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ENVIRONMENTAL ASSESSMENT

for the

GENERAL MANAGEMENT PLAN and DEVELOPMENT CONCEPT PLAN

October 1985

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HOVENWEEP NATIONAL MONUMENT COLORADO-UTAH

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ENVIRONMENTAL ASSESSMENT

for the General Management Plan and Development
Concept Plan, Hovenweep National Monument,
Colorado and Utah.

NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF THE INTERIOR

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CHAPTER I

PURPOSE AND NEED

A. INTRODUCTION

This environmental assessment (EA) was prepared to disclose the potential environmental consequences that may result from implementation of various management alternatives at Hovenweep National Monument. The monument is managed by the Superintendent of Mesa Verde National Park. Also, this EA documents the steps used by the National Park Service (NPS) in the process of preparing a general management plan and development concept plan. The process is intended to address issues or problems identified by the public, the NPS, and other government Agencies. After this EA is completed, along with further public involvement, an alternative(s) will be selected from those presented in Chapter II of this document. Currently, the National Park Service does not have a preferred management alternative. The selected alternative will provide the framework for preparation of the Hovenweep National Monument General Management and Development Concept Plans.

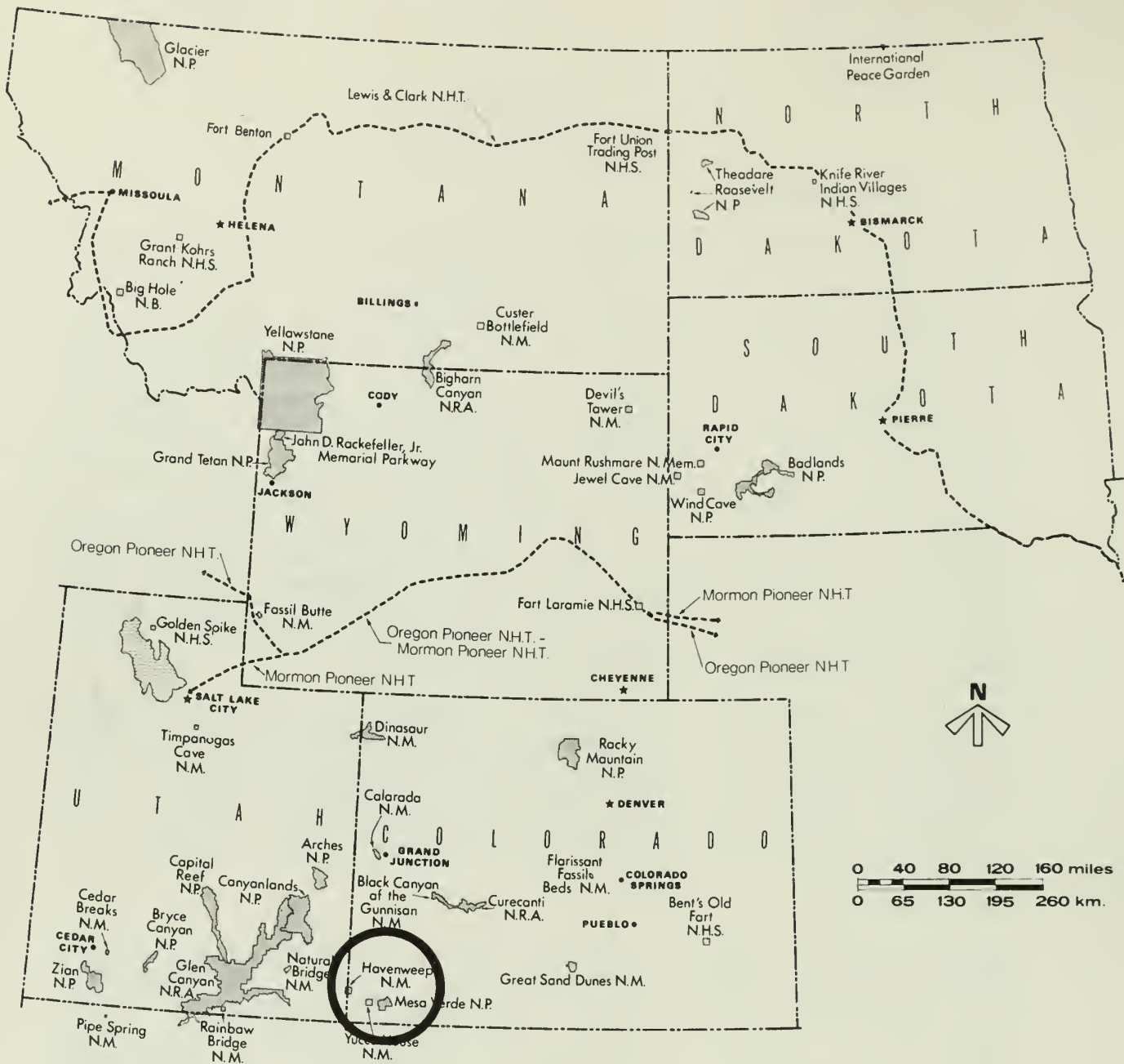
Hovenweep National Monument consists of six separate administrative units located in southwestern Colorado and southeastern Utah. Cortez, Colorado, is 45 miles east and Blanding, Utah, 45 miles west of the monument. Map I.1, the Location Map, and Map I.2, the Area Map, display the relationship of Hovenweep to other areas of the region.

B. PURPOSE

Hovenweep National Monument was established by Presidential Proclamation 1654, March 2, 1923. Presidential Proclamations 2924, April 29, 1951; 2998, November 20, 1952; and 3132, April 6, 1956, and Public Land Order 2604, February 5, 1962, adjusted the boundaries of Hovenweep National Monument (see Appendix A, Legislation). Hovenweep National Monument does not presently have a general management plan. The area is managed on an interim basis in accordance with the monument's statement for management which is updated every 2 years. An interim interpretive prospectus was prepared for the area in 1974. The purpose of this EA is to analyze various alternatives for management of Hovenweep National Monument. The selected alternative will provide for management, via a General Management Plan for the next 10 to 15 years.

C. NEED

The six monument units exist today much the same as they have for the past three decades, even though visitation patterns and levels of use have changed during this period.

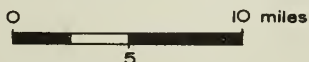
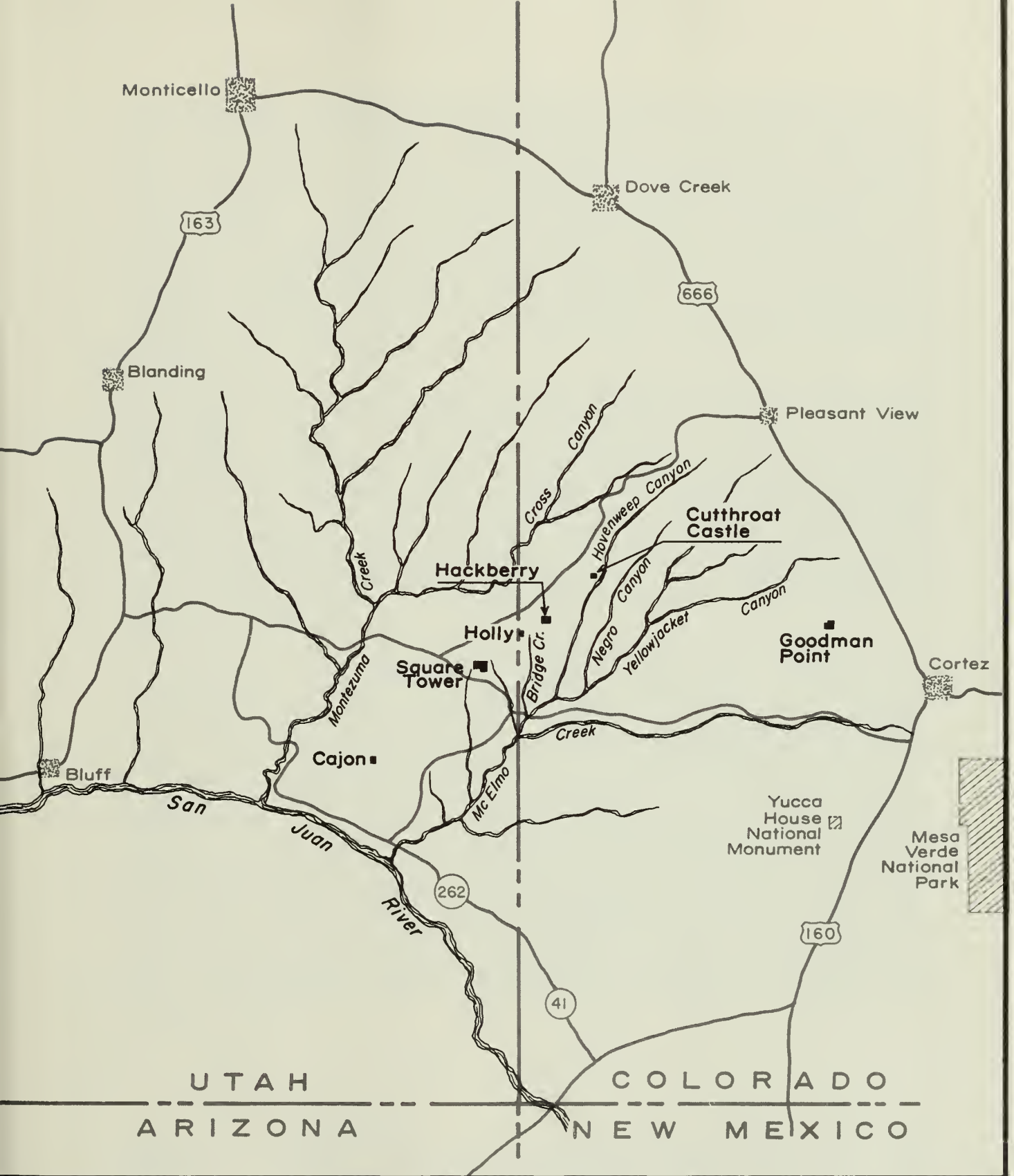


Legend

- Locations of Major Cities
- ★ Locations of State Capitals
- ▭ State Boundary Lines
- ▭ National Park Service Areas
- National Park Service Historical Trails

Map I.1 Location Map ROCKY MOUNTAIN REGION

National Park Service
United States Department
of the Interior



Map I.2
Area Map
Hovenweep National Monument
Colorado-Utah
 U.S. Dept. of the Interior - National Park Service

Existing and potential development in the area promises even more dramatic change in the near future. Visitor services and facilities at the monument have essentially remained unchanged since the 1960's, with the Visitor Center dating back to the 1950's. New findings since the monument's establishment in 1923 regarding archeological resources in the area have raised questions about the position of the Hovenweep canyonhead sites in the development of the Anasazi culture. Energy exploration and development in the vicinity during the past few years have posed a new situation with regard to access and the need for greater resource understanding and protection.

A majority of lands surrounding Hovenweep National Monument (see Map II.1) are administered by the Bureau of Land Management (BLM). A resource management plan has been prepared by the BLM for the San Juan/San Miguel resource areas which includes lands surrounding the monument's units in Colorado. The Utah BLM offices are presently preparing a similar plan for southeastern Utah including land around the two monument units in Utah. Management outlined by the San Juan/San Miguel plan includes a no-surface occupancy stipulation on lands surrounding Hovenweep National Monument units in Colorado.

In light of this changing situation, need for this EA is expressed by issues. The following issues were identified by the public, the National Park Service, and other government Agencies during a public involvement program begun in May 1981. Initial public involvement was obtained through a scoping brochure that was distributed to interested publics and organizations. In January 1985 public workshops were held in Monticello, Utah, and Cortez, Colorado, to discuss preliminary alternatives and identify additional issues. On January 10, 1985, a special meeting was held with all affected agencies to exchange information and ideas. The issues represent concerns or problems that individuals and groups have expressed to date regarding the future of Hovenweep National Monument. This planning effort will respond to these concerns. As new issues are identified during the planning process, they will be added to this list.

D. ISSUES

1. Identified Issues

ISSUE A: IDENTIFY THE TYPE AND LEVEL OF USE APPROPRIATE FOR EACH OF THE HOVENWEEP NATIONAL MONUMENT UNITS

This issue includes the amount and type of visitor use provided at the monument. Some people believe the low levels of use at Hovenweep should be maintained, let Hovenweep be maintained as it is. Others feel the monument

should accommodate a greater variety of visitors at all Hovenweep units. Still others believe the Square Tower Unit should be improved to provide additional services while the remaining outlying units should be left undeveloped.

ISSUE B: DETERMINE HOW THE AREA'S CULTURAL RESOURCES CAN BEST BE PROTECTED FROM VANDALISM AND NATURAL DETERIORATION

This issue includes the strategies necessary to protect and maintain the artifacts and ruins of Hovenweep National Monument. Many people feel greater control is needed to minimize intentional and unintentional vandalism of the ruins. They feel if use continues to increase and additional services are not provided, then the integrity of Hovenweep could be severely impacted. Also, people felt additional research and stabilization programs are needed to maintain the architectural groups while others felt natural deterioration was acceptable and the ruins should be left alone. A majority of respondents felt that storage of Hovenweep artifacts at Mesa Verde National Park has been working well for years and should therefore be maintained. A few people believed storage facilities should be provided at Hovenweep to allow quicker curation and access.

ISSUE C: DETERMINE THE TYPE OF ACCESS THAT SHOULD BE PROVIDED TO EACH OF HOVENWEEP NATIONAL MONUMENTS' UNITS

Many people believe the existing poor access to Hovenweep and planned lack of directional signs to the outlying units act to protect the ruins by controlling the number and type of visitors. These people believe this situation should be maintained. Others felt access should be improved by paving roads so more people would visit the monument to help the tourist industry. Still others felt access should only be improved to Square Tower and primitive access should be maintained at outlying units. This would provide a variety of recreation experiences to accommodate different types of monument visitors.

ISSUE D: IDENTIFY RESOURCES IN THE HOVENWEEP AREA THAT ARE NECESSARY FOR UNDERSTANDING AND INTERPRETING THE HOVENWEEP CULTURE

A majority of respondents felt research and interpretive programs should be expanded to include aspects of the Anasazi culture that lead up to the architectural towers. They believe this is necessary to obtain total understanding of how the towers developed. Others felt that protection of Hovenweeps' towers is primary and that additional research and interpretation is not necessary.

ISSUE E: IDENTIFY LAND PROTECTION STRATEGIES NECESSARY TO PROTECT HOVENWEEP NATIONAL MONUMENT AND ITS RELATED VALUES

Some people believe only National Park Service management can adequately protect ruins and archeological sites in and adjacent to Hovenweep National Monument. They feel boundaries of the monument should be expanded to include surrounding Bureau of Land Management, State of Utah, and private lands. Suggestions regarding the amount of expansion was wide and varied. These people felt that livestock grazing and energy associated activities on surrounding lands are adversely affecting the cultural resource values. They feel that protection of cultural resources should be a higher priority in the mission of the Bureau of Land Management.

Others felt that current land ownership patterns should be maintained. They feel if Federal and State agencies would cooperate, strategies for protection of cultural resources could be developed. These people point out that the Bureau of Land Management is also responsible for management of cultural resources.

ISSUE F: RESPOND TO THE MONUMENT VISITOR'S NEEDS FOR SAFETY, INFORMATION, AND INTERPRETATION

Some people believe the low level of interpretive services and the "homemade" interpretive exhibits are unique and appropriate for Hovenweep. They feel this level of services should be maintained; however, more effort should be placed on information distribution to warn visitors of potential hazards as well as the fragility of the ruins. Others feel a more structured interpretive program is needed with guided trail tours and programs for large groups. These people believe an expanded interpretive program is essential for visitor safety and increased awareness of the ruins to minimize unintentional vandalism.

ISSUE G: DETERMINE WHAT FACILITIES ARE NEEDED FOR RESOURCE PROTECTION, VISITOR USE, AND ADMINISTRATION OF HOVENWEEP NATIONAL MONUMENT

Many people believe Hovenweep National Monument is unique in the National Park System because very few facilities are provided for visitor use. They feel this situation should be maintained because visitors who prefer a highly structured environment can go to other areas. They contend the National Park Service should "let Hovenweep be Hovenweep." Others feel more facilities should be provided at the Square Tower Unit; however, the outlying units should be left in their current "undeveloped" conditions. A few respondents expressed the desire to develop all of Hovenweeps' units to encourage more visitation and help the local tourist economy.

2. Planning Objectives

Need is also expressed in terms of planning objectives. The following planning objectives are based on the management objectives listed in Hovenweep National Monuments Statement for Management and the issues listed above.

a. Resource Protection

Preserve and protect the monument's cultural and scientific resources from deterioration by either natural forces or human activities.

b. Visitor Use

Provide for the health, safety, and convenience of the monument's visitors and residents.

c. Management Efficiency

Promote efficient and cost effective management of the monument's resources and visitor services.

d. Research

Encourage and provide to bona fide educational institutions and qualified individuals the opportunity for research that is consistent with National Park Service needs and values.

e. Interpretation

Provide the best interpretation possible of Hovenweep and the surrounding area's cultural history to the park visitor and of secondary themes relative to the natural history.

CHAPTER II
ALTERNATIVES

A. INTRODUCTION

This chapter describes the range of alternatives developed for the Hovenweep National Monument General Management Plan (GMP) and Development Concept Plan (DCP). As discussed earlier, the National Park Service does not presently have a preferred management alternative. These alternatives may be modified during the planning process as additional data and public input is obtained. Appendix B includes a breakdown of estimates for initial construction costs required for each alternative. Development Concept maps that apply to the various alternatives are included following the alternative descriptions. Chapter III contains existing condition discussions, and maps that apply to the minimum requirement/no action alternative.

B. ALTERNATIVE FORMULATION

Each of the alternatives considered in detail include a compatible mix of various management elements (such as land use and management, land protection, resource management, and visitor use). The management elements are presented in an integrated package for each alternative to help facilitate understanding of the various management strategies available and to provide a base to help estimate the environmental consequences. Selection of a National Park Service preferred alternative is not limited to the alternatives presented in their current mix. Options are available to mix different elements of each alternative to form a National Park Service proposed general management plan (such as land protection strategies from Alternative III with development concepts from Alternative II and resource management from Alternative IV). This technique is provided for by 40 CFR 1505.1(e).

Presidential Proclamations beginning in 1923 that established Hovenweep recognized only the more spectacular canyonhead complexes generally associated with masonry towers. The profession of archeology at that time was still a relatively young branch of science. Interest was focused almost entirely on this climax aspect of the Anasazi culture on Cajon Mesa.

It was once thought that it was sufficient to preserve and protect only the most spectacular aspect of a climax vegetation, such as the great redwood trees. As the discipline of ecology matured, it was learned it is also important to consider the successional system that led up

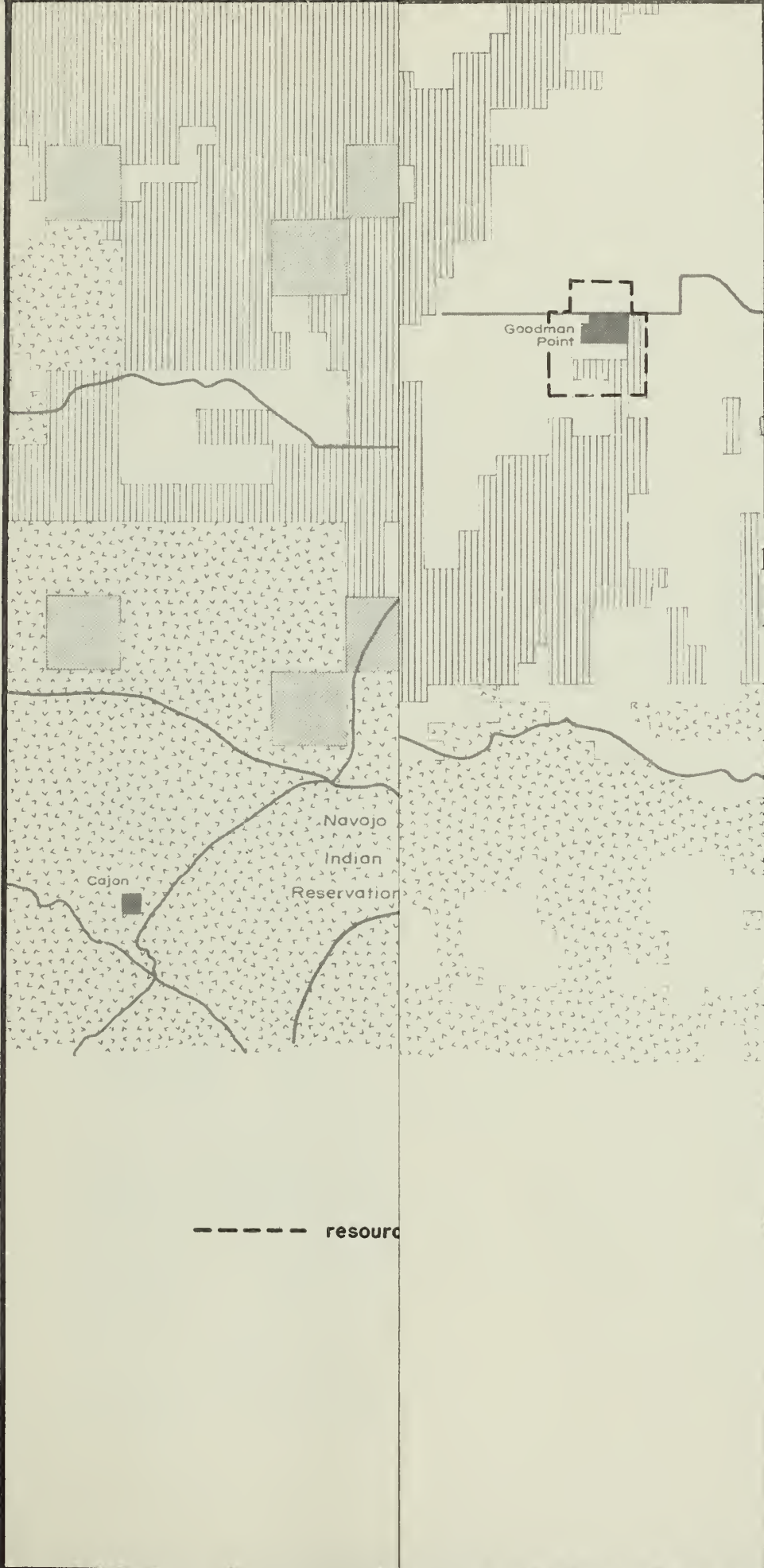
to, and will continue, the maintenance of these individual trees. In a similar way, the study of archeology now recognizes the successional patterns of cultures. It is important to understand and safeguard the previous aspects of a particular culture in order to understand the climax phenomenon. In other words, the reason behind the construction of the Hovenweep tower complexes may not lie within these ruins, but in the previous settlement areas that were generally abandoned. Mesa tops away from the canyonheads also contain areas of agricultural activity that may have supported the canyonhead communities. Today, we can only speculate as to the reason behind this shift over time and space away from the smaller, numerous mesa top pueblos to these architectural mysteries perched on boulders and canyon ruins.

For the reasons discussed above and because of public interest in cultural resources associated with Hovenweep, alternatives for resource protection were developed. These alternatives are not restricted to the existing monument boundary. For this purpose, a study area was delineated in the vicinity of Hovenweep, and known cultural resources within this area were evaluated. Based on an evaluation of significance and location of these cultural resources, topographic features, and existing monument lands, a recommended resource protection zone was defined. This zone is shown on Map II.1, the Resource Protection Map. It includes the following:

- The cultural resources on some 897 acres of private and Bureau of Land Management land is within the protection zone in the vicinity of Goodman Point. Cultural resources on these lands are an integral part of the archeological sites within Hovenweep. These cultural resources require protection so that some day additional research can take place to more fully understand and interpret Goodman Point. The full extent and importance of these additional resources was not known when Goodman Point was withdrawn as a possible Federal Reserve in 1889.

- The cultural resources on some 66 acres of private and Bureau of Land Management land is within the resource protection zone in the Cutthroat Castle unit vicinity. These lands include additional cultural resources adjacent to the existing area and a 1,000-foot buffer zone around these resources. Protection of these cultural resources will assist in the understanding of the archeological sites within or partially within the existing boundary.

- This resource protection zone includes some 5,412 acres of land in Colorado and Utah (some of which are private), State of Utah, and Bureau of Land Management land connecting the Square Tower, Holly, and Hackberry Units. Cultural resources in this area would assist in the understanding of



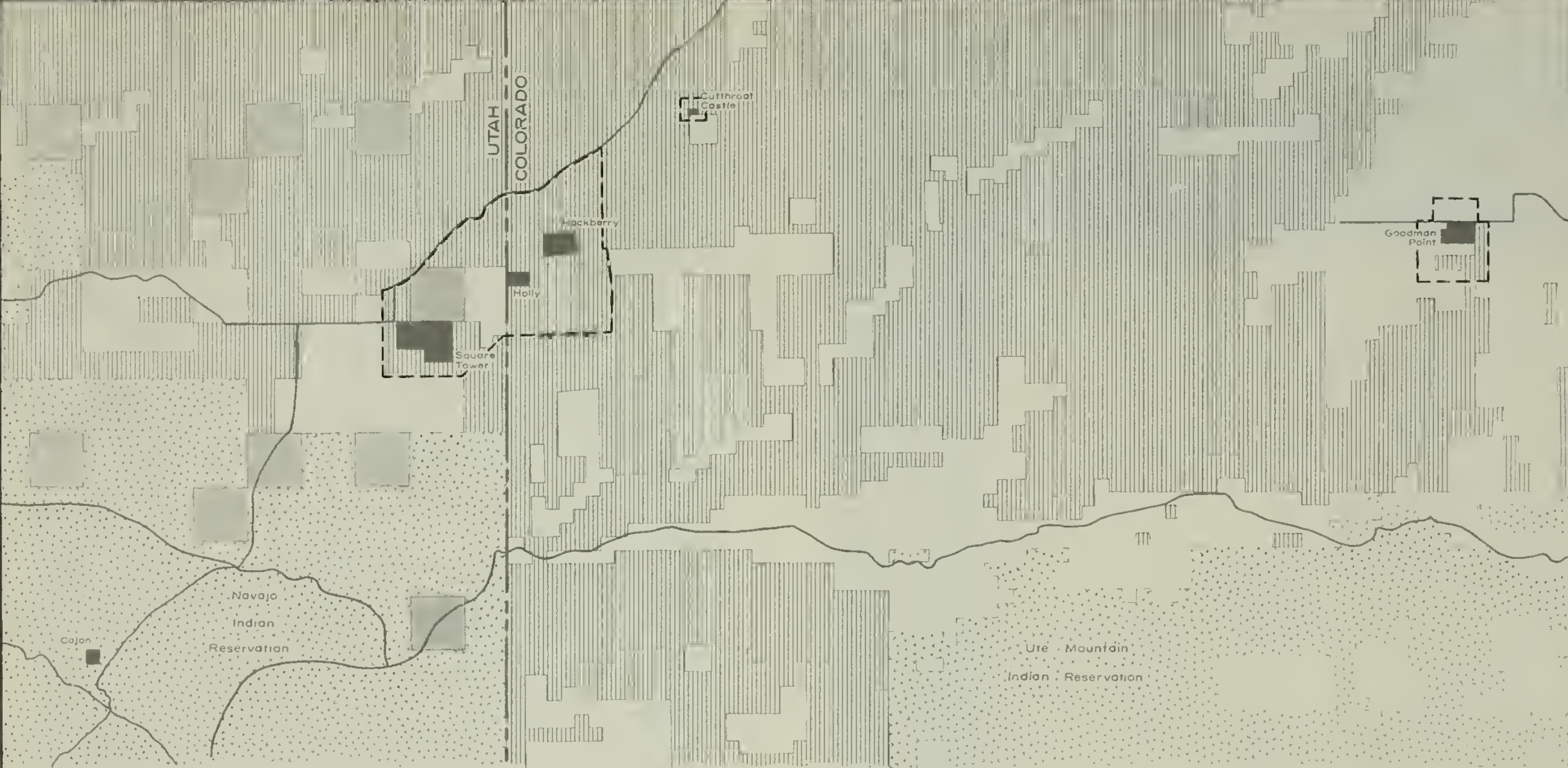
Map II.1

**Resource Protection
Hovenweep National Monument
Colorado · Utah**

United States Department of the Interior · National Park Service



320 80,040
Sept '85 RMRO



Legend

- | | | | | | |
|----------------------------|--------------------------|-------------|--------------|--------------------------|---------------------------|
| ----- | resource protection zone | ~~~~~ | road | [stippled pattern] | Indian reservation |
| [solid black box] | Hovenweep Nat. Mon. | [white box] | private land | [vertical lines pattern] | Bureau of Land Management |
| [horizontal lines pattern] | state land | | | | |

Map II.1

**Resource Protection
Hovenweep National Monument
Colorado · Utah**

United States Department of the Interior · National Park Service



the Hovenweep canyonhead sites. When these units were established, only the more spectacular standing masonry structures at the canyonheads were included in the boundary. Since that time it has been determined that these structures were part of a culture which evolved from less spectacular sites on higher ground between the canyons. These additional archeological sites would help in understanding and interpreting the entire Hovenweep story. Protection of these resources would also enable the manager to gain a better understanding of the interrelationships between several major settlement sites in the area. Archeological site density zones indicate that they have potential value in future research efforts.

C. ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Several alternatives were identified during the scoping process and for various reasons were eliminated from detailed study in this environmental assessment. While these alternatives provide different ways of addressing the issues, they are, in most instances, similar to one or more of the alternatives considered in detail or are beyond the scope of this study. Following are the alternatives eliminated from detailed study and the reasons why the alternatives were eliminated.

Include Bureau of Land Management Wilderness Study areas, Cross Canyon and Squaw/Papoose Canyon, in expansion of Hovenweep National Monument: Management of these areas is determined by the Bureau of Land Management's land and resource management planning process. The San Juan/San Miguel Resource Management Plan documents the analysis process and illustrates how cultural resources are managed and protected. Chapter I of this environmental assessment illustrates the purpose of Hovenweep National Monument. Given this purpose, it has been determined that land within the proposed resource protection zone would provide sufficient data to understand and interpret the Hovenweep canyonhead sites. Therefore, this alternative was eliminated from detailed study.

Place all Bureau of Land Management lands within Montezuma County, Colorado, under National Park Service ownership and manage for multiple use: The purpose of this environmental assessment is to display the environmental consequences of various management alternatives at Hovenweep National Monument. This alternative explores National Park Service management of Bureau of Land Management lands which may or may not relate to the Hovenweep canyonhead sites. Because this proposal is beyond the purpose of the Hovenweep National Monument General Management Plan process, this alternative was eliminated from detailed study.

The Navajo Nation acquires Hovenweep National Monument and surrounding Bureau of Land Management lands and manages these lands: The purpose of this environmental assessment is to explore National Park Service management of Hovenweep National Monument as established by its enabling legislation (see Appendix A). This proposal is beyond that scope and therefore was eliminated from detailed study.

Complete additional cultural resource inventories and use a cultural resource ecosystem approach to delineate the resource protection zone: As illustrated in this chapter, cultural resource inventories were completed prior to delineation of the resource protection zone. It was determined that cultural resources within this zone provide sufficient data to understand and interpret the Hovenweep canyonhead sites. Expansion of the resource protection zone beyond these limits may not be necessary to meet the purpose of Hovenweep National Monument. For these reasons, this alternative was eliminated from detailed study.

Improve the monuments artifact display by requesting local collectors to return artifacts under an amnesty agreement: Alternative II, III, and IV provide for increased exhibits and interpretation at Hovenweep National Monument. Artifacts presently stored at Mesa Verde National Park are adequate to provide displays of the Hovenweep canyonhead and associated sites. Granting of amnesty is beyond the jurisdiction of the National Park Service. Also, 43 CFR, Part 7, 1215.13, already provide a means to return artifacts to universities or museums. For these reasons, this alternative was eliminated from detailed study.

D. ALTERNATIVE DESCRIPTIONS

Each of the following alternatives represent a different combination of management emphasis that could be employed at Hovenweep National Monument. Four alternatives are considered in detail in this environmental assessment. They range from the minimum requirement/no action alternative to an emphasis on resource protection and visitor use and enjoyment.

1. ALTERNATIVE I (Minimum Requirement/No Action)

This alternative provides for the maintenance of existing conditions at Hovenweep National Monument. Improvements are limited to those necessary for public health and safety and rehabilitation work needed to maintain current operations.

a. Land Use and Management - Management Zoning

Existing classifications are maintained. All lands within Hovenweep National Monument are placed in the historic zone. historic zones include the archeological sites within

Hovenweep National Monument's cultural resources base. Developed areas are classified as development subzones. These include lands for existing or proposed facilities such as buildings, campgrounds, major roads and parking areas, and utilities necessary to provide for effective management of the area.

b. Land Protection

Cultural resources within existing boundaries of Hovenweep National Monument are protected through National Park Service Management. Cultural resources on adjacent Bureau of Land Management, State of Utah, or private lands that are related to Hovenweep's cultural resource base are managed by the respective land management agencies or private landowner.

c. Resource Management

(1) Ruins Stabilization

Stabilize ruins at the Hovenweep units according to the priorities set by the Superintendent and the Chief of Research of Mesa Verde National Park. The features of primary significance in all six units of Hovenweep are the archeological remains of communities of prehistoric farmers of the 11th, 12th, and 13th centuries. Ruins stabilization began at Hovenweep in the 1940's and has continued intermittently since then, as funds have become available. To date, Cajon, Square Tower, and Cutthroat Castle units will have received major stabilization attention. Holly, Goodman Point, and Hackberry are scheduled for completion by 1987.

(2) Artifact Storage

Existing artifact storage facilities at Mesa Verde National Park are used to house artifacts from Hovenweep National Monument.

(3) Research and Monitoring

Current monitoring and research programs are continued. Potable water systems are monitored to ensure a safe and adequate supply for visitor and employee use and for structural and wildfire suppression. Other monitoring and research occurs on an intermittent basis as opportunities arise.

d. Visitor Use

(1) Access and Circulation

Current visitor use patterns at Hovenweep National Monument are continued. Use is directed to the Square Tower Unit for

initial National Park Service contact. The outlying units (Holly, Hackberry, Cutthroat Castle, Cajon, Goodman Point) are open to public use. Access to these areas is provided by National Park Service maps and brochures obtained at the Square Tower unit. Currently, segments of access roads to some outlying units are located on Bureau of Land Management land, the need exists to obtain a cooperative agreement from the Bureau of Land Management to insure public use and unit access.

The National Park Service would favor maintaining the current condition of all unit access roads. An agreement with the private landowners is required to provide trail linkage between the Square Tower, Holly, and Hackberry units.

The current signing program is maintained. Directional signs provide access to the Square Tower unit. Directional signing for outlying units is not provided.

(2) Interpretation

Current interpretive programs of providing limited facilities and service at the Square Tower unit are maintained. Except for registration boxes with brief unit descriptions, no interpretation is provided at the outlying units.

e. Park Operations - Administration, Maintenance, Residential

Administration, maintenance, and residential facilities are at the Square Tower unit. Current staffing levels, illustrated below, are maintained.

<u>Position</u>	<u>FTE</u>
Area Manager	1.0
Park Technician	1.0
Park Technician	.2
	<hr/>
	2.2

Curatorial responsibilities rest with the staff of Mesa Verde National Park. A ruins stabilization crew (four masonry workers and a supervisor) is required for about 6 weeks a year. This crew is provided by Mesa Verde National Park. Other specialists and trades required to manage the monument are provided by Mesa Verde National Park.

f. Development Concepts

Current developments are maintained. Improvements are limited to those necessary for public health and safety or facility rehabilitation necessary to maintain useability. Chapter III, AFFECTED ENVIRONMENT, contains a complete description of facilities and services provided at each of the monument units.

(1) Square Tower

Existing facilities are maintained in their current location, they are summarized as follows:

(a) A visitor contact/ranger station that houses a 230 square-foot visitor contact area with interpretive exhibits and a 380 square-foot ranger station with the monuments' library, administrative offices, and storage.

(b) A 31 unit campground with comfort station and 6 shade structures.

(c) One permanent employee residence and a mobile home for a permanent employee residence.

(d) Maintenance area and structures.

(e) Utilities, including a 1,400-foot well, reverse osmosis water treatment system, septic tank sewage system, and power distribution system.

To maintain useability of the visitor contact/ranger station, rehabilitation is necessary to prolong the facilities life. Estimated cost for rehabilitation work is \$72,000.

(2) Holly

Existing facilities are maintained, they include:

- (a) A small unimproved parking area
- (b) One pit toilet
- (c) Registration box
- (d) Complete boundary fencing.

(3) Hackberry

Existing facilities that are maintained include:

- (a) Two small unimproved parking areas
- (b) Two pit toilets
- (c) Identification signs
- (d) Two registration boxes
- (e) Complete boundary fencing.

(4) Cutthroat Castle

Existing facilities that are maintained include:

- (a) A small unimproved parking area
- (b) Pit toilet
- (c) Registration box
- (d) Complete boundary fencing.

(5) Cajon

Existing facilities are maintained, they include:

- (a) A small unimproved parking area on Navajo Reservation lands
- (b) Pit toilet
- (c) Registration box
- (d) Complete boundary and livestock management fencing
- (e) A livestock spring development.

(6) Goodman Point

No developments or facilities are provided at Goodman Point except a small identification sign. About 3,500 linear feet of boundary fencing is required at this unit with an approximate cost of \$28,000.

2. ALTERNATIVE II

This alternative provides for protection of cultural resources within the resource protection zone by emphasizing cooperation among land management agencies and private land owners in the Hovenweep area. Interpretive facilities and programs, visitor use facilities, and other visitor services are provided at the Square Tower unit. Outlying units serve the public with limited services.

a. Land Use and Management - Management Zoning

Existing classifications are maintained. All lands within Hovenweep National Monument are placed in the historic zone. historic zones include the archeological sites and environmental settings needed to protect, understand, and appreciate Hovenweep National Monument's cultural resource base. Developed areas are classified as development subzones. These include lands for existing or proposed facilities such as buildings, campgrounds, major roads and parking areas, and utilities necessary to provide for effective management of the area.

Because of its enormous size, distance away from the other Hovenweep units, and dissimilarity to the small tower complexes of Hovenweep, Goodman Point is to be established

as a separate national monument. This would require Congress to enact separate legislation, but Goodman Point would still be administratively managed as a part of Hovenweep National Monument.

b. Land Protection

Land management agencies and private landowners cooperate in the establishment of a "Resource Protection System." The system would provide for management of these resources primarily for the protection of their cultural values; however, compatible uses would be allowed. The system includes development as a joint management plan regarding cultural resources within the resource protection zone. Lands subject to the Resource Protection System include:

- In addition to the 143 acres of National Park Service land at Goodman Point, an additional 897 acres of Bureau of Land Management land and private lands are included.

-At Cutthroat Castle, 14 acres of National Park Service land and 66 acres of Bureau of Land Management land and private lands are subject to the system.

- In addition to 588 acres of National Park Service land at Square Tower, Holly, and Hackberry 5,412 acres of Bureau of Land Management, State of Utah, and private lands are subject to the system.

c. Resource Management

(1) Ruins Stabilization

Stabilize ruins at the Hovenweep units according to the priorities set by the Superintendent and the Chief of Research of Mesa Verde National Park. The features of primary significance in all six units of Hovenweep are the archeological remains of communities of prehistoric farmers of the 11th, 12th, and 13th centuries. Ruins stabilization began at Hovenweep in the 1940's and has continued intermittently since then, as funds have become available. To date, Cajon, Square Tower, and Cutthroat Castle units will have received major stabilization attention. Holly, Goodman Point, and Hackberry are scheduled for completion by 1987.

(2) Artifact Storage

Existing artifact storage facilities at Mesa Verde National Park are used to house artifacts from Hovenweep National Monument.

(3) Research and Monitoring

Current monitoring and research programs are continued. Potable water systems are monitored to ensure a safe and adequate supply for visitor and employee use and for structural and wildfire suppression. Other monitoring and research occurs on an intermittent basis as opportunities arise.

d. Visitor Use

(1) Access and Circulation

Improved visitor use and enjoyment of Hovenweep National Monument is encouraged at the Square Tower unit. The Holly, Hackberry, Cutthroat Castle, and Cajon units are managed as they currently exist. Visitor use and enjoyment of Goodman Point is encouraged when visitor use facilities are developed in conjunction with research efforts.

The National Park Service would favor improving roads, with a surface for all-weather use to the Square Tower unit. When opportunities arise the National Park Service would support this venture; however, financial assistance will not be available. The National Park Service would encourage maintaining access roads to Holly, Hackberry, Cutthroat Castle, and Cajon in their current condition. Segments of access roads to outlying units which are located on Bureau of Land Management land require a cooperative agreement between the Bureau of Land Management and the National Park Service to insure continued public use and unit access.

A signing program that provides visitor directions to Square Tower and Goodman Point is provided. Signing to other units is not provided as a means to control visitor use.

(2) Interpretation

Interpretive programs at Hovenweep are improved by providing increased interpretive facilities and services at the Square Tower unit. Limited interpretive services are provided at Goodman Point. Services at other outlying areas are not provided except for brief unit descriptions at registration boxes.

At Goodman Point, additional interpretive services may be available through guided tours to view on-going research efforts. These tours would only be available during those periods when studies are being carried out. This type of program would provide an opportunity to work with local groups in introducing this new national monument.

e. Park Operations - Administration, Maintenance, Residential

Administration, maintenance, and residential facilities are at the Square Tower unit. Staffing needs for full implementation of this alternative include:

<u>Position</u>	<u>FTE</u>	<u>Goodman Point*</u>	
		<u>Position</u>	<u>FTE</u>
Area Manager	1.0		
Park Technician	1.0		
Maintenance Worker	.9	Park Technician	.5
Park Technician	.6		
	<hr/>		
	3.5		

*When research/development occurs.

Curatorial responsibilities rests with the staff of Mesa Verde National Park. A ruins stabilization crew (four masonry workers and a supervisor) is required for about 6 weeks a year. This crew is provided by Mesa Verde National Park. Other specialists and trades required to manage the monument are provided by Mesa Verde National Park.

f. Development Concepts

The following development concepts encourage visitors to walk more and take more time in visiting Square Tower and Goodman Point.

(1) Square Tower

The goal of this concept is to provide improved visitor use facilities, they include:

- (a) Remodeling the existing visitor contact/ranger station that includes a 600 square-foot addition
- (b) Replacement of a mobile home with a permanent employee residence
- (c) Construction of a two-unit seasonal employee apartment
- (d) Replacement of old railroad boxcars with a 1,000 square-foot storage/maintenance building
- (e) Pedestrian trails
- (f) Interpretive exhibits
- (g) Replacement of existing parking with a 20-vehicle parking lot
- (h) Commercial telephone service.

The visitor contact station provides staff offices, visitor orientation, and information services. These services are provided prior to the visitors initial contact with the ruins to create an awareness and appreciation of the opportunities, limitations, and hazards of viewing the ruins.

Estimated cost for full implementation of this concept is \$741,400.

(2) Holly

Existing facilities are maintained, they include:

- (a) A small unimproved parking area
- (b) One pit toilet
- (c) Registration box
- (d) Complete boundary fencing.

(3) Hackberry

Existing facilities that are maintained include:

- (a) Two small unimproved parking areas
- (b) Two pit toilets
- (c) Identification signs
- (d) Two registration boxes
- (e) Complete boundary fencing.

(4) Cutthroat Castle

Existing facilities that are maintained include:

- (a) A small unimproved parking area
- (b) Pit toilet
- (c) Registration box
- (d) Complete boundary fencing.

(5) Cajon

Existing facilities are maintained, they include:

- (a) A small unimproved parking area on Navajo Reservation lands
- (b) Pit toilet
- (c) Registration box
- (d) Complete boundary and livestock management fencing
- (e) A livestock spring development.

(6) Goodman Point

Facilities will be constructed to accommodate research, maintenance, and controlled visitor use of the area when major research activities begin. Facilities include:

- (a) A 10-vehicle gravel parking lot
- (b) A vault type rest room
- (c) 1,500 linear feet of trail
- (d) An employee residence
- (e) Interpretive exhibits.

Estimated cost for full implementation of this concept is \$254,000.

3. ALTERNATIVE III

The goal of this alternative is to improve protection of cultural resources in and surrounding Hovenweep National Monument by establishment of an area of critical environmental concern within the resource protection zone. Emphasis is placed on improved visitor use facilities and services at the Square Tower unit with improved visitor use facilities and services provided at some of the outlying units.

a. Land Use and Management - Management Zoning

Existing classifications are maintained. All lands within Hovenweep National Monument are placed in the historic zone. Historic zones include the archeological sites and environmental settings needed to protect, understand, and appreciate Hovenweep National Monument's cultural resource base. Developed areas are classified as development subzones. These include lands for existing or proposed facilities such as buildings, campgrounds, major roads and parking areas, and utilities necessary to provide for effective management of the area.

b. Land Protection

The Bureau of Land Management (BLM) is encouraged to designate lands within the resource protection zone as an Area of Critical Environmental Concern (ACEC). The Final San Juan/San Miguel Resource Management Plan includes provisions for an ACEC designation on Colorado lands. This alternative differs from that proposal in that the ACEC designation is oriented more towards cultural resource protection. In addition, the BLM is encouraged to exchange lands with the State of Utah and manage those lands as an ACEC. Under this designation, special management emphasis is given to preserving the areas cultural resources, while retaining the concept of multiple use. This designation could be applied by the BLM and would require no additional approval. Lands subject to the ACEC designation surrounding Hovenweep National Monument include:

- (1) Designating approximately 897 acres of BLM and private lands surrounding the Goodman Point unit as an ACEC.
- (2) Designating approximately 66 acres of BLM and private lands surrounding Cutthroat Castle as an ACEC.
- (3) Designating approximately 5,412 acres of BLM, private, and State of Utah lands surrounding the Square Tower, Holly, and Hackberry units as an ACEC.

c. Resource Management

(1) Ruins Stabilization

Stabilize ruins at the Hovenweep units according to the priorities set by the Superintendent and the Chief of Research of Mesa Verde National Park. The features of primary significance in all six units of Hovenweep are the archeological remains of communities of prehistoric farmers of the 11th, 12th, and 13th centuries. Ruins stabilization began at Hovenweep in the 1940's and has continued intermittently since then, as funds have become available. To date, Cajon, Square Tower, and Cutthroat Castle units will have received major stabilization attention. Holly, Goodman Point, and Hackberry are scheduled for completion by 1987.

(2) Artifact Storage

Existing artifact storage facilities at Mesa Verde National Park are used to house artifacts from Hovenweep National Monument.

(3) Research and Monitoring

Conduct research, surveys, and monitoring needed to preserve the natural and cultural resources of Hovenweep National

Monument and to interpret those resources accurately to the public. The National Park Service will encourage research by qualified individuals and organizations through contact programs; however, National Park Service financial assistance to conduct these activities is not available. Current monitoring and research should be continued and new programs initiated as required for both natural and cultural resources.

Potable water systems should continue to be monitored to ensure a safe and adequate supply for visitor and employee use and for structural and wildfire suppression. Rattlesnake populations and locations need to be monitored to provide visitors with safe self-guided trail walks. Other current natural resource management activities are monitoring exotic plants to control their population at the monument, especially tamarisk and Russian thistle, and monitoring grazing on 80 acres of Square Tower to note its effects upon archeological sites, vegetation, and soil.

Research into the cultural resource at Hovenweep National Monument will include the following:

- (a) Conduct research into the possible effects of acid rain on the Hovenweep ruins.

(b) When sufficient funding is obtained, excavate part of Hovenweep's archeological resource in order to provide information for public interpretation and for management needs.

(c) Conduct research to examine the paleoclimate. This would include analysis of pack rat deposits and pollen-related studies.

(d) Study the soil/geology of the canyonhead ruin drainages to determine possible locations of Anasazi wells.

(e) Examine the towers for their possible astronomical (such as, calendrical) and signalling potential.

(f) Study plant succession on Cajon Mesa, to include relative ages of trees to answer postulations of Anasazi-impacted environmental factors, such as absence of pinyon pine at some units.

d. Visitor Use

(1) Access and Circulation

Full visitor use and enjoyment of Hovenweep National Monument is encouraged at the Square Tower, Holly,

Hackberry, and Cutthroat Castle Units. Goodman Point is reserved for research and educational purposes. Public visitation at Goodman Point would continue; however, this use would not be encouraged. Because of its distance from the monument's headquarters at Square Tower and the increased cost for management, the Cajon unit is managed as it currently exists. Visitor use facilities and services at Cajon are limited to existing situations.

The National Park Service would favor improving roads, with a surface for all-weather use, to all units except Cajon. When opportunities arise for road improvement, the National Park Service would support this venture; however, financial assistance will not be made available. The National Park Service would encourage maintaining the Goodman Point and Cajon access roads in their current condition. Segments of access roads to outlying units located on Bureau of Land Management land would require a cooperative agreement, rights-of-way, or withdrawal from the Bureau of Land Management to insure continued public use and unit access.

A signing program that encourages visitors to visit the Square Tower unit first is developed. Directional signing to the outlying units, except Goodman Point and Cajon is provided. However, this signing is oriented to the user

travelling from Square Tower to further encourage initial monument contact at Square Tower.

A trail system that provides a pedestrian linkage between the Square Tower, Holly, and Hackberry ruins is provided for the day hiker. Because this trail crosses Bureau of Land Management land, an agreement or permit with the Bureau of Land Management is required.

(2) Interpretation

Interpretive programs at Hovenweep are improved by emphasizing increased interpretive facilities and services at the Square Tower unit. Limited interpretive services are provided at outlying areas, except Goodman Point and Cajon. Services at the outlying areas include wayside exhibits and guided or self-guided tours. Visitors are encouraged to visit the Square Tower unit first where a majority of information and educational material is provided by interpretive personnel.

At Goodman Point, limited interpretive services may be available through guided tours to view ongoing research efforts. These tours would only be available during those periods when studies are being carried out. This type of program would provide an opportunity to work with local groups in managing public use and providing interpretive services.

Interpretive services or programs at Cajon are not provided except for information contained at the registration box.

e. Park Operations - Administration, Maintenance, Residential

Administration, maintenance, and residential facilities are located at the Square Tower unit. Staffing needs for full implementation of this alternative include:

<u>Position</u>	<u>FTE</u>
Area Manager	1.0
Park Ranger	1.0
Park Technician	.9
Maintenance Work	.9
Park Technician (one seasonal)	.3
	—
	4.1

Curatorial responsibilities are shared among the monument's staff with assistance from Mesa Verde National Park. A ruins stabilization crew (four masonry workers and a

supervisor) is required for about 6 weeks a year. This crew is provided by Mesa Verde National Park. Other specialists and trades required to manage the monument are provided by Mesa Verde National Park.

f. Development Concepts

The following development concepts encourage visitors to walk more and take more time in visiting each ruin area, except Goodman Point and the Cajon unit. Most facilities such as parking, rest rooms, and other structures are relocated away from the ruins to avoid visual conflicts, potential damage, and potential vandalism. Facilities provided in these development concepts are to protect the area's resources and to accommodate visitor use. They will be designed and constructed as funds are available. Detailed cultural resource surveys will be conducted as a part of the design process to avoid or mitigate adverse impacts. Facilities are designed in accordance with the "Uniform Federal Accessibility Standards" for disabled visitors and employees. Current technology for energy efficiency will be considered during the design of each facility. Detailed cost estimates for the facilities are included in the appendix. Development concepts for each unit of the monument are described below.

(1) Square Tower

The goal of this concept is to move development away from the primary archeological resources along the canyon rim and to provide a better sequence for interpreting the resource to the visitor. Facilities include:

- (a) Replacement of the existing visitor contact/ranger station with a 2,400 square-foot facility located at a pad built in the 1960s for a planned visitor center/museum.
- (b) Replacement of a mobile home with a 1,300 square-foot permanent employee residence.
- (c) Construction of a three-unit seasonal employee apartment.
- (d) Replacement of old storage sheds with a 1,000 square-foot storage/maintenance building.
- (e) Conversion of a single family campground unit to a group campsite with large ramada shelter.
- (f) Construction of a 50-seat, rustic amphitheater.
- (g) Pedestrian trails.
- (h) Interpretive exhibits.
- (i) Replacement of existing parking with a 20-vehicle parking lot.
- (j) Replacement of six existing campground shade structures and construction of nine additional shade structures.
- (k) Commercial Telephone Service.

- (1) Increased water treatment facilities, increased sewage treatment capabilities, and an expanded power distribution system.

The visitor contact station provides staff offices, visitor orientation, and information services. These services are provided before the visitor comes in contact with the cultural resources to create an awareness and appreciation of the opportunities, limitations, and hazards of viewing the ruins.

The existing visitor contact station, temporary residence, parking area, and maintenance building are obliterated or removed from the site. These sites are rehabilitated to simulate characteristics of the surrounding landscape. Estimated cost for full implementation of this concept is \$1,536,000.

- (2) Holly

Facilities are located outside the existing monument boundary on Bureau of Land Management land. Included are:

- (a) A five vehicle gravel parking lot
- (b) A vault type rest room
- (c) 1,500 linear feet of trail
- (d) Interpretive exhibits and signs.

Estimated cost for full implementation of this concept is \$48,300.

- (3) Hackberry

Vehicular use of roads within the existing unit boundary is prohibited. Access to the ruins is provided by a trail from a reconstructed trailhead located on Bureau of Land Management land. Facilities include:

- (a) A five-vehicle gravel parking log
- (b) A vault type rest room
- (c) 3,000 linear feet of trail
- (d) Interpretive exhibits and signs.

Estimated cost for full implementation of this concept is \$56,300.

- (4) Cutthroat Castle

A trailhead northeast of the current monument boundary on Bureau of Land Management land is improved. Facilities include:

- (a) A five-vehicle gravel parking lot
- (b) 4,000 feet of reconstructed trail
- (c) Interpretive exhibits and signs.
- (d) A three-vehicle, secondary parking lot located near the entrance gate.

The toilet located near the ruins is maintained in its current location. Interpretation at this unit could include cultural resources, vistas and air quality, view of four states, multiple use, and other pertinent information and educational items in the area.

Estimated cost for implementation of this concept is \$32,700.

(5) Cajon

Existing facilities are maintained, they include:

- (a) A small unimproved parking area located on Navajo Reservation lands
- (b) Pit toilet
- (c) Registration box
- (d) Complete boundary and livestock management fencing
- (e) A livestock spring development.

(6) Goodman Point

Under this concept, facilities would not be provided until the unit is used for a major research effort. When this occurs, facilities provided include:

- (a) A 10-vehicle gravel parking lot
- (b) A vault type rest room
- (c) 1,500 linear feet of trail
- (d) Interpretive exhibits.

Estimated cost for full implementation of this concept is \$78,000.

4. ALTERNATIVE IV

This alternative provides for enhanced protection of cultural resources in and surrounding Hovenweep National Monument by expansion of monument boundaries to include lands within the resource protection zone. Emphasis is placed on full visitor use and enjoyment of the monument through improvement of interpretive programs, visitor use facilities, and by emphasis on improved vehicular access.

a. Land Use and Management - Management Zoning

Existing classifications are maintained. All lands within Hovenweep National Monument are placed in the historic zone. Historic zones include the archeological sites and environmental settings needed to protect, understand, and appreciate Hovenweep National Monument's cultural resource base. Developed areas are classified as development subzones. These include lands for existing or proposed facilities such as buildings, campgrounds, major roads and parking areas, and utilities necessary to provide for effective management of the area.

b. Land Protection

The boundary of Hovenweep National Monument is adjusted to include lands within the resource protection zone. The purpose of these additions is to provide protection of cultural resources through National Park Service acquisition of interest. These interests could include fee title, conservation or scenic easements, or land exchanges with private landowners or State of Utah for other Federal lands. Exchange of lands with the State of Utah could be pursued through project BOLD. Congressional action is required to adjust the monument boundaries should this alternative be selected. Expansion of the monument's boundaries includes:

(1) Expanding Goodman Point from its existing 143 acres to approximately 1,040 acres. Expansion includes both Bureau of Land Management and private lands. These additional lands include cultural resources that are an integral part of the archeological sites within the present boundary and would assist in the understanding of the Goodman Point resources. The full extent and importance of these additional resources was not known when Goodman Point was withdrawn as a possible federal reserve in 1889.

(2) Expanding Cutthroat Castle from its existing 14 acres to about 80 acres. Expansion includes both Bureau of Land Management land and private lands. These lands include additional cultural resources adjacent to the existing area and a 1,000-foot buffer zone around these resources. The additional cultural resources would assist in the understanding of the archeological sites within or partially within the existing boundary.

(3) The Square Tower, Holly, and Hackberry units are expanded from their existing 588 acres to approximately 5,412 acres. This expansion consolidates three separate units to one larger unit. Included are private, Bureau of Land Management, and State of Utah lands. Expansion provides for protection of cultural resources that would assist in the understanding of the Hovenweep culture. When these units were established, only the more spectacular

standing masonry structures at the canyonheads were included in the boundary. Since that time, it has been determined that these structures were part of a culture which evolved from less spectacular sites on higher ground between the canyons. These additional sites would assist in understanding and interpreting the entire Hovenweep story. Protection of these lands would also enable the National Park Service to gain a better understanding of the interrelationships between several major settlement sites in the area. Archeological site density on these additional lands indicate that they have potential value in future research efforts.

c. Resource Management

(1) Ruins Stabilization

Stabilize ruins at the Hovenweep units according to the priorities set by the Superintendent and the Chief of Research of Mesa Verde National Park. The features of primary significance in all six units of Hovenweep are the archeological remains of communities of prehistoric farmers of the 11th, 12th, and 13th centuries. Ruins stabilization began at Hovenweep in the 1940's and has continued intermittently since then, as funds have become available. To date, Cajon, Square Tower, and Cutthroat Castle units will have received major stabilization attention. Holly, Goodman Point, and Hackberry are scheduled for completion by 1987.

(2) Artifact Storage

Artifact storage facilities are constructed at the Hovenweep National Monument headquarters. These facilities are housed in conjunction with the visitor-contact station and administration building.

(3) Research and Monitoring

Conduct research, surveys, and monitoring needed to preserve the natural and cultural resources of Hovenweep National Monument and to interpret those resources accurately to the public. The National Park Service will encourage research by qualified individuals and organizations through contact programs; however, National Park Service financial assistance to conduct these activities is not available. Current monitoring and research should be continued and new programs initiated as required for both natural and cultural resources.

Potable water systems should continue to be monitored to ensure a safe and adequate supply for visitor and employee use and for structural and wildfire suppression. Rattlesnake populations and locations need to be monitored

to provide visitors with safe self-guided trail walks. Other current natural resource management activities are monitoring exotic plants to control their population at the monument, especially tamarisk and Russian thistle, and monitoring grazing on 80 acres of Square Tower to note its effects upon archeological sites, vegetation, and soil.

Research into the cultural resource at Hovenweep National Monument will include the following:

(a) Conduct research into the possible effects of acid rain on the Hovenweep ruins.

(b) When sufficient funding is obtained, excavate part of Hovenweep's archeological resource in order to provide information for public interpretation and for management needs.

(c) Conduct research to examine the paleoclimate. This would include analysis of pack rat deposits and pollen-related studies.

(d) Study the soil/geology of the canyonhead ruin drainages to determine possible locations of Anasazi wells.

(e) Examine the towers for their possible astronomical (such as, calendrical) and signalling potential.

(f) Study plant succession on Cajon Mesa, to include relative ages of trees to answer postulations of Anasazi-impacted environmental factors, such as absence of pinyon pine at some units.

d. Visitor Use

(1) Access and Circulation

Full visitor use and enjoyment of Hovenweep National Monument is encouraged at the Square Tower, Holly, Hackberry, Cutthroat Castle, and Cajon units. Goodman Point is reserved for research and educational purposes. Public visitation at Goodman Point would continue; however, this use would not be encouraged.

National Park Service would favor improving roads, with a surface for all-weather use to all units. When opportunities arise for road improvement the National Park Service would support this venture; however, financial assistance will not be available. The National Park Service would encourage maintaining the Goodman Point access road in its current condition.

A signing program that encourages visitors to visit the Square Tower unit first is developed. Signing to the outlying units, except Goodman Point, is provided. However, this signing is oriented to the user travelling from the Square Tower unit to further encourage initial monument contact at Square Tower.

A trail system that provides a pedestrian linkage between the Square Tower, Holly, and Hackberry ruins is provided for the day hiker.

(2) Interpretation

Interpretive programs at Hovenweep are improved by emphasizing increased interpretive facilities and services at the Square Tower unit. Limited interpretive services are provided at outlying areas, except Goodman Point. Services at the outlying areas include wayside exhibits and guided or self-guided tours. Visitors are encouraged to visit the Square Tower unit first where a majority of information and educational material is provided by interpretive personal.

At Goodman Point, limited interpretive services may be available through guided tours to view ongoing research efforts. These tours would only be available during those periods when studies are being carried out. This type of program would provide an opportunity to work with local groups in managing public use and providing interpretive services.

e. Park Operations - Administration, Maintenance, Residential

Administration, maintenance, and residential facilities are located at the Square Tower unit. Staffing needs for full implementation of this alternative include:

<u>Position</u>	<u>FTE</u>	<u>Goodman Point</u> [*]	
Area Manager	1.0	<u>Position</u>	<u>FTE</u>
Park Ranger	1.0	Park Technician	.5
Park Technician	.9		
Maintenance Work	.9		
Park Technician	.7		
(two seasonal)	—		
	4.5		

* When research/development occurs.

Curatorial responsibilities are shared among the monument's staff with the assistance from Mesa Verde National Park. A ruins stabilization crew (four masonry workers and a supervisor) is required for about 6 weeks a year. This crew is provided by Mesa Verde National Park. Other specialists and trades required to manage the monument are provided by Mesa Verde National Park.

f. Development Concepts

The following development concepts encourage visitors to walk more and take more time in visiting each ruin area except Goodman Point. Most facilities such as parking, rest rooms, and other structures are relocated away from the ruins to avoid visual conflicts, potential damage, and potential vandalism. Facilities provided in these development concepts are to protect the area's resources and to accommodate visitor use. They will be designed and constructed as funds are available. Retailed cultural resource surveys will be conducted as a part of the design process to avoid or mitigate adverse impacts. Facilities are designed in accordance with the "Uniform Federal Accessibility Standards" for disabled visitors and employees. Current technology for energy efficiency will be considered during the design of each facility. Detailed cost estimates for the facilities are included in the appendix. Development concepts for each unit of the monument are described below.

(1) Square Tower

The goal of this concept is to move development away from the primary archeological resources along the canyon rim and to provide a better sequence for interpreting the resource to the visitor. Facilities include:

- (a) Replacement of the existing visitor contact/ranger station with a 2,400 square-foot facility located at a pad built in the 1960s for a planned visitors center/museum.
- (b) Replacement of a mobile home with a duplex unit for permanent employees.
- (c) Construction of a three-unit seasonal employee apartment.
- (d) Replacement of old storage sheds with a 1,000 square-foot storage/maintenance building.
- (e) Conversion of a single family campground unit to a group campsite with large ramada shelter.
- (f) Construction of a 50-seat rustic amphitheater.
- (g) Pedestrian trails.
- (h) Interpretive exhibits.
- (i) Replacement of existing parking with a 20-vehicle parking lot.
- (j) Replacement of six existing campground shade structures and construction of nine additional shade structures.
- (k) Boundary fencing (approximately 13.5 miles) around the consolidated Square Tower, Hackberry, and Holly unit.
- (l) Commercial telephone service.
- (m) Increased water treatment facilities, increased sewage treatment capabilities, and an expanded power distribution system.

The visitor contact station provides staff offices, visitor orientation, and information services. These services are provided before the visitor comes in contact with the cultural resources to create an awareness and appreciation of the opportunities, limitation, and hazards of viewing the ruins.

The existing visitor contact station, temporary residence, parking area, an maintenance building are obliterated or removed from the site. These sites are rehabilitated to simulate characteristics of the surrounding landscape.

Estimated cost for full implementation of this concept is \$2,110,000.

(2) Holly

Facilities are outside the existing monument boundary on Bureau of Land Management land that is included as part of the monument's boundary expansion. Included are:

- (a) A five-vehicle gravel parking lot
- (b) A vault type rest room
- (c) 1,500 linear feet of trail
- (d) Interpretive exhibits and signs.

Estimated cost for full implementation of this concept is \$48,500.

(3) Hackberry

Vehicular use of roads within the existing unit boundary is prohibited. Access to the ruins is provided by a trail from a reconstructed trailhead on Bureau of Land Management land. This land is included as part of the monument's boundary expansion. Facilities include:

- (a) A five-vehicle gravel parking lot
- (b) A vault type rest room
- (c) 3,000 linear feet of trail
- (d) Interpretive exhibits and signing.

Estimated cost for full implementation of this concept is \$56,300.

(4) Cutthroat Castle

A trailhead northeast of the current monument boundary on Bureau of Land Management land is improved. The Bureau of Land Management land is included as part of the monument's boundary expansion. Facilities include:

- (a) A five-vehicle gravel parking lot
- (b) 4,000 feet of reconstructed trail

- (c) Interpretive exhibits and signing.
- (d) A three-vehicle, secondary parking lot located near the entrance gate.

The toilet located near the ruins is maintained in its current location. Interpretation at this unit could include cultural resources, vistas and air quality, view of four states, multiple use, and other pertinent information and educational items in the area.

Estimated cost for implementation of this concept is \$32,700.

(5) Cajon

Facilities to serve Cajon are on Navajo Reservation lands, requiring an agreement with the Tribe prior to implementation. The existing livestock spring is maintained. Included improvements are:

- (a) A five-vehicle gravel parking lot
- (b) Improvement of the last 1/4 mile of the access road
- (c) Relocation of the toilet to the trailhead
- (d) Interpretive exhibits and signing.

Estimated cost for implementation of this concept is \$69,300.

(6) Goodman Point

Under this concept, facilities would not be provided until the unit is used for a major research effort. When this occurs, facilities provided include:

- (a) A 10-vehicle gravel parking lot
- (b) A vault type rest room
- (c) 1,500 linear feet of trail
- (d) An employee residence
- (e) Interpretive exhibits.

Fencing of the unit occurs after completion of the monument's boundary expansion. A total of 4 miles of fence is required.

Estimated cost for full implementation of this concept is \$397,000.

D. DEVELOPMENT CONCEPT MAPS

Following are the development concept maps that apply to the previously displayed alternatives.



- monument boundary (fenced)
- canyon rim
- paved road
- unpaved road
- trail
- ruin
- existing facility to be removed

Map II . 2

Alternatives III & IV

Square Tower Unit

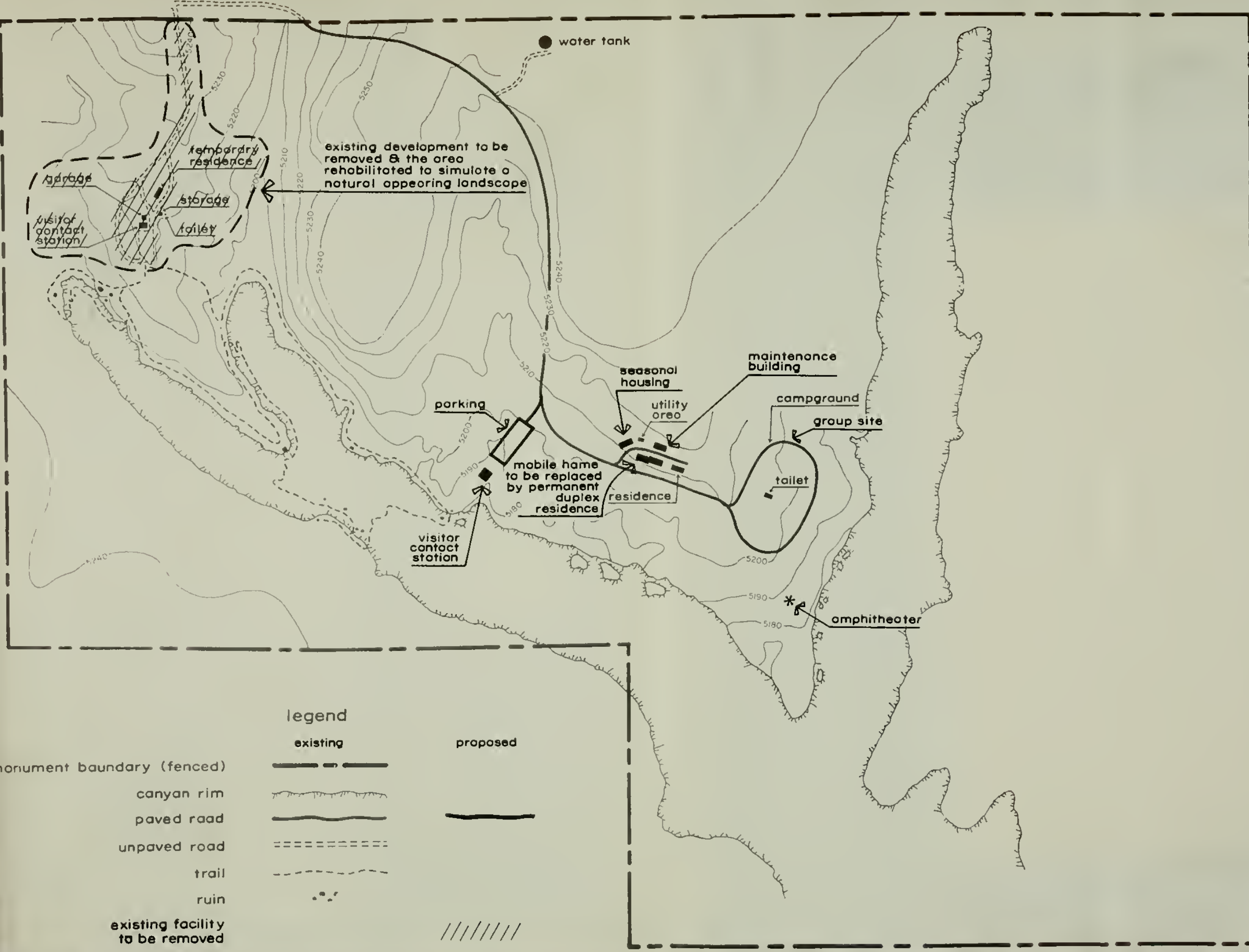
Hovenweep National Monument

Colorado · Utah

United States Department of the Interior · National Park Service



320 | 80,036
MAY 85 | RMRO



Map II . 2

Alternatives III & IV

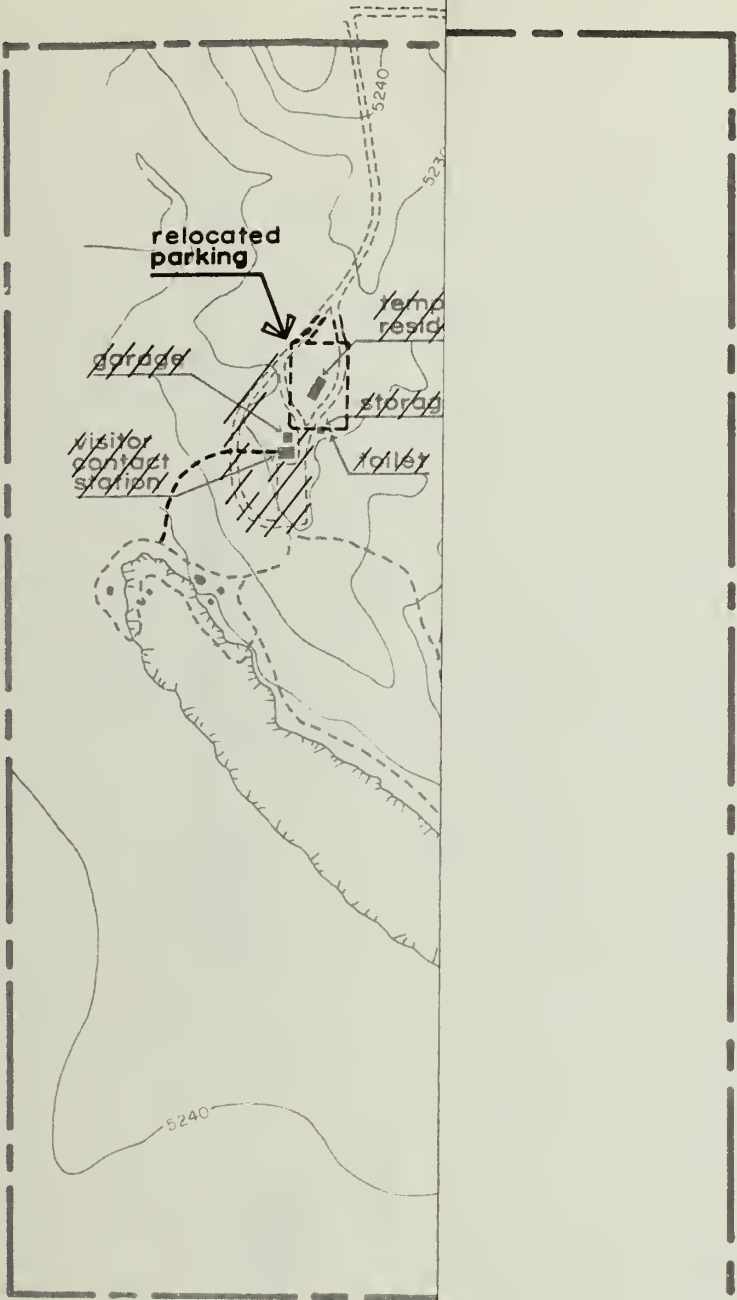
Square Tower Unit

Hovenweep National Monument
 Colorado • Utah

United States Department of the Interior • National Park Service



320 | 80,038
 MAY 85 | RMRO



- building
- monument boundary (fenced)
- canyon rim
- paved road
- unpaved road
- trail
- ruin
- existing facility to be removed

Map II. 3

Alternative II

Square Tower Unit

Hovenweep National Monument
 Colorado · Utah

United States Department of the Interior · National Park Service



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 NOV '84 RMRO



Map II. 3

Alternative II

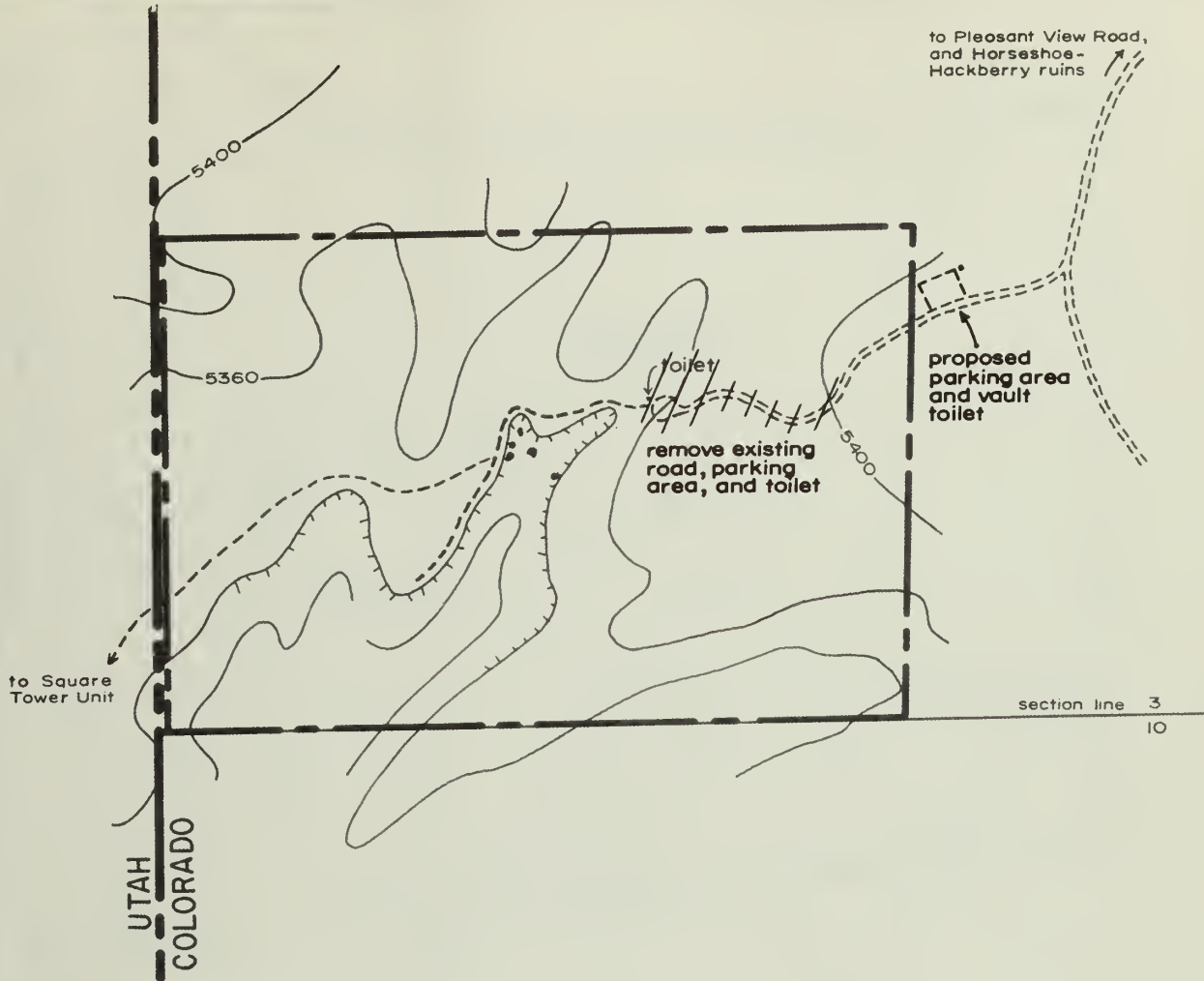
Square Tower Unit

Hovenweep National Monument
Colorado · Utah







United States Department of the Interior · National Park Service

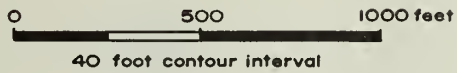


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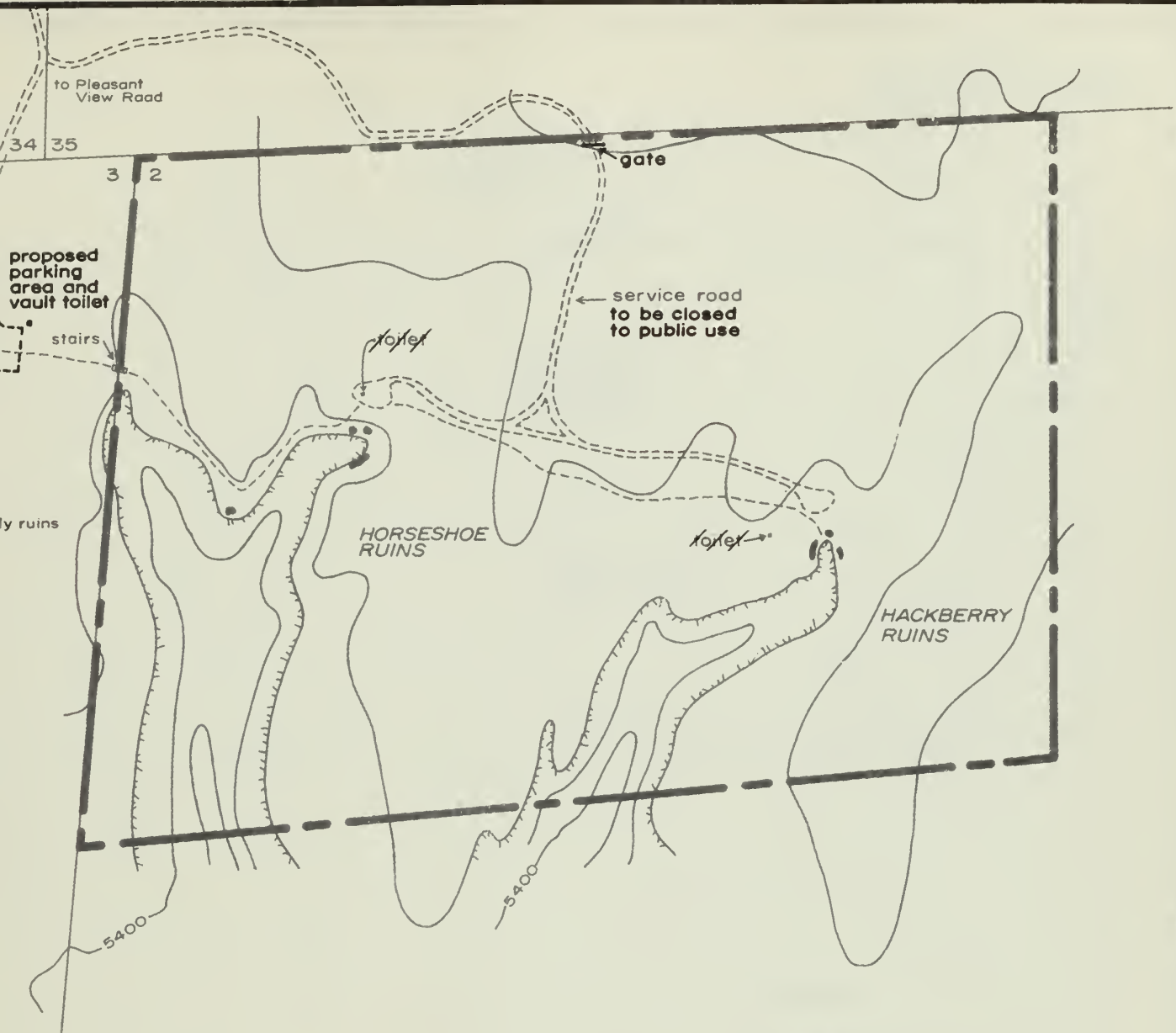


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


-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  trail
-  ruin
-  facility to be removed



Map II. 4
Alternatives III & IV - Holly Group Ruins
Hovenweep National Monument
Colorado-Utah
 U.S. Department of the Interior · National Park Service

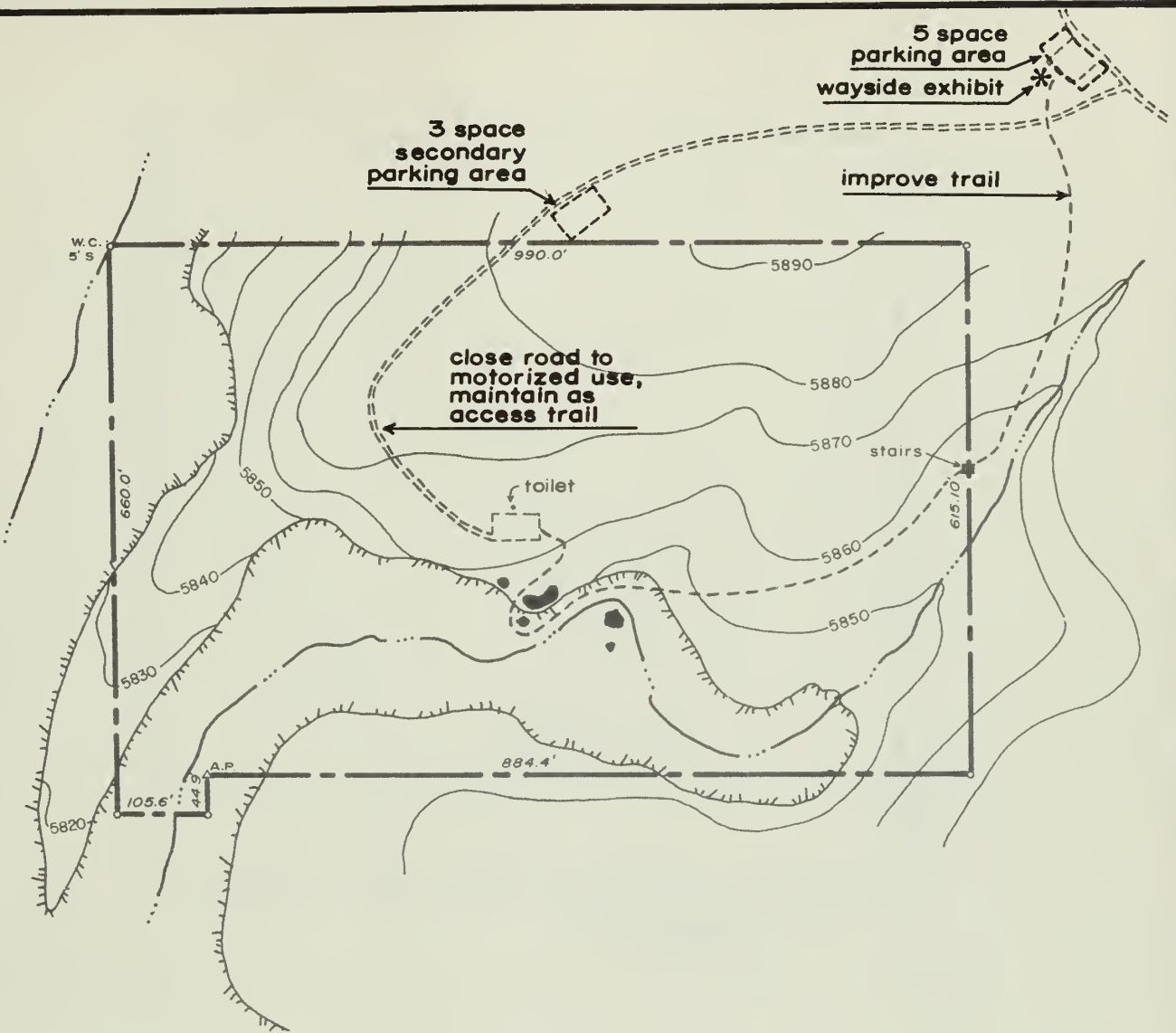


legend







-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  ruin
-  trail
-  facility to be removed



Map II. 5
Alternatives III & IV - Hackberry Group Ruins
Hovenweep National Monument
Colorado-Utah
 U.S. Department of the Interior-National Park Service



legend






-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  ruin
-  trail
-  intermittent stream

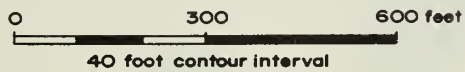


Alternatives III & IV - Cutthroat Castle
Hovenweep National Monument
 Colorado-Utah
 U.S. Department of the Interior · National Park Service



legend

-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  ruin
-  spring



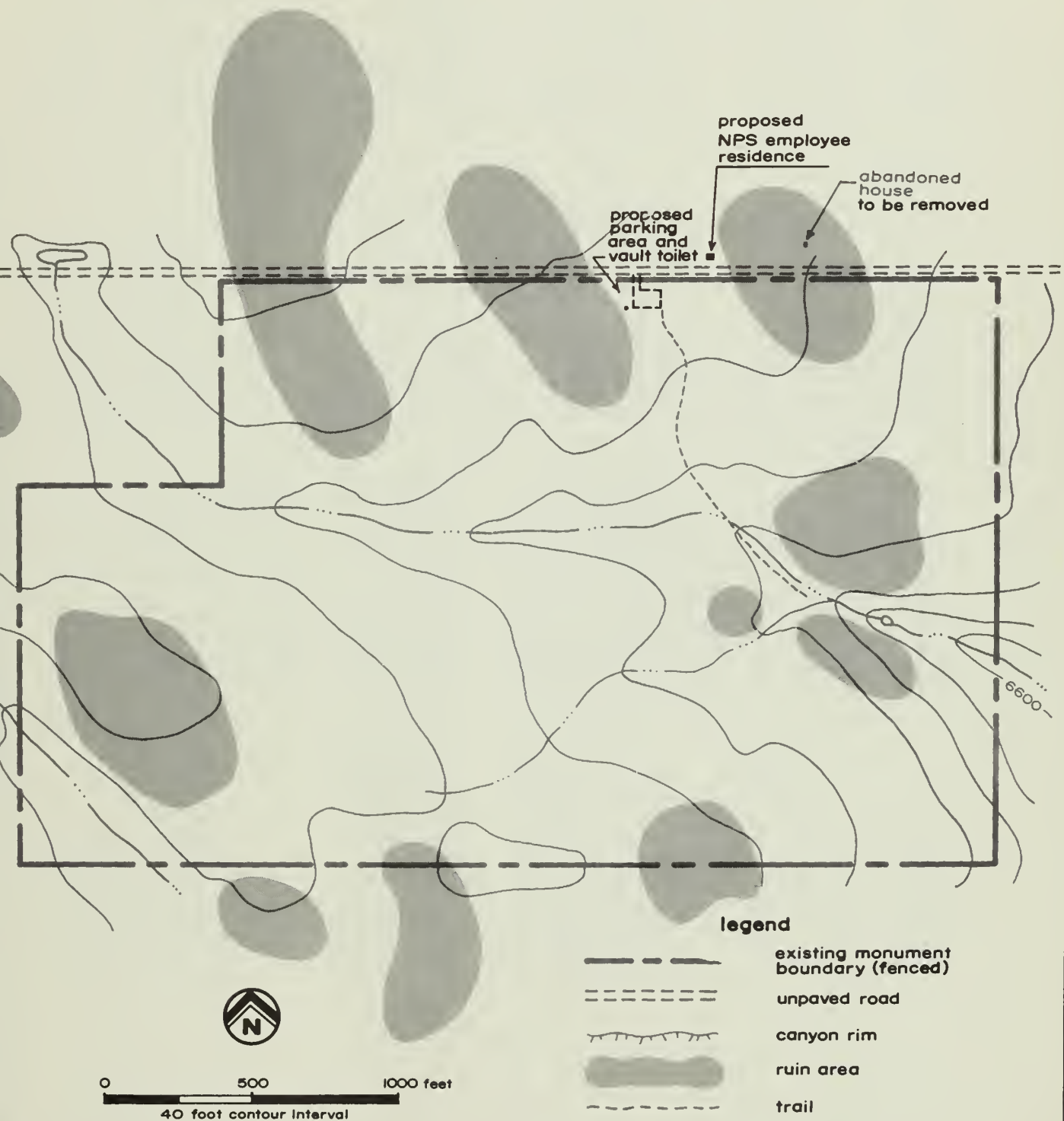
Alternative IV - Cajon Group Ruins

Hovenweep National Monument
Colorado-Utah

U.S. Department of the Interior-National Park Service

Map II . 7

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Map II. 8
 Alternatives II, III & IV - Goodman Point Group Ruins

Hovenweep National Monument
 Colorado-Utah

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E. SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES BY ALTERNATIVE ELEMENTS

	<u>Alternative I</u>	<u>Alternative II</u>	<u>Alternative III</u>	<u>Alternative IV</u>
Land Protection	High risk of cultural resource damage. Continued multiple use with associated economic benefits.	Moderate risk of cultural resource damage. Continued multiple use with associated economic benefits. Increased cooperation between landowners and agencies.	Moderate risk of cultural resource damage. Continued multiple use with restrictions. Some commodity economic benefits.	Low risk of cultural resource damage. Total NPS management with increased economic benefits from increased visitation.
Resource Management	Deterioration of ruins mitigated. Adequate storage of artifacts. No additional information from research and monitoring.	Deterioration of ruins mitigated. Adequate storage of artifacts. No additional information from research and monitoring.	Deterioration of ruins mitigated. Adequate storage of artifacts with increased costs. Information provided by research and monitoring.	Deterioration of ruins mitigated. Adequate storage of artifacts with increased costs. Information provided by research and monitoring.
Visitor Use	Park access to units. Facilities and interpretation limited. Experience of visitors who prefer a "primitive" environment is enhanced.	Improved access to Square Tower and Goodman Point. Poor access to outlying units. Opportunities provided to visitors who prefer primitive or a structured environment.	Improved access to all units except Cajon. Opportunities emphasized for visitors who prefer a structured environment. Limit "primitive" opportunities at Cajon.	Improved access to all units. Opportunities limited to a structured environment. No opportunities for a "primitive" experience.
Park Operations	Requires 2.2 FTES.	Requires 3.5 FTES.	Requires 4.1 FTES.	Requires 4.5 FTES.
Administration, Maintenance Residential	Work efficiency maintained.	Slightly improved work and energy efficiency.	Improved work and energy efficiency.	Improved work and energy efficiency.
Development Concepts	Cost of initial construction \$100,000.	Cost of initial construction \$995,400.	Cost of initial construction \$1,751,300.	Cost of initial construction \$2,713,600.

CHAPTER III
AFFECTED ENVIRONMENT

A. INTRODUCTION

This chapter summarizes the current physical and biological characteristics of the Hovenweep National Monument. Also, it summarizes visitor use data as well as local and regional land uses and facilities. This chapter describes those aspects of the environment likely to be affected by the alternatives described in Chapter II.

B. REGIONAL CONTEXT

Tourism, ranching, dry-land farming, and energy exploration and development are important sectors of the regions economy. The immediate region around Hovenweep is largely agricultural. Five of the units are surrounded primarily by Bureau of Land Management lands which are grazed annually from December to May by the sheep and cattle of at least five ranchers operating under permit with the Bureau of Land Management. Energy resource exploration, development, and production activities are increasing in the Hovenweep area. The Mineral Resource section of this chapter provides further details on the regional context.

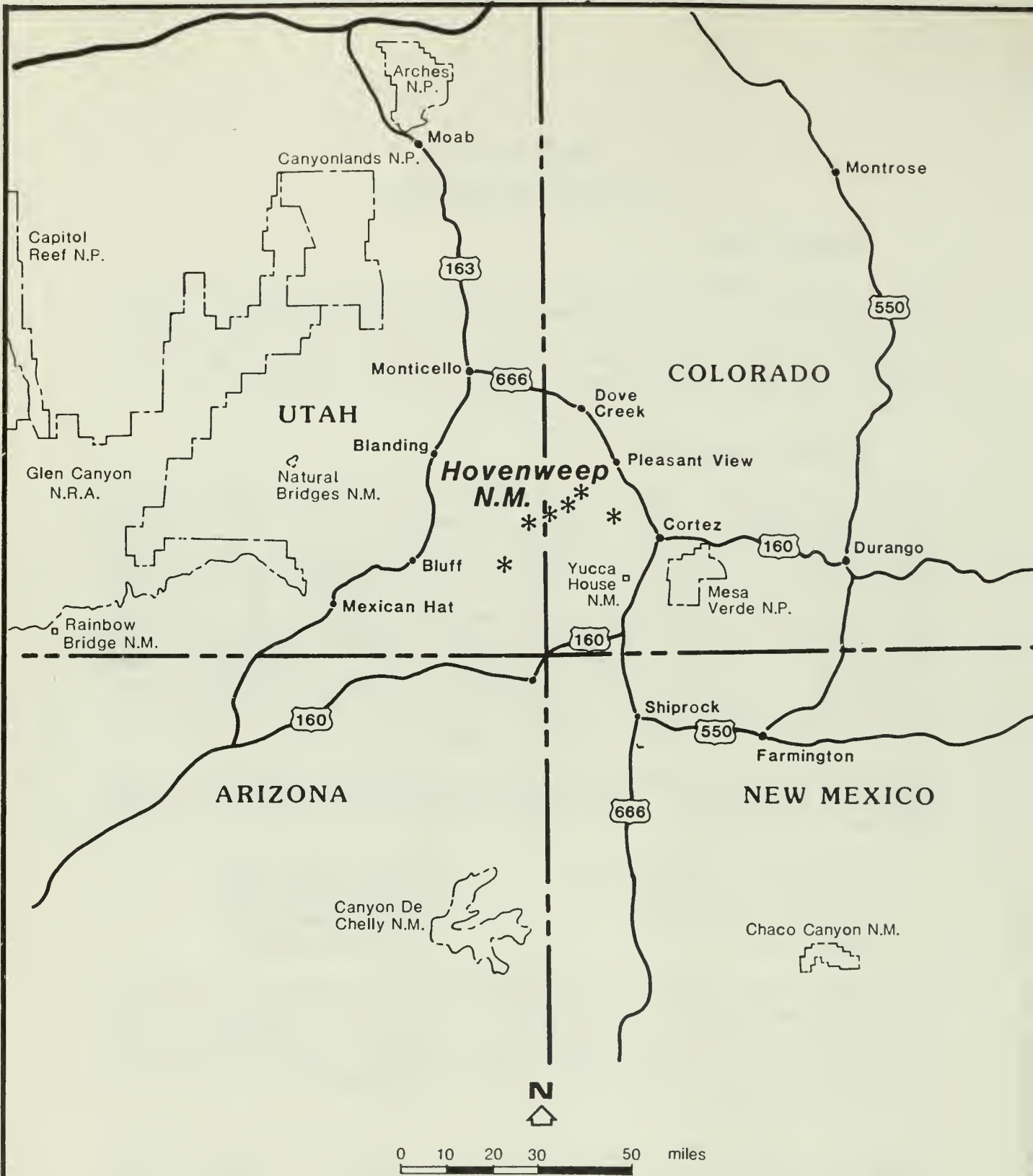
Approximately 100,000 people live within a radius of 150 miles of Hovenweep. The major communities ranked by size are the following:

Farmington, New Mexico	30,000 population
Durango, Colorado	13,000 population
Cortez, Colorado	7,000 population
Moab, Utah	5,500 population

The remaining population is essentially rural in character living in small towns of 3,000 or less and on the Navajo and Ute Mountain Indian reservations. Map III.1, Regional Map, illustrates the relationship of Hovenweep National Monument to the region. Existing land management and use is illustrated on Map III.2.

Recreation opportunities within the region include several large reservoirs such as Lake Powell, Lemon, Vallecito, and Navajo. Additionally, McPhee Reservoir on the Dolores River north of Dolores, Colorado, is near completion. The San Juan National Forest is 50 miles east of the monument, and Manti LaSal National Forest is 70 miles west.

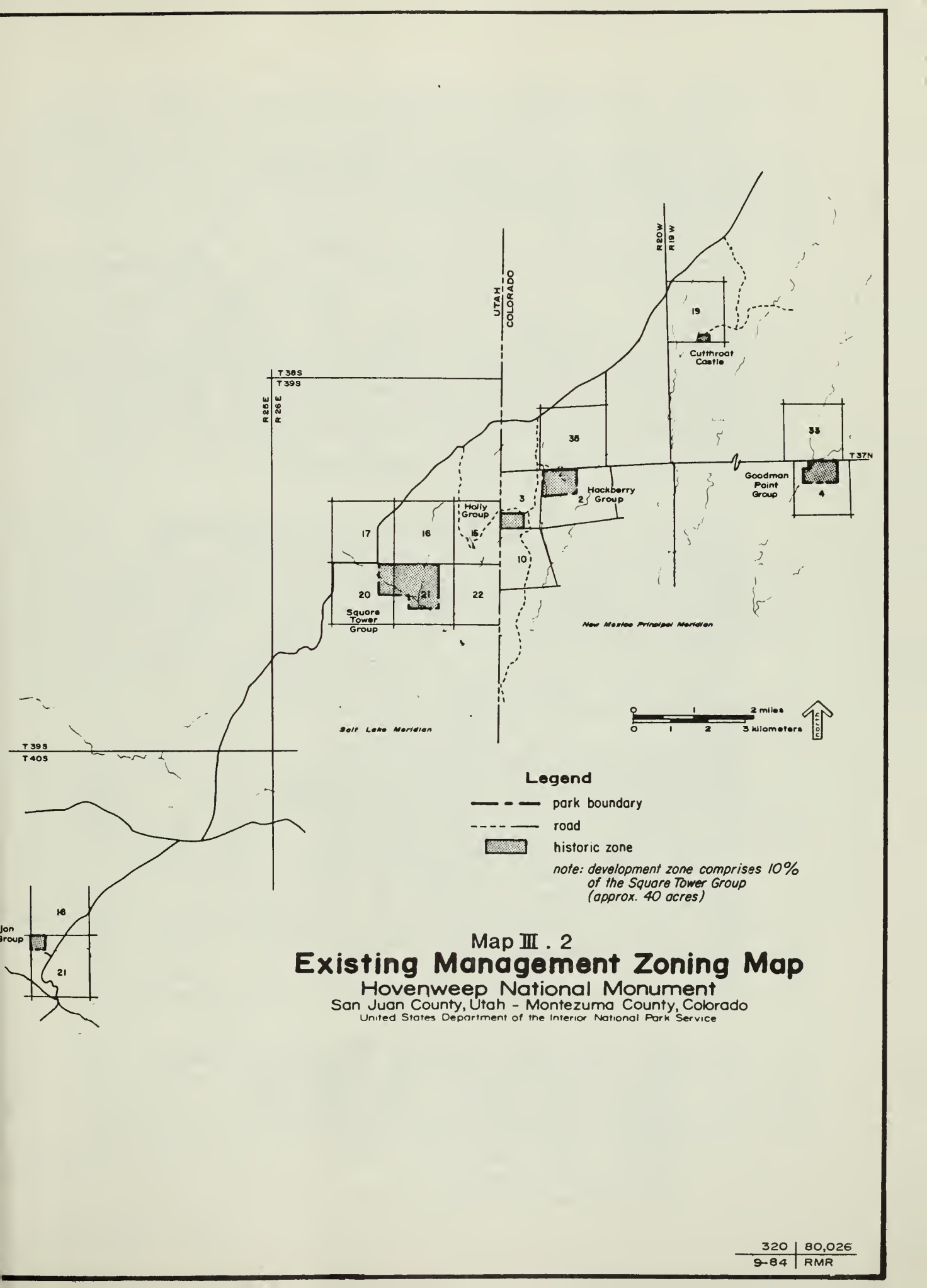
The population of Colorado in 1980 was 2,791,325, with a growth rate of 9.8 percent between 1975-80. As reported in the Colorado Statewide Comprehensive Outdoor Recreation



Map III . 1
Vicinity Map

Hovenweep National Monument
Colorado-Utah

United States Department of the Interior - National Park Service



T 39S
T 39S
R 26E
R 26E

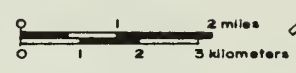
R 20W
R 19W

UTAH
COLORADO

T 37N

Salt Lake Meridian

New Mexico Principal Meridian



Legend

- park boundary
- - - road
- historic zone

note: development zone comprises 10% of the Square Tower Group (approx. 40 acres)

**Map III . 2
Existing Management Zoning Map**

Hovenweep National Monument
San Juan County, Utah - Montezuma County, Colorado
United States Department of the Interior National Park Service

Jon Group

Plan, the population is projected to increase by 13.2 percent between 1980-85 to a total of 3,159,087. The growth rate for the southwestern corner of Colorado is projected to be 15.3 percent. Overall, Colorado has a relatively young population. In 1980, 67 percent of the Colorado population was under 40 years of age.

The population of Utah increased at a growth rate of approximately 18 percent between 1975-80, with an estimated population of 1,424,000 in 1980. The population is predicted to increase by 11.5 percent between 1980-85 to a total of 1,588,000. The most recent available figures for southeastern Utah (Utah Statewide Comprehensive Outdoor Recreation Plan) show a growth rate of 30 percent between 1972-77. The overall population of Utah is even younger than that of Colorado. Projections for 1980 predict 73 percent of the residents to be under 40 years of age.

C. CULTURAL RESOURCES OF THE REGION

Several parks, monuments, and historic sites lie within a 150-mile radius of Hovenweep National Monument. Most of these protect prehistoric villages left by members of the Anasazi culture. The earliest evidence of man in the region indicates hunters and gatherers moved through the area as early as 12,000 years ago. The earliest villages in the region were lived in around the time of Christ by people whose culture gradually developed into the Anasazi culture approximately AD 750. The Anasazi occupied the Four Corners region until approximately AD 1300 when they abandoned the area for reasons that are not yet fully understood.

The best known archeological area in the region is Mesa Verde National Park. The archeological sites, open for public display, span the entire Anasazi period. Mesa Verde has gained international recognition through its designation as a World Heritage Cultural Site by the United Nations Educational, Scientific, and Cultural Organization. Mesa Verde and Hovenweep provide the visitor with an interesting contrast in terms of access to ruin, level of development, and type of experience. Other interpreted and developed Anasazi sites include the Anasazi Heritage Center and Grand Gulch primitive area.

Other Anasazi sites in the region are the following:

- Aztec Ruins National Monument, New Mexico
- Canyon de Chelly National Monument, Arizona
- Chaco Culture National Historic Park, New Mexico
- Dominguez-Escalante Ruins, Colorado
- Edge of the Cedars State Historical Monument, Utah
- Lowry Ruin National Landmark, Colorado
- Mancos Canyon Park, Ute Mountain Reservation, Colorado
- Salmon Ruins, New Mexico
- Yucca House National Monument, Colorado

Map III.3, Significant Cultural Resources, provides a reference for the above discussions.

Present day Indian reservations in the region provide examples of modern Native American culture. These include the Hopi, which may be distant descendants of the Anasazi. Closer to the monument are Navajo and Ute people, both groups probably coming into this area after the Anasazi had abandoned it.

D. UNIT DESCRIPTIONS

Hovenweep National Monument consists of six separate units of prehistoric pueblos and towers north of the San Juan River in a high desert county comprised of shallow canyons and broad mesas. The prehistoric inhabitants were part of the large Puebloan culture of the Four Corners region of Colorado, Utah, Arizona, and New Mexico that lasted until almost AD 1300. The six units are described as follows:

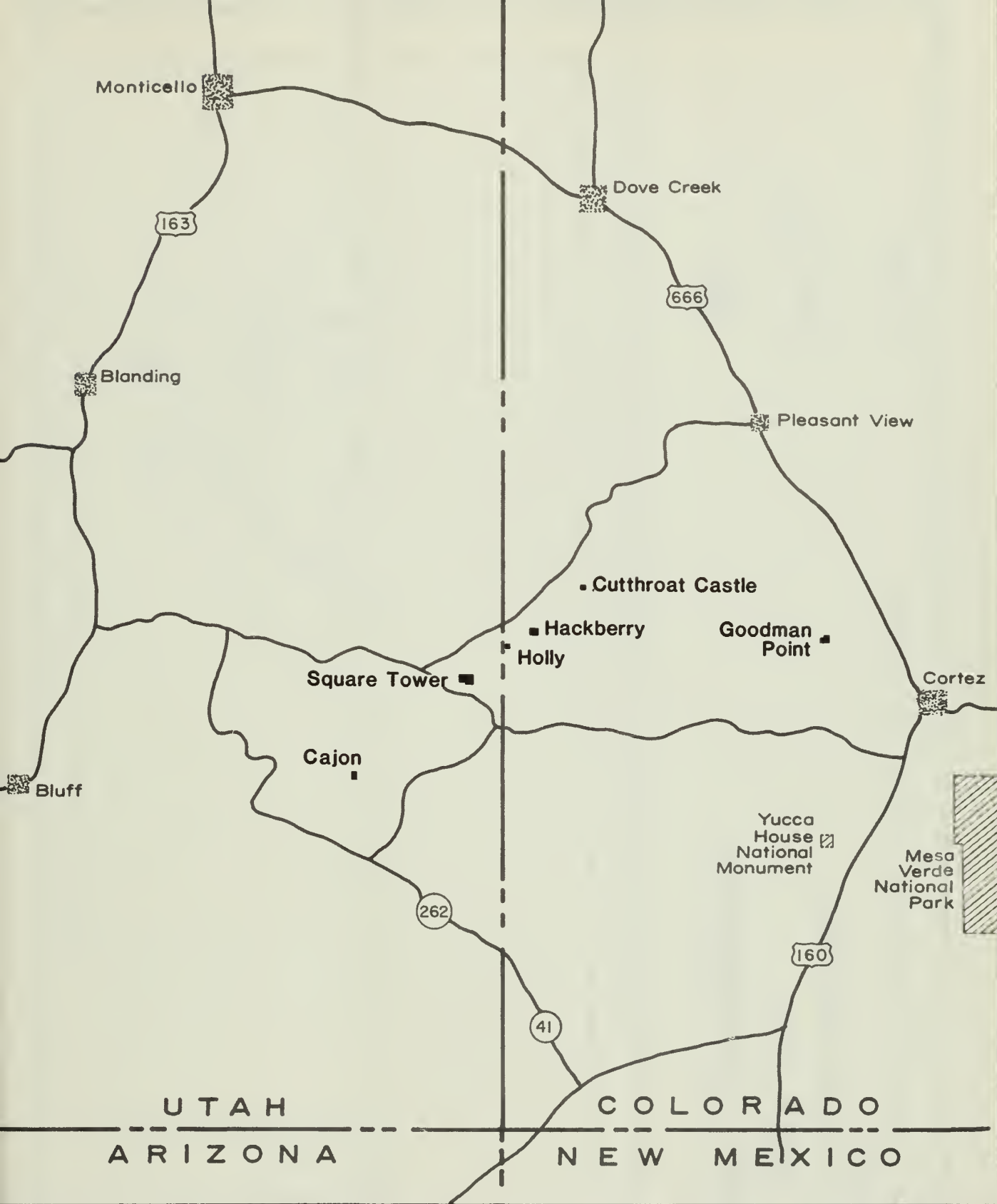
1. Square Tower (See Map III.4)

The 400-acre Square Tower unit is not only the largest of Hovenweep's six units, but also serves as the monument's headquarters. It is in Utah, township 30 south, range 26 east, in the juniper-sage, sage, and shrubland plant zones. The significant resource here, as with all the units of the monument, is archeological.

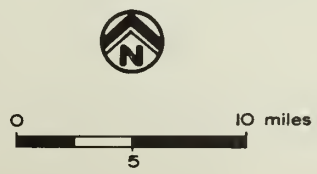
San Jose State University field crews located 68 sites during their work at the monument in 1974. Five large ruin complexes made up of 14 different archeological sites are clustered near the springs at the head of Little Ruin Canyon. These large Pueblo II-III complexes contain towers, room blocks, possible kiva depressions, check dams, middens, and nearby granaries and rock shelters. Interpretive trails allow visitors to come into contact with these ruins, which were occupied from approximately AD 1150-1300.

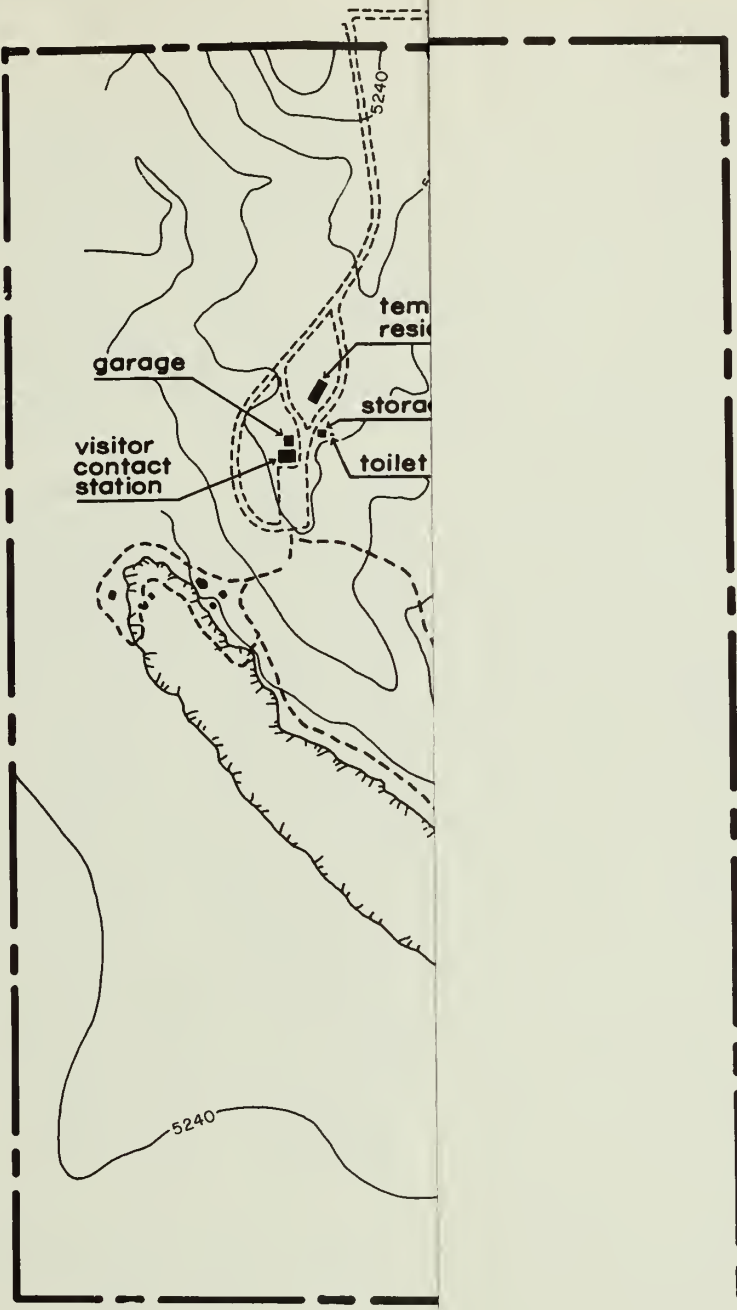
Several other large sites within the unit are on the mesa top and in the canyon. A variety of granaries, shelters, pictographs, petroglyphs, check dams, lithic scatters, and sweathouses occur within the monument. These sites span 9,000 years from the Archaic through Pueblo III and recent Navajo periods.

The Square Tower unit contains most of the monument's visitor use and administrative facilities including the visitor contact station, campground, park employee residences, and maintenance areas. The ranger station at Square Tower unit is headquarters for the administration and



Map III. 3
Significant Cultural Resources
Hovenweep National Monument
Colorado-Utah
 U.S. Dept. of the Interior - National Park Service





- monument boundary (fenced)
- canyon rim
- paved road
- unpaved road
- trail
- ruin
- building

Map III. 4

Existing Conditions

Square Tower Unit

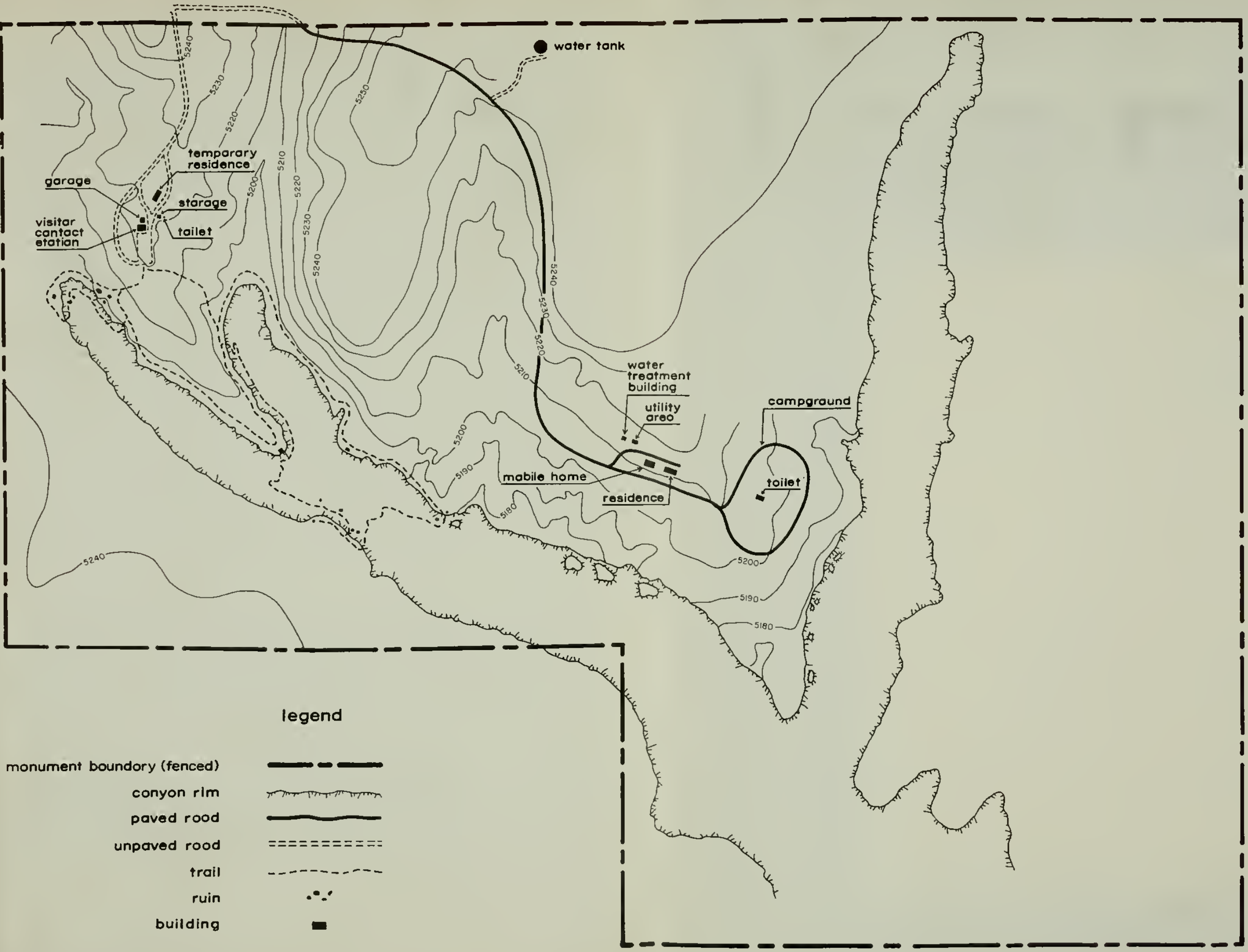
Hovenweep National Monument

Colorado · Utah

United States Department of the Interior · National Park Service



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NOV '84 RMRO



- legend**
- monument boundary (fenced)
 - canyon rim
 - paved road
 - unpaved road
 - trail
 - ruin
 - building

Map III. 4

Existing Conditions

Square Tower Unit

Hovenweep National Monument
Colorado · Utah

United States Department of the Interior · National Park Service



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NOV '84 RMRO

operation of the monument. It contains a small, 230 square-foot visitor contact area with interpretive exhibits, information, and orientation. The visitor safety and protection functions are housed in this building, including first aid and the radio link to Mesa Verde National Park, which is the monument's primary means of administrative communication. The monument presently has no telephonic service. The 380 square-foot ranger station also houses the monument's library, interpretive artifact collection, and a small but well-maintained herbarium. The ranger station was built at Mesa Verde in 1925 and moved to Hovenweep in 1952.

The Square Tower unit's water supply comes from a well 1,400 feet deep. The water is softened and chlorinated, but is of marginal quality due to the high alkaline and dissolved minerals it contains. A small reverse osmosis treatment system was installed in 1983. It does not replace the existing system, but rather provides drinking water in the two park residences and campground. A septic tank sewer system serves the campground and nearby three-bedroom residence and three-bedroom housetrailer. A separate septic system, installed in 1984, serves the ranger station. A rest room is available for visitors at the ranger station. Empire Electric company provides electricity from Cortez, Colorado, and building heat comes from propane gas furnaces at the residences. A wood burning stove heats the ranger station. Immediately behind the ranger station is a small, wood frame maintenance shop and two smaller storage sheds. Additional storage is provided by a metal building near the water well and pump house. The monument has enough equipment to do minor repairs on the buildings, utilities, signs, and trails. For major repairs, the Hovenweep staff calls for support on the Mesa Verde National Park maintenance division.

The monument's primary interpretive facilities are at the Square Tower unit. A wayside exhibit at the start of the self-guided trail system contains displays that give visitors an introduction to the Anasazi culture and to the environment of the Four Corners region. A trail register is available at the trailhead which visitors may sign, state how many are in their group, and make comments if they wish.

Three loop trails bring the visitor to all of the visible ruins at Square Tower that have standing walls. The trails vary from 0.3 mile to 1 mile, and also vary as to number of ruins along the trail and amount of ascending and descending required. Many of the significant features on the trails have identification signs and corresponding short write-ups under the same headings in the trail guide.

A part of the 1962 "Mission 66" project that added the three-bedroom house, 1/2-mile of paved road, and supportive utility systems also included a 31-site modern campground. The campground has a rest room with running water and flush toilets. The rest room is open from May to November. Campers pay a \$2 use fee during this period. During the colder months, the rest room is closed and a pit toilet is provided. Two bulletin boards attached to the front of the rest room provides general visitor information. A 3-1/4 mile hiking trail leads from the campground to the Holly unit via Little Ruin and Keeley Canyons.

The Bureau of Land Management and the National Park Service signed a 3-year Memorandum of Understanding on November 8, 1982, for the use of a sanitary landfill by the monument on Bureau of Land Management land. The site is approximately 1/2-mile northwest of the ranger station. Burnable materials are incinerated on the site and the remainder buried.

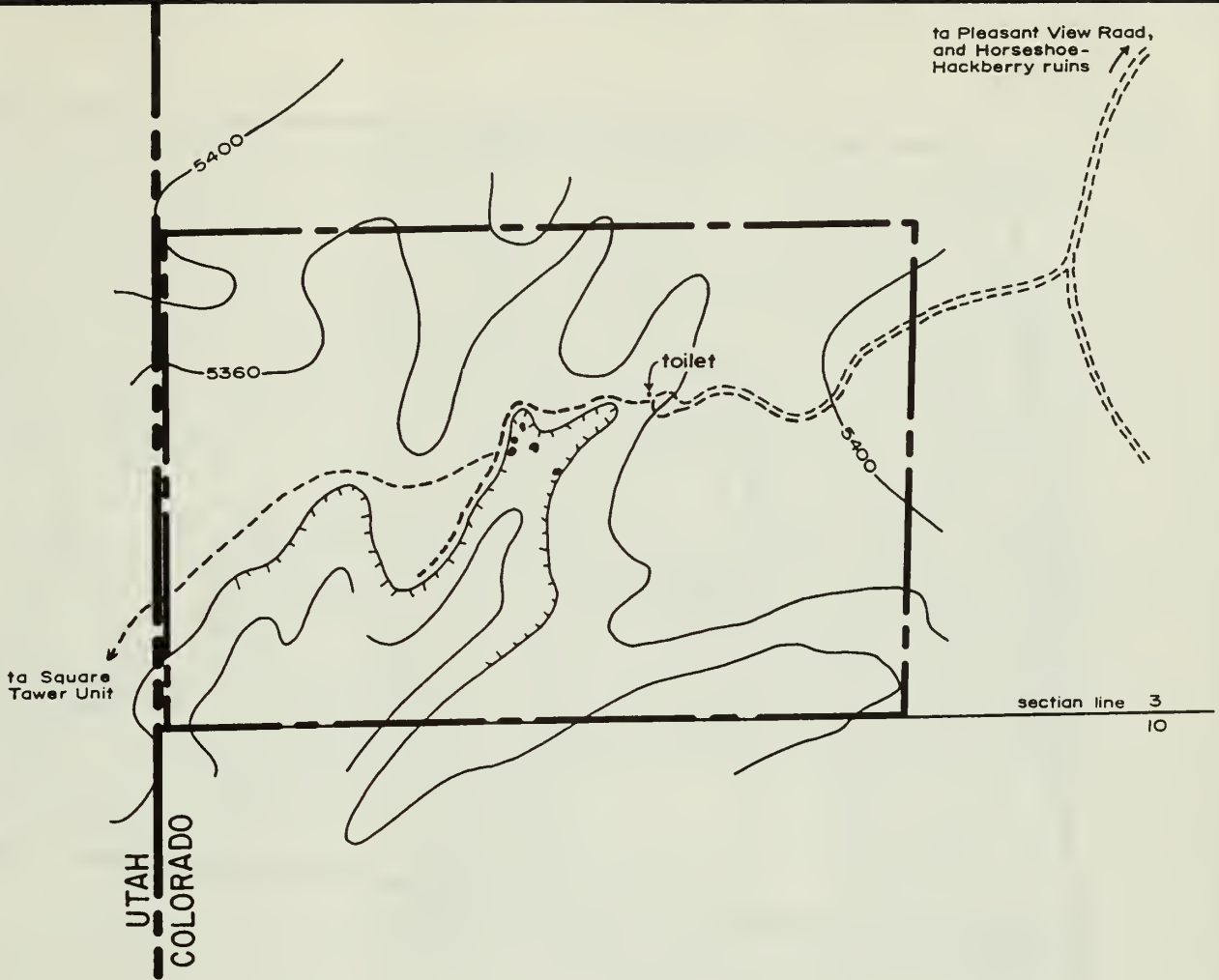
2. Holly (See Map III.5)

The 63-acre Holly unit is centered around the head of the north fork of Keeley Canyon in the juniper-sage vegetation zone, with a large Pueblo II-III, multiroom tower complex clustered around the canyonhead. Features associated with the Holly unit include a large rim dam, talus retaining walls, possible kiva depressions, several room blocks, middens, nearby arroyo check dams, petroglyphs, granaries, lithic and ceramic scatters. The area was occupied primarily during the Pueblo II-III period, although several possible Archaic, Pueblo I, and Navajo sites have been located.






Access to Holly unit is by dirt road or by a 3-1/4 mile long hiking trail from the campground at Square Tower unit. Holly is one of the more accessible of the outlying monument units, and it is the most visited ruin group after Square Tower. A small parking area is within the National Park Service boundary. Next to it is a pit toilet and a trail register. On the trail register is a map of the ruins, a sign-in sheet for visitors, and a short information sheet to introduce the visitors to the ruin. The National Park Service boundary is completely fenced at Holly, with the west boundary being the Colorado-Utah State line.

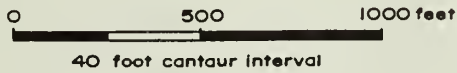
3. Hackberry (See Map III.6)

A dense cluster of sites occurs around the two canyonheads of Hackberry Canyon, in a 125-acre parcel at the north edge of the juniper-sage zone. Hackberry House and Horseshoe



legend

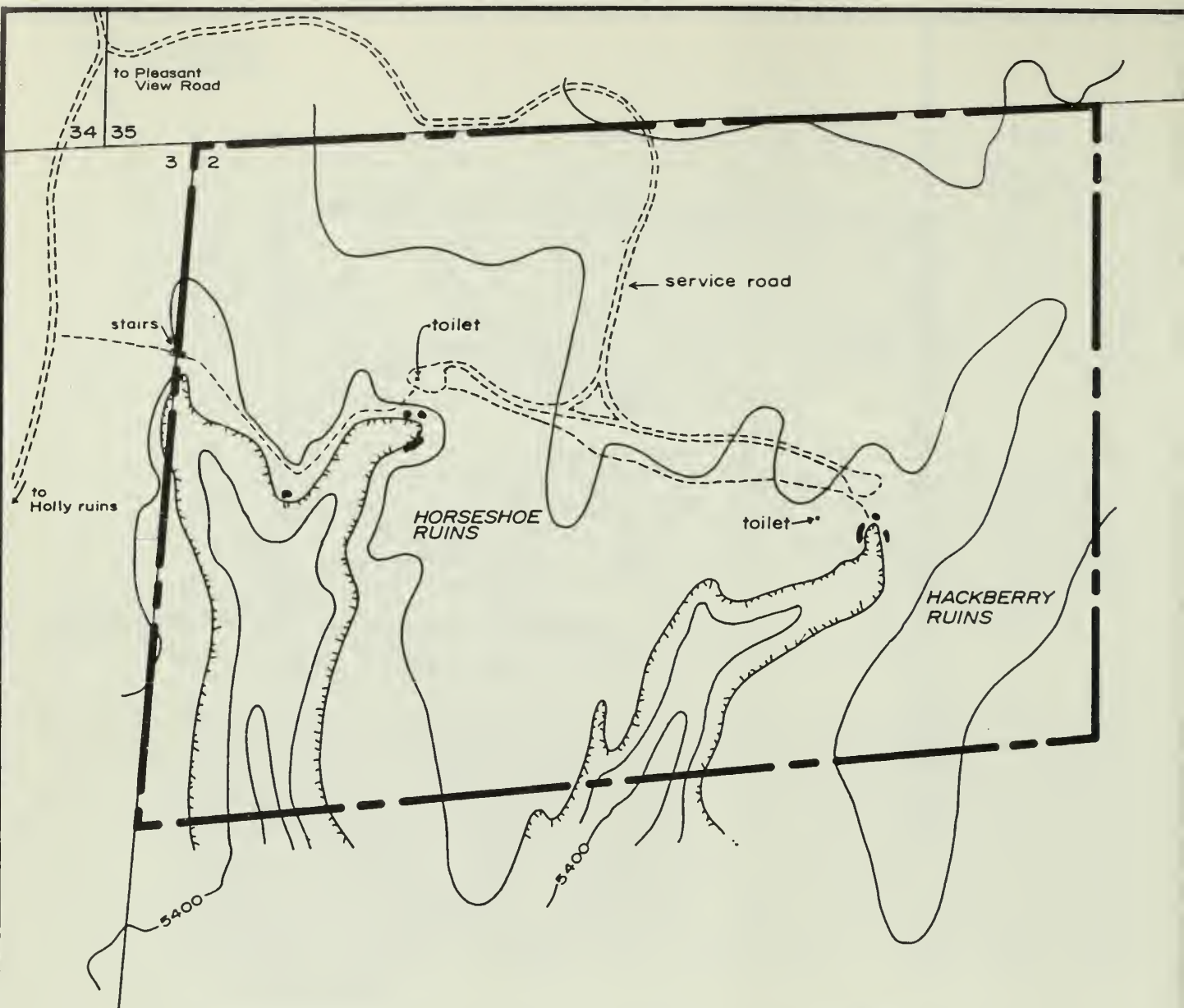
-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  trail
-  ruin





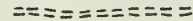


Map III . 5
Existing Conditions - Holly Group Ruins
Hovenweep National Monument
Colorado-Utah

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Legend

-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  ruin
-  trail



Map III . 6
Existing Conditions - Hackberry Group Ruins
Hovenweep National Monument
Colorado-Utah
 U.S. Department of the Interior-National Park Service

House are two of the most impressive sites at Hovenweep, and each is composed of towers, room mounds, rim dams, terraces, possible kiva depressions, shelters, and middens. A sheltered kiva and a large pictograph panel also occur at Horseshoe House. Other sites within the unit are canyon wall and talus shelters and granaries which are clustered near the large ruin complexes, strings of arroyo check dams, unit pueblos, isolated rooms, and numerous ridge-top lithic and ceramic scatters. The occupation sequence ranges from Basket Maker III through Pueblo III, with a limited use by recent Navajo.

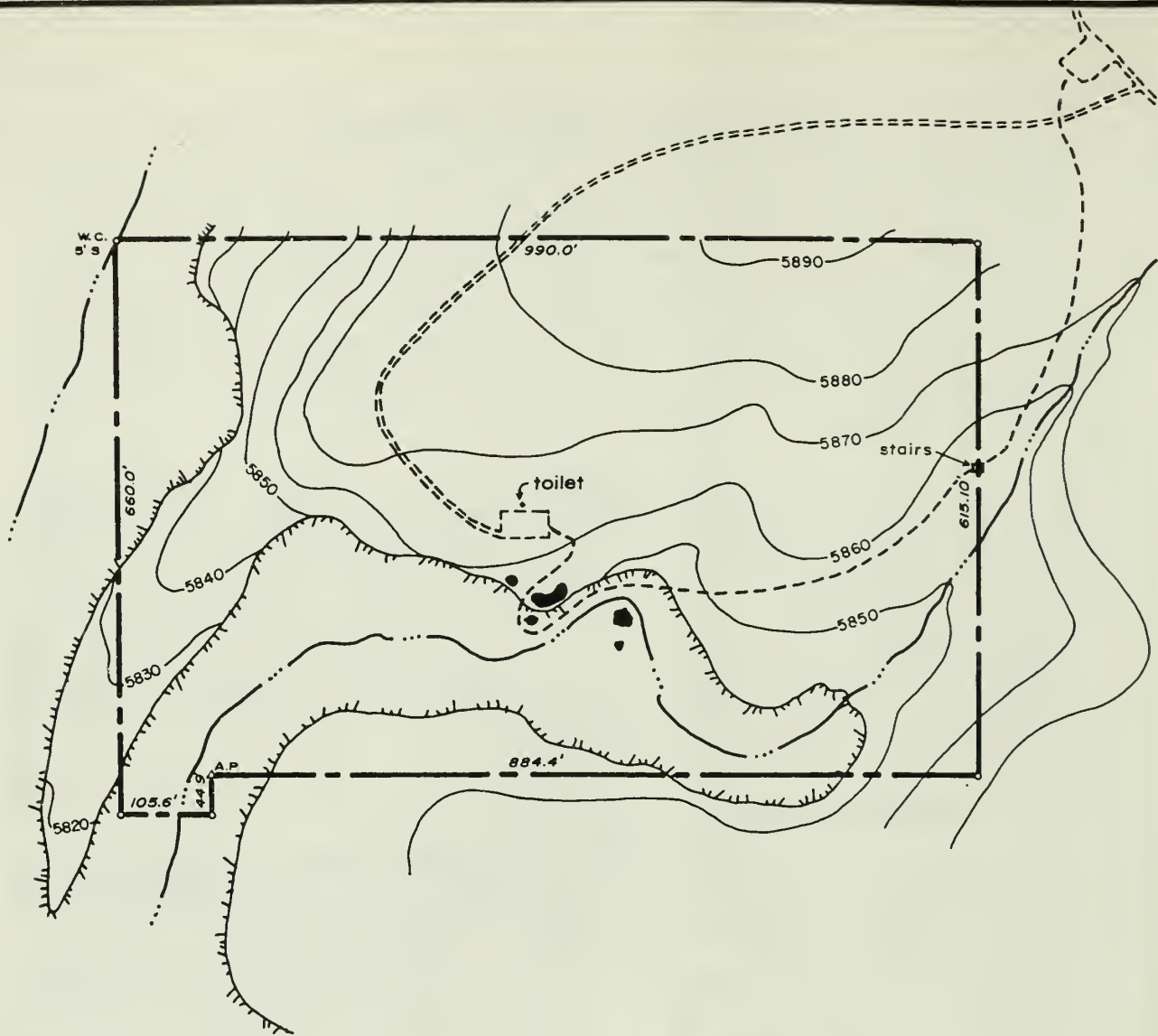
Visitors may reach the Hackberry and Horseshoe ruins by two access routes. A dirt road passes through the boundary fence from the north and leads to parking areas near each ruin complex with identification signs, pit toilets, and trail registers. There is also a short trail connecting Hackberry and Horseshoe ruins with the dirt access road leading to Holly ruin. A stile provides access over the western boundary fence of Hackberry unit, and the trail is marked by a sign and trail register. The entire National Park Service boundary is fenced.

4. Cutthroat Castle (See Map III.7)


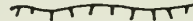
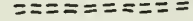



A 14-acre unit of pinyon and juniper forest at the head of an unnamed tributary of Hovenweep Canyon is the Cutthroat unit, which contains the highest number of sites per acre of any monument unit. The major site complex is Cutthroat Castle, a large, Pueblo II-III cluster of room blocks, towers, possible kiva depressions, natural shelters, middens, and check dams clustered around a spring at the head of a canyon. The area may have been inhabited as early as Archaic or Basket Maker II times, as indicated by crude points and a possible Basket Maker II pit house, but the heaviest use occurred during Pueblo II-III times.

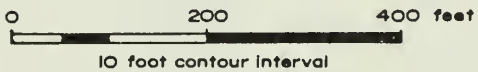
The National Park Service boundary is fenced with privately owned land bordering to the south and Bureau of Land Management land surrounding the unit on the other three sides. Shell and Mobil Oil Companies have submitted plans to drill carbon dioxide wells within 1 mile of the Cutthroat unit, and part of that proposal includes electric lines passing approximately 1/2-mile southeast of the unit; however, recently these plans have been dropped.

At the small parking area near the ruin are a pit toilet and a trail register which contains a map of the ruin and a short interpretive message. A short trail leads from the parking area to the ruin itself. Cutthroat is the least accessible of the monument's units, and receives relatively little visitation. Visitors may also reach Cutthroat Castle



legend

-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  ruin
-  trail
-  intermittent stream



**Existing Conditions - Cutthroat Castle
Hovenweep National Monument
Colorado-Utah**
U.S. Department of the Interior National Park Service

by parking at an area off the access road on the mesa top to the north and hiking the 1/2-mile trail across Bureau of Land Management land. The trail enters the unit on the eastern boundary across a stile.

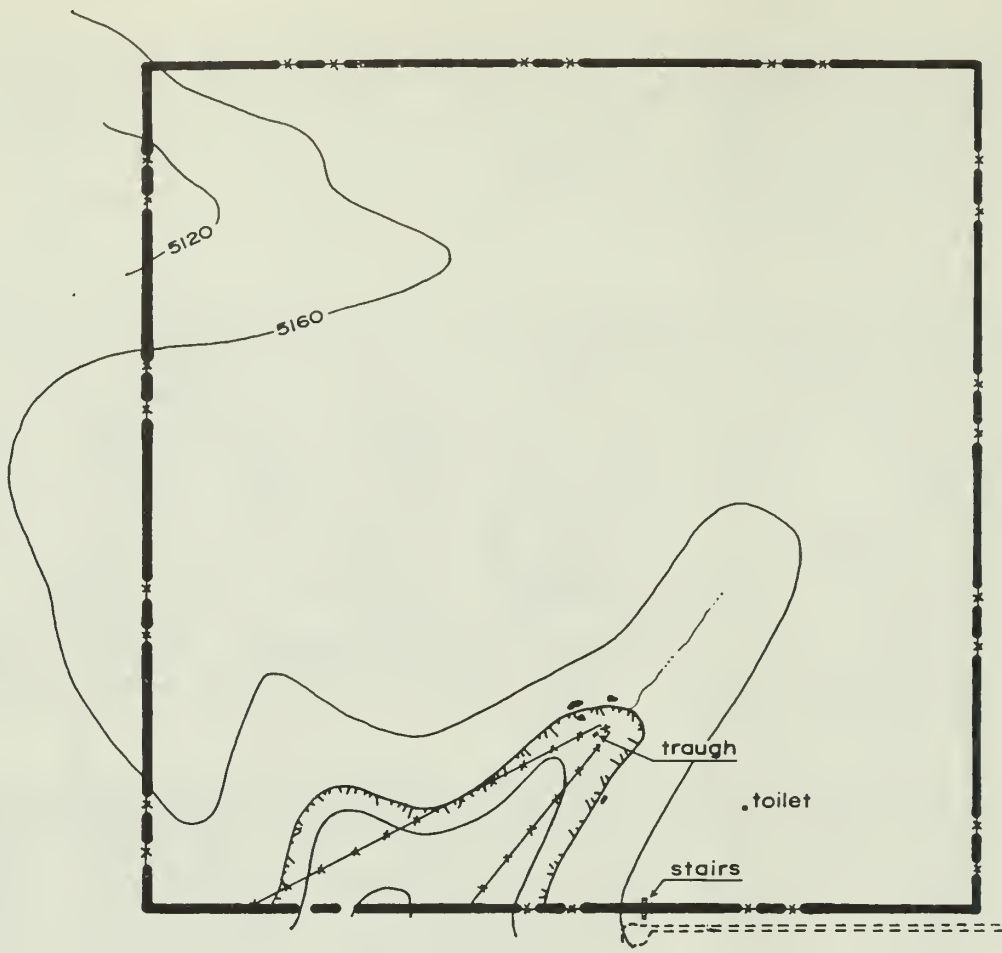
5. Cajon (See Map III.8)

The southernmost monument unit is the 40-acre Cajon unit located in the shrub vegetation zone on the extreme southern edge of Cajon Mesa. The largest structure is Cajon Ruin, a cluster of towers, room blocks, granaries, retaining walls, possible kiva depressions, petroglyphs, pictographs, and midden located around a spring. The site was occupied from Basket Maker III through Navajo times with heaviest use during the Pueblo II-III period. In addition to the main ruin, at least 20 of the 40 acres are covered with concentration of lithic debris scattered on ridges, in arroyos, and in blow-outs. This lithic scatter indicates that the area was a hunting, manufacturing, farming, and plant-collecting station during the same periods that the main ruin was occupied.


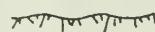


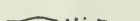
Access to Cajon Ruin is by an unmarked dirt road. The parking area is adjacent to the boundary fence, which has a stile to allow visitors to enter the monument unit. Immediately within the fence is an identification sign and a trail register. The only other visitor facility is a pit toilet easily visible a few hundred feet from the main ruin. It has a history of occasional vandalism, as do the National Park Service sign, trail register, and fence. Periodically in the past, the fence has been cut or knocked down and livestock have been found grazing inside Cajon unit. This has not happened in recent years.

Cajon is the only monument unit surrounded by Navajo tribal lands, and the spring there is an important water source for Navajo livestock. A pipe from the spring carries water to a trough outside the fenced area to provide livestock water. Earlier fencing allowed animals free access to the spring which resulted in the trampling of some archeological midden near the spring. A fence section installed in 1984 keeps the livestock away from the spring area.

Cajon is also on the northern edge of the Aneth oil field. While many oil wells south of Cajon are visible--2 to 5 miles away--the closest one is 1/4-mile north. The oil well and two oil storage tanks are visible from almost anywhere near the ruin.



legend

-  existing monument boundary (fenced)
-  canyon rim
-  unpaved road
-  ruin
-  spring

Existing Conditions - Cajon Group Ruins
Hovenweep National Monument
 Colorado-Utah

U.S. Department of the Interior · National Park Service

6. Goodman Point (See Map III.9)

Goodman Point is different from the other Hovenweep units. Its 143 acres lie adjacent to Montezuma County Road P a few miles northwest of Cortez. It has a higher elevation, receives more moisture, and has slightly cooler temperatures than the other Hovenweep units. The immediate environment is a pinyon juniper forest, surrounded by modern dry farmland producing pinto beans and winter wheat. Because of its architecture and large size--as well as its setting in a higher, cooler, and wetter environment--the complex at Goodman Point is more like the large pueblos in Montezuma Valley than the canyonhead sites of the other Hovenweep units.

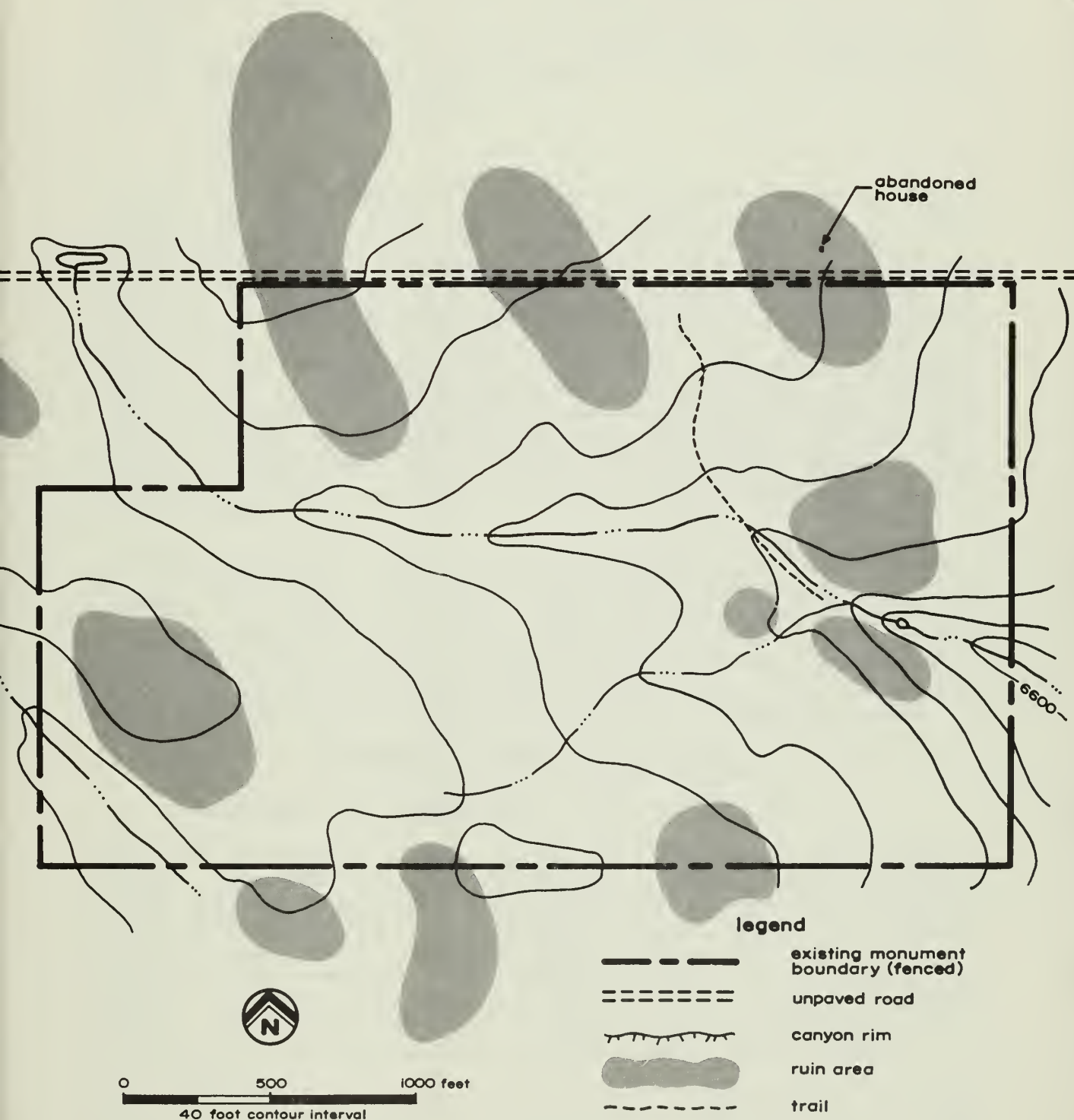
Formerly under the U. S. Land Office, the entire section (T. 36 N., R. 17 W., Sec. 4) was withdrawn in 1889 as a possible Federal reserve. After it became a part of Hovenweep National Monument in 1951, the Bureau of Land Management cancelled its withdrawal of the rest of Section 4, selling some of it to private landowners.

The Goodman Point complex extends north and south of the present monument boundaries and contains at least two large prehistoric settlements, a lake created by a prehistoric dam, a prehistoric road, and small cliff dwellings. The most obvious ruin in the unit is a multiroom stone pueblo immediately north and west of the spring. This pueblo was at least two stories high and contained 400-500 rooms and numerous towers and kivas.

West of the large stone pueblos is another, older settlement. This settlement appears to have been roughly crescent-shaped, with the eastern points of the crescent extending 1/4-mile beyond the present north and south boundaries of the monument unit. This village was probably made up of a series of room blocks with work areas, refuse dumps, and kivas in between.

Goodman Point does not contain the high, free-standing prehistoric walls that the other Hovenweep units have. It is one of the largest prehistoric settlements in the Montezuma Valley, and may have held a central position in the area social structure, along with Yucca House, Yellowjacket, Lowry, Mud Springs, Sand Canyon Pueblo, and other large Anasazi communities.

Goodman Point is 9 miles from Cortez. The access road to it is experiencing increased house-building along it. A carbon dioxide well is proposed 3 miles west of Goodman Point.



Map III . 9
 Existing Conditions - Goodman Point Group Ruins

Hovenweep National Monument
 Colorado-Utah

U.S. Department of the Interior · National Park Service

The National Park Service has fenced the unit, but there is no other development except a sign within the unit out of sight from the road identifying the unit and a trail register. Visitation is not encouraged although there are occasional visitors who climb over the fence. There are no toilet facilities. The only parking is between the boundary fence and the county road.

E. ACCESS

Access to the monument is via dirt and gravel roads. Signs direct visitors only to Square Tower unit. Visitors travelling from the west must drive across 7 miles of unpaved road, from the north 23 miles, and from the east 23 miles. Local roads in Utah are infrequently maintained by San Juan County and by Montezuma County in Colorado. During periods of inclement weather, the roads can be impassable except for four-wheel drive and high clearance vehicles. Spur roads to the outlying Hovenweep units rarely receive any maintenance. One result of the dispersed nature of the units coupled with poor access and directional signing only to the Square Tower unit is that visitation to the outlying units is only 20 to 25 percent of the visitation to the Square Tower unit.

Transcolorado Airlines provides commuter air service to Cortez, Colorado, and there is currently commuter airline service to Blanding, Utah. The closest rail service is either Grand Junction, Colorado, or Gallup, New Mexico, both over 200 miles distant. The only direct access to Hovenweep is by privately owned or rented automobile. No commercial service or organized tour makes Hovenweep a regular stop.






RESOURCE ELEMENT DESCRIPTIONS

A. VEGETATION AND TOPOGRAPHY (See Map III.10)

Five of Hovenweep's six units are on Cajon Mesa, which covers approximately 500 square miles on the Colorado-Utah border near Four Corners. Although the topography is fairly uniform, variations in rainfall, soil type, and plant associations occur through minor elevation and drainage pattern differences. The northern half of the mesa is higher, cooler, and wetter supporting a pinyon-juniper forest. This part of the mesa is the most productive today growing dry land pinto beans, winter wheat, and alfalfa.

Most of Hovenweep's units are in the juniper-sage and sage areas in the midportion of the mesa. In addition to the above plants, rabbitbrush, cliffrose, Mormon tea, yucca, and serviceberry are commonly found and were important plants to



-  Pinyon-Juniper
-  Juniper-Sage
-  Sage
-  Shrub land
-  major canyon



Map III . 10
Vegetation and Topography
Hovenweep National Monument
Colorado-Utah
 U. S. Dept. of the Interior - National Park Service

the prehistoric Anasazi. It is the part of the mesa that was most heavily occupied by the Anasazi when they built the settlements preserved by Hovenweep.

Permanent springs and seeps are common in canyonheads that cut into the mesa, especially at the point of contact between the porous Dakota Sandstone which caps the mesa and the underlying, more impervious Morrison Shales. The springs in the canyonheads and the seasonal and permanent streams in the bottom of every canyon are important sources of springtime moisture and summer floods. These canyonheads, the ridge tops between them, and the slopes along the canyon edges were favored settlement locations for the Anasazi.

Soil for growing the Anasazi crops of corn, beans, and squash is generally deficient except in the north, where modern agriculture is practiced. There are no large areas of deep build-up or dunes. Areas of greatest depth occur in the broader canyon bottoms and on the ridges near the upper reaches of the mesa top drainages.

South of the Square Tower unit sagebrush grades into the mixed shrubland plant zone composed of shadscale, greasewood, snakeweed, and grasses. This zone covers the southern end of Cajon mesa and the San Juan River valley. In some places, snakeweed has become the dominant plant, especially in over-grazed areas. The Cajon unit of Hovenweep is the only part of the monument in this plant zone.

The Goodman Point unit lies a few miles northwest of Cortez, and has a higher elevation, receives more moisture, and has slightly cooler temperature than the other Hovenweep units. The immediate environment is a pinyon-juniper forest, surrounded by modern dry farmland producing pinto beans and winter wheat. Parts of the Goodman Point unit are almost completely overgrown with a vigorous sage cover. A large spring is in the unit.

B. VISITATION CHARACTERISTICS

One of the intents of this planning effort is to identify the appropriate facilities and levels of development required to preserve and interpret the park resources with minimal adverse impact to the monument and associated cultural resource values. A detailed analysis of visitor use characteristics must be developed to determine development needs and potential impact levels.

1. Visitor Trends

The National Park Service began recording public use statistics at Hovenweep National Monument in 1941 when some

300 persons visited the area. Visitation has increased steadily through the 1960's and 1970's, levelling off at approximately 14,000-15,000 for the period of 1979-83. The highest visitation was 19,400 during the 1976 Bicentennial Year (see Figure III.1, Annual Visitation). For the purpose of this plan, visitor use and trends will be examined for the base period of 1979-83.

Visitor use at Hovenweep National Monument is a combination of day use and overnight campground stays with an average length of stay of approximately 1 hour for day-use visitors and 18 hours for campers. From 1979 to 1983, use in the 31-unit campground at Square Tower actually decreased slightly with 22 percent of the total visitors spending a night in the campground in 1979 and 19 percent in 1983. With the exception of a few nights each year, the campground is not used to capacity. It should be noted that a campground fee system was instituted in 1983. During this period, visits to the outlying units increased steadily from 2,028 (14 percent of the Square Tower unit visits) in 1979 to 2,926 (24 percent) in 1983.

Thus it appears that visitation has levelled off during the base period with a rather steady and dramatic increase in outlier visits and a slight decrease in campground usage.

2. Season of Use

Visitation patterns fall into three rather distinct seasonal, 4-month periods (see Figure III.2, Average Monthly Use Distribution). The peak visitor season is May 1 to August 31 when 65 percent of the yearly visits are recorded. Visitors travelled to Hovenweep in remarkably consistent numbers from month to month during this 5-year period. Visitation averaged 75 per day with as many as 200 being recorded. At the opposite extreme is the winter period, November 1 to February 28, when only 6 percent of the yearly visitors travelled to the monument. It is not uncommon during this period to have days with no visitors, and several weeks with no campers. During the transition months, March to April and September to October, approximately 29 percent of the annual visitation was recorded.

3. Visitor Origin

A visitor origin analysis conducted for 1983 indicated the following:

Regional (Colorado, Utah, Arizona, and New Mexico)	54 percent
Other States	39 percent
International	7 percent

- — — average annual increase (1960–1983, excluding 1976–1978) 7%
- · - · - average annual increase (1971–1983, excluding 1976–1978) 2%
- - - - - average annual decrease (1979–1983) 1%

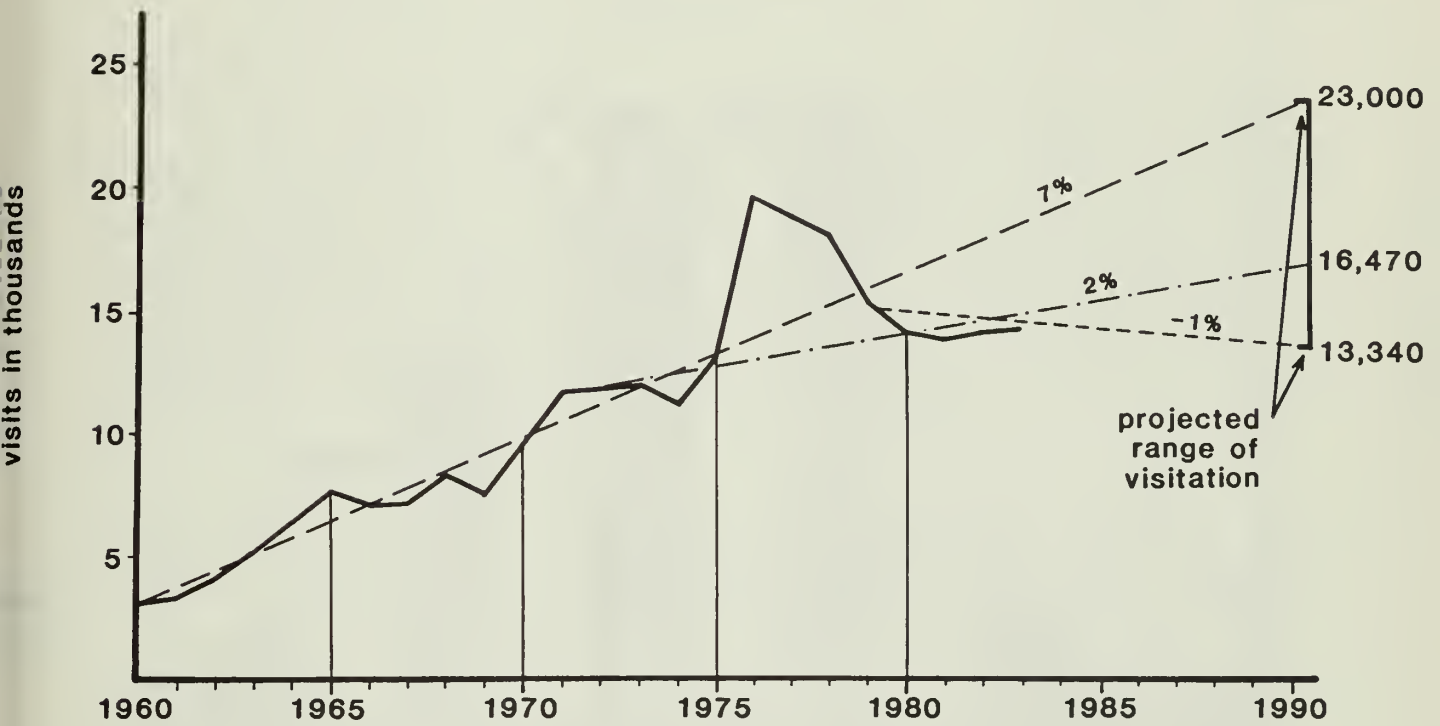


Figure III . 1
Annual Visitation 1960–1983
Hovenweep National Monument

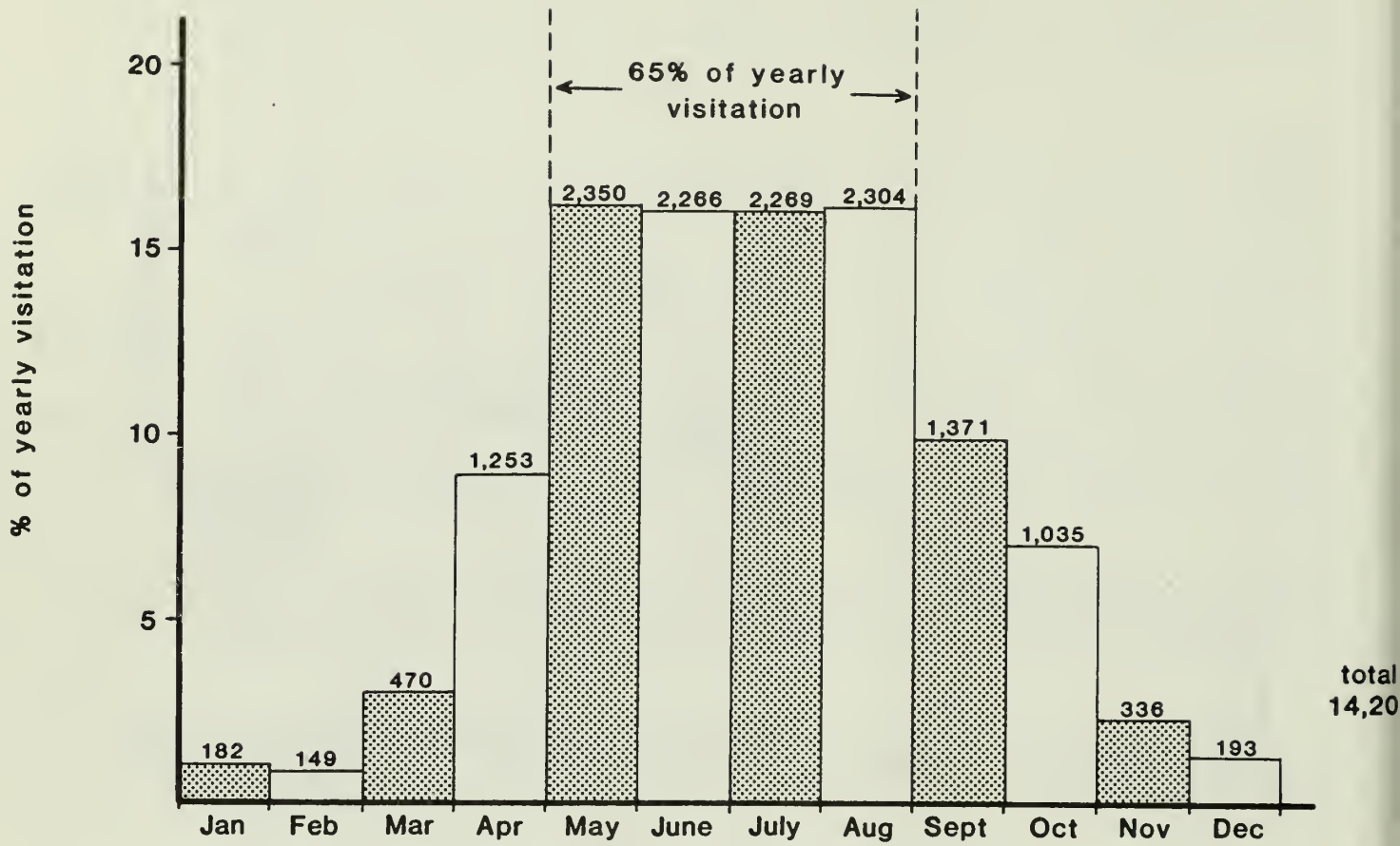


Figure III . 2

**Average Monthly Use Distribution
Hovenweep National Monument , 1979-1983**

Excluding May, when a large percent of the Hovenweep visitors are students from area schools, the breakdown by origin during the peak visitor season is as follows:

Regional	37 percent
Other States	55 percent
International	8 percent

In addition, approximately 11 percent of the annual visits are made by people living in the local area, that is, within a 1-hour travel time to Hovenweep National Monument. Many persons visit the area as a part of a trip to other parks in the region. Most visitors to Hovenweep have visited the larger parks in the region such as Mesa Verde National Park and Canyon de Chelly National Monument, and are interested in a more detailed, specialized, and uncrowded park visit. This type of experience is provided at Hovenweep National Monument by its remoteness, lack of visitor control measures, and specialized cultural resource.

4. Projected Visitation

Despite the rather consistent visitation increase at Hovenweep National Monument over the past 20 years, projections of future visitation must be cautiously viewed and applied. Excluding the years 1976-78 when general travel and park visitation increased nationwide during the Bicentennial Year and visitation to the monument increased because of the temporary, emergency closure of Mesa Verde National Park, the average annual increase from 1960-83 was 7 percent. Projecting this same annual increase will give a visitation of 23,000 for 1990. A more accurate projection might be based on more current trends for the period 1971-83, again excluding the unusual 1976-78 years. Using this average annual increase of 2 percent gives a visitation figure of 16,470 for 1990.

Another method of projecting future visitation is based upon the average annual decrease of 1 percent from the most recent years, 1979-83. This projection yields a visitation of 13,340 for 1990.

These projections give a range from roughly 13,000 to 23,000 for 1990 and from 11,000 to 50,000 for the next 20 years. At best, an analysis of the visitation figures can only show a pattern of long-term visitation increase with a levelling off during the most recent years.

As was previously mentioned, the difficult access and remote location serve to limit the number and preselect the type of visitors to Hovenweep National Monument. Should either of these factors be removed, it is probable that visitation

would increase. While this remains an unknown future situation, the San Juan County Highway Department has announced plans to pave a 10-mile section of road from the Colorado border south along the Pleasant View Road to link up with the existing pavement on the road extending from McElmo Canyon in Colorado to Route 262 in Utah. This work is expected to begin in 1986 and take approximately 5 years to complete. By 1988, the road is expected to be paved to the Square Tower unit, leaving only 2 miles of unpaved road from the west.

Should the road be paved, Hovenweep National Monument would still be an isolated side trip for most visitors. Town officials from Blanding, Utah, and Cortez, Colorado, have been pursuing the possibility of redesignating the McElmo Canyon Road as a United States Highway to channel tourism traffic through the Southeastern Utah area.

At present, Hovenweep National Monument is still a rather difficult side trip for most people. There exists, however, ambitious plans and schedules to extend pavement to the monument's doorstep and to create a major tourist artery as near as 6 miles away. Other National Park Service areas, such as Natural Bridges National Monument in Utah and Navajo National Monument in Arizona, experienced dramatic visitation increases when relatively short road sections were paved.

C. INTERPRETATION

The separation of the monument into six different administrative units has resulted in a concentrated interpretive effort at the Square Tower Ruin group. The monument headquarters, park housing, and a campground are located here. An archeological site survey by Mr. Albert Schroeder (1967) suggested a dominant theme of "agricultural adjustment." An interim interpretive prospectus by Mr. Don Follows (1974) suggested the more generalized interim theme of "adaptation" be used until additional research provided more information.

Beginning in 1974, San Jose State University conducted an archeological project at Hovenweep designed to investigate agricultural growth and decline at the monument. Since the local inhabitants participated in an intense, but relatively short-lived food-production system in a fragile desert environment, the Hovenweep Project (1974-1977) was aimed at analyzing prehistoric Anasazi farming, in addition to obtaining interpretive data for the National Park Service.

Because it is located on a dirt road away from the main stream of visitor travel, the monument serves mainly visitors who seek out lesser known and undeveloped National Park Service areas. Impacts on the resource have been light, and developments are low key. The poor roads leading to the monument have preselected the type of visitor interest. Such interest is more intense than would be found at Hovenweep National Monument if it appealed to a larger segment of the National Park System user.

Homemade exhibits and a 24-page, printed trail guide form the core of monument interpretation. Personal information services supplement the program when personnel are available. Approximately 50 percent of all visitors are greeted and have the opportunity to talk with monument personnel. Also, the monument has a park folder which provides general information.

Because visitors arrive at the monument in small numbers spread throughout most of the day and tend to stay only for a short period of time, regularly scheduled interpretive tours are not presented. However, tours are given whenever possible to visiting groups upon request. In 1983, 56 such guided tours were presented. Many of these programs involved area school groups from the fifth and sixth grades.

Nonillustrated evening campfire programs are also presented two nights a week during the peak visitor season. In 1983, 27 programs were presented. Although attendance is small, these are well-received programs, and the frequency of scheduling is limited by the staffing level.

The ranger station is divided into two areas, an administrative headquarters office and a visitor center area. The monument's general brochure and the trail guide for the three loop trails that lead to the archeological ruins are available at the ranger station. Exhibits in the visitor center show photographs of the monument's common animals and examples of Hovenweep National Monument architecture including a model of one ruin as it may have appeared in AD 1300. Maps of the immediate and regional area, with photographs of the outlying Hovenweep units and other visitor attractions, are on display. Drinking water and a coin operated soft drink vending machine owned by the Mesa Verde Museum Association are in the visitor center side of the building. Books, postcards, prints, and slides are for sale by the Mesa Verde Museum Association. The selection of items offered is dictated by the limited size of the sales area and book storage.

A wayside exhibit at the start of the self-guided trail system contains displays that give visitors an introduction to the Anasazi culture and to the environment of the Four Corners region. A trail register is at the wayside which visitors may sign, state how many are in their group, and make comments if they wish. Also, the wayside exhibit contains maps of the regional area and of the interpretive trail system.

Three loop trails bring the visitor to all of the visible ruins that still have standing walls. The trails vary from 0.3 mile to 1 mile and also vary as to number of ruins along the trail and amount of ascending and descending required. The most significant features on the trails have identification signs and corresponding short, informative write-ups under the same headings in the trail guide.

Two bulletin boards are attached to the front of the rest rooms in the campground with general visitor information. There is a map of the interpretive trails and a sheet listing general campground rules.

At each outlying monument unit there is an identification sign and trail register. On each trail register is a map of the ruins at that outlier, a sign-in sheet for visitors to put their name and any comments they may have, and a short information sheet to introduce the visitor to the ruins at that outlier. A trail leads the visitor from the trail register to the ruin.

D. LANDOWNERSHIP (See Map III.11)

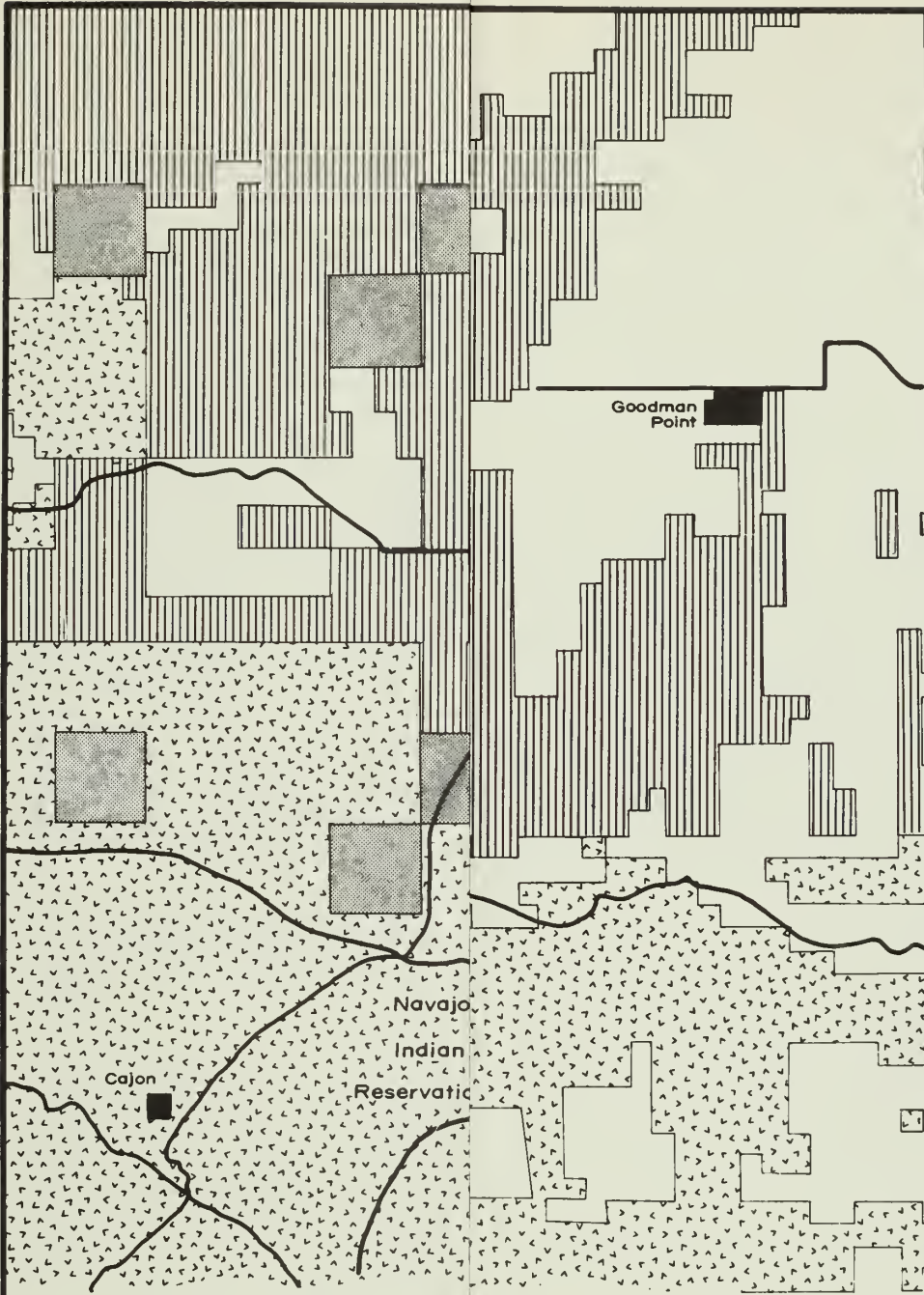
The six units of Hovenweep National Monument are bordered by either privately owned or State owned land, Bureau of Land Management lands, or Navajo tribal lands. Cajon unit is entirely surrounded by the Navajo Indian reservation. While Bureau of Land Management or State land is immediately adjacent to the Square Tower unit, private land is nearby. Some of this land is used for winter grazing, and all of it has had oil and uranium prospecting on it. Holly unit has private land on its western boundary. The rest of the area around Holly and Hackberry is Bureau of Land Management land. Cutthroat Castle unit is bordered on the south by private land, while the rest of the immediate area is Bureau of Land Management land. Goodman Point unit has the most complex land ownership pattern surrounding it. On the east boundary is Bureau of Land Management lands, south and west is private land, and the north boundary is a county road. Immediately north of the county road are a number of privately-owned tracts used primarily for agriculture.

Figure III.3 illustrates acreages of current ownership in the resource protection zone.

FIGURE III.3

LANDOWNERSHIP PATTERNS
IN RESOURCE PROTECTION ZONE

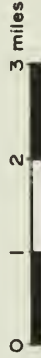
	Private (Ac.)	State of Utah (Ac.)	BLM-CO (Ac.)	BLM-Utah (Ac.)
Square Tower, Holly, Hackberry Areas	597	640	2,545	1,630
Cutthroat Castle Area	28	--	38	--
Goodman Point Area	627	--	270	--



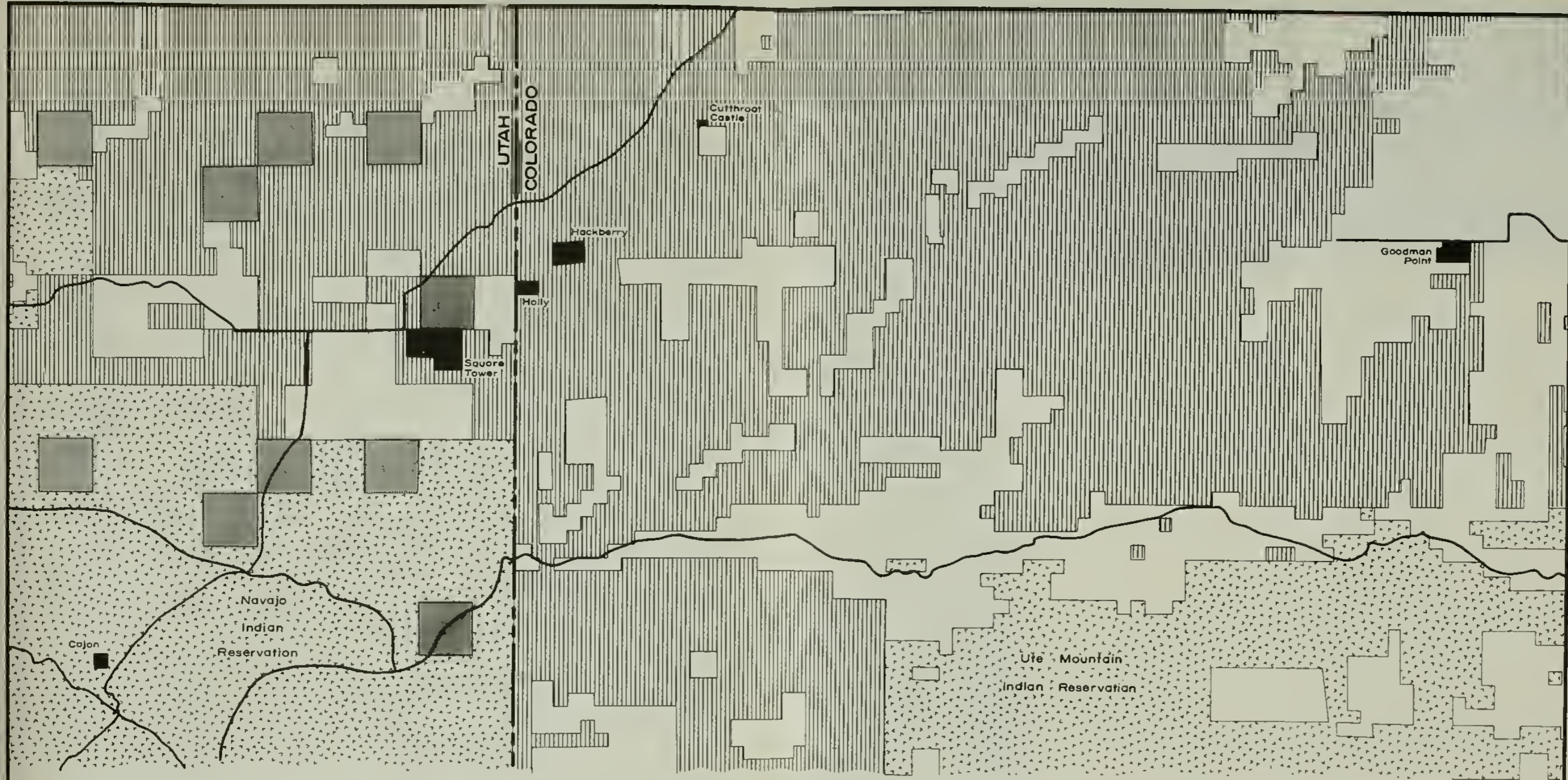
Map III . 11

Land Ownership
Hovenweep National Monument
Colorado · Utah







United States Department of the Interior · National Park Service



320 | 80,012
 Jan '82 | RMRO



Legend

- | | | | |
|--|---------------------|---|---------------------------|
|  | road |  | Indian reservation |
|  | Hovenweep Nat. Mon. |  | private land |
|  | state land |  | Bureau of Land Management |



Map III . 11

Land Ownership
Hovenweep National Monument
Colorado · Utah

United States Department of the Interior · National Park Service

E. MINERAL RESOURCES

Energy resource exploration and extraction is increasing in the Hovenweep area. Around the monument are deposits of oil, natural gas, uranium, vanadium, coal, and pure carbon dioxide. Oil exploration in the area 10 miles south of the monument and on Navajo tribal lands surrounding Cajon unit, as well as 15 miles northwest of the Square Tower unit, has been successful. Since 1979, oil exploration has increased dramatically, using seismographic testing lines on all lands surrounding the monument. Several wildcat wells have been drilled between 2 and 5 miles west and north of the monument headquarters and some of them are now producing oil and natural gas. In July 1985, an unsuccessful well was drilled on State of Utah lands just 580 feet north of the Square Tower Unit. Portions of land in the vicinity of the monument in Colorado is a known geologic structure (KGS) for oil and gas.

In 1983, 17 seismic exploration lines totalling 108 miles were run within 8 miles of the Square Tower unit. That was the first year that exploration continued through the winter months becoming a year-round activity.

There is a history of uranium exploration 5 miles east of the Square Tower unit. Uranium and vanadium exploration was conducted on lands adjacent to the Square Tower unit in 1975.

While testing for uranium, coal was discovered and is considered to be of sufficient quality and quantity to be strip mined. The Colorado-Ute Electric Association conducted a power generation site selection study in 1978. One alternative in their study is to build a generating station approximately 30 miles northeast of the Square Tower unit. Currently, plans for additional generating facilities in this area have been dropped indefinitely. It could use coal from a number of strip mines in the Cortez area including the area surrounding Goodman Point unit. The Four Corners Power Plant and the San Juan Generating Station, both coal burning electrical generators, are approximately 65 miles southeast of the monument near Farmington, New Mexico.

Shell and Mobil Oil Companies are developing a carbon dioxide well field north and west of Cortez. Most of the units of Hovenweep National Monument are surrounded by the planned well field. This will involve drilling approximately 150 wells. A network of electrical lines and pipelines will connect the wells to processing facilities. Carbon dioxide wells exist 3 miles west of the Goodman Point unit and approximately 3 miles from the Cutthroat Castle and the Hackberry units.

In late 1984, Superior Oil Company constructed a 25-mile carbon-dioxide pipeline connecting the large McElmo Dome Field 7 miles northeast of Cutthroat Castle unit with the Aneth oil field. The pipeline runs next to the Pleasant View Road, and passes within 1 mile of Cutthroat Castle, Holly, Hackberry, Square Tower, and Cajon Unit.

F. GRAZING

All of the national monument units have livestock grazing on at least one side of their boundaries. The Square Tower unit is bordered on the west, south, and east by Bureau of Land Management lands. On these three sides of the headquarters unit, there are no grazing allotments. North of the Square Tower unit is a cattle grazing allotment to Mr. Marvin Redburn of Phoenix, Arizona.

The Holly and Hackberry units are both surrounded by Bureau of Land Management grazing allotments to Mr. James Cline of Dolores, Colorado. The Cutthroat Castle unit is surrounded by a grazing allotment held by Mr. Lon Laymon of San Bernadino, California. All of these allotments are for cattle. Also, grazing occurs along the west, south, and east boundaries of the Goodman Point unit. The Cajon unit is surrounded by Navajo tribal lands grazed by horses, sheep, and cattle. The Square Tower unit is surrounded by Bureau of Land Management and State of Utah lands that are part of the Cross Canyon grazing allotment. The permit is held by the Flying W Ranch of Delores, Colorado. The grazing permittee on the Colorado side is Mr. Lon Laymon.

Public Land Order 2604 added 280 acres of Bureau of Land Management land to the Square Tower unit of Hovenweep National Monument. The Bureau of Land Management was authorized to administer grazing on these lands. Representatives of the National Park Service, Bureau of Land Management, and the range user met in July 1976 and agreed to a specified grazing use for 80 of the 280 acres added in 1962. A Bureau of Land Management permittee is authorized to graze 1,500 sheep for 2 days (not to exceed 48 hours) each year during the period when these sheep are authorized to graze the adjacent Federal range administered by the Bureau of Land Management. This grazing authorization has been used no more than five times since 1965.

CHAPTER IV

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The estimated effects disclosed in this chapter provide the information necessary to compare the relative merits of the alternatives displayed in Chapter II. This information was derived from inventories and assumptions based on scientific and analytical methods.

This disclosure includes discussions of possible environmental impacts resulting from the implementation of alternatives, any adverse environmental effects which cannot be avoided if the proposal is implemented, the relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources necessitated by implementation of an alternative.

CONSEQUENCES

A. REGIONAL EFFECTS

Alternative I may provide the best scenario for local economics related to the production of commodity resources. The multiple use concept on surrounding lands would continue with livestock grazing, energy exploration and development, hunting, and woodcutting. Because lands remain in private ownership, taxes derived from the lands would continue to flow to local governments.

Alternatives II and III also provide a good scenario for local economics related to the production of commodity resources. Multiple use concepts are retained although their intensity may be limited in efforts to protect cultural resource values.

In Alternative IV, use of commodity resources would be curtailed or eliminated in the resource protection zone. Loss of these revenues to the local economy may be offset by increased awareness of Hovenweep National Monument and the subsequent use of Hovenweep by increased numbers of tourists. The amount of tourism dollars that can be generated by Hovenweep is unknown.

Each alternative includes provisions for a ruins stabilization program. Crews used to stabilize the ruins may provide periodic employment opportunities for local residents to help the economy.

B. IMPACTS ON CULTURAL RESOURCES

Private and Bureau of Land Management land within the resource protection zone surrounding Square Tower, Holly, and Hackberry contains 116 known archeological sites. Evidence indicates the number of archeological sites is much greater than what has been inventoried to date. The known sites are composed of 84 habitation structures, 11 storehouses, 16 scatters, 4 water control features, and a rubble mound. Under Alternative I, current uses of these lands continues. The recent San Juan/San Miguel Bureau of Land Management Resource Management Plan in Colorado did not recognize lands within the resource protection zone to contain "significant" cultural resources as defined by the Bureau of Land Management in their management prescriptions. Consequently, current trends and management of archeological sites would likely continue. Domestic livestock grazing results in livestock gathering within rock structures and rubble piles. Archeological sites are disturbed by trampling, rubble turning, and fecal deposition. Low walls and water control features are obliterated, fecal deposition on sites prohibits their use for geochemical dating. Because of uncontrolled access and use of the area, intentional and unintentional vandalism to archeological sites would continue. The amount and intensity of this vandalism is unknown. Energy operations result in employees of the various companies using the area who are not aware of land protection ethics necessary to maintain evidence of the Pueblo culture. Therefore, unintentional vandalism would increase with increased energy operations. The mission of the Bureau of Land Management is multiple use; this mission is not always conducive to the protection of cultural resources. Subsequently, when conflicts do arise, protection of cultural resources may be compromised to the extent allowed by law. Currently, the National Park Service interprets canyonhead structures; however, other types of structures occur on surrounding lands indicating the variety of activities that have occurred in the area are not interpreted for the visitor. Because the monument's units are small, the ruins are vulnerable to degradation from activities occurring on surrounding lands.

At Goodman Point nine scatters and about 90 acres of rubble extending from and associated with the Goodman Point ruins are located on private and Bureau of Land Management lands within the resource protection zone. Under Alternative I, current practices of sagebrush chaining, plowing for agriculture, unprofessional excavation of ruins, and

residential developments could continue on some surrounding lands. If this trend continues the integrity of the Goodman Point ruins could be seriously impaired resulting in the loss of this cultural resource within the next 20 years.

Successful implementation of Alternative II is dependent on cooperation among the National Park Service, the Bureau of Land Management, the State of Utah, and private landowners. Because the missions of each Agency and individual are different, the degree of cultural resource protection afforded by this alternative is unknown. However, this alternative should result in better control of access and use in the area to lessen the effects of intentional and unintentional vandalism. Increased awareness of the cultural resource values could lead to improved compliance programs and cultural resource mitigation measures more conducive to National Park Service standards. Agencies and landowners who choose not to participate in this cooperative program could adversely affect cultural resources as described for Alternative I. If current uses and developments surrounding Goodman Point continues, its cultural resource integrity could be lost in the next 20 years.

Alternative III requires the cooperation of the Bureau of Land Management and contains provisions for the acquisition of interests on State of Utah lands by the Bureau of Land Management. If this occurs, impacts associated with residential developments at Goodman Point could be mitigated. Under the ACEC designation multiple use of lands would continue; however, increased awareness of cultural resource values should lead to improved compliance programs and improved protection measures and stipulations that apply to various multiple use activities. Because all lands within the protection zone would be under the Bureau of Land Management or the National Park Service ownership, better control of activities external to the national monument could result.

Under Alternative IV the entire resource protection zone would be placed in the National Park Service system. The entire area would be protected, researched, and interpreted for present and future visitors. Occasional incidences of trespass would probably occur, but would be minimized. This alternative does not provide optimum protection of the Goodman Point ruins, but rather the minimums necessary to protect the site from direct impacts associated with current uses and developments. Indirect effects from external uses would continue. The Goodman Point Resource Protection Zone is similar to the original 1889 withdrawal. The Square Tower, Holly, and Hackberry Resource Protection Zone provides opportunities to research and interpret a much broader picture of late Pueblo occupation and use of the area. This alternative allows the National Park Service to

protect and interpret surrounding cultural resource values to more fully meet the purpose of Hovenweep National Monument. When Hovenweep was established, the amount of land needed to meet its purpose was minimal and very little was known of surrounding archeology. Recent archeological evidences and increasing demands and use of surrounding lands indicates a need to protect cultural resources within the resource protection zone.

Other aspects of the alternatives also contributes to the protection and maintenance of cultural resources at Hovenweep National Monument. All alternatives provide for an ongoing stabilization program to insure perpetuation of the architectural structures. Storage facilities are provided at Mesa Verde National Park or Hovenweep National Monument to assure protection of artifacts in all alternatives.

The type, amount, and location of facilities can also effect cultural resources. In Alternative I facilities and locations are maintained as they presently exist. At Square Tower, vibrations associated with vehicular travel near the ruins continues. Since developments provided cannot accommodate increased use, their adequacy to reduce potential for abuse and vandalism is diminished. Alternatives II, III, and IV relocate facilities at the various units while providing opportunities to accommodate increased visitations. These changes enhance the National Park Service's ability to protect ruins and minimize the potential of unintentional vandalism.

In Alternative II and III, increased management by the Bureau of Land Management--on lands within the resource protection zone--may be required to protect cultural resources. This could result in a need for increased funding and staffing for local Bureau of Land Management offices to fulfill this mission.

Increased research opportunities provided by Alternatives III and IV will enhance park managements knowledge to help retard or prevent degradation to the cultural resources. Because management relays on present data concerning cultural resources in Alternatives I and II, improvement in cultural resource protection practices are not anticipated.

C. IMPACTS ON TOPOGRAPHY AND VEGETATION

Developments at the various units are minimal in all alternatives. Relocation of some facilities would disturb about 1/2 acre of soil and vegetation. Impacts associated with this disturbance would be mitigated through rehabilitation of previously disturbed sites.

Activities with the most affect on soil and vegetation are not associated with National Park Service management of the area. Most impacts are generated by multiple use activities that occur on surrounding Bureau of Land Management and private lands. These activities include domestic livestock grazing, range structural and nonstructural improvements, seismic operations, road construction, and energy related developments. The effects on soils can be measured in terms of lost productivity. Loss of topsoil through erosion, disturbance of an area through excavation, chemical additions, and additions of infertile soil through sedimentation all result in lost productivity. Alternative I possesses the highest risk of lost soil productivity because current uses and developments on surrounding lands continue. Under National Park Service management, as in Alternative IV, many of the land disturbing activities would be curtailed or prohibited, therefore, minimizing the risk of lost soil productivity.

Vegetation disturbances created by the previously described activities results in a change of compositions and density of the affected plant communities and an interruption of natural ecological processes. While these disturbed areas could be revegetated in a short period of time (approximately 5 years), they cannot be "restored" in the same period. Evidences of vegetation disturbance that took place more than 50 years ago still remain on the landscape. As previously discussed, these impacts would be reduced with increased emphasis on cultural resource protection and management.

D. IMPACTS ON VISITOR USE AND VISITATION

In Alternative I primitive road access and limited directional signing remains resulting in relatively low levels of use. This type of access favors visitors who are more self reliant and prefer uncrowded conditions. Conditions for improved road access and directional signing to Square Tower and Goodman Point are provided for in Alternative II. Visitation to these units should increase as a result of improved access. The experience of visitors who prefer better access and a more defined and structured environment is enhanced at Square Tower and Goodman Point. For visitors who prefer a primitive access with minimal developments, their needs are met at the outlying Holly, Hackberry, Cutthroat Castle, and Cajon units.

Alternative III provides the conditions necessary to improve road access and directional signing to Square Tower, Holly, Hackberry, and Cutthroat Castle. Increased visitation to these units is expected as a result. The experience of visitors who prefer a more primitive environment would be diminished at these units; however, some of this need would continue to be provided at Cajon. Visitors who prefer

improved access and a more structured and defined environment are favored in Alternative IV. Road access and directional signing is improved for all units. It is difficult to quantify how visitation patterns would change as a result of improved access. Any road improvements that do occur would be completed by local counties or the States. Other National Park Service areas, such as Natural Bridges National Monument in Utah and Navajo National Monument in Arizona, experienced visitation increases when relatively short road sections were paved. If current access conditions are maintained, visitation at the monument is expected to increase from 2 to 7 percent annually.

Currently, provisions for the physically handicapped are not provided at Hovenweep National Monument. Under Alternative I this condition would continue. Alternative II, III, and IV include accessibility standards for the visitor contact station at Square Tower, although accessible trails to the ruins themselves are only partially provided to a few of the architectural structures. Outlying units in Alternatives II, III, and IV include provisions to eliminate architectural barriers at the trailheads; however, handicap trail access to the ruin groups is not provided.

E. IMPACTS ON INTERPRETATION

Under Alternative I, limited interpretation is provided at Square Tower and no interpretive services are provided at outlying units. Because visitors are touring the monument without proper orientation, degradation to the areas resources are increased and visitors are exposed to hazards that they are unaware of.

Interpretive services are improved at Square Tower in Alternative II. Because directional signing is oriented to Square Tower, most visitors should receive National Park Service contact prior to initial contact with the ruins. Improved interpretive exhibits should heighten awareness of the ruins fragility and warn visitors of potential hazards.

In Alternative III and IV major interpretive programs are provided at Square Tower and new programs could be initiated at Goodman Point. This alternative provides strategies necessary to protect Hovenweep's resources by providing some visitor orientation before the visitor comes in contact with the ruins at Square Tower and Goodman Point. Orientation efforts at these areas will encourage the visitor to appreciate the cultural resources; therefore, deterring abuse and vandalism while enhancing visitor safety. Visitors who visit outlying units before Square Tower will not have the full benefit of the interpretive program; however, interpretive exhibits or waysides are provided at Hackberry, Holly, and Cutthroat Castle.

F. IMPACTS ON LANDOWNERSHIP

In Alternatives I and II, current land ownership patterns are maintained. Alternative III provides provision for the possible acquisition or exchange of 640 acres of State of Utah lands by the Bureau of Land Management if they agree with this alternative's strategies. In Alternative IV the National Park Service would acquire full or partial interest in 640 acres of State of Utah land, approximately 1,252 acres of private land, and approximately 4,483 acres of Bureau of Land Management land. Many impacts associated with this alternative are mitigated via exchange programs initiated through the Bureau of Land Management.

G. IMPACTS ON MINERALS

On January 10, 1985, a meeting was held in Cortez, Colorado, with other agencies and government entities to discuss planning at Hovenweep National Monument. During that meeting the Bureau of Land Management requested the National Park Service explore oil and gas opportunities forgone under the various resource protection strategies. This analysis was prepared in response to that request.

Because geologic structures within the resource protection zone have not been totally explored and oil and gas operations in any given area are variable, a set of Assumptions and Analysis Guidelines were employed. These assumptions were based on information provided by the Bureau of Land Management on oil and gas activities in southwest Colorado. The Wildland Planning Glossary (1976) defines "assumption" as:

A judgemental decision which supplies missing values, relationships, or societal preferences . . . the true nature of such missing information is either unknown or cannot be readily ascertained within the time and/or budgetary constraints on the need for a planning decision.

The items listed below represent the major assumptions used in this analysis:

Exploration

- One wildcat well is drilled per 640 acres of leased land
- One of 2.5 wildcat wells discover commercial quantities of oil and gas
- 50 percent of these wells are carbon dioxide gas only

- Each carbon dioxide gas well will result in a field with 20 wells
- 50 percent of discovery wells are oil and gas
- Each oil and gas well will result in a field with two wells.

Development

- Average field size is 640 acres
- Carbon dioxide gas field spacing is one well per 320 acres
- Oil and gas field spacing is one well per 160 acres.

Production

- Each carbon dioxide gas well will produce 18,250 million MCF of gas per year
- Each oil and gas well will produce 3,000 BBLs of oil per year and 5 million MCF of gas per year
- Average life of a carbon dioxide gas field is 30 years
- Average life of an oil field is 15 years.

Under Alternatives I, II, and III, resource protection strategies provide for multiple-use of non-National Park Service lands within the resource protection zone. Therefore, there are no oil and gas opportunities forgone. Cultural resource protection and mitigation measures may effect the timing and intensity of oil and gas operations; however, long-term benefits of oil and gas production should remain similar among these alternatives.

Alternative IV provides for National Park Service management of all lands within the resource protection zone. If enabling legislation for boundary expansion provides for multiple-use activities, then effects on oil and gas are similar to those discussed above. If enabling legislation for boundary expansion excludes oil and gas activities, some opportunities would be forgone. The following lists the opportunities and activities forgone under this scenario based on the previously presented assumptions and analysis guidelines.

Number of wildcat wells not drilled	-	10
Number of discoveries not made	-	4
Number of carbon dioxide gas field wells not developed	-	40
Number of oil and gas field wells not developed	-	4
Barrels of oil not produced each year	-	12,000
Volume of gas not produced each year	-	730,000 million MCF

Loss of the above opportunities and activities would also result in the loss of direct payments to the local economies, loss of royalties to the government, and loss of oil and gas for energy consumption.

H. IMPACTS ON GRAZING

In Alternatives I, II, and III, domestic livestock grazing would continue. Slight reductions of grazing capacities may result from implementation of Alternatives II and III due to stricter permit stipulations for protection of cultural resources. Under Alternative IV, grazing within the resource protection zone may be prohibited. If this occurs, approximately 436 animal unit months (AUMs) of grazing (or 36 head of livestock per year) would be lost. This estimate is based on an average grazing capacity of 14.6 acres per AUM in the project area. This average capacity is based on capacities outlined in the "San Juan/San Miguel Resource Management Plan, Bureau of Land Management, 1984."

I. IMPACTS ON ADMINISTRATION

Staffing to implement the various alternatives are illustrated on Figure IV.1. These staffing levels assume curatorial responsibilities, ruin stabilization crews, and other support will continue to be supplied by Mesa Verde National Park.

FIGURE IV.1

STAFFING LEVELS

POSITION	<u>Alternatives (FTEs)</u>			
	I	II	III	IV
Area Manager	1.0	1.0	1.0	1.0
Park Technicians	1.2	1.6	1.2	1.6
Maintenance Worker		.9	.9	.9
* Park Technician		.5		.5
Park Ranger			1.0	1.0
TOTAL FTEs	2.2	4.0	4.1	5.0

* Park Technician at Goodman Point when research/development occurs.

Alternative I maintains current physical facilities (administrative offices, maintenance buildings, housing). Because these facilities are not improved to standards associated with other National Park Service units, there is a potential of reduced work efficiency. In Alternatives II, III, and IV administrative and maintenance facilities are improved to help increase work efficiency. Facilities are replaced or remodeled to increase energy efficiency which results in long-term savings in energy costs.

J. IMPACTS ON PUBLIC HEALTH AND SAFETY

Public health and safety is enhanced through monitoring programs, interpretive programs, and increased staffing to control visitor use. In all alternatives, visitor safety is enhanced through stabilization of ruin walls. Each alternative also provides for monitoring necessary to insure potable water supplies are adequate for human consumption. Alternatives III and IV provide programs to monitor rattlesnake populations to provide visitors with safe, self-guided trail walks. Increased interpretive programs in Alternatives III and IV provide strategies necessary to warn visitors of potential hazards prior to initial contact with the ruins.

K. IMPACTS ON VISUAL RESOURCES

Visual resource impacts are associated with two distinct impacts (1) the impacts associated with the historic scene as related to architectural structures and (2) impacts to the landscape resulting from various land uses and developments.

Impacts to the historic scene are created by conflicts between more modern developments and the ruins. In Alternative I this conflict would continue at all Hovenweep units, visitors view the ruins and the National Park Service developments within the same viewshed. Alternative II provides for relocation of parking at Square Tower thereby reducing visual conflicts between automobiles and the ruins. However, other developments remain in their present location continuing current visual conflicts. Parking, administration, and visitor contact facilities are relocated at Square Tower in Alternative III. Trailhead facilities are also relocated to adjacent Bureau of Land Management lands at Holly, Hackberry, and Cutthroat Castle. The relocation of these facilities reduces visual conflicts between the National Park Service developments and the ruins. Impacts to the historic scene are also reduced in Alternative IV, these impacts are similar to those described for Alternative III.

Most impacts to the landscape are associated with uses and developments on lands surrounding Hovenweep National Monument. Since these uses and developments are not controlled by the National Park Service, it is impossible to quantify their visual impacts. However, based on previous studies and analyses some correlations can be made. In Alternative I current land uses on surrounding lands would continue. The effects of range structural improvements remain visually subordinate to the characteristic landscape. These improvements are visually evident; however, the characteristics of the natural landscape remain dominant. Oil and gas exploration and development activities create more visually evident impacts to the landscape. The area's potential to absorb visual impacts is low due to lack of vegetative and topographic screening capabilities, slow vegetative recovery rates, and light soil colors. Therefore, road construction, well pad developments, and seismic shot lines create changes that modify the characteristic landscape. These changes are generally dominant over natural features giving the appearance of a culturally modified environment. Alternatives II and III also provide for continuance of current uses on surrounding Hovenweep lands; however, the intensity of these uses may be lessened due to cultural resource protection measures. Visual impacts would be similar to those described for Alternative I although the degree of these impacts should be reduced. If under National Park Service management in Alternative IV, current uses and developments are curtailed, then landscape modifications should be substantially less. In time, natural ecological processes should dominate leaving a natural appearing landscape.

THE RELATIONSHIP BETWEEN SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF THE LONG-TERM PRODUCTIVITY

The management objective of Hovenweep National Monument recognizes protection of cultural resource values as the dominant or primary resource objective. However, these values are interpreted for visitor use and enjoyment. This potential conflict between use of and protection of cultural resource values requires that some tradeoffs be made and that visitor use in the area be carefully and thoroughly managed. Thus, through good planning and management practices, visitor use in the monument's cultural resource environment can become a long-term preservation of the cultural resource values rather than a short-term consumptive use of the resource.

The General Management Plan for Hovenweep National Monument will provide a management framework to improve management, protect cultural resources, and provide visitor services. Past experience indicates some facilities at Hovenweep are inadequate to accommodate management objectives. The action alternatives are designed to provide for accommodation of management objectives. Subsequently, adverse impacts associated with uncontrolled recreation and resource use are mitigated, therefore, enhancing long-term productivity.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitment of resources refers to nonrenewable resources, such as cultural resources, or to those factors which are renewable only over long-time spans, such as soil productivity. Also, irreversible includes loss of future options.

Irretrievable commitment applies to losses associated with production or use of renewable natural resources.

Irreversible commitments associated with the alternatives are:

- Materials used in construction of roads, trails, buildings, and appurtenant facilities;
- Loss of soil productivity; and
- Loss of cultural resource sites disturbed by construction.

Irretrievable commitments associated with the alternatives are:

Construction of facilities and vehicular use of the air will deteriorate air quality over natural levels;
In alternatives that increase acres of National Park Service management, some livestock grazing will be lost; and
In alternatives that restrict incompatible activities loss of some energy values (oil, gas, carbon dioxide) may result.

CHAPTER V

LIST OF PREPARERS

This environmental assessment was prepared by an Interdisciplinary Team of the Hovenweep National Monument and the Rocky Mountain Regional Office. The team members are:

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CHAPTER VII

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GOVERNMENT OFFICIALS TO WHOM COPIES OF THIS DOCUMENT WERE
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Honorable Timothy Wirth, House of Representatives, Washington, DC 20515

Honorable Mike Strang, House of Representatives, Washington, DC 20515

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Honorable David Monson, House of Representatives, Washington, DC 20515

The Utah State Director, Don Gillespie, provides a copy of review documents to the Governor of Utah.

42. Hovenweep National Monument

Establishment: Proclamation (No. 1654) of March 2, 1923.....

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BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

[No. 1654—Mar. 2, 1923—42 Stat. 2299]

WHEREAS, there are in southwestern Colorado and southeastern Utah four groups of ruins, including prehistoric structures, the majority of which belong to unique types not found in other National Monuments, and show the finest prehistoric masonry in the United States; and

WHEREAS, the said four groups of ruins are situated upon the public lands owned and controlled by the United States and 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 the proper protection thereof,

NOW, THEREFORE, I, Warren G. Harding, President of the United States of America, by virtue of the power in me vested by section two of the act of Congress entitled, "An Act for the Preservation of American Antiquities," approved June 8, 1906 (34 Stat., 225) do proclaim that there is hereby reserved, subject to all prior valid claims, and set apart as a National Monument to be known as the Hovenweep National Monument the lands shown upon the diagram hereto annexed and made a part hereof and more particularly described as follows:

Utah, Salt Lake Base and Meridian

In township thirty-nine south, range twenty-six east, northeast quarter of the northeast quarter and the southwest quarter of the northeast quarter of section twenty, and the southwest quarter of the northwest quarter of section twenty-one; in township forty south, range twenty-five east, northwest quarter of the northwest quarter of section twenty-one.

Colorado, New Mexico Principal Meridian

In township thirty-six north, range twenty west, lot four and southwest quarter of the northwest quarter of section two, and lot six and southwest quarter of the southeast quarter of section three.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any of the features or objects included within the boundaries of this Monument and not to locate or settle upon any of the lands thereof.

Executive Order No. 3755, dated November 17, 1922, is hereby revoked and such lands thereby temporarily withdrawn and not included in said Hovenweep National Monument by this Proclamation are restored to entry under the public land laws of the United States.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management and control of this Monument, as provided in the act of Congress entitled, "An Act to establish a National Park Service, and for other purposes," approved August 25, 1916 (39 Stat., 535), as amended June 2, 1920 (41 Stat., 732).

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

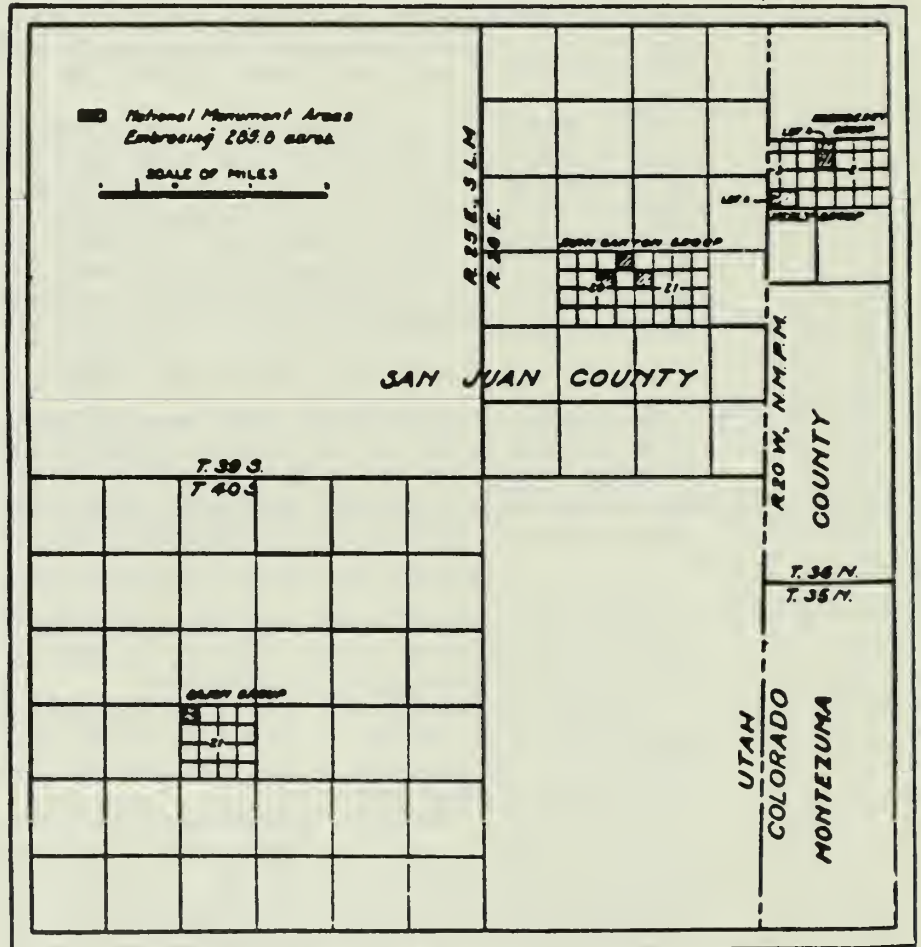
DONE at the City of Washington this second day of March, in the year of our Lord one thousand nine hundred and twenty-three, and [SEAL] of the Independence of the United States of America the one hundred and forty-seventh.

WARREN G. HARDING,

By the President:
CHARLES E. HUGHES,
Secretary of State.

DEPARTMENT OF THE INTERIOR
ALBERT B. FALL, SECRETARY

NATIONAL PARK SERVICE
STEPHEN T. MATHER, DIRECTOR



HOVENWEEP NATIONAL MONUMENT

ENLARGING HOVENWEEP NATIONAL MONUMENT
COLORADO AND UTAH

April 26, 1951
(No. 2824)

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

42 Stat., Pt. 2,
p. 2299.

WHEREAS Proclamation No. 1654 of March 2, 1923, established the Hovenweep National Monument on certain public lands in southwestern Colorado and southeastern Utah for the purpose of protecting and preserving four groups of ruins including structures of the finest prehistoric masonry to be found in the United States; and

WHEREAS it has been determined that the public lands described and set apart as the said Hovenweep National Monument do not include the lands containing one of the said groups of ruins known as the Hackberry Ruin; and

WHEREAS another ruin, known as the Goodman Point Ruin, situated in the vicinity of the Hovenweep National Monument, has been found to be of significance comparable to, and suitable for preservation with, the ruins comprising the said Monument; and

WHEREAS it is deemed desirable in the public interest that the lands embracing the Hackberry Ruin and the Goodman Point Ruin be added to and reserved as parts of the Hovenweep National Monument:

Addition of designated lands as parts of Hovenweep National Monument.

NOW, THEREFORE, I, HARRY S. TRUMAN, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906 (ch. 3060, 34 Stat. 225, 16 U. S. C. 431), do proclaim that, subject to valid existing rights and the provisions of existing withdrawals, the following-described tracts of land in Colorado are hereby added to and reserved as parts of the Hovenweep National Monument:

NEW MEXICO PRINCIPAL MERIDIAN

T. 36 N., R. 20 W.,
Sec. 2, lot 3, and SE $\frac{1}{4}$ NW $\frac{1}{4}$
T. 36 N., R. 17 W.,
Sec. 4, lot 2, and SW $\frac{1}{4}$ NE $\frac{1}{4}$

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

65 STAT.]

PROCLAMATIONS—APR. 27, 1951

c9

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of the lands hereby added to this monument as provided in the act of Congress entitled "An Act To establish a National Park Service, and for other purposes," approved August 25, 1916 (39 Stat. 535, 16 U. S. C. 1-3), and acts supplementary thereto or amendatory thereof.

Supervision, etc., of added lands.

16 U. S. C. 1 485; 16 C. S. C. 1-3, 22, 43.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this 26th day of April, in the year of our Lord nineteen hundred and fifty-one, and of the Independence of the United States of America the one hundred and seventy-fifth.

By the President:

DEAN ACHESON

Secretary of State

HARRY S TRUMAN

ENLARGING THE HOVENWEEP NATIONAL MONUMENT
COLORADO AND UTAH

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

November 20, 1952
[No. 2968]

A PROCLAMATION

WHEREAS Proclamation No. 1654 of March 2, 1923, established the Hovenweep National Monument on certain public lands in southwestern Colorado and southeastern Utah for the purpose of preserving four groups of ruins, including structures of the finest prehistoric masonry found in the United States, and Proclamation No. 2924 of April 26, 1951, added to the monument certain other public lands in southwestern Colorado containing other significant ruins; and

42 Stat. 2290.

48 Stat. 43.

WHEREAS other public lands, contiguous to a portion of the lands now comprising the said monument, have been found to contain very important archeological sites, including small pueblos and an exceptional and significant great kiva (a large circular semi-subterranean ceremonial room), the inside and overall diameters of which are approximately 60 and 100 feet, respectively, which kiva has never been excavated by archeologists or vandalized by unauthorized digging; and

c22

PROCLAMATIONS—DEC. 1, 1952

167 STAT.

WHEREAS it appears that it would be in the public interest to reserve the lands embracing such archeological sites as a part of the said monument:

Addition of land to Hovenweep National Monument, Colo.-Utah.

NOW, THEREFORE, I, HARRY S. TRUMAN, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906, 34 Stat. 225 (16 U. S. C. 431), do hereby proclaim that, subject to valid existing rights and the provisions of existing withdrawals, the following-described lands in Colorado are hereby added to and reserved as a part of the Hovenweep National Monument:

NEW MEXICO PRINCIPAL MERIDIAN

T. 36 N., R. 17 W.,

sec. 4, lot 3, SE $\frac{1}{4}$ NW $\frac{1}{4}$, and E $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$

The area described contains 81.02 acres, more or less.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any features of this monument and not to locate or settle upon any of the lands thereof.

Supervision, management, etc.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of the lands hereby added to this monument as provided in the act of Congress entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916, 39 Stat. 535 (16 U. S. C. 1-3), and acts supplementary thereto or amendatory thereof.

3 USC 424; 16 USC 1-4, 21, 41.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this 20th day of November in the year of our Lord nineteen hundred and fifty-two and of [SEAL] the Independence of the United States of America the one hundred and seventy-seventh.

HARRY S TRUMAN

By the President:

DAVID BRUCE

Acting Secretary of State

(79 344)

REVISING THE BOUNDARIES OF HOVENWEEP NATIONAL MONUMENT
UTAH AND COLORADO

April 6, 1946
(No. 3122)

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION

WHEREAS it appears that public lands described as SW $\frac{1}{4}$ NEX section 20, Township 39 South, Range 26 East, Salt Lake Base and Meridian, which contain no objects of historic or scientific interest were erroneously included in the Hovenweep National Monument in Utah and Colorado by Proclamation No. 1654 of March 2, 1923 (42 Stat. 2299); and

WHEREAS it appears that public lands described as SE $\frac{1}{4}$ NEX of such section 20 which contain ruin groups worthy of preservation because of their historic and scientific value were erroneously omitted from the monument; and

WHEREAS there are other public lands contiguous to the monument which contain an important ruin group, Cutthroat Castle, an outstanding example of a defensive structure of the thirteenth century, the preservation of which is desirable because of its historic and scientific value; and

WHEREAS it appears that it would be in the public interest to reserve such lands as an addition to such monument:

Hovenweep National Monument,
Utah-Colo.

NOW, THEREFORE, I, DWIGHT D. EISENHOWER, President of the United States of America, under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906, 34 Stat. 224 (16 U. S. C. 431), do proclaim as follows:

1. The following-described lands in the State of Utah are hereby excluded from the Hovenweep National Monument:

UTAH, SALT LAKE BASE AND MERIDIAN

T. 39 S., R. 26 E.,
sec. 20, SW $\frac{1}{4}$ NEX

The lands hereby excluded from the monument shall not be subject to application, location, settlement, entry, or other forms of appropriation under public land laws until further order of an authorized officer of the Department of the Interior.

2. Subject to valid existing rights, the following-described public lands in the States of Utah and Colorado are hereby reserved and added to and made a part of the Hovenweep National Monument and shall be subject to all laws, rules, and regulations applicable to that monument:

UTAH, SALT LAKE BASE AND MERIDIAN

T. 39 S., R. 26 E.,
sec. 20, SE $\frac{1}{4}$ NEX

COLORADO, NEW MEXICO PRINCIPAL MERIDIAN

T. 37 N., R. 19 W.,
sec. 19, SE $\frac{1}{4}$ of Lot 11 and
E $\frac{1}{2}$ SW $\frac{1}{4}$ of Lot 11, excepting
a portion of Segregated Tract
63 patented to Edward C. Forest

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States of America to be affixed.

DONE at the City of Washington this sixth day of April in the year of our Lord nineteen hundred and fifty-six, and of [SEAL] the Independence of the United States of America the one hundred and eightieth.

DWIGHT D. EISENHOWER

By the President:

JOHN FOSTER DULLES,
Secretary of State.

FEDERAL REGISTER

February 10, 1961

page 1271

(Public Land Order 2884)

(Tab 67688)

UTAH

Withdrawal for Use of National Park
Service (Hovenweep National Mon-
ument)

By virtue of the authority vested in the
President and pursuant to Executive
Order No. 16358 of May 26, 1962, it is
ordered as follows:

1. Subject to valid existing rights, the
following described public lands are
hereby withdrawn from all forms of ap-
propriation under the public land laws,
including the mining laws, and reserved
for use of the National Park Service in
connection with administration of the
Hovenweep National Monument:

SALT LAKE MONUMENT

T. 28 S., R. 20 E.

Sec. 21, NW $\frac{1}{4}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$,
NE $\frac{1}{4}$ SW $\frac{1}{4}$, and NW $\frac{1}{4}$ SE $\frac{1}{4}$.
Containing 280 acres.

2. The lands shall continue to be ad-
ministered by the Bureau of Land Man-
agement for grazing purposes.

JOHN A. CASPER, JR.,
Assistant Secretary of the Interior.

FEBRUARY 8, 1962

[P.L. Doc. 62-1878; Filed Feb. 8, 1962;
8:46 a.m.]

APPENDIX B - DEVELOPMENT CONCEPT COST ESTIMATES

Following are the gross construction cost estimates.

ALTERNATIVE I

Square Tower	-	visitor center/ranger station rehabilitation	72,000
Goodman Point	-	boundary fencing	<u>28,000</u>
		Total	\$100,000

ALTERNATIVE II

Square Tower	-	600 sq. ft. visitor center/ranger station addition	145,000
	-	remodel visitor center/ranger station	72,000
	-	20-vehicle parking lot	40,000
	-	4,000 ft. trail reconstruction	19,000
	-	1,300 sq. ft. employee residence	177,000
	-	2-unit seasonal apartment	191,000
	-	entrance sign	8,000
	-	6 shade structures	29,000
	-	interpretive exhibits (four)	13,000
	-	site restoration	2,400
	-	commercial telephone service	<u>45,000</u>
			\$741,400
Goodman Point	-	10-vehicle parking lot	10,000
	-	vault restroom	32,000
	-	1,500 ft. trail	7,000
	-	employee residence	177,000
	-	3,500 ft. fencing	<u>28,000</u>
			\$254,000
		Total	\$995,400

ALTERNATIVE III

Square Tower	-	2,400 sq. ft. visitor contact/ranger station	463,000
	-	permanent employee duplex	322,000
	-	3-unit seasonal apartment	287,000
	-	1,000 sq. ft. storage/maintenance building	153,000
	-	50-seat amphitheater	56,000
	-	group campsite with shelter (625 sq. ft.)	35,000
	-	4,000 ft. trail reconstruction	19,000
	-	20-vehicle parking lot	40,000
	-	15 shade structures	72,000
	-	interpretive exhibits (six)	19,000
	-	site restoration	17,000
	-	entrance sign	8,000
	-	commercial telephone service	<u>45,000</u>
			\$1,536,000

Holly	-	5-space parking lot	5,300
	-	vault restrooms	32,000
	-	1,500 ft. trail	7,000
	-	interpretive exhibit (one)	1,600
	-	signing	800
	-	gate	1,600
			<u>48,300</u>
Hackberry	-	5-space parking lot	5,300
	-	3,000 ft. trail	15,000
	-	interpretive exhibit	1,600
	-	vault restroom	32,000
	-	gate	1,600
	-	signing	800
			<u>56,300</u>
Cutthroat Castle	-	8-space parking lot	5,300
	-	4,000 ft. trail	19,000
	-	wayside exhibit	6,000
	-	gate	1,600
	-	signing	800
			<u>32,700</u>
Goodman Point	-	10-space parking lot	11,000
	-	vault restroom	32,000
	-	1,500 ft. trail	7,000
	-	3,500 ft. fencing	28,000
			<u>78,000</u>
		Total	\$1,751,300

ALTERNATIVE IV

Square Tower	-	2,400 sq. ft. visitor contact/ranger station	463,000
	-	permanent employee duplex	322,000
	-	3-unit seasonal apartment	287,000
	-	1,000 sq. ft. maintenance/storage building	153,000
	-	50-seat amphitheater	56,000
	-	group campsite with shelter (625 sq. ft.)	35,000
	-	4,000 ft. trail reconstruction	19,000
	-	20-vehicle parking lot	40,000
	-	15 shade structures	72,000
	-	interpretive exhibits (six)	19,000
	-	site restoration	17,000
	-	entrance sign	8,000
	-	commercial telephone service	45,000
	-	13.5 miles boundary fencing	574,000
			<u>2,110,000</u>

Holly	-	5-space parking lot	5,300
	-	vault restroom	32,000
	-	1,500 ft. trail	7,000
	-	interpretive exhibit (one)	1,600
	-	signing	800
	-	gate	1,600
			<u>\$48,300</u>
Hackberry	-	5-space parking lot	5,300
	-	3,000 ft. trail	15,000
	-	interpretive exhibit (one)	1,600
	-	vault restroom	32,000
	-	gate	1,600
	-	signing	800
			<u>\$56,300</u>
Cutthroat Castle	-	8-space parking lot	5,300
	-	4,000 trail	19,000
	-	wayside exhibit	6,000
	-	gate	1,600
	-	signing	800
			<u>\$32,700</u>
Cajon	-	5-space parking lot	5,300
	-	access road improvement	64,000
			<u>\$69,300</u>
Goodman Point	-	10-space parking lot	11,000
	-	vault restroom	32,000
	-	1,500 ft. trail	7,000
	-	residence	177,000
	-	4 miles fencing	170,000
			<u>\$397,000</u>

TOTAL \$2,713,600

Clemson University



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DATE DUE

