resources management plan

AZTEC RUINS NATIONAL MONUMENT

natural resources

cultural resources

Division of Natural Resources Management
Southwest Region · National Park Service
Department of the Interior

RESOURCES MANAGEMENT PLAN

FOR

AZTEC RUINS NATIONAL MONUMENT

September

1976

Prepared by: Aztec Ruins National Monument Staff, Navajo Lands Group and Southwest Region Office of Natural Science

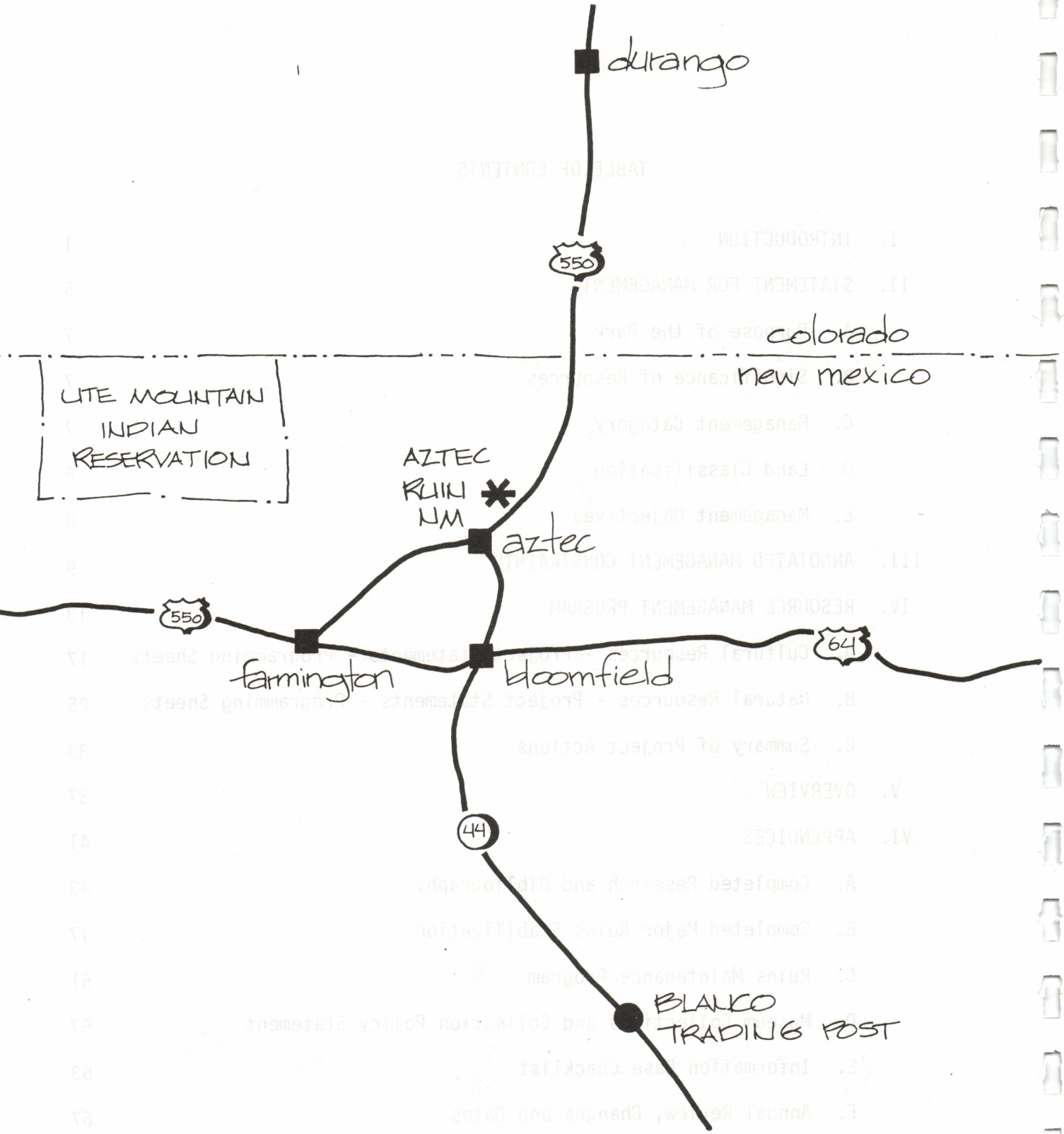
Reviewed by: Southwest Region Offices of History, Archeology, Planning, Maintenance, Interpretation, and Resources Management

Concurred by: Clarence N. Gorman
Superintendent, Aztec Ruins National Monument

Approved for Implementation by: W. O. Thompson
~~Acting~~ Regional Director, Southwest Region

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	STATEMENT FOR MANAGEMENT	5
	A. Purpose of the Park	7
	B. Significance of Resources	7
	C. Management Category	7
	D. Land Classification	8
	E. Management Objectives	8
III.	ANNOTATED MANAGEMENT CONSTRAINTS	9
IV.	RESOURCE MANAGEMENT PROGRAM	13
	A. Cultural Resources - Project Statements - Programming Sheets	17
	B. Natural Resources - Project Statements - Programming Sheets	25
	C. Summary of Project Actions	33
V.	OVERVIEW	37
VI.	APPENDICES	41
	A. Completed Research and Bibliography	43
	B. Completed Major Ruins Stabilization	47
	C. Ruins Maintenance Program	51
	D. Museum Collections and Collection Policy Statement	57
	E. Information Base Checklist	63
	F. Annual Review, Changes and Dates	67



AZTEC RUINS NATIONAL MONUMENT
VICINITY MAP

I. INTRODUCTION

I. INTRODUCTION

A Resources Management Plan is a strategic planning document and a key factor in good management and preservation of the resources.

This plan is a set of project statements which include proposed actions for implementation as well as 5-year programming sheets for management and research actions. Other sections of the plan serve as an introduction and a set of guidelines. Project statements are determined on the basis of approved Management Objectives and Land Classification. Management Constraints and Completed Research serve as guidelines for projects. The Plan serves the Superintendent in two ways: 1) as a manual for management activities which will preserve the environment or achieve an environmental status quo to comply with Park Service Standards, and 2) a set of research projects and priorities that are designed to obtain additional information for management and interpretation.

II. STATEMENT FOR MANAGEMENT



FRED MANG PHOTO (NPS)

II. STATEMENT FOR MANAGEMENT

A. PURPOSE OF THE PARK

The presence near the town of Aztec, in northwestern New Mexico, of a massive pueblo and other significant archeological features, and a unique blending of prehistoric architectural styles representing the great Chaco Canyon and Mesa Verde cultures of the American Southwest, prompted President Warren G. Harding to establish Aztec Ruins National Monument by Presidental Proclamation No. 1650 of January 24, 1923 (42 Stat. 2295), ". . . with a view to the preservation of said ruin for the enlightenment and culture of the Nation . . ."

B. SIGNIFICANCE OF RESOURCES

Of primary significance at Aztec are the remains of a massive, unified-design, terraced pueblo, covering 2 acres (0.8 hectares) standing three stories high, extending seven rooms wide at the base and four and five rooms wide across the wings, and containing 500 rooms averaging 10 feet (3 m) by 12 feet (4 m) in dimensions. A partially-restored "great kiva" dominates the pueblo's enclosed patio.

The nearby Hubbard Ruin, acquired in 1948, has been excavated, and adds to the archeological significance of Aztec Ruins National Monument, as do numerous unexcavated archeological sites in other parts of the monument.

Also of significance, the ruins are a unique blending of architectural styles, representing, in initial construction, Chaco Canyon-related peoples (northwestern New Mexico) between A.D. 1111 and 1115; and representing, in later remodeling and enlargement, Mesa Verde-related peoples (southwestern Colorado), who abandoned the pueblo in the late 13th century. This architectural blending offers significant insights into social relationships between Chaco Canyon and Mesa Verde, and into the cultural history of, and eventual abandonment of, the Four Corners region.

Because of its unique historical significance in the prehistory of our Nation, the monument is listed on the National Register of Historic Places.

C. MANAGEMENT CATEGORY

Historical (archeological)

D. LAND CLASSIFICATION

All 27.14 acres (11 hectares) of monument lands are listed in the National Register of Historic Places, and will be classified and managed as a historic zone, in accordance with National Park Service Management Policies (1975), which stipulate that ". . . physical development . . . shall be the minimum needed to preserve, protect, and interpret historical . . . values."

E. MANAGEMENT OBJECTIVES

1. To protect, stabilize where appropriate, and maintain the historical integrity of the major ruin and its Great Kiva, and other archeological features significant to the monument story.

2. To provide visitors with opportunities for interesting, enjoyable, and enlightening monument experiences, and to enable them to gain insights into the archeological values, through well-researched, varied, balanced, and well-equipped interpretive programs, emphasizing the Aztec ruins as a reflection of cultural change resulting from cultural diffusion into the region from the Chaco Canyon and Mesa Verde locales.

3. To maintain liaison and close cooperation with, and offer assistance to, other Federal, state, county, city, and other entities that have an interest in the monument and its surroundings, in order to achieve the monument's purpose, and to in general promote the most harmonious integration possible of activities inside and outside the monument boundaries.

III. ANNOTATED MANAGEMENT CONSTRAINTS

III. ANNOTATED MANAGEMENT CONSTRAINTS

All management, planning, and development decisions and actions relating to Aztec Ruins National Monument must comply with current National Park Service Management Policies (1975) and Activity Standards (1972); with the park's establishing legislation (Presidential Proclamation No. 1650, January 24, 1923, 42 Stat. 2295, appended); and with subsequent boundary-expansion legislation (Presidential Proclamation No. 1840, July 2, 1928, 45 Stat. 2954, appended; Presidential Proclamation No. 1928, December 19, 1930, 46 Stat. 3040, appended; and Presidential Proclamation No. 2787, 62 Stat. 1513, May 27, 1948, appended). All decisions and actions must also comply with the provisions of the Antiquities Act of 1906; the National Park Service Organic Act of 1916; the Historic Sites Act of 1935; the National Historic Preservation Act of 1966; the National Environmental Policy Act of 1969; Executive Order 11593 of May 13, 1971; and the Archeological and Historic Data Preservation Act of 1974.

An easement dated March 1948 allows 20 feet (6 m) adjacent and parallel to the park's western boundary for public-road use only. The road is not liable to upkeep and maintenance by the National Park Service, and the easement becomes null and void if travel across it becomes hazardous, or if road use is abandoned.

With the acquisition of 1.8 acres (0.7 hectares) of land from the American Museum of Natural History in 1930 (see appended Presidential Proclamation of 1930) came "one sixteenth (1/16) of one share in running space in the Farmers' Ditch, a community ditch existing under the laws of the State of New Mexico." This amounts to approximately 4.8 acre-feet (5,900 cubic meters) of water per year, and together with the domestic water furnished by the City of Aztec, is deemed sufficient for present and future park use.

In 1958, Lloyd A. Hubbard donated to the United States an easement for approximately 357 feet (109 m) of underground transite cement asbestos pipe across his land from the Farmers' Union Ditch to the northwestern corner of the monument, which includes rights of ingress and egress to install, maintain, and repair the pipe.

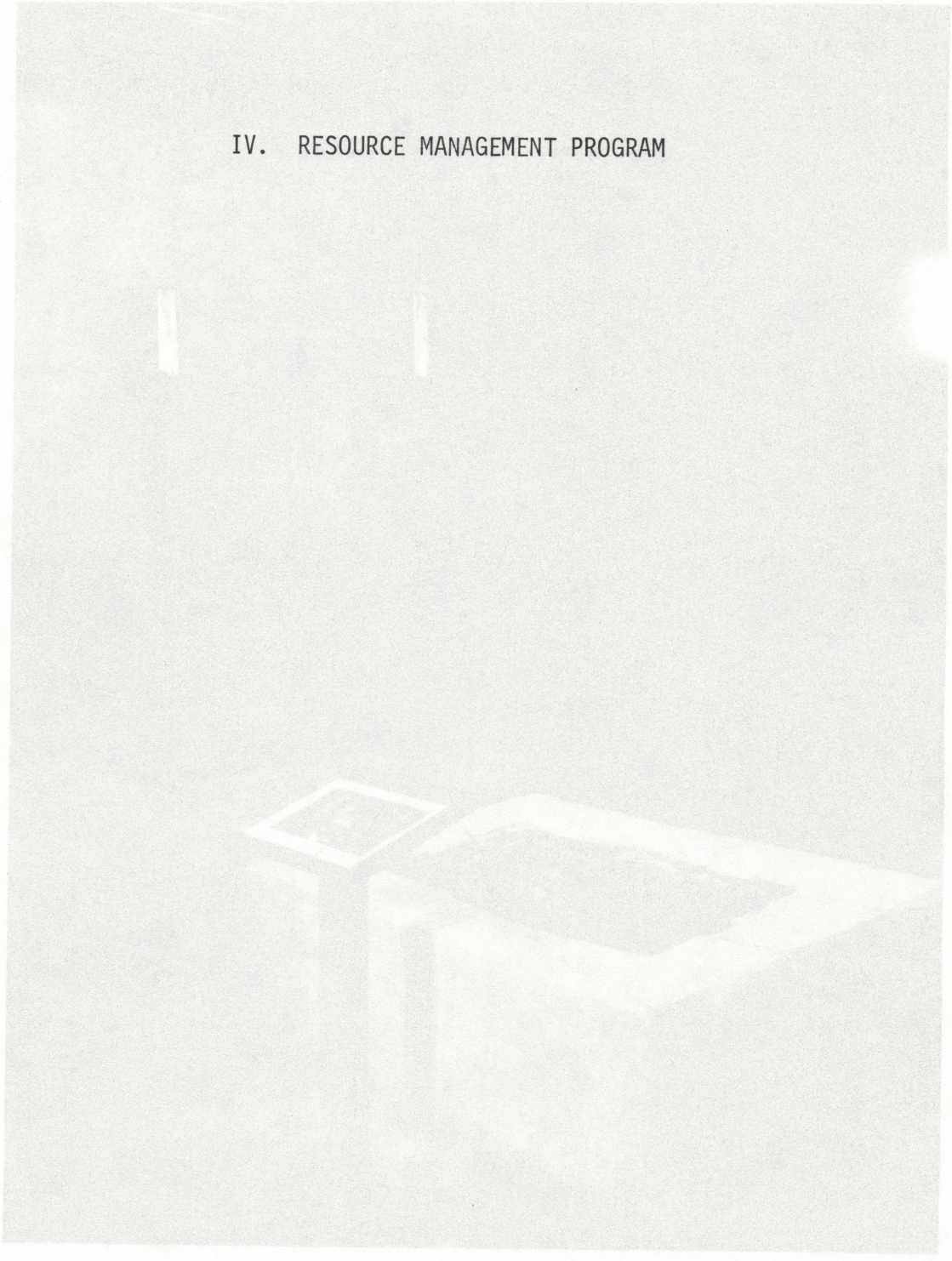
A 20-year special-use permit was issued on March 1, 1971, to San Juan County, New Mexico, for the construction (it has been constructed) and maintenance of a county road across 0.15 acres (0.06 ha) of land in the southeastern corner of the monument.

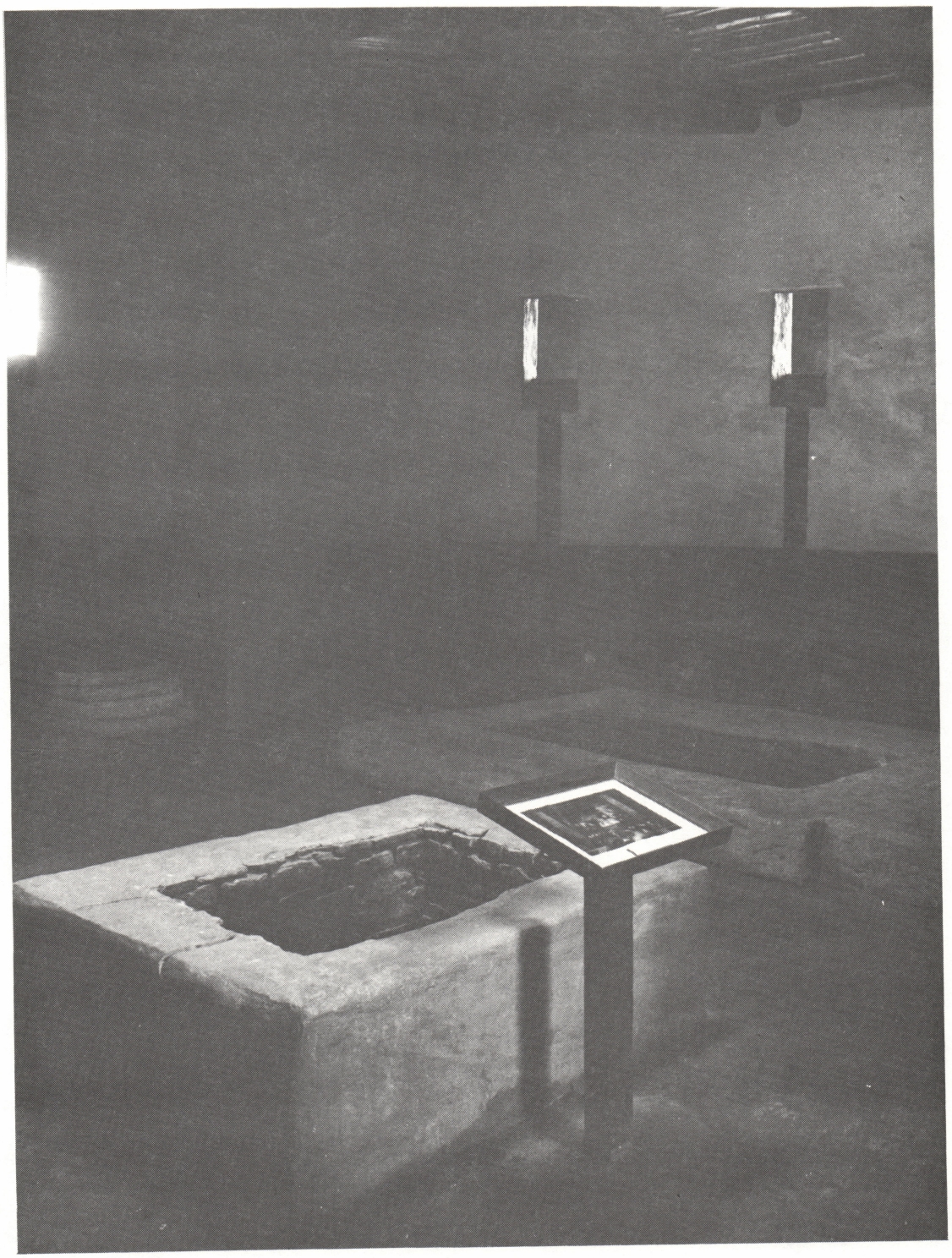
The National Park Service exercises proprietary law-enforcement jurisdiction over the monument, which means that monument staff are limited to enforcing only Federal codes within the boundaries. Local, city, state, and county law-enforcement agencies also exercise jurisdictional enforcement authority within the monument.

The indenture of March 28, 1928 involves the right to drains and drainage across land described. And, indenture of May 15, 1947 contains an easement for a public road along the west boundry.

These constraint documents are available at Aztec, New Mexico, 87401, The Navajo Lands Group, Farmington, New Mexico, and the Southwest Regional Office, Santa Fe, New Mexico.

IV. RESOURCE MANAGEMENT PROGRAM





FRED MANG PHOTO (NPS)

IV. RESOURCE MANAGEMENT PROGRAM

For the purpose of clarity, all the actions included in the project discussions will be divided into five Natural Types and two Historic (Cultural) Types.

The five Natural Types are:

1. Those actions whose implementation will have a significant and measurable effect on the natural environment. (Significant Action)

2. Those actions whose implementation will continue existing maintenance of the natural environment. (Continuing Maintenance)

3. Those actions which will initiate new maintenance of the natural environment. (New Maintenance)

4. Those actions which entail research into the natural environment. (Research)

5. Those actions which do not have an effect on the natural environment. (No Effect-Natural)

The two Historic (Cultural) Types are:

A. Those actions whose implementation will have an effect on the historic resources. (Effect)

B. Those actions which will not have an effect on the historic resources. (No Effect-Historical)

A. CULTURAL RESOURCES

1. Project: Archeological Assessment

The Aztec Ruins National Monument inventory of cultural resources is incomplete. The task is to compile the existing data into an archeological assessment and complete the requirements of the NPS Activity Standards for a Historic Resource Study.

Action: Research (5. No Effect-Natural B. No Effect-Historical)

Complete an inventory of the cultural resources of the monument.

The following are required by NPS Activity Standards and are to be satisfied by the means indicated:

a. Archeological and aboriginal background and significance for areas not previously studied. (Archeological assessment.)

b. A documented archeological base map recording and locating all existing archeological and aboriginal structures, features, sites and objects within the study area. (Completed. See NPS Drawing No. NM:AR/10,700-A, three sheets--east half, west half and details, 10/1/56 - revised 1/61.)

c. A documented interpretive narrative of the known archeological and aboriginal structures, features, sites and objects within the study area. (Archeological assessment.)

d. A record of the ecological factors involved at the time of the principal archeological or aboriginal cultural significance accompanied by documentation of the source of data shown. (Archeological assessment.)

e. Minor test excavations to determine stratigraphy and depth of otherwise superimposed structures, sites, and features. (This requirement has been satisfied by previous research and results are included in the archeological assessment.)

f. Enlargement upon the landmark study prepared for the designation of national significance. (Archeological assessment.)

g. National Register inventory forms covering districts, sites, buildings, structures and objects of national, state, or local significance in archeology and aboriginal cultural as judged against National Register criteria. (Administrative action.)

h. A recommended list of classified structures identifying which structures are worthy of preservation. (Administrative action.)

i. Evaluation of prehistoric resources, including values not represented by tangible surviving sites or resources. (Archeological assessment.)

j. Identification of problems in preservation or interpretation. (Archeological assessment and this plan.)

k. Broad recommendations for preservation and interpretation. (Archeological assessment and this plan.)

2. Project: Museum Collections

Museum records, preservations, storage space and conditions, and security do not fully meet NPS Activity Standards. See appendix for an approved Collections Policy Statement and description of the collections.

Action: Maintenance (5. No Effect-Natural B. No Effect-Historical)

A professional curatorial inspection and collections management plan is needed to identify deficiencies and make recommendations for compliance with NPS Activity Standards.

3. Project: Preservation of Ruins

There are three (3) excavated or partly excavated ruins and one (1) excavated and reconstructed prehistoric great kiva at Aztec Ruins National Monument. These are:

a. West (or Main or Aztec) Ruin: A very large, massive, largely excavated, stabilized, prehistoric, masonry Pueblo ruin consisting of 185 ground floor rooms including two rooms with intact, original ceilings, 14 kivas and rubble core walls standing to the third story.

b. Hubbard Ruin: An excavated, stabilized, prehistoric, masonry Pueblo ceremonial structure consisting of 22 rooms, two kivas and moderately well to poorly constructed walls standing up to eight feet (2.4 meters).

c. East Ruin: A largely unexcavated, 16 feet (5 m) high, 400 (91 m) by 180 feet (55 m), prehistoric, masonry Pueblo mound containing 24 excavated or partly excavated, stabilized rooms with intact, original ceilings.

d. Great Kiva: A large, excavated, prehistoric, reconstructed, masonry Pueblo ceremonial structure in the plaza of the West Ruin.

These excavated ruins are threatened by natural weathering and erosion and by such man-caused factors as their excavated condition, insufficient and improper drainage, inadequate and improper preservation techniques and visitor use. The task is to preserve these cultural resources in such a manner that they are left unimpaired for future generations. The preservation technique selected to arrest further deterioration is stabilization.

In addition, these are ten unexcavated ruins at Aztec Ruins National Monument. All are brush covered, mounded sites with no above surface standing walls. These unexcavated ruins require periodic inspection to determine if they are in a static state and to protect them from illegal excavation.

Action: Research and Maintenance

a. Ruins Maintenance: (5. No Effect-Natural A. Effect) Continue, improve, and expand ruins maintenance to provide vegetation control, drainage, and repair of existing stabilization measures including protective roofs in the West, Hubbard and East Ruins and the Great Kiva. A consultation in compliance with section 106 of the National Historic Preservation Act will be required

b. Rehabilitate West Ruin: (5. No Effect-Natural A. Effect)
Complete the ruins stabilization rehabilitation of the West Ruins. (Pkg. 110 - fifth of five-year project; 106 Statement has been completed.)

c. Rehabilitate Hubbard Ruin: (5. No Effect-Natural A. Effect)
Carry out ruins stabilization rehabilitation of the Hubbard Ruin. A consultation in compliance with section 106 of the National Historic Preservation Act will be required.

d. Design and Install Comprehensive Surface Drainage System for West Ruin. (3. New Maintenance A. Effect)
A consultation in compliance with section 106 of the National Historic Preservation Act will be required.

e. Develop New Preservation Techniques and Materials. (4. Research B. No Effect-Historical)
Several preservation techniques and materials such as the unlimited use of Tinted Portland Cement mortars, dry-barrel drains, Pencapsula, etc., have proven to be ineffective or harmful. Research leading to the development of a better mortar, to better drainage and to prevent sandstone deterioration caused by surface and subsurface moisture is needed.

Note: All new materials are to be laboratory and field tested on non-original fabric before application to original fabric. Prior to application to original fabric, a National Historic Preservation Act 106 Statement may be required. Since surface and subsurface moisture is involved in this action, Natural Resource research may be indicated in the future.

f. Complete a Historic Structures Report for the West, East and Hubbard Ruins in Accordance with NPS Activity Standards. (5. No Effect-Natural B. No Effect-Historical)

g. Complete a Historic Structure Preservation Guide for Each Ruin in Accordance with NPS Activity Standards. (5. No Effect-Natural B. No Effect-Historical)

CULTURAL RESOURCES RESEARCH

ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 NPS M.Y.	Year 1 Cost/ $1000	Year 2 NPS M.Y.	Year 2 Cost/ $1000	Year 3 NPS M.Y.	Year 3 Cost/ $1000	Year 4 NPS M.Y.	Year 4 Cost/ $1000	Year 5 NPS M.Y.	Year 5 Cost/ $1000	Date Submitted 10-237	Date Submitted 10-238
	1	C1	Archeological Assessment	.1	2										
	2	C3E	New Preservation Techniques - Methods	.1	10										
	3	C3F	Historic Structures Reports - West, East and Hubbard Ruins	.5	8										
	4	C3G	Historic Structures Preservation Guides - West, East and Hubbard Ruins			1	15	1	15						

CULTURAL RESOURCES MAINTENANCE

ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 NPS M.Y.	Year 1 Cost/ $1000	Year 2 NPS M.Y.	Year 2 Cost/ $1000	Year 3 NPS M.Y.	Year 3 Cost/ $1000	Year 4 NPS M.Y.	Year 4 Cost/ $1000	Year 5 NPS M.Y.	Year 5 Cost/ $1000	Date Submitted 10-237 10-238
		C3A	Ruins Maintenance	.3	3	.3	3	.3	3	.3	3	.3	3	
110		C3B	Rehabilitate West Ruin			.5	30							2/73
		C3C	Rehabilitate Hubbard Ruin					1	60					
24		C3D	Design and Install Drains West Ruin			.2	6							
		C2	Museum Collections	.2	3	.1	1	.1	1	.1	1	.1	1	

B. NATURAL RESOURCES

1. Project: Inventory of Biotic Resources

A natural resources management program is minimal for this monument because of its size and character. Most area resources are historical in character, and it is unlikely that knowledge of the area's natural resources will greatly influence planning or management. A two-part research project of data gathering is included solely to provide the area with information that may be utilized for interpretation.

Action: Research (4. Research B. No Effect-Historical)

Research

Continue to compile species lists for plants and animals that are identified within the immediate area.

a. Inventory all plants of the area and provide information on their status and other aspects that could be utilized by local interpreters.

b. Inventory all of the animals of the area and provide information on their status and other interesting aspects that could be utilized by local interpreters.

2. Project: Wildlife Protection

Aztec Ruins is very limited in size but consists of a lush growth of trees, shrubs and grass which are inviting to many species of animals. Because of the small size of the monument, nearly all wildlife stray into the surrounding farm lands to search for food. Some, such as the Mourning Dove and Gambel's quail, are hunted both in and out of season. Dogs and cats stray onto the monument and take their toll in wildlife.

Action: Maintenance (2. Continue Maintenance-Natural B. No Effect-Historical)

Capture stray dogs and cats and return them to their owners, if known. Apprise the owners of the penalties that can be levied if their animals are not controlled.

Strictly enforce hunting regulations to prevent the flushing of game by hunters from the monument to surrounding lands for shooting.

3. Project: Wildfire Control

While there are no records of fire at Aztec Ruins National Monument, the dense cover of the northeast section of the monument does pose a fire hazard. Since this section lies in close proximity to a county road, the potential for fire is present. If this small acreage should burn, it would destroy the only wildlife sanctuary within the vicinity.

Action: Maintenance (2. Continue Maintenance-Natural B. No Effect-Historical)

Prepare a fire management plan to control, as quickly as possible, any fire which may occur on the monument.

4. Project: Noxious Plants and Animals

Vegetative cover within the monument was originally and typically that of the Upper Sonoran Zone but has been drastically altered by several hundred years of occupation. Many exotic trees have become part of the scene and are presently affording shade for visitors and food and cover for animals. However, they are exotic in nature and, upon their death, will be replaced with vegetation more compatible to the historic nature of the resource. Plants such as Russian thistle and wild morning glory pose a serious threat to the ruins, walkways and other man-made objects by expediting deterioration of walks, blacktop, etc. Puncture-vine presents a hazard to visitors with thin-soled shoes or bare feet.

Ground squirrels burrow in and under the walk of the ruins causing structural damage and erosive potential.

Action: Maintenance (2. Continue Maintenance-Natural B. No Effect-Historical)

Control of Russian thistle, morning glory and puncture-vine will continue where needed to prevent deterioration of historic ruins and other man-made objects and to prevent injury to visitors. Russian thistle and puncture-vine can be controlled through physical removal but an herbicide is needed for the eradication of the morning glory. The herbicide "Bromacil" (5-bromo-3-sec-butyl-6-methyluracil) is currently recommended and has been approved for this purpose.

Ground squirrels should be controlled within ruins areas by methods which are selective to the pest controlled.

ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 NPS M.Y.	Year 1 Cost/ $1000	Year 2 NPS M.Y.	Year 2 Cost/ $1000	Year 3 NPS M.Y.	Year 3 Cost/ $1000	Year 4 NPS M.Y.	Year 4 Cost/ $1000	Year 5 NPS M.Y.	Year 5 Cost/ $1000	Date Submitted 10-237 10-238
	1	N1a	Inventory Plants		.5									
		N1b	Inventory Animals		.5									

NATURAL RESOURCES MAINTENANCE

ACTIVITIES AND 5-YEAR PROGRAMMING SHEET

Pkg. No.	Area Priority	RMP Ref. No.	Project Title	Year 1 NPS M.Y.	Year 1 Cost/ $1000	Year 2 NPS M.Y.	Year 2 Cost/ $1000	Year 3 NPS M.Y.	Year 3 Cost/ $1000	Year 4 NPS M.Y.	Year 4 Cost/ $1000	Year 5 NPS M.Y.	Year 5 Cost/ $1000	Date Submitted 10-237 10-238
		N~~3~~2	Wildlife Protection	.1	.4	.1	.4	.1	.4	.1	.4	.1	.4	
		N~~4~~3	Wildlife Control	.1	.13	.1	.13	.1	.13	.1	.13	.1	.13	
		N~~5~~4	Noxious Plants and Animals	.1	1.15	.1	1.15	.1	1.15	.1	1.15	.1	1.15	

C. SUMMARY OF PROJECT ACTIONS



FRED MANG PHOTO (NPS)

C. SUMMARY OF PROJECT ACTIONS

PROJECT		ACTION* NATURAL 1	2	3	4	5		CULTURAL A	B
C1						X			X
C2						X			X
C3a						X		X	
C3b						X		X	
C3c						X		X	
C3d				X				X	
C3e					X				X
"	Application			X				X	
C3f						X			X
C3g						X			X
N1a					X				X
N1b					X				X
N2			X						X
N3			X						X
N4			X						X

* NATURAL:
1. Significant Action
2. Continuing Maintenance
3. New Maintenance
4. Research
5. No Effect-Natural

CULTURAL:
A. Effect
B. No Effect-Historical

V. OVERVIEW

V. OVERVIEW

The following is a review of all actions proposed within the Aztec Ruins National Monument Resources Management Plan, and outlined within the seven types described in the Management Plan.

1. Those Actions Whose Implementation Will Have a Significant and Measurable Effect on the Natural Environment. (Significant Action)

   No such actions are planned. Each project included in the Resources Management Plan was considered on its own merit and, in every case, those actions planned do not have a significant and measurable effect on the environment. All of the actions fall into Natural Types 2, 3, 4, or 5 or Historical Types A or B.

2. Those Actions Whose Implementation Will Continue Existing Maintenance of the Natural Environment. (Continuing Maintenance)

   Natural Resource Projects 2, 3, and 4 fall into this type.

3. Those Actions Which Will Initiate New Maintenance of the Natural Environment. (New Maintenance)

   Cultural Resource Project 3d and Cultural Resource Project 3e (Application) fall into this type.

4. Those Actions Which Entail Research Into the Natural Environment. (Research)

   Cultural Resource Project 3e and Natural Resource Projects 1a and 1b fall into this type.

5. Those Actions Which Do Not Have and Effect on the Natural Environment. (No Effect-Natural)

   Cultural Resource Projects 1, 2, 3a, 3b, 3c, 3f and 3g fall into this type.

A. Those Actions Whose Implementation Will Have an Effect on the Historic Resources. (Effect)

   Cultural Resource Projects 3a, 3b, 3c, 3d and 3e (Application) fall into this type.

B. Those Actions Which Will Not Have an Effect on the Historic Resources. (No Effect-Historical)

Cultural Resource Projects 1, 2, 3e, 3f and 3g; and Natural Resource Projects 1a, 1b, 2, 3 and 4 fall into this type.

DETERMINATION: It is determined that all actions outlined above are maintenance and research in character and do not significantly affect the natural environment or cause controversy. It is further determined that Cultural Resource Projects 3a, 3b, 3c, 3d and 3e (Application) will affect the cultural resources and will require a consultation in compliance with section 106 of the National Historic Preservation Act. A 106 consultation has already been completed for Cultural Resource Project 3b.

Therefore, in accordance with the following paragraph of "Guidelines for the Preparation and Review of Environmental Assessments and Statements" (National Park Service, July 29, 1974, page 6),

> Based on an overview of all actions affecting the environment, the responsible official may determine that many plans, projects and operational decisions have negligible potential to cause controversial or significant environmental impact and therefore do not require preparation of environmental assessments.

NO ENVIRONMENTAL ASSESSMENT WILL BE PREPARED.

Recommended by: Roland H. Wauer — Chief, Natural Resources, Southwest Region — 9/22/76 Date

Recommended by: Richard W. Sellars — ACTING Chief, Cultural Resources, Southwest Region — 9/23/76 Date

Concurred by: [signature] — General Superintendent, Navajo Lands Group — 9/20/76 Date

Concurred by: Monte E. Fitch — Associate Regional Director, Park Operations — 9/23/76 Date

Approved by: [signature] — Acting Regional Director, Southwest Region — 9-24-76 Date

VI. APPENDICES



FRED MANG PHOTO (NPS)

APPENDIX A

Completed Research and Bibliography

APPENDIX A - COMPLETED RESEARCH AND BIBLIOGRAPHY

1. Excavation of Main, West or Aztec Ruin.

Morris, Earl H.

1919 The Aztec Ruin. American Museum of Natural History, Anthropological Papers, Vol. XXVI, Part I, New York

1921 The House of the Great Kiva at Aztec Ruin. American Museum of Natural History, Anthropological Papers, Vol. XXVI, Part II, New York

1924 Burials in the Aztec Ruin. American Museum of Natural History, Anthropological Papers, Vol. XXVI, Part III, New York

1924 The Aztec Ruin Annex. American Museum of Natural History, Anthropological Papers, Vol. XXVI, Part IV, New York

1928 Notes on Excavations in the Aztec Ruin. American Museum of Natural History, Anthropological Papers, Vol. XXVI, Part V, New York

2. Partial Excavation of the East Ruin

Richert, Roland

1964 Excavation of a Portion of the East Ruin, Aztec Ruins National Monument, New Mexico, Southwestern Monuments Association, Technical Series No. 4, Globe, Arizona

3. Excavation of the Hubbard Site

Vivian, R. Gordon

1959 The Hubbard Site and Other Tri-Walled Structures in New Mexico and Colorado. National Park Service, Department of the Interior, Archeological Research Series No. 5, Washington, D.C.

4. Excavation of Trash Mound in Front of Visitor Center

Maxon, James

1961 Excavation of a Mound, Aztec Ruins National Monument, New Mexico, Manuscript

APPENDIX B

Completed Major Ruins Stabilization

APPENDIX B - COMPLETED MAJOR RUINS STABILIZATION

Reports of major stabilization work carried on at Aztec Ruins National Monument are on file in the monument library.

The stabilization reports for the West Ruin are:

1938 - 1946:	Steen, Charlie R., et. al.
1939 - 1941:	Vivian, R. Gordon
1950:	Vivian, R. Gordon, and Raymond Rixey
1951:	Richert, Roland
1959, 1959 - 1960 and 1961:	Shiner, Joel
1965:	Voll, Charles B., and Martin T. Mayer
1967:	Mayer, Martin T.

The stabilization reports for the East Ruin are:

1949:	Vivian, R. Gordon
1953 and 1956:	Richert, Roland
1957:	Vivian, R. Gordon, and Roland Richert
1960:	Shiner, Joel L.
1965:	Voll, Charles B., and Martin T. Mayer
1967:	Mayer, Martin T.

The stabilization reports for the Hubbard Mound are:

1954:	Vivian, R. Gordon, and Tom Mathews
1960:	Shiner, Joel
1965:	Voll, Charles B., and Martin T. Mayer

APPENDIX C

Ruins Maintenance Program

APPENDIX C

SUMMARY OF RUINS MAINTENANCE
AZTEC RUINS NATIONAL MONUMENT

NUMBER OF MAINTENANCE RUINS: 3

TOTAL LINEAR FEET OF STABILIZED WALL: 8,610 (1.63 miles) 2,625 meters

TOTAL SQUARE FEET OF STABILIZED WALL: 85,540 (7,946 m^2)

RUIN	MAN-DAYS ANNUAL	MAN-DAYS CYCLIC	CYCLE YEARS
1. West Ruin	50	120	10
2. Hubbard Ruin	10	30	5
3. East Ruin	5	30	10

Revised 7/75

AZRU
WERU

RUINS MAINTENANCE DESCRIPTION

NAME: West Ruin

DESCRIPTION: A very large ruin with cored walls standing to three stories. Twenty-one rooms exist with intact ceilings. It is largely excavated.

USE: The major interpreted site. Entered by the visitor on a self-guiding trail.

	PRESENT	ACCEPTABLE
MAINTENANCE STANDARD:	B	B
PROTECTION STANDARD:	B	B

SIZE: 185 ground-floor rooms, 14 kivas, and a restored great kiva.

Linear feet of stabilized wall: 6,790 (2,071m)

Square feet of stabilized wall: 72,800 ($6,770m^2$)

SPECIAL PROBLEMS: Twenty-one rooms with intact ceilings covered by modern, protective roofs. Long internal drainage lines. High water table and rotting of basal masonry.

LAST CYCLIC MAINTENANCE: 1976

PERIOD FOR CYCLIC MAINTENANCE: 10 years

MAN-DAYS FOR CYCLIC MAINTENANCE: 120 man-days

MAN-DAYS FOR ANNUAL MAINTENANCE: 50 man-days

Revised 7/75

AZRU
HURU

RUINS MAINTENANCE DESCRIPTION

NAME: Hubbard Ruin

DESCRIPTION: A specialized tri-wall structure, moderately well constructed of varying masonry types.

USE: Moderately heavy. A secondary interpretive feature. Entered on a self-guiding trail.

	PRESENT	ACCEPTABLE
MAINTENANCE STANDARD:	B	B
PROTECTION STANDARD:	B	B

SIZE: 22 rooms, 2 kivas and several fragmentary rooms.

Linear feet of stabilized wall: 1,100 (334m)

Square feet of stabilized wall: 7,700 ($716m^2$)

SPECIAL PROBLEMS: Drainage and water seepage.

LAST CYCLIC MAINTENANCE: 1965

PERIOD FOR CYCLIC MAINTENANCE: 5 years

MAN-DAYS FOR CYCLIC MAINTENANCE: 30 man-days

MAN-DAYS FOR ANNUAL MAINTENANCE: 10 man-days

Revised 7/75

AZRU
EARU

RUINS MAINTENANCE DESCRIPTION

NAME: East Ruin

DESCRIPTION: A partly excavated, 16 feet high, 400 x 180 feet mound, with 24 excavated and partly excavated, roofed rooms.

USE: Not open to the public.

	PRESENT	ACCEPTABLE
MAINTENANCE STANDARD:	B	B
PROTECTION STANDARD:	C	C

SIZE: 24 excavated and partly excavated roofed rooms.

Linear feet of Stabilized Wall: 720 (220m)

Square feet of Stabilized Wall 5,040 (469m^2)

SPECIAL PROBLEMS: Roofed rooms.

LAST CYCLIC MAINTENANCE: 1965

PERIOD FOR CYCLIC MAINTENANCE: 10 years

MAN-DAYS FOR CYCLIC MAINTENANCE: 30 man-days

MAN-DAYS FOR ANNUAL MAINTENANCE: 5 man-days

Revised 7/75

APPENDIX D

Museum Collections and Collection Policy Statement

APPENDIX D - COLLECTIONS AND LOCATIONS

There are 56 accession, and 3,556 catalogued items in the Aztec Ruins National Monument Museum Collections. The collection is one of the best assemblages of prehistoric artifacts maintained by the National Park Service.

Accession #1. There are 271 items, including pottery, basketry, sandals, shell, bone, stone, plant material, etc., from the West Ruin, which were excavated by Earl Morris and are on permanent loan from the American Museum of Natural History. Most items are stored at the Arizona Archeological Center, Tucson, Arizona.

Accession #2. There are 163 items, including pottery, bone tools, sandals, matting, cotton cloth and stone knives from the West Ruin which were collected by the Abrams family before excavation and are on permanent loan from Mrs. Rosa Abrams. There are 20 items at Aztec Ruins. There are 143 items at the Arizona Archeological Center, Tucson, Arizona.

Accession #3. There are 118 items, including pottery, stone tools, and plant material, which were collected by Sherman Howe from the Aztec Ruins area. There are 91 items at Aztec Ruins and 27 items at the Museum of New Mexico. All are loaned by Sherman Howe.

Accession #8. There are 1,172 items covering the entire range of artifacts recovered from the West Ruin. The accession includes pottery, bone, wood, fiber, shell, and human remains of high quality. These were excavated from the West Ruin by Earl Morris and were donated by the American Museum of Natural History. Most of the items are stored at the Arizona Archeological Center, Tucson, Arizona.

Accession #15. There are 227 items, including pottery, stone, bone and wooden artifacts, and a field collection, NPS, from the East and West Ruins, stored at Arizona Archeological Center, Tucson, Arizona.

Accession #16. There are 75 items of pottery and stone, and a field collection, NPS, stored at the Arizona Archeological Center, Tucson, Arizona.

Accession #20. Most of the 477 items of pottery, stone, bone, shell, and fiber, including basketry, sandals, cordage, and wood, from the Aztec vicinity, are stored at the Arizona Archeological Center, Tucson, Arizona.

The following are minor accessions including pottery, bone, human remains, lithic materials, models, and wooden artifacts. These items are from the Aztec vicinity. Accessions 5, 6, 9, 10, one-half of 11, 12-14, 17, 19, 26-34, 36-40, 42-47, and 49-53 are stored at Aztec Ruins. Accessions 11, 18, 21-25, 41 and 53 are stored at the Arizona Archeological Center. Accession 48 is at the Southwest Regional Office, Santa Fe, New Mexico.

Approximately one-half of the items excavated from the West Ruin by Earl Morris for the American Museum of Natural History are stored at the American Museum of Natural History, New York, New York.

Collection Policy Statement

Aztec Ruins National Monument was established to preserve and interpret the archeological remains of Anasazi occupation, including the large Chacoan ruin of Aztec, within the monument boundaries. The purposes of the park collection will at all times be consistent with the applicable provisions of the management plan, interpretive prospectus and other documents governing management and interpretation. Such purposes are:

1. To collect and acquire, as appropriate, original objects from the archeological sites within the park, retaining on-site those objects useful for park purposes and placing objects not needed on loan with an appropriate scholarly institution.

2. To exclude from the collection objects of unknown origin or from sites not within the park, prospective donors to be referred to the Aztec Museum or the Salmon Ruins.

3. To acquire art and photographs relating to interpretive themes of the park; all original historic negatives and one copy of all historic photographs to be deposited with an appropriate archive.

4. To exclude from the collection all original historic documents and to find appropriate repositories for all such materials as become available to the park, copies of all materials needed for park purposes to be made for the park reference files.

5. To maintain a library and reference files adequate to meet most needs for developing interpretive programs and documenting collections.

6. To exclude from the collection objects that needlessly duplicate materials already collected or that do not relate to the park.

7. To recognize the intrinsic and irreplaceable value of all original objects in the park collection; to make use of reproductions only in living history demonstrations and to take all necessary measures to document, conserve and safeguard the collection.

APPENDIX E

Information Base Checklist

APPENDIX E

Information Base Checklist
Aztec Ruins National Monument

BASIC THEMATIC MAP FILE

Regional Features A region map is included in the Statement for Management.

PARK SPECIFIC

Topography The archeological base map, NM-AR-10, 700-A depicts the topography of the Monument.

Geology Because of the size and nature of the Monument, no geologic map is deemed necessary.

Land Ownership and Use The Monument boundaries are contained in the following Presidential Proclamations: #1650, January 24, 1923, 42 Stat. 2295; #1840, July 2, 1928, 45 Stat. 2954; #1928, December 19, 1930, 46 Stat. 3040; and #2787, May 27, 1948, 62 Stat. 1513. All lands within the boundaries are NPS owned and listed in the National Register of Historic Places, and classified as a Historic Zone. Information on easements, water rights, special use permits, and jurisdictions are listed in the Statement for Management. Information on ownership of surrounding land can be obtained from plat maps at the County Assessors Office, San Juan County Courthouse, Aztec, New Mexico.

Soils, Hydrology, Vegetation, and Wildlife Because of the size and nature of the Monument, no such maps are deemed necessary.

Cultural Resources The Monument has been completely surveyed, and an archeological base map, NM-AR-10, 700-A is available.

NARRATIVE FILE

Climate Data are available from the Monument staff which keeps daily weather records.

Socioeconomic Environment Socioeconomic data are available in the following publications from the Department of Commerce:

1. "General Social and Economic Characteristics, New Mexico"
2. "General Population Characteristics, New Mexico"
3. "Number of Inhabitants, New Mexico"

These publications may be viewed in the Office of Environmental Coordination, Southwest Region Office.

Business and Industry Besides the information from the above mentioned publications, the Natural Science Office, Southwest Region Office, maintains a file on this subject. It includes "Annual Business and Economic Reports" and monthly reports published by the Mew Mexico Bankshare Corporation.

Geology Brief descriptions of local geology are contained in the published archeological reports. A geologic report on the general area is contained in Vol. 4, No. 3, "Eastern New Mexico Contributions in Anthropology," December 1972.

Land Ownership and Use See Land and Ownership map file description.

Soils, Hydrology, Vegetation, and Wildlife Except for brief descriptions in various archeological reports and NPS planning documents, no narratives on these subjects are available. Vegetation and wildlife narratives are addressed in Project N1. Any development will require a detailed soil survey of the development site.

Cultural Values The Statement for Management has a brief description of Archeological values. The Archeological Assessment, now in progress, will contain more detailed information on Archeological values.

Recreation, Development, and Support Facilities Information is available at Monument headquarters.

APPENDIX F

Annual Review, Changes and Dates

APPENDIX F

ANNUAL REVIEW, CHANGES AND DATES

The Resource Management Plan will be reviewed annually by the Superintendent and the Regional Resource Management Plan Coordinator. Necessary changes will be initiated at the Park area for approval by the General Superintendent and the Regional Director.

Resource Management Plan Coordinator — Date 9/17/76

DATE 9/27/88

RESOURCE MANAGEMENT PLAN

DISTRIBUTION

FROM: PPE-SWRO, LINDA DANSBY, DIVISION OF PLANNING, DESIGN AND ENVIRONMENTAL COORDINATION, SWR (FTS 476-1856, 505-988-6856)

TO: SUPERINTENDENT, Aztec Ruins
~~(ORIGINAL AND~~ 5 COPIES)

DSC-PGT (1)

DSC-TCE (1)

ONR-SWRO(1)

~~O~~RA-SWRO (1)

P-SWRO (1)

PCH-SWRO (1)

OIV-SWRO (1)

Plan Review Rooms (2)

PPE-SWRO, RMP File

ENCLOSED FOR YOUR FILES IS THE RESOURCE MANAGEMENT PLAN FOR Aztec Ruins NM,

APPROVED ON 4/25/88.

AZTEC RUINS NATIONAL MONUMENT

RESOURCES MANAGEMENT PLAN

prepared by

William L. Schart

Chief Park Ranger

RECOMMENDED: _____
Superintendent, Aztec Ruins National Monument

APPROVED: _____ APR 25 1988
Acting Regional Director, Southwest Region

AZTEC RUINS NATIONAL MONUMENT

RESOURCES MANAGEMENT PLAN

STATEMENT FOR MANAGEMENT 4
PURPOSE OF THE MONUMENT 4
MANAGEMENT OBJECTIVES 4

OVERVIEW AND NEEDS: CULTURAL RESOURCES 7

PROJECT STATEMENTS: CULTURAL RESOURCES 8
AZRU - C2 Drain Groundwater Destroying Stone Ruins . . 9
AZRU - C3 Historic Structures Reports for the East Ruin, West Ruin and Reconstructed Great Kiva, and Hubbard Mound. 11
AZRU - C5 Study and Preserve Plaster Art 12
AZRU - C7 Historic Structure Report for the Visitor Center 13
AZRU - C8 Prepare Historic Resources Study 14
AZRU - C9 Historic Structure Preservation Guide . . . 15
AZRU - C10 Prepare a Cultural Landscape Report 16
AZRU - C11 Update List of Classified Structures . . . 18
AZRU - C12 Wall Bonding Study 19
AZRU C-14 Prehistoric Wood Study 20
AZRU - C15 Ruins Stabilization 22
AZRU - C16 Research Most Effective Methods of Ruins Preservation and Stabilization 24
AZRU - C17 ARCHEOLOGICAL EVALUATION OF UNKNOWN MOUNDS 25

OVERVIEW AND NEEDS: NATURAL RESOURCES 26

NATURAL RESOURCE PROJECT STATEMENTS 27
AZRU - N1 Water Rights Study 27
AZRU - N2 Quantification of Federal Water Rights . . . 28
AZRU - N3 Vegetation Management 29
AZRU - N4 Control of Noxious Plants and Animals . . . 31

Cultural Resources Programming Sheet 33

Natural Resources Programming Sheet 34

Bibliography 35

Stabilization Reports 38

INTRODUCTION

A Resources Management Plan is a key factor in good management and preservation of the resources of the monument. It is a strategic document that identifies resource management needs, puts them in order of priority, recommends actions, and summarizes the method of implementing the recommendations.

This plan provides a synopsis of the purpose and objectives of Aztec Ruins National Monument, and of its management zoning and legislative mandates. After an overview of the general problems and needs of the cultural and natural resources, there is a section of individual project statements and programming sheets, separated by type of resource.

The plan serves the park staff in two ways: 1) as a reference of management activities that will protect information potential of the resources; and as a prioritized set of research projects designed to obtain additional information from the resources for the enlightenment of the park's staff and visitors.

STATEMENT FOR MANAGEMENT

PURPOSE OF THE MONUMENT

A massive pueblo and other significant archeological features, as well as an unusual blending of prehistoric architectural styles representing both the Chacoan and the Mesa Verdean cultures of the American Southwest, prompted President Warren G. Harding to establish Aztec Ruins National Monument by Presidential Proclamation No. 1650 of January 24, 1923 (42 Stat. 2295), "with a view to the preservation of said ruin for the enlightenment and culture of the Nation."

Of primary significance at Aztec are the remains of a massive, unified-design, terraced pueblo, covering 2 acres, standing 3 stories high, extending 7 rooms wide at the base and 4 and 5 rooms wide across the wings, and containing 500 rooms averaging 10 feet by 12 feet in dimensions. A partially restored great kiva dominates the pueblo's enclosed patio.

The nearby Hubbard ruin, acquired in 1948, has been excavated and adds to the archeological significance of Aztec Ruins National Monument, as do numerous unexcavated sites in other parts of the monument.

Also of significance, the ruins are a blending of architectural styles, representing in initial construction Chacoan peoples (northwestern New Mexico) between A. D. 1111 and 1115, and in later remodeling and enlargement Mesa Verde-related peoples (southwestern Colorado), who abandoned the pueblo in the late 13th century. This architectural blending offers significant insights into social relationships between the Chacoan and Mesa Verdean peoples and into the cultural history and eventual abandonment of the Four Corners region.

Because of its significance in the prehistory of our nation, the monument is listed on the National Register of Historic Places.

MANAGEMENT OBJECTIVES

Cultural Resources Management

To maintain and perpetuate the inherent integrity of the cultural resources.

- To provide for the preservation and protection of the cultural resources of the monument.

- To obtain knowledge of the cultural resources of the monument and of appropriate preservation techniques, procedures, and maintenance requirements to provide for the stabilization and maintenance of the ruins.

- To operate an ongoing, comprehensive cultural resources maintenance program.

- To have sufficient knowledge of the story of Aztec Ruins and related areas to ensure an adequate data base for full interpretive development.

- To eliminate or mitigate all significant external and internal threats to the cultural resources of the monument.

Natural Resources Management

To manage the natural resources to preserve the natural scene and to complement the park's cultural resources, visitor uses, and facilities.

To determine and use the water rights due the monument to ensure adequate supply of water for current and future needs.

Visitor Use

To provide for the enjoyment, appreciation and understanding of the park by the public and to control uses that could impair park resources or their enjoyment.

- To provide each visitor with the opportunity for a safe and enjoyable visit.

- To provide visitors with an opportunity to appreciate and understand the Aztec Ruins story.

- To facilitate enjoyment of the resources by special populations.

Development

To develop minimal facilities for visitor use, resource protection, and safe and efficient management of the monument.

Cooperation

To cooperate with the city of Aztec, San Juan County, and other governmental agencies and private concerns for the purpose of

protecting the resources at Aztec Ruins National Monument from adverse effects due to non-park uses and developments.

To promote understanding of the monument and its relationships with other prehistoric resources in the area.

OVERVIEW AND NEEDS: CULTURAL RESOURCES

The cultural resources of Aztec Ruins National Monument consist of twelve prehistoric sites, one reconstructed great kiva, and a museum collection of well over 4200 items, of which some 1,700 are stored at the Western Archeological Center in Tucson, Arizona. A more detailed description of these resources is available in the Archeological Assessment.

The monument has been completely surveyed and is listed on the National Register of Historic Places. The museum catalogue is not 100% complete. A curatorial study of the collections stored on the monument was made in 1980 and a Collections Management Plan published. Since then, a new collections storage room was added to the visitor center, a scope of collections statement approved, and a storage plan for moving collections from the basement to the new storage room prepared. Many, but not all, of the items in the basement have been moved to the storage room. Funding for a project to analyze and catalogue the on-site collection has been received for use in fiscal year 1987.

Two of the ruins - the West Ruin and the Hubbard Site - have been developed and are managed as interpretive exhibits accessible by a self-guiding trail. These two ruins receive regular, extensive stabilization to repair and/or replace deteriorated sections. However, recent deterioration of some sections because of higher than normal precipitation has caused more damage than park crews can repair. The Hubbard Site was partially backfilled in 1978 to increase the protection while still allowing visitors to observe the nature of this site. The other sites are managed to preserve them for future use in research and/or for interpretation, primarily by protecting them from man-caused damage while allowing the covering of earth to protect them from natural weathering. There are no plans for excavation of any of these sites in the foreseeable future.

New research, both on the monument as well as other related areas should be reviewed and incorporated into the interpretative program as well into the general management program. Two non-destructive research projects could increase our knowledge of the ruins for both interpretive and management purposes: a study of wall bonding to develop the architectural sequence of the ruin, and a wood preservation project similar to the one currently underway at Chaco Culture National Historic Park.
Two particular problems stand out. Most pressing is the question of both ground water and precipitation in the ruins. Water

attacks both the mortar and the stones comprising the walls. What is needed is some method of preventing the water from reaching the walls and/or rapidly removing it before it can cause damage.

The second problem is that of preserving the few remaining sections of original plaster. This is somewhat related to the above, as water in the walls can cause plaster to spall off. The best method of preserving this rare aspect of our resource needs to be determined.

Historic Structure Reports are needed for the East Ruin, the West Ruin, the Visitor Center, and the Hubbard Site; these should be prepared as soon as possible before valuable data are lost.

Several basic study projects, including the Historic Resource Study, Historic Structure Preservation Guide, Cultural Landscape Report, and the List of Classified Structures Report need to be programmed. This is especially important since the Cultural Resource Preservation Program has selected the General Management Plan for Aztec Ruins for funding in Fiscal Year 1987.

Several projects have been accomplished since this plan was last updated in 1982. Project C-1, Install Fire and Intrusion Alarm; project C-4, Salvage and Preserve Collapsed Roof have been completed; and project C-6, Park History Study (which has been retitled Administrative History) has been funded for Fiscal Year 1987.

Some progress has been made on project C-2, Drain Groundwater Destroying Stone Ruins. Seven rooms in the Northwest section of the West Ruin were partially excavated to reduce static load and groundwater movement through walls resulting from differential fill and a drainage system was installed to carry water to the plaza drainage system. One additional room was almost completely excavated to eliminate problems associated with differential fill. One kiva in the southeast corner of the ruin was backfilled. Some of the cobblestone rooms front the plaza have also been partly backfilled.

AZRU - C2 Drain Groundwater Destroying Stone Ruins

Statement of Condition

For most of the history of Aztec Ruins National Monument, it has been thought that groundwater originating from irrigated lands adjacent to the monument has been a major, if not the major source of moisture attacking the ruins. However, recently some cultural resource management specialists in the Southwest Regional Office have come to believe that groundwater is of little, if any, threat to the resources and that precipitation is the major threat.

Empirical evidence supporting both points of view can be cited. Rises in the water table correlating with the irrigation season have been documented from test wells drilled to gain information on this very subject, and certainly precipitation adds to the problem by soaking directly into walls as well as into the ground. In truth, probably a combination of the two sources is affecting the ruins.

Current Action and Results

A variety of drainage systems have been installed over the years; in ruins walls, across roofs and fill, and below the ground in and around the ruins. These have had varying effects. Some have contributed some improvements, some were never particularly effective, and some have deteriorated to the point where they no longer work as intended.

In 1982, Larry Nordby of the Southwest Region Office, produced a comprehensive drainage plan for the West Ruin. In 1984, a portion of this plan was implemented. However, much of the plan remains to be done and the problem of groundwater remains.

Results of Current Action

These drains have contributed some improvement to the situation, particularly in rooms and kivas excavated below ground level. However, drainage problems continue at unacceptable levels. Deterioration of the ruins threatens loss of the primary resource for which the park was established.

Alternative Actions and Their Probable Impacts

1. No Action. With this alternative, unacceptable impact to the resource would be allowed. Extensive damage and eventual loss would result.

2. Continue Current Action. With this alternative, we would continue to maintain the current drainage systems. To the extent

that these are effective, some degree of protection would be provided the ruins. However, in as much as these systems are not fully effective, and do not cover the entire ruin, unacceptable impacts would continue.

3. Fully Implement the Comprehensive Drainage Plan. This action would involve backfilling additional rooms and installing additional drainage systems to provide protection for those portions of the ruin not presently covered.

4. Research sources of water impacting ruins.
With this alternative, research into the sources of water impacting the ruins would be conducted and the information could be used to better design ways of dealing with the problem.

5. Install solar powered exhaust fans in intact rooms.
Moisture does snot only impact walls, but roof beams, lintels, sills, etc. Exhaust fans could remove damp air and mitigate this problem.

Recommended Action

Since unacceptable levels of deterioration would continue under both alternatives 1 and 2, they are rejected. Whatever the source of the water, alternative 3 would help mitigate the effects and is recommended.

Alternative 4 should be undertaken to provide better understanding of the source(s) of moisture impacting the ruin.

Alternative 5 should be explored to determine if it is a viable treatment to be added to the mitigating alternatives.

AZRU - C3 Historic Structures Reports for the East Ruin, West Ruin and Reconstructed Great Kiva, and Hubbard Mound.

Statement of Condition

Excavation and preservation have been on-going activities at Aztec Ruins since 1916. Through natural adverse conditions and poor stabilization, much architectural information has been lost. In addition, architectural and archeological features have been removed, altered, or obliterated. Documentation of these activities, original conditions, techniques used, and results has often been unsatisfactory and in some cases, non-existent. However, a vast amount of architectural and archeological information has remained unaffected. Such information is necessary for the proper care of the archeological resources at Aztec Ruins National Monument.

Current Action and Results

No action is currently being taken. Subtle but continual loss of information continues.

Alternative Actions and Probable Impacts

1. No Action. Failure to complete an Historic Structures Report will assure the subtle but continual loss of information necessary for the proper care of valuable and non-renewable archeological resources at Aztec Ruins National Monument.

2. Complete Historic Structures Reports for the East Ruin, the West Ruin, and the Hubbard Site. Historic Structures Reports, required by NPS activity standards, are important repositories of archeological, architectural, historical, and preservation data critical to appropriate preservation and conservation treatments and activities. These data also provide an important information base for correcting past preservation mistakes. An Historical Structures Report will help insure the preservation of extant data and will aid in the recovery or retrieval of information lost to human or natural forces. Such a study should include an inventory of graffiti of early settlers of the vegas, etc.,

Recommended Action

Failure to take action will result in gradual but continual loss of necessary information; this alternative must be rejected. Alternative 2 is recommended as it will result in the most complete preservation of information possible.

AZRU - C5 Study and Preserve Plaster Art

Statement of Condition

The north wall of room 117, West Ruin, is covered with a plaster panel decorated with reddish color on the bottom of the wall. Zoomorphic and abstract figures have been incised into the plaster.This is one of the few extant plaster panels in prehistoric ruins in the NPS. The incised art is an important facet of the social and philosophical aspects of the prehistoric community at Aztec.

Current Actions and Results

A small protective roof provides some shelter from direct precipitation. However, capillary action draws groundwater into the fabric of the wall behind the plaster, causing spalling. Freeze-thaw cycles undoubtedly contribute to deterioration. This plaster panel is one stop on the self-guiding trail. A wire fence protects the panel from visitors.

Alternative and Their Probable Impacts

1. No Action. Failure to take action will result in continued deterioration and eventual loss of the plaster panel, a rare and important cultural resource.

2. Study and Implement Preservation Measures. Studies of methods of preserving this plaster panel will be conducted. Ideally, in situ preservation would be the most desirable treatment, but this may not be feasible. Removal for storage and/or exhibit may be the only practical method of preserving this panel. Once studies determine the best method, it should be promptly implemented.

Recommended Action

Alternative 1 could continue deterioration and result in loss of a valuable cultural resource; it is rejected. Alternative 2 is recommended.

AZRU - C7 Historic Structure Report for the Visitor Center

Statement of Condition

The structure now serving as the visitor center at Aztec Ruins National Monument was originally constructed by Earl Morris in the early 1920's as his residence while he was excavating the ruin, and then during his tenure as the first monument custodian, before becoming the visitor center. Original prehistoric materials, particularly roof beams, were apparently used in this construction. It was enlarged in the 1930's, the 1950's and the 1980's. Other modifications have occurred, such as re-arranging internal walls, re-roofing, painting, carpeting, etc. Because of the building's connection with Morris, one of the pioneers of SW archeology, its role in the history of the monument, and the fact that it is over 50 years old, it is considered an historic structure.

Facts about its construction, enlargements, modifications, repairs, etc. are currently scattered in many places, such as Morris' papers, NPS files, as well as in the minds of former and current employees. Such facts disappear when papers are lost or destroyed, when people forget, and ultimately through death. Such information is necessary for the proper preservation, use and management of this building.

Current Action and Results

No action is currently being taken. Subtle but continual loss of information continues.

Alternative Actions and Probable Impacts

1. No Action. Failure to complete a Historic Structures Report will assure the subtle but continual loss of information necessary for the proper preservation, use and management of this historic building.

2. Complete an Historic Structures Report for the visitor center. Historic Structures Reports, required by NPS activity standards, are important repositories of architectural, historical, ethno-historical, and preservation data critical to appropriate use, management and preservation. These data also provide an important information base for correcting past mistakes. An Historic Structures Report will help insure the preservation of extant data and will aid in the recovery or retrieval of information lost to human or natural forces.

AZRU - C8 Prepare Historic Resources Study

Statement of Condition

Historic Resources Studies identify and evaluate National Register eligible properties. Although Aztec Ruins National Monument is on the National Register of Historic Places (which see, 1972, p. 314), this study was not prepared at that time, nor has it been since.

Current Action and Results

No action is currently being taken. Data vital to such a study may be lost.

Alternative Action and Probable Impacts

1. No Action. Failure to complete an Historic Resources Study will result in loss of data necessary for such a study and for the proper interpretation and management of the resources.

2. Prepare an Historic Resources Study. Historic Resources Studies are required by NPS policy. They identify and evaluate historic events that occurred in the area and identify and locate sites, scenes, structures, or objects associated with them. These studies serve several important planning, interpretive and resource management purposes:

- documentation of historic events;

- location, description, and evaluation of cultural properties within the historic themes; and

- meeting the legal requirements of documenting National Register properties.

Recommended Action

Failure to take action will be a violation of policy and result in loss of data. Alternative 2 is therefore recommended.

AZRU - C9 Historic Structure Preservation Guide

Statement of Condition

Three prehistoric ruins (the West Ruin, the East Ruin, and the Hubbard Site) plus the reconstructed great kiva have been and continue to be subjected to preservation treatment. All but the East Ruin are interpreted to the public.

A Ruins Preservation Guide was prepared in 1979 by Steve Adams of the Navajo Lands Group Office. While undoubtedly portions of this guide remain valid, it is likely that at least some of it have been rendered obsolete by more recent developments.

Current Action and Results

No action is being taken to update this guide. By and large, preservation activities in the ruins follow the guide. Since there may well be better methods and materials available, we cannot be sure that the best efforts to preserve these valuable resources are being made.

Alternative Actions and Probable Results

1. No Action. Failure to prepare an up-to-date Historic Structures Preservation Guide could possibly result in continuation of less than optimum preservation treatments, and therefore greater possibility of adverse impact to the resources.

2. Prepare an Historic Structures Preservation Guide.

This will direct preservation maintenance activities on the above named structures. It will serve as a reference for programming, continued housekeeping, routine and cyclic preservation maintenance for park maintenance personnel. It will provide necessary information for orderly, timely, and proper inspection and maintenance. In addition, it will provide a way to evaluate maintenance activities.

AZRU - C10 Prepare a Cultural Landscape Report

Statement of Condition

The landscape in and around Aztec Ruins National Monument today is undoubtedly quite different than that which the Anasazi inhabitants saw. Trailer parks and commercial buildings intrude on the south, and other sides of the monument are bounded by irrigated pastures and orchards. Development on the monument grounds is also quite different. Portions of the monument are intensively landscaped with lawns and trees, and the portion which is allowed to assume a more natural growth has been heavily affected by groundwater and surface overflows from the irrigated lands nearby. It would be desirable to determine what the prehistoric landscape was. This information would be valuable in interpreting prehistoric life here, and could indicate whether it was possible to attempt to recreate a portion of this prehistoric landscape.

Current Action and Results

Existing landscaping is being allowed to continue, both on and surrounding the monument. Park and regional staff have and are consulting with the City of Aztec in planning the nature of further development in the monument vicinity. However, it is likely that any such development, however aesthetically pleasing, will not recreate the prehistoric scene.

Alternative Actions and Probable Impacts

1. No Action. By failing to provide a Cultural Landscape Report, present landscapes will continue and future development will be guided by other considerations than what existed prehistorically. In addition, the potential for loss of data concerning the prehistoric landscape exists.

2. Prepare a Cultural Landscape Report. This document identifies, evaluates, and determines appropriate management options for the cultural landscape. It will collect, evaluate, and present documentary and/or field survey findings and propose options for management. In addition, the information contained in it will be useful for interpretation.

Recommended Action

Failure to take action will mean that the landscape will be managed according to concerns other than prehistoric. Development and resulting changes to the landscape will obliterate features that would make it possible for the NPS to determine what the actual prehistoric landscape was like.

Even if it is not possible to restore the prehistoric scene, the knowledge provided by a Cultural Landscape Report will be useful for other interpretive and management purposes.

AZRU - C11 Update List of Classified Structures

Statement of Condition

Although there are 13 documented archeological sites within the boundaries of Aztec Ruins National Monument, only three (the East Ruin, the West Ruin, and the Hubbard Site) have been placed on the List of Classified Structures. In addition, both the reconstructed great Kiva and the Visitor center are historic structures, but are not on the list. This presents a false picture of the nature and extent of the archeological resources of the monument.

Current Action and Results

No action is being taken. The full nature of the resources of the monument is not properly documented on this list.

Alternative Actions and Probable Impact

1. No Action. The current lack of full documentation will continue.

2. Update the List of Classified Structures. The List of Classified Structures is an evaluated inventory of all historic and prehistoric structures having archeological, historic, and/or architectural/engineering significance. Updating this will better help managers in planning and programming appropriate treatment and in recording decisions regarding structures.

Recommended Action

Since alternative 1 will continue the lack of full documentation, alternative 2 is recommended.

AZRU - C12 Wall Bonding Study

Statement of Condition

Although the general outline is known, many of the details of the architectural history of the West Ruin are unknown. In addition, the effect of past stabilization on architectural details has not been fully documented and can influence simple observation-based determinations of what is a bond or butt. A well planned, professional research project based on wall bonding as well as other pertinent architectural features, and allowing for the changes produced by stabilization, would help in determining the construction sequence of the ruin. This information would assist in understanding and interpreting the West Ruin. As time passes, data vital to this project can be lost through deterioration.

Current Action and Results

No action is being taken. Our knowledge of the West Ruin is less than what it could be and data may be lost.

Alternatives and Their Probable Impact

1. No Action. Failure to take action will result in continuing our current level of knowledge about the architectural history of the West Ruin. Data may be lost through deterioration.

2. Implement Wall Bonding Study. In this way, information for better understanding and interpretation of the West Ruin can be gained. Lose of data through time can be mitigated.

Recommended Action

Alternative 2 is recommended as it will provide needed information for interpretation and research.

AZRU C-14 Prehistoric Wood Study

Statement of Condition

There is a large and yet to be determined number of prehistoric wood elements comprising part of the cultural resources of Aztec Ruins National Monument. Many of these are structural members of the prehistoric structures in situ, other elements have been removed and are stored in various places. Those elements still in place in the ruins are exposed to varying degrees of weathering. Those elements removed their original location still may be exposed to adverse impacts, and the original provenience may be poorly documented or even lacking. What documentation exists may be lost through deterioration of labels, tags, notes, etc.

Because of all this, a valuable portion of the resource is in danger and valuable data that can be derived from this resource may be lost.

Current Action and Results

This project was implemented. The XXX form was approved with the proviso that beams to be samples be re-submitted with an eye toward evaluating structural impacts. The inventory process has been started.

Original prehistoric roofs in the East and West ruins are protected by modern roofs. Those beams stored in room 24, East Ruin are protected somewhat by a modern roof built in this otherwise open room. Other elements are subjected to varying degrees of protection, being protected only by what incidental protection is offered by walls. At times in the past, at least some of the wood in the ruins was treated with pentachlorophenol, but this practice was stopped in the 1970's and is now contrary to NPS safety policy.

We can expect that beams subject to weathering will decay to the point that they will be neither useful as structural elements of the ruins nor as material for dendrochronological or other types of analysis. This could result in damage to the ruins as well as loss of data.

Alternatives and Their Probable Impacts

1. No Action. Failure to take any actions will result in eventual loss of beams in the ruins exposed to weathering, as well as possible loss of documentation for beams in storage.

2. Continue Current Action. Complete the inventory of prehistoric wood in storage in the visitor center and the East

Ruin, as well as *in situ.* Catalogue all wooden elements in storage that are properly documented. Determine which beams are to be sampled for dendrochronological studies and submit for approval. Apply an approved preservation treatment to wood in the ruins. The regional curator will determine the most appropriate action to take in regard to undocumented wood.

Recommended Action

Alternative 1 would result in loss of both prehistoric resources and data and is rejected. Alternative 2 is recommended.

AZRU - C15 Ruins Stabilization

Statement of Condition

There are three ruins in Aztec Ruins National Monument requiring stabilization. The West Ruin contains 185 ground floor rooms, 14 kivas, and the reconstructed great kiva, with a total of 6,790 linear feet of wall and 72,800 square feet of wall. The East Ruin contains 24 excavated and partially excavated rooms, with 720 linear feet of wall and 5,040 square feet of wall. The Hubbard Site (which was mostly backfilled in 1978) contains one exposed kiva with 75 linear feet of wall and 530 square feet of wall.

Following the completion of a multi-year stabilization project in 1978, responsibility for the maintenance of these ruins was turned over to the monument. Funding and FTE for a permanent mason was granted and the position filled. However, the funding for seasonal workers has been limited and the monument has never been able to field as large a crew as needed.

Current Actions and Results

Since there has not been enough crew to do all the work needed in a season, only the worst sections received work. Other sections are left until they, too, deteriorate greatly. We are never able to catch up, resulting in greater damage to the ruins, and increased expense over the long haul.

Alternatives and Their Probable Impacts

1. No Action. Failure to take any action will result in increasing deterioration of the ruins and eventual loss of the primary resource for which the monument was established.

2. Continue Current Action. Under this alternative, a small crew will be funded and some, but not all needed work will be done. Less damaged portions of walls will be left until they deteriorate sufficiently to be considered for work. This results in increased long-term expense and increased damage to the ruins as well as loss of original fabric.

3. Fully Fund the Ruins Stabilization Program. By fully funding the ruins stabilization program each year, all needed work will be done, not just the highest priority work. Less damage will occur to the ruins, and less expense will result since damage can be repaired in its early stages before extensive work is needed.

Recommended Action

No action would result in extreme damage and eventual loss of the

primary resource for which the monument was established. Continuing currently would result in the worst damage being fixed, but would result in increased damage and expense by leaving lesser work undone until damage increased to significant levels. Therefore, the third alternative is recommended.

AZRU - C16 Research Most Effective Methods of Ruins Preservation and Stabilization

Statement of Condition

A wide variety of methods and materials have been used over the past 65 years in attempt to stabilized and preserve the prehistoric resources of Aztec Ruins National Monument. None have proved to be fully effective. Deterioration of the ruins continues and we in effect, are merely treating the symptoms.

Current Action and Results

Currently, most stabilization efforts are directed to repair of deterioration. Eroded mortar is replaced with adobe mud amended with Rhoplex to increase the weather resistance. Eroded sandstone is replaced with fresh sandstone shaped to fit. Collapsed sections are rebuilt and voids filled with Rhoplex-mud and new or original stone, as appropriate.

Drains have been installed in attempt to reduce or eliminate damage from ground water and precipitation, however, they have not proved to be fully effective. There is even disagreement as to whether ground water or precipitation is the major source of impact.

Other than for the above mentioned drains, little is being done to treat the causes of deterioration, which continues. If present methods continue, it is foreseeable that at some point in the future, much if not all of the ruin will have been replaced with new material. Depending on the amount of damage to be repaired and our level of funding in any given year, we may not be able to keep up with the damage.

Alternatives Actions and Their Expected Results

1. Continue Current Action. With this action, deterioration to the ruin would continue and we would then try to repair the effects of this. Eventually, most if not all of the ruin would be effected.

2. Research the Most Effective Methods for Ruins Preservation and Stabilization. With this alternative, research would be conducted to determine the most effective methods to preserve the ruins and to repair and stabilize what damage does occur. Deterioration would be reduced.

Recommended Action

Alternative 2 is the most desirable solution to this problem, and is recommended. However, until such time as this alternative is implemented, we will continue with current action.

AZRU - C17 ARCHEOLOGICAL EVALUATION OF UNKNOWN MOUNDS

Statement of Condition

There are seven mounds (designated A through G) on the grounds of Aztec Ruins National Monument. Only one of these, Mound F, is definitely known to be prehistoric. Two others, and G, received limited testing in 1987 and are presumed to be prehistoric. Beyond this, we know nothing of the age or contents of these mounds.

Current Action and Results

Currently, nothing is being done. Since we do not know the nature of these mounds, we cannot properly manage them.

Alternative Actions and Their Probable Impacts

1. Continue Current Action: Under this alternative, nothing would be done to determine the nature of these mounds. Without this knowledge, we will be unable to properly manage them.

2. Archeological Evaluation of the Mounds. Under this alternative, a professional archeological evaluation of the mounds would be conducted to determine their age, and contents. Such an evaluation would be conducted as much as possible in a non-destructive manner. Once the nature of the mounds is determined, appropriate management strategies can be devised, and if appropriate, the information can be incorporated into the interpretive program.

Recommended Action

Since Alternative 1 would not provide us with needed information, is rejected. Alternative 2 in recommended.

OVERVIEW AND NEEDS: NATURAL RESOURCES

Aztec Ruins National Monument is a small area (27.14 acres) and has been heavily modified by man in prehistoric, historic, and modern times. About half the monument has been developed with landscaped grounds and modern buildings and facilities. For these reasons, Natural Resources problems are few, simple, and relatively uncritical.

Probably the most critical problem is the dense, unnatural stands of vegetation in the northeast section of the monument, which have accumulated as result of overflow from the irrigated fields and cattle pond just north of the monument. Although this overflow has been eliminated, the vegetation remains. As it dies and dries out it will present a significant fire hazard. A number of unexcavated ruins are located in or near this area and could be quite damaged by a fire.

Also significant, but perhaps not quite as critical are the water rights study and Quantification of Federal water rights. Water and water rights are limited resources in this area, and will undoubtedly grow scarcer as the Aztec area grows. If the Park Service should lose its water rights; through ignorance of their existence, the monument could find itself with insufficient water to meet its needs.

The least significant of our natural resource problems is the control of noxious plants and animals. While these do have the potential for causing some damage to the ruins and other man-made features, as well as injuring visitors, in general they are more of a nuisance than a real problem. Control is handled on a routine basis as part of our normal operations. Since these plants and animals occur in lands surrounding the monument, they re-infest our land and permanent eradication is impossible.

Since none of these projects is large or complex, they all theoretically can be accomplished in any one fiscal year if funding and personnel is provided. In following years we would need only continue control of noxious plants and animals.

NATURAL RESOURCE PROJECT STATEMENTS

AZRU - N1 Water Rights Study

Statement of Condition

Aztec Ruins National Monument was established in 1923, and enlarged in 1928, 1930, and 1948. With the acquisition of 1.8 acres of land from the American Museum of Natural History in 1930 came "one sixteenth (1/16)" of one share in running space in the Farmers Ditch, a community ditch existing under the laws of New Mexico. Other water rights which the monument may have are not known.

Current Management Action

Water from the above source is used to irrigate monument lands, and together with domestic water furnished by the City of Aztec, is sufficient for present use.

Alternative Actions and Their Probable Impact

1. No Action: Failure to follow proper procedure may legally weaken the United States' position in perfecting its own Water Rights and in future litigation against other water users or developers within the same drainage.

2. Undertake Water Rights Study: This will determine the legal classification of all surface and ground waters within the existing and authorized boundaries of the park, and identify procedures for administrative control (Federal or State System) for the park in accordance with NPS Water Resources and Water Rights Management Policy. This will assist managers and planners to integrate legal procedures established by statutes or judicial decisions for the protection of Water Rights into the planning process for the park.

Recommended Course of Action

For the reasons stated above, the first alternative is rejected, and the second alternative is recommended.

AZRU - N2 Quantification of Federal Water Rights

Statement of Condition

The exact amount of Federal Water Rights is unknown.

Current Management Action

None

Results of Current Action

We are unable to comply with the President's Initiative of June 6, 1978 concerning water resources. Park planners and managers do not know the amount of water legally available for NPS use.

Alternative Actions and their Probable Impacts

1. No Action: Ignorance of the amount of water available will continue and we will remain unable to comply with the President's Initiative.

2. Research and map land ownership, water sources, diversions, and distribution system for the area to determine quantity of water legally available to NPS: This course of action will provide us with the information needed to plan and manage water resources as well as comply with the President's Initiative.

Recommended Course of Action

For the reasons stated above, the first alternative is rejected, and the second recommended.

AZRU - N3 Vegetation Management

Statement of Condition

Overflow of water from cattlepond and irrigated fields to the north of the monument has resulted in dense stands of riparian vegetation in the northeast portion of the monument. This vegetation is historically inaccurate, hinders access to several unexcavated ruins, and poses a serious fire hazard. A heavily used county road runs adjacent to this section, threatening ignition from exhaust sparks, thrown matches/cigarettes, etc.

Current Management Actions

The landowner of these lands and cattlepond has rights of drainage across monument land. In 1979 a drain pipe was installed to carry overflow from the pond across monument lands, and the earthen dam containing the pond raised. This has largely eliminated flooding in this area, however, excess vegetation remains.

Results of Current Action

The flooding which produced this problem has been eliminated, however, the vegetation remains. Having dried from lack of water, the dried brush presents a real and immediate fire hazard.

Alternative Actions and their Probable Impacts

1. No Action: Under this alternative, the excess vegetation would remain. This would continue the historical inaccuracy, impede access to ruins, and pose a fire hazard.

2. Removal by Manual Clearing: Under this alternative, park or contract workers would cut brush and haul off for disposal elsewhere. Assuming sufficient funds and labor were available, this would correct the situation, but this may not be the most cost effective method.

3. . Controlled Burning: Under this alternative, the excess vegetation would be burned off. Conditions would be chosen and controlled such that the fire would present minimal hazard. However, burning vegetation covering unexcavated ruins could have adverse impacts on those resources.

4. Construct Firebreak along County Road: With this alternative, a firebreak would be cleared of vegetation adjacent to this county road. This would reduce or eliminate the potential for ignition from sources on this road.

However, other sources of ignition would remain and unnatural vegetation would still cover much of the monument.

Recommended Course of Action

The first alternative is rejected for the reasons stated above. The fourth alternative would be a partial solution, but would not completely eliminate fire hazard and unnatural vegetation would continue. The recommended course of action is a combination of alternative 2 and 3. Manual clearing would be used in sensitive areas, such as unexcavated ruins. Controlled burning could then be used to clear the bulk of the vegetation.

AZRU - N4 Control of Noxious Plants and Animals

Statement of Condition

Vegetative cover within the monument was originally typically that of the Upper Sonoran Zone, but has been drastically altered by human occupation. Many exotic trees have become part of the scene and are presently affording shade for visitors and food and cover for animals. Plants such as russian thistle and wild morning glory pose a serious threat to the ruins, walkways, and other man-made objects by expediting deterioration of walks, blacktop, etc. Puncture-vine presents a hazard to visitors with thin-soled shoes or bare feet and causes problems with mechanized equipment with pneumatic tires.

Ground squirrels burrow in and under the ruins and walks, causing structural damage and erosive potential. Domestic and feral animals, including dogs, cats, and cows, stray into the monument and harass wildlife, foul footpaths, and could cause injury. Animals also are vectors for diseases like plague and rabies.

Current Management Action

Russian thistle and puncture vine are controlled by physical removal: but removal of wild morning glory requires an approved herbicide. Ground squirrels are controlled by selective methods. Stray domestic animals are returned to owners when captured.

Alternative Actions and Their Probable Impacts

1. No Action: This alternative would allow noxious plants and animals to continue to exist on the monument unhindered. The deleterious effects mentioned above would also continue unabated.

2. Continue Current Actions: The actions described above will continue. By and large, control will be achieved.

3. Replace Exotic Trees: Exotic trees will be allowed to die and replaced with native species, eliminating the problem.

Recommended Actions

Since Alternative 1 will not solve any of these problems, but will allow harmful effects to continue, it is rejected.

A combination of Alternatives 2 and 3 is recommended, since this will result in adequate control of both floral and faunal pests.

AZRU - N5 Removal of trash from the North East Section of the Monument

Statement of Condition

The north east section of the monument is covered with piles of debris from ruins stabilization, piles of vegetation from landscaping, concrete slabs, and miscellaneous trash.

Current Action and Results

Currently, nothing is being done to correct this situation. The area is unsightly.

Alternative Actions and Their Probable Impacts

1. Continue Current Action. Under this alternative action, nothing would be done and the unsightly mess would continue.

2. Clean up the Mess. Under this action, all the debris and trash would be removed and the area maintained as a park.

Recommended Action

Since Alternative 1 would continue an unacceptable situation, Alternative 2 is recommended.

RESOURCES PROGRAMMING SHEET

PARK: Aztec Ruins National Monument REGION: SW STATE: NM NATURAL/CULTURAL DATE: 09/09/87 PAGE 1 OF 1

Area PRI-ORITY	RMP REF. NO.	PACK. NO.	PROJECT TITLE	ACTION TYPE	YEAR 1 NPS M.Y.	YEAR 1 COST/ $1000	YEAR 2 NPS M.Y.	YEAR 2 COST/ $1000	YEAR 3 NPS M.Y.	YEAR 3 COST/ $1000	YEAR 4 NPS M.Y.	YEAR 4 COST/ $1000	YEAR 5 NPS M.Y.	YEAR 5 COST/ $1000
1	AZRU-C15		Ruins Stabilization		1.5	50	1.5	50	1.5	50	1.5	50	1.5	50
2	AZRU-C2		Drain Groundwater		1.1	33	1.1	33	1.1	33	1.1	33	1.1	33
3	AZRU-C14		Prehistoric Wood Study		0.1	6	0.1	6	0.1	6	0.1	6	0.1	6
4	AZRU-C5		Preserve Plaster Art					15						
5	AZRU-C3		HSR East & West Ruins				0.2	20	0.2	20				
6	AZRU-C8		Historic Resources Study				0.2	10						
7	AZRU-C7		HSR - Visitor Center						0.1	10				
8	AZRU-C9		HSPG								0.1	10		
9	AZRU-C10		Cultural Landscape Report								0.2	15		
10	AZRU-C11		List Classified Structures										0.1	3
11	AZRU-C12		Wall Bonding Study										0.1	10
12	AZRU-C16		Research Ruins Preservation & Stabilization				0.2	20	0.2	20	0.2	20	0.2	20
13	AZRU-C17		Archeological Evaluation of Unknown Mounds						1.0	40	1.0	40	1.0	40

RESOURCES PROGRAMMING SHEET

PARK: Aztec Ruins National Monument REGION: SW STATE: NM NATURAL/CULTURAL DATE: 09/09/87 PAGE 1 OF 1

Area PRI-ORITY	RMP REF. NO.	PACK. NO.	PROJECT TITLE	ACTION TYPE	YEAR 1 NPS M.Y.	YEAR 1 COST/ $1000	YEAR 2 NPS M.Y.	YEAR 2 COST/ $1000	YEAR 3 NPS M.Y.	YEAR 3 COST/ $1000	YEAR 4 NPS M.Y.	YEAR 4 COST/ $1000	YEAR 5 NPS M.Y.	YEAR 5 COST/ $1000
1	AZRU-N3		Vegetation Management				0.3	6						
2	AZRU-N4		Noxious Plant/Animal Control		0.1	2	0.1	2	0.1	2	0.1	2	0.1	2
3	AZRU-N1		Water Rights Study							3				
4	AZRU-N2		Quantification of Water Rights							3				

AZTEC RUINS NATIONAL MONUMENT

Anonymous

1876 Report of the Exploring Expedition from Santa Fe, New Mexico, to the Junction of the Grand and Green Rivers of the Great Colorado of the West, Washington, D.C.

N.D. "Inventory of Collections Pertaining to the Southwest Archeological Center," Mimeograph Report on file at Aztec Ruins National Monument.

Bauer, Clyde M.

1917 Contributions to the Geology and Paleontology of San Juan County, New Mexico; Stratigraphy of a part of the Chaco River Valley, U.S. Geological Survey Professional Paper 98: 271-78, Washington, D.C.

Birnie, Rogers, Jr.

1879 Report on Ruins Visited in New Mexico, U.S. Geological Survey West of the One Hundredth Meridian, Final Report, 7 (Archaeology): 346-50, U.S. Army Engineering Department, Washington, D.C.

Corbett, John M.

1963 Aztec Ruins National Monument, New Mexico, National Park Service Historical Handbook Series, No. 36, Washington, D.C.

Douglass, Andrew E.

1932 Tree Rings and Their Relation to Solar Variation and Chronology, Smithsonian Institute, Annual Report, 1931: 3034-12, Washington, D.C.

1935 Dating Pueblo Bonito and Other Ruins of the Southwest, National Geographic Society, Contributions to Technical Papers, Pueblo Bonito Series 1.

Endlich, Frederic M.

1877 Description of Ruins Near Aztec, New Mexico, U.S. Geological and Geographical Survey of the Territories, Embracing Colorado and parts of Adjacent Territories, 9th Annual Report, 1875: 176-91, Washington, D.C.

Howe, Sherman S.

1947 My Story of the Aztec Ruins, Times Hustler Press, Farmington, New Mexico.

Lister, Florence C. and Robert H. Lister

1968 Earl Morris and Southwestern Archeology, University of New Mexico Press, Albuquerque, New Mexico.

1987 Aztec Ruins on the Animas, University of New Mexico Press, Albuquerque, New Mexico.

Moorehead, Warren K.
1908 "Ruins at Aztec and on the Rio La Plata, New Mexico," American Anthropologist, Vol. 10, No.2: 255-63.

Morgan, Lewis
1881 Ruins of Houses of the Sedentary Indians of the San Juan River and its Tributaries, Contributions to North American Ethnology, 4: 154-97, Washington, D.C.

Morris, Ann Axtell
1934 Digging in the Southwest, Doubleday, Doran and Company, New York.

Morris, Earl H..
1917 "The Ruins at Aztec," El Palacio, 4:3: 43-69, Santa Fe, New Mexico.

1919 "Further Discoveries at the Aztec Ruin," El Palacio, 6: 17-23, 26, Santa Fe, New Mexico.

1921 "Chronology of the San Juan Area," Proceedings of the National Academy of Sciences, 7: 18-22.

1928 The Aztec Ruin, American Museum of Natural History, Anthropological Papers 26, Parts I-V.

National Park Service
1976 Outline of Planning Requirements.

1977 Interpretive Prospectus

1982 Resources Management Plan

1986 Statement for Management

Nelson, Nels C.
1917 "Excavations of the Aztec Ruins," American Museum Journal, v. 18. no. 2.

Nusbaum, Jesse L.
1934 "Archeological Discovery at Aztec Ruins National Monument," Southwestern Monuments Monthly Report, April, Supplement: M-N.

Prudden, Theophil Mitchell
1903 "The Prehistoric Ruins of the San Juan Watershed," American Anthropologist, v. 5.

Reymond, Jonathon Eric
1971 Mexican Influence on Southwest Ceremonialism, Ph. D. Dissertation, Southern Illinois University, Carbondale, Illinois.

Richert, Roland
1964 Excavation of a Portion of the East Ruins, Aztec Ruins National Monument, New Mexico, Southwest Monuments Association Technical Series, Volume 4, Globe, Arizona.

Robinson, William L., Bruce G. Harril, and Richard L. Warren
1974 Tree-Ring Dates from New Mexico B: Chaco-Gobernador Area, Laboratory of Tree-Ring Research, Tucson, Arizona.

Schart, William L.
1977 An Assessment of the Archeological Resources of Aztec Ruins National Monument, New Mexico, Southwest Cultural Resources Center, Southwest Region, National Park Service.

Vivian, R. Gordon
1959 The Hubbard Site and Other Tri-Walled Structures in New Mexico and Colorado, Archeological Research Series, Number 5, National Park Service, Department of the Interior, Washington, D.C.

Weltfish, Gene
1932 :Prehistoric Basketry of Aztec Ruins National Monument," Smithsonian Miscellaneous Collections, 87: (no. 7), Washington, D.C.

Wissler, Clark
1927 "The Aztec Ruin National Monument," Natural History, v. 27, no. 3.

STABILIZATION REPORTS FOR AZTEC RUINS

West Ruin

1938 -1946 Steen, Charlie R., et. al. Various work including capping, patching, and drainage work in 78 rooms, 8 kivas, and the northwest corner of the East Ruin.

1939 -1941 Vivian, R. Gordon. Work in 12 rooms and one kiva was mostly confined to repairing modern protective roofs and improving drainage.

1950 Vivian, R. Gordon, and Raymond Rixey. Twenty rooms were capped and patched.

1951 Richert, Roland. Twenty three rooms of the south wing were re-excavated and stabilized; 43 rooms in the east wing and 28 rooms in the north wing were stabilized.

1959 Shiner, Joel. Stabilization was performed on 14 rooms, 4 kivas, and on the north plaza.

1959 -1960 Shiner, Joel. Stabilization was performed on 40 rooms and one kiva.

1965 Voll, Charles, and Martin T. Mayer. Stabilization was performed on 22 rooms and three kivas. Minor repairs were made on additional rooms.

1967 Mayer, Martin T. Heavy rains caused the north wall of room 89 to fall, and this was rebuilt.

1973 Laudeman, Peter. Heavy rains caused severe damage to Kiva N in the West Ruin and Kiva 2 in the Hubbard Site. Emergency repairs were carried out here and to drains in the north tier. Also, the first year's work of a 4 year project was carried out in 54 rooms.

1974 Trussell, Marianne. The second year of the 4 year project. Forty seven rooms were stabilized.

1975 Adams, Stephen E. The third year of four. Thirty five rooms and 4 kivas stabilized.

1977 Adams, Stephen E. The 4 year project was extended to 6 years, this being the fifth year. Forty rooms and 4 kivas stabilized.

1978 Schart, William L. The sixth and final year of the project. Seventy five rooms and 5 kivas were stabilized.

1982 Adams, Stephen E. A french drain was installed in back of

the north wall to intercept water from the irrigated fields north of the monument.

East Ruin

1949 Vivian, R. Gordon. Support and/or protection for 11 rooms with original ceilings was provided.

1953 Richert, Roland. Ceilings in 13 rooms were jacked up and supported.

1956 Richert, Roland. Seven rooms without ceilings, that had been excavated, were stabilized.

1957 Vivian, R. Gordon and Roland Richert. Overburden was removed from original ceilings and protective roofs were installed.

1960 Shiner, Joel L. More work on rooms with ceilings.

1965 Voll, Charles R. and Martin T. Mayer. One room was stabilized and minor repairs made.

1967 Mayer, Martin T. Heavy rains caused the east wall of room 2 to fall and this was rebuilt.

Hubbard Site

1954 Vivian, R. Gordon, and Tom Mathews. Debris was cleaned away from the walls, which were stabilized and plastered with soil cement.

1960 Shiner, Joel. The soil cement was replaced with portland cement, tinted to a brown color. Decayed stone was also replaced.

1965 Voll, Charles B., and Martin T. Mayer. Kiva 2 was stabilized and minor repairs made.

1978 Schart, William L. Cement plaster was removed from all walls, which were then stabilized. All but the central kiva and four outer rooms were backfilled.