⁴ Whereas most of the use described occurred within the 1882 Reservation, significant areas of use did not. The uses concentrated on were herding and farming, with gathering and hunting only cursorily discussed. The areas of major use having potential archaeological remains can be grouped into those southeast of the 1882 Reservation, those southwest, and those west. Use of all three areas was documented in the late 1800s and noted in the 1800-1900 section. This use was maintained in the southeast and expanded in the other areas from 1900 into the 1930s. In the southwest, farm and grazing land near Red Lake owned by Sakkuvaya of Bakavi and Frank Masaquatewa of Shipaulovi

CV-6417-201

were in use in 1915.²²⁵ An area below Tovar Mesa was used for Hopi farming in 1916.²²⁶ There are other reports by Hopi informants. All conclude with comments to the effect that the Navajo pressure, unrestrained by the government, limited their use. In the southeast, the area from White Cone to Comah (Comar) Spring was used for grazing in 1912 by Albert Vinton, Charlie Naha, and Neil, Archie, and George Coochise. Superintendent Daniels encouraged the planting of fields in this area in addition to grazing in 1920 and 1921.²²⁷

To the west, in the early 1900s, Frank Tewanimptewa and the Numkena brothers tried to plant fields.²²⁸ There were 20 families with farms between Moenkopi and Dinnebito reported by Numkena.²²⁹ Hopi ran cattle from Cameron to Howell Mesa, watering at the Little Colorado River. Since 1914, west of White Mesa and 14 miles (22 km) north of Tuba City, two flocks of Hopi sheep have been run.²³⁰ Additionally, Nagata²³¹ has documented extensive use of the entire Moenkopi region to the 1960s, including intensive flood water and irrigation farming of the Moenkopi Wash and Pasture Canyon areas, dry farming in desirable locations primarily to the south and southeast, and grazing extending in all directions from the village. Activities such as wood gathering, coal quarrying, hunting, fishing, plant gathering, and other activities were pursued. In the years after passage of the Indian Reorganization Act in 1934, the management of the land resources of the area was transferred from the Bureau of Indian Affairs to the Navajo Tribe,

CV-6417-201

resulting in restriction of Moenkopi Hopi use.²³² This change did not affect allotted areas used for farming around the village.

Areas in use before 1900 discussed in the previous section continued in use to the 1930s and beyond, some to the present. By use of Fairchild Aviation aerial photographs taken in 1934 of the entire 1934 and 1882 Reservations, areas under cultivation are easily spotted. The Bakalo area southeast of Moenkopi was substantially used as were areas north, northeast, and west of the Bakalo, southwest on the Moenkopi Plateau, and west on Coal Mine Mesa. From discussions with Moenkopi and Oraibi people, ownership of many of the fields was learned. Fields in the Bakalo were owned by Clay Johnson, Gaseoma, Edward and Willard Holmes and others. To the north of the Bakalo were farms of the Dallas family, and to the east the fields of John Talashoma and Tsavatawa. To the west were those of Milo Tewa and Poyangam-tewa. Also in this area, along the north edge near Coal Mine Mesa near another Bakalo (called Nanmuru by the Hopi), are fields of Nasetoynewa, Brian Gilbert, James and Alex Humetewa, and George Nuvayestewa (Fig. 8). A "bakalo" is a low lying area where water stands. They range in size from less than an acre to the large one southeast of Moenkopi referred to above which is nearly a square mile. Their water retention attracts farming and can also water herds.

Agricultural patterns expanded gradually from the founding of Moenkopi, about 1878, until in 1937 the acreage under cultivation in the Moenkopi Wash area had risen to nearly 900

acres, four times as large as the original allotments.²³³ Similar expansion in dry land farming apparently also took place. These increases were spurred in part by the burgeoning Hopi population in the area that increased from less than 200 in 1910 to 400 in the early 1930s.²³⁴ As noted earlier, this expansion of agriculture was tolerated and even encouraged by the federal government into the 1920s, topping out in the late 1920s or early 1930s.

A similar growth profile can be plotted for grazing areas. Around Moenkopi, cattle herding groups formed early.²³⁵ All cattle ranges were appropriated by the 1930s. New individuals joined existing co-ops, usually the one of their father, for herding is a male occupation.²³⁶ In contrast, sheep herding was on an individual basis. Sheep herding was near the village.²³⁷ Thus, the land use begun by Accowski in the early 1900s for sheep herding was continued by his nephews into the 1930s. Archaeological confirmation of these areas of use and modes of use will be presented in detail in later sections. Use of the Kaibito Plateau for sheep herding (probably the Accowski family) was noted by Adams²³⁸ and continued into the 1930s, concentrating in the area around Castle Butte south and east to Pasture Canyon and the surrounding area.

In 1930, at least 1300 head of sheep and 300 cattle were grazed by Hopis on the Moenkopi Plateau and Coal Mine Mesa, which was set aside for the Hopi herds by a Tuba City superintendent.²³⁹ The broad expanse of the Moenkopi Plateau and Coal Mine Mesa south of Moenkopi was used for grazing. In this area are ranch houses and corrals used during the 1920s and 1930s. Artifacts and

structures from many of these ranches and corrals remain. This area is bounded on the east by the 1882 Reservation line, on the north by Moenkopi Wash, and on the southwest by the mesa escarpment. This entire, V-shaped area was extensively in use for grazing, hunting, and gathering. The Bakalo region and environs in the northeast corner of this area were the only sections used extensively for agriculture.

The Ward Terrace west of the Moenkopi Plateau was also used by Hopi ranchers from Moenkopi (Fig. 11). In 1934, according to aerial photographs, there was only one habitation structure, probably a frame house. A circular stone structure was built by Henry Humetewa, a Hopi, sometime after 1934, and used by a Navajo (Sakizzi) who tended the Hopi cattle. Abundant Hopi petroglyphs in the area support Hopi use and habitation of the area. Artifacts indicate this use began before 1934 (Appendix II). The area grazed by the Hopi cattle ranged from the Moenkopi Wash south to the Little Colorado River at Cameron. Remnants of a later cattle corral are 100 m south of the circular stone structure. The Humetewa family used the area from the late 1920s to World War II. Others using the area were Henry and Robert Dallas (Puhuyouma).

In summary, Hopi use of the area around Moenkopi was extensive and varied. Documented Hopi habitation and use based on aerial photographs, informants, material culture, and rock art testify to Hopi use of an area outside the 1882 Reservation from the Castle Rocks area on the north, Ward Terrace on the west, Coal

Mine Mesa on the east, and Buck Pasture on the south. Permanent structures are farm and ranch houses, the latter near corrals, and water resources. Land modification included small dams (charcos), fields, and wind breaks.

The general trend of Hopi economy from 1900 to 1940 is a gradual de-emphasis in agriculture and increased emphasis on herding. Thus, by 1937, 18 percent of Hopi commercial income came from livestock with population figures in 1937 reported as 11,202 sheep, 317 goats, 7,695 cattle, and 5,085 horses and burros.²⁴⁰ According to Thompson,²⁴¹ in 1942 livestock accounted for 34 percent of Hopi income. The entire range was in use²⁴² and until the development of land management districts in 1937, the government left reservation land as an open range for livestock.²⁴³ In the Moenkopi area, belonging to a different land management unit in 1942, the Hopi residents were assigned 3,487 sheep units.²⁴⁴ Until 1937, the Moenkopi Hopi were not under Navajo jurisdiction for grazing.

Other uses such as hunting and gathering for religious or secular purposes continued throughout the 1900-1940 period. Wood gathering occurred in the Kaibito Plateau area and the Hopi Buttes. Hunting was much reduced, concentrating on small game, coyote, and eagles by the 1930s.²⁴⁵ Gathering ranged widely wherever sources of plants, rocks, firewood, timber, coal, etc., occurred. With trucks and wagons, more distant sources could be tapped. Archaeological identification of these areas is difficult because there are few material remains of these activities. Other

CV-6417-201

specialist reports deal with these uses from documentary and informant data rather than archaeological remains.

Material culture in the outlying areas of Hopi use and occupancy in the twentieth century is principally Euroamerican manufactured and includes many items. Some of those available in 1934 at the Hubbell Trading Post in Oraibi are listed in Table 3. Items associated with specific use types were discussed for similar structures in the 1880-1900 period. Items uniquely Hopi were discussed earlier in this section. Of critical importance are the continued material culture differences between the two cultures. Hopi homes for the 1900-1940 period are nearly always stone and nearly always square or rectangular. Instances of Hopi building rectangular stone houses for Navajo employees and an occasional circular home for themselves are known, but are the exceptions proving the rule. As before, the Navajo built circular or polygonal hogans of wood. With the advantage of wagons and motorized vehicles by the late 1920s, it was easier for the Navajo to transport wood to a potential building site and the traditional shapes and styles remained most popular until after World War II. Not until the 1940s did some Navajo build rectangular, stone structures, and these were considered untraditional. ²⁴⁶

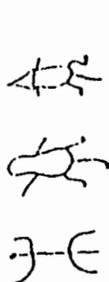
It is clear that following control of the Navajo by the U.S. government and with the encouragement of the government through the 1920s to re-expand, the Hopi were ready, willing, and able to re-expand into traditionally utilized areas suitable for farming and grazing at considerable distances from their

CV-6417-201

villages. This re-occupation was further encouraged with the use of wagons and especially with trucks and cars. These distant farmsteads and ranches became seasonal, if not year-round, habitations and permanent structures were built. This is at variance with the pattern in the nineteenth century when the Navajo were uncontrolled, ground transportation was restricted, and permanent Hopi structures far from the villages were rare. Thus, near Hopi fields and corrals of the 1900s are frequently found permanent rectangular Hopi structures.

In addition to rectangular or square stone houses, other Hopi site features near habitation units can be pudding ovens, and near fields, corn roasting pits. A pudding oven is a small, underground chamber of stone in which sweetened corn gruel is baked. A roasting pit for sweet corn is pictured by Page and discussed by Page and by Beaglehole.²⁴⁷ It is a large, bottle-necked structure located near the field. Beaglehole did his fieldwork in 1932 and 1934 at Second Mesa and Page did his in the mid-1930s. Also near fields and corrals are shrines, usually of rectangular stone slabs. These contain objects for fertility.²⁴⁸ Their use continued in a traditional manner to World War II and is known today.

Other indications of Hopi use, occupancy and possession can be found in the material culture at these sites. A principal component is rock art. Hopi rock art, in contrast to Navajo, includes clan symbols (Fig. 12), brands, katsina figures, and names. Often dates accompany these. If the date is not present,



LIZARD



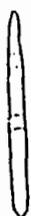
SNAKE



CORN



RABBIT BRUSH



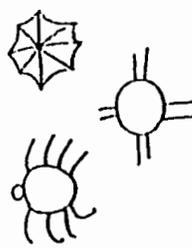
REED



BUTTERFLY



RED ANT



SPIDER



BADGER



BEAR



COYOTE



HORN



RABBIT



PORCUPINE



CROW



EAGLE



PARROT

Figure 12. Hopi clan symbols.

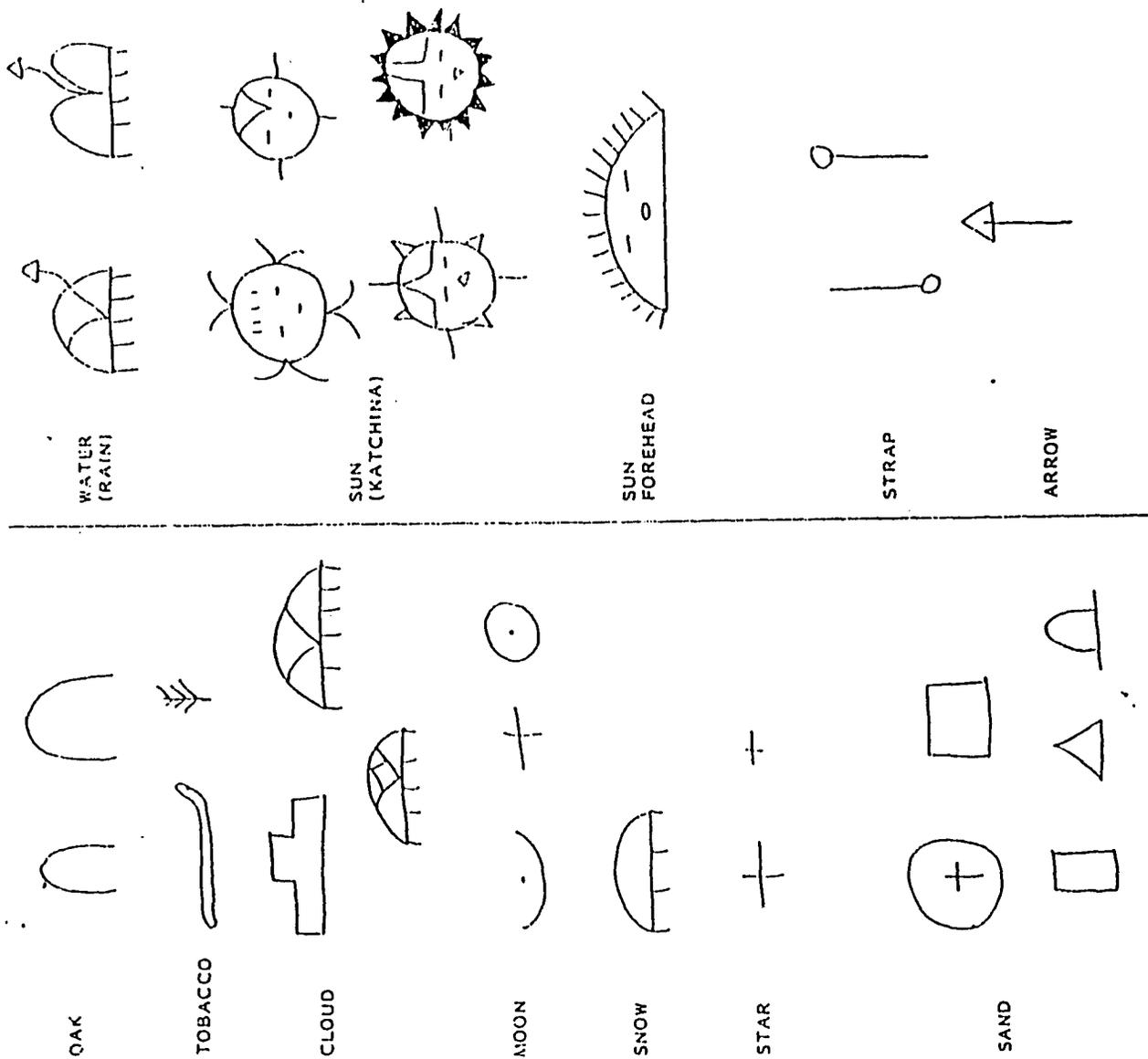
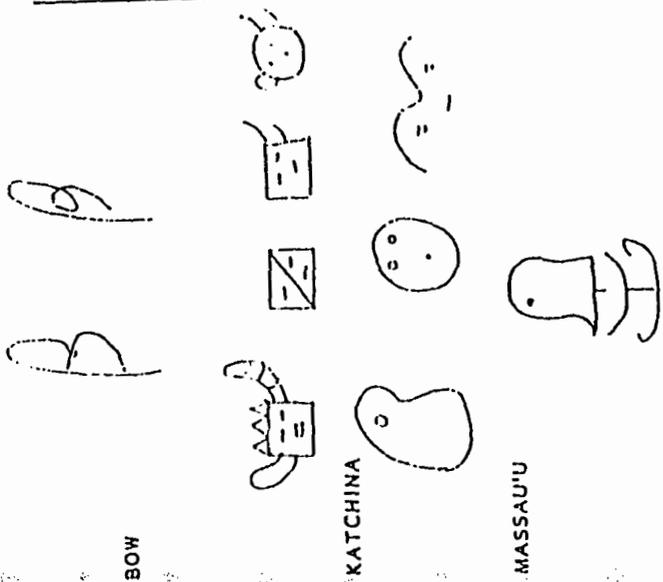


Figure 12 (cont). Hopi clan symbols.



Various other bird clan representations:

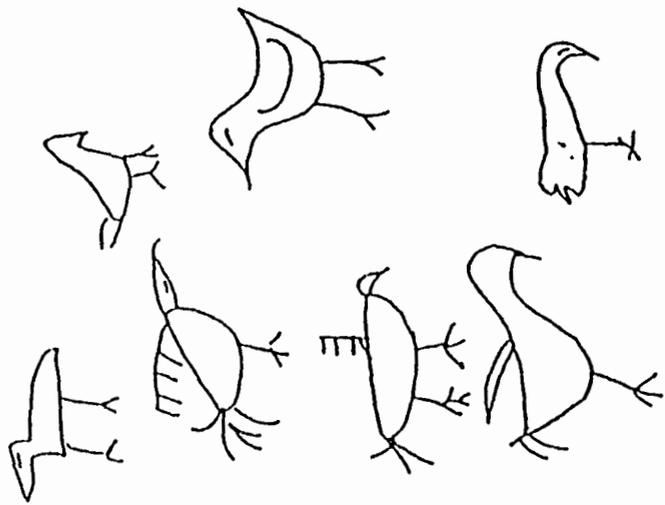


Figure 12. (cont). Hopi clan symbols.

other means can be used, including artifacts and aerial photographs.

In the 1930s, most Hopi homes had piki ovens, usually in separate houses. These may also have been just near the village home and not near field or herding structures, if these were only seasonal or temporary. During this period, Hopi decorated pottery was red or orange with black or black and red (rarely white) designs. This was made only at First Mesa, although used on all mesas. Distinctive wicker and coil basketry were made on Third and Second Mesas, respectively, and used on all three mesas. Thus, in the 1930s, distinctive Hopi material culture on the 1934 Reservation included the following: form and construction material of dwellings, roasting pits for sweet corn, pudding ovens, fertility shrines, Hopi rock art, piki stones, pottery, and basketry.

Age of a site can be determined through aerial photographs taken in 1934 by Fairchild Aviation, dates chiseled on local rock outcrops associated with the sites, material culture using such techniques as patent dates, styles, etc., and independent corroboration of several informants.

HOPI MATERIAL CULTURE OF THE 1930s

General discussion of Hopi material culture has been presented in the preceding sections. Material culture is being emphasized in this paper because, as an archaeologist, this is the material remaining that testifies to the fact that an area was

used, what it was used for, who used it, and when it was used. This discussion will derive from archaeological data collected during surveys of the area supplemented by trading post and government records. A total of 78 sites of Hopi use or manufacture were recorded during this study. These are listed in Appendix I and plotted on Fig. 13. Fifty-five of the sites were in use in 1934; another four (sites 91, 108, 130, and 140) predate 1934 on the basis of the 1934 aerial photograph images or associated artifacts.

These data support the pattern noted in the general discussion for the 1900-1940 period, and the underlying causes that revolve around acculturation of Hopi and Navajo tribes by Euroamerican culture. Archaeological fieldwork concentrated in the region west of the 1882 Reservation boundary. The pattern of use in the western area revolved around the occupation of Moenkopi village. This pattern is one noted by Page, Nagata, and others²⁴⁹ with farming centered near the village, sheepherding in the area within 10-15 miles of the village, and cattle herding outward to 50 miles or more from the village. Herding of cattle also occurred south of the 1882 Reservation; however, only areas with documented structures built by, or used by or for, Hopi will be discussed in this section. Although use and occupancy include other than farming and herding and associated structures, these uses will be emphasized in this report due to their more substantial material remains. Other activities clearly reflecting use, such as gathering and hunting, rarely leave material remains and

CV-6417-201

are not considered in this report except as related to farming and herding. Activities such as ritual, including eagle gathering, salt trail trips, trips to gather "spruce" or Douglas fir, frequently leave archaeological evidence. These uses are considered in other documents prepared for this case.

Clearly a critical factor for this case is proving Hopi occupancy and use of the 1934 Reservation area. This can best be accomplished through the documentation of features. After location of a feature the task then becomes identifying its use, its user, and period of use.

Location of features was accomplished through examining the Fairchild Aviation aerial photographs and field checking objects that appeared to be cultural features. A far more efficient method was to accompany Hopi to features they knew. This method established the identity of the user that could be corroborated through discussions with other Hopi, through documents, or by artifacts found at the site. When a feature was located, it was assigned an arbitrary number in a sequence. A form describing the feature was completed. These are attached as Appendix I. This form identifies the use of the site, ownership, period of use, location, artifacts, and includes a sketch of the site.

Use of a site was usually clear. Houses, corrals, and rock art all have a life of over 50 years. Occasionally, a use attributed by a Hopi interviewee, such as community corral, could not be determined with archaeological data; or, a use could only be determined after discussion with several Hopis. A use was

included on the form and in the following discussion only if it could be corroborated with the archaeological remains at the site or with several Hopi providing corroborative testimony.

Three lines of evidence provide data on period of use: interviews, artifacts (including rock art), and aerial photographs (Table 6, Appendix II). The 1934 Fairchild aerial photographs of the 1934 Reservation usually reveal the existence of a structure discovered on the ground. Conceivably, vegetation or rock outcrops could hide a feature, but this is rare. Occurrence in a photograph indicates the feature's presence in 1934, not necessarily use, but use probably occurred in the not too distant past. Trails leading to and from the feature and their degree of use apparent in the aerial photograph are reliable indicators of recent use. Absence of a feature from the aerial photographs demonstrates the feature was not present in 1934. Dates carved into rock associated with sites are indicative of use. Due to increasing literacy with presence of schools after 1900, dates are much more likely after 1910-1920. Most Hopi were literate after 1934. Frequently associated with dates are names. Logically, a Hopi name associated with a date is interpreted to mean the site was used by the Hopi on that date during that year. A range of dates is interpreted as minimally spanning the use of that site. Artifacts on a site that can be dated also suggest period of use, but are less precise than the aerial photographs or rock art. A discussion of the problems of dating using only a few Euroamerican manufactured items is presented in Appendix II.

Site Categories:

This section is divided into two general parts: sites with structures and sites without structures. Under sites with structures are permanent houses and corrals. Sites without structures include rock art panels, fields, charcos (water catchments), and cairns (stacks of rock).

Structures: Permanent Houses

The term "permanent" refers to the fact that these structures were well built, usually stone, and intended for use year after year. Corrals and fields were used over many years. Houses were usually associated with fields or corrals that were located at a considerable distance from the main village. Table 4 presents the association of a site form and building material to its use. Of the 19 sites having permanent houses belonging to Hopi, 15 are stone, three frame, and one site has both (although it did not in 1934). Eleven of the stone and all of the frame are rectangular and five of the stone are round. The only form associated with agriculture is rectangular stone houses. Such houses were very rarely built by Navajo until after World War II and many of these were in fact built by Hopi for Navajo. In the Navajo Emergence Myth²⁵⁰ the circular hogan is contrasted to the rectangular Puebloan house. Because ceremony is deeply tied to the hogan form by the Navajo, it is the only form permitted for a traditional Navajo family.²⁵¹ Thus by form alone, rectangular stone houses are almost surely Hopi and not Navajo. Sites with

cattle corrals usually have stone structures, if any structures are present. Construction of these structures probably relates to their distance from the home village and the use of cattle cooperatives,²⁵² allowing one or more individuals of the co-op the time to stay with their herds year-round, or throughout the good forage season in the vicinity.

Frame houses may be for less permanent occupation. They are considered permanent because they are used over several years. They are always associated with sheep corrals and herding, an individual or family enterprise in which the individual preferred returning to the village daily rather than staying with the herd.²⁵³

Circular stone structures are an interesting form. The prohibition on building noncircular houses by Navajo is not merely the reverse for Hopi. There are no such prohibitions. Circular houses take less stone and are stronger than rectangular houses, especially when built as solitary units, and were thus preferred by a few Hopi in isolated areas. Obviously, in villages where rooms share walls, circular forms would not work. Two problems must be considered for these structures in proving they are Hopi. First, one must prove they are not Navajo. Second, one must explain Hopi use.

Any permanent dwelling of the Navajo must have a sweathouse built near it (within 150-650 feet or so).²⁵⁴ The circular stone structures certainly qualify as permanent dwellings, and yet none that were investigated have sweathouses, nor features such as

small, shallow depressions, fire-reddened rocks, or ash and charcoal areas indicating their former existence. At one of these circular structures, numerous Hopi names and brands were carved in nearby rock outcrops indicating Hopi use.

Hopi construction of circular dwellings is nothing new. Hopi ancestors frequently dug circular structures into the ground, such as kivas, or on top of the ground, such as towers and granaries. The circular structures better utilize resources, are stronger, and may have been used more readily by Navajo workers employed by Hopi to herd the sheep or cattle.

Structures: Corrals

Sheep corrals can be distinguished from cattle corrals in their smaller size, the presence of one or more attached or nearby lambing pens, and frequently from the deep, concentrated dung deposit. Of the 15 Hopi sheep corrals dated to 1934 through aerial photographs or rock art names and dates, 14 involve in part or nearly totally the use of a natural stone formation, be it an outcrop, cliff, or alcove. The one exception to this pattern used post and fence construction. The open ends of those using natural formations are closed with wooden posts, posts and fence, a stone wall, or car parts, bed springs, and other miscellaneous artifacts, often in combination. This striking pattern argues for single culture construction and use and is concentrated in the Moenkopi village area. It differs markedly from the Navajo pattern of wood post or post and fence corrals in open areas noted at

Navajo sites observed in the region north and east of the Moenkopi area that also date to the 1930s.

In general, Hopi did not corral their cattle on the open range. Only three exceptions to this rule (sites 83, 130, and 140) were noted. Site 140 is a corral built by the Humetewa family in a canyon on the east side of Ward Terrace in the late 1920s with use discontinuing before 1934. Site 83 had at least one structure during the 1930s and a temporary cattle corral may also have been in use. Site 130 was built by Roger Honahni in Little Bakalo near a dugout (site 97) built by the Numkena brothers. The Honahni site is a corral that was built in the late 1920s with use discontinuing before 1934. The corral is visible on the aerial photographs. In general, cattle (and horses) were kept in the community corrals or corrals used by one of the cattlemen's cooperatives when near Moenkopi village. One possible cattle corral dating to the 1930s was located on Ward Terrace associated with site 83. Four community corrals used for all manner of livestock date to 1934, with two still in use. One is located near Greasewood spring just below Highway 264 (site 90). This corral has two natural cliff sides and two post and frame sides. It also has a loading chute. A second community corral was a pole and fence structure on the Moenkopi Plateau 4.6 miles (7 km) south of the village (site 106). It has been dismantled. The third community corral (site 102) is located 1.6 miles (2 km) southeast of Moenkopi village along the wash. The southern sides are formed by a cliff whereas those on the north are constructed

with a stone wall. The fourth community corral (site 139) is adjacent to the sandstone cliff in a natural alcove along the south side of Moenkopi Wash opposite the village. The community corrals are distinguishable by their large size and such features as chutes for easy loading on trucks or wagons for sale or transfer. All of the community corrals are visible on the Fairchild aerial photographs. A horse corral (site 137) postdating 1934, built and used by Jackson Tewa is located below Ironwood Spring, 2.7 mi (4.4 km) east of Moenkopi Village.

Rock Art Panels

Fifteen sites have identifiable rock art panels (Table 6). Four are associated with water, four with corrals, one with a corn oven, two with a house-field complex, one with a field, and three with house-corral complexes, or ranches. Although all 15 sites were probably in use in 1934, four of the sites do not have rock art to support use in 1934. These are sites 83, 89, 118, and 132. Site 89, Greasewood Spring, does not appear on the aerials, while the other three do have features appearing on the Fairchild aerial photographs. However, Greasewood Spring was used in association with the community corral, site 90, that is visible on the aerial photographs. Identifiable rock art has one or more dates and one or more Hopi names or Hopi brands. The rock art is significant in clearly identifying Hopi individuals and frequently the dates of their presence and presumable use of areas or structures.

Dates range very near 1934 or both before and after the 1934 date, indicating a range of use. The site forms (Appendix I) and Table 6 list the specific dates, names, brands, etc. In every case, the rock art confirms location, individuals, and dates of use by Hopi that have been suggested previously by individuals interviewed. This strengthens the probability that most Hopi individuals interviewed are reporting events to the best of their abilities and accurately.

A substantial series of springs flow from the head of Pasture Canyon into Moenkopi Wash at the village of Moenkopi. Total length of the canyon is about 5 miles (8 km). Hopi have practiced horticulture the length of this canyon for many years with some fields and homes still present within the canyon. To water the fields, an elaborate system of dams and irrigation ditches has been erected by the Hopi. The irrigation ditches were maintained by the users annually in the spring and the dates of these maintenance projects were carved into the rock at one place (site 102) 4.3 mi (7 km) from Moenkopi village. Annual dates range from 1912 through 1922 and thereafter at least every other year, if not annually, including 1934 to 1945 and again in 1957. This clearly indicates Hopi presence and use before, during, and after 1934.

A second series of rock art panels occurs in Pasture Canyon with the Honkuku farm complex (site 100) 3.1 (5 km) from Moenkopi. Although the buildings postdate 1934, the field is visibly in use on the Fairchild aerial photographs. The early dates are 1928 and 1933, both associated with Hopi names. The buildings

have dates of 1942, 1946, and 1957 carved into their lintels, indicating a continuity of use at least from the 1920s to the 1950s.

Greasewood Spring (site 89), Ironwood Spring (site 111), and Cottonwood Spring (site 145), are located within drainages flowing from the south into Moenkopi Wash. They are within 5 miles (8 km) of Moenkopi village to the east. Greasewood Spring (Teptsotsmova pahu) has Hopi names and dates carved into the rock ranging from 1941-1948, plus a rock carving of a Long Hair Katsina. Near this spring is one of the Moenkopi community corrals that was in use in 1934 and which is visible on the 1934 Fairchild aerial photographs.

Near Ironwood Spring there is a complex of sheep corrals and a rectangular frame building. From this complex down the drainage, north toward Moenkopi Wash, there is a series of rock art panels pecked and carved (petroglyph style rock art) into the rock face a length of nearly 800 feet (240 m). These depictions have been divided into 18 groupings, or panels. Most of the Hopi names have dates associated with them. There are a few Navajo names. The dates associated with Hopi names, all from Moenkopi village, range as early as 1918 and include 1925, 1934, 1935, 1936, 1937, 1939, 1942, 1949, and several later. Navajo names with associated dates all postdate 1960.

Cottonwood Spring (Sohoptugave pahu) was developed as part of a CCC program in the 1930s to improve water for Hopi sheep and cattle. The spring had been a traditional watering spot for Hopi

CV-6417-201

livestock previous to development as reflected in dates, all with Hopi names, of 1930, 1933, and 1971, carved into nearby rock outcrops. A Hopi katsina mask and other Hopi designs are also depicted in the rock.

A major rock art panel (site 152) is associated with a large field visible in the Fairchild aerial photographs at the confluence of Cottonwood Springs and Moenkopi Wash. One panel has a June, 1934 date with a Hopi name. There are also 1935 and 1949 dates with Hopi names.

The rock art panels associated with structures occur as far away as Ward Terrace, in Bakalo, at the base of Ironwood Spring, and near Moenkopi village in the Moenkopi Wash. An extensive set is at a cattle and sheep ranch on Ward Terrace east of Salt Spring (site 83). The rock art consists of several family brands that were in use in the 1930s. These brands belonged to Puhyouma (later Dallas), Kevanheptewa, and Humetewa, all from Moenkopi village. The site clearly shows up on the 1934 Fairchild aerial photographs. The Dallas family name is commonly associated with dates of 1941, 1943, and 1951 carved into the rock. Their use postdates that of those families whose brands are depicted. Structures associated with the rock art are a cattle corral, a circular stone house, and a rectangular frame house. The frame house is apparently visible on the 1934 aerial photographs.

A field and rectangular farm house associated with rock art (site 151) were actively being used by Edwin Kaye judging from the Fairchild aerial photographs. Rock art dates with Hopi names,

frequently Kaye's, include 1923, 1936, and 1942, plus many later dates.

The third grouping of rock art associated with corrals and houses is at a site belonging to the Gaseoma family on the west cliff of the Bakalo. The site (93) has two corrals and a dugout house; however, only the corrals are visible on the aerial photographs. One date was found associated with construction of a rock wall to enclose one corral. The year 1934 is carved into the rock cliff face with the names John and Russ, the names of the two sons of the elder Gaseoma. Several names and dates are carved near the other corral, all Hopi families from Moenkopi. The dates are 1922, 1937, 1944, and 1947.

A second Gaseoma corral (site 118) is located 3.75 miles (6 km) east of Moenkopi village on the south side of Moenkopi Wash. Associated with this corral is a ramada. The only date in the panel is 1944 associated with a Hopi name. Several other Hopi names, Hopi brands, and a Hopi Long Hair Katsina are also depicted. This site is visible in the 1934 Fairchild aerial photographs.

A corn oven and associated ramada (site 122), probably postdating 1934, have a series of rock art panels of dated Hopi names. These names indicate use of the field with which the oven and ramada were associated. The dates with Hopi names are 1925, 1926, 1933, and 1934. The post-1934 use of the oven and ramada together with the rock art bracket the period of concern.

Four corral sites also have rock art. The first rock art panel (site 109) is located about 3 miles (5 km) north and east of Moenkopi village near a corral used by Sahme, from Moenkopi village. Several Hopi names and dates are carved or pecked into the rock. Although the corral is not discernable on the aerial photographs, the rock art indicates the area was used by Hopi in the 1930s. The dates are 1919, 1929, 1939, 1947, 1966, and 1968. Presumed Navajo names and drawings are carved over some of these.

The second Sahme corral (site 112) is on a bluff just east of present State Highway 264, south of Moenkopi Wash and over a prehistoric Hopi ancestral site named Posewlelana. 3 miles (5 km) east of Moenkopi village. Several Hopi names and associated dates are carved into the rock. The dates are 1910, 1931, 1942, 1970, 1971, and 1972.

The third sheep corral (site 114), belonging to Big Philip Hongeva of Moenkopi, is within .6 mile (1 km) of Moenkopi village. Again, Hopi names and associated dates are carved or pecked into the rock. The dates are 1926, 1944, 1950, 1960, and later. This corral is on the aerial photographs.

The fourth sheep corral (site 132), used by Jackson Tewa, was visible on the aerial photographs. The associated rock art has one Hopi name, but no dates.

The four sheep corrals, as is typical for these structures built by Hopi, were built using natural cliffs or similar formations as part of their enclosing walls. Usually only one wall was needed to be built to complete the enclosure. Clearly, all of

these sites were in use in 1934. With the possible exception of corral site 108, near rock art site 109, all of the sites are visible on the 1934 aerial photographs and the rock art dates generally confirm their use period. If anything, the rock art dates might not indicate a site was in use in 1934, when it actually was. This is the case for Greasewood Spring, the Jackson Tewa corral, the Humetewa complex on Ward Terrace, and the second Gaseoma corral.

Miscellaneous Site Types

There were 21 miscellaneous site types. These include five underground corn ovens, two charcos, one dam built around a spring, one cave used for weaving by Moenkopi villagers, two flumes built by Hopi to carry water and expand irrigation for farming in Kerley Valley, five quarries, two cairns, one site to obtain clay, one shrine constructed and used by Moenkopi villagers, and one historic rock art site associated with the Hopi Salt Trail.

Five Hopi sites with underground corn ovens were recorded. Two had associated ramadas and all five are associated with Hopi fields. Rock art associated with site 122 indicates extensive usage of the field from 1904 through 1934. The corn oven at the site was constructed in 1961. Thus the use of the oven does not relate to the early use of the field. This seems to be the case with three other of the oven sites. Two of these ovens occur 3.35 miles and 4.4 miles (5.4 km and 7 km) north of

Moenkopi village up Pasture Canyon just below the rock art panel associated with maintenance of the drainage ditch. The third post-1934 corn oven is 1.25 miles (2 km) east of the village in the Moenkopi Wash floodplain. One corn oven site (site 146) associated with fields was in use in 1934. It occurs in Kerley Valley 1 mi (1.6 km) west of Moenkopi village on the north edge of Moenkopi Wash. The site 146 oven is present in the Fairchild aerial photographs. The nearby site 142 oven was not visible in the aerial photos.

The Weaver's cave (site 153) was used by men of Moenkopi Village for weaving clothes and ceremonial kilts and other religious paraphernalia during the summer when it became too hot to do the work in the kivas.

Two sites contained artificially constructed stock ponds, or charcos. These take advantage of the natural terrain to fill with water for cattle or sheep. Site 85 contained two such ponds built, in part, of stone walls. One also contained several natural stone pot holes. The site lies on the north end of Nannuru, north of the Bakalo. Although neither pond is visible in the 1934 Fairchild aerial photographs, it is probable that the natural pot holes in the bedrock of one charco were present in 1934. Associated features are a stone sheep corral and 2-3 houses owned by a Hopi, Big Philip Hongeva at site 86. Site 141 is an earthen dam constructed by Hopi cattlemen across a wash that drains from the Moenkopi Plateau to Ward Terrace 5.4 mi (8.7 km)

south of Moenkopi Village. The dam is visible on the Fairchild aerial photographs.

Site 145 is a dam constructed around Cottonwood Spring. The spring has traditionally been used to water Hopi sheep and cattle as indicated by rock art depicting Hopi names with dates of 1930 and 1933. A Hopi Civilian Conservation Corps crew helped the government improve the spring in the 1930s.

Two flumes (sites 148 and 149) were built by the Hopi in 1934 across Moenkopi Wash in the Kerley Valley to bring irrigation water from their fields on the north side of the wash to fields on the south side.²⁵⁶ The flumes are visible in the Fairchild aerial photographs.

Five sites are rock quarries. Two (sites 133 and 134) were used in the original and subsequent construction of Lower, and later, Upper Moenkopi. They are visible in the aerial photographs. One lies north of Moenkopi and the other, west. One (site 144) was used by several Hopi in the construction of houses at both Upper and Lower Moenkopi. It lies just east of Highway 89 six miles south of Cameron. The fourth quarry (site 143) was used to quarry stone in the manufacture of pikistones. Every Hopi household, at one time, had a stone "griddle" used to cook piki bread and to this day, it is a favored Hopi food. The fifth site (site 150) is a small quarry a half mile east of Ironwood Spring canyon that was used to obtain building stone, probably for improving Ironwood Spring.

One site (147) was used to obtain duma. Duma is a soil high in kaolin clay content. The duma is used by Hopi for white washing clothing, coloring the human body for ritual, and for coloring Katsina dolls. The source of duma is adjacent to the second cairn described below, 7.4 mi (12 km) southeast of Moenkopi Village.

Site 154 is the site of Tutuveni²⁵⁷ used into the 1910s by Hopi travelling to obtain salt and to visit the Hopi emergence place from the underworld. This trip was discontinued in part due to fear of Navajo in the area.

Site 155 is the Salako spring at the head of Pasture Canyon that is a major shrine built by the Hopi of Moenkopi.²⁵⁸ Informants describe use before 1934 and it has been used to very recently.

The last site type is the cairn. This is a stack or pile of stones. These are used by Hopi as landmarks and are associated with rituals. Two cairn sites have been recorded. The first site (site 84) consists of two cairns associated with the charco, house-corral complex noted above (sites 85 and 86). The Hopi use and occupancy of these latter features indicates the two cairns at this site are Hopi-built. They probably served as landmarks for they sit on a topographic prominence visible from miles around.

The second cairn (site 107) is located 1.6 miles (2.5 km) southeast of the first cairn site. It consists of a pile of rocks with grama grass placed beneath and between the rocks. This rock pile, according to several Hopi, lies along a trail used by the

Hopi in traveling from Oraibi on Third Mesa to Moenkopi and was also part of the trail used by the Hopi in traveling from Oraibi to gather salt at the convergence of the Little Colorado River with the Colorado River, known also as the Salt Trail. In using this trail, the traveler would stop at the cairn or trail marker, pick up a stone from the vicinity and a grama grass or shrub (ideally grama grass), and use them to scrape or cleanse themselves. Both the stone and plant were then placed on the cairn. Near the second cairn site is a deposit of "duma" or a Hopi white-washing material.

The first cairn site could also have been used as a Salt Trail marker. The Salt Trail also leads to Tutuveni, Inscription Rocks, near Willow Spring which is discussed later. Use of the Salt Trail into the 1910s is documented.²⁵⁵

SITE USE CATEGORIES

There are two basic activities that Hopi engage in that require seasonal or permanent use of an area outside the village proper. These are farming and ranching. Because both of these activities require such an investment of time and labor, structures, features, or land modification are required and are associated with both. This results in substantial visibility in the archaeological record and allows the archaeologist to document or support the contention that these events occurred and to pinpoint where they occurred. Both of these categories substantiate Hopi

claims to use and occupancy of the point of the site and areas around it.

Most of the archaeologically visible site types mentioned in the preceding section are associated with one of these site use categories. The Salt Trail markers (including Tutuveni) and one shrine area, Salako, fall into another category, ritual use, and will be considered separately. The rock quarries (and duma) are considered under a miscellaneous category heading.

Farming

A total of 22 farming sites used by the Hopi were located during this study. (Table 5, Fig. 13, Appendix I.) Farming sites are characterized by a number of features, houses and fields being the most common. Eight of the farm sites have rectangular stone houses, five have corn ovens, and two of these five have ramadas. Six sites have only fields. One site is an irrigation ditch with rock art. Two sites are flumes built by Hopi in 1934 to extend agriculture in Kerley Valley.²⁶⁰ The permanent structures on the sites indicate a permanent, seasonal occupation at the field, probably in part due to the long commuting distance. These structures were also useful for permanent storage of tools and implements and temporary storage of grain.

The total number of farming sites in use in 1934 recorded on this survey is 17. Seven of the eight sites with rectangular structures, one field with a corn oven, the six fields, and the two flumes were all in use in 1934. The irrigation ditch also

dates to 1934. The one other site with a rectangular house pre-dates 1934, whereas three of the corn oven sites postdate 1934. No sites on allotted lands are included in this inventory. The allotted areas are in T 34N, R 11E, Sections 32, 33, and 34; and T 31N, R 11E, Section 4, amounting to 400 acres.²⁶¹

The irrigation ditch in Pasture Canyon (site 102) is part of a canyon-long system of ditches for watering Hopi fields. These range past 4.4 miles (7 km) up canyon from the mouth at Moenkopi village. The Fairchild aerial photographs indicate many of these fields were in use in 1934. Rock art from the ditch site and from near a field with a corn oven indicates both areas were in use or visited in 1934.

The flumes were built by Hopi in 1934 to extend Hopi irrigation in the Kerley Valley from the north side of the Moenkopi Wash to the south side. Documents²⁶² and the Fairchild aerial photographs both substantiate the existence and use of the flumes in 1934.

Aerial photographs and the archaeological data recorded in this report indicate three major areas of agriculture and two secondary areas in use in 1934. The three major areas are Moenkopi Wash (including Kerley Valley), Pasture Canyon, and the Hollow Place, or Bakalo (Fig. 8). Using Moenkopi village as the point of reference, the Hopi were farming east or up canyon at least 3 miles (5 km), 2 miles (3 km) east of the present bridge for Highway 264. Four fields with rectangular structures visible in the aerial photographs (sites 80, 81, 151, and 126) and one

with no structure (site 152) are located in this east Moenkopi Wash area. The Hopi of Moenkopi farmed 1.25 miles (2 km) downstream or west of the village on both sides of the wash and another 2.5 miles (4 km) further west, primarily on the south side.²⁶³ The corn oven site dating to the 1930s is located 1 mile (1.6 km) west of Moenkopi Village just north of the Wash.

As noted before, the Hopi were farming at least 4.4 miles (7 km) up Pasture Canyon in 1934. The aerial photographs and documents of the period²⁶⁴ plus the irrigation ditches associated with Hopi names and dates carved into nearby rock at site 102 support this conclusion. A little further up the canyon, .4 mile (.7 km) above the ditch rock art, is the Salako shrine (site 155) which was in use in 1934 by groups from Moenkopi village. Prayer feathers and other offerings typical of Hopi ritual were still visible in the small alcove containing this shrine in 1983.

The Bakalo area 5 miles (8 km) southeast of Moenkopi village is the largest of a series of natural sinks or depressions in the earth's surface (Fig. 8). Because these areas have no drainage out of them, water drains to their low spots making them good areas for dry farming. Fields belonging to Milo Tewa (site 88), Clay Johnson (site 21), Edward and Willard Holmes (site 136), Roger Honahni and Forrest Kaye (site 135), and others, were visible in the Fairchild aerial photographs. Those of Tewa and Johnson have associated rectangular stone structures visible in the aerial photographs. Adjacent to the north of the main Bakalo area is a smaller bakalo called the Namuru area (Fig. 7). This area

was used extensively by Hopi farmers but, by 1930, was used primarily by Big George Nuvayestewa for agriculture. The area was apparently too dry and the other farmers, Forrest Kaye, Nasetoynewa (whose farm had an associated rectangular stone structure), and James and Alex Humetewa, moved to the Bakalo. Big George's field (site 129) is visible under cultivation in the Fairchild aerial photographs.

In all of these major farming areas, permanent rectangular stone structures were built by one or more of the inhabitants. Especially after World War II, ramadas were built near fields, probably due to increased use of pickups, making the trip to the field much easier. Areas within easy walking distance had ramadas before and during the 1930s.

Secondary farming areas are defined as areas where fields were dispersed, while in major areas they were concentrated in 1934. Two areas of dispersed fields were noted in the Fairchild aerial photographs and during archaeological fieldwork. The first is north of Owl's Cap and west of the Hollow Place, 4.4 miles (7 km) south of Moenkopi village (Fig. 8). Located here is a field used in 1934 by Edwin Kaye and Jackson Tewa. The field is still in use.

The other secondary farming area is east of Bakalo and Nanmuru and west of Coal Mine (Fig. 8). This field, also used by Jackson Tewa, was located in a shallow drainage and actively farmed in 1934, judging from the aerial photographs.

To summarize the distribution of farming by Hopi in the vicinity of Moenkopi village in 1934, an extensive belt of arable land was utilized stretching from Kerley Valley on the west, 3.9 miles (6 km) west of Moenkopi village, to Coal Mine Mesa, 9 miles (15 km) to the east of the village. Farming also took place 4.4 miles (7 km) up (north) Pasture Canyon and extended south to Owl's Cap and Bakalo a distance of 6.2 miles (10 km). Total area enclosed by these boundaries is over 80 square miles (200 sq. km). The sites noted in this inventory are not exhaustive, but do attempt to cover those on the edges of the distribution in every direction.

Ranching

Ranching by the Hopi is fairly recent. As early as the 1700s they had livestock, but these ranged freely and away from the villages to keep the animals out of the crops.²⁶⁵ The day-to-day management of the animals away from the village did not evolve until after the Navajo were subjugated in 1864. By the 1880s, individuals were herding sheep and establishing corrals and other features outside the villages.²⁶⁶ Cattle ranching is a second facet of ranching. Rather than being done by individuals, cooperatives were involved in cattle ranching.

As noted by Page in his 1937-38 assessment of Hopi and Navajo land use, Hopi sheep are usually herded within 10-12 miles of the villages, whereas cattle ranged outside this area.²⁶⁷ Because cattle are allowed to range unsupervised, corrals, houses, and other such herding features are less frequently associated

with cattle herding than with sheep herding and are thus generally less visible in the archaeological record. However, when structures are present at sites used for cattle herding, they can be substantial, having stone buildings for houses. The considerable distance these structures lie from Moenkopi (over 6 miles (10 km)) probably made commuting in the 1930s impractical. Also, during the spring and fall, the cattle were rounded up for branding, sale, and other activities, some of which could take several days and might require a structure for protection from the elements.

Forty-one ranching sites were recorded as used by Moenkopi inhabitants (Table 5, Fig. 13, Appendix I). Thirty of the 41 had corrals that were built into natural enclosures of rock, five were in the open, two sites (97 and 98) were dugouts without associated corrals and the location of one corral (site 87) is unknown, but other structures indicate its approximate location. Three of the sites (85, 141 and 145) had no corrals, but were used to water livestock. The use of natural rock enclosures in 86 percent of located Hopi corrals and 90 percent of sheep corrals is a strong indicator of Hopi ownership in the Moenkopi area. Navajo sites noted in the area never used such enclosures, although their use by Navajo is known elsewhere by the author. Thirty-one of the 41 sites were in use in 1934. Several ranch sites that are believed to have been in use in 1934 were not located. Use in 1934 was determined through the Fairchild aerial photographs, documents, artifacts, and associated rock art. Seven of the sites had rock

art securely dating their use in 1934. Documents include the work by Page, Nagata, B. Adams, and others. ²⁶⁸

Four of the 25 sites used in 1934 have structures in addition to corrals. One (site 97) had a rectangular stone dugout house; one (site 83) had a probable rectangular frame house; one (site 87) had a circular stone house structure; and one (site 86) had both a circular stone house structure and two rectangular dugouts. The site 86 dugouts were probably no longer in use in 1934. The site 97 dugout was a cattle ranch but did not have a corral that could be located. Site 83 was used for horses and cattle. Both of the sites with circular structures were used for sheep herding only. One site had a ramada. Fourteen of the 21 remaining sites were used exclusively for sheep corrals, two were charcos (earthen dams, sites 85 and 141) built by Hopi to water cattle, one was a spring used to water livestock (site 145), and four were used for community corrals (sites 90, 106, 120 and 139). All four of the community corrals were used for sheep, cattle, or horses. Community corrals are available for use by anyone in the Moenkopi village to pen their stock while awaiting sale, for feeding, or whatever. Two of the community corrals (sites 90 and 120) are still used.

Construction of the corrals was usually a relatively easy process. The open sides of the rock enclosure were fenced with stone (rarely), car parts (rarely), bed springs (rarely), or usually wooden post and fence or barbed wire, and frequently a combination of the above. If there were escape routes up the

sides of the stone enclosure, these were usually closed with stone walls. Some of the corrals were used during lambing and these had fenced-off areas for separating the lambs. Sheep corral areas with much use are usually easy to identify even if the fence or other artifacts were scarce. This is because dung deposits, especially in the relatively protected natural enclosures, were frequently quite deep. Some measured over 1 meter deep and the limit to the corral could be easily determined by the limit of the dung deposit.

Where the corral had no natural enclosure, it was constructed of wooden fence posts and wire. When the sheep (or other livestock) were moved to a new area, the corral was usually dismantled and taken along.

The distribution of these corrals parallels the distribution of farming in general terms with a few notable exceptions. Many of these corrals were used seasonally. Thus one individual or family could use several during one season, for example, the Accowsie and Gaseoma families. The corrals in Moenkopi Wash were mostly for wintering the sheep. These included ten sheep corrals and three community corrals. These range from 3.8 miles (6 km) east of the village to .6 mile (1 km) west, 1.3 miles (2 km) north of the wash, and .6 mile (1 km) south.

Away from the Wash itself, springs were used to water livestock, saving the long trip from the mesa top into the canyon. Two such spring areas south of the wash and east of the Highway

264 bridge were at Ironwood Spring (site 111), and Cottonwood Spring (site 145).

One sheep corral (site 79) is located in the Castle Rocks area 3 miles (5 km) north of Moenkopi village. Several other corrals may have been used by Hopi in the area north of Tuba City from the Castle Rocks to Tuba Butte in the 1930s, but none was located. The area was used for grazing sheep.

One ranch used for sheep, cattle, and horses was located on Ward Terrace 10.3 miles (16.5 km) south of Moenkopi village. This ranch (site 83) consisted of a natural enclosed cattle corral, possibly a now disassembled rectangular frame house, and a circular stone house. Only the frame house is visible on the aerial photographs. An associated corral structure (site 140) built by the Humetewa family in the late 1920s, prior to construction of site 83, is located in a canyon on the east edge of Ward Terrace 3.2 mi (5.1 km) north of site 83 but was not in use in 1934. Rock art, including Hopi names, dates, and Hopi brands, testifies to the long usage of the ranch by several individuals, including the Humetewa family, Puhuyouma-Dallas family, and Kewanheptewa. The Third Mesa/Moenkopi "Flying Head" brands were developed and used by the Hopi to brand their cattle and horses before 1930 and continued in use past 1937. Artifacts recorded at the site support a pre-1930 date for beginning use of the horse and cattle ranch. No other Navajo or Hopi structures are located within 4.5 miles (7.2 km) of this ranch in 1934, as indicated by the Fairchild aerial photographs. This indicates exclusive Hopi use of much of the

northeastern section of Ward Terrace. Also due to the nature of Hopi ranching, the cattle ranged unsupervised over a large area from Cameron on the southwest to Howell Mesa on the north-east.²⁶⁹ Hopi range use, following the livestock reduction in 1937, from Moenkopi village was "Coal Mine Mesa, around the Moenkopi Village, and Ward Terrace" involving 285 head of cattle and 20-40 horses.²⁷⁰ Cattle owned by individuals from the Moenkopi-Third Mesa area also ranged into the Leupp area.²⁷¹

To the east and southeast of Moenkopi village, ranching by the Hopi is more intensive and extensive. From north to south the areas of usage were Nanmuru, Bakalo, Little Bakalo, and the Owl's Cap area to at least Buck Pasture (Fig. 9). In Nanmuru, 8 miles (13 km) southeast of Moenkopi village, the large ranching complex of Big Philip Hongeva (site 86) was situated. Hongeva raised mostly sheep and goats. The ranch in Nanmuru consisted of up to three circular stone houses, a sheep corral, probably a frame structure or two, and two charcos (site 85), although only one partly natural charco was probably in use in 1934. No sweathouse was located in the vicinity. The complex is visible in the Fairchild aerial photographs. The trail system around the site and leading up to it indicate it was in use at that date. Just one mile (1.5 km) northwest of Big Philip is the Logan Loma Ranch (site 87) consisting of a circular stone house. No corral was visible. No sweathouse occurred in the area. It is also visible and apparently in use in the Fairchild aerial photographs.

CV-6417-201

Southwest of Nanmuru is the Bakalo. Two Hopi sheep ranching complexes have been located in the eastern rim of the Bakalo, 5 miles (8 km) southeast of Moenkopi village. These were both built and used by the Gaseoma family. Only site 93 was in use in the Bakalo area in 1934 as determined through rock art, as well as the aerial photographs. Site 93 consisted of a rectangular frame house and two corrals. The house apparently was not in use in 1934 for it does not appear in the aerial photographs. The rock art dates, associated with the corral, all have Hopi names. These dates are 1922, 1934, 1937, 1944, and 1947. According to the Bureau of Indian Affairs (BIA) census in 1937/38, Gaseoma was the largest sheep and general livestock owner of the area, Hopi or Navajo.²⁷² Numerous of his corrals and sheep camps have been charted.

Four ranching sites, sites 101, 104, 106 and 141, all but site 104 visible in the Fairchild aerial photographs, are located near Owl's Cap, a rock formation west of Bakalo and 5.3 miles (8.5 km) south of Moenkopi village. Three feature corrals: two were used by Gaseoma and one was a community corral. Neither of Gaseoma's corrals (sites 101 and 104) have associated structures. (A rectangular cinderblock house at site 101 postdates 1934 and was not visible on the Fairchild aerial photographs.) The community corral and one of Gaseoma's are two of the Hopi corrals not using natural rock enclosures. The one corral in a rock enclosure apparently postdates 1934, but has the greatest depth of dung deposit of any of the three, indicating longer or

more intense use. Miscellaneous Euroamerican artifacts occur at all but site 141, typical for Hopi sites of the 1930s and later. A Hopi pottery jar at site 104, the one in the rock enclosure, is one of the rare artifacts in these sites clearly associated with native culture.

Site 101 had posts or wire indicating remains of the corral enclosure. This is atypical of open sites or sites in short use. When the corral was no longer in use the posts and especially the wire, a relatively expensive commodity, were saved and recycled to the next corral area, although the corral could be erected in the same place the next year and over several years.

Site 141 was a charco. This earthen dam was built by Hopi cattlemen, led by Roger Honahni, in a wash leading from Moenkopi Plateau to Ward Terrace. The charco is located 1.7 mi (2.7 km) west of Owl's Cap and 5.4 mi (8.7 km) south, southwest of Moenkopi village. The dam is visible in the Fairchild aerial photographs.

Another ranching area is Little Bakalo southeast of Owl's Cap and south of Bakalo a distance of 9.5 miles (15 km) from Moenkopi village. In the Little Bakalo today stands a Hopi ranching complex consisting of a rectangular stone house and the most elaborate cattle corral complex in the area. This complex post-dates 1934, but was preceded by a Hopi rectangular stone house built by the Numkena brothers, probably in the 1920s (site 97). The Fairchild aerial photographs and recorded artifacts indicate this house, which did not have associated corrals, was in use in 1934. This is because the structure was used when cattle were

being moved. The present house was built from stone from the Numkena house, the ruins of which are still visible nearby. A second ranching structure is a cattle corral (site 130) built and used by Roger Honahnie prior to 1934. It is visible in the aerial photographs.

To summarize, the 25 ranching sites in use by the Hopi in 1934 are distributed broadly to the south, southeast, and east, ranging 8 miles (13 km) southeast to Nanmuru, 9.5 miles (15 km) southeast in Little Bakalo, 5.3 miles (8.5 km) south at Owl's Cap, 10.3 miles (16.5 km) south-southwest on Ward Terrace, and 3 miles (5 km) north in Castle Rocks. This area covers over 115 square miles (300 sq. km) and includes only the areas where structures were located and not areas grazed by the sheep or cattle. The fact that most had corrals with sheep dung deposits and few had houses indicates they were used to corral sheep. Sheep herding demands an individual be present to herd the sheep. Thus, Hopi covered, and intensively used, the entire region described above. Several individuals who were listed in 1937/38²⁷³ as having large sheep herds have not been accounted for in terms of corrals or other ranch architecture. What this means is that the areas computed above are certainly underestimates of the area used exclusively by the Hopi for ranching. Areas used with the Navajo include areas outside those above and include other activities.²⁷⁴ Government documents indicate Hopi were around Buck Pasture. In fact, one small, rectangular stone dugout house (site 98), which may be visible in the aerial photographs but probably

CV-6417-201

postdates 1934, was built by James Humetewa just west of Buck Pasture (Fig. 9). It has no associated corral and was used when moving cattle. The Humetewa house is 14.4 miles (22 km) south of Moenkopi village.

In 1938, Page²⁷⁵ suggested an area for exclusive Hopi use similar to the one outlined above, but extending further west and not as far southwest of Moenkopi as would be suggested by the above data. Total area proposed by Page is 130 square miles (350 sq. km). However, if both agricultural and ranch lands located archaeologically and in the aerial photographs are included, they easily match that proposed by Page. In fact, the Page map omits areas south and east that are clearly in use by the Hopi in 1934. An estimate of not less than 166 square miles (430 sq. km or 106,630 acres) was being used and occupied virtually exclusively by the Hopi for farming and ranching (Figs. 10 and 13). Activities not resulting in architecture, such as wood gathering, general plant gathering, herding (especially cattle), and ritual use expand areas of joint use with the Navajo considerably to the north, south, and west. Numerous Hopi interviewees discuss use of the Preston Mesa-Wildcat Peak area 25-32 miles (40-50 km) north of Moenkopi village. Also, others reported using all of Moenkopi Plateau and Ward Terrace for grazing in 1934. Many of these other uses are discussed in other reports. Adding these areas to those already mentioned, would triple the area of exclusive Hopi use and include even a much broader area of joint use.

Cattle grazing is mentioned in numerous records of the 1930s. These documents indicate use by the Hopi for grazing ranged from Cameron on the southwest to Preston Mesa on the north. This area includes Ward Terrace, the Moenkopi Plateau, Coal Mine Mesa east to the Hopi Mesas, and the Leupp area east to the Hopi Buttes.²⁷⁶ This area, used by the Hopi and their livestock, includes at least an additional 1750 square miles (4530 sq. km, or 1.12 million acres) (Fig. 11).

Ritual Use

At this point a note should be made with regard to ritual use of the land by the Hopi and the supporting archaeological evidence. Basically, in the Moenkopi area this involves the Hopi Salt Trail, which was used by Third Mesa Hopi, and shrines associated with Moenkopi village. Two shrines on the Salt Trail were recorded and one was in use in 1934.²⁷⁷ The first, site 107, lies 9.3 miles (15 km) east of the village. It consists of a pile of rocks where the Hopi users of this trail cleansed themselves. This portion of the trail was used by travelers from Oraibi and other Hopi villages to Moenkopi, as well as those on the expeditions to gather salt. Associated with this rock pile is a white clay (duma) outcrop (site 147) where clay could have been collected in conjunction with use of the rock pile or on separate occasions. The second site, Tutuveni (Writing or Inscription Rock; site 154), lies 9.5 miles (15.3 km) west-northwest of the village. At this place members of the salt expedition would stop

and carve or peck their clan emblem in the rock at this shrine.²⁷⁸ The use of Tutuveni probably dates back hundreds of years and indicates the antiquity of the journey to the location of the salt and of the Sipapu which most Hopi believe is the original place of their emergence from an underworld into the present world. Both the sipapu and salt source are located at or near where the Little Colorado River enters the Colorado River at the bottom of the canyons. The Sipapu is located in the 1934 Reservation area; the salt deposit, just outside.

This entire trail leading from Oraibi through the Moenkopi area, to Moenave, to Tutuveni, then to the Sipapu and the salt mine has been in use for hundreds of years, and was still in use in 1912.

A second shrine called Salako (or Shalako; site 155) by the Hopi at Moenkopi, lies near the head of Pasture Canyon, 4.8 miles (7.7 km) north of the village. From at least the late 1800s through the 1930s, up to the present, the shrine has been used by the Hopi by placing prayer feathers within the small cave comprising the shrine. Such prayer sticks were still visible in the cave in 1983 indicating recent use. A spring flows from the cave. The shrine insures the continued flow of water from the spring for the benefit of the Hopi fields downstream within Pasture Canyon. Small shrines of individuals or groups within Moenkopi village lie near the village in fields or corrals. These are placed to increase fertility of the plants and animals.²⁷⁹ An example of a small private shrine in a corral area was located at site 82 in

CV-6417-201

the north cliff of Moenkopi Wash, 2.2 miles (3.5 km) east of Moenkopi village. Allotments to Hopi in this area and the presence of fields, houses, corrals, and other structures or forms of land modification meant the recording of shrines near the village was done only as they were encountered. Actually each spring within a 10-mile (16 km) radius of the village has been given a Hopi name and has the potential to be a shrine location, because water is so vital to the survival of the people and their crops.

Miscellaneous: Rock Quarry

Two sites, 133 and 134, have been used as rock quarries since the founding of present-day Moenkopi. Site 133 is a ridge west of the village and just east of Highway 160. Site 134 is the small mesa just north of Upper Moenkopi. The entire mesa was used as a quarry. Both quarries provided stone for the building of Upper and Lower Moenkopi and were visibly active in the Fairchild aerial photographs. Three other sites were also used by the Moenkopi Hopi as quarries. Site 144 is located 6 mi (9.7 km) south of Cameron on the east side of Highway 89. Stone was collected here both before and after 1934 and used in the construction of houses in both Upper and Lower Moenkopi. Site 143 occurs 6.4 miles (10 km) west of Moenkopi village on a rocky bench north of Moenkopi Wash that is an extension of Ward Terrace. Stones that were manufactured into pikistones have been quarried by the Moenkopi people at this place throughout the occupation of the village. Site 150, five miles east of the village, was a small quarry for

CV-6417-201

stone used for improving Ironwood Spring and possibly to build field houses in the Moenkopi Wash area. Although not visible on the Fairchild aerial photographs due to the quarry's small size, the presence and construction of numerous field houses in the area, such as at sites 110 and 151, built before and possibly after 1934, suggest the quarry could have been in use in 1934.

**GENERAL SUMMARY OF HOPI USE, OCCUPATION, AND
POSSESSION FROM AN ARCHAEOLOGICAL STANDPOINT**

The archaeological evidence summarized in the preceding sections paints a picture of extensive and sometimes intensive use of most of the 1934 Reservation by the Hopi and their ancestors, the Hisatsinom, since before A.D. 700. The Hisatsinom led a village life dependent on maize, supplemented by beans, squash, gathered seeds, and hunted meat. These foods actually remained the basis of Hopi culture up to World War II.

Up to A.D. 1300, archaeological evidence indicates the Hisatsinom occupied all areas of the 1934 Reservation, with the northeast corner and areas west and south of Moenkopi the most sparsely occupied. During the search for twentieth century Hopi sites, at least seven thirteenth century Hisatsinom sites were located: one west of Moenave near Hamblin Wash; one at site 79 in the Castle Rocks area, north of Moenkopi village; one at site 84 in Nanmuru; one at site 112 (Poseolelena), just east of Highway 264 above Moenkopi Wash; one a mile west of Moenkopi on a butte across Highway 160; one at Salt Spring on Ward Terrace; and one along the east bank of the Little Colorado River, 8 miles (13 km)

southeast of Cameron. Thus, with adequate inventory and field examination, the intensity of Hisatsinom, and more recent, occupation in the region is certain to be greater rather than less than projected from present archaeological knowledge of the area. The clear cultural association of the Hopi to the Hisatsinom establishes a pattern of land use followed by the Hopi today. This pattern stretches back in time well over 1000 years.

After A.D. 1300, archaeological evidence of use and occupancy of the 1934 Reservation by people ancestral to the Hopi is much less widespread, but also much clearer. From the 1300s to the present, the Hopi and their historic and prehistoric ancestors have made yellow or brown pottery, with the exception of the nineteenth century. This pottery suffers little or no deterioration in the less than 700 years it has been in or on the ground. Its color and craftsmanship usually distinguish it from the earlier Hisatsinom pottery and distinguish it as Hopi. No other contemporary groups in the 1934 Reservation made pottery even remotely similar to this Hopi Yellow Ware.

Prehistoric Hopi (A.D. 1300-1630) occupation of the 1934 Reservation is found scattered throughout the northern, eastern, and southern sections, and occurs thinly in the west around what is today Moenkopi. Occupation is concentrated in a broad band along the Arizona-Utah border from the Rainbow Plateau on the east, west to Comb Ridge (on the east edge of Monument Valley), and south to Long House Valley on the northwest side of Black Mesa. Hopi sites are also concentrated in the Canyon de Chelly

area and Chinle Valley on the eastern edge of the 1934 Reservation. A third concentration of prehistoric Hopi sites occurs in the Wide Ruin, Cottonwood Creek, Bidahochi, and Hopi Buttes section in the southeastern portion of the 1934 Reservation. Thus, 5000 sq. km or more were used by the fourteenth through sixteenth century Hopi users of the 1934 Reservation, but likely never at one time. Most of this use was probably seasonal farming or perhaps hunting-gathering, and ritual trips. The only large prehistoric Hopi sites in use during all or part of this period in the 1934 Reservation were Old Moenkopi and Bidahochi, with Wide Ruin and Klagetoh occupied only for very short periods after A.D. 1300.

In 1630, the Spaniards established missions among the Hopi and introduced several domestic plants and animals, with peaches, sheep, goats, and to a lesser degree, cattle, the most economically significant. From 1630 to 1880, the historic Hopi Period, use of the 1934 Reservation included seasonal use and occupation and livestock grazing. Also, during this period the village of Old Moenkopi, which lay on the mesa northeast of the modern village, was in use. Archaeological sites are very few and scattered. A considerable part of this problem, especially for nineteenth century Hopi pottery which is white like Hisatsinom pottery, is lack of recognition by archaeologists recording historic Hopi sites. Pottery in southwestern archaeology is used as a major indicator of the presence or absence of a cultural group.

Sites from this period are concentrated in Canyon de Chelly, outside the 1934 Reservation boundary, around Moenkopi, in

CV-6417-201

Long House Valley northwest of Black Mesa, and in the Chinle Wash area. All of these areas, with perhaps the exception of the Moenkopi area, were probably used seasonally for farming or perhaps for tending to orchards or herding sheep. Livestock grazing in the Moenkopi area prior to concentrations of Navajo or other non-Hopi groups in the area was apparently extensive, although its extent is unknown due to lack of adequate documents and the nature of the activity, which leaves no archaeological remains.

With the placement of the Navajo on a reservation after 1868, the presence of Mormons in the Moenkopi area by the 1870s, and the re-establishment of "modern" Moenkopi about 1879, Hopi land use patterns changed dramatically, returning probably to the level that predated Navajo presence. Thus, 1880 marks a transition period that was truncated in 1901 in the western reservation with the establishment of the Tuba City Agency and development of the water in the area. This development and continued expansion of the Reservation, consolidated finally in 1934, greatly affected Hopi-Navajo relations and land-use patterns. The development of this area for ranching benefitted that aspect of Indian economy and probably aided the traditional Navajo herding economy more than the mixed Hopi farming and herding economy.

Areas used and occupied by the Hopi in or very near the year 1934 can be clearly identified through archaeological remains supplemented by the Fairchild aerial photographs. These demarcate Hopi farming, sheep herding, and, rarely, cattle herding and ritual. A total of 55 Hopi sites in use in 1934 have been

identified, marked on USGS maps, and recorded (Fig. 13). These and other Hopi sites recorded in the 1934 Reservation, but not in use in 1934, are attached as Appendix I. Those in use in 1934 are clearly identified under part 6. of the form. Of the 55, 17 were used for farming, 25 for ranching (3 with water collection features only, 16 for sheepherding, 2 for cattle ranching, and 4 with community corrals), 4 are exclusively rock art sites, and 9 are of a miscellaneous nature. These sites identify the following areas within a 14-mile (22 km) radius of Moenkopi village as exclusively or nearly exclusive use by the Hopi (Table 5). Figure 13 graphically presents the area of exclusive Hopi use as defined by archaeological remains. This use is predominately farming and sheep herding. The areas are:

1. Moenkopi Wash, containing both farming sites (some with rectangular stone structures), sheep corrals against the cliffs primarily used for wintering sheep, and community corrals for all livestock. Exclusive Hopi use within Moenkopi Wash begins 2 mi (3 km) east of the Highway 264 bridge over Moenkopi Wash and extends into Kerley Valley. Archaeological evidence documents Hopi farming in Kerley Valley to the flumes and corn roasting pits in the valley ranging 2.5 mi (4 km) west of Moenkopi Village. Extensive use of the Kerley Valley since 1934 has obscured or eliminated other archaeological data on exclusive Hopi use. The patchwork of Hopi and Navajo allotments are visible in the 1934 aerial photos. The identity of the users of these allotments is beyond the scope of this report.

2. Pasture Canyon, containing only farming plots and associated features and structures. Hopi exclusivity begins as far north as the Salako shrine, 4.8 mi (7.7 km) north of Moenkopi Wash, and extends south to the wash.

3. Bakalo, with both farming plots located in the lower, arable sections of the Hollow Place, and sheep corrals along the cliffs. Some of the farms have associated rectangular stone structures.

4. Nanmuru, used primarily for farming, although by 1934 this had mostly phased out, supplemented with sheep ranching that still flourished in 1934. Hopi sheep ranches in this area often had associated circular stone structures.

5. Little Bakalo, which contained cattle ranches and a cattle corral.

6. Coal Mine Mesa, east of Nanmuru, which had one farming field, but through which the Salt Trail passed.

7. Moenkopi Plateau, from Moenkopi Wash south to Owl's Cap and on to Buck Pasture. This area contained mostly sheep corrals from the Moenkopi Wash area to Owl's Cap, although near Owl's Cap there was one farm and one community corral in use in 1934. To the west of Owl's Cap was a charco, or earthen dam, built by Hopi to capture water for cattle. Between Owl's Cap and Buck Pasture use was mostly for cattle herds. One rectangular, dugout structure that came into use apparently just after 1934 was associated with this cattleherding.

CV-6417-201

8. Ward Terrace was used by one Hopi ranching complex for both horses and cattle. The only other structure, Hopi or Navajo, that occurred on Ward Terrace within 4.5 miles (7.2 km) of this site in 1934 was a corral built by the same Hopi family.

9. Castle Rocks, north of Moenkopi Wash which were used solely for sheep herding indicated by at least one sheep corral.

Most of these areas are contiguous, and small areas between them should logically also be considered of exclusive Hopi use. Archaeological data and the 1934 aerial photographs indicate Navajo presence in these areas of exclusive Hopi use is very rare to totally absent in 1934. In addition to these areas are other areas (as detailed in other reports) of exclusive Hopi use that are not evidenced by archaeological data. In addition to areas of exclusive use are vast areas of Hopi use that were probably shared with Navajos.

CV-6417-201

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CV-6417-201

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