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# land protection plan

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## CHACO CULTURE

NATIONAL HISTORICAL PARK / NEW MEXICO





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LAND PROTECTION PLAN

CHACO CULTURE NATIONAL HISTORICAL PARK  
New Mexico

Recommended: Tom Vaughan, Superintendent	September 18, 1985
Approved: Robert Kerr, Regional Director	September 20, 1985



## SUMMARY

Total Acreage within the Authorized Park Boundary: 33,974.29 acres

### Current Surface Ownership:

Federal	23,009.03 acres	(including 2,239.68 acres transferred to NPS on April 23, 1981)
State	1,769.50 acres	
Navajo tribal fee	4,697.01 acres	
Navajo tribal trust	3,059.51 acres	
Indian allotment	1,120.05 acres	
Other private	319.19 acres	

Total acreage remaining to be protected: 10,965.26

Number of tracts remaining to be protected: 31 (14 owners)

### Current Subsurface Ownership:

National Park Service	23,390.31 acres
Other (including federal, state, tribal, and private)	10,583.98 acres*

In addition, there are 3,737.96 acres of BLM subsurface rights and 320.00 acres of BIA subsurface rights with preexisting mineral leases.

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\*The surface and subsurface acreages are not the same because of the properties with split estates, that is, where the surface owner does not own the subsurface.

Method of Protection Proposed:

Surface:

Fee acquisition through exchange, donation, or purchase	10,965.26 acres*
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Subsurface:

Fee acquisition through exchange, donation, or purchase	10,423.98 acres*
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Cooperative agreement	160.00 acres**
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Funding Status:

Authorized by PL 96-550	\$11,000,000***
Appropriated as of FY 1985	1,480,000
Obligated	500,120

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\*An 80-acre property is recommended for acquisition with appropriated funds; the remainder of the lands will be acquired through exchange or donation.

\*\*The cooperative agreement will cover a mineral lease on BIA land; the leases on the remaining 3,897.96 acres will expire by 1990 if no mineral production occurs, and all subsurface rights will subsequently be controlled by the federal government.

\*\*\*Includes authorization for the 33 archeological protection sites that are not part of the park or managed by the National Park Service.

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## INTRODUCTION

In May 1982 the Department of the Interior issued a policy statement for use of the federal portion of the Land and Water Conservation Fund, which requires that, in carrying out its responsibility for land protection in federally administered areas, each agency using the fund will

identify what land or interests in land need to be in federal ownership to achieve management unit purposes consistent with public objectives in the unit

use, to the maximum extent practical, cost-effective alternatives to direct federal purchase of private lands, and when acquisition is necessary, acquire or retain only the minimum interests necessary to meet management objectives

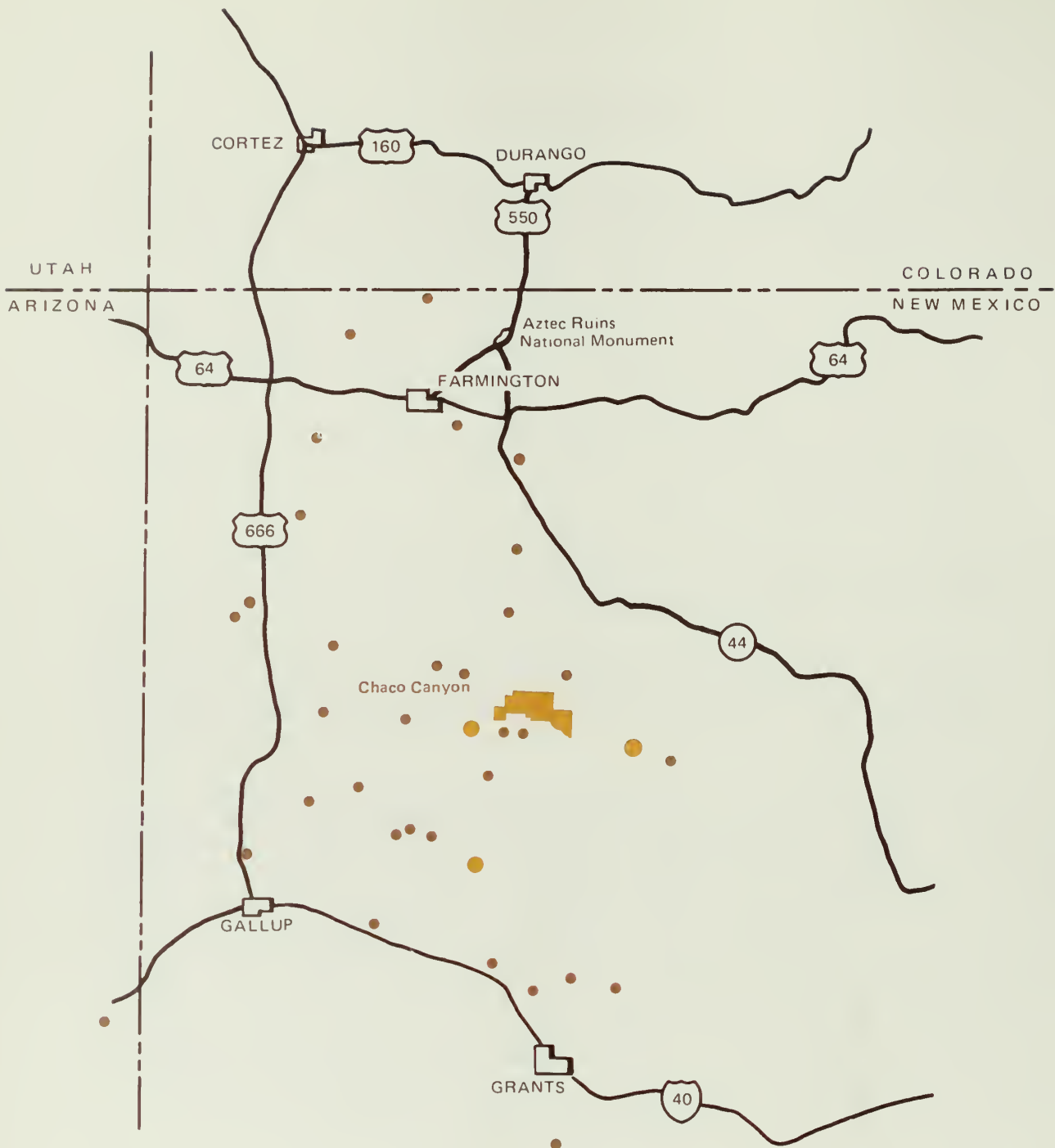
cooperate with landowners, other federal agencies, state and local governments, and the private sector to manage land for public use or to protect it for resource conservation



formulate, or revise as necessary, plans for land protection and resource use or protection to ensure that sociocultural impacts are considered and that the most outstanding areas are adequately managed

In response to this policy, the National Park Service is preparing a land protection plan for each unit of the national park system that contains nonfederal land. The purpose of the plan is to identify methods of ensuring protection of the natural, historic, scenic, cultural, recreational, or other significant resources and to provide for adequate visitor use. The plan will be prepared in compliance with relevant legislation, other congressional guidelines, executive orders, and departmental and agency policies. The plan will be simple, concise, and prepared with public participation. The utmost attention will be paid to consideration of the many alternatives available for land protection requirements. Once plans have been approved, revisions or updates will be made as necessary to reflect changing conditions (48 FR 6676, February 14, 1983).

The major purposes of this Land Protection Plan are to identify the means necessary to provide sufficient resource protection and provide for public use and enjoyment of Chaco's resources; to establish priorities for land protection; to provide for manageable resource areas through land protection strategies; and to provide a strategy and priority listing for the expenditure of acquisition funds.

This plan does not constitute an offer to purchase land or any interests in land; it will generally guide subsequent land protection activities subject to the availability of funds and other constraints. The plan does not diminish the rights of nonfederal landowners.



- CHACO CULTURE
-  NATIONAL HISTORICAL PARK
-  DESIGNATED PROTECTION SITE  
(Not Administrated by National Park Service)



0 10 20 Miles  
0 10 20 30 Kilometers

## REGION

CHACO CULTURE NATIONAL HISTORICAL PARK  
UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

## PURPOSE OF THE PARK AND RESOURCES TO BE PROTECTED

### PURPOSE OF CHACO CULTURE NATIONAL HISTORICAL PARK

Chaco Culture National Historical Park was first established as Chaco Canyon National Monument by presidential proclamation on March 11, 1907. The proclamation's intent was clear:

And whereas, the extensive prehistoric communal or pueblo ruins . . . are of extraordinary interest because of their number and their great size . . . it appears that the public good would be promoted by reserving these prehistoric remains as a National Monument with as much land as may be necessary for proper protection thereof.

By the late 1910s, it became clear that this intent had not been fulfilled, either by providing as much land as was necessary or by providing for the proper protection of the resources. Subsequent presidential proclamations in 1928 and 1931, and acts of Congress in 1916 and 1935, further defined Chaco land protection policies. However, neither the 1928 nor the 1931 proclamation fully corrected boundary problems: Mesas were cut in half by the boundary, one major outlier (ruin) was still outside the authorized boundary, and the attempt at getting another major ruin incorporated into the main unit of the national monument was unsuccessful because of incomplete land surveys.

In the 1970s and early 1980s intensive research in Chaco Canyon by the National Park Service and others revealed that the prehistoric Chacoan system was much more complex than previously imagined and that the Chacoan system had a larger central area of influence than the approximately 21,509 acres of the existing national monument. By 1978 it was obvious that there was a need to not only correct these boundary problems, but to provide as much land as necessary to preserve known Chacoan resources and provide for the proper protection of newly discovered resources and any other as yet undiscovered resources associated with the center of this extensive system, that is, in and around the central canyon. To this end, the Park Service compiled a 120-page "Position Paper for Congressional Legislation for Boundary Adjustments" in February 1978.

On December 19, 1980, Congress passed legislation establishing Chaco Culture National Historical Park. The boundaries established by this legislation correspond to the NPS alternative in the position paper for minimum addition lands, with no buffer (see appendix B for a description of the addition lands ). Title V of PL 96-550 increased the size of Chaco to approximately 33,974 acres (see 1980 Boundary Adjustments map).

The park is primarily set aside to recognize, preserve, and interpret the unique archeological resources associated with the Chacoan branch of the prehistoric Anasazi culture and to facilitate research activities associated with these resources. The legislation also mandates that Chaco be

R.12W. | R.11W.

R.11W. | R.10W.



0 1 2 3 mi.

--- UPS Boundary

Kin Klizhin  
Addition

31	32	33	4	9
6	5	3	8	7

Casa Moreno



T.17N R.10W

KIN YA'A

R.13W  
R.12W

30	29	28	33
31	32	35	

T.17N.  
T.16N.

PUEBLO PINTADO

SAN JUAN CO.  
MC KINLEY CO.

T.21N.  
T.20N.

R.10W  
R.9W

4	3	2	1
9	10	11	12

LEGEND

LANDS ADDED

LANDS DELETED  
(By P.L.96-550)

CHACO CULTURE HHP

Kin Bineola

Kin Ya'a

KEY MAP

Rio Arriba Co

Sandoval Co.

McKinley Co

Pueblo Pintado

Northern  
Addition

CHACO CULTURE  
NATIONAL HISTORICAL  
PARK

Southern  
Addition

Chacra  
Mesa  
Addition

# CHACO CULTURE NATIONAL HISTORICAL PARK NEW MEXICO 1980 BOUNDARY ADJUSTMENTS



administered in accordance with the provisions of law generally applicable to the national park system. The park is comprised of one major unit and three detached portions (see appendix D for the complete text of PL 96-550).

In the congressional hearings on PL 96-550, Congress repeatedly expressed four major concerns:

- the impacts of mineral/energy exploration and development on Chaco's cultural resources

- the effects of outside activities on the major ruins of Chaco

- adequate protection for the prehistoric roads

- adequate protection for underrepresented sites within the additions

It was the intent of Congress that by enacting PL 96-550 these concerns would be met and the park's resources would be adequately protected. The thrust of the legislation and congressional intent is protection of resources rather than mitigation of adverse effects. The congressional intent was not that the 1980 additions be managed as national preserves, rather that they be managed and administered in accordance with provisions of law generally applicable to other units of the national park system (section 506(a)). Congress recognized in its hearings that some lands around Chaco had the same potential as some of the addition lands, but there was a willingness to "write off" these other areas if a small laboratory/classroom was set aside as a national historical park. Congress recognized that there were still many unanswered questions concerning the extent and significance of Chaco's cultural resources.

Included in the Chaco legislation are 33 archeological protection sites (approximately 8,771 acres), which are managed and administered by an interagency management group (IMG) consisting of the National Park Service (NPS), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), U.S. Forest Service, state of New Mexico, and Navajo tribe. These protection sites are not part of the park.

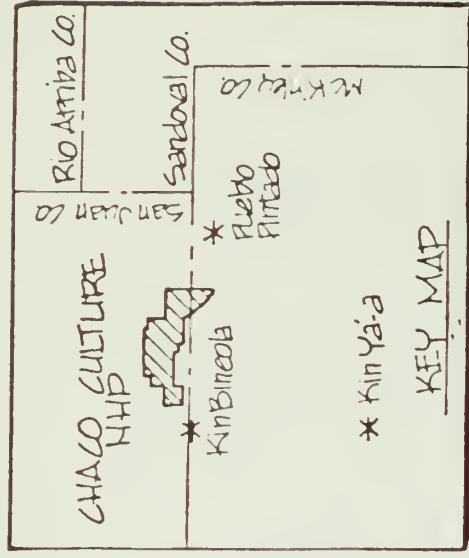
## RESOURCE SIGNIFICANCE

The primary park purpose is preservation and interpretation of the more than 3,600 known archeological sites, in particular those associated with the Chacoan branch of the Anasazi. Although sophisticated, high technology methods have been employed to inventory and excavate sites at Chaco over the past 10 years, there are still major gaps in our knowledge of this complex prehistoric system. New sites are still being discovered and inventoried, and new interpretations of excavation data are being made. Until very recently, the visiting public, local managers, and even archeologists thought of Chaco in terms of a few large pueblos. Although innumerable rock art sites and approximately 300 village sites were known, these were not interpreted as a necessary part of the system that included the pueblo towns.

# KEY

\* Visitor Center

1. Kin Klizhin
2. Penasco Blanco
3. Casa Chiquita
4. Alto Complex (4 ruins)
5. Kin Kletso
6. Pueblo del Arroyo
7. PUEBLO BONITO
8. Chetro Ketl & Talus Unit
9. Casa Rinconada & Villages
10. Tsin Kletsin
11. Hungo Pavi
12. Kin Nahasbas
13. Una Vida
14. Gallo Cliff Dwellings
15. Wiji
16. Shabikeshchee Village
17. Half House
18. POCO Site
19. "Shrines"



## KEY MAP

R.11 W R.10 W.



SAN JUAN CO.  
MC KINLEY CO.

31	32	33
6	5	4
7	8	9

30	29	28	X Kin Ya'a
31	32	33	
R.12 W	R.13 W	T.17 N.	T.16 N.

R.10 W	R.9 W	T.21 N.	T.20 N.
4	3	2	1
9	10	11	12
			Pueblo Pintado



--- LPS Boundary

## CHACO CULTURE NATIONAL HISTORICAL PARK NEW MEXICO MAJOR INTERPRETIVE ARCHEOLOGICAL SITES

During the 1970s, the Chaco Center discovered that a formal system existed between the 12 large towns in the canyon, the small towns and communities, and the 75+ outlying towns (called outliers). Archeologists were surprised to find that the only permanent, formal visual communications network and road system in the prehistoric United States existed at Chaco. Signaling shrines tied the canyon pueblos to the outliers by way of signal fires. To date, only five of these shrines have been found. The roadway system consists of engineered roads that are straight, have cuts and fills, stairways in cliffs, and way stations for each day's journey along them. So far 700+ miles of these 30-foot-wide roads have been inventoried, with approximately 25 miles inside the park's boundaries.

Archeologists have questioned why the Chacoan people developed such elaborate and complex systems for communicating and travel and what caused the primary impetus for this system. Archeologists cannot fully answer these and many other basic questions yet. The system may have resulted from economic or social needs or religious beliefs. Whatever the impetus, other unique or indicative features are associated with the Chaco phenomenon. Great kivas such as Casa Rinconada and Kin Nahasbas are much larger than typical clan kivas and contain unique floor features. They may have served as meeting places for people from all over the Chacoan system for religious ceremonies, political gatherings, trade and barter meetings, or all three. One of the greatest mysteries of Chaco are the stone circles. Only 15 are known and all are in the main canyon. Despite a two-year research project, their function is still unknown. Water control features such as dams, lined canals, headgates, and waffle gardens are as sophisticated as those of the prehistoric Mexican cultures. Architectural features such as core-and-veneer masonry, preplanned towns, multistory construction, and tri-wall structures are indicative of the Chacoan culture. Some are unknown in North America outside Mexican cultures.

Chaco Canyon is ideally situated in the middle of the San Juan Basin to gather resources from surrounding resource-rich areas such as Mt. Taylor, the Chuska Mountains and valley, the San Juan River valley, and the Crownpoint area. Goods and possibly services from one part of the basin were moved into Chaco, perhaps stored until needed, and redistributed to other parts of the basin to meet local needs. At the peak of its development (ca. A.D. 1100-1200), the network of outliers connected to Chaco Canyon via roads had evolved into a social system that supported craft specialists and possibly full-time administrative specialists. Many construction projects such as the road system are indicative of surplus labor being channelized into public works.

Many of the unit's resources are subtle, often hidden, and not easily recognized. To most observers, the physical remains of features such as village sites, roads, water-control structures, and special use sites are difficult if not impossible to discern. Even to the trained observer and archeologist, some features take months to fully identify and map. Because the significance of the Chaco phenomenon has only recently been appreciated, many of the features discovered and now included in the

park have received little protection or research in the past and no visitor interpretation.

### Cultural Inventories

One of the major goals, if not the major goal, of the National Park Service at Chaco Culture National Historical Park is to preserve and protect the cultural remains of the Chacoan Anasazi in such a way as to provide a laboratory for future study of this culture and a place to interpret this highly complex culture to the public in a compatible setting. To achieve this goal, the Park Service has undertaken a number of surveys and research projects to identify the extent and significance of the cultural resource. The problem is that archeological methods are continually developing. It is impossible to say that we have inventoried all cultural resources, nor is it possible to forecast the location, possibility, or types of sites that may be found in the future. For example:

Before 1970, the Park Service inventory for Chaco had identified 300 archeological sites in the national monument. As a result of new technology and inventory methods, 2,200 sites had been inventoried by 1981. At last count, approximately 3,600 sites are known.

Methods for inventorying sites were pioneered at Chaco during the 1970s, including the use of remote sensing (aerial imagery) to identify site patterns and linear features (e.g., roads and canals). A new type of density-sensing radar that has only been declassified within the past year holds great promise for applications in archeological inventorying and should reveal previously unknown resources.

Although major advances in site predictability have been made in recent years, archeologists cannot say specifically what new resources may be identified. Professional researchers in the field of the Chacoan culture are united in their belief that not everything that is significant to their understanding has been discovered. New technology is foreseeable that will aid in this understanding if undisturbed areas are preserved.

In addition to the very important archeological resources, Chaco also has major natural resource values. Two complete mesa ecosystems, West and South mesas, have undisturbed grass tablelands and deep north-facing rincons that offer a variety of habitats and scenic vistas (rincons are steep-walled, boxed canyons).

Four natural arches have been mapped in the park, along with 20 major fossil localities, badlands, deep alcoves containing riparian vegetation, and natural formations. Three known threatened or endangered bird species are residents of the park, along with two known endemic plants, two state protected plants, and one state protected mammal. Critical habitat for two additional endangered animals exists, and there may be two other threatened plant species. The National Park Service has



consulted with the U.S. Fish and Wildlife Service in the identification and protection of endangered species.

Chacra Mesa, located in the southeastern portion of the park, is the most rugged--ranging from grassy meadowlands on top of the mesa, to pinyon-juniper woodlands on the north slopes, to rugged cliffs and deep rincons on the northern edges. Archeological site densities and potential research values are as high or higher than areas of the former national monument. Chacra Mesa also contains the greatest number of vegetation and wildlife habitats, which are closer to being unmodified than any place in the region. Recreational opportunities abound.

#### Potential for Future Research

Although much field research has been undertaken in recent years, archeologists and cultural resource specialists have much research and inventory work to complete. The NPS Division of Cultural Resources, Southwest Region, put out a paper in April 1983 called "Research Design for Continuation of Field Studies." The goal of future research was to obtain archeological data that would contribute to the solution of Chacoan Anasazi research questions of regional scope. To this end, future studies are to include a multiyear archeological inventory program focusing on unsurveyed portions of the park. The result should be a base of archeological information that will benefit the general public by enabling wiser management and an increased appreciation of the prehistoric and historic past. The report goes on to state, "It should perhaps be emphasized that archeological inventory is not the 'be all to end all.'"

The 1983 research design paper states that approximately 17,000 acres in the park have not been initially surveyed (some lands have been preliminarily inventoried). It lists seven separate research and management problems that have not yet been adequately addressed, along with strategies for addressing each that could take many years to complete. One example of a research problem that has not been solved using current technologies, but has a high potential for research once technologies advance, is the question of redistribution of domesticated crops. Much of the current debate stems from the almost total lack of quantitative data on the potential agricultural productivity of outlying community areas. Another research problem would be developing a realistic model for projecting settlement patterns, populations, and trends, which are essential for testing the various location/economic models proposed for the outlier system.

A major goal of future research will be to provide baseline data against which the effects of special uses and natural deterioration may be monitored.

The archeological specialists and cultural resource managers researching the Chaco questions have repeatedly stated that every aspect of Chaco's environment has potential relevance to the archeology of Chaco if left

undisturbed. This was one of the strongest incentives for seeking legislation to expand the national monument into a national historical park.

## LAND CHARACTER

The entire region surrounding and including Chaco Culture National Historical Park is classified as high cold desert, with 8.5 inches of precipitation annually. The conditions on Chacra Mesa are milder and there is more rainfall.

Chaco Canyon bisects the main park unit from the southeast to the northwest. The canyon averages about a half mile wide and about 350 to 400 deep. Major gaps in the canyon wall occur at Gallo Wash (campground), Fajada Gap (opposite headquarters), and South Gap (opposite Pueblo Bonito). Werito Rincon will one day form another gap. The canyon walls are steep to vertical sandstone cliffs and ledges. On the north side of the canyon is a broad tableland sloping gently to the north; on the south side are three mesas (uplands with relatively flat, grass-covered tops). Each of these mesas has very high cliffs (400-600 feet) on the south side and extensive systems of deep rincons on their north side draining into Chaco Wash.

The three detached units are all in low, open lands along broad washes. All streams are intermittent, including the main Chaco Wash/Chaco River, which drains well over 288 square miles above the main park unit.

Because theoretical evaporation exceeds precipitation in this climate, only hardy desert plants can exist without extensive irrigation. Even good native American dry farming techniques can only yield one crop in 3 to 5 years. North slopes, where evaporation is less and soils are better developed, support open pinyon-juniper woodlands with a variety of shrubs and smaller plant species. Such areas provide the best wildlife habitat in the park (primarily Chacra Mesa, with smaller areas on the South and West mesas). Large herbivores such as deer, carnivores such as bobcat and coyote, and numerous smaller species inhabit this area. The cliff areas facing south are almost devoid of vegetation, but those facing north often contain water holes, riparian vegetation, and a variety of medium to small mammal habitats. Particularly interesting are the north-draining rincons. The canyon floor and north side tablelands were heavily overgrazed before the national monument was fenced in the early 1940s. The vegetation has yet to fully recover, and sagebrush, saltbush, greasewood, and other disturbance plants are present. Tumbleweed (an exotic) and nonnative grasses comprise the smaller plants. Disturbed areas are very slow to recover, taking 50 to 150 years to approach natural conditions. Droughts occur about once every five to seven years.

Archeological sites are found throughout these topographic and vegetative areas, although permanent dwellings from the Classic period tend to be more prevalent on the canyon floor (exceptions are Pensaco Blanco, the Alto Complex, and Tsin Kletsin). Use-sites and rock art from the Classic period are found just about anywhere.

The Chacoan people were bound by physiographic features and barriers, which determined hunting patterns, gathering and agricultural uses, and other resource uses. Physiography also determined the location of shrines, roads, canals, dams, catchments, and probably even the major pueblos themselves. Other features that depended on broad physiographic features included rock art, farmlands, and the smaller pueblos. Resource utilization depended on availability; for example, woody plants were only available on the higher mesas, necessitating long hauling distances. It is vital to preserve these physiographic units to interpret their interrelationships to the public and to gain an understanding of the prehistoric way of life. The 1980 boundaries approximate physiographic boundaries.

## LEGISLATIVE AUTHORITIES AND CONSTRAINTS

PL 96-550 defined the following land protection priorities that the National Park Service must observe:

Section 504 (a). The Secretary is authorized to acquire lands, waters, and interests therein within the boundaries of the Chaco Culture National Historical Park (hereinafter referred to as the "park") . . . by donation, purchase with donated or appropriated funds, or exchange. Property owned by the State of New Mexico, or any political subdivision thereof, may be acquired by exchange or donation only. Property held in trust for the benefit of any Indian tribe or for the benefit of any individual member thereof may be acquired only with the consent of such owner or beneficial owner as the case may be.

Section 506 (a). The Secretary shall administer the park in accordance with the provisions of this title and the provisions of law generally applicable to the administration of units in the National Park System, including the Act of August 25, 1916 (Organic Act) . . . and the Act of August 21, 1935 (Historic Sites Act).

## Cooperative Agreements

This administrative procedure involves a written cooperative agreement with surface and/or subsurface owners for the use, protection, or management of lands. Section 505 of the act outlines procedures for cooperative agreements:

The Secretary shall seek to enter into cooperative agreements with the owners, including the beneficial owners, of the properties located in whole or part within the park. . . . The purposes of such agreements shall be to protect, preserve, maintain, and administer the archaeological resources and associated site regardless of whether title to the property or site is vested in the United States. Any such agreement shall

contain provisions to assure that (1) the Secretary, or his representative, shall have a right of access at all reasonable times to appropriate portions of the property for the purpose of cultural resource protection and conducting research, and (2) no changes or alterations shall be permitted with respect to the cultural resources without the written consent of the Secretary. Nothing in this title shall be deemed to prevent the continuation of traditional Native American religious uses or properties which are the subject of cooperative agreements. [Underline added.]

In certain circumstances, protecting, preserving, maintaining, and administering the archeological resources and associated sites will be the primary objective. In other areas, such as West, South, and Chacra mesas, it will also be necessary to provide viewshed protection, watershed management, visitor access, and natural resource management (e.g., erosion control management plantings and controlled burns).

#### Donation as a Means of Acquisition

The end result of a donation is the same as an exchange (discussed below). Section 504(a) of the park legislation states that lands owned by the state of New Mexico can be acquired only through exchange or donation. Section 504(b) states: "The respective tribal authorities are authorized to convey by exchange, purchase, or donation the beneficial interest in any lands . . . consistent with the purpose of this title." State law requires that the state land office manage lands to the economic benefit of the state.

#### Exchange as a Means of Acquisition

Section 504(c)(1) states:

The Secretary shall attempt to acquire private lands or interests therein by exchange prior to acquiring lands by any other method authorized pursuant to section 504 of this Act.

Section 504(d)(1) states:

For purposes of completing an exchange . . . the Secretary shall designate a pool of at least three times the private acreage . . . comprised of Federal property interests of a similar resource character to property to be exchanged. Federal property shall, whenever possible, be designated in blocks of at least one section in size, but in no event shall the blocks designated be less than one-quarter of a section in size.

Section 504(d)(2) states:

Exchanges shall be on the basis of equal value, and either party to the exchange may pay or accept cash in order to



equalize the value of the property exchange, except that if the parties agree to an exchange and the Secretary determines it is in the public interest, such exchange may be made for other than equal values.

As previously mentioned, state lands may only be acquired by exchange or by donation.

According to the 1982 "Resource Protection Case Study" for the park, exchanges appear to be a viable tool in working with private individuals, corporations, and the state of New Mexico to protect park lands. Exchanges require a high degree of cooperation between the involved agencies. There are direct costs associated with exchanges such as title insurance, appraisals, and surveys.

#### Purchase as a Means of Acquisition

Section 504(a) authorizes the acquisition of lands, waters, and interests therein through various means, including purchase with donated or appropriated funds. By including interests, the law implies that less-than-fee interests may be acquired through the use of conservation easements, etc.

Section 508 authorizes \$11,000,000 for acquisition. In FY 1984, \$500,000 was appropriated, and in FY 1985 an additional \$980,000 was appropriated. This funding is primarily to complete exchanges.

### MANAGEMENT PLANS

#### General Management Plan

In 1979 a General Management Plan (GMP) was approved for Chaco Canyon National Monument. The GMP focused on additional staffing, funding needs, proposals for changes in the physical facilities and the road system, and inclusion of the Chaco outlier system into the interpretive program. The 1980 legislation establishing Chaco Culture National Historical Park required that a new GMP be prepared to address the changes resulting from the addition of park lands and the needs not discussed in the 1979 plan. The 1985 GMP focuses on

land protection issues and methods and management of the resources

additional facilities/staff/funds for anticipated increases in visitation, and campground relocation to a more aesthetic location out of the floodplain of Gallo Wash

establishment of clear management objectives for the park

interpretation of the Chacoan phenomenon, especially with relation to the outliers

All proposed developments (other than trails) will occur on lands already in the federal estate, with the possible exceptions of a sanitary landfill and a radio repeater station.

All of Chaco Culture National Historical Park is included on the National Register of Historic Places, which provides some protection to archeological resources. In addition, the GMP contains an evaluation of critical resource values (archeology, visitor use areas, visible areas, watersheds, and steep slopes) to be considered in land protection. Along with visitor access proposals, these considerations have, to a great extent, served as a basis for measures proposed in this Land Protection Plan. Other considerations are described below.

The GMP provides for the following management zones and subzones within Chaco Culture National Historical Park:

Historic zone - includes the entire main unit and the three detached areas.

Preservation subzone - includes the former national monument and the Mockingbird Canyon area. Most of these lands are now in federal ownership, and the rest are proposed for federal ownership in the Land Protection Plan. They are areas of high resource value.

Special grazing use subzone - includes most of the remainder of the park. Grazing will be allowed to continue in this subzone.

Special mineral and grazing use subzone - comprises approximately 160 acres in the Kin Ya'a addition. Potential land uses include all activities of the grazing subzone and controlled resource extraction (subsurface).

Park development subzone - a relatively small subzone, including the park's physical developments for visitor use, administration, and maintenance.

For more complete descriptions and the Management Zoning map, see the "Identification of Land Categories and Rationale for Protection" section of this plan.

New visitor use activities are proposed on lands affected by this plan in the preservation and grazing subzones. The proposed uses at this time are recreational hiking and increased interpretation of unusual or underinterpreted sites.

This Land Protection Plan is summarized in the GMP, and the resource analysis that provided a basis for land protection strategies is described in detail.

## Resource Management Plan

A resource management plan (RMP) containing a cultural component and a natural component is being prepared for the park. The philosophy of the RMP reflects the mandates of the National Park Service's organic act and PL 96-550, that is, to manage the lands and natural and cultural objects within the park so as to leave them unimpaired for public enjoyment while providing future research opportunities.

The RMP lists over 20 cultural resource projects and 14 natural resource projects. The priority projects in the plan are

fencing (natural and cultural project) - to be undertaken within the preservation and special use subzones (pending completion of an archeological site inventory). The purpose is to protect limited areas around sensitive sites/resources in the special use subzones and to fence the entire preservation subzone in the park.

erosion control (natural project) - to be undertaken in limited areas in all management zones, particularly Chacra Mesa, the headwaters of Mockingbird Canyon, Werito Rincon, and possibly near Kin Klizhin. The purpose is to prevent soil/bank erosion, particularly around archeological sites.

grazing (natural project) - to be continued subject to exchange arrangements on federal lands within the special grazing use subzones, where the National Park Service will regulate this activity. The purpose is to protect natural and cultural resources by monitoring, study, and administration of grazing, possibly using a permit system.

## Statement for Management

Management objectives listed in the March 1976 "Statement for Management" are guiding philosophies for the park. Chaco is to preserve those prehistoric remains and to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same (from the 1916 NPS organic act). In addition, the "Statement for Management" includes the following management objectives:

Protect and perpetuate the archeological and natural environments of the park.

Provide visitors with opportunities for meaningful park experiences by offering a varied and balanced interpretive program and effective visitor information and other programs that offer insights into the park values.

Encourage a continuing research program designed to help management improve resource preservation and to increase visitor knowledge and enjoyment.

Achieve a harmonious integration of activities within and outside the park through maintaining cooperation with other federal agencies, the state of New Mexico, the Navajo tribe, and local organizations in regional programs for cultural and natural resource conservation, interpretation, and outdoor recreation.

A revised "Statement for Management" will be prepared as a followup to the GMP.

#### Basic Operations Statement

Written in 1981, the "Basic Operations Statement" sets the minimum standards for resource preservation, as related to this Land Protection Plan:

Execute cultural projects to protect/salvage resources immediately threatened or damaged by natural, environmental, or human erosion.

Execute projects to prevent deterioration of cultural resources pending adequate funding to bring them to standard.

Identify the park's natural resources and protect them from further unnatural impact and influences.

Emphasize the integration of cultural and natural resources management.

#### VISITOR USE OBJECTIVES

The detailed objectives are contained in the GMP. The park's overall objectives are to provide opportunities for visitors to see the structural and material remains of the Chacoan Anasazi, and to experience the setting and remoteness of the area in which the Anasazi lived in an environment that is as close to its pre-European condition as possible. Specific visitor use proposals and needs are also contained in the GMP, as are the proposed activities by zones.



## NONFEDERAL OWNERSHIP AND USES

From an ownership and jurisdiction standpoint, the San Juan Basin is one of the most complex regions in the country, especially in the "checkerboard" area where a mixture of federal, state, Indian, and private lands exist. This area is generally east and south of the Navajo Reservation and includes Chaco Culture National Historical Park. The status of Indian lands is complicated by the division into tribal trustlands, allotted lands, and tribal fee lands. Allotted lands frequently involve complex title chains, with as many as 50 or more people having interests in the land. Finally, the combination of surface and subsurface ownerships sometimes creates overlapping property rights and jurisdictions with split estates.

### OWNERSHIP

Chaco Culture National Historical Park contains approximately 33,974 acres, of which some 21,509 acres constituted the previous national monument. In addition, about 1,280 acres from the Bureau of Indian Affairs and approximately 960 acres from the Bureau of Land Management were transferred to the National Park Service on April 23, 1981, subject to existing oil, gas, and mineral leases. These leases will expire by mid 1989, except for one (on approximately 160 acres), which will expire September 1, 1990. All mining claims under the 1872 Mining Law have been relinquished.

Total nonfederal surface ownership in the park is 10,965.26 acres; 1,769.50 acres are owned by the state of New Mexico, and all state land is encumbered by grazing leases. Of the remaining 9,195.76 acres, 4,697.01 are tribal fee lands, 3,059.51 are tribal trustlands, 1,120.05, which were distributed under the General Allotment Act of 1887 (25 USC 331 et seq. 1982), are held in trust for allottees or their heirs, and 319.19 are privately owned (see table 1 for details). Subsurface rights to the lands are in a variety of ownerships. Some have been reserved or sold by prior owners, some are held or have been sold by the tribe, and some are still under the ownership of the United States. Coal was reserved by the United States on many of the allotted lands (see the "Mineral/Energy Relationships" section for more details).

### LAND USES

All lands are undeveloped. The last person/family to live within the park's exterior boundaries moved out sometime in the late 1940s to early 1950s. Their hogans (one-room dwellings) are on Chacra Mesa and are in a ruinous state. The only current activities are grazing (on 76.1 percent of the 1980 addition lands) and subsistence agriculture (approximately 5 acres near Kin Klizhin). The only improvements or man-made structures are

one windmill and metal stock reservoir on Chacra Mesa and one near Kin Ya'a

five maintained earthen stock reservoirs--three in the southern addition and one each in the northern and Kin Klizhin additions

less than 1-3/4 miles of fence line (rangeland fencing) in the southern, northern, and Kin Bineola additions (approximately 2 miles of rangeland fencing coincides with the authorized boundary on the Kin Klizhin addition)

less than 5 miles of unimproved dirt roads spread over all six additions, with perhaps 6 more miles of vehicle ruts that are used repeatedly

one local service powerline right-of-way in the northern addition

### COMPATIBLE AND INCOMPATIBLE USES

Generally, the current uses of nonfederal lands within the park boundary (as of January 1, 1983) are compatible. Further studies will be necessary to determine any management requirements for such uses in specific areas; these studies will be recommended in the resource management plan. The compatible and incompatible uses of lands within the expanded park boundary are as follows:

#### Compatible Uses

continued grazing on lands currently being grazed and within the appropriate management subzone (After research on threatened and endangered species and grazing intensity levels, it may be necessary to erect approximately 5-acre enclosures to protect certain resources. Procedures will be outlined in the resource management plan.)

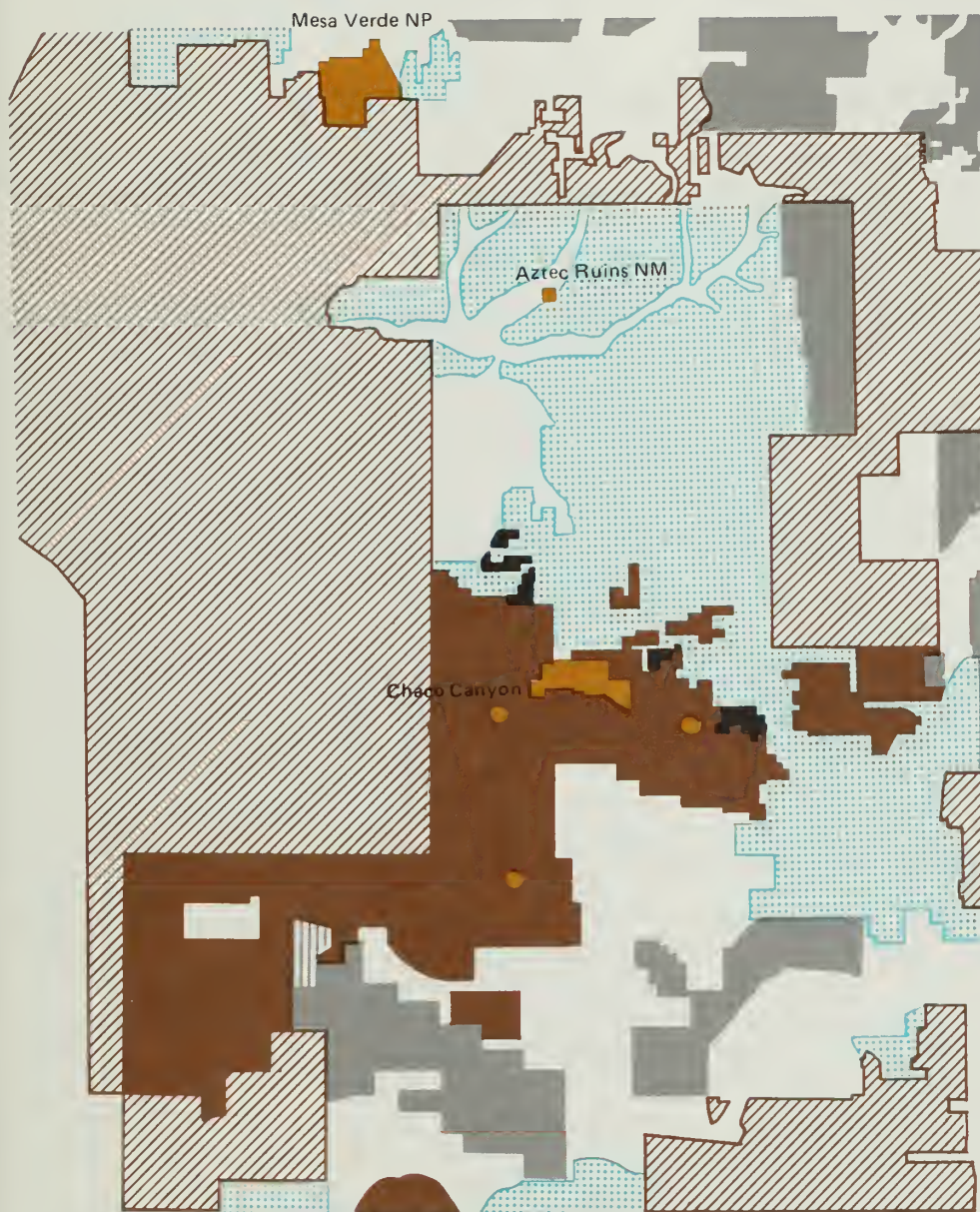
existing grazing and range improvements within the appropriate management subzone, with the exceptions noted under "Incompatible Uses" below









existing religious uses and entry by local native Americans

low-impact visitor uses as described in the General Management Plan

#### Incompatible Uses

land modifications or any significant habitat modifications (from conditions existing on January 1, 1983), except for controlled resource extraction entry in the special mineral and grazing use subzone (Controls will include proper clearances under section 106 of the National Historic Preservation Act, as amended, and compliance



-  CHECKERBOARD (Primarily Private)
-  CHECKERBOARD (Primarily BLM)
-  CHECKERBOARD (Primarily Navajo)
-  NATIONAL PARK
-  NATIONAL FOREST
-  INDIAN RESERVATION
-  STATE
-  MILITARY AND NRC



0 10 20 Miles  
0 10 20 30 Kilometers

## REGIONAL LAND STATUS

CHACO CULTURE NATIONAL HISTORICAL PARK  
UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

Table 1: Landownership and Background

<u>Number of Tracts</u>	<u>Acres</u>	<u>Owner(s)</u>	<u>Background on Ownership</u>
7	4,697.01	Navajo tribe (fee interest)	The tribe owns the land, purchased through public land sales from the Santa Fe Pacific Railroad and the federal government. In all cases, the original owner retained subsurface rights. The tribe allows tribal members to reside and/or graze on the land. Individuals can obtain house leases and grazing permits, but few in the Chaco area do so.
8	3,059.51	Navajo tribe (trustlands)	Trustlands are lands held in trust for the tribe and administered by the BIA. Tribal members are permitted to graze on these lands.
8	1,120.05	Individuals (Indian allotment)	These lands were distributed under the General Allotment Act of 1887 and are held in trust for allottees and their heirs. The subsurface is managed by the BIA on behalf of individual allottees. Allotments are about 160 acres each and cannot be divided (thus as many as 10-15 heirs have possession of the same 160 acres). Two-thirds of the allottees must agree to any action. When a family dies out, the land is held in trust by the BIA until another allottee is assigned.
4	1,769.50	State of New Mexico	State sections are generally sections 2, 16, 32, and 36 in any township, but the state has been consolidating its holdings through exchanges over the years. A semi-independent state land office is responsible for management.
1	80.00	Archeological Conservancy	This private, nonprofit foundation, which is dedicated to preserving archeological sites and their lands, purchased this tract in December 1982.
3	239.19	Other private individuals	These private individuals are not residents of the area. All tracts are in T21N, R10W, section 5. As far as can be determined, all activities on these tracts (primarily grazing) are trespass.



with requirements of the National Environmental Policy Act. A map of the applicable subzone is included in the "Recommendations" section of this document.)

new range improvements that necessitate ground disturbance such as earthen reservoirs (Three existing earthen reservoirs should be relocated from the southern addition because they are close to prehistoric roads and other cultural resources. The slow spread of concentrated disturbances around these reservoirs will have a long-term adverse effect because of continued trampling on mound sites, breaking up of cultural remains, particularly pottery, gradual erosion of mounds and road features, destruction of vegetative cover, and destruction of habitats. The long-range impacts of soil compaction are largely unknown.)

destruction or modification of any archeological site or significant natural resource through any means (On a site-specific basis, small enclosures may be utilized to mitigate or prevent damage. Procedures will be included in the resource management plan.)

residential use, except required park housing

rights-of-way not directly necessary to the park's visitor services, such as high voltage lines, pipelines, and additional roads, except those associated with mineral extraction in the special mineral and grazing use subzone

## EXTERNAL CONDITIONS AND INFLUENCES ON RESOURCE MANAGEMENT

The San Juan Basin has potential for becoming one of the most rapidly developing energy resource areas in the nation. Plans and environmental impact statements have been approved or are in the process of being approved for six major energy development actions (see table 2). The Draft San Juan Basin Cumulative Overview lists the following cumulative effects on the national historical park as a result of actions proposed on BLM lands:

improved area roads and new transportation arteries

increased vandalism and theft of cultural and natural resources

visual impacts degrading the quality of scenic vistas

overcrowding and expanded use of facilities and sites

reduction in quality of recreational experiences

This overview does not address indirect impacts on the park. The document lists the destruction of some 92,000 acres of San Juan Basin

Table 2: External Influences on Resource Management

Action	Construction/ Operation Date(s)	Closest Approach to Chaco Culture NHP	EIS/ Construc- tion Status	Primary Developments	Secondary Developments	Percentage Increase in Traffic on Area Roads	New Jobs	Water Use	Wildlife Habitat Destruction/ Adverse Impact	Archaeological Site Disturbance	Other Direct Impacts to Chaco
New Mexico Generating Station	C = 1985 O = 1990	Powerline corridor adjacent to north boundary	Draft EIS on public review until 2/7/83	2,000 megawatt coal- fired generating plant, three 500 kilovolt transmission lines. Located 16 mi. northwest of Chaco	Possible "New Town" 13 miles north of Chaco; on 2,400 acres; roads; other unknown	(est. 1%)	1987 = 1,515 1992 = 1,530	35,000 acre-ft per yr Unknown for town	2,400 acres direct	Unknown	Air quality; possible acidifi- cation of rain
Star Lake- Bisti Regional Coal Development	O = 1990	Railroad and powerline 1-2 miles from north boundary	Final EIS issued 2/26/79	Coal strip-mine in Bisti region ca. 15 mi. northwest of Chaco, railroad to haul 31 million tons/year by 1990 (as high as 60 trains/day)	Improved area roads	4.3%	1990 = 6,735	59,000 acre-ft per yr	17,500 acres direct	617-838 known sites	Air quality; seismic; noise
Alameda Coal Development	ca. 1990?	mines 3½ miles northeast; roads 2 miles north- east	On Navajo tribal land-- not avail. Clearance finished 1982	Coal strip-mine in the Gallo-Alamo washes 5-7 miles northeast of Chaco	Improved area roads; support developments	Unknown	Unknown	Unknown	(est. 3,200+ acres)	Unknown	Air quality; seismic; noise; traffic; silt- ation; erosion; relocation of grazing
Regional Uranium Development	O = 1985	One mine operating in the Kin Ya'a unit, maybe 1-2 miles from Chaco	Cumulative overview report-- Final 1/1981	Mod. growth until year 2000 = up to 72 mines and up to 15 mills; 1990 production of 18,000 short tons U <sub>3</sub> O <sub>8</sub>	New and improved area roads, other secondary develop- ment	(est. 1996 = 14.7%)	1996 = 23,000 2000 = 21,000	1990 = 629,000 acre-ft per yr	Local around mines/mills	by 1990 = 312 2000 = 453	Air quality; seismic; possible change of Fajada west to per- manent stream
Coal Pref- erance Right Lease Applications (PRLA)	O(full) = 2000	2½ miles north for ca. 6 mi. lateral extent	EIS issued 1981; com- pleted pro- cessing 12/1/84	Leasing for develop- ment of 75,510 acres on 26 PRLAs north of Chaco; coal	New and improved area roads, other support facilities	2000 = 4,190 veh./ day	2000 = 6,922	12,850 acre-ft per yr	31,718 acres vegetation removed	171 identified; 542+ pre- dicted	Air quality; seismic; noise; dust; scenic
San Juan Regional Coal Leasing	O (full) = 2000	4 miles northeast or 8 miles northwest	Land use planning completed; sales to begin 9/1983 (EIS 11/82)	24 tracts; approx. 1.32 billion tons of coal; approx. 35,977 acres; scattered areas around Chaco	New and improved area roads; other support facilities	2000 = 3,310 veh./day	2000 = 12,253	3,700 acre-ft per yr	35,977 acres vegetation removed	185 identified; 812-1098 pre- dicted plus prehistoric roads	Air quality; seismic; noise; dust; scenic; vandalism
Navajo Railroad	C = 1985 O = 2000	ca. 45 miles west	Final EIS issued 2/25/83	ca. 106 miles of rail- road from the Farmington area south	Unknown	Unknown	2000 = 1,240	N/A (construc- tion = 1,500 acre- ft)	1,284 acres	100+	Indirect
Expansion of Navajo Indian Irrigation Project	Under continu- ous expansion	ca. 35 miles north	Under construction	Development of irrigated farmlands	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Dust, other indirect
Oil and Gas Leasing	Continuous exploration and develop- ment	1½ miles northeast; or 2 miles south	---	Small oil and gas fields	Unknown	(est. 1%)	Unknown	Unknown	Minor	Unknown	Dust; noise; odors

All data are taken from the cited environmental impact statements. All data are direct results of the proposed/planned actions. Summary and cumulative results of planned/proposed actions are in the "External Conditions and Influences on Resource Management" section of this Land Protection Plan and Draft San Juan Basin Cumulative Overview (BLM Nov. 1982).

habitats without assessing the impacts on the park's wildlife habitats. Other indirect effects include increased poaching; increased "professional" looting of identified cultural sites; population and grazing pressures on unsettled lands in the park by up to 150 displaced Navajo families and their stock; dramatically increased property values on undeveloped lands; and congestion on area roads with commercial/industrial traffic.

Chaco Culture National Historical Park began to receive national media attention in 1979. As of this writing, no fewer than 50 national circulation media events have focused on Chaco (television, Sunday supplements, periodicals, journals, and magazines). In addition, local, regional, and national newspapers run articles of their own or pick up on wire service articles (for example, United Press International, February 1983). International media coverage includes a November 1982 National Geographic article and several guidebook articles. Four or five additional documentary films or segments are in the works (three hour-long documentaries are in circulation), along with about 10 national coverage articles, and the media is still requesting more. Media coverage often focuses on newly discovered resources--resources located on the 1980 addition lands.

Because of the above influences, it is incumbent on the National Park Service to ensure the protection of sensitive cultural resources in the most expedient and productive manner possible.

#### SUMMARY OF PREVIOUS LAND ACQUISITION

##### Acquired

Public domain	11,063.13 acres
From Santa Fe Pacific Railroad Company	6,392.68 acres
From University of New Mexico	3,200.56 acres
From BLM and BIA per PL 96-550 (subject to existing leases)	2,239.68 acres
All other	<u>112.98 acres</u>
Total	23,009.03 acres

##### Not Acquired (previous national monument)

Allotment	160.05 acres
Subsurface (oil, gas, mineral interests)	1,277.00 acres

##### Deleted per PL 96-550 (transferred to BLM)

Public domain	380.00 acres
Indian trust (never acquired)	160.00 acres

## Improvements and Retained Interests

No improvements have been acquired, and no substantial improvements are located on any newly authorized lands. There are a few minor grazing/range improvements on these lands (see "Land Uses" section).

Retained interests exist on approximately 1,277 acres of the former national monument lands (oil, gas, and mineral interests) and on all lands transferred from the Bureau of Land Management and the Bureau of Indian Affairs in 1981 (outstanding leases due to expire by 1990).

A list and maps of tracts, owners' names, acreages, and methods of protection are in appendix A.

## LEGAL AND REGULATORY AUTHORITIES

PL 96-550 expressly requires that the park be managed according to provisions of law generally applicable to units of the national park system, including 16 USC 1, 2-4 (laws relating to the National Park Service) and 16 USC 461-67 (preservation of historic features and antiquities).

In addition to PL 96-550, certain other laws apply to management of Chaco Culture National Historical Park:

### Federal Laws

Clean Air Act, as amended (1970)

water pollution acts

wildlife conservation acts, including Bald Eagle Act (1940) and Endangered Species Act (1972)

Antiquities Act of 1906 and Archeological Resource Protection Act of 1979

National Environmental Policy Act of 1969

executive orders, including those dealing with wetlands preservation, floodplain management, and off-road vehicle use

Native American Religious Freedom Act (1978)

### State Laws

Antiquities Preservation Law (18-6 NMSA 1978)

natural resource protection laws, including protection of state threatened and endangered species and endemic species



## County and Local Ordinances and Regulations

none apply

## TRACTS PREVIOUSLY OWNED OR ACQUIRED BY THE U.S. GOVERNMENT

Lands included from the previous national monument (1907-1980) were largely in public domain before 1907. With the exception of one Indian allotment in the northwest corner, all lands from the national monument were acquired by the mid-1940s.

## ACQUISITION CEILING AND STATUS

PL 96-550 authorized \$11 million for land acquisition (including the funding for the archeological protection sites); \$500,000 was appropriated in FY 1984, and \$980,000 in FY 1985. Except for lands transferred from other federal agencies, no acquisitions or protection measures have been completed by the government as of this publication; however, the Park Service is currently working with the state of New Mexico and BLM to undertake several land exchanges, and final negotiations are in progress on some of these exchanges.

## SOCIAL/CULTURAL/ECONOMIC RELATIONSHIPS

### Overview

The immediate park area is a very isolated rural region where subsistence grazing is the most common land use. Native Americans (Navajo) make up the majority of the residents. The entire region is experiencing activities associated with the development of energy resources. Coal, uranium, natural gas, crude oil, and geothermal steam are either being developed or explored and mapped for future development. Active uranium mining and milling is taking place in the southern part of the San Juan Basin near Crownpoint, large coal strip mines are operating in the northwestern portion, and producing natural gas and oil fields have been located in the northeast and southeast. Power plants, railroads, and associated facilities are also planned (see Region map and table 2). Strip mining of coal is now occurring within 6 miles of the northwest boundary.

With the exception of the Kin Ya'a detached unit near Crownpoint, which is being developed for uranium leach mining, the immediate vicinity of Chaco Culture National Historical Park has not yet been subjected to intensive mineral or oil and gas development. However, coal strip mining, a railroad line, power transmission lines, and other developments have been proposed within a 16-mile range of the park boundary (see "External Conditions and Influences on Resource Management" section). An oil well is producing within 2 miles of the boundary.

No one other than NPS park staff is currently living in the park. Navajo graze cattle and horses year-round on lands near the park, including many of the addition lands, and reside near the park boundary. Scattered parcels of federal land are under BIA grazing leases. There is a small, widely scattered community of Navajo people living just north of the park (approximately 16 family units consisting of about 64 to 86 people) who graze small bands of sheep and goats on land that includes much of the northern addition. Additional income and/or subsistence comes from small garden plots, seasonal work for the National Park Service, work with the Chaco preschool, and Indian assistance programs. According to The Navajo Atlas by James N. Goodman (Norman: University of Oklahoma Press 1982), this area is heavily overgrazed.

Lands south of the park comprise a private tribal-owned ranch. The Tribal Ranch, Inc., through two different ranch units, leases all the lands in the Chacra Mesa, southern, and Kin Klizhin additions for grazing cattle and some horses. All state lands (3 sq mi) are leased for grazing. About 43 percent of the land in the Chacra Mesa and southern additions is not grazeable because of rugged terrain, steep slopes, and lack of viable access to the top of West and South mesas. A windmill with a metal stock reservoir is located on the southeast end of the Chacra Mesa addition (on land transferred to NPS from BLM), with approximately 1.2 miles of slightly improved dirt road coming through authorized lands. Three small earthen stock reservoirs are located in the southern addition, one in the Kin Klizhin addition, and one in the northern addition. A 5-acre cornfield is located near Kin Klizhin ruin in that addition.

Despite adaptations to the Anglo culture, traditional and historical uses and movement patterns are still strong among the Navajo people of the Chaco area. Although the tribe operates large leased ranches, the more common pattern is family herds roaming freely on open range, herded by family members or sheep dogs. There are few fences. Traditional use areas are handed down by word of mouth from generation to generation. Families and extended families may live on one piece of land for generations.

Often when fences are constructed across traditional herding avenues, they are repeatedly cut so that the herds can move freely. This was the case for almost 40 years on Chaco's west boundary fence. The ability to control the land through perseverance, use, long tradition, good neighbor relations, and a strong position from which to negotiate commands respect.

Navajo traditions are firmly embedded in Chaco Canyon. The Navajo Atlas identifies one sacred site within Chaco Culture National Historical Park. NPS officials have had at least one additional active shrine identified to them by traditional medicine men. Plants that are not found as frequently outside the park (due in part to overgrazing) are utilized by medicine men in healing and other ceremonies. Many major features in the park have Navajo names:

Kin Kletso - yellow house	Tsin Kletsin - black house
Kin Bineola - whirlwind house	Clys Canyon - Cly is a family name
Kin Ya'a - standing-up house	Werito Rincon - Werito is a family name

Anasazi is from a Navajo word meaning "old ones." The word Chaco may be derived from a Navajo word meaning "rock canyon." Traditions shroud many of the ruins in the canyon. Fajada Butte, south of headquarters, is a major feature in folklore involving witches.

The Navajo culture, their rich traditions, their strong world view, their complex language, and their land use patterns remain largely intact, perhaps as much in the Chaco area as any place because of its isolation.

The local economy (within 30 miles) is quite depressed. Incomes are low and unemployment is very high (above 30 percent). Population densities range from 2.2 to 2.9 per square mile. Families are large (6 to 15 individuals in one house), and local opportunities for jobs, recreation, and education are poor.

### Possible Social Impacts

Positive economic benefits from exchanges or other protection alternatives could be realized by the tribal ranches obtaining lands with more grazeable acreage in large blocks. Approximately 43 percent of the tribal ranchlands in the southern and Chacra Mesa additions are ungrazeable because of rugged terrain or natural barriers.

Land is a very important part of Navajo culture, and there is continuing and increasing pressure for land among the Navajo people. As a consequence, any land protection strategy proposed by the National Park Service for the park may be perceived adversely by the local population. Careful and sensitive interactions in presenting and explaining the plans to the Navajo community are essential.

### Visitor Use Relationships

Visitor use is now concentrated in an 8-square-mile area of the canyon floor where the visitor center, campground, loop tour road, and main ruins area are located. Backcountry use occurs primarily on four established trails totaling 13 miles in length. The GMP proposes adding about 15-20 miles of trails that would go into the southern addition (West and South mesas) and Chacra Mesa addition. Recreational hiking currently involves 11 to 12 percent of the park's visitors, but it is expected to increase in proportion as visitation increases and overcrowding in the main ruins area occurs and as the uniqueness of the relatively new discovered archeological sites in the backcountry becomes better known (sites such as shrines, stone circles, prehistoric stairs and roads, farming terraces, way stations, and refuge sites). As local visitation from Albuquerque, Santa Fe, Farmington, Durango (Colorado),

and Gallup-Grants increases, the demand for recreational and other nonarcheological-related backcountry experiences will also increase because this kind of experience is limited in local preserve areas (national park areas, state parks, etc.). Of the preserve areas within a day's outing of the above communities, only Bandelier National Monument, San Pedro Park's wilderness area, and Chaco Culture National Historical Park have backcountry use.

Approximately 53 percent of the park (including 1980 addition lands) is visible from one or more of the seven major frontcountry visitor attractions plus Pueblos Alto (the most heavily visited backcountry site). More of the park is visible from the backcountry destination sites of Penasco Blanco, Tsin Kletsin, and Wijiji. Finally, almost 88 percent of the main unit will be visible to visitors once the trail system proposed in the GMP is built. Visitor enjoyment and the backcountry experience will be enhanced if the character of the authorized lands remains essentially undisturbed or is enhanced through active NPS management.

Visitation has been gradually increasing over the past 10 years, and with the increased national media attention and possible improvements in area roads, this trend is expected to continue if not accelerate. The park's present visitation is 51,600 annually. The environmental consequences of increasing visitation are addressed in the GMP.

## MINERAL/ENERGY RELATIONSHIPS

### Background

All 1980 addition lands, including those transferred to the Park Service from other federal agencies, have outstanding subsurface interests. Most lands are split estates, that is, the surface owner does not own the subsurface. Additionally, 1,437 acres of the former monument have outstanding subsurface interests. The federal subsurface tracts are closed to any new entry effective December 1980. However, these tracts are subject to existing leases that may not expire if the lessee develops his interest before the expiration date. This applies on approximately 3,738 acres, primarily in the Chacra Mesa and northern additions. The other federal subsurface interests are administered by the Bureau of Indian Affairs under legal provisions (including Allottee Mining Act of 1909) that require that interests be managed to the economic benefit of individual Indians or the tribe for whom title is held by the federal government. This includes approximately 1,120 acres, of which approximately 800 acres are not currently leased. The state of New Mexico has similar requirements for economic benefit on its 1,769 acres. Besides the Bureau of Land Management, Bureau of Indian Affairs, and state, private individuals have subsurface tracts that are leased or are open to leasing.



## Potential Mineral/Energy Resources

Although no deposits having current economic value have been located under authorized lands, the potential exists under all authorized lands, as indicated by widespread leasing.

Coal. In 1980 the Bureau of Land Management published a coal resource map that includes all lands within the park as "areas of potential coal occurrence." In the category of "areas of high coal development potential" are lands near the north boundary of the main unit and the Pueblo Pintado unit and north and south of the Kin Ya'a unit. In 1978, the U.S. Geological Survey identified lands now in the Kin Bineola unit as within a known recoverable coal resource area. The Kin Klizhin addition is on the margin of this formally designated area. Small, low-grade coal seams occur throughout the unit; in August 1979 BLM geologists inventoried a coal seam in the southern addition.

Plans have been approved for coal leasing under BLM's preference right lease applications and competitive leasing system within 3 miles of the park's north boundary. The state of New Mexico's Mining and Minerals Division has mapped Chaco as part of a coal field and has issued 10 permits for coal strip mines within 20 miles of the park (as of August 1983). Three more mines are listed as being in planning stages. All this activity is occurring at a time when the market is depressed. It is expected that activity in the area will substantially increase if the market improves.

Uranium. During 1978-79 the Department of Energy undertook a project to locate and evaluate uranium resources along the margins of the Grants mineral belt, which extends into the Chaco Canyon area. Although the official report is not available, contacts with the field geologists during the drilling revealed that uranium is present under Chacra Mesa and the southeastern corner of the park. With current technologies it is uneconomical to extract these localized, relatively low-grade ores from depths of 4,000+ feet. Since 1979, the uranium market has been severely depressed. If market conditions improve, research into newer extraction technologies could occur. Coupled with better area access, some of the ore bodies may become economical. Within the Kin Ya'a unit, a company is extracting uranium ores that were not economical even five years ago, using a solution mining process that is still in the experimental stage.

A private company drilled two uranium exploration holes in the northern addition in 1979. Onsite geologists told park staff that uranium was present, but it was not economically feasible to extract the resource in the foreseeable future. The company subsequently abandoned their claims within the northern addition, after destroying three segments of prehistoric road and one archeological site that are now within the park. Approximately 12 to 14 acres within the northern addition were disturbed without adequate reclamation or additional knowledge of the park's cultural resources.

As mentioned, uranium exploration occurred in the Kin Ya'a area before 1980, and resource extraction is occurring within that unit. So far, all inventoried sites have been avoided by both exploration and extraction activities. The possibility exists that there are cultural resources in this unit for which no present methods of detection are available. Some of these as yet undetected resources have probably been affected (see discussion of cultural resources under "Resource Significance" section).

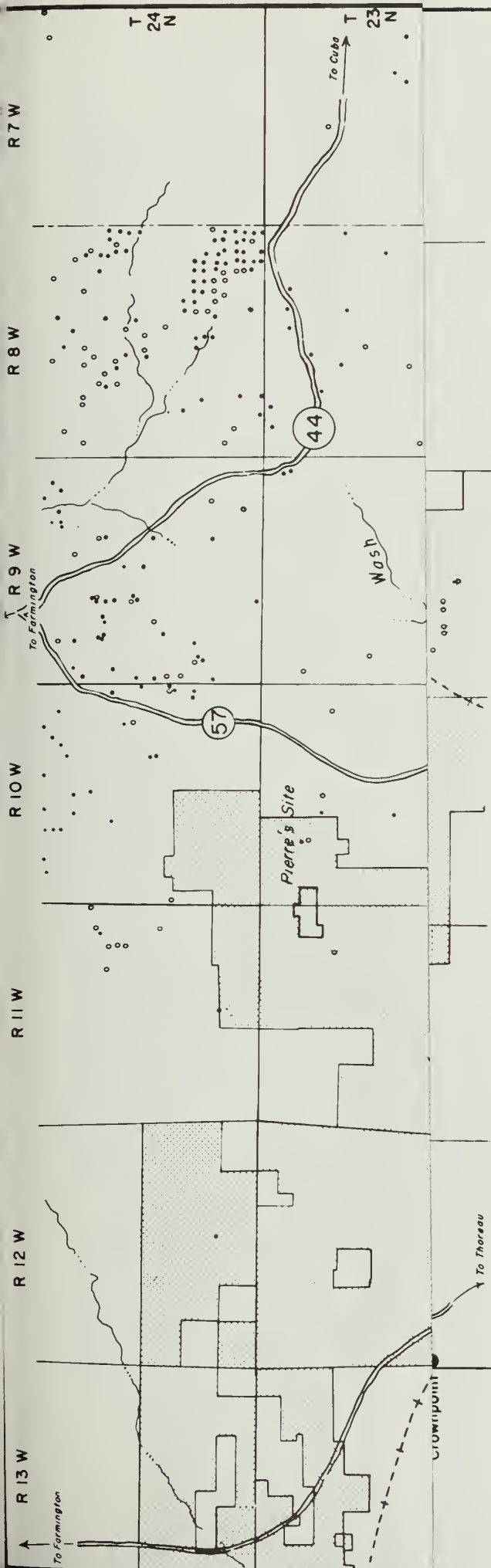
Oil and Natural Gas. Within 20 miles of the park are four oil-producing areas and one well that is capped, pending improved access, market, and/or technology. Most of the fields in the immediate area must use secondary production techniques. One such operation is 1½ miles from the park boundary, and three pumps are in operation. Production is expensive because of maintenance of fluid injection pumps, heaters on the pipes and storage tanks, isolation on dirt roads, and rights-of-way for access.

Since the well operations near the park boundary began in 1978, there have been difficulties in obtaining compliance with state and/or tribal permits. The collection pits have never been in compliance with safety or engineering requirements and have broken on at least three occasions. During one event, in April 1979, the sludge fluids flowed into the park, causing destruction of vegetation and animal habitat.

The park's records document 11 wildcat wells being drilled within 3 miles of the boundaries since 1978. Some of these are known to have been dry holes from onsite contacts; others may simply be capped pending access and market improvements. During October-November 1983, a seismic exploration company used heavy machinery including bulldozers to put in four seismic lines adjacent to the park's boundaries (see Energy Resource Development map). One line trespassed approximately ¼ mile into the southern addition despite the National Park Service's efforts to work with the company to avoid trespass. One archeological site within the unit was damaged. The Navajo tribe, as the permitting agency, was unable to effectively control operations as required by the permit: Operations proceeded without the required presence of an archeologist; the seismic lines were moved from locations indicated on maps attached to the permit; and reclamation was not undertaken until after penalties were imposed. On the well exploration sites near the park, the only reclamation that has been accomplished is some landscaping. Drill pads may be visible years later as changes in vegetation occur or areas become eroded.

The Chaco area is open and has little vegetation to muffle sound. Exploration activity within 3 miles of the park has resulted in some impacts on the visitor experience. Noise from drilling activities has been heard in the campground and in the backcountry from as far away as 4 miles. Derricks are visible for many miles. If exploration or development activities occurred within the park, the disruption of visitor experiences would be much more pronounced.

Of the 44 outstanding subsurface tracts depicted in appendix A, 16 are owned in fee or by allottees. All the remaining oil, gas, and mineral



# LEGEND

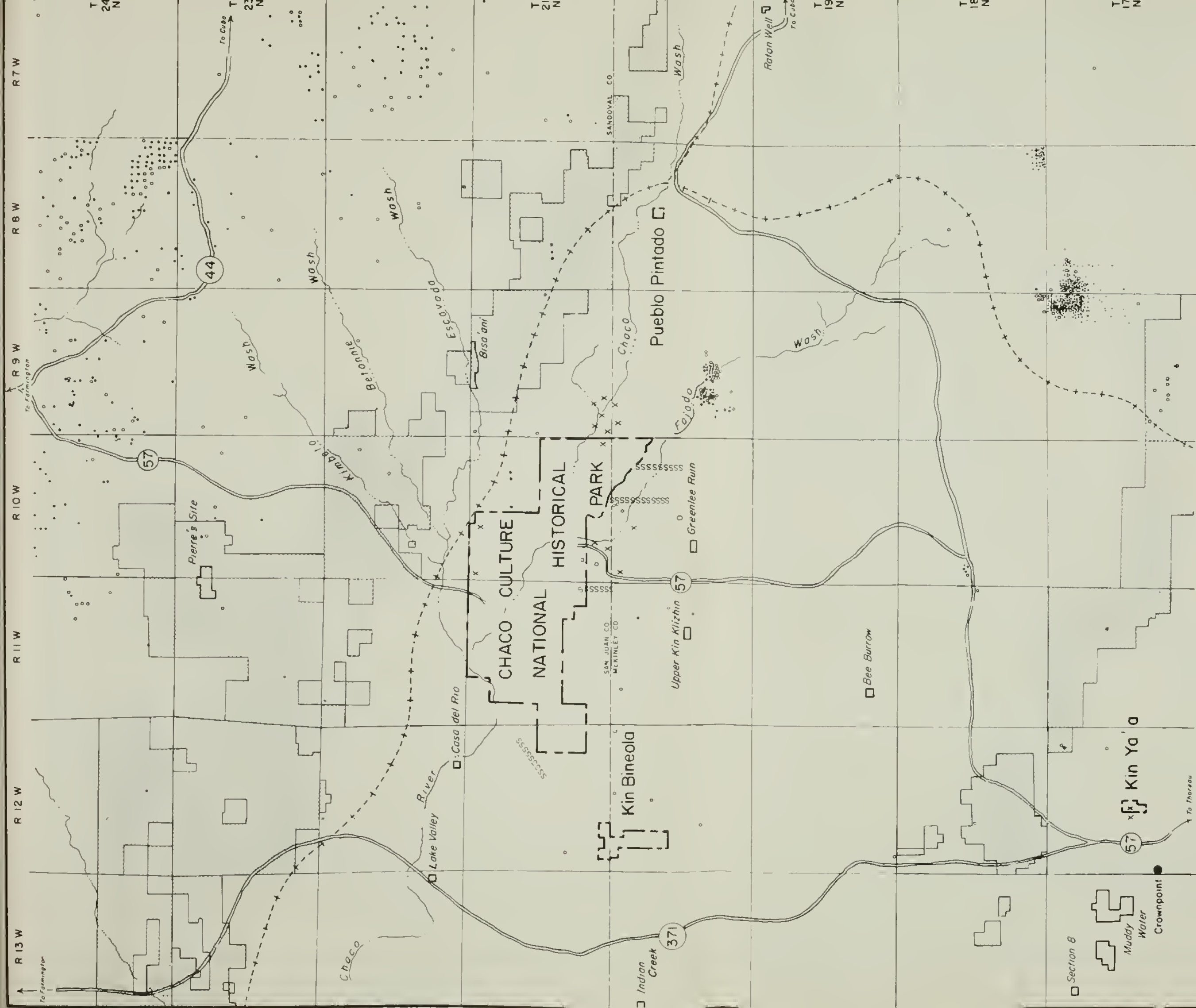
- Producing Oil Well
- o Exploratory Oil Well
- x Known Uranium Test Drill Site
- ▨ Coal Leasing or Mining Activity
- SSSSSSS Known Seismic Test Lines
- Chaco Culture National Historical Park Boundary
- Be Burrow Archeological Protection Sites
- - - + - - - Proposed Railroad

## ENERGY RESOURCE DEVELOPMENT San Juan Basin and Vicinity



CHCU 80,051  
JAN 1984 SWR  
Drawn by P. Tschannen-Possen





LEGEND

- Producing Oil Well
- Exploratory Oil Well
- Known Uranium Test Drill Site
- Cool Leasing or Mining Activity
- Known Seismic Test Lines
- Chaco Culture National Historical Park Boundary
- Archeological Protection Sites
- Proposed Railroad
- Bee Burrow

ENERGY RESOURCE DEVELOPMENT  
San Juan Basin and Vicinity





leases may be encumbered for a significant period of time if the leases go into production. BLM federal oil and gas leases define the rights of a lessee as follows:

The lessee is granted the exclusive right . . . to drill for, mine, extract, remove and dispose of all oil and gas deposits . . . in the lands leased, together with the right to construct and maintain thereupon, all works, buildings, plants . . . roads . . . pipelines, reservoirs, tanks, pumping stations, or other structures necessary to the full enjoyment thereof, for a period of 10 years, and so long thereafter as oil or gas is produced in paying quantities. [Underline added.]

Many BIA leases have similar provisions.

### Effects of Mineral Entry on Park Resources

Effects of resource extraction entry on park resources can roughly be divided into three categories: exploration--short-term impacts; exploration--long-term impacts; and development impacts.

Exploration--Short-Term Impacts. Most exploration sites involve 3 to 7 acres of land for the drill pad and 2.4 acres per mile for road access. Some activities require more land for the drill pads, depending on type of drilling activity and the need for collection pits. During the exploration activity, there is loss of topsoil (which is very shallow in this type of desert) and potential for erosion. Because of the open terrain, visual intrusions could only be mitigated in a few areas of the park, and it might not be possible to mitigate noise intrusions except in the extreme west end of the park.

If the Park Service was unable to enforce its oil and gas development regulations (because of lack of control of access or lack of surface ownership), the reclamation practices common in the San Juan Basin would be employed--scarifying compacted pads and access roads to promote the reestablishment of native plants. Often, Russian thistle (an exotic) takes over for one to three years, with a very slow reinvasion of other exotics and some native species. Even where the Park Service could require relandscaping and planting, the plant species that would dominate for many years would not approximate natural conditions (see discussion of long-term impacts below). Current revegetation practices are designed to provide good range cover to retain topsoil and to provide for grazing rather than to reestablish native conditions.

Exploration--Long-Term Impacts. Archeological resources might be irretrievably lost as a result of exploration. Any resulting mitigation or salvage requirements would be designed to quickly gain a basic understanding of a site; however, this information would not be as comprehensive as that obtained through research designed by the National Park Service. Such research typically takes much longer to perform than mitigation or salvage. Although it might be possible to mitigate any

impacts of exploration in a month, it might take a year or longer to properly research the same site to gain maximum knowledge. Comprehensive research was clearly the intent of Congress in establishing this unit of the national park system. The congressional hearings on PL 96-550 indicated an expressed interest in establishing a scientific laboratory where the mitigation of impacts would not be the basis for collecting information.

Perhaps even more important to the purposes of the park would be the long-term impacts that the entry would have on site identification. Many of Chaco's archeological sites are initially identified by observing vegetation anomalies, either from the ground or in aerial photos. Even small features such as canals (less than two feet wide) can be identified, and large features such as prehistoric roads (average 30 feet wide) are readily identifiable. Since new techniques for identifying sites are still being developed (see the "Purpose" section), and new sites are still being sought and found, it is critical that no masking of these features be allowed to occur. Archeologists are successfully identifying man-made scars or disturbances that are close to 1,000 years old. Man-caused disturbances occurring today could obliterate clues to prehistoric sites or create confusion and misdirect research.

Development Impacts. All impacts discussed above would be present but intensified. Any development would be a long-term intrusion on the cultural/natural scene of the park. The extraction of resources requires much more area than exploration does: Tank batteries, pipelines, collection pits, power sources, maintenance facilities, and transportation facilities can require 15 or more acres, depending on the nature of the resource and production methods employed. Even with ideal situations, such activities could directly disturb or destroy up to three sites and indirectly affect other sites by opening new areas of the park to vehicle/public traffic.

Summary of Impacts. Mineral exploration and development activities involve practices that impact natural resources in direct and indirect ways. Seismic lines, roads, drill pads, shafts, and pits all affect the terrain and the natural system it supports. First, saltbush and associated shrubs and grasses are removed and replaced by bare patches of ground. If this ground is permitted to return to a vegetated state, exotic plant species, notably Russian thistle, dominate. Roads unused in the park for over 30 years are still visible because they have become dominated by thick stands of thistle, and it is probable that disturbed mineral sites would also be revegetated with species that are undesirable from a National Park Service management perspective. Revegetation and restoration of disturbed lands require continuous and active exotic eradication efforts and plantings.

Because of the magnitude of the problem and tenacity displayed by exotics, no work has been done to replace exotics in this area with native plant communities. However, based on observations of previously disturbed sites, it is assumed that, in general, any new mineral exploration and development would result in the loss of native plant cover

and its replacement by exotics, with little chance of community restoration without extensive work. Even efforts to mechanically remove the scars on the terrain would probably exacerbate the problem of exotics.

Second, impacts of these activities on soils cause denudation, exposure to wind and water erosion, and compaction. Efforts can be made to partially mitigate these effects with the use of the best engineering practices. Before these destructive activities could be permitted, determination of the best engineering practices and compliance with them would have to be required.

Third, exploration and development would have impacts on air quality. Chaco is a class II area, with certain limits for allowable pollutant increases established by law. Generation of fugitive particulate emissions would result from the operation of heavy equipment, vehicles, and blasting. These emissions could be reduced in part by such practices as road watering. However, even under the best control, there would still be an increase in fugitive particulate emissions.

Fourth, the presence of mineral-related activities would impact wildlife. Direct impacts on raptors and large ungulates would be matched by similar impacts on small rodents or vegetation on which the whole community depends.

In summary, terrain disturbance associated with mineral activity would inevitably impact cultural and natural features in this park. There is no way terrain disturbance could avoid such impacts. The effects could be minimized, but that minimum would still be severe and would degrade park values. Mitigation could reduce the level of damage but not restore the natural community in the short run. Given the aridity of this climate and the thin soils, recovery would be slow at best.

## MINERAL LEASING

Four types of mineral leases occur in the park. If the tracts were acquired through exchange, the following conditions would have to be considered.

Federal ownership of the subsurface--Approximately 3,740 acres of federally owned subsurface rights are subject to valid existing leases, which were issued by the Bureau of Land Management before the lands were included in the park. Jurisdiction over 2,240 of these acres was transferred to the National Park Service in 1981 (surface and subsurface rights); the BLM administers subsurface interests on the remaining 1,500 acres (surface rights on these lands are privately owned).

Under the terms of the Mineral Leasing Act of 1920, as amended, mineral leases may not be issued in "national parks and monuments" (a term that is interpreted to mean all units of the national park system) except where specifically authorized by Congress. This

prohibition binds both the National Park Service and the Bureau of Land Management. Therefore, unless production occurred on any of the lands with valid existing leases, the leases could not be renewed following their expiration. Lessees are identified in appendix A.

Bureau of Indian Affairs' administration of the subsurface in trust for an Indian allottee--The Bureau of Indian Affairs issues mineral leases under different statutory authority than the Bureau of Land Management (Allottee Leasing Act, March 3, 1909, 25 USC 396). This authority does not preclude the issuing of leases in units of the national park system. Therefore, any time prior to NPS acquisition of these properties through exchange, the BIA could issue new mineral leases or renew existing leases. In addition, following the exchange, NPS control of subsurface rights would be contingent on the expiration of leases issued by the BIA. Leases currently exist on the following tracts:

<u>Tract</u>	<u>Owner/Allottee</u>	<u>Subsurface Tract(s)</u>	<u>Acres</u>
01-170	Navajo tribal trustland (from allottee: Na-Ti-Ta Tes-Wot Est.)	02-134 02-156	160
01-181	Edwin Martin Est. (allottee)	02-152	<u>160</u>
Total			320

In addition, the subsurface of the following 960.05 acres of allotted lands, although not now leased, could be leased by the Bureau of Indian Affairs on behalf of the allottee:

<u>Tract</u>	<u>Surface and Subsurface Owner</u>	<u>Acres</u>
01-102	Hosteen Tah Be Kin Est.	160.05
01-156	Annabelle Atencio	160.00
01-169	Bobby Pablo	160.00
01-172	Na Ti Jen Ihl Got Est.	160.00
01-177	Hostan Tsosee	80.00
01-178	Na Glee Ha Bah Est.	160.00
01-180	Ihl Kid Ez Bah	<u>80.00</u>
Total		960.05



State of New Mexico ownership of the subsurface--The state owns the subsurface on the following tracts, on which there are no current leases:

<u>Tract</u>	<u>Surface and Subsurface Owner</u>	<u>Acres</u>
01-154	State of New Mexico	640.00
01-159	State of New Mexico	449.50
01-168	State of New Mexico	640.00
01-174	State of New Mexico	<u>40.00</u>
Total		1,769.50

Private ownership of the subsurface--The subsurface of the following tracts is privately owned:

<u>Tract</u>	<u>Subsurface Owner</u>	<u>Acres</u>
01-104	Morris, J.O. Est. (OGM 50%)	1,277.00
01-151	Amsden, Larry (OGM 6.25%)	1,277.00
01-161	Fairchild, Bertha P.	80.00
01-162	Archeological Conservancy	80.00
01-163	Crampton, William E., et al.	39.51
01-165	Witten, Robert C. Tr.	119.68
02-101	Santa Fe Pacific R.R. Co. (OGM)	192.40
02-106	Santa Fe Pacific R.R. Co. (OGM)	50.20
02-113	Santa Fe Pacific R.R. Co. (OGM)	135.40
02-116	Santa Fe Pacific R.R. Co. (OGM)	640.00
02-120	First Church of Christ Sci. (OGM)	80.00
02-129	Santa Fe Pacific R.R. Co. (OGM)	2,720.00
02-131	Foster, De Esta (OGM 75%)	640.00
02-148	Alessio, John, et ux. (OGM 25%)	640.00
02-136	New Mexico & Arizona Land Co. (OGM)	640.00
02-140	New Mexico & Arizona Land Co. (OGM)	401.23
02-146	New Mexico & Arizona Land Co. (OGM)	120.00
02-155	New Mexico & Arizona Land Co. (OGM)	80.00
02-157	Unknown (OGM)	39.42
02-158	Unknown (OGM)	39.59
02-159	Unknown (OGM)	80.00
02-160	Unknown (OGM)	<u>80.00</u>
Total		7,534.43



## PROTECTION ALTERNATIVES

PL 96-550 authorizes the National Park Service (through the secretary of the interior) to acquire lands, waters, and interests therein within the boundaries of Chaco Culture National Historical Park by donation, purchase, or exchange (sec. 504(a)). Section 504(c)(1) further requires that an attempt be made to acquire private lands or interests by exchange prior to acquiring lands by any other method authorized.

The legislation also requires that the National Park Service attempt to enter into cooperative agreements where possible with landowners to preserve, protect, maintain, and administer the archeological resources and associated sites regardless of whether title to the property is vested in the United States (sec. 505).

## AVAILABLE LAND PROTECTION METHODS

In addition to the land protection methods identified in PL 96-550, the following methods are also available:

Zoning--Neither county in which Chaco lies has any zoning code, and they are not likely to develop codes that are applicable to Chaco's isolated location.

Regulations--Chaco Culture National Historical Park is an area of concurrent jurisdiction, meaning that the park rangers share police powers with county and state enforcement officials. The Park Service can use applicable federal laws (titles 16 and 18 of the United States Code) and regulations (title 36 of the Code of Federal Regulations).

Of the regulations contained in 36 CFR 1-7, only 10 specific regulations apply to privately owned lands within the park boundaries. These regulations control gambling, firearms and weapons, wildlife protection, fishing, fires, misappropriation of property, trespassing and vandalism, interference with agency functions, disorderly conduct, and abandoned property.

The regulations contained in 36 CFR 9 are mining and mineral regulations. Part 9A regulates mining claims filed under the 1972 Mining Law; Chaco does not have any claims that this regulation would apply to. Part 9B applies to oil and gas leases owned by any entity other than the federal government where access is on, across, or through federally owned lands or waters. Currently, this only applies to 1,277 acres of the outstanding subsurface areas. Other regulations affecting subsurface management include Oil and Gas Operations Regulation 43 CFR 3160 and Onshore Oil and Gas Order 1.

In addition, park rangers can enforce state law on federally owned or controlled lands through the Assimilated Crimes Act (regulatory authority contained in 36 CFR). It is necessary for the Park Service to obtain authority to enforce 36 CFR 1-7 before implementing visitor use recommendations (from the General Management Plan) on privately owned lands.

Regulations are most effective in relatively pristine areas in reducing impacts in known, identified circumstances. They are less effective in efforts to preserve natural or cultural systems.

Easement acquisition--The acquisition of easements is an option that is not considered viable at Chaco Culture National Historical Park. This is addressed more fully in table 3.

Surface acquisition--The acquisition of surface rights is a desirable protection strategy at Chaco Culture National Historical Park. Acquisition through exchange or donation is the preferred method of acquisition. This is addressed more fully in table 3.

Subsurface interest--Acquisition of the subsurface with a cooperative agreement on the surface interest is a reasonable alternative only if the surface owners are willing to negotiate. This is addressed more fully in table 3.

## MANAGEMENT REQUIREMENTS

Direct acquisition of land by the National Park Service is not the only effective method of protecting park resources.

At Chaco it is incumbent upon managers to try to preserve and protect the archeological sites (Congress has acknowledged their national significance) and the necessary intervening lands. This sounds simple but in fact it is not because archeologists do not have a complete understanding of what sites are significant to the understanding of this culture, nor is it certain that all sites have been identified. For example, before the early 1970s the prehistoric roads, canals, reservoirs, and catchments were largely unknown and unidentifiable. With the advent of sophisticated remote-sensing techniques, such as aerial photography, side-scanning radar, computer enhanced imagery, and satellite imagery, these features were discovered to be of major extent and significance. Unless the preservation of the cultural setting and the natural resources is accomplished by the best possible means (to maximize their future value to research), resources or sites that are not identifiable by current techniques or technology may be destroyed.

The purpose of Chaco Culture National Historical Park is not only to preserve individual sites and resources, but to share these outstanding examples of a prehistoric civilization with the visiting public. Managers must attempt to enhance public enjoyment as much as possible, without detriment to the resources. Protection measures must fulfill both of these

Table 3: Alternative Land Protection Strategies

Cooperative AgreementsExplanation--  
Circumstances, Conditions, and Requirements

The National Park Service (NPS) would write an agreement to fulfill park needs and work with the landowner to institute the agreement. In the case of tribal members or tribal ranches, negotiations would have to proceed through the Bureau of Indian Affairs, the tribal government, and their legal advisors--a process requiring probably a minimum of three years. FL 90-500 states that the general purpose of these agreements is "to preserve, protect, maintain and administer the archeological resources and associated sites." Other purposes, on an individual tract basis, might include two but not more than three of the following: 1) public access; 2) ability to manage sensitive plant or wildlife species; 3) posting of the authorized boundary by signs only; 4) ability to undertake erosion control projects; 5) prohibitions against land modifications; and 6) the ability to use prescribed fire. FL 90-500 also requires that agreements "contain provisions to assure that (1) the Secretary of the Interior, or his representative, shall have a right to access at all reasonable times to appropriate portions of the property for the purpose of cultural resource protection and continuing research; and (2) no changes or alterations shall be permitted with respect to the cultural resources without written consent of the Secretary." Agreements could be terminated by either party with thirty to sixty days notice in writing without notice--so management must closely monitor the terms. After sufficient time without a workable agreement being signed, or upon termination of the agreement by the private landowner, or upon termination with the terms of the agreement, the National Park Service would initiate proceedings to institute another protection alternative. Agreements must contain provisions for compliance with the National Historic Preservation Act and National Environmental Policy Act.

Cooperative agreements would be best used in the special grazing use subzone (where many resource values are low, little or no visitor access is required, archeological site densities are relatively low, and little active resource management is anticipated) and in the special mineral and grazing use subzone.

Protection of Park Resources

To be effective in providing adequate protection, the following would be required: 1) There could be no existing or proposed incompatible uses except in the mineral and grazing special use zone (see "Compatible and Incompatible Uses" section); 2) the agreements could be maintained and enforced over the long term (permanently); and 3) substantial immediate progress could be made toward implementing the agreements. A substantial commitment of continuing funds would be required to administer more than 35 agreements, including additional staff, travel and per diem, support funds for typing, files maintenance, mailings, telephone use, and supplies. If the required funding levels were cut, agreements would fail. Funds might also be needed for payments to landowners.

A legal determination would be necessary to find out if the Code of Federal Regulations was enforceable under this protection method (see limitations column).

Benefits

Costs would be relatively administrative and annual costs relatively low. There would be no increase in federal estate or loss of lands from tax rolls. Private owners would retain title and would be responsible for management of property under the agreement. The landowner might get income. Agreements would be very flexible. The owner would retain all rights, especially grazing. When unanticipated needs were discovered, agreements could be renegotiated to accommodate the new needs.

#### Limitations

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Long-term costs and administrative time would probably exceed fair market value. Agreements would be renegotiated periodically with chances of nonnegotiation or noncompliance. Terms might not provide all necessary protections. Agreements would be difficult to enforce and impossible to maintain if the landowner wanted out. It might not be possible to perform required resource management functions or provide for continuing public access. Agreements might not be effective or might not be maintainable with absentee landowners (all of the owners at Chaco). Trespass uses would not be controllable. Negotiations with tribal members might be lengthy.

This would be the most tenuous protection alternative. Allotment tracts could have as many as 30 interested parties. It might be necessary to negotiate with all of them.

#### Social/Cultural Impacts

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Lack of familiarity with the conditions and implications of agreements in the park system unit might create local uncertainty. Despite close cultural ties to the land, cultural barriers and differing land ethics might create unmanageable situations and ill feelings. Provisions for compliance with the Historic Preservation Act and National Environmental Policy Act might have adverse social impacts because of differing cultural views and land ethics. Absentee landowners would have to maintain closer contact with their lands to control trespass uses and to mitigate local apathy. Few, if any, economic impacts would be likely.

#### Partial Interest: Easement

##### Explanation--

##### Circumstances, Conditions, and Requirements

The National Park Service would purchase that portion of the interest in the tract necessary to the management of the unit. An easement can be either negative--NPS purchase of the right to do something from the owner (such as purchasing the right to harvest timber), or positive--permitting the National Park Service to perform certain required activities such as decision control. At Chaco, only one easement type would be required, known as a conservation easement, using both negative and positive easement provisions.

Necessary purchase provisions of all easements would include: 1) no construction of buildings or other improvements; 2) no intensification of present uses, particularly grazing; and provisions for the Park Service to monitor animal grazing units; 3) no actions that would result in clear damage or destruction of identified cultural or natural values and the ability for the Park Service to manage the same for long-term enhancement; 4) provisions for NPS access to manage identified resources; 5) provisions for NPS enforcement of Federal laws and 36 CFR; 6) provisions to allow the Park Service to post boundary marking signs; 7) provisions to allow the Park Service to intensively manage threatened, endangered, or protected plants or animals; 8) provisions allowing the Park Service to undertake erosion control measures; and 9) provisions allowing the Park Service to undertake archeological research, including excavations. No public access would be anticipated at this time.

Conservation easements would be best utilized on lands with moderate to low resource values and moderate to low archeological site density where active management and continual NPS access was necessary. They would also be useful where site densities and cultural values were relatively high and intense management of the resource was necessary or anticipated. The best use of conservation easements would be in the special use subzones in areas where the above criteria were met.

Under the provisions of the laws and regulations that guide the administration of a lotrent lands, easements that attach to the property are not possible for periods longer than 25 years. An Indian allottee(s) can grant an "easement" with the consent of the Bureau of Indian Affairs (which holds the land title in trust) for a period not to exceed 25 years.

##### Protection of Park Resources

Easements would allow greater effectiveness in preserving and protecting park resources than cooperative agreements because of their legal standing and their greater stability over the long term. They would be less effective than fee acquisition, especially where unanticipated needs or situations arose. As with agreements, easements would take a continuing commitment by the National Park Service of money for staff to monitor uses and to provide administrative functions. Easements would probably be most effective in preserving and protecting cultural resources but less effective for natural resources, which tend to change more rapidly.

##### Benefits

Easements would be best suited to special use subzones where some private use (primarily grazing) without resource deterioration was compatible with NPS management objectives and full fee ownership was not required. The private owner would retain fee title and would be responsible for management of property. This could be less costly than fee acquisition. Only the rights necessary to management would be purchased. Less administrative time would be required than for cooperative agreements.



#### Limitations

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Substantial funding would be required. Possible management problems could be created where unforeseen needs arose, and where conditions must be enforced in an isolated situation with absentee landowners. The National Park Service could lack authority to enforce federal laws and regulations. Enforcement of easements must be through the courts, which would take time, money, and manpower. More administrative time would be required than fee acquisition. Easements might not be effective in controlling trespass uses. Local support would be required for easements to be effective.

Easements on Indian allotment lands would not provide a perpetual interest (beyond 25 years).

#### Social/Cultural Impacts

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Lack of familiarity with conditions, needs, and implications might create problems in purchasing or enforcing conditions. Absentee landowners would be difficult to contact when violations occurred. Absentee landowners would have to maintain closer contact with their land. Easements have limited application, so they are anticipated as having very limited social and cultural impacts. Traditional uses could be retained if somewhat more controlled (as in the case of grazing). If trespass uses could be controlled by this measure, more impacts would be felt by the trespassers.

Economic benefits could be realized through the sale of easements while retaining property and fee title. Additional public relation values could be realized. Money from easement sales would not stay in the local community because of absentee landowners.

Preservation of "Mother Earth" (Navajo folkway) should create positive cultural impacts.

#### Explanation of Criteria, Values, and Limits, and Requirements

in tracts where subsurface interest has been severed through retention by previous owner or sale by present owner, the National Park Service could acquire this interest. Acquisition could be by exchange, donation, or purchase. Where cultural and natural resource values and site density were moderate to high, public access was necessary, active resource management projects were necessary or anticipated, water-bled problems existed, or the rugged terrain would show pronounced scars as a result of mining, subsurface control without surface control would not be sufficient to fulfill management's need.

Any areas in the preservation of and special grouping are substances require subsurface protection. Two very special situations preclude subsurface activities: 1) Resource extraction cannot be undertaken immediately adjacent to an archeological site with standing masonry walls, such as the Ishkhin or Yen Bircala. Seismic and vibration from extraction-induced ground disturbance and subsidence could have a devastating effect on the trees and walls. 2) Many archeological sites are completely unrecognizable from the ground or to the overlying vegetation; for example, prehistoric underground reservoirs, water control features, and isolated kivas. Natural and man-made features have been completely obliterated or buried. Almost all areas of the park have a fairly density of this kind of site and have a great potential for this kind of site and have been determined to be areas that are not suitable for surface extraction.

#### Subsurface Acquisition

##### Protection of Park Resources

Used in conjunction with an applicable surface protection method, this would be a very effective tool (see limitations on this chart). Resource extraction activities have significant ground-disturbing effects. The resource values and the terrain character are not very compatible with the potential for resource extraction.

##### Benefits

Selective acquisition of subsurface rights would provide protection while keeping costs lower than fee acquisition. There would be no change in surface ownership right by this method alone.

The single greatest potential source of ground-disturbing activities would be eliminated.

## Estimation

Used solely, subsurface acquisition would have limited effects in preserving and protecting park resources because the surface owner would be free to construct roads and stock reservoirs, cultivate the soil, change drainage patterns, grant rights-of-way, and even excavate cultural resources. The National Park Service would gain no rights of access or protection powers over cultural or natural resources. Costs could be quite high for tracts with suspected mineral resources or unproven reserves; costs should be lower for other tracts. Combined with a surface protection method, costs could approach or exceed fair market value.

## Social/Cultural Impacts

Impacts on the local community and Nation people in general should all be positive because "Mother Earth" would be preserved.

Impacts on resource extraction companies could be perceived as negative because of loss of potential extraction areas. However, 1) no known reserves exist under any authorized lands, except in the Kin Ya'a area, 2) the likelihood that present economical reserves exist is slight from evidence gained from heavy exploration in the area (see "Ownership" section); and 3) extreme isolation and difficulties in extracting mineral resources make otherwise marginally economical deposits uneconomical in this area.

Positive impacts could be realized by companies through tax incentives, reduced lease costs, and free public relations, emphasizing that the company was attempting to preserve our national heritage while providing the necessary energy resources.

## Surface Acquisition

### Explanation--

#### Circumstances, Conditions, and Requirements

Exchange--exchange of land identified by the BLM outside the boundary. Payments or donations could be made to equalize values. This method would be possible on all authorized lands. PL 96-350 and state law make exchange the only acquisition possibility for state-owned lands. Federal law and tribal conditions make this and purchase the only realistic acquisition options. Management needs and resource conditions make some form of acquisition necessary for all lands within the preservation subzone.

Donation--acquisition of full or partial interest in tracts at less-than-market value. The donation could have substantial tax and other benefits. Donation would be possible on all tracts affected by this plan except Indian allotments. The tribe and state have given strong indication that they will not consider donations.

Purchase--outright acquisition of entire interest (subject to existing leases or subsurface interest). Negotiated sales would be for fair market value on a willing-seller basis. Purchase would potentially be possible on all tracts affected by this plan, the highest priority would be for lands in the preservation subzone. Purchase is not legally possible on Indian allotment lands.

Leaseback or Sellback--fee acquisition with subsequent lease or sale of certain acceptable interests back to an interested party. This would potentially be most useful for grazing rights in the special grazing use subzone. The same procedures and fees the Bureau of Land Management uses in the area could be adapted.

#### Protection of Park Resources

Exchange, donation, and purchase would have the same end result: complete land protection, provided that full fee interest was gained through donation. Surface acquisition would be the best means of controlling land uses and therefore accomplishing preservation and management. All federal laws and regulations could be enforced by local park rangers. Title and management responsibility would be vested in the federal government. This could be the only protection measure that would allow local managers to control trespass uses. Over the long range (50+ years), acquisition would be the least expensive land protection method for Chaco (administratively and outright costs) and the most effective in protecting park resources.

With leaseback or sellback, management goals and objectives could be accomplished while providing for acceptable traditional uses.

#### Benefits

Exchange would allow the National Park Service to obtain fee title. Both the park and the land interest owner could realize benefits to their particular needs.

Donation would result in little or no cost to the federal government. The National Park Service would obtain interest or title at much less than fair market value. Potential benefits to both the land interest holder and the National Park Service would result.

Through purchase, the federal government would obtain fee title for fair market value. As with exchange and donation, long-range management would be greatly facilitated.

The National Park Service would control leaseback or sellback to ensure that protection concerns were met while allowing for compatible productive uses of the land. More control would be possible than under easement interest.

#### Limitations

The exchange process would be lengthy, involved, and subject to problems along the way. A great deal of cooperation would be required between the land/interest holder, National Park Service, and Bureau of Land Management. Administrative costs of title insurance, surveys, etc., would be high.

The only perceived limitation of donation would be that partial interest donation might not fully meet management needs. This could be mitigated by working with the owner.

Purchase of lands would depend on the availability of appropriated funds. There is a legislative requirement to pursue other means first.

Leaseback or sellback could preclude public use on some tracts.

#### Social/Cultural Impacts

There are no residents on any authorized lands, so no people would be displaced because of acquisition through exchange, donation, or purchase. Adverse impacts could occur over the long term to trespass users. Economic impacts would be positive to the tribal exchanges were for lands that are not on the tax rolls or that are not subject to lease costs. Donations would have positive tax and other economic benefits. Exchanges and donations would have substantial public relations benefits. A negative economic impact could be displacement of some grazing as the National Park Service instituted range management procedures.

Ranchers and the community could potentially retain grazing interests on the park lands. Lease costs should remain similar to present costs. Adverse impacts could occur over the long term to lessees.



mandates where it is determined that preservation of the site and setting and visitor use are possible and desirable. If the protection measure does not accomplish both mandates, it is not a reasonable alternative under congressional direction.

## SOCIAL AND CULTURAL IMPACTS

The greatest social and cultural impacts are generally associated with fee acquisition. Even if this plan proposed fee acquisition of all tracts, the social and cultural impacts would be very slight when compared to many other national park system areas for the following reasons: 1) There are no residents on authorized lands, 2) all landowners are absentee, 3) authorized lands represent less than 1 percent of the largest landowner's total holdings, 4) authorized lands represent less than 1 percent of the region's lands available for native American traditional uses, and 5) land use is limited to grazing (and subsurface potential) on 76.1 percent of the authorized lands, and the remaining 23.9 percent is inaccessible. The land will support about one sheep or five cows per 264 acres per year without overgrazing.

Specific social/cultural impacts are addressed in table 3. Generally, positive impacts could be realized under each of the identified protection alternatives. Because there are no residents on any of the authorized lands, no one will be moved or displaced by any alternative. The primary, if not only, land use is traditional grazing by local Navajo or tribal ranches.

Options such as exchange, donation, purchase (willing seller), and partial interest purchase or donation can have substantial positive public relations values. Publicity concerning the transaction would largely be free and would undoubtedly emphasize the positive preservation and conservation benefits and the national public interests (see also "Social/Cultural/Economic Relationships").

## RECOMMENDATIONS

The recommendations in this Land Protection Plan are based on 1) the legislative intent and direction as established by PL 96-550, which requires the use of cooperative agreements wherever practicable; 2) the Department of Interior requirements to consider other than full fee acquisition when possible and to pursue exchanges or donations; 3) the resource analysis prepared for the General Management Plan; and 4) operational needs and concerns as addressed in the park's 1976 "Statement for Management" and the forthcoming resource management plan.

The Land Protection Plan proposes a protection strategy for recently authorized park lands that consists of acquisition through exchange, donation, or purchase and cooperative agreements. The plan was formulated with full consideration of the requirements of PL 96-550, and the purpose of all land protection actions is to protect, preserve, maintain, and administer the park's archeological resources regardless of whether title to a property is vested in the United States. In most cases where the plan recommends acquisition of private lands, state lands, or tribal trust, fee, or allotment lands, the recommended method of acquisition is exchange, utilizing existing federal properties under the jurisdiction of the secretary of the interior that are not managed by the National Park Service. One small parcel of privately owned land will be purchased in fee. Cooperative agreements will be used on one parcel where mineral production is occurring under an existing lease and as needed to administer grazing on federal lands within the boundary.

The park contains a total of 33,974.29 acres. The National Park Service currently manages 23,009.03 surface acres and 23,390.31 subsurface acres that are owned in fee by the federal government, including 2,239.68 acres that were administratively transferred to the Park Service by the Bureau of Land Management and Bureau of Indian Affairs following enactment of PL 96-550. The Land Protection Plan addresses the 10,965.26 surface acres and 10,583.98 subsurface acres that do not have an approved protection strategy. The basic protection methods for surface rights include acquisition of 10,885.26 acres through exchange or donation and acquisition of 80.00 acres (currently owned by the Archeological Conservancy) with appropriated funds. The plan also proposes to acquire subsurface interests through exchange and expiration of existing leases, except for a 160-acre tract within the Kin Ya'a unit that will be managed by means of a cooperative agreement. Controlled mineral extraction will be permitted on this tract following approval of a plan of operations from the energy company. The long-term goal is to acquire this subsurface interest after existing operations cease.

## RESOURCE ANALYSIS

As part of the park's General Management Plan, a resource analysis was undertaken in 1982 to provide quantifiable basic data on five aspects of

Chaco's resources: archeological values, watershed, visible areas, steep slopes, and visitor use. The data were prepared to assist managers in making land protection and land use decisions. In addition to these five resource categories, this Land Protection Plan used two other data bases: archeological site density and natural resources. Archeological sites were inventoried as part of the general management planning effort and natural resources as part of the data collection for the information base. Each of these seven data bases was evaluated for each quarter-section resource unit. Legal mandates, preservation of ecosystems, real estate practices, and state land considerations were also evaluated. Each of these considerations is discussed individually, along with the minimum criteria for recommending land protection strategies.

### Archeological Values

The archeological value score is an indication of the relative research value of the sites within a quarter-section as they relate to the Chaco story. Because all sites are equally susceptible to damage, erosion, vandalism, etc., this score is not an indication of the relative protection needs of an area. This score will necessarily increase as other sites of Chaco affiliation are destroyed or mitigated and as research perceptions change through time. Although comparable score data are not available for areas outside the park, site densities for the remainder of the San Juan Basin indicate that scores would be lower than the average (201) for the park. The first natural break in scores is at 160 sites per quarter-section or one per acre.

### Visible Areas

Areas that are visible from any one of the major visitor attractions--the major ruins--were identified through computer modeling and ground truthing. The results are expressed as a percentage of the area that is visible from one major attraction. Some sections are visible from more than one attraction, so scores over 100 percent are possible. It would be difficult to hide any development in a quarter-section that is more than one-third visible from an attraction. Therefore, visibility was used as the minimum criteria for recommending acquisition.

### Watershed

The percentage of area that drains into the main Chaco Wash above the confluence with the Escavada Wash was calculated for each quarter-section. The ability to completely manage the watershed is the most critical element in managing cultural resources at Chaco. Over the past five years, the Park Service has spent \$60,000 per year on watershed management to control erosion of cultural resources.

### Steep Slopes

Slopes over 25 degrees are generally accepted by land use planners as having too much potential for creating adverse impacts if developments or landscape modifications are undertaken. At Chaco, in the semiarid high desert environment, steep slopes that cover more than one-third of an area would have potential to cause severe adverse impacts to the remaining area through outwash, soil depletion, soil piping, siltation, and other residual effects.

### Visitor Use

Through an analysis of the trail system as proposed in the General Management Plan, each quarter-section was evaluated as to the percentage of area that would be used by hikers on trails.

### Archeological Site Density

The congressional intent in establishing Chaco Culture National Historical Park was to preserve a portion of the sites associated with this culture because they are nationally significant (that is, those sites within the boundaries of the park). The number of archeological sites per quarter-section was inventoried in 1982 and compared to the site density of inventoried portions of the San Juan Basin conducted in 1980 by Walter Wait of the National Park Service.

### Natural Resources

For the information base, an evaluation of natural resources requiring protection was undertaken in 1980 and was expressed as a score. This score does not indicate the full extent of the natural resources nor is it an absolute inventory of existing significant resources; rather it indicates the relative amount of management interest necessary to accomplish mandated protection. Legal protection for threatened or endangered species was considered as well as protection mandated by policy. Aesthetic considerations, habitat preservation, features or species of high visitor interest, and ecosystem preservation were all considered. Although complete natural resource inventories have yet to be done, these scores range up to 75 per quarter section.

## OTHER MANAGEMENT CONSIDERATIONS

### Legal Mandates

The congressional mandate of PL 96-550 is to administer the park in accordance with the provisions of law generally applicable to the administration of the national park system (sec. 506(a)). The primary



consideration here is the Park Service's general mandate to not allow activities in derogation of park values without specific authorization from Congress in the enabling legislation (16 USC 1, as amended). Because Chaco's legislation is silent on this issue, the Park Service must apply the general mandate and seek to gain control of all mineral rights. At the Kin Ya'a unit, mineral production operations predate the legislation and therefore will be allowed to continue under controls (see "Identification of Land Categories and Rationale for Protection" section of this plan and the GMP). This mandate has further ramifications when real estate practices are considered (see below).

### Ecosystem Preservation

The mesa tops and boxed canyons at Chaco represent relatively undisturbed, semiarid high desert ecosystems. These types of ecosystems are becoming increasingly threatened throughout the Southwest because of man's developments and activities. In the San Juan Basin there are almost no remaining undisturbed examples of these ecosystems--other than the few in this park. Interpretation of the archeological resources as they relate to the undisturbed environment is of critical importance (see discussion of potential for future research under "Resource Significance"). Every aspect of the environment at Chaco has potential relevance to interpreting the archeology, if left undisturbed. For example, prehistoric roads are much easier to identify in relatively undisturbed areas of the park. Disturbances of any kind tend to round down the contours of the edges of the roads and on slopes, causing gullying in the prehistoric roads.

### Accepted Real Estate Practices

It is considered bad practice to split estates (surface from subsurface) where they are not currently severed. Indeed, the biggest short-term management problems are on those lands where split estates exist. Because of the split estate and outstanding third-party interests, the Park Service must negotiate with three or more interested parties on those tracts, any one of whom can forestall protection goals or place requirements on the transfer of interests that may not be acceptable to the protection mandates of the park. Because Congress has required Chaco to be managed according to laws generally applicable to national park system units, the National Park Service will seek control of all mineral activities within the park boundary.

On those tracts recommended for acquisition that do not have split estates (16 tracts, 3,208.74 acres), the National Park Service will acquire the surface interests as a matter of course in acquiring the subsurface interests.



## State of New Mexico Lands

The state of New Mexico owns 1,769.50 acres within the park, which are currently managed by the State Land Office to provide revenues for the operation of state government programs through the granting of surface and subsurface leases. Because these lands contain numerous archeological sites and ranked high in the resource analysis undertaken as part of this planning project, the continuation of state leases could result in overgrazing and mineral development, with significant resource and visitor use impacts. The plan therefore recommends that all state lands be acquired through exchange to permit NPS control of land uses to meet resource protection needs.

## TRACT PROTECTION PRIORITIES

### Surface Priorities

First priority--all lands within the preservation subzone and adjoining lands where two or more of the following resource values are high: cultural resources, viewshed, watershed, steep slopes, visitor access, or natural resources

Second priority--lands within the special grazing use subzone with moderate to high cultural resource values and some watershed, viewshed, natural resource, or visitor access values

Third priority--all other lands

### Subsurface Priorities

First priority--all nonfederal oil, gas, and mineral ownerships within the park

Second priority--all leases formerly issued by BLM

Third priority--leases issued by BIA

## IDENTIFICATION OF LAND CATEGORIES AND RATIONALE FOR PROTECTION

The 1985 General Management Plan details the land categories (management zones) and the rationale for their protection. As applied to this Land Protection Plan, these categories are described briefly below (see also Management Zoning map).

The historic zone includes the entire main park unit and the three detached units. Management emphasis is on preservation, protection, and interpretation of the cultural resources and their setting. The cultural resources are found throughout the park, and the setting is closely

related to those resources. At present the protection of these resources and their setting is ensured only on federal (NPS) lands. Recommendations to provide some measure of protection are contained in the General Management Plan (through listing of the entire park on the National Register of Historic Places and through nomination to the World Heritage List) and in this Land Protection Plan (through various land protection measures).

Within the historic zone are four subzones:

Development subzone--All visitor use facilities and developments necessary to the operation of the park are contained in the development subzone. None of the lands affected by this Land Protection Plan are in this subzone.

Preservation subzone--In addition to the management goals for the historic zone as a whole, this subzone provides for the management, preservation, protection, and enhancement of natural resources to provide for visitor enjoyment. The most stringent protection available in law and regulation is used. This subzone comprises all of the former national monument plus Mockingbird Canyon.

Special grazing use subzone--In addition to the management goals for the historic zone as a whole, this subzone provides for management of natural and cultural resources while providing for continued grazing. Grazing is permitted pursuant to congressional direction in PL 96-550, sec. 506(d).

Grazing will be allowed to continue on all addition lands in the special grazing use subzone. Grazing on federal lands will be regulated by the National Park Service. Grazing arrangements will be negotiated with Navajo tribal officials or allottees during the land exchange process, and holders of grazing leases on lands transferred to the National Park Service by the BLM and BIA (2,240 acres) or lands owned by the state of New Mexico (1769 acres) will be allowed to continue to graze subject to signing cooperative agreements with the National Park Service. Certain regulations may be imposed by the National Park Service on grazing practices to assure protection of cultural and natural resources. Grazing in Mockingbird Canyon will be prohibited; this canyon has sensitive cultural resources, is in the primary visitor use area, and is not currently grazed because of access limitations. Residential use and dwellings will not be permitted on federal lands in the special grazing use subzone.

Special mineral and grazing use subzone--This is the smallest subzone and is located only in the Kin Ya'a detached area. Because of the existing mineral extraction activities--activities that predate PL 96-550--and because of the company's continued sensitivity to NPS resource protection concerns and their unprecedented efforts to map and avoid sensitive resources, it has been determined that Mobil Oil Company's Uranium Division will be permitted to continue their

resource extraction activities throughout the life of the existing project. Resource extraction will be subject to an approved operations plan. Grazing will be allowed to continue in this subzone. Upon completion of the current uranium extraction operations, the National Park Service will seek acquisition of the subsurface rights consistent with the policies contained in this plan.

## PROPOSED METHODS OF ACQUISITION

PL 96-550 mandates that exchanges be attempted before any other means of acquisition (sec. 505) and that cooperative agreements be pursued where possible. The draft 1984 plan recommended more extensive use of cooperative agreements and conservation easements, but during public and agency review of that plan, certain viewpoints were expressed that resulted in modification of the draft proposals. It is now the National Park Service's position that exchanges are the most feasible and desirable method of protection on the majority of the addition lands for the reasons discussed below. If an owner is willing, donations of lands or interests will of course be readily accepted.

Public and agency review of the draft plan resulted in the following changes to the proposed methods of protection. The Navajo tribal government specifically requested that the Park Service pursue exchange of all tribal fee and trust surface and subsurface interests for federal lands in the general vicinity of the park. After consultation with Navajo tribal officials, the Park Service determined that cooperative agreements and conservation easements would not provide adequate protection, and it changed the proposal to recommend exchange. The Park Service will also pursue exchanges on all allotment lands within the boundary. Some cooperative agreements will be established for park management purposes, such as control of grazing practices.

Acquisition by exchange of Navajo fee, trust, and allotment interests for lands outside the park may require negotiated agreements for the continuation of grazing for specified periods because the land received in exchange may already be leased for grazing, and leases may have to expire before the Navajos receiving the land can graze. Likewise, those Navajos involved in the exchange may want to continue to graze the existing land in the park until they can graze the newly received land. On exchange lands, valid existing subsurface oil, gas, and mineral leases may have to continue until lease periods expire before subsurface rights can be cleared. Management of all park lands acquired by the National Park Service through exchange will be subject to expiration of existing leases. The Navajo tribe has requested that all lands that it receives outside the park boundary in exchange for existing tribal trust or fee lands within the park be designated as tribal trustlands.

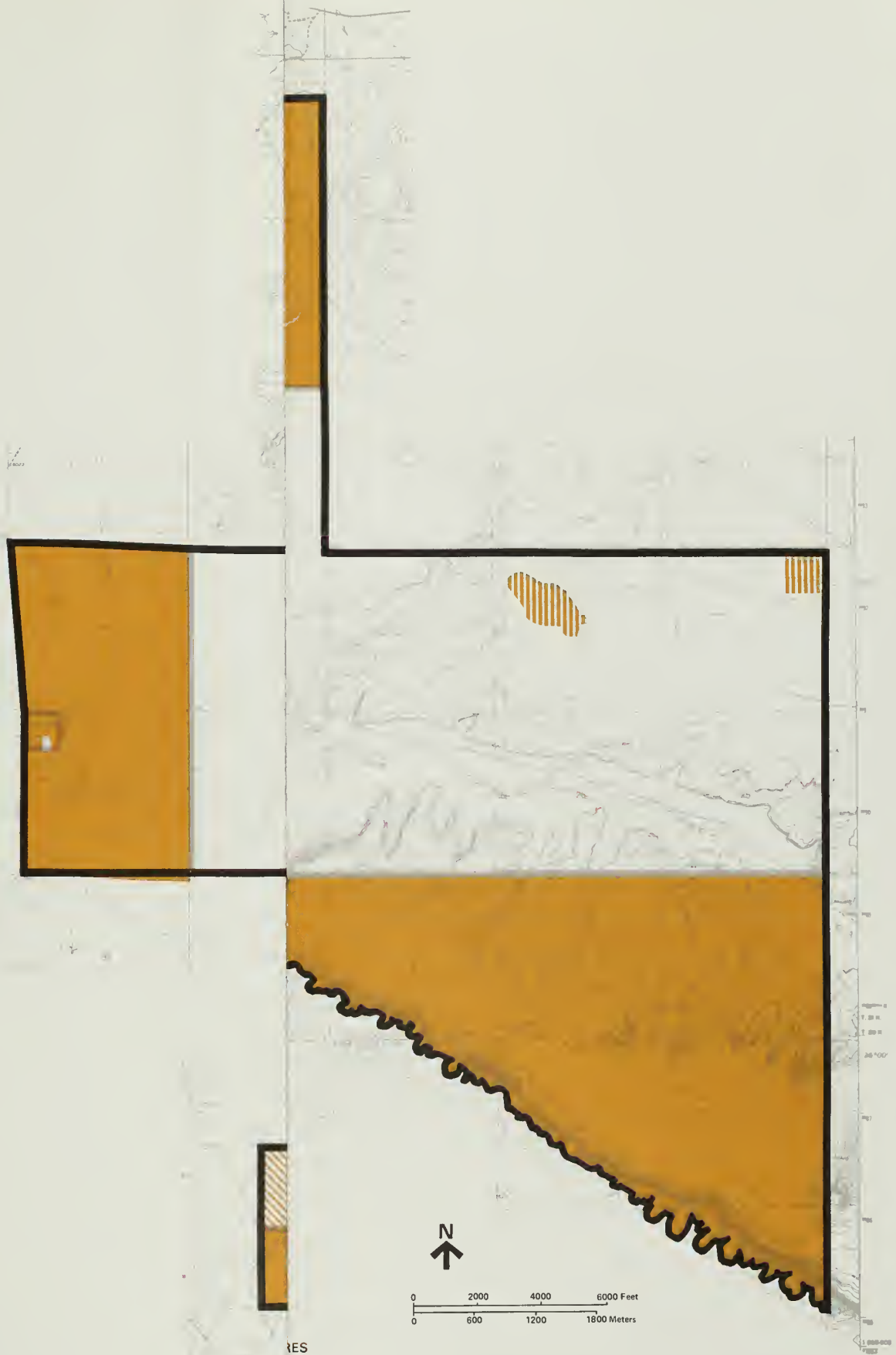
The draft plan proposal to acquire through exchange the Bureau of Land Management oil and gas leases within the park boundary was also modified. Following further review by the field solicitor and the Bureau of Land Management, the National Park Service was informed that

exchange of lessees' interests in federal oil and gas leases within Chaco Culture for the lessees' right to select an oil and gas lease of comparable value in the same general area outside the park is not authorized by PL 96-550 and would require specific congressional authorization. The recommendation in this final plan is to allow these leases to continue until they expire in 1990. If an energy company or private individual applies for an exploration or drilling permit, the National Park Service and Bureau of Land Management will control this potential activity through the use of 36 CFR Part 9B, Oil and Gas Operations Regulation 43 CFR 3160, and Onshore Oil and Gas Order 1.

If the recommendation for acquisition of certain rights through exchange or donation eventually proves to be unsuccessful, the Park Service may pursue additional cooperative agreements or memorandums of understanding to provide interim protection of park resources. The potential for additional mineral exploration within the park boundary exists, and there is some possibility of mineral or oil and gas extraction. The actual potential for mining or drilling activity is impossible to fully judge and is directly dependent on the national and world economies. The potential plans of energy companies are confidential, and their plans for exploration and development are unknown.

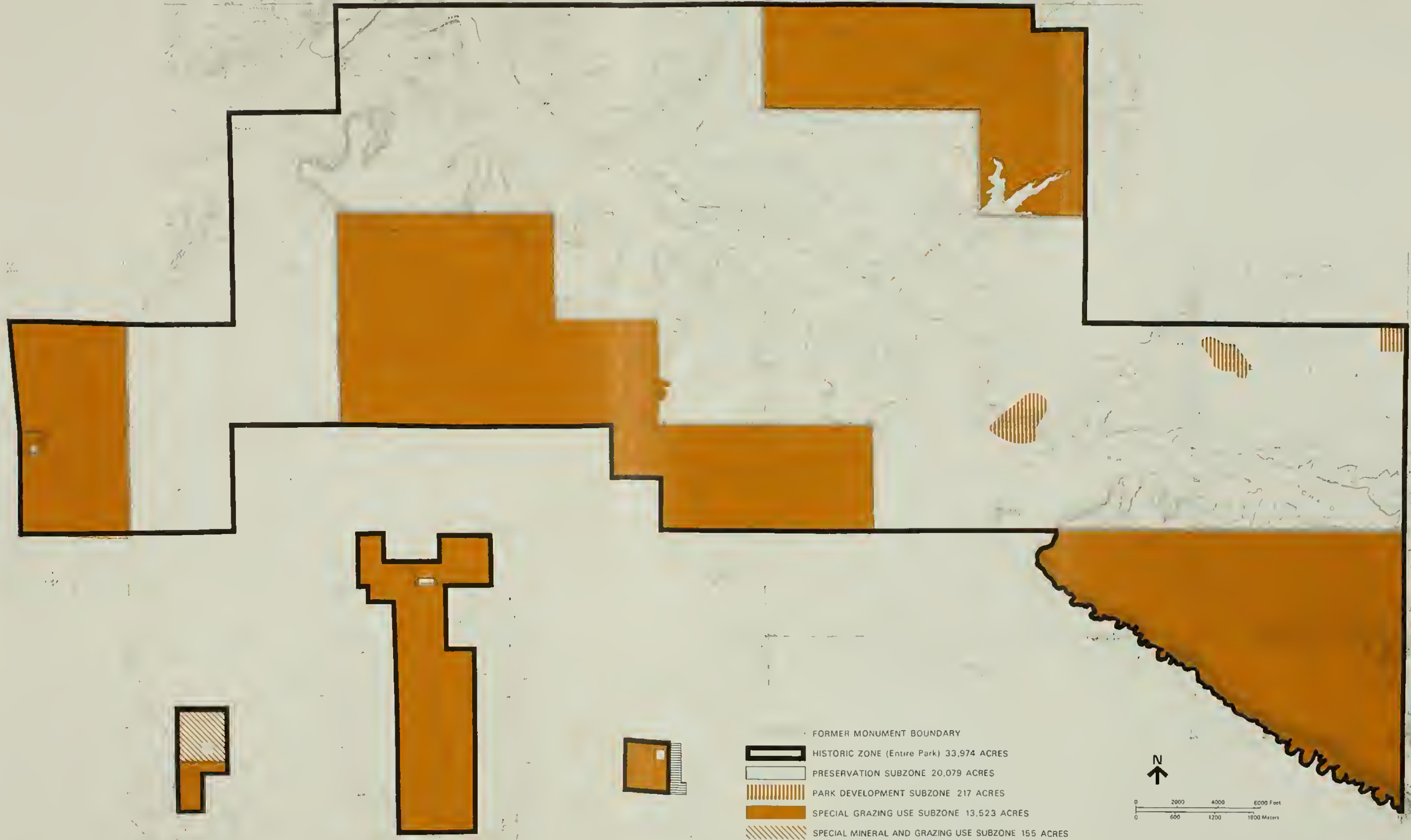
The purchase of subsurface interests will be considered a last resort and will only be proposed following a complete, site-specific resource analysis of probable mineral activity impacts on cultural and natural resources within the park.





# MANAGEMENT ZONING CHACO CULTURE NATIONAL HISTORICAL PARK UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE





KIN YA'A  
 KIN YA'A

KIN BINEOLA  
 KIN BINEOLA

PUEBLO PINTADO  
 PUEBLO PINTADO

Note: All lines that do not follow section lines follow identifiable natural barriers such as cliffs.

## APPENDIXES

# APPENDIX A: TRACT LISTINGS AND PROPOSED PROTECTION METHODS

## SURFACE OWNERSHIP

<u>Tract</u>	<u>Owner</u>	<u>Acreage</u>	<u>Proposed Protection Method*</u>	<u>Priority</u>
01-102	Hosteen Tah-be-kin Est. (allottee)	160.05	Acquire	First
01-152	Navajo Tribe	192.40	Acquire	First
01-154	State of New Mexico	640.00	Acquire	First
01-156	Atencio, Annabelle (allottee)	160.00	Acquire	First
01-157	Navajo Tribe Trustland	254.00	Acquire	First
01-158	Navajo Tribe	50.20	Acquire	First
01-159	State of New Mexico	449.50	Acquire	First
01-160	Navajo Tribe	880.00	Acquire	First
01-161	Fairchild, Bertha P.	80.00	Acquire	First
01-162	Archeological Conservancy	80.00	Acquire	First
01-163	Crampton, William E., et al.	39.51	Acquire	First
01-164	Navajo Tribe	39.59	Acquire	Third
01-165	Witten, Robert C. Tr.	119.68	Acquire	First
01-167	Navajo Tribe	3,360.00	Acquire	First
01-168	State of New Mexico	640.00	Acquire	First
01-169	Pablo, Bobby (allottee)	160.00	Acquire	First
01-170	Navajo Tribe Trustland	160.00	Acquire	Second
01-172	Na-ti-jen-ihl-got Est. (allottee)	160.00	Acquire	First
01-173	Navajo Tribe Trustland	640.00	Acquire	First
01-174	State of New Mexico	40.00	Acquire	First
01-175	Navajo Tribe Trustland	80.00	Acquire	Second
01-176	Navajo Tribe Trustland	448.30	Acquire	Second
01-177	Tsosee, Hostan (allottee)	80.00	Acquire	First
01-178	Na-gee-ha-bah Est. (allottee)	160.00	Acquire	First
01-179	Navajo Tribe Trustland	280.00	Acquire	Third
01-180	Ihl-kid-ez-bah (allottee)	80.00	Acquire	First
01-181	Martin, Edwin Est. (allottee)	160.00	Acquire	First
01-184	Navajo Tribe	135.40	Acquire	First
01-185	Navajo Tribe Trustland	558.65	Acquire	Second
01-186	Navajo Tribe	39.42	Acquire	Second
01-187	Navajo Tribe Trustland	638.56	Acquire	First
	Total	10,965.26		

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\*In all cases where acquisition is proposed, except for the 80-acre Archeological Conservancy property, exchanges or donations will be pursued.

## SUBSURFACE OWNERSHIP

<u>Tract</u>	<u>Owner</u>	<u>Acreage</u>	<u>Proposed Protection Method</u>	<u>Priority</u>
<u>Split Estate</u>				
01-104	Morris, J.O. Est. (OGM 50%)*	1,277.00	Acquire	First
01-151	Amsden, Larry (OGM 6.25%)	1,277.00	Acquire	First
02-101	Santa Fe Pacific R.R. Co. (OGM)	192.40	Acquire	First
02-106	Santa Fe Pacific R.R. Co. (OGM)	50.20	Acquire	First
02-113	Santa Fe Pacific R.R. Co. (OGM)	135.40	Acquire	First
02-116	Santa Fe Pacific R.R. Co. (OGM)	640.00	Acquire	First
02-120	First Church of Christ Sci. (OGM)	80.00	Acquire	First
02-129	Santa Fe Pacific R.R. Co. (OGM)	2,720.00	Acquire	First
02-131	Foster, De Esta (OGM 75%)	640.00	Acquire	First
02-148	Alessio, John, et ux. (OGM 25%)	640.00	Acquire	First
02-136	New Mexico & Arizona Land Co. (OGM)	640.00	Acquire	First
02-140	New Mexico & Arizona Land Co. (OGM)	401.23	Acquire	First
02-146	New Mexico & Arizona Land Co. (OGM)	120.00	Acquire	First
02-155	New Mexico & Arizona Land Co. (OGM)	80.00	Acquire	First
02-156	Na-Ti-Ta-Tes-Wot Est. (OGM)	160.00	Acquire	First
02-157	Unknown (OGM)	39.42	Acquire	First
02-158	Unknown (OGM)	39.59	Acquire	First
02-159	Unknown (OGM)	80.00	Acquire	First
02-160	Unknown (OGM)	80.00	Acquire	First
	Subtotal	7,375.24		
<u>Same Surface/Subsurface Owner</u>				
01-102	Hosteen Tah-be-kin Est. (allottee)	160.05	Acquire	First
01-154	State of New Mexico	640.00	Acquire	First
01-156	Atencio, Annabelle (allottee)	160.00	Acquire	First
01-159	State of New Mexico	449.50	Acquire	First
01-161	Fairchild, Bertha P.	80.00	Acquire	First
01-162	Archeological Conservancy	80.00	Acquire	First
01-163	Crampton, William E., et al.	39.51	Acquire	First
01-165	Witten, Robert C. Tr.	119.68	Acquire	First
01-168	State of New Mexico	640.00	Acquire	First
01-169	Pablo, Bobby (allottee)	160.00	Acquire	First
01-172	Na-ti-jen-ihl-got Est. (allottee)	160.00	Acquire	First
01-174	State of New Mexico	40.00	Acquire	First
01-177	Tsosee, Hostan (allottee)	80.00	Acquire	First
01-178	Na-gee-ha-bah Est. (allottee)	160.00	Acquire	First
01-180	Ihl-kid-ez-bah (allottee)	80.00	Acquire	First
01-181	Martin, Edwin Est. (allottee)	160.00	Acquire	First
	Subtotal	3,208.74		
	Total	10,583.98		

\*OGM = oil, gas, and minerals

# MINERAL LEASES ON BLM SUBSURFACE RIGHTS

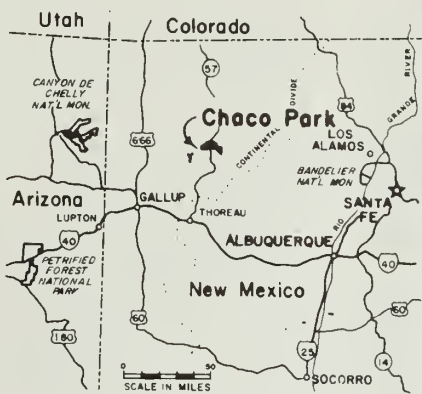
<u>Tract</u>	<u>Lessee</u>	<u>Acreage</u>	<u>Proposed Protection Method</u>	<u>Priority</u>
Note: Federal subsurface preexisting noncompetitive oil and gas leases closed to new entry under 1872 mining laws or leasing under the Mineral Leasing Act of 1920. These leases will expire by 1990 if production does not occur, and leases cannot be reissued after expiration.				
02-103	Seabrook Corp. (OG lease)	643.28	Acquire	Second
02-108	Champlin Petro. Co. (OG 50% lease)	798.00	Acquire	Second
02-109	Norcen Petro., Inc. (OG 25% lease)	798.00	Acquire	Second
02-110	Rowell, Dean W. (OG 12.5% lease)	798.00	Acquire	Second
02-111	Seabrook Corp. (OG 12.5% lease)	798.00	Acquire	Second
02-112*	TXO Production Corp. (OG 75% lease)	96.00	Acquire	Second
02-153*	Apcot-Finadel (J.V.) (OG 25% lease)	96.00	Acquire	Second
02-117*	Champlin Petro. Co. (OG 50% lease)	558.65	Acquire	Second
02-118*	Norcen Petro., Inc. (OG 25% lease)	558.65	Acquire	Second
02-119*	Seabrook Corp., et al. (OG 25% lease)	558.65	Acquire	Second
02-122	Champlin Petro Co. (OG 50% lease)	636.40	Acquire	Second
02-123	Norcen Petro., Inc. (OG 25% lease)	636.40	Acquire	Second
02-124	Seabrook Corp., et al. (OG 25% lease)	636.40	Acquire	Second
02-126*	Chambers, Merle C. (OG lease)	319.32	Acquire	Second
02-127*	TX Estrn. Skyline Oil (OG lease)	160.00	Acquire	Second
02-128*	TXO Production Corp. (OG 75% lease)	159.24	Acquire	Second
02-154*	Apcot-Finadel (OG 25% lease)	159.24	Acquire	Second
02-135	Champlin Petro Co. (OG 50% lease)	160.00	Acquire	Second
02-161	Chorney, Joan (OG 25% lease)	160.00	Acquire	Second
02-162	Norcen Petro Co. (OG 25% lease)	160.00	Acquire	Second
02-139*	Ross, Ruth (OG Lease)	47.07	Acquire	Second
02-143*	Robinson, Billi (OG 50% lease)	160.00	Acquire	Second
02-133*	Coleman Oil & Gas Co. (OG 50% lease)	160.00	Acquire	Second
	Total	3,737.96		

# MINERAL LEASES ON BIA SUBSURFACE RIGHTS

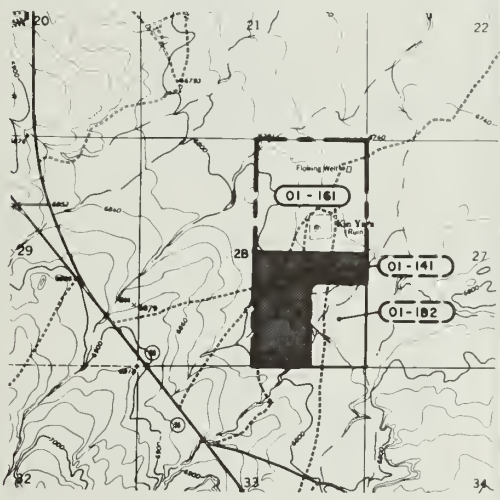
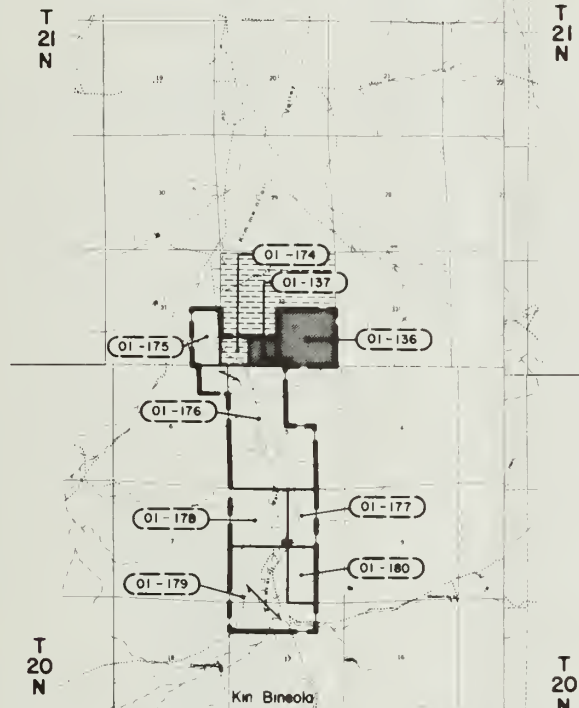
<u>Tract</u>	<u>Lessee</u>	<u>Acreage</u>	<u>Proposed Protection Method</u>	<u>Priority</u>
02-134	Mountain Fuel Supply Co. (BIA OG lease)	160.00	Acquire	Third
02-152	Mobil Oil Corp. (BIA mining lease)	160.00	Coop. Agreement	Third
	Total	320.00		

\*Federal minerals where surface rights are held by nonfederal owners





VICINITY



Kin Ya'a T. 17 N., R. 12 W.

DEED	TRACT	OWNER	ACRES	INT
WIT D-9	01-101	PUBLIC DOMAIN	479.75	FEE
	01-102	HOSTEEN TAH BE KIN EST.	160.06	FEE (2)
EXC D-11	01-103	UNIV OF NEW MEXICO	640.56	FEE
	01-104	SEE NOTE: (1)		
WIT D-9	01-105	PUBLIC DOMAIN	639.86	FEE
EXC D-1	01-106	SANTA FE PACIFIC RAILROAD CO.	639.52	FEE
WIT D-9	01-107	PUBLIC DOMAIN	640.00	FEE
EXC D-1	01-108	SANTA FE PACIFIC RAILROAD CO.	637.84	FEE
EXC D-11	01-109	UNIV OF NEW MEXICO	640.00	FEE
	01-110	SEE NOTE: (1)		
WIT D-9	01-111	PUBLIC DOMAIN	640.00	FEE
EXC D-1	01-112	SANTA FE PACIFIC RAILROAD CO.	640.00	FEE
WIT D-9	01-113	PUBLIC DOMAIN	640.00	FEE
EXC D-1	01-114	SANTA FE PACIFIC RAILROAD CO.	640.00	FEE
WIT D-9	01-115	PUBLIC DOMAIN	640.00	FEE
EXC D-11	01-116	UNIV OF NEW MEXICO	640.00	FEE
WIT D-9	01-117	PUBLIC DOMAIN	638.20	FEE
EXC D-11	01-118	UNIV OF NEW MEXICO	640.00	FEE
WIT D-9	01-119	PUBLIC DOMAIN	640.00	FEE
WIT D-9	01-120	PUBLIC DOMAIN	640.00	FEE
EXC D-2	01-121	SANTA FE PACIFIC RAILROAD CO.	640.00	FEE
WIT D-9	01-122	PUBLIC DOMAIN	640.00	FEE
EXC D-11	01-123	UNIV OF NEW MEXICO	640.00	FEE
WIT D-9	01-124	PUBLIC DOMAIN	640.00	FEE
EXC D-1	01-125	SANTA FE PACIFIC RAILROAD CO.	638.36	FEE
WIT D-10	01-126	PUBLIC DOMAIN	640.00	FEE
WIT D-9	01-127	PUBLIC DOMAIN	640.00	FEE
EXC D-1	01-128	SANTA FE PACIFIC RAILROAD CO.	636.96	FEE
	01-129	DELETED		
WIT D-9	01-130	PUBLIC DOMAIN	638.28	FEE
EXC D-2	01-131	SANTA FE PACIFIC RAILROAD CO.	640.00	FEE
WIT D-9	01-132	PUBLIC DOMAIN	640.00	FEE
EXC D-2	01-133	SANTA FE PACIFIC RAILROAD CO.	640.00	FEE
WIT D-9	01-134	PUBLIC DOMAIN	640.00	FEE
EXC D-2	01-135	SANTA FE PACIFIC RAILROAD CO.	640.00	FEE
WIT D-9	01-136	PUBLIC DOMAIN	160.00	FEE
WIT D-10	01-137	PUBLIC DOMAIN	40.00	FEE
WIT D-10	01-138	PUBLIC DOMAIN	160.00	FEE
WIT D-9	01-139*	PUBLIC DOMAIN	320.00	FEE
PL 96-550	01-140*	DELETED FROM CHCU (Never Acq.)		
WIT D-9	01-141	PUBLIC DOMAIN	160.00	FEE
WIT D-9	01-142	PUBLIC DOMAIN	495.00	FEE
COM D-12	01-143	U. N. M. & T. C. MILLER, et al	98.44	FEE
WIT D-9	01-144	PUBLIC DOMAIN	32.02	FEE
COM D-12	01-145	U. N. M. & T. C. MILLER, et al	14.54	FEE
DON D-4	01-146	COUNTY OF SAN JUAN	(0.92)	ROW
	01-147	SEE NOTE: (1)		
	01-148	SEE NOTE: (1)		
	01-149	SEE NOTE: (1)		
	01-150	SEE NOTE: (1)		
	01-151	SEE NOTE: (1)		
	01-152	NAVAJO TRIBE	192.40	FEE
TRA D-17	01-153	U. S. A.	643.28	FEE
	01-154	STATE OF NEW MEXICO	640.00	FEE
TRA D-17	01-155	U. S. A.	900.00	FEE
	01-156	ATENCIO, ANNABELLE	160.00	FEE (2)
	01-157	NAVAJO TRIBE TRUSTLAND	254.00	FEE
	01-158	NAVAJO TRIBE	50.20	FEE
	01-159	STATE OF NEW MEXICO	449.50	FEE
	01-160	NAVAJO TRIBE	880.00	FEE
	01-161	FAIRCHILD, BERTHA P.	80.00	FEE
	01-162	THE ARCHAEOLOGICAL CONS.	72.00	FEE
	01-163	CRAMPTON, WILLIAM E., et al	38.51	FEE
	01-164	NAVAJO TRIBE	33.59	FEE
	01-165	WITTEN, ROBERT C. TR.	119.68	FEE
TRA D-17	01-166	U. S. A.	636.40	FEE
	01-167	NAVAJO TRIBE	3360.00	FEE
	01-168	STATE OF NEW MEXICO	640.00	FEE
	01-169	PABLO, BOBBY	160.00	FEE (2)
	01-170	NAVAJO TRIBE TRUSTLAND	160.00	FEE
TRA D-17	01-171	U. S. A.	160.00	FEE
	01-172	NA TI JEN IHL GOT EST.	160.00	FEE (2)
	01-173	NAVAJO TRIBE TRUSTLAND	640.00	FEE
	01-174	STATE OF NEW MEXICO	40.00	FEE
	01-175	NAVAJO TRIBE TRUSTLAND	80.00	FEE
	01-176	NAVAJO TRIBE TRUSTLAND	448.30	FEE
	01-177	TSOSEE, HOSTAN	80.00	FEE (2)
	01-178	NA GLEE HA BAH EST.	160.00	FEE (2)
	01-179	NAVAJO TRIBE TRUSTLAND	280.00	FEE
	01-180	IHL KID EZ BAH	80.00	FEE (2)
	01-181	MARTIN, EDWIN EST.	160.00	FEE (2)
DIS TRA D-17	01-182	PUBLIC DOMAIN (To: B.L.M.)	760.00	FEE
DIS TRA D-17	01-183*	PUBLIC DOMAIN (To: B.L.M.)	3200.00	FEE
	01-184	NAVAJO TRIBE	135.40	FEE
	01-185	NAVAJO TRIBE TRUSTLAND	558.65	FEE
	01-186	NAVAJO TRIBE	39.42	FEE
	01-187	NAVAJO TRIBE TRUSTLAND	638.56	FEE

\* Deleted from CHCU. Not Shown on Graphic.

\* Deleted from CHCU, Not Shown on Graphic

NOTE: (1) Mineral Tracts Formerly Shown On This Segment Are Now Depicted On SUBSURFACE STATUS SEGMENT 02

(2) Navajo Indian Tribal Allottees

OGM Reference Should Be Made To SUBSURFACE STATUS SEGMENT 02 For Outstanding Oil Gas And Mineral Interests Which Are Severed From Surface Ownership.

## CHACO CULTURE NATIONAL HISTORICAL PARK

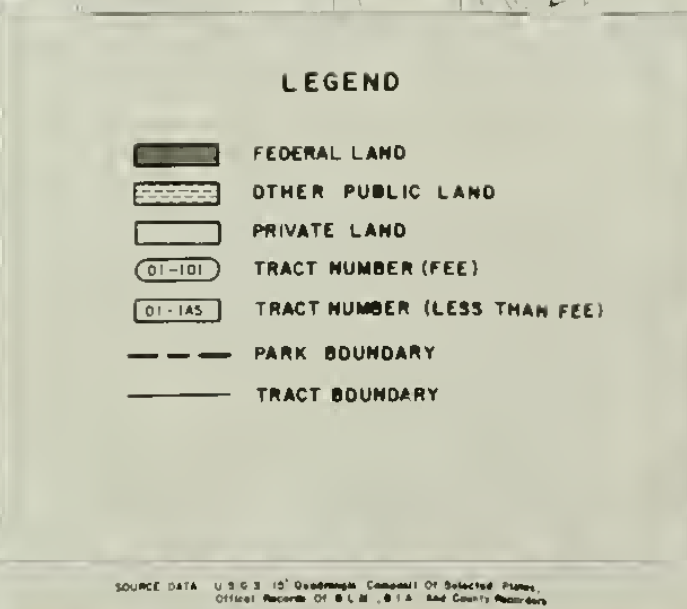
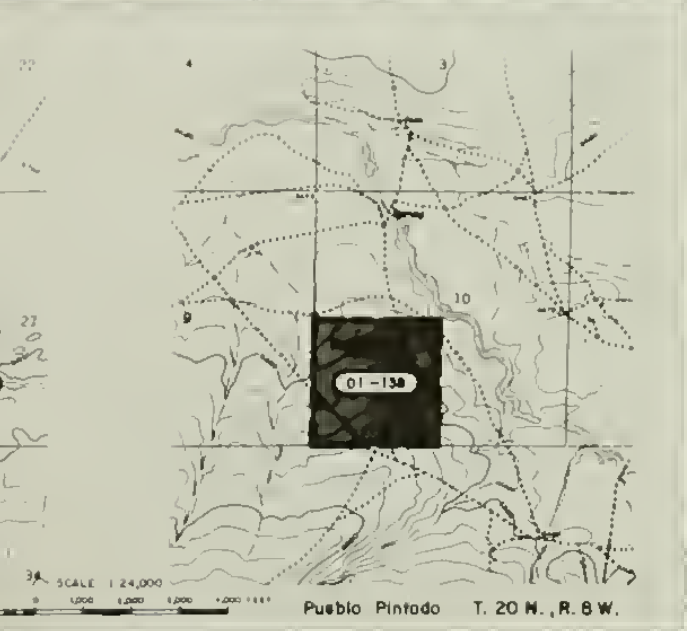
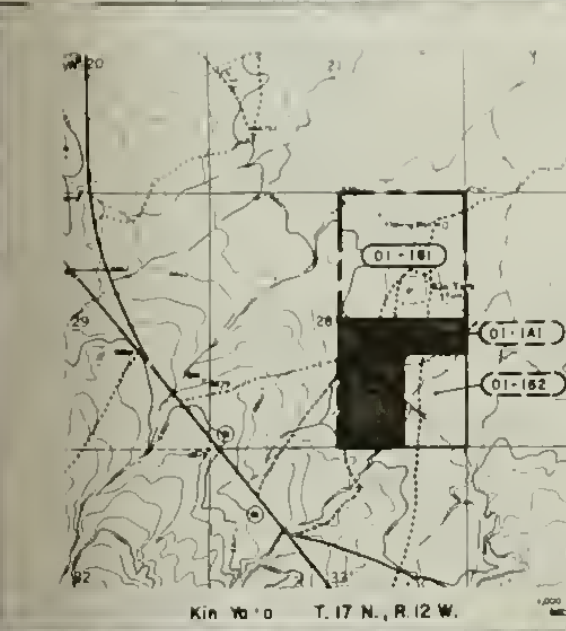
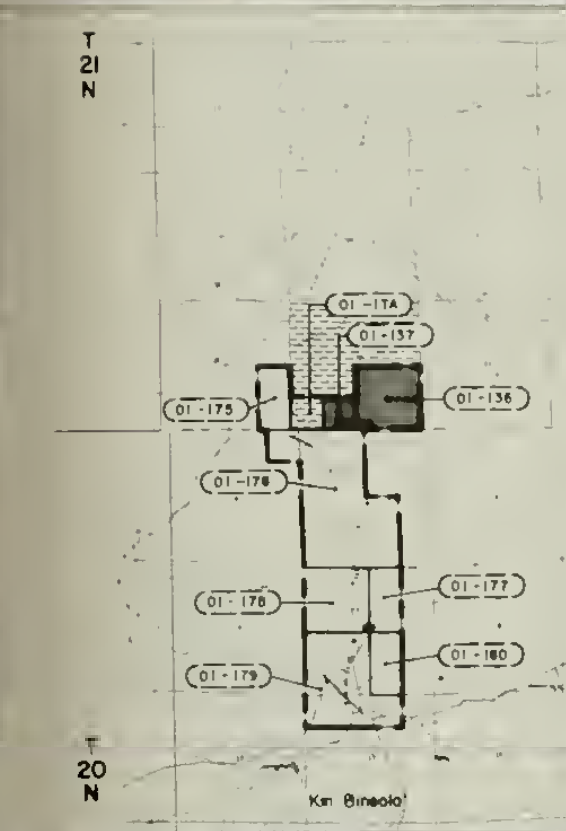
MCKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

SURFACE STATUS SEGMENT 01

8-03-82	C.O. 4-82, Add 183
8-25-82	C.O. 2-82, Pa. Del. No. 9, 17 Cg. 140, 182
3-30-82	C.O. 1-82, Del. No. 141, Add 182, 183
3-11-82	Survey Revision Tr. 143, 144, 145
2-5-82	Redrawn, P.L. 96-550
2-17-81	C.O. 14-77
6-22-77	C.O. 8-77
4-5-77	C.O. 8-77
4-20-76	C.O. 4-76
9-11-72	N.C. 129, Add 147
3-1-83	C.O. 1-83 N.C. 182
4-10-85	C.O. 310-1-85 thru 310-11-85
2-23-84	C.O. 1-84 Ac. Ch. 176
12-21-83	C.O. 8-83 Ac. Ch. 176
12-2-83	C.O. 3-83 N.C. 170
3-1-83	C.O. 1-83 N.C. 182

ESTABLISHES  
FORMER  
BOUNDARIES  
DATE: PL  
SERVICE  
MAPPED RESOURCES





DEED	TRACT	OWNER	ACRES	INT
WIT 0-9	01-101	PUBLIC DOMAIN	479.75	FEE
EXC 0-11	01-102	HOSTEEN TAH BE KIM EST.	180.00	FEE (2)
	01-103	UNIV OF NEW MEXICO	640.00	FEE
	01-104	SEE NOTE (1)		
WIT 0-9	01-105	PUBLIC DOMAIN	639.88	FEE
EXC 0-1	01-106	SANTA FE PACIFIC RAILROAD CO	639.52	FEE
WIT 0-9	01-107	PUBLIC DOMAIN	640.00	FEE
EXC 0-1	01-108	SANTA FE PACIFIC RAILROAD CO	637.84	FEE
EXC 0-11	01-109	UNIV OF NEW MEXICO	640.00	FEE
	01-110	SEE NOTE (1)		
WIT 0-9	01-111	PUBLIC DOMAIN	640.00	FEE
EXC 0-1	01-112	SANTA FE PACIFIC RAILROAD CO	640.00	FEE
WIT 0-9	01-113	PUBLIC DOMAIN	640.00	FEE
EXC 0-1	01-114	SANTA FE PACIFIC RAILROAD CO	640.00	FEE
WIT 0-9	01-115	PUBLIC DOMAIN	640.00	FEE
EXC 0-11	01-116	UNIV OF NEW MEXICO	640.00	FEE
WIT 0-9	01-117	PUBLIC DOMAIN	636.20	FEE
EXC 0-11	01-118	UNIV OF NEW MEXICO	640.00	FEE
WIT 0-9	01-119	PUBLIC DOMAIN	640.00	FEE
WIT 0-9	01-120	PUBLIC DOMAIN	640.00	FEE
EXC 0-2	01-121	SANTA FE PACIFIC RAILROAD CO	640.00	FEE
WIT 0-9	01-122	PUBLIC DOMAIN	640.00	FEE
EXC 0-11	01-123	UNIV OF NEW MEXICO	640.00	FEE
WIT 0-9	01-124	PUBLIC DOMAIN	640.00	FEE
EXC 0-1	01-125	SANTA FE PACIFIC RAILROAD CO	638.36	FEE
WIT 0-10	01-126	PUBLIC DOMAIN	640.00	FEE
WIT 0-9	01-127	PUBLIC DOMAIN	640.00	FEE
EXC 0-1	01-128	SANTA FE PACIFIC RAILROAD CO	636.96	FEE
	01-129	DELETED		
WIT 0-9	01-130	PUBLIC DOMAIN	638.28	FEE
EXC 0-2	01-131	SANTA FE PACIFIC RAILROAD CO	640.00	FEE
WIT 0-9	01-132	PUBLIC DOMAIN	640.00	FEE
EXC 0-2	01-133	SANTA FE PACIFIC RAILROAD CO	640.00	FEE
WIT 0-9	01-134	PUBLIC DOMAIN	640.00	FEE
EXC 0-2	01-135	SANTA FE PACIFIC RAILROAD CO	640.00	FEE
WIT 0-9	01-136	PUBLIC DOMAIN	160.00	FEE
WIT 0-10	01-137	PUBLIC DOMAIN	40.00	FEE
WIT 0-10	01-138	PUBLIC DOMAIN	160.00	FEE
WIT 0-9	01-139	PUBLIC DOMAIN	320.00	FEE
PL 96-550	01-140	DELETED FROM CHCU (Never Acq)		
WIT 0-9	01-141	PUBLIC DOMAIN	160.00	FEE
WIT 0-9	01-142	PUBLIC DOMAIN	495.00	FEE
COM 0-12	01-143	U N M B T C MILLER, et al	98.44	FEE
WIT 0-9	01-144	PUBLIC DOMAIN	32.02	FEE
COM 0-12	01-145	U N M B T C MILLER, et al	1A.54	FEE
DOM 0-4	01-146	COUNTY OF SAN JUAN	10.92	ROW
	01-147	SEE NOTE (1)		
	01-148	SEE NOTE (1)		
	01-149	SEE NOTE (1)		
	01-150	SEE NOTE (1)		
	01-151	SEE NOTE (1)		
	01-152	NAVAJO TRIBE	192.40	FEE
TRA 0-17	01-153	U S A	643.28	FEE
	01-154	STATE OF NEW MEXICO	640.00	FEE
TRA 0-17	01-155	U S A	800.00	FEE
	01-156	ATENCIO, ANNABELLE	180.00	FEE (2)
	01-157	NAVAJO TRIBE TRUSTLAND	254.00	FEE
	01-158	NAVAJO TRIBE	30.20	FEE
	01-159	STATE OF NEW MEXICO	44.850	FEE
	01-160	NAVAJO TRIBE	880.00	FEE
	01-161	FAIRCHILD, BERTHA P	80.00	FEE
	01-162	THE ARCHAEOLOGICAL COMS	7.00	FEE
	01-163	CRAWFORD, WILLIAM E, et al	38.51	FEE
	01-164	NAVAJO TRIBE	39.59	FEE
	01-165	WITTEN, ROBERT C TR	11.868	FEE
TRA 0-17	01-166	U S A	636.40	FEE
	01-167	NAVAJO TRIBE	3340.00	FEE
	01-168	STATE OF NEW MEXICO	640.00	FEE
	01-169	PABLO, BOBBY	160.00	FEE (2)
TRA 0-17	01-170	NAVAJO TRIBE TRUSTLAND	160.00	FEE
	01-171	U S A	160.00	FEE
	01-172	NA TI JEN IHL BOT EST	160.00	FEE (2)
	01-173	NAVAJO TRIBE TRUSTLAND	640.00	FEE
	01-174	STATE OF NEW MEXICO	40.00	FEE
	01-175	NAVAJO TRIBE TRUSTLAND	80.00	FEE
	01-176	NAVAJO TRIBE TRUSTLAND	448.30	FEE
	01-177	TSOSEE, MOSTAN	60.00	FEE (2)
	01-178	NA GLEE HA BAH EST	180.00	FEE (2)
	01-179	NAVAJO TRIBE TRUSTLAND	280.00	FEE
	01-180	IHL KIOEZ BAH	60.00	FEE (2)
	01-181	MARTIN, EDWIN EST	160.00	FEE (2)
DIS TRA 0-17	01-182	PUBLIC DOMAIN (To BLM)	60.00	FEE
DIS TRA 0-17	01-183	PUBLIC DOMAIN (To BLM)	320.00	FEE
	01-184	NAVAJO TRIBE	135.40	FEE
	01-185	NAVAJO TRIBE TRUSTLAND	558.65	FEE
	01-186	NAVAJO TRIBE	39.42	FEE
	01-187	NAVAJO TRIBE TRUSTLAND	638.58	FEE

\* Deleted from CHCU, Not Shown on Graphic

NOTE (1) Mineral Tracts Formerly Shown On This Segment Are Now Depicted On SUBSURFACE STATUS SEGMENT 02

(2) Navajo Indian Tribal Allotment

OGM Reference Should Be Made To SUBSURFACE STATUS SEGMENT 02 For Outstanding Oil Gas And Mineral Interests Which Are Severed From Surface Ownership

**CHACO CULTURE NATIONAL HISTORICAL PARK**  
McKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

**SURFACE STATUS SEGMENT 01**

DATE	REVISIONS	DATE	REVISIONS
8-10-83	C.O. 340-1-85 New 340-11-85	8-10-83	C.O. 340-1-85 New 340-11-85
8-23-84	C.O. 340-1-85 New 340-11-85	8-23-84	C.O. 340-1-85 New 340-11-85
10-21-85	C.O. 340-1-85 New 340-11-85	10-21-85	C.O. 340-1-85 New 340-11-85
12-2-85	C.O. 340-1-85 New 340-11-85	12-2-85	C.O. 340-1-85 New 340-11-85
3-1-85	C.O. 340-1-85 New 340-11-85	3-1-85	C.O. 340-1-85 New 340-11-85

ESTABLISHED, DECEMBER 19, 1980  
FORMERLY CHACO NATIONAL MONUMENT  
BOUNDARY CHANGE

DATE, FEBRUARY 1982

MAPPED BY ROUTHWEET REGION  
DIVISION OF LAND RESOURCES

NEW MEXICO PRINCIPAL MERIDIAN

SCALE 1:48,000

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

DRAWING NO 310  
50,048-1

SHEET 1 OF 16



# VICINITY

10 W.

# LEGEND



Public Domain, Transferred To N.P.S. April, 1981



Lands To Be Acquired Through Exchange



See Segments 01 & 02 for Land Status

T 21 N

T 21 N

T 20 N

T 20 N

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

SOURCE DATA: U.S.G.S. 15' Quadrangle Composit  
Reduction Of Selected Plates  
ESTABLISHED: Public Law 96-550, Dec. 19, 1980  
Formerly Chaco National Monument

## CHACO CULTURE ATIONAL HISTORICAL PARK

McKINLEY & SAN JUAN COUNTIES  
NEW MEXICO



NEW MEXICO PRINCIPAL MERIDIAN

Drawn by M.S./J.P.

CHCU 80,048-B  
FEB. 1984 SWR

Revised 6/6/85



# VICINITY



R. 12 W.

R. 11 W.

R. 10 W.

## LEGEND

- Public Domain, Transferred To N.P.S. April, 1981
- Lands To Be Acquired Through Exchange
- See Segments 01 & 02 for Land Status

T 21 N

T 21 N

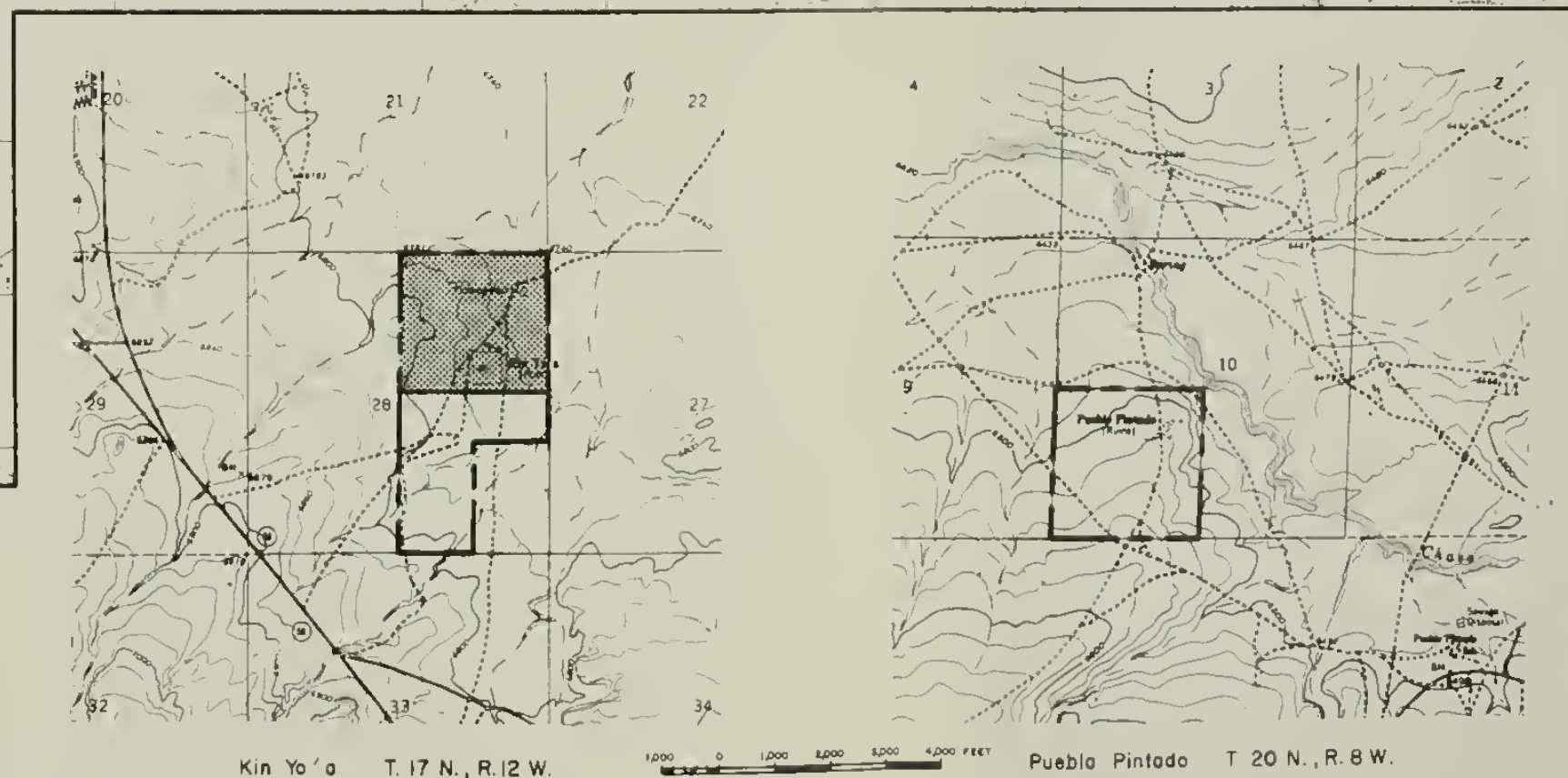
T 20 N

T 20 N

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

SOURCE DATA: U.S.G.S. 15' Quadrangle Composit  
Reduction Of Selected Plates  
ESTABLISHED: Public Law 96-550, Dec. 19, 1980  
Formerly Chaco National Monument

CHCU 80.048-B Revised 6/6/85  
FEB. 1984 SWR



Kin Yo'a T. 17 N., R. 12 W.

Pueblo Pintado T. 20 N., R. 8 W.

## CHACO CULTURE NATIONAL HISTORICAL PARK

MCKINLEY & SAN JUAN COUNTIES  
NEW MEXICO



NEW MEXICO PRINCIPAL MERIDIAN

Drawn by M.S.P.P.



# LEGEND

Federal Subsurface, Closed to new entry under 1872 mining laws or leasing under either the Mineral Leasing Act of 1920 or the Mineral Leasing Act for Acquired Lands.

Federal Subsurface, Subject to preexisting non-competitive Federal Oil & Gas leases, Closed to new entry under 1872 mining laws or leasing under either the Mineral Leasing Act of 1920 or the Mineral Leasing Act for Acquired Lands.

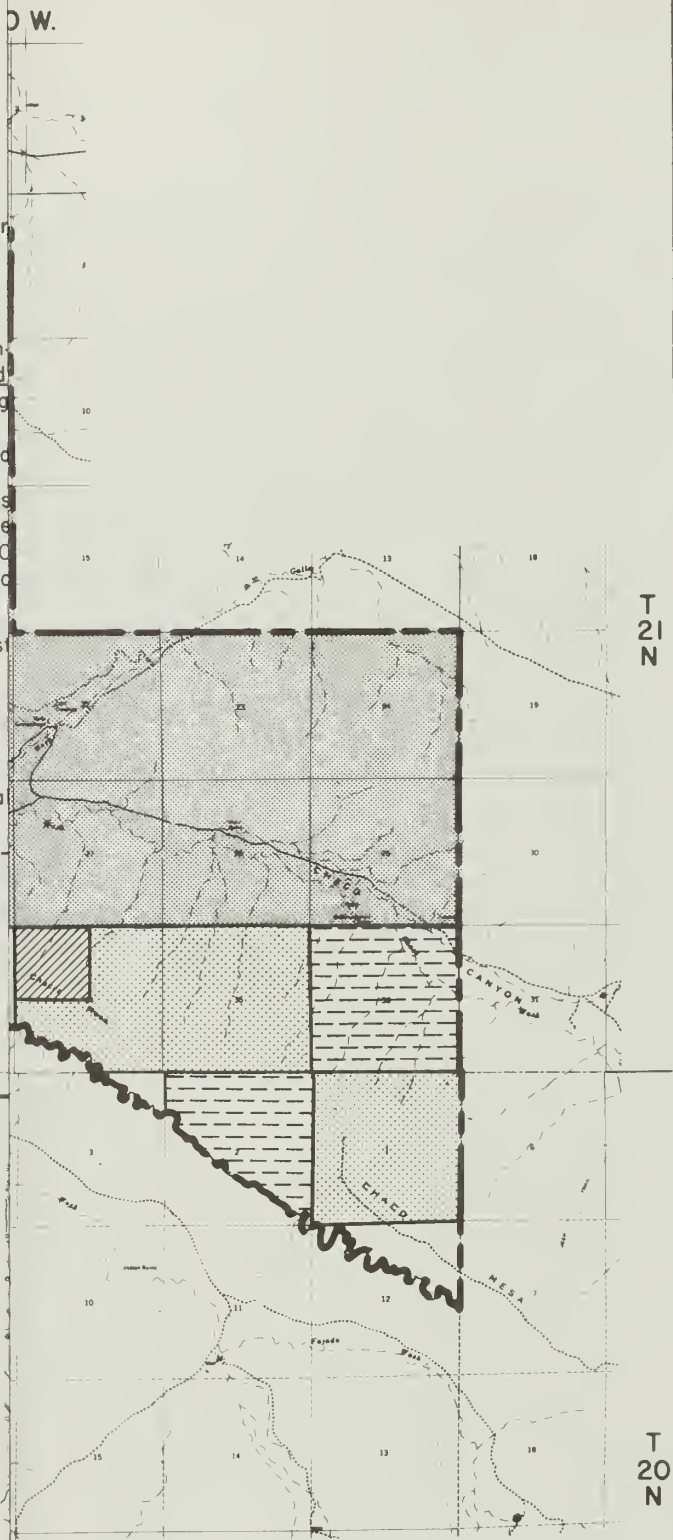
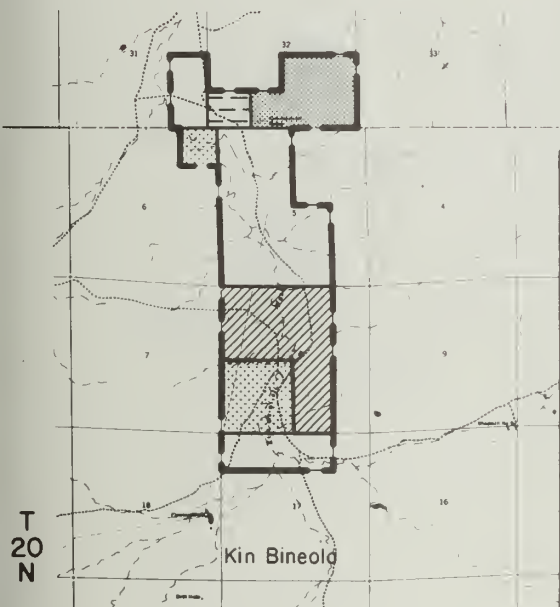
Navajo Indian Tribe, Navajo Indian Tribe Trust or Tribal Allottee, Open to new entry under Tribal Mining Act of May 11, 1938, Tribal Oil & Gas Leasing Act of May 29, 1924, and Allotment Mining Act of March 3, 1909.

Navajo Indian Tribal Allottee, Subject to Existing Oil & Gas Lease or Mining Lease.

State of New Mexico, Open to entry under State Leasing Authority.

Private Subsurface, Subject to Existing Mineral Lease.

Private Subsurface, Open to entry under private purchase or lease.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

SOURCE DATA: U.S.G.S. 15' Quadrangle Composite  
Reduction Of Selected Plates

ESTABLISHED: Public Law 96-350, Dec. 19, 1980  
Formerly Chaco National Monument

CHCU 80,050-A  
DEC. 1983 | SWR

Revised 6/6/85

## CHACO CULTURE NATIONAL HISTORICAL PARK

MCKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

SCALE: 1:48,000


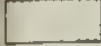
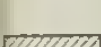



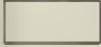


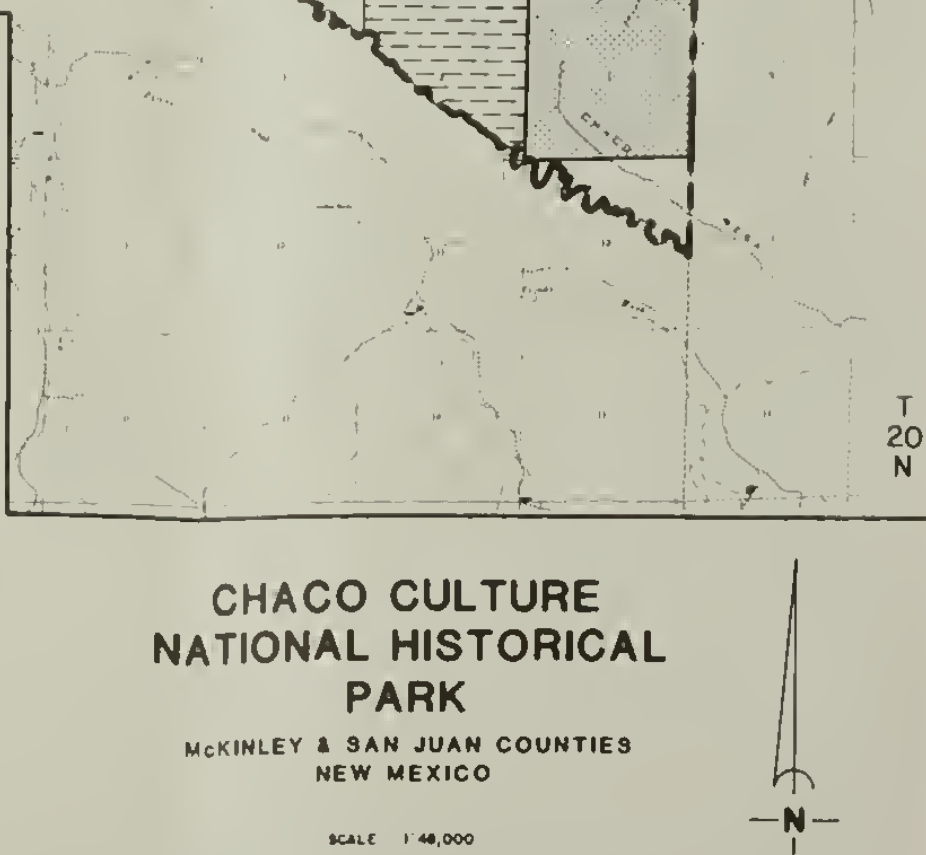
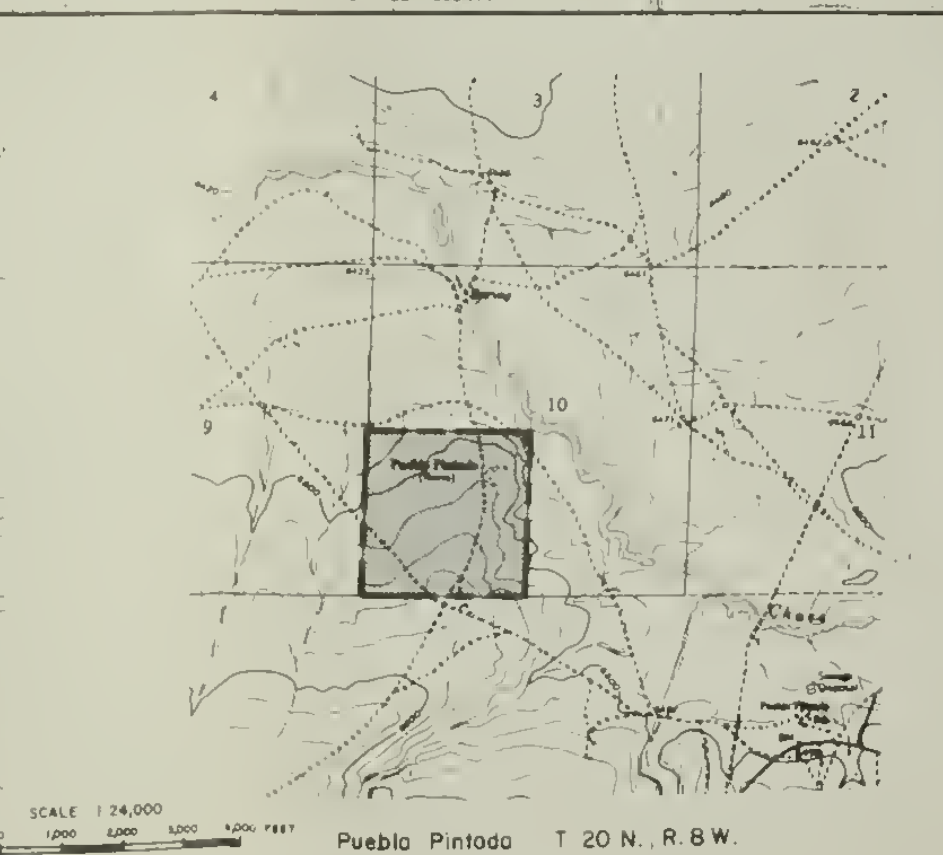
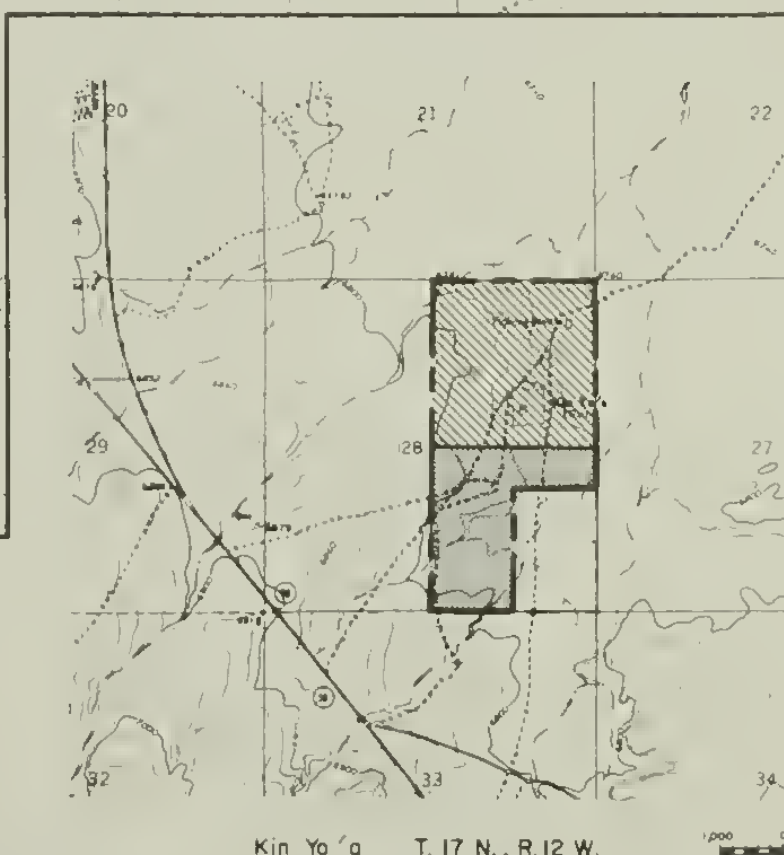
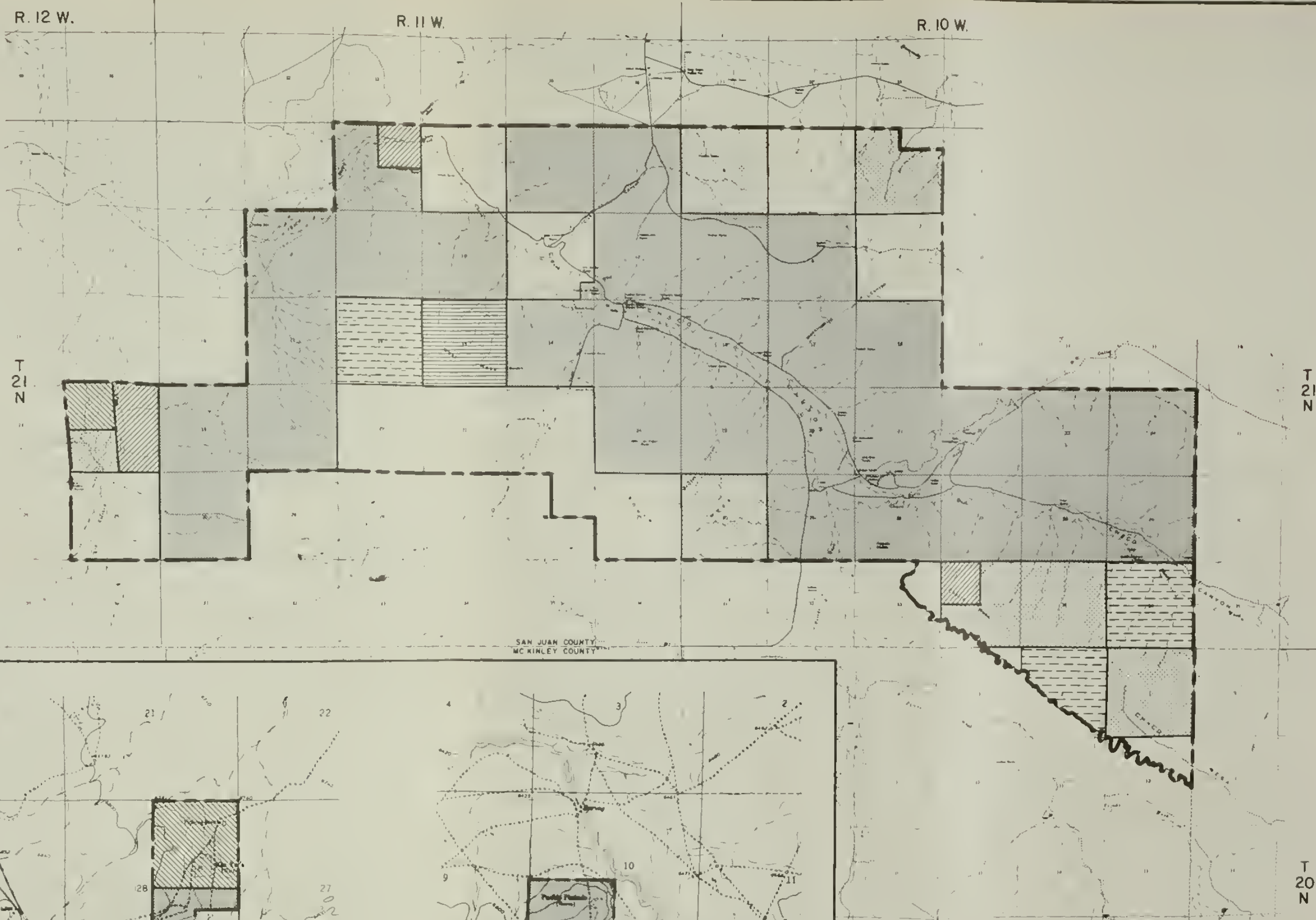
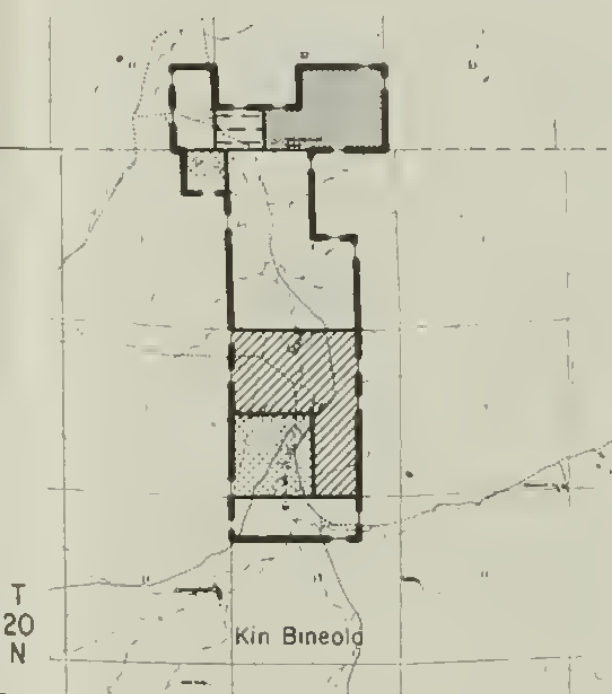
NEW MEXICO PRINCIPAL MERIDIAN





# LEGEND

-  Federal Subsurface, Closed to new entry under 1872 mining laws or leasing under either the Mineral Leasing Act of 1920 or the Mineral Leasing Act for Acquired Lands.
-  Federal Subsurface, Subject to preexisting non-competitive Federal Oil & Gas leases, Closed to new entry under 1872 mining laws or leasing under either the Mineral Leasing Act of 1920 or the Mineral Leasing Act for Acquired Lands.
-  Navajo Indian Tribe, Navajo Indian Tribe Trustland or Tribal Allottee, Open to new entry under Tribal Mining Act of May 11, 1938, Tribal Oil & Gas Leasing Act of May 29, 1924, and Allottee Mining Act of March 3, 1909.
-  Navajo Indian Tribal Allottee, Subject to Existing Oil & Gas Lease or Mining Lease
-  State of New Mexico, Open to entry under State Leasing Authority.
-  Private Subsurface, Subject to Existing Mineral Lease
-  Private Subsurface, Open to entry under private purchase or lease.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

SOURCE DATA U.S.G.S. 15' Quadrangle Composite  
Reduction Of Selected Plates  
ESTABLISHED Public Law 96-550, Dec. 19, 1980  
Formerly Chaco National Monument

Kin Ya'o T. 17 N., R. 12 W.

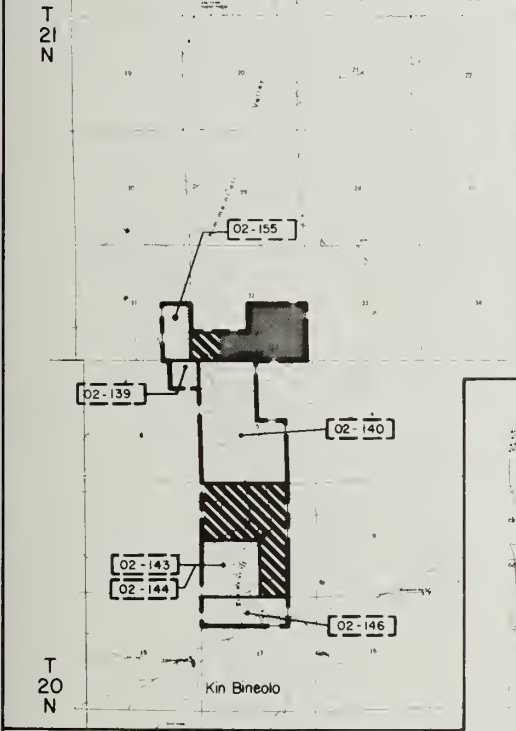
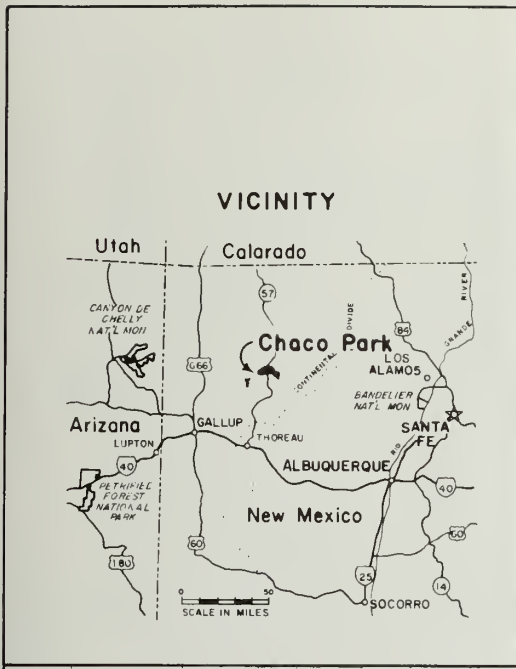
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1,000 0 1,000 2,000 3,000 4,000 FEET

Pueblo Pintado T. 20 N., R. 8 W.

CHACO CULTURE  
NATIONAL HISTORICAL  
PARK  
MCKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

SCALE 1:48,000  
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NEW MEXICO PRINCIPAL MERIDIAN

## GENERAL SUBSURFACE OWNERSHIP STATUS



Recordation	Deed-U.S.	Tract	Owner - Lessee	Acres	Interest
	PUR D-15	01-104 01-110 01-147	MORRIS, J. O., E5T AMSDEN, THEODORE P., et ux DELETED (SEE 02-136)	1277.00 1277.00	OGM 50% OGM 12.5%
	PUR D-14	01-148	FIRST NAT BANK OF IOWA CTY, TR	1277.00	OGM 12.5%
	PUR D-13	01-149	HALL, GAIL A., E5T	1277.00	OGM 12.5%
	PUR D-16	01-150 01-151	AMSDEN, CHARLES W., et ux AMSDEN, LARRY	1277.00 1277.00	OGM 6.25% OGM 6.25%
8K 51 PG 705 NMMC-0815-23 NM-35308		02-101 02-102 02-103 02-104 02-105	SANTA FE PACIFIC RAILROAD CO DELETED(Relinquished 1-25-83) SEABROOK CORP DELETED DELETED	192.40 643.28	OGM OG LEASE
8K 51 PG 705 NMMC-10247-64 NM-36351 NM-36351 NM-36351 NM-36105 8K 51 PG 705		02-106 02-107 02-108 02-109 02-110 02-111 02-112 02-113 02-114 02-115	SANTA FE PACIFIC RAILROAD CO DELETED(Relinquished 7-21-81) CHAMPLIN PETROLEUM CO NORCEN PETROLEUM INC ROWELL, DEAN W SEABROOK CORP. TXO PRODUCTION CORP SANTA FE PACIFIC RAILROAD CO DELETED DELETED	50.20 798.00 798.00 798.00 96.00 135.40	OGM OG 50% LE OG 25% LE OG 12.5% LE OG 12.5% LE OG 75% LE OGM
8K 51 PG 705 NM-36579 NM-36579 NM-36579 8K 558 PG 291 NMMC-16709-44 NM-36579 NM-36579 NMMC-10211-246 NM-35117 NM-33386 NM-36105 8K 51 PG 705 NMMC-10301-336 8K 561 PG 31		02-116 02-117 02-118 02-119 02-120 02-121 02-122 02-123 02-124 02-125 02-126 02-127 02-128 02-129 02-130 02-131 02-132 02-133 02-134 02-135 02-136 02-137 02-138 02-139 02-140 02-141 02-142 02-143 02-144 02-145 02-146 02-147 02-148 02-149	SANTA FE PACIFIC RAILROAD CO CHAMPLIN PETROLEUM CO., et al NORCEN PETROLEUM CO SEABROOK CORP., et al FIRST CHURCH OF CHRIST 5CICORP DELETED(Relinquished 1-25-83) CHAMPLIN PETROLEUM CO., et al NORCEN PETROLEUM CO. SEABROOK CORP. et al DELETED(Relinquished 4-22-82) CHAMBERS, MERLE C TX ESTRN SKYLINE OIL TXO PRODUCTION CORP SANTA FE PACIFIC RAILROAD CO DELETED(Relinquished 1-25-82) FOSTER, DE ESTA DELETED DELETED MOUNTIAN FUEL SUPPLY CO CHAMPLIN PETRO CO NEW MEXICO & ARIZONA LAND CO DELETED DELETED(Relinquished 3/2/83) ROSS, RUTH NEW MEXICO & ARIZONA LAND CO. DELETED DELETED ROBINSON, BILLIE COLEMAN OIL & GAS CO DELETED NEW MEXICO & ARIZONA LAND CO. DELETED ALESIO, JOHN, et ux DELETED(Relinquished 1-17-83)	640.00 558.65 558.65 558.65 80.00 636.40 636.40 636.40 319.32 160.00 159.24 2720.00 640.00 160.00 160.00 640.00 47.07 401.23 160.00 160.00 120.00 640.00	OGM OG 50% LE OG 25% LE OG 25% LE OGM OG 50% LE OG 25% LE OG 25% LE OG LEASE OG LEASE OG 75% LE OGM OG LEASE OG 50% LE OGM OG LEASE OGM OG 50% LE OG 50% LE OGM OGM 25%
81A-NOOC14205894 NM-39908 8K 141 PG 91		02-150 02-151 02-152	DELETED(Relinquished 1-17-83) DELETED(Relinquished 1-25-83) MOBIL OIL CORP	160.00	MINING LE
STATE 01173 NM-32815 8K 141 PG 91		02-153 02-154 02-155 02-156 02-157 02-158 02-159 02-160 02-161 02-162	APCOT-FINADEL (J.V.) APCOT-FINADEL (J.V.) NEW MEXICO & ARIZONA LAND CO NA TI TA TES WOT, EST. CASE, BEN, ET UX. CASE, BEN, ET UX. CASE, BEN, ET UX. CASE, BEN, ET UX. CHORNEY, JOAN NORCEN ENERGY, INC	96.00 159.24 80.00 160.00 39.42 39.59 80.00 160.00 160.00	OG 25% LE OG 25% LE OGM OGM OGM OGM OGM OG 25% LE OG 25% LE

TRACT REGISTER KEY	
RECORDATION	NM- New Mexico Serial Register, Bureau Of Land Management NMMC- New Mexico Mineral Claim, BLM, Unpatented Mineral Lodes 81A- Bureau Of Indian Affairs STATE- New Mexico State Lease 8K PG- County Recorders Book & Page
INTEREST:	OGM Oil Gas & Minerals OG Oil & Gas MIN Minerals URAN Uranium J.V. Joint Venture LE Lease
NOTE	U S A. Reservations Of Patent And OGM Interests Acquired With Surface Tracts Are Not Depicted

DATE	REVISIONS	DATE	REVISIONS
12-5-83	CO 4-83 New Tr 156		
12-2-83	CO 3-83 Int C112,128, N Ch 139, New Tr 153,154,155		
6-20-83	CO 2-83 Add 152		
3-1-83	CO 1-83 Del 102,121,149-151		
12-21-82	CO 6-82 Ac 139,150		
11-26-82	CO 5-82 Del 107,125,130 Add 149-151		
8-03-82	CO 4-82 Del 141,142,145,147		
6-28-82	CO 3-82 Int 131,132 Add 148		
6-28-82	CO 3-82 Del 104,115,137,105,135		
6-10-85	CO 310-12-85 thru 310-17-85		
11-23-84	CO 310-3-84		
12-22-83	CO 6-83 Del 136		
12-21-83	CO 5-83 Ac Ch 02-139, Int Ch 152		

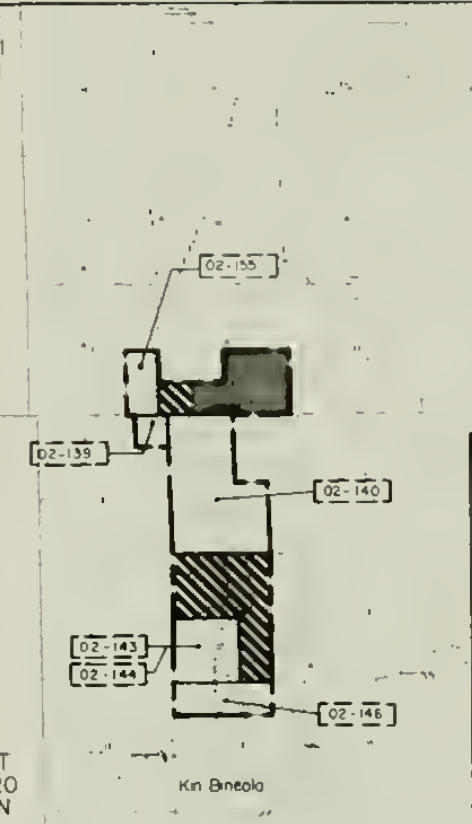
ESTABLISHES BOUNDARIES OF THE INTERIOR  
DATE: 1985  
MAP: 1985  
SERVICE: 1985  
RESOURCES: 1985

# CHACO CULTURE NATIONAL HISTORICAL PARK

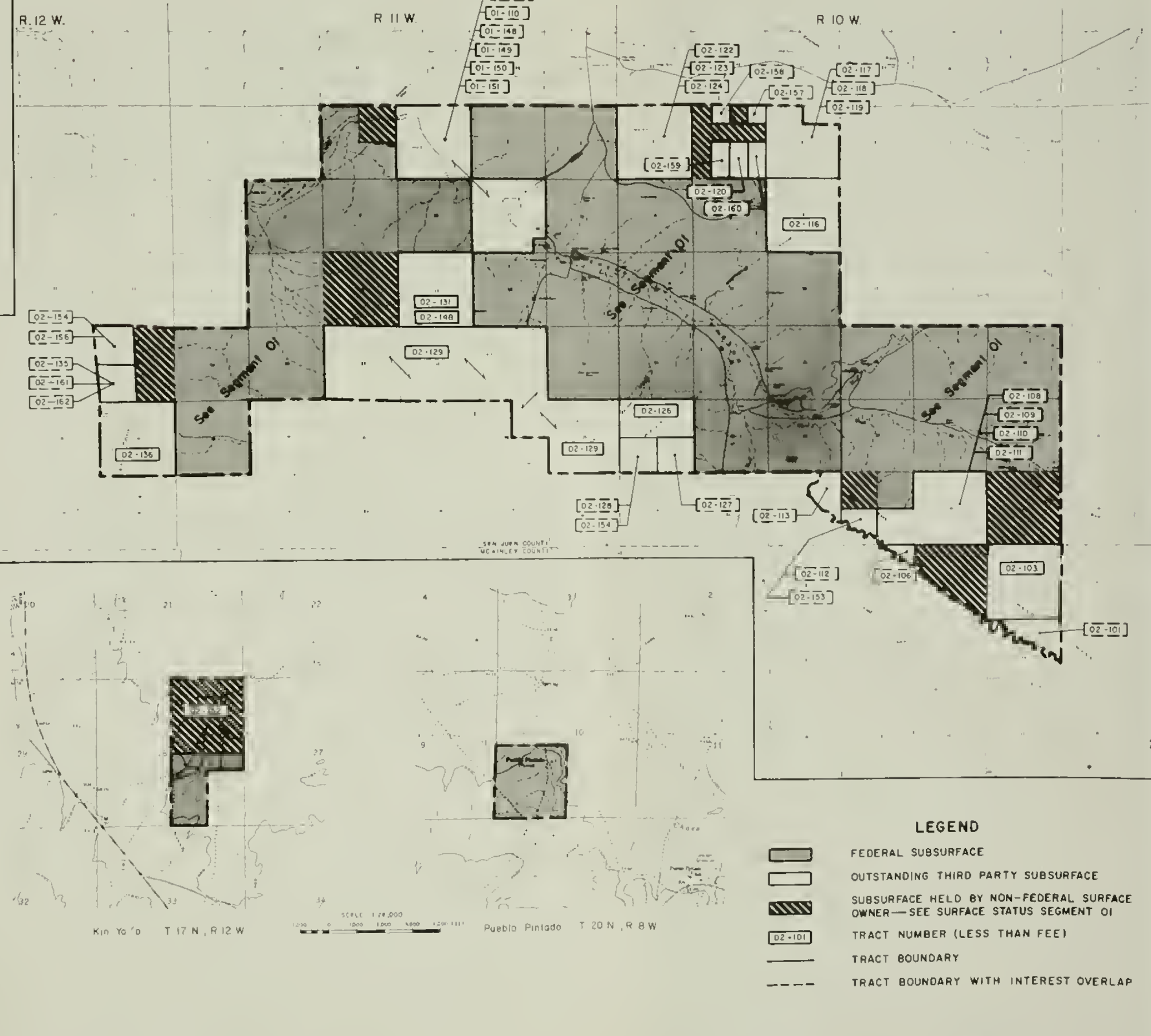
McKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

## SUBSURFACE STATUS SEGMENT 02





DATE	REVISIONS	DATE	REVISIONS
11-25-84	CO 310-12-81 11-25-84	11-25-84	CO 310-12-81 11-25-84
12-22-83	CO 310-12-81 11-25-84	12-22-83	CO 310-12-81 11-25-84
12-21-83	CO 310-12-81 11-25-84	12-21-83	CO 310-12-81 11-25-84



ESTABLISHED: DECEMBER 19, 1980 FORMERLY CHACO NATIONAL MONUMENT BOUNDARY CHANGE:	DATE: FEBRUARY 1982	MAPPED BY: SOUTHWEST REGION DIVISION OF LAND RESOURCES
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Recordation	Deed-U.S.	Tract	Owner - Lessee	Acres	Interest
	PUR D-15	01-104 01-110 01-147 01-148 01-149 01-150 01-151	MORRIS, J. O., EST AMSDEN, THEODORE P., et al DELETED (SEE D-138) FIRST NAT. BANK OF IOWA CTYTR HALL, GAIL A., EST AMSDEN, CHARLES W., et al AMSDEN, LARRY	1277.00 1277.00 1277.00 1277.00 1277.00 1277.00 1277.00	OGM 50% OGM 12.5%  OGM 12.5% OGM 12.5% OGM 6.25% OGM 6.25%
BK 31 PG 705 NM-0815-23 NM-35508		02-101 02-102 02-103 02-104 02-105	SANTA FE PACIFIC RAILROAD CO DELETED (Relinquished 1-25-83) SEABROOK CORP DELETED DELETED	192.40  643.28   	OGM  OG LEASE   
BK 31 PG 705 NM-0247-64 NM-36351 NM-36351 NM-36351 NM-36105 BK 31 PG 705		02-106 02-107 02-108 02-109 02-110 02-111 02-112 02-113 02-114 02-115	SANTA FE PACIFIC RAILROAD CO DELETED (Relinquished 7-21-81) CHAMPLIN PETROLEUM CO NORCEN PETROLEUM INC ROWELL, DEAN W SEABROOK CORP TXO PRODUCTION CORP SANTA FE PACIFIC RAILROAD CO DELETED DELETED	50.20  798.00 798.00 798.00 798.00 96.00 135.40   	OGM  OG 50% LE OG 25% LE OG 12.5% LE OG 12.5% LE OG 75% LE OGM  
BK 31 PG 703 NM-36379 NM-36379 NM-36379 BK 31 PG 291 NM-06709-44 NM-36379 NM-0211-246 NM-35117 NM-33386 NM-36105 BK 31 PG 705 NM-0301-336 BK 31 PG 91		02-116 02-117 02-118 02-119 02-120 02-121 02-122 02-123 02-124 02-125 02-126 02-127 02-128 02-129 02-130 02-131 02-132 02-133	SANTA FE PACIFIC RAILROAD CO CHAMPLIN PETROLEUM CO, et al NORCEN PETROLEUM CO SEABROOK CORP, et al DELETED (Relinquished 1-25-83) CHAMPLIN PETROLEUM CO, et al NORCEN PETROLEUM CO SEABROOK CORP, et al DELETED (Relinquished 4-22-82) CHAMBERS, MERLE C TX ESTAN SATLINE OIL TXO PRODUCTION CORP SANTA FE PACIFIC RAILROAD CO DELETED (Relinquished 1-25-82) FOSTER, DE ESTA DELETED DELETED	640.00 558.65 558.65 558.65 80.00 636.40 636.40 636.40 319.32 160.00 159.24 2720.00 640.00    	OGM OG 50% LE OG 25% LE OG 25% LE OGM OG 50% LE OG 25% LE OG 25% LE OG LEASE OG LEASE OG 75% LE OGM OGM 75 %   
BIA-0004-205P34 NM-39908 BK 141 PG 91		02-134 02-135 02-136 02-137	MOUNTAIN FUEL SUPPLY CO CHAMPLIN PETRO CO NEW MEXICO & ARIZONA LAND CO DELETED	160.00 160.00 640.00  	OG LEASE OG 50% LE OGM  
STATE Q1173 NM-52815 BK 141 PG 91		02-138 02-139 02-140 02-141 02-142	DELETED (Relinquished 3/2/83) ROSS, RUTH NEW MEXICO & ARIZONA LAND CO DELETED DELETED	 47.07 401.23   	 OG LEASE OGM   
NM-26049 NM-26049  BK 141 PG 91		02-143 02-144 02-145 02-146 02-147	ROBINSON, BILLIE COLEMAN OIL & GAS CO DELETED NEW MEXICO & ARIZONA LAND CO DELETED	160.00 160.00  120.00  	OG 50% LE OG 50% LE  OGM  
BK 31 PG 32 NM-56515-24 B36392-94-96 NM-56512-18 NM-06745-80 BIA-0004-20-1000		02-148 02-149  02-150 02-151 02-152	ALESSIO, JOHN, et al DELETED (Relinquished 1-17-83)  DELETED (Relinquished 1-17-83) DELETED (Relinquished 1-25-83) MOBIL OIL CORP	640.00    160.00	OGM 25%    MINING LE
NM-36105 NM-36105 BK 141 PG 91 BIA-780-3512 BK 459 PG 122 BK 459 PG 122 BK 459 PG 122 BK 459 PG 122 NM-59908 NM-59908		02-153 02-154 02-155 02-156 02-157 02-158 02-159 02-160 02-161 02-162	APCOT - FINADEL (J.V.) APCOT - FINADEL (J.V.) NEW MEXICO & ARIZONA LAND CO MATTA TATES WOT, EST CASE, BEN, ET UX CASE, BEN, ET UX CASE, BEN, ET UX CASE, BEN, ET UX CHORNEY, JOAN NORCEN ENERGY, INC	96.00 159.24 90.00 160.00 39.42 39.99 80.00 80.00 160.00 160.00	OG 25% LE OG 25% LE OGM OGM OGM OGM OGM OGM OG 25% LE OG 25% LE

TRACT REGISTER KEY

RECORDATION NM- New Mexico Serial Registers, Bureau Of Land Management  
NM- New Mexico Mineral Claim, BLM, Unpatented Mineral Leases  
BIA- Bureau Of Indian Affairs  
STATE- New Mexico State Leases  
BK PG- County Records Book & Page

INTEREST OGM Oil Gas & Minerals  
OG Oil & Gas  
MIN Minerals  
URAN Uranium  
JV Joint Ventures  
LE Leases

NOTE U.S.A. Reservations Of Patent And OGM Interests Acquired With Surface Tracts Are Not Depicted

CHACO CULTURE

CHACO CULTURE NATIONAL HISTORICAL PARK

McKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

SUBSURFACE STATUS SEGMENT 02

# VICINITY

R. 10 W.

# LEGEND



Oil, Gas & Mineral Interests to be acquired.



See Segment 01, 02



Cooperative Agreement



Federal Non-Competitive Oil & Gas Leases. (expiration of leases by 1990, if production does not occur.) After 1990, subsurface management will be under the jurisdiction of N.P.S.



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T 20 N

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

SOURCE DATA: U.S.G.S. 15' Quadrangle Composit  
Reduction Of Selected Plates  
ESTABLISHED: Public Law 96-550, Dec 19, 1980  
Formerly Chaco National Monument

## CHACO CULTURE NATIONAL HISTORICAL PARK

McKINLEY & SAN JUAN COUNTIES  
NEW MEXICO



NEW MEXICO PRINCIPAL MERIDIAN

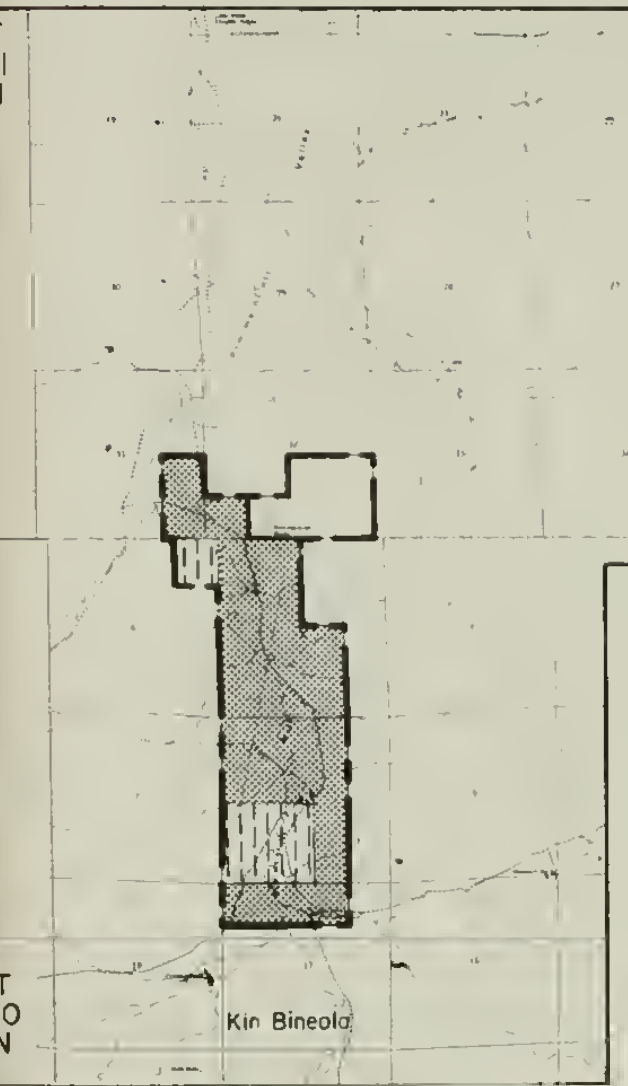
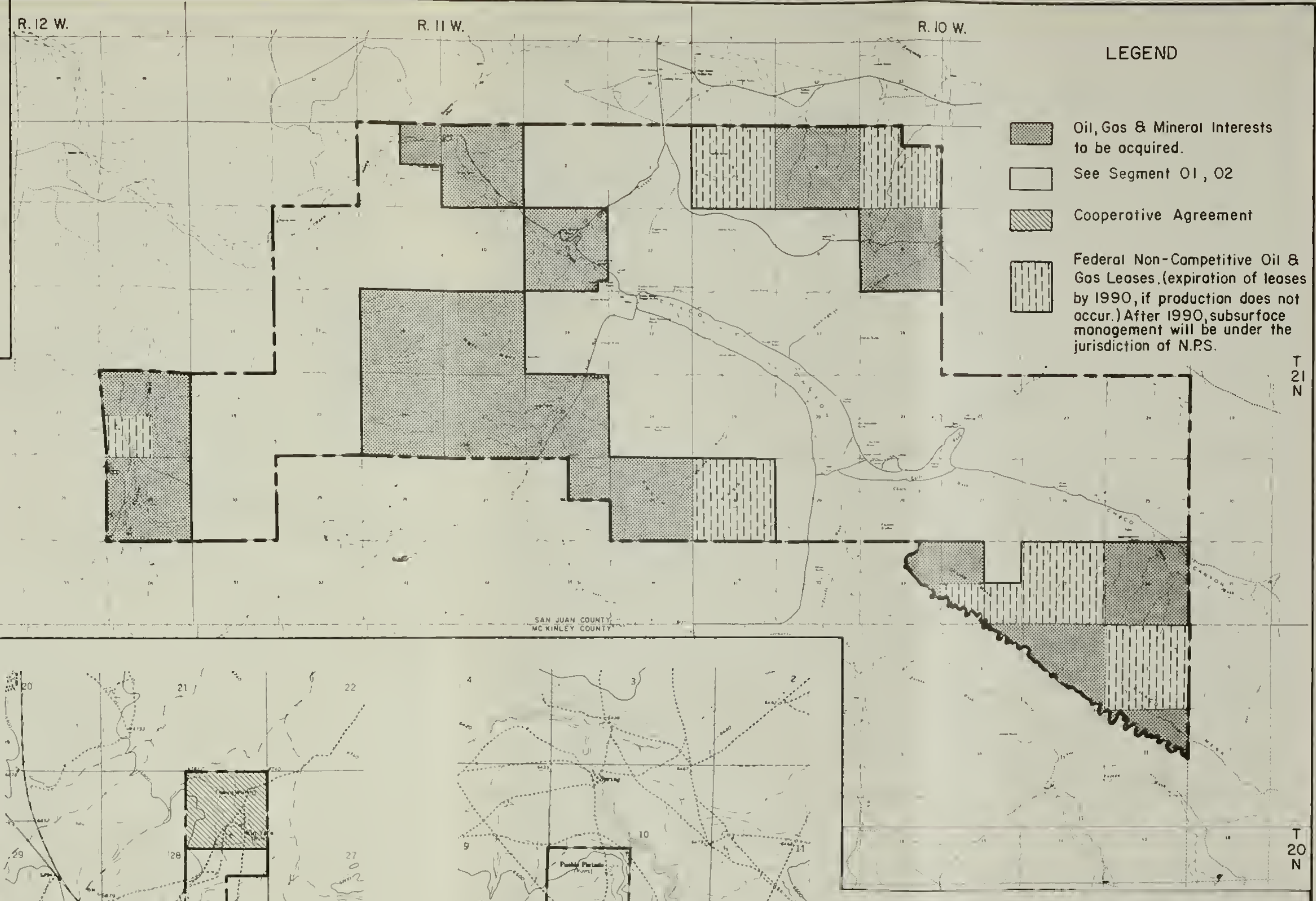
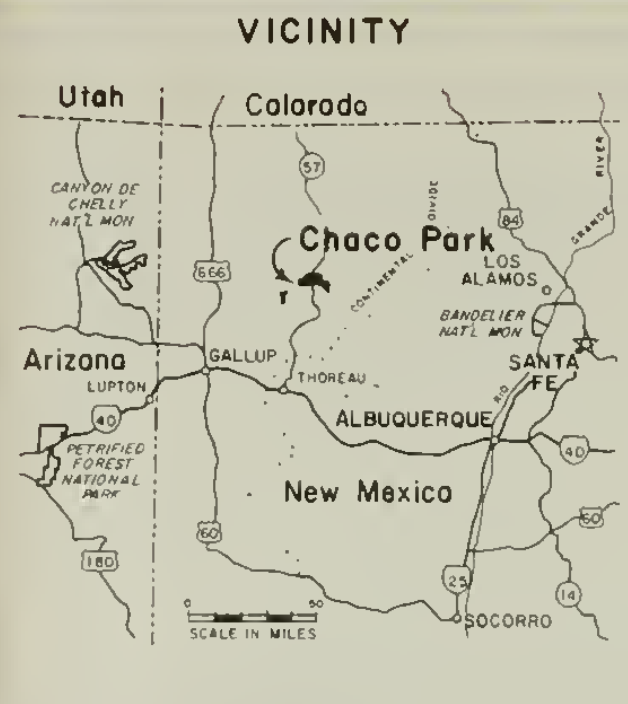


CHCU 80,049  
DEC. 1983 | SWR

Revised 6/6/85

Drawn by U.S./P.R.

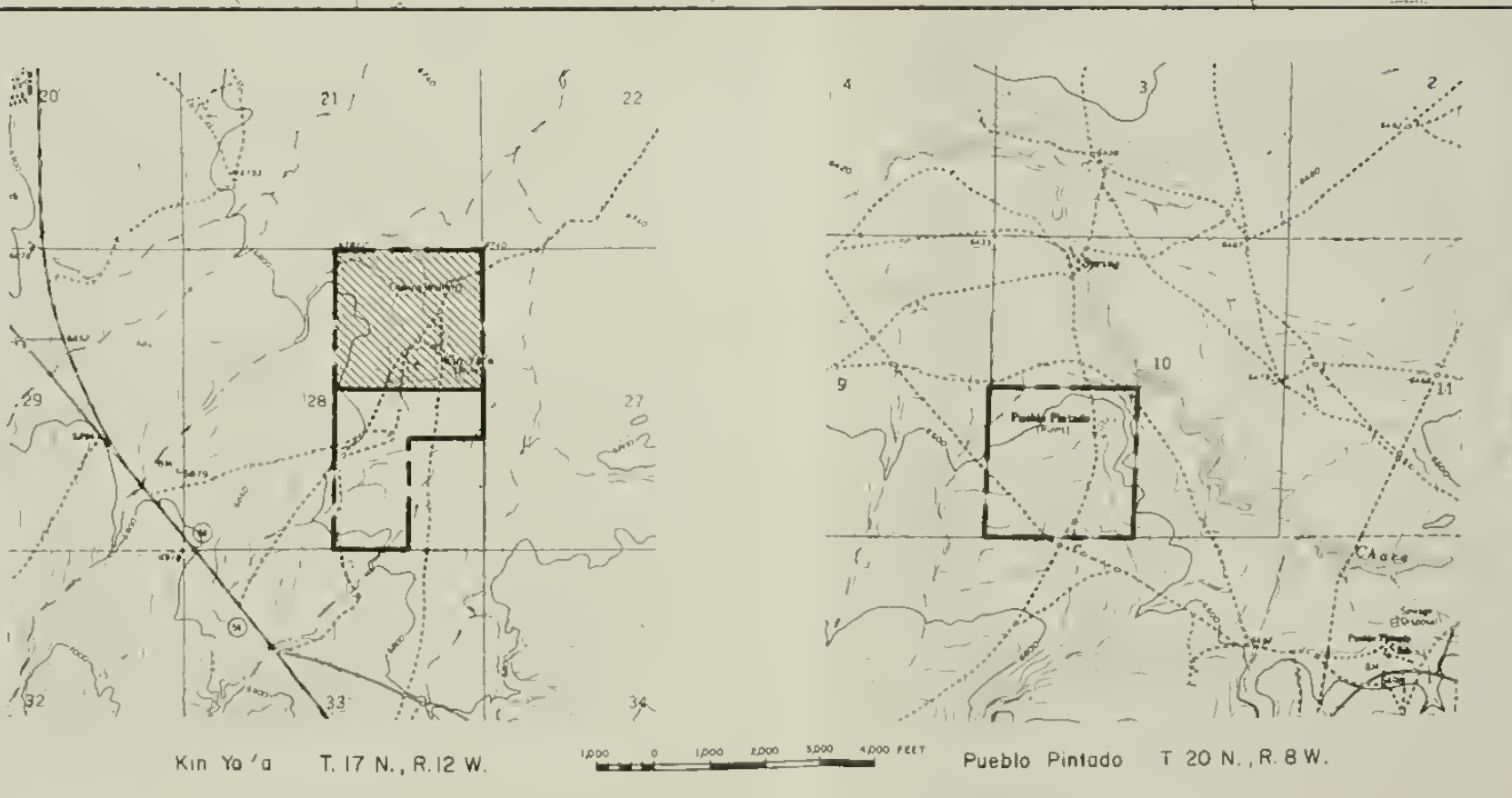




UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
DIVISION OF LAND RESOURCES

SOURCE DATA U.S.G.S. 15' Quadrangle Composite  
Reduction Of Selected Plots

ESTABLISHED Public Law 96-550, Dec 19, 1980  
Formerly Chaco National Monument



**CHACO CULTURE  
NATIONAL HISTORICAL  
PARK**

MCKINLEY & SAN JUAN COUNTIES  
NEW MEXICO

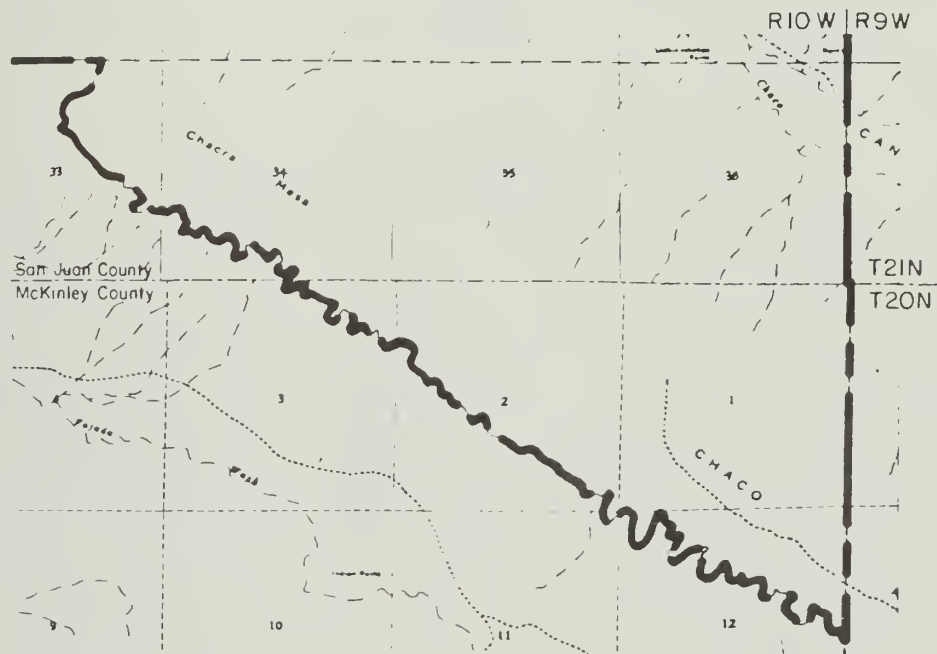


**SUBSURFACE PROTECTION PROPOSAL**



## APPENDIX B: PARK LANDS ADDED BY PUBLIC LAW 95-550

## CHACRA MESA ADDITION



General Resource Values:

1. 491 archeological sites (1 site per 6.52 acres) (value score = 5,385)  
Greatest site density and highest value score. Contains  
Shabikeschee Village.
2. Possibility of rare "shrine" sites--one known.
3. Concentrations of rock art.
4. Highly scenic: two known natural arches; others.
5. Highest number of floral and faunal habitats; least disturbed  
habitats.
6. Concentrations of paleontological resources.
7. 68% of area drains into the Chaco Wash; many steep, critical  
drainages.
8. 22% of area consists of steep slopes.
9. 16% of area visible from high visitor use areas; more visible from  
Wijiji.
10. 45% of area has high potential for visitor use on trails; 100% for  
exploration hiking.
11. Golden eagle and probable peregrine falcon habitat.

### General Management Concerns:

1. Protection of highest archeological site density; the Shabikieschee Village and Half House.
2. Watershed protection and erosion control.
3. Habitat protection.
4. Development of visitor use.

### Proposals:

1. Stabilization and research of sites, especially Shabikeshchee Village and Half House.
2. Development of trail system, exploration hiking.
3. Possible park radio repeater location.
4. Active habitat preservation and possible erosion control.

## SOUTHERN ADDITION



### General Resource Values:

1. 323 archeological sites (1 site per 14.37 acres) (value score = 4,655).
2. Rare "shrine" sites.
3. Sections of prehistoric roads.
4. Multistory structure sites.
5. Prehistoric water control features.
6. Known golden eagle and possible peregrine falcon habitat.
7. 68% of area drains into the Chaco Wash; some steep, critical watersheds.
8. 26% of area contains steep slopes.
9. 31% of area visible from visitor use site(s).
10. 26% of area has potential for visitor use.
11. Complete mesa top and rincon ecosystems.

### General Management Concerns:

1. Protection of prehistoric road segments.
2. Research potential.
3. Maintenance of intact ecosystems.
4. Development of visitor use and access.

### Proposals:

1. Trail systems on West and South mesas, possibly in Werito Rincon.
2. Archeological research.
3. Active maintenance of intact ecosystems.

## NORTHERN ADDITION

### Recommendations:

1. Lands for acquisition are shaded.
2. Lands for cooperative agreements lack shading.



### General Resource Values:

1. 156 archeological sites (1 site per 6.52 acres) (value score = 2,180).
2. POCO site in section 5.
3. Large concentration of prehistoric road segments (especially sections 6 and 9).
4. Known golden eagle habitat (legal protection).
5. Possible presence of endangered plant.
6. 45% of area drains into the Chaco Wash.
7. 5% of area consists of steep slopes.
8. 33% of area is visible from visitor use site(s).

### General Management Concerns:

1. POCO site protection.
2. Protection of numerous prehistoric road segments.
3. Proximity to proposed developments (railroad, major transmission line, etc.).
4. Social/economic impacts on adjacent native American community.
5. Threatened and endangered species protection.

### Proposals:

1. No visitor access other than occasional exploration.
2. Archeological research.
3. Substantial land area managed under cooperative agreements.

## KIN KLIZHIN, KIN BINEOLA, AND KIN YA'A ADDITIONS

### Recommendations:

1. Lands for acquisition are shaded.
2. Lands for cooperative agreements lack shading.
3. Lands in federal estate are cross hatched.

### Management Concerns:

1. Preservation and stabilization of sites.
2. Research into outliers and their communities.
3. Possibility of visitor access to either Kin Bineola or Kin Ya'a.

### KIN KLIZHIN ADDITION

1. Number of sites--145
2. Site value score--2,305
3. Sites per acre--1 per 8.8
4. Other--numerous prehistoric irrigation features

### KIN BINEOLA ADDITION

1. Number of sites--151
2. Site value score--2,315
3. Sites per acre--1 per 4.5
4. Other--numerous prehistoric water control features; isolated great kiva(s?)

KIN BINEOLA

KIN KLIZHIN

### KIN YA'A ADDITION

1. Number of sites--50
2. Site value score--875
3. Sites per acre--1 per 3.2
4. Other--well defined prehistoric roads

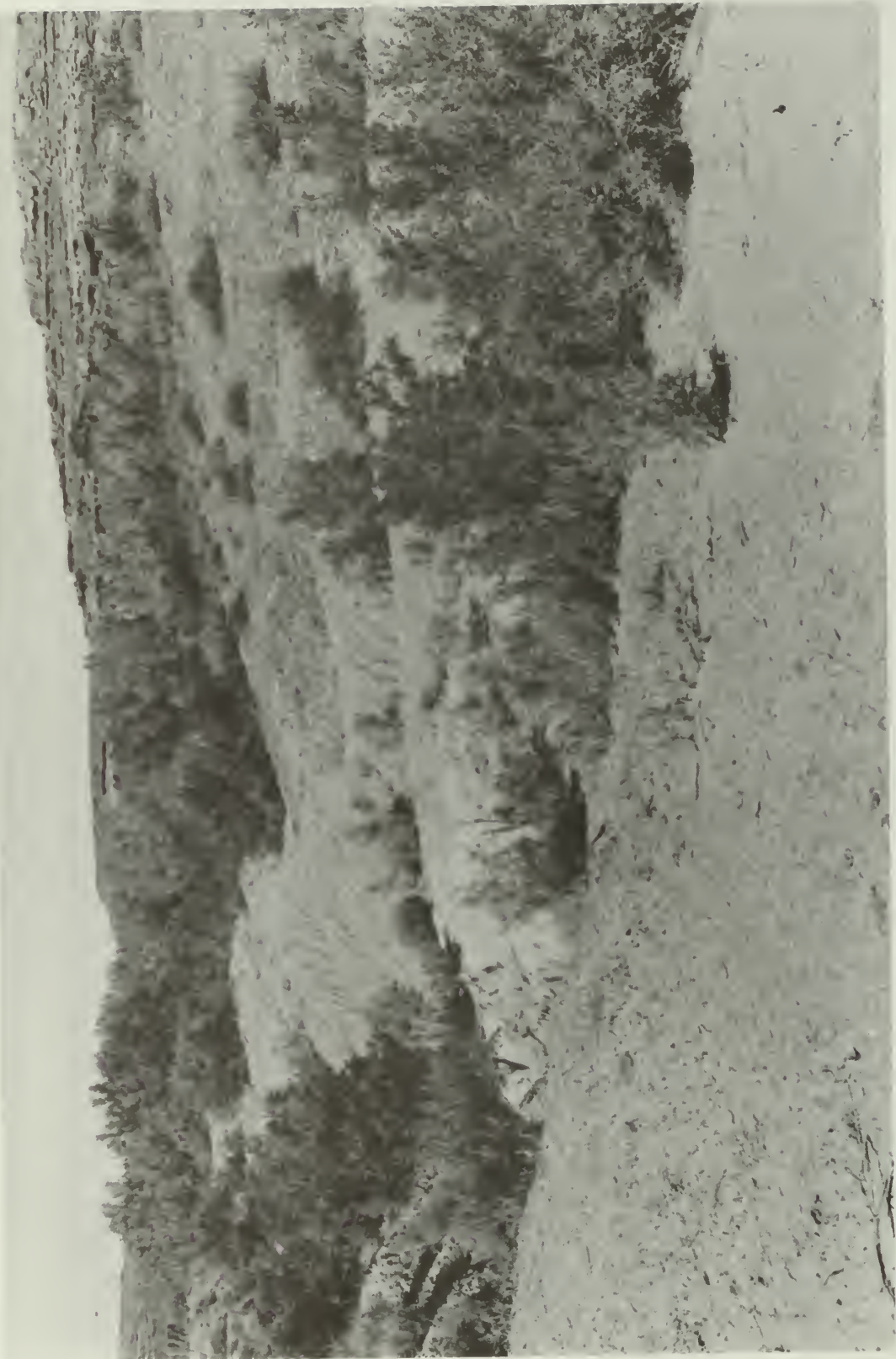
KIN YA'A





Large Mound Site: This photo shows a house block that contained 10-20 rooms. Erosion has not yet affected the house itself but has probably destroyed some associated features. This is typical of problems on all 1980 addition lands.





Mound Site (on right): This site is being affected by erosion. Without active management to control erosion, this site could be lost or severely damaged in the next 5-7 years. The house block contains about 7-12 rooms; already 10 percent of the site has been affected. This is typical of management problems in the Chacra Mesa, Kin Klizhin, northern, and Kin Bineola additions.





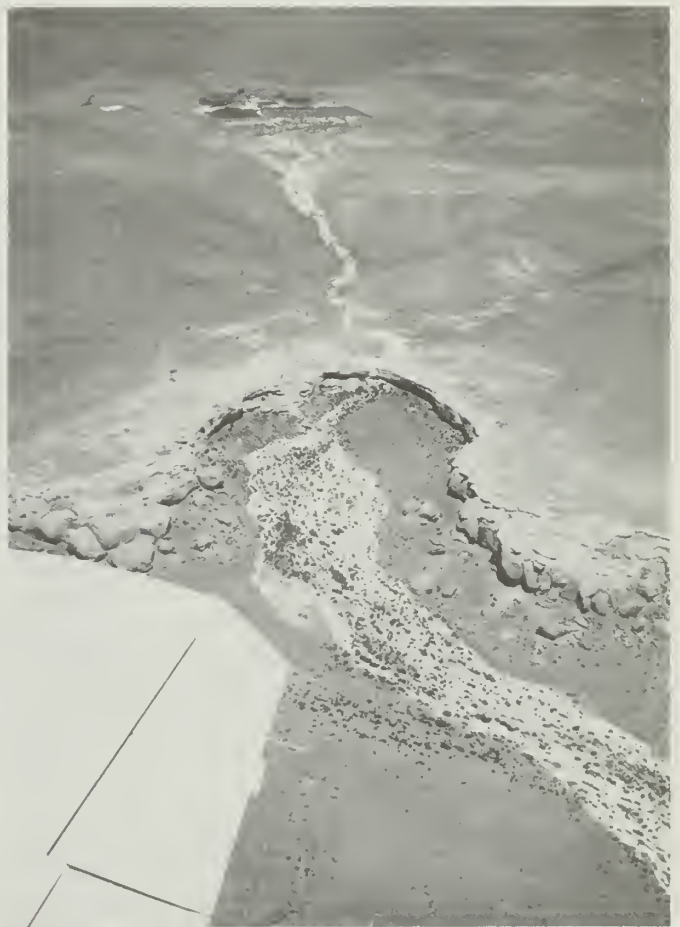
Small Pithouse Site: Prior to excavation, this site was only a small, shallow depression. It is typical of sites found on all of the 1980 addition lands; surface indications are easily destroyed.





Head of Werito Rincon: Former monument land is to the right of the fence; land added in 1980 is to the left (southern addition). Cliff faces contain rock art. Upper and lower overhangs on the right are favored nesting sites for raptors, including golden eagles. Mound in extreme right foreground is a village site.

Aerial view of oil well operation adjacent to the park boundary. Note that the holding ponds collapsed, allowing material to run downslope and into the park. This is an example of potential park impacts resulting from mineral and oil and gas developments.







Example of resource impacts resulting from oil and gas explorations adjacent to and within the park. The two top photos were taken from the southern park boundary looking south. The two bottom photos are taken from within the southern boundary looking north. These actions were undertaken without the knowledge of park staff. Currently the park staff has no authority to control such activity within much of the recently added park lands.







Oil development on a site adjacent to the northeast boundary of the park.

## APPENDIX C: SPECIAL CONSIDERATIONS

Two somewhat special circumstances require some explanation: 1) tracts vs. resource areas; and 2) subsurface rights severed from surface ownership.

### Tracts vs. Resource Areas

With only a few exceptions, most ownership tracts are large--1 square mile or larger. Particularly in these large tracts, topography and resource values vary widely. It is often impossible to match resource protection needs and goals to existing tract boundaries. Where the addition or subtraction of approximately 40 acres would make the protection goal boundary coincide with a tract boundary, this has been done. However, in some cases this has not been possible, so tracts have been divided in order to provide proper protection with reasonable boundaries. The different tract boundaries between surface ownership and severed subsurface interests further complicates the matter. Protection goals are to simplify this where possible.

### Subsurface Interest vs. Surface Ownership

Of the 1980 addition lands, only about 5½ square miles have the subsurface rights under the same ownership as the surface: 1) All state sections retain subsurface rights, except 40 acres in the Kin Bineola addition; 2) all Indian allotments have retained subsurface rights although the BIA administers these rights on behalf of the allottees; 3) most of section 5, T21N, R11W (northern addition), has retained subsurface rights despite the highly divided surface ownership. All other lands have subsurface rights in ownership other than the surface owner. Under 36 CFR 9 the National Park Service has the authority to regulate mineral entry, by means of a plan of operations, provided that the surface is in the federal estate. Because denial of entry can constitute a taking of rights, resource protection may not be accomplished without owning the subsurface rights. Owning just the subsurface does not solve all the problems either, because further protection measures must be taken to ensure protection of antiquities from vandals and long-term degradation, to ensure habitat protection, or to provide for visitor use and NPS monitoring.

## APPENDIX D: LEGISLATION

Public Law 96-550  
96th Congress

### An Act

To designate certain National Forest System lands in the State of New Mexico for inclusion in the National Wilderness Preservation System, and for other purposes.

Dec 19, 1980

[H R 825.3]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

National Forest  
System lands,  
New Mex  
Designation

### TITLE V—CHACO CULTURE NATIONAL HISTORICAL PARK

SEC. 501. (a) The Congress finds that—

16 USC 410ii.

(1) archeological research in the San Juan Basin conducted over the past several years has greatly increased public knowledge of the scope of the prehistoric culture referred to as Chacoan Anasazi;

(2) the discoveries and the increased general interest in the Chaco phenomenon have come at a time when the San Juan Basin is experiencing extensive exploration and development for a wide variety of energy-related resources, including coal, uranium, oil, and natural gas;

(3) development of the San Juan Basin's important natural resources and the valid existing rights of private property owners will not be adversely affected by the preservation of the archeological integrity of the area; and

(4) in light of the national significance of the Chacoan sites and the urgent need to protect them, continued cooperation between Federal agencies and private corporations is necessary to provide for development in the San Juan Basin in a manner compatible with preservation and archeological research.

(b) It is the purpose of this title to recognize the unique archeological resources associated with the prehistoric Chacoan culture in the San Juan Basin; to provide for the preservation and interpretation of these resources; and to facilitate research activities associated with these resources.

SEC. 502. (a) There is hereby established in the State of New Mexico, the Chaco Culture National Historical Park comprising approximately thirty three thousand nine hundred and eighty nine acres as generally depicted on the map entitled "Chaco Culture National Historical Park", numbered 310/80,032-A and dated August 1979. The Chaco Canyon National Monument is hereby abolished, as such, and any funds available for the purpose of the monument shall be

Establishment.  
16 USC 410ii-1.

Abolishment.  
16 USC 431 note.

available for the purpose of the Chaco Culture National Historical Park.

(b) Thirty three outlying sites generally depicted on a map entitled "Chaco Culture Archeological Protection Sites", numbered 310/80,033-A and dated August 1980, are hereby designated as "Chaco Culture Archeological Protection Sites". The thirty three archeological protection sites totaling approximately eight thousand seven hundred and seventy one acres are identified as follows:

Name:	Acres
Allentown .....	42
Andrews Ranch .....	640
Bee Burrow .....	40
Bisa'ani .....	131
Casa del Rio .....	40
Coolidge .....	15
Dalton Pass .....	10
Great Bend .....	19
Greenlee Ruin .....	60
Grey Hill Spring .....	23
Halfway House .....	40
Haystack .....	115
Hogback .....	371
Indian Creek .....	100
Jacques .....	40
Kin Nizhoni .....	726
Lake Valley .....	30
Las Ventanas .....	31
Morris 41 .....	85
Muddy Water .....	1,210
Newcomb .....	44
Peach Springs .....	985
Pierre's Site .....	440
Raton Well .....	23
San Mateo .....	14
Sanostee .....	1,565
Section 8 .....	40
Skunk Springs Crumbled House .....	588
Standing Rock .....	321
Twin Angels .....	40
Toh la kai .....	10
Upper Kin Klizhin .....	60
Squaw Springs .....	870

List additions or deletions, submittal to Congress  
16 USC 410ii-2  
*Supra*

Lands, waters, and interests, acquisition.  
16 USC 410ii-3

SEC. 503. The Secretary of the Interior shall continue to search for additional evidences of Chacoan sites and submit to Congress within two years of date of enactment of this Act and thereafter as needed, his recommendations for additions to, or deletions from, the list of archeological protection sites in section 502(b) of this title. Additions to or deletions from such list shall be made only by an Act of Congress.

SEC. 504. (a) The Secretary is authorized to acquire lands, waters, and interests therein within the boundaries of the Chaco Culture National Historical Park (hereinafter referred to as the "park") and the archeological protection sites as identified in section 502 of this title by donation, purchase with donated or appropriated funds, or exchange. Property owned by the State of New Mexico or any political subdivision thereof, may be acquired by exchange or donation only. Property held in trust for the benefit of any Indian tribe or for the benefit of any individual member thereof may be acquired only with the consent of such owner or beneficial owner as the case may be.

(b) The respective tribal authorities are authorized to convey by exchange, purchase, on donation the beneficial interest in any lands designated by section 502 of this Act and held in trust by the United States for the respective tribes, to the Secretary, subject to such terms



and conditions as the tribal authority deems necessary and which the Secretary deems are consistent with the purposes of this title.

(c)(1) The Secretary shall attempt to acquire private lands or interests therein by exchange prior to acquiring lands by any other method authorized pursuant to section 504 of this Act.

Private lands or interests, acquisition.

(2) The Secretary shall attempt to enter into cooperative agreements pursuant to section 505 of this Act with owners of private property for those archeological protection sites described in section 502(b) of this Act. The Secretary shall acquire fee title to any such private property only if it is necessary to prevent direct and material damage to, or destruction of, Chaco cultural resources and no cooperative agreement with the owner of the private property interest can be effected.

Private property owners, cooperative agreements.

(d)(1) For purposes of completing an exchange pursuant to subsections (a) and (b), the Secretary shall designate a pool of at least three times the private acreage described in subsections (a) and (b), comprised of Federal property interests of a similar resource character to property to be exchanged. Federal property shall, whenever possible, be designated in blocks of at least one section in size, but in no event shall the blocks designated be less than one-quarter of a section in size.

Pool, acreage designation.

(2) The Secretary may include within the pool any Federal property under his jurisdiction except units of the National Park System, National Forest System, or the National Wildlife Refuge System that are nominated by the owner of the private property to be exchanged. Exchanges shall be on the basis of equal value, and either party to the exchange may pay or accept cash in order to equalize the value of the property exchange, except that if the parties agree to an exchange and the Secretary determines it is in the public interest, such exchange may be made for other than equal values.

(e) All Federal lands, waters, and interests therein excluded from the boundaries of Chaco Canyon National Monument by this title may be exchanged for non-Federal property to be acquired pursuant to this title. Any lands so excluded shall be managed by the Secretary under the provisions of the Federal Land Policy and Management Act of 1976. Transfer of administration of such lands to the Bureau of Land Management shall not be considered a withdrawal as that term is defined in section 103(j) of the Federal Land Policy and Management Act of 1976.

Federal lands exchanged for non-Federal property.

43 USC 1701 note

43 USC 1702  
16 USC 410ii-4.

SEC. 505. The Secretary shall seek to enter into cooperative agreements with the owners, including the beneficial owners, of the properties located in whole or in part within the park or the archeological protection sites. The purposes of such agreements shall be to protect, preserve, maintain, and administer the archeological resources and associated site regardless of whether title to the property or site is vested in the United States. Any such agreement shall contain provisions to assure that (1) the Secretary, or his representative, shall have a right of access at all reasonable times to appropriate portions of the property for the purpose of cultural resource protection and conducting research, and (2) no changes or alterations shall be permitted with respect to the cultural resources without the written consent of the Secretary. Nothing in this title shall be deemed to prevent the continuation of traditional Native American religious uses of properties which are the subject of cooperative agreements.

SEC. 506. (a) The Secretary shall administer the park in accordance with the provisions of this title and the provisions of law generally applicable to the administration of units of the National Park

Administration  
16 USC 410ii-5.

System, including the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-4), and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461-7).

43 USC 1702.

(b) The Secretary shall protect, preserve, maintain, and administer the Chaco Culture Archeological Protection Sites, in a manner that will preserve the Chaco cultural resource and provide for its interpretation and research. Such sites shall be managed by the Secretary in accordance with the provisions of this title and the provisions of law generally applicable to public lands as defined in section 103(e) of the Federal Land Policy and Management Act of 1976: *Provided, however*, That lands held in trust by the Secretary for an Indian tribe or any individual member thereof, or held in restricted fee status shall continue to be so managed or held by the Secretary.

(c) No activities shall be permitted upon the upper surface of the archeological protection sites which shall endanger their cultural values. For the purposes of this title, upper surface shall be considered to extend to a depth of twenty meters below ground level. Nothing in this title shall be deemed to prevent exploration and development of subsurface oil and gas, mineral, and coal resources from without the sites which does not infringe upon the upper surface of the sites.

(d) Nothing in this title shall be deemed to prevent the continuation of livestock grazing on properties which are the subject of cooperative agreements.

General  
management  
plan transmittal  
to Congressional  
committees

16 USC 1a-7

(e) Within three complete fiscal years from the date of enactment, the Secretary shall transmit to the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, a general management plan for the identification, research, and protection of the park, pursuant to the provisions of subsection (12)(b) of the Act of August 18, 1970, to be developed by the Director, National Park Service, in consultation with the Directors, Bureau of Land Management and Bureau of Indian Affairs and the Governor, State of New Mexico, and a joint management plan for the identification, research, and protection of the archeological protection sites, to be developed by the Director, National Park Service, in consultation and concurrence with the Directors, Bureau of Land Management and Bureau of Indian Affairs, and the Governor, State of New Mexico.

16 USC 410n-6.

Plan, submittal  
to congressional  
committees.

SEC. 507. (a) Consistent with and in furtherance of the purposes of the Division of Cultural Research of the Southwest Cultural Resources Center, operated by the National Park Service, the Secretary shall continue such research and data gathering activities as may be appropriate to further the purposes of this title and knowledge of the Chaco culture. The Secretary shall submit in writing within six months of the effective date of this section, to the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, a plan for the continued operational program of the Division. The Secretary is authorized and encouraged to establish a committee composed of professional archeologists and others with related professional expertise including the designee of the Governor of the State of New Mexico to advise the Secretary in matters related to the surveying, excavation, curation, interpretation, protection, and management of the cultural resources of the historical park and archeological protection sites.

Computer-  
generated data  
base,  
development.

(b) The Secretary shall, through the Division of Cultural Research of the Southwest Cultural Resources Center of the National Park Service, be responsible for the development of a computer-generated

data base of the San Juan Basin, and make such information available to Federal and private groups when to do so will assist such groups in the preservation, management, and development of the resources of the basin.

(c) The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking with respect to the lands and waters in the archeological protection sites, and the head of any Federal agency having authority to license or permit any undertaking with respect to such lands and waters, shall prior to the approval of the expenditure of any Federal funds on such undertaking, or prior to the issuance of any license or permit, as the case may be, afford the Secretary a reasonable opportunity to comment in writing with regard to such undertaking and its effect upon such sites, and shall give due consideration to any comments made by the Secretary and to the effect of such undertaking on the purposes for which such sites are established.

SEC. 508. Effective October 1, 1981, there are authorized to be appropriated such sums as may be necessary to carry out the provisions of this title but not to exceed \$11,000,000 for acquisition and \$500,000 for development.

Appropriation  
authorization  
16 USC 410m-7

## APPENDIX E: EMERGENCY PROTECTION GUIDELINES

These guidelines contain policies and procedures to be followed by the National Park Service in the event of actual or proposed surface-disturbing activities, such as mineral/energy exploration or development, earthen reservoir construction, vehicle access construction, and others. The guidelines will be used to ensure preservation of cultural site integrity, the protection of the cultural values of the park, and significant natural resources.

The emergency protection guidelines supplement existing laws and regulations for the management of cultural resources on public lands in compliance with the Antiquities Act of 1906, as amended (16 USC 431), the Historic Sites Act of 1935 (16 USC 461), the National Historic Preservation Act of 1966 (16 USC 470), Executive Order 11593 (May 13, 1977), the Archeological Resources Protection Act of 1979 (93 Stat. 721), and the Surface Mining Control and Reclamation Act of 1977.

All lands within the boundaries of Chaco Culture National Historical Park are listed on the National Register of Historic Places. Consequently, proposed actions or programs of any federal agency will require compliance with section 106 of the National Historic Preservation Act of 1966, as amended. Section 106 compliance should provide additional protection to the highly significant cultural resources of the park.

### MANAGEMENT POLICIES

Valid Existing Prior Rights: Prior rights include such entitlements as grants, leases, rights-of-way, permits, and licenses that were issued before the enactment of PL 96-550 on December 19, 1980. Case-specific determinations of prior rights will be made by the regional director, Southwest Region, National Park Service.

Within the boundaries of Chaco Culture National Historical Park, management of valid existing prior rights will include the following:

Surface-disturbing actions that do not endanger cultural or natural values and are not disruptive to the visitor experience (as defined by NPS management guidelines and the park's General Management Plan and its components) may be permitted, based on case-specific evaluations. Cooperative agreements will be established where necessary to identify allowable activities.

Reclamation will be required by the administering agency or agencies following the implementation of all approved surface-disturbing activities. (Reclamation is defined as returning the landscape to its original contours, including the replacement of large features such as rocks and the establishment of previously existing vegetation with species diversity and ratios not varying from the original by more than 33 percent.)



Preservation of all known or discovered cultural values within the park is mandatory. If all land protection measures fail to ensure preservation of these values, mitigation including salvage mitigation will be considered as a last option.

Where access to valid existing prior rights is across federal land, the minerals management regulations contained in 36 CFR 9 will be applied. Where access is across nonfederal land and activities are not on federal land, management of the activities will be guided by these emergency protection guideines.

No Prior Rights: Actual or proposed activities where no valid existing rights are identified will not be allowed. This does not apply to state or privately owned subsurface rights or lands administered by the Bureau of Indian Affairs under the Allottee Mining Act of 1909. In these cases, regardless of current lease status, the owners' right to lease their interest cannot be abridged. Once leased, the interest will be managed as described under "Valid Existing Prior Rights" above. The National Park Service will work with state and private landowners and the Bureau of Indian Affairs to institute moratoriums or cooperative agreements to not lease their interests until the goals of this Land Protection Plan can be accomplished.

## PROCEDURES

Potential Surface-Disturbing Actions: Prior to approval of a proposal for surface-disturbing actions affecting park resources, the National Park Service will

ensure that any proposed decision is consistent with the policies set forth above

advise resource specialists of the proposed action and allow a minimum of 60 days for the Park Service to comply with NEPA requirements

Emergency Stabilization: The need for emergency stabilization will be identified during site reconnaissance by the park's archeologist in consultation with the Division of Cultural Resources, Southwest Region, and the Chaco Center.

Patrol and Surveillance: The park will provide for a patrol and surveillance program. All documents, photos, etc., from onsite patrols and surveillance will be kept on permanent file to aid future managers in distinguishing between prehistoric features and historic disturbance.

Research: Approved archeological research will be allowed within the boundaries during the period in which the emergency guidelines are in effect.

Effective Period: The emergency guidelines will remain in effect from the date of the approval of this plan until all subsurface interests within the boundaries of the park have been cleared and are held by the National Park Service.

## APPENDIX F: EXCHANGE PROCEDURES

The authority to engage in exchange of property or interests in property is contained in PL 96-550, section 504(a). Moreover, the secretary of the interior is charged in section 504(c)(1) with the obligation to utilize exchange as the preferred means of acquisition before making use of other means.

To facilitate the process of exchange, a memorandum of understanding has been developed between the National Park Service and the Bureau of Land Management. This memorandum addresses process, responsible persons in each agency, manpower commitments, funding, and the agency responsible for appraisal. A similar memorandum will be developed with the Bureau of Indian Affairs.

Several types of properties or interests in properties that would be subject to exchange procedures exist in Chaco Culture National Historical Park. These include full fee ownership (including allotments), surface ownership only, subsurface ownership only, and federal leases.

Generally, the procedures for exchange are as follows:

The owner of the interest to be exchanged should in general agree on the lands to be selected.

The selected lands will be comprised of property interests of a similar resource character to the property to be exchanged.

The offered and selected lands will be appraised, and an exchange agreement will be completed between the federal agency and the property owner. Either party to the exchange may pay or accept cash in order to equalize the value of the exchange.

Exchange proposals will be processed in the order in which they are submitted.

The appraisal of subsurface tracts where there are no known mineral values is a complex, technical issue; however, it has been done numerous times in the past. Basically there are two methods. One is the use of comparable sales of unknown subsurface values to determine the value of the subject subsurface values. There are a number of sales in this area. The second method is by economic evaluation. This method considers the producing wells as well as the dry holes and the formations drilled. A well-organized, in-depth geologic report giving trends, formations, and probabilities is required. The economic evaluation considers the probable recoverable reserves, the decline rate, the long-term production history, current prices, drilling costs, operating costs as well as the discount factor, and the risk factors. The values arrived at by these two methods are correlated into a final estimate of value.

The appraisal of the surface estate is a typical market value appraisal using comparable sales. All of the appraisals must conform to the federal Uniform Appraisal Standards for Federal Land Acquisition.



## APPENDIX G: GLOSSARY OF TERMS

Allotment -- federal land held in trust for the beneficial interest of an individual Indian or his/her heirs.

Cooperative management agreement -- resolutions between two or more parties for giving and receiving assistance. Assistance can take the form of financial, technical, product, or access agreements. It can be given free, for a fee, or through the exchange of services. Agreements between landowners and interested parties range from informal arrangements to detailed contracts.

Conveyance -- in real property law, a transfer of legal title to land by an instrument, such as a deed, by which interest in real property is created or by which title to real property is transferred from grantor to grantee.

Donation -- the voluntary conveyance of private property to public ownership and/or use, without compensation to the owner other than tax incentives.

Easement -- a legally enforceable interest in land created by a transfer (that is, a grant, reservation, or conveyance). Property ownership includes a variety of rights which may be envisioned as a "bundle of rights." This bundle usually includes the rights to farm, cut timber, build structures, extract minerals, exclude others from the property, and otherwise develop the land, subject to local regulations. Ownership of all property rights is described as a "fee simple estate." However, these rights can be separated and leased, sold, or donated to other parties. Each of these rights constitutes a less-than-fee interest in the property.

Easements are the most common type of less-than-fee interest for conservation purposes. They can be affirmative or negative, appurtenant or in gross, implied or prescriptive. Affirmative easements establish positive rights to enter and use land, such as the right of access for hiking, hunting, or fishing. Negative easements limit the uses of the land, for example, by prohibiting residential development, restricting timber cutting and filling of wetlands, or limiting changes in the facade of a historic structure. There is no limit to the number of provisions that may be included in an easement, and positive as well as negative conditions may be combined.

Entry -- an application to acquire title to public lands.

Et al. -- an abbreviation for et alii, "and others," or et alius, "and another."

Exchange -- federal agencies may acquire land or interests in land by trading land or interests already under their jurisdiction. Land trades between federal agencies are usually considered to be transfers. Trades of private land for federally owned land are usually defined as exchanges.

Exchanges may be for equal values, or values can be equalized by payment of cash. The Federal Land Policy and Management Act of 1976 (FLPMA) authorizes exchanges involving public lands and provides that cash equalization payments cannot exceed 25 percent of the total value of the lands transferred out of federal ownership. FLPMA also requires that the exchange be in the "public interest," considering federal land management as well as needs of state and local people, recreation, wildlife, minerals, and other values. Other requirements under FLPMA include consistency with agency mission and land use plans as well as findings of equal nonmonetary values, including physical and aesthetic qualities.

Federal land -- all classes of land owned by the federal government.

Fee -- an estate of inheritance clear of any condition, limitation, or restriction to particular heirs, but descendable to the heirs in general, male or female, lineal or collateral. In American law, the terms "fee," "fee simple" and "fee simple absolute" are equivalent.

Fee simple -- the estate which a man has where lands are owned by him and his heirs absolutely, with unconditional power of disposition during his life, and descending to his heirs and legal representatives upon his death intestate. Fee simple title to public lands is conveyed by a patent, approved clear list, deed, or grant without condition.

Indian reservation -- lands reserved for the use of native Indians and, in Alaska, for Aleuts and Eskimos.

Indian trust patent -- an Indian patent which is issued with the condition that title to the land remain for a specified period of time in the United States in trust for the patentee.

Land trusts -- nonprofit corporations established to own land and interests in land for specific purposes, ranging from maintaining open spaces in rural areas to providing parks in cities. The objectives of individual trusts are generally stated in their charters.

Leasable minerals -- oil and gas; oil shale; coal; potash; phosphate; sodium; sulphur in Louisiana and New Mexico; gold, silver, and quicksilver in certain private land claims; and silica deposits in certain parts of Nevada.

Leases -- arrangements, typically between a landowner and a tenant, that allow the tenant to use the landowner's property for a specified period. Leases are common property agreements for residential, industrial, and commercial buildings. Agricultural leases, which allow a tenant to rent farming rights to land, are also used frequently. A lease can involve only partial rights to use property, for example covering only access, water, or timber.

Federal agencies can lease private holdings in parks, forests, and wildlife refuges as an alternative to purchasing the land. In some cases, the

lease agreement may call for minimum payment, perhaps \$1 per year, in exchange for sound and compatible land management. This type of arrangement is especially appealing to corporations with small inholdings surrounded by federal lands.

Leases can be an effective way to gain control over property for limited periods of time. Federal agencies frequently lease lands from owners who want to maintain full property rights but not necessarily occupy or use them. Leasing and special use permit activities of federal land-managing agencies vary significantly, depending on local customs and land needs.

Mineral land -- public land which has been classified as containing, or is known to contain, valuable minerals.

Mineral land entry -- filing of a claim to hold or purchase lands belonging to the public domain and valuable for the minerals they contain, implying a prior discovery of ore and the opening of a mine.

Mineral lease -- a lease under the Minerals Leasing Act of February 25, 1920, as amended and supplemented, authorizing the development and production of certain leasable minerals from public lands.

Public land -- any land or interest in land owned by the United States within the several states and administered by the secretary of the interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except for lands located on the outer continental shelf and lands held in trust for the benefit of Indians, Aleuts, and Eskimos (43 USC 1702, sec. 103(e)).

Public land also includes the remaining public domain of the United States: reservations, other than Indian reservations, created from the public domain; lands withdrawn, reserved, or withheld from private appropriation and disposal under the public land laws, including the mining laws; outstanding interests of the United States in lands which have been patented or otherwise conveyed under the public land laws; national parks; national forests; wildlife refuges and ranges; and the surface and subsurface resources of all such lands.

Purchase and sellback -- purchase of land in fee by a public agency, attaching of desired restrictions to the deed (that is, reserving certain exclusive rights), and then reselling or leasing the restricted land. Federal agencies have traditionally acquired partial interest in land through the acquisition of easements, that is, by directly acquiring specific property rights. This is another approach for obtaining specified rights from the owner of a property.

Special use permits -- similar in concept to leases in that they transfer limited rights of use from one party to another for a specified period of time. For federal agencies, special permits are used more often than leases to allow private uses of land in federal ownership. Special use permits are issued under administrative guidelines of each agency, and they are more likely than leases to specify what activities can and cannot

take place. Permits also may contain provisions for revocation on relatively short notice or for violation of terms. The Forest Service and Bureau of Land Management issue a variety of such permits for livestock grazing, skiing, and utility rights-of-way.

Surface rights -- all rights in the land excepting the oil, gas, and mineral rights to underground deposits.

Technical assistance -- providing of information, advice, and ideas to individuals or groups requesting help. Technical assistance efforts may be directed toward individual landowners by providing information about sound land management or conservation practices to encourage protection of natural, cultural, or recreational resources. Advice on land conservation strategies also can be directed toward local governments or organizations concerned about protecting important resources. As a land protection technique, technical assistance relies entirely on cooperation by landowners or local governments.

Zoning -- the division of a municipal, county, or sometimes state lands into districts for the purpose of regulating the use of land. The regulations pertaining to each district are set forth in a zoning text, and the districts to which they apply are delineated on a map. Together, the zoning text and the zoning map constitute the zoning ordinance. Once an ordinance has been adopted by a government, its provisions are legally binding on all landowners. Generally, a zoning ordinance specifies the uses permitted in each district and development requirements.



# APPENDIX H: TRACT RESOURCE ANALYSIS SHEETS

Surface Tract # 01-102

Portion Complete  
Acres 160.05

TRACT RESOURCE ANALYSIS  
Location: NE¼ Sec. 4,  
T. 21 N., R. 11 W.

Subsurface Tract # None

Portion Complete  
Acres Same

11 Archeological Sites\* incl. Great Kiva  
0.07 Sites Per Acre  
220 Archeological Resource  
Value Score\*  
1.4 Value Per Acre  
35 Natural Resource Value Score+  
0.22 Value Per Acre

110 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
10 % of area with steep slopes\*  
5+ % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

/P/ Threatened/Endangered Species

/X/ Endemic Species

/X/ Unusual Cultural Site Protections

/ / Erosion Control

/ / Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases \_\_\_\_\_

Mitigating Factors Allotment; not split  
estate.

LAND PROTECTION GOAL:

Surface: Acquire (exchange)

Subsurface: Acquire (exchange)

01-103

Surface Tract # 01-109

Portion Complete  
Acres Same

TRACT RESOURCE ANALYSIS  
Location: Sec. 3 & 11,  
R. 21 N., R. 11 W.

Subsurface Tract # 01-104

Portion 50% interest  
Acres 1,277

174 Archeological Sites\* Main Ruins  
0.14 Sites Per Acre  
2675 Archeological Resource  
Value Score\*  
2.1 Value Per Acre  
284 Natural Resource Value Score+  
0.22 Value Per Acre

Main  
Canyon% Visible from Major Visitor  
Main Attraction(s)\* Contains Main Ruins  
Canyon% of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
100 % of area with high potential  
for visitor use\* CURRENT USE

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

/ / Threatened/Endangered Species

/P/ Endemic Species

/X/ Unusual Cultural Site Protections

/X/ Erosion Control

/X/ Unusually Steep or Critical Watershed

Geological Features Fossil localities,  
rincons

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases \_\_\_\_\_

Mitigating Factors Contains primary ruins  
and visitor use area; split estate

LAND PROTECTION GOAL:

Surface: CURRENTLY Federal Estate

Subsurface: Acquisition (exchange/donation)

01-103  
Surface Tract # 01-109  
Portion Complete  
Acres Same

TRACT RESOURCE ANALYSIS  
Location: Sections 3 & 11,  
T. 21 N., R. 11 W.

Subsurface Tract # 01-151  
Portion 6.25% interest  
Acres 1,277

174 Archeological Sites\* Main Ruins  
0.14 Sites Per Acre  
2675 Archeological Resource  
Value Score\*  
2.1 Value Per Acre  
284 Natural Resource Value Score+  
0.22 Value Per Acre

Main Canyon % Visible from Major Visitor  
Main Attraction(s)\* Contains Main Ruins  
Canyon % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
100 % of area with high potential  
for visitor use\* CURRENT USE

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☒ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Fossil locations,  
rincons

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases

Mitigating Factors Contains primary ruins  
and visitor use areas; split estate

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: CURRENTLY Federal Estate

Subsurface: Acquisition (exchange/donation)

Surface Tract # 01-152  
Portion Complete  
Acres 192.40

TRACT RESOURCE ANALYSIS  
Location: Section 12,  
T. 20 N., R. 10 W.

Subsurface Tract # 02-101  
Portion Complete  
Acres 192.40

35 Archeological Sites\*  
0.18 Sites Per Acre  
395 Archeological Resource  
Value Score\*  
2.1 Value Per Acre  
74 Natural Resource Value Score+  
0.39 Value Per Acre

0 % Visible from Major Visitor  
Attraction(s)\*  
55 % of area that drains into the  
Chaco Wash\*  
25 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features Formations

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases Grazing

Mitigating Factors Split estate

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Cooperative Agreement

Subsurface: Acquire (exchange)

Surface Tract # 01-153

Portion Complete  
Acres 643.28

TRACT RESOURCE ANALYSIS

Location: Section 1,  
T. 20 N., R. 10 W.

Subsurface Tract # 02-103

Portion Complete  
Acres 643.28

88 Archeological Sites\*  
0.14 Sites Per Acre  
990 Archeological Resource  
Value Score\*  
1.6 Value Per Acre  
174 Natural Resource Value Score+  
0.27 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
15 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

X/ Threatened/Endangered Species  
/ Endemic Species  
X/ Unusual Cultural Site Protections  
X/ Erosion Control  
X/ Unusually Steep or Critical Watershed

Geological Features Rincons

Must cross Federal land to access Yes  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors NPS administers surface;  
BLM leases subsurface; grazed without a  
lease

LAND PROTECTION GOAL:

Surface: CURRENTLY NPS  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-154

Portion Complete  
Acres 640

TRACT RESOURCE ANALYSIS

Location: Section 36,  
T. 21 N., R. 10 W.

Subsurface Tract # NONE

Portion Same  
Acres Same

121 Archeological Sites\*incl. Shabic Village  
0.19 Sites Per Acre and Half House  
1630 Archeological Resource  
Value Score\*  
2.6 Value Per Acre  
191 Natural Resource Value Score+  
.30 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
40 % of area with steep slopes\*  
100 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

X/ Threatened/Endangered Species  
X/ Endemic Species  
X/ Unusual Cultural Site Protections  
X/ Erosion Control  
X/ Unusually Steep or Critical Watershed

Geological Features Natural Arch;  
Formations, Rincons, Fossils  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G, Mineral, Grazing  
Mitigating Factors Not split estate;  
owner willing to exchange

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-155

Portion 20%

Acres 160 of 800

TRACT RESOURCE ANALYSIS

Location: NE $\frac{1}{4}$  Sec. 34,

T. 21 N., R. 10 W.

13 Archeological Sites\*  
.08 Sites Per Acre  
145 Archeological Resource  
Value Score\*  
.9 Value Per Acre  
53 Natural Resource Value Score+  
.33 Value Per Acre  
  
90 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
20 % of area with steep slopes\*  
100 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

02-108

02-109

02-110

Surface Tract # 01-155

Portion 80%

Acres 640 of 800

TRACT RESOURCE ANALYSIS

Location: Section 35,

T. 21 N., R. 10 W.

Subsurface Tract # 02-111

Portion 80%

Acres 640 of 800

108 Archeological Sites\*  
0.17 Sites Per Acre  
1355 Archeological Resource  
Value Score\*  
2.1 Value Per Acre  
173 Natural Resource Value Score+  
.27 Value Per Acre  
  
35 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
25 % of area with steep slopes\*  
75 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species

☐ Endemic Species

☒ Unusual Cultural Site Protections

☒ Erosion Control

☒ Unusually Steep or Critical Watershed

Geological Features Rincons, natural arch,  
fossils

Must cross Federal land to access Yes

Potential Economic Minerals Yes

Current leases O & G

Mitigating Factors NPS administers the  
surface; BLM leases subsurface; grazed  
without a lease

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: CURRENTLY NPS

Subsurface: Regulatory control until  
expiration of lease



Surface Tract # 01-156

Portion Complete  
Acres 160

TRACT RESOURCE ANALYSIS  
Location: NW $\frac{1}{4}$ , Section 34,  
T. 21 N., R. 10 W.

Subsurface Tract # NONE

Portion Same  
Acres Same

13 Archeological Sites\*  
.08 Sites Per Acre  
145 Archeological Resource  
Value Score\*  
.90 Value Per Acre  
42 Natural Resource Value Score+  
.26 Value Per Acre  
  
75 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
5 % of area with steep slopes\*  
100 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Rincons

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases Allotment; not split estate  
Mitigating Factors \_\_\_\_\_

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-157

Portion 65%  
Acres 158 of 242.48

TRACT RESOURCE ANALYSIS  
Location: SE $\frac{1}{4}$ , Section 34  
T. 21 N., R. 10 W.

Subsurface Tract # 02-111

Portion 20%  
Acres 158 of 798

16 Archeological Sites\*  
.1 Sites Per Acre  
300 Archeological Resource  
Value Score\*  
.53 Value Per Acre  
55 Natural Resource Value Score+  
.34 Value Per Acre  
  
10 % Visible from Major Visitor  
Attraction(s)\*  
80 % of area that drains into the  
Chaco Wash\*  
30 % of area with steep slopes\*  
40 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Rincons

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors Split Estate; BLM  
administers subsurface (leased)

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-184  
Portion complete  
Acres 135.4

TRACT RESOURCE ANALYSIS  
Location: Section 33,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-113  
Portion same  
Acres same

16 Archeological Sites\*  
.17 Sites Per Acre  
135 Archeological Resource  
Value Score\*  
1.1 Value Per Acre  
49 Natural Resource Value Score+  
.38 Value Per Acre

35 % Visible from Major Visitor  
Attraction(s)\*  
40 % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
40 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☐ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Formations  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases Grazing  
Mitigating Factors Split Estate

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange/donation)

Surface Tract # 01-157  
Portion 35%  
Acres 84.48 of 242.48

TRACT RESOURCE ANALYSIS  
Location: SW<sup>1</sup>/<sub>4</sub>, Sec. 34  
T. 21 N., R. 10 W.

Subsurface Tract # 02-112  
02-153  
Portion 88%  
Acres 84.48 of 96

7 Archeological Sites\*  
1.3 Sites Per Acre  
140 Archeological Resource  
Value Score\*  
.69 Value Per Acre  
25 Natural Resource Value Score+  
.26 Value Per Acre

10 % Visible from Major Visitor  
Attraction(s)\*  
80 % of area that drains into the  
Chaco Wash\*  
30 % of area with steep slopes\*  
40 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Rincons  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors Split estate; BLM  
administers subsurface (leased)

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-158

Portion Complete  
Acres 50.20

TRACT RESOURCE ANALYSIS

Location: Section 3,  
T. 20 N., R. 10 W.

Subsurface Tract # 02-106

Portion Complete  
Acres 50.20

7 Archeological Sites\*  
.14 Sites Per Acre  
135 Archeological Resource  
Value Score\*  
2.7 Value Per Acre  
38 Natural Resource Value Score+  
.76 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
30 % of area that drains into the  
Chaco Wash\*  
25 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features Formations

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases Grazing

Mitigating Factors Split estate

LAND PROTECTION GOAL:

Surface: Acquire (exchange)

Subsurface: Acquire (exchange)

Surface Tract # 01-159

Portion Complete  
Acres 449.50

TRACT RESOURCE ANALYSIS

Location: Section 2,  
T. 20 N., R. 10 W.

Subsurface Tract # None

Portion Same  
Acres Same

64 Archeological Sites\*  
.14 Sites Per Acre  
775 Archeological Resource  
Value Score\*  
1.7 Value Per Acre  
124 Natural Resource Value Score+  
.28 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
65 % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Formations

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases Mineral; O & G; Grazing

Mitigating Factors State of New Mexico  
willing to exchange

LAND PROTECTION GOAL:

Surface: Acquire (exchange)

Subsurface: Acquire (exchange)

Surface Tract # 01-185  
Portion complete  
Acres 558.65

TRACT RESOURCE ANALYSIS  
Location: Section 4,  
T. 21 N., R. 10 W.

02-117  
02-118  
Subsurface Tract # 02-119  
Portion same  
Acres same

42 Archeological Sites\*  
.07 Sites Per Acre  
575 Archeological Resource  
Value Score\*  
1.4 Value Per Acre  
59 Natural Resource Value Score+  
.10 Value Per Acre

0 % Visible from Major Visitor  
Attraction(s)\*  
10 % of area that drains into the  
Chaco Wash\*  
5 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:  
☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases Split Estate  
Mitigating Factors \_\_\_\_\_

LAND PROTECTION GOAL:  
Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-186  
Portion complete  
Acres 39.42

TRACT RESOURCE ANALYSIS  
Location: Lot 1, Sec. 5,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-157  
Portion same  
Acres same

0 Archeological Sites\*  
0 Sites Per Acre  
0 Archeological Resource  
Value Score\*  
0 Value Per Acre  
0 Natural Resource Value Score+  
0 Value Per Acre

0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:  
☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases Unknown  
Mitigating Factors None  
Must acquire subsurface to meet legislative  
mandates.

LAND PROTECTION GOAL:  
Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease



Surface Tract # 01-160

Portion 9%  
Acres 80 of 880

TRACT RESOURCE ANALYSIS

Location: SE $\frac{1}{4}$ , Sec. 5,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-120

Portion Complete  
Acres 80

18 Archeological Sites\* POCO Site  
4.44 Sites Per Acre  
220 Archeological Resource  
Value Score\*  
1.8 Value Per Acre  
50 Natural Resource Value Score+  
.21 Value Per Acre  
  
50 % Visible from Major Visitor  
Attraction(s)\*  
25 % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases \_\_\_\_\_

Mitigating Factors Split estate, necessary  
to make manageable Unit

LAND PROTECTION GOAL:

Surface: Acquire

Subsurface: Acquire

Surface Tract # 01-160

Portion 73%  
Acres 640 of 880

TRACT RESOURCE ANALYSIS

Location: Section 9,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-116

Portion Complete  
Acres 640

35 Archeological Sites\*  
.06 Sites Per Acre  
510 Archeological Resource  
Value Score\*  
.8 Value Per Acre  
116 Natural Resource Value Score+  
.18 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
10 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☒ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Rincones

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases \_\_\_\_\_

Mitigating Factors SW $\frac{1}{4}$  contains head of  
Mockingbird Canyon which is in the  
Preservation Subzone; Split Estate

LAND PROTECTION GOAL:

Surface: Acquire (exchange)

Subsurface: Acquire

Surface Tract # 01-160

Portion 9<sup>0</sup>  
Acres 80 of 880

TRACT RESOURCE ANALYSIS

Location: SW $\frac{1}{4}$ , Sec. 5,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-159

Portion Entire  
Acres 80.00

9 Archeological Sites\*  
0.11 Sites Per Acre  
125 Archeological Resource  
Value Score\*  
1.56 Value Per Acre  
12 Natural Resource Value Score+  
0.15 Value Per Acre  
75 % Visible from Major Visitor  
Attraction(s)\*  
50 % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases Unknown

Mitigating Factors None

Must acquire subsurface to meet legislative  
mandates.

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-160

Portion 9%  
Acres 80 of 880

TRACT RESOURCE ANALYSIS

Location: SE $\frac{1}{4}$ , Sec. 5,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-160

Portion Entire  
Acres 80.00

9 Archeological Sites\*  
0.11 Sites Per Acre  
125 Archeological Resource  
Value Score\*  
1.56 Value Per Acre  
6 Natural Resource Value Score+  
0.08 Value Per Acre  
25 % Visible from Major Visitor  
Attraction(s)\*  
30 % of area that drains into the  
Chaco Wash\*  
15 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases Unknown

Mitigating Factors None

Must acquire subsurface to meet legislative  
mandates.

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-161  
Portion Entire  
Acres 80

TRACT RESOURCE ANALYSIS  
Location: SW $\frac{1}{4}$ , Section 5,  
T. 21 N., R. 10 W.

Subsurface Tract # None  
Portion Entire  
Acres Same

3 Archeological Sites\*  
.04 Sites Per Acre  
50 Archeological Resource  
Value Score\*  
.6 Value Per Acre  
16 Natural Resource Value Score+  
.20 Value Per Acre  
85 % Visible from Major Visitor  
Attraction(s)\*  
45 % of area that drains into the  
Chaco Wash\*  
25 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors Not split estate,  
manageable Unit necessity.

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)  
Subsurface: Acquire (exchange/donation)

Surface Tract # 01-162  
Portion Entire  
Acres 80

TRACT RESOURCE ANALYSIS  
Location: NE $\frac{1}{4}$ , Sec. 5,  
R. 21 N., R. 10 W.

Subsurface Tract # None  
Portion Same  
Acres Same

5 Archeological Sites\*  
.06 Sites Per Acre  
80 Archeological Resource  
Value Score\*  
1.0 Value Per Acre  
5 Natural Resource Value Score+  
.06 Value Per Acre  
20 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors Currently managed as  
a protected tract; not split estate

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire with appropriated funds  
Subsurface: Acquire with appropriated funds

Surface Tract # 01-163

Portion Entire  
Acres 39.51

TRACT RESOURCE ANALYSIS

Location: NE $\frac{1}{4}$ , Sec. 5,  
T. 21 N., R. 10 W.

Subsurface Tract # None

Portion Same  
Acres Same

0 Archeological Sites\*  
0 Sites Per Acre  
0 Archeological Resource  
Value Score\*  
0 Value Per Acre  
0 Natural Resource Value Score+  
0 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases \_\_\_\_\_

Mitigating Factors Not split estate;  
must acquire subsurface to meet legislative  
mandates.

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Acquire (exchange/donation)

Surface Tract # 01-164

Portion Entire  
Acres 39.59

TRACT RESOURCE ANALYSIS

Location: NW $\frac{1}{4}$ , Sec. 5,  
T. 21 N., R. 10 W.

Subsurface Tract # 02-158

Portion Entire  
Acres 39.59

1 Archeological Sites\*  
.03 Sites Per Acre  
15 Archeological Resource  
Value Score\*  
.3 Value Per Acre  
0 Natural Resource Value Score+  
0 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases Unknown

Mitigating Factors None  
Must acquire subsurface to meet legislative  
mandates.

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Acquire (exchange/donation)



Surface Tract # 01-165

Portion Entire

Acres 119.68

TRACT RESOURCE ANALYSIS

Location: NW<sup>1</sup>/<sub>4</sub>, Sec. 5,

T. 21 N., R. 10 W.

Subsurface Tract # None

Portion Same

Acres Same

4 Archeological Sites\*  
.03 Sites Per Acre  
60 Archeological Resource  
Value Score\*  
.5 Value Per Acre  
12 Natural Resource Value Score+  
.10 Value Per Acre  
  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species

☐ Endemic Species

☐ Unusual Cultural Site Protections

☐ Erosion Control

☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases \_\_\_\_\_

Mitigating Factors Not split estate; must  
acquire subsurface to meet legislative  
mandates.

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Acquire (exchange/donation)

Surface Tract # 01-166

Portion Entire

Acres Same

TRACT RESOURCE ANALYSIS

Location: Section 6,

T. 21 N., R. 10 W.

Subsurface Tract # 02-124

Portion Entire

Acres 636.4

34 Archeological Sites\*  
.05 Sites Per Acre  
465 Archeological Resource  
Value Score\*  
.7 Value Per Acre  
129 Natural Resource Value Score+  
.20 Value Per Acre  
  
100 % Visible from Major Visitor  
Attraction(s)\*  
50 % of area that drains into the  
Chaco Wash\*  
5 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species

☒ Endemic Species

☐ Unusual Cultural Site Protections

☐ Erosion Control

☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access Yes

Potential Economic Minerals Yes

Current leases O & G, Grazing

Mitigating Factors NPS administers surface;

BLM administers subsurface (leased)

LAND PROTECTION GOAL:

Surface: CURRENTLY NPS

Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-187

Portion 50%

Acres 319.32 of 638.56

TRACT RESOURCE ANALYSIS

Location: N<sup>1</sup>/<sub>2</sub>, Sec. 30,

T. 21 N., R. 10 W.

Subsurface Tract # 02-126

Portion Entire

Acres 319.32

40 Archeological Sites\*  
.13 Sites Per Acre  
430 Archeological Resource  
 Value Score\*  
1.4 Value Per Acre  
81 Natural Resource Value Score+  
.25 Value Per Acre

90 % Visible from Major Visitor  
 Attraction(s)\*  
100 % of area that drains into the  
 Chaco Wash\*  
55 % of area with steep slopes\*  
70 % of area with high potential  
 for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species

☒ Endemic Species

☐ Unusual Cultural Site Protections

☒ Erosion Control

☒ Unusually Steep or Critical Watershed

Geological Features Formations

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases O & G

Mitigating Factors Split Estate; Head of  
Werito Rincon and Part of South Mesa; in  
the Preservation Subzone

LAND PROTECTION GOAL:

Surface: Acquire (exchange)

Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-187

Portion 25%

Acres 160 of 638.56

TRACT RESOURCE ANALYSIS

Location: SE<sup>1</sup>/<sub>4</sub>, Sec. 30,

T. 21 N., R. 10 W.

Subsurface Tract # 02-127

Portion Entire

Acres 160

21 Archeological Sites\*  
.13 Sites Per Acre  
355 Archeological Resource  
 Value Score\*  
2.2 Value Per Acre  
13 Natural Resource Value Score+  
.08 Value Per Acre

115 % Visible from Major Visitor  
 Attraction(s)\*  
100 % of area that drains into the  
 Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
 for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species

☐ Endemic Species

☐ Unusual Cultural Site Protections

☒ Erosion Control

☒ Unusually Steep or Critical Watershed

Geological Features Formations

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases O & G

Mitigating Factors Split Estate

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-187  
Portion 25%  
Acres 159.24 of 638.56

TRACT RESOURCE ANALYSIS  
Location: SW $\frac{1}{4}$ , Sec. 30  
T. 21 N., R. 10 W.

02-128  
Subsurface Tract # 02-154  
Portion Entire  
Acres 159.24

18 Archeological Sites\*  
.11 Sites Per Acre  
22 Archeological Resource  
Value Score\*  
1.3 Value Per Acre  
37 Natural Resource Value Score+  
.23 Value Per Acre

140 % Visible from Major Visitor  
Attraction(s)\*  
100 % of area that drains into the  
Chaco Wash\*  
50 % of area with steep slopes\*  
15 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Formations

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors Split Estate; Head of  
Werito Rincon and part of South Mesa; in  
the Preservation Subzone

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-167  
Portion 68%  
Acres 2,720 of 3,998.56

TRACT RESOURCE ANALYSIS  
Location: Sec. 21, 22, 23, 25, Acres 2,720  
and NE $\frac{1}{4}$  of 26, T. 21 N., R. 11 W.

Subsurface Tract # 02-129  
Portion Entire

186 Archeological Sites\*  
.10 Sites Per Acre  
2725 Archeological Resource  
Value Score\*  
1.2 Value Per Acre  
393 Natural Resource Value Score+  
.15 Value Per Acre  
20 % Visible from Major Visitor  
Attraction(s)\* South Gap = 150%  
90 % of area that drains into the  
Chaco Wash\* South Gap = 100%  
25 % of area with steep slopes\*  
20 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☒ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control (Part)  
☒ Unusually Steep or Critical Watershed  
(Part)

Geological Features Rincons, Fossils

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases Grazing  
Mitigating Factors Split Estate; part  
contains Mesas in Preservation Subzone;  
South Gap Viewshed

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)  
Subsurface: Acquire (exchange/donation)

Surface Tract # 01-167  
Portion 16%  
Acres 640 of 3,998.56

TRACT RESOURCE ANALYSIS  
Location: Section 15,  
T. 21 N., R. 11 W.

02-131  
Subsurface Tract # 02-148  
Portion Entire  
Acres 640

39 Archeological Sites\*  
.06 Sites Per Acre  
495 Archeological Resource  
Value Score\*  
.8 Value Per Acre  
167 Natural Resource Value Score+  
.26 Value Per Acre

120 % Visible from Major Visitor  
Attraction(s)\*  
85 % of area that drains into the  
Chaco Wash\*  
30 % of area with steep slopes\*  
70 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Formations, Rincons,  
Fossils  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors Split Estate; contains  
West Mesa which is in the Preservation  
Subzone

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange/donation)

Surface Tract # 01-168  
Portion Entire  
Acres 640

TRACT RESOURCE ANALYSIS  
Location: Section 18,  
T. 21 N., R. 11 W.

Subsurface Tract # None  
Portion Same  
Acres Same

23 Archeological Sites\*  
.04 Sites Per Acre  
340 Archeological Resource  
Value Score\*  
.5 Value Per Acre  
122 Natural Resource Value Score+  
.20 Value Per Acre

25 % Visible from Major Visitor  
Attraction(s)\*  
5 % of area that drains into the  
Chaco Wash\*  
30 % of area with steep slopes\*  
10 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☒ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☒ Unusually Steep or Critical Watershed

Geological Features Rincons, Formations  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G, Minerals  
Mitigating Factors Not split estate;  
owner willing to exchange

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)



Surface Tract # 01-169  
Portion Entire  
Acres 160

TRACT RESOURCE ANALYSIS  
Location: NE $\frac{1}{4}$ , Sec. 24,  
T. 21 N., R. 12 W.

Subsurface Tract # None  
Portion Same  
Acres Same

17 Archeological Sites\*  
.11 Sites Per Acre  
245 Archeological Resource  
Value Score\*  
1.5 Value Per Acre  
Natural Resource Value Score+ } Disturbed  
Value Per Acre } Area

100 % Visible from Major Visitor  
Attraction(s)\* Kin Klizhin  
% of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
% of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:  
☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control for Kin Klizhin and  
associated canals  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors NOT split estate

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:  
Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-170  
Portion Entire  
Acres 160

TRACT RESOURCE ANALYSIS  
Location: NW $\frac{1}{4}$ , Sec. 24,  
T. 21 N., R. 12 W.

Subsurface Tract # 02-134  
Portion Entire  
Acres 160

10 Archeological Sites\*  
.06 Sites Per Acre  
145 Archeological Resource  
Value Score\*  
.9 Value Per Acre  
38 Natural Resource Value Score+  
.24 Value Per Acre  
75 % Visible from Major Visitor  
Attraction(s)\* Kin Klizhin  
% of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
% of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:  
☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control for Kin Klizhin and  
associated canals  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_  
Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors Split Estate; subsurface  
owned and leased by Allottee

\*From GMP Resource Analysis  
+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:  
Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-171

Subsurface Tract # 02-155

Portion Entire  
 Acres 160

## TRACT RESOURCE ANALYSIS

Location: SW<sup>1</sup><sub>4</sub>, Sec. 24,  
T. 21 N., R. 12 W.

Portion Entire  
 Acres 160

10 Archeological Sites\*  
.06 Sites Per Acre  
220 Archeological Resource  
 Value Score\*  
1.3 Value Per Acre  
9 Natural Resource Value Score+  
.06 Value Per Acre  
85 % Visible from Major Visitor  
 Attraction(s)\* Kin Klizhin  
 % of area that drains into the  
 Chaco Wash\*  
0 % of area with steep slopes\*  
 % of area with high potential  
 for visitor use\*

## SPECIAL PROTECTIONS NEEDED:

☒ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control for Kin Klizhin and  
 associated canals  
☐ Unusually Steep or Critical Watershed

## Geological Features \_\_\_\_\_

Must cross Federal land to access Yes  
 Potential Economic Minerals Yes  
 Current leases O & G; Grazing  
 Mitigating Factors NPS administers surface;  
BLM administers subsurface (leased)

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

## LAND PROTECTION GOAL:

Surface: CURRENTLY NPS  
 Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-172

Subsurface Tract # None

Portion Entire  
 Acres 160

## TRACT RESOURCE ANALYSIS

Location: SE<sup>1</sup><sub>4</sub>, Sec. 24,  
T. 21 N., R. 12 W.

Portion Same  
 Acres Same

22 Archeological Sites\*  
.14 Sites Per Acre  
345 Archeological Resource  
 Value Score\*  
2.2 Value Per Acre  
4 Natural Resource Value Score+  
.03 Value Per Acre  
85 % Visible from Major Visitor  
 Attraction(s)\* Kin Klizhin  
 % of area that drains into the  
 Chaco Wash\*  
0 % of area with steep slopes\*  
 % of area with high potential  
 for visitor use\*

## SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control for Kin Klizhin and  
 associated canals  
☐ Unusually Steep or Critical Watershed

## Geological Features \_\_\_\_\_

Must cross Federal land to access No  
 Potential Economic Minerals Yes  
 Current leases \_\_\_\_\_  
 Mitigating Factors Not split estate;  
must acquire subsurface to meet legal  
mandates

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

## LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
 Subsurface: Acquire (exchange)

Surface Tract # 01-173

Portion Entire  
Acres 640

TRACT RESOURCE ANALYSIS

Location: Section 25,  
T. 21 N., R. 12 W.

Subsurface Tract # 02-136

Portion Entire  
Acres 640

82 Archeological Sites\* Kin Klizhin Ruin  
.13 Sites Per Acre  
1350 Archeological Resource  
Value Score\*  
2.1 Value Per Acre  
39 Natural Resource Value Score+  
.07 Value Per Acre  
  
100 % Visible from Major Visitor  
Attraction(s)\* Kin Klizhin  
% of area that drains into the  
Chaco Wash\*  
% of area with steep slopes\*  
% of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☒ Endemic Species  
☒ Unusual Cultural Site Protections  
Kin Klizhin  
☒ Erosion Control for Kin Klizhin  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors Split estate; Kin  
Klizhin located in NW $\frac{1}{4}$

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)  
Subsurface: Acquire (exchange/donation)

Surface Tract # 01-174

Portion Entire  
Acres 40

TRACT RESOURCE ANALYSIS

Location: SW $\frac{1}{4}$ , Sec. 32,  
T. 21 N., R. 12 W.

Subsurface Tract # 02-138

Portion Entire  
Acres 40

4 Archeological Sites\*  
.10 Sites Per Acre  
70 Archeological Resource  
Value Score\*  
1.8 Value Per Acre  
14 Natural Resource Value Score+  
.35 Value Per Acre  
  
100 % Visible from Major Visitor  
Attraction(s)\* Kin Bineola  
% of area that drains into the  
Chaco Wash\*  
% of area with steep slopes\*  
% of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☒ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features Bluffs

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases Minerals, Grazing  
Mitigating Factors Not split estate;  
owner willing to exchange

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-175

Portion Entire  
Acres 80

TRACT RESOURCE ANALYSIS

Location: SE $\frac{1}{4}$ , Sec. 31,  
T. 21 N., R. 12 W.

Subsurface Tract # 02-155

Portion Entire  
Acres 80

9 Archeological Sites\*  
.11 Sites Per Acre  
100 Archeological Resource  
Value Score\*  
1.3 Value Per Acre  
9 Natural Resource Value Score+  
.11 Value Per Acre  
15 % Visible from Major Visitor  
Attraction(s)\* Kin Bineola  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors Split Estate

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)  
Subsurface: Acquire (exchange/donation)

Surface Tract # 01-176

Portion 10%  
Acres 47.07 of 448.30

TRACT RESOURCE ANALYSIS

Location: NE $\frac{1}{4}$ , Sec. 6,  
T. 20 N., R. 12 W.

Subsurface Tract # 02-139

Portion Entire  
Acres 47.07

7 Archeological Sites\*  
.30 Sites Per Acre  
90 Archeological Resource  
Value Score\*  
3.8 Value Per Acre  
5 Natural Resource Value Score+  
.21 Value Per Acre  
100 % Visible from Major Visitor  
Attraction(s)\* Kin Bineola  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases 0 & G  
Mitigating Factors Split Estate

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)  
Subsurface: Regulatory control until  
expiration of lease



Surface Tract # 01-176

Portion 90%

Acres 401.23 of 448.30

TRACT RESOURCE ANALYSIS

Location: Section 5,

T. 20 N., R. 12 W.

Subsurface Tract # 02-140

Portion Entire

Acres 401.23

59 Archeological Sites\*  
.15 Sites Per Acre  
920 Archeological Resource  
Value Score\*  
2.3 Value Per Acre  
61 Natural Resource Value Score+  
.15 Value Per Acre

75 % Visible from Major Visitor  
Attraction(s)\* Kin Bineola  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species

☐ Endemic Species

☒ Unusual Cultural Site Protections

☒ Erosion Control

☐ Unusually Steep or Critical Watershed

Geological Features

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases

Mitigating Factors Split Estate

LAND PROTECTION GOAL:

Surface: Acquire (exchange/donation)

Subsurface: Acquire (exchange/donation)

Surface Tract # 01-177

Portion Entire

Acres 80

TRACT RESOURCE ANALYSIS

Location: NE $\frac{1}{4}$ , Sec. 8

T. 21 N., R. 12 W.

Subsurface Tract # None

Portion Same

Acres Same

9 Archeological Sites\*  
.11 Sites Per Acre  
145 Archeological Resource  
Value Score\*  
1.8 Value Per Acre  
27 Natural Resource Value Score+  
.34 Value Per Acre

0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species

☐ Endemic Species

☐ Unusual Cultural Site Protections

☒ Erosion Control

☐ Unusually Steep or Critical Watershed

Geological Features

Must cross Federal land to access No

Potential Economic Minerals Yes

Current leases

Mitigating Factors NOT SPLIT ESTATE

Must acquire subsurface to meet legal  
mandate; Allotment

LAND PROTECTION GOAL:

Surface: Acquire (exchange)

Subsurface: Acquire (exchange)

Surface Tract # 01-178  
Portion Entire  
Acres 160

TRACT RESOURCE ANALYSIS  
Location: NW $\frac{1}{4}$ , Sec. 8,  
T. 21 N., R. 12 W.

Subsurface Tract # None  
Portion Same  
Acres Same

8 Archeological Sites\*  
.05 Sites Per Acre  
100 Archeological Resource  
Value Score\*  
.6 Value Per Acre  
13 Natural Resource Value Score+  
.08 Value Per Acre  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors NOT Split Estate; must  
acquire subsurface to meet legal mandate;  
allotment

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-179  
Portion 60%  
Acres 160 of 280

TRACT RESOURCE ANALYSIS  
Location: SW $\frac{1}{4}$ , Sec. 8,  
T. 20 N., R. 12 W.

02-143  
Subsurface Tract # 02-144  
Portion Entire  
Acres 160

14 Archeological Sites\*  
.09 Sites Per Acre  
210 Archeological Resource  
Value Score\*  
1.3 Value Per Acre  
13 Natural Resource Value Score+  
.08 Value Per Acre  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
5 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases 0 & G  
Mitigating Factors Split Estate; Federal  
Subsurface is leased

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Regulatory control until  
expiration of lease

Surface Tract # 01-179  
Portion 40%  
Acres 120 of 280

TRACT RESOURCE ANALYSIS

Location: N. portion of  
T. 20 N., R. 12 W.

Subsurface Tract # 02-146  
Portion Entire  
Acres 120

24 Archeological Sites\*  
.20 Sites Per Acre  
480 Archeological Resource  
Value Score\*  
4.0 Value Per Acre  
29 Natural Resource Value Score+  
.24 Value Per Acre  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
5 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors Split Estate

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-180  
Portion Entire  
Acres 80

TRACT RESOURCE ANALYSIS

Location: SE 1/4, Sec. 8,  
T. 20 N., R. 12 W.

Subsurface Tract # None  
Portion Same  
Acres Same

14 Archeological Sites\*  
.18 Sites Per Acre  
240 Archeological Resource  
Value Score\*  
3.0 Value Per Acre  
21 Natural Resource Value Score+  
.26 Value Per Acre  
0 % Visible from Major Visitor  
Attraction(s)\*  
0 % of area that drains into the  
Chaco Wash\*  
5 % of area with steep slopes\*  
0 % of area with high potential  
for visitor use\*

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☒ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases \_\_\_\_\_  
Mitigating Factors NOT Split Estate; must  
acquire subsurface to meet legal mandate;  
Allotment

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Acquire (exchange)

Surface Tract # 01-181

Portion Entire  
Acres 150

TRACT RESOURCE ANALYSIS

Location: NE $\frac{1}{4}$ , Sec. 28,  
T. 17 N., R. 12 W.

Subsurface Tract # 02-152

Portion Entire  
Acres 160

50 Archeological Sites\*  
.31 Sites Per Acre  
875 Archeological Resource  
Value Score\*  
5.4 Value Per Acre  
0 Natural Resource Value Score+  
0 Value Per Acre  
100 % Visible from Major Visitor  
Attraction(s)\* Kin Ya'a  
0 % of area that drains into the  
Chaco Wash\*  
0 % of area with steep slopes\*  
125 % of area with high potential  
for visitor use\*

\*From GMP Resource Analysis

+From Parks Resource Basic Inventory

SPECIAL PROTECTIONS NEEDED:

☐ Threatened/Endangered Species  
☐ Endemic Species  
☐ Unusual Cultural Site Protections  
☐ Erosion Control  
☐ Unusually Steep or Critical Watershed

Geological Features \_\_\_\_\_

Must cross Federal land to access No  
Potential Economic Minerals Yes  
Current leases O & G  
Mitigating Factors Allotment; BIA issued  
subsurface lease; pre-existing extraction  
operations

LAND PROTECTION GOAL:

Surface: Acquire (exchange)  
Subsurface: Cooperative Agreement



## APPENDIX I: FINDING OF NO SIGNIFICANT IMPACT

### General Management Plan/Development Concept Plan and Land Protection Plan

#### Chaco Culture National Historical Park New Mexico

#### Introduction

The National Park Service (NPS) is in the process of preparing a new general management plan (GMP) for Chaco Culture National Historical Park. The GMP and an accompanying land protection plan (LPP) that provides for protection of approximately 13,205 acres of new park lands were required by the enactment of Public Law 96-550, December 19, 1980. The plans provide guidance for the preservation, use, development, and operation of the park for the next 10-15 years and beyond.

In developing these plans, the views of other federal, state, and local governmental agencies, the Navajo Tribe, private organizations, and individuals were sought in a series of formal meetings the first of which were held in Farmington, Crownpoint, and Albuquerque, New Mexico during March, 1983. The draft GMP and LPP were prepared and released to the public for review in October 1984. A formal public meeting was held in Albuquerque, November 1, 1984 to receive public comments on the draft plans. A series of consultation meetings were also conducted with federal, state, and local governments, the Navajo Tribe, individuals, and energy companies to discuss plan proposals, suggested plan changes, and implementation procedures.

Following the issuance of this document a final GMP/DCP and LPP will be prepared, approved, and released for public information.

#### Summary of Draft Plan Proposals

The GMP/DCP revises and updates a GMP approved in 1979, and many of the concepts in the earlier plan have been carried forward. The current GMP provides

a general strategy for managing lands within the expanded boundary. It includes an analysis of critical resource values and an overall management zoning concept. Land protection proposals are summarized in the GMP and described on a tract-by-tract basis in the Land Protection Plan that is being circulated concurrently. Other GMP and DCP proposals include the rehabilitation of the fence along the old national monument boundary and establishment of markers along the newly authorized boundary by agreement with landowners; an improved interpretive program to provide opportunities for greater personal contact between visitors and interpretive staff; a regulated access system in the primary ruins area during peak periods; relocation of the campgrounds to provide a more desirable camping setting above the 100-year floodplain; continued monitoring of activities near the park to reduce their impacts on park resources; an increase in the ruins maintenance program and limited backfilling of excavated rooms to bring stabilization to an acceptable standard; and renovation or development of utility, waste disposal, and communication systems. This document includes alternatives for the major GMP/DCP proposals, and it assesses impacts of the plan and alternatives.

The management zoning system proposed in the GMP/DCP and in the LPP defines appropriate uses and management strategies for specific areas within the park. Four subzones were proposed each providing specific guidance on permitted land uses within each subzone. According to the zoning system, grazing within the 13,205 acre park addition would have been permitted on approximately 8,205 acres and discontinued on approximately 5,000 acres.

The LPP proposes a protection strategy for 13,205 acres of recently authorized park lands. The proposed strategy consists of cooperative agreements, conservation easements, and fee acquisition through the use of exchanges utilizing existing surface and subsurface lands under the management of the Bureau of Land Management. In those cases where the LPP recommends acquisition of private lands or an interest in private lands, the recommended method of acquisition is to be through the use of an exchange utilizing federal property under the jurisdiction of the Secretary of Interior that are not managed by the National Park Service. LPP proposals address the protection and management of all surface and subsurface rights and interest.

Three basic protection methods were proposed for surface rights: 3,676.6 acres were to be protected by cooperative agreement, 1,440 acres by conservation easements, and 5,848.66 acres to be acquired in fee through the use of land exchanges. The LPP also proposed to acquire all subsurface interest including leases through exchange, except for a 160-acre tract within the Kin Ya'a unit that is to be managed by means of a cooperative agreement.

### Summary of Public Response

Public review of the draft planning documents was conducted during October and November 1984. A formal public meeting was held in Albuquerque in November 1, 1984 which was attended by 35 individuals. Six consultation meetings were held with agency and private interests that were attended by a total of 90 individuals. The NPS received 27 written responses to the draft plans from governmental agencies, energy companies, the Navajo Tribe, and private individuals.

The majority of verbal and written comments received during the public review focused on the following concerns: Grazing within the park boundary, the use of cooperative agreements versus land exchanges to protect park lands, the need for more collective planning with the Navajo Tribe and other involved governmental agencies, regional transportation needs within the vicinity of the park, acquisition of road rights-of way along the north side of the park, Navajo Tribal involvement with park operations, improved NPS communication with allottees, the lack of legislative authority to exchange subsurface leases, the control of oil and gas exploration and development prior to implementation of protection measures, and the need to more completely address native American religious freedom concerns.

The New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation participated in the development of the plan in accordance with the Programmatic Memorandum of Agreement between the National Park Service, the Advisory Council, and the National Conference of State Historic Preservation Officers.

### Plan Changes As A Result Of Public Review

Additions and modifications will be made to the GMP/DCP and LPP to reflect changes that were formulated during and subsequent to the public review period.

Changes that will be made to the LPP also will be summarized in the GMP/DCP. More emphasis on consideration of native American concerns will be included in the final GMP. Park addition lands where proposals for a reduction in grazing were made will be reevaluated cooperatively with Navajo Tribal representatives. The purpose of further discussions of grazing will be to make the plan and management zoning system less restrictive to grazing within the new park addition. Also, the NPS will place emphasis on increasing Navajo employment at Chaco Culture and within other NPS managed areas located within the Navajo reservation area.

As a result of public and agency review of the LPP, it has been determined by the NPS Field Solicitor that the NPS and Bureau of Land Management do not have legal authority to exchange lessees' interest in federal oil and gas leases within Chaco for the lessees' right to select an oil and gas lease of comparable value in the same general area outside Chaco Culture. Such an exchange would require special legislative action to provide for legal authority. However, the lack of this authority does not prevent lessees from relinquishing their interest in the leases within Chaco Culture to the United States or NPS, if they so desire. Because of the stated position of the Navajo Tribe not to enter into cooperative agreements on Tribal fee lands within Chaco Culture, this proposal will be modified to provide for exchange of Tribal fee lands within the park for Bureau of Land Management lands within the vicinity of the park.

The NPS will pursue a commercial lease of State of New Mexico lands within the recently expanded park area prior to completing the proposed exchange. This will be undertaken to provide the NPS with some level of resource protection and access to cultural resources. The NPS will consult with Navajo Tribal representatives to assure that all LPP details are accurate and conform with records of the Navajo Tribal Lands Office.

### Impact Summary

The proposals in the GMP/DCP and LPP are expected to be beneficial to the protection and long-range care of the important cultural resources of Chaco Culture. Impacts on visitor use should be positive allowing for a more complete understanding of the significance of the "Chacoan phenomenon" and with the use of facilities that will have less safety risk to visitors.



The proposals are expected to have minimal adverse impacts on cultural and natural resources. No impacts on endangered species, floodplains, and wetlands are anticipated. Minimal impacts on the local economy may result because the potential for mineral activity within the recently added park lands will be largely excluded. The extent of these economic impacts is unknown because the new park lands have not been thoroughly investigated for mineral resources. Some localized resource impacts could result from oil and gas exploration and development within the new park addition if holders of lease interest improve their lease before the termination of the lease. Impacts would be controlled in these potential cases by the use of existing federal regulations including 36 CFR, 9B.

### Conclusion

After a review of the draft GMP/DCP and LPP and public and agency response, it has been determined that the implementation of the plan does not constitute a major federal action significantly affecting the human environment and that an environmental impact statement will not be prepared.

Recommended: /s/ Thomas G. Vaughan 5/28/85  
Superintendent, Chaco Culture National Historical Park      Date

Approved:  5/28/85  
Regional Director, Southwest Region      Date

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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