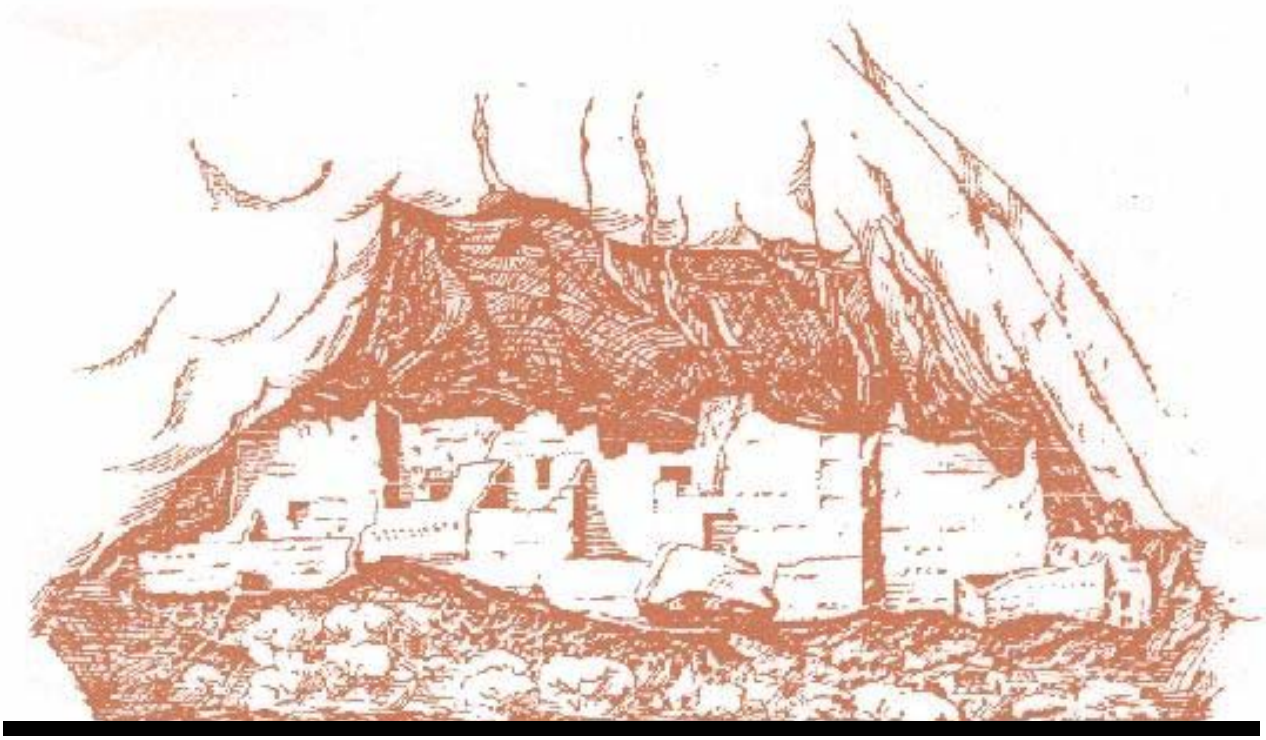
National Park Service
U.S. Department of the Interior

General Management Plan Summary

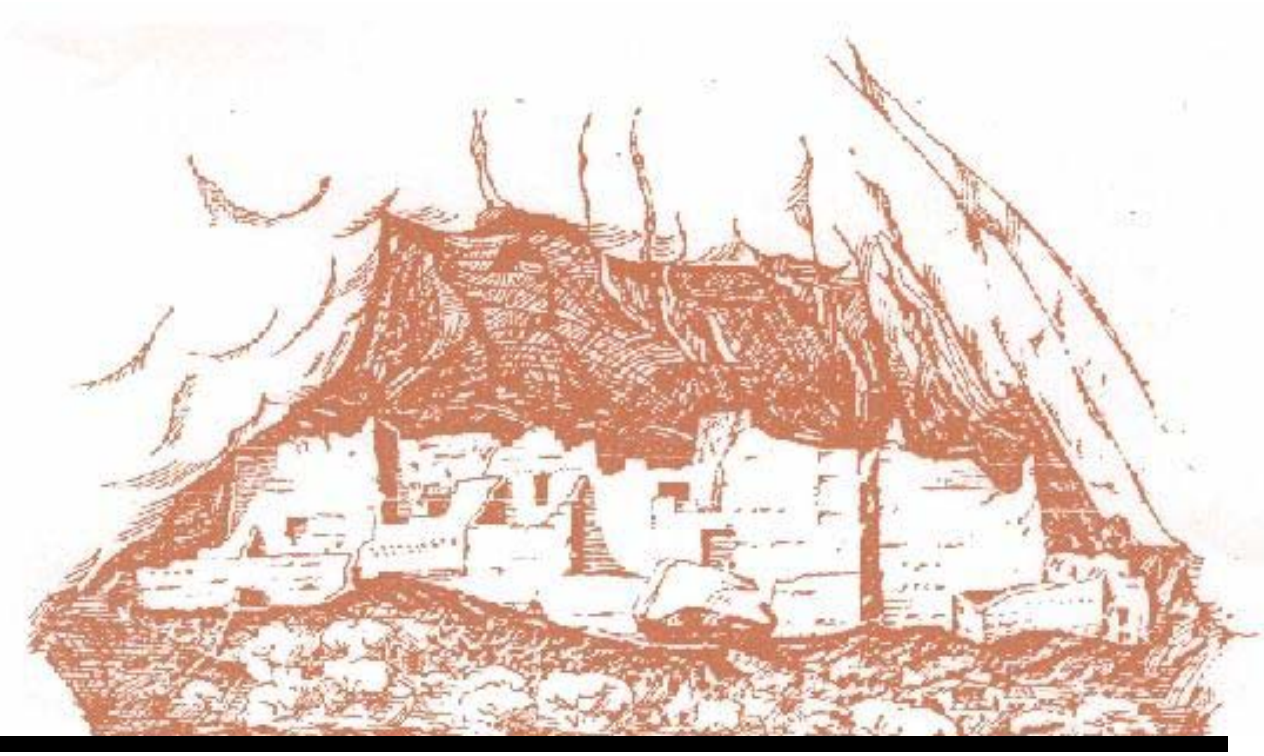


TONTO

National Monument • Arizona

National Park Service
U.S. Department of the Interior

Final Environmental Impact Statement
General Management Plan



TONTO

National Monument • Arizona

Final Environmental Impact Statement

General Management Plan

TONTO

National Monument • Arizona

SUMMARY:
This *General Management Plan/Final Environmental Impact Statement* describes and analyzes alternatives for the management of Tonto National Monument over the next ten to fifteen years. Four alternatives were considered - a no-action and three action alternatives including the National Park Service (NPS) proposal. The NPS proposal would construct a new administrative facility within monument boundaries to improve staff needs and remodel the existing visitor center to increase visitor orientation and education opportunities. The management of cultural and natural resources would also improve with more staff and the information needed to conduct preservation programs. The plan assesses impacts to archeological and historical resources, long-term health of natural ecosystems, visitor experiences, economic contribution to local communities, adjacent landowners, and operational efficiency. The plan also describes cumulative effects for each alternative.

PUBLIC COMMENT:

The draft General Management Plan/Environmental Impact Statement was prepared to evaluate and assess the impacts of a range of alternatives and to provide the public with an opportunity to comment. The draft plan was available for public comment for sixty days in 2002. Refer to Appendix 4 in this document for a list of comments received from the public and the NPS response to those comments.

United States Department of the Interior • National Park Service • Tonto National Monument

Table of Contents

PURPOSE OF THE PLAN 1

Introduction 1
Purpose of the Plan 1
Need for the Plan 1
Planning Issues and Concerns 2
The Planning Process 3
The National Park System 4
Park Purpose 4
Park Significance 5

MISSION STATEMENT (A VISION FOR THE FUTURE) 7

GPRA Mission Goals 8
Park Mission Goals 8

VISITOR EXPERIENCE AND THE PARK ENVIRONMENT 15

MANAGEMENT PRESCRIPTIONS 25

THE PROPOSAL AND ALTERNATIVES 31

ENVIRONMENTAL CONSEQUENCES 77

Introduction 77
Cultural Resources— Archeology 78
Cultural Resources—Cliff Dwelling Environment 80
Cultural Resources— Landscapes 81
Cultural Resources—Historic Structures—List of Classified Structures and Mission 66 83
Cultural Resources— Ethnography 85
Natural Resources—Topography, Geology, and Soils 86
Natural Resources—Vegetation 88
Natural Resources—Wildlife 90
Natural Resources—Threatened and Endangered Species 91
Natural Resources—Water Resources, Wetlands, Floodplains 93
Natural Resources—Air Quality 94
Natural Resources—Natural Quiet 96
Visitor Use, Experience, Accessibility 97
Scenic Vistas, Viewsheds 100
Adjacent Land, Partnerships 101
Facilities—Visitor/Administrative Facility, Parking Area (Including Public Safety) 102
Museum Collections, Reference and Archives Library 104
Employee Residences 106
Trails 107
Maintenance Facility, Entrance Station, Roads, Volunteer Trailer Pad, Picnic Area 108
Operational Efficiency—Visitor Center and Headquarters 109
Water, Septic, and Solid Waste Systems 110
Commercial Services 112
Boundary 113
Economic Contribution To Gateway Communities 114
Cumulative Effects 115
Long-Term Integrity Of Archeological Resources 117
Historic Character of the Built Environment 121
Long-Term Integrity of Ethnographic Resources 125
Long-Term Integrity of Natural Systems and Processes (Soils, Vegetation, Wildlife, Threatened and Endangered Species, Water Resources) 129
Long-Term Quality of Air and Natural Quiet 133
Ability to Use, Experience, and Access Park Resources 137
Scenic Vistas, Viewsheds 142
Impacts to Adjacent Lands and Economies of Gateway Communities 144
Operational Efficiency 147

CONSULTATION/COORDINATION 155

Public Involvement, Agencies Consulted 155
Planning Team 155
Contributors 156
List of Recipients 156

REFERENCES CITED 159

APPENDIX 1: LEGISLATION 161

APPENDIX 2: FUTURE PLANS AND STUDIES 163

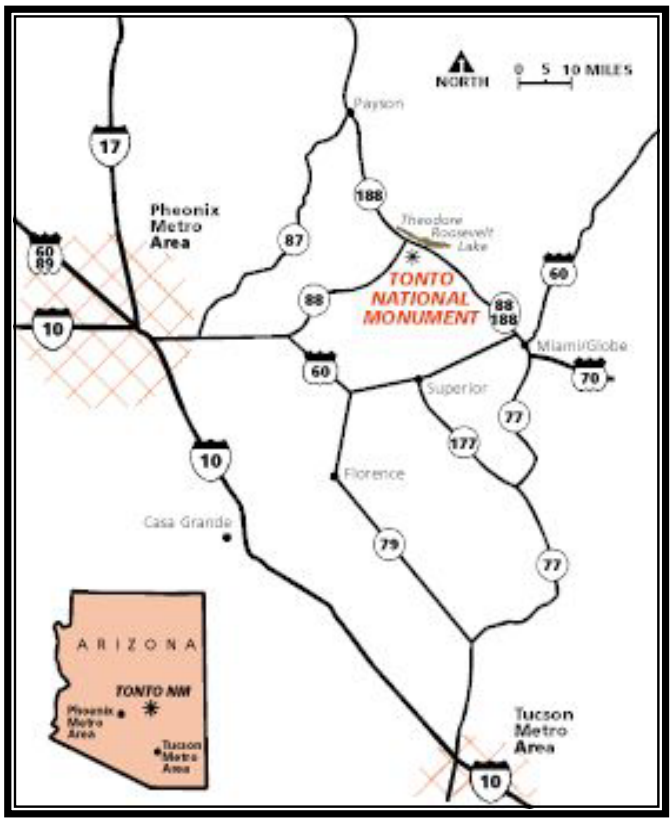
APPENDIX 3: CULTURAL HISTORY 165

APPENDIX 4: PUBLIC COMMENTS & NPS RESPONSE 167

PURPOSE OF THE PLAN

Introduction

Tonto National Monument is located in east central Arizona's Gila County only 50 air miles east of Phoenix in a rapidly changing regional environment. The monument was established to protect numerous prehistoric archeological sites including two Gila-phase cliff dwellings of the Salado culture. The primary sites are the Upper and Lower Cliff Dwellings. Rock shelters overlooking Tonto Basin have protected the nearly 700 year-old masonry cliff dwellings. Thirteen smaller remote cliff dwellings and fifty surface sites also have been documented in the monument. Six of the archeological sites are on the List of Classified Structures. Evidence of Archaic, Apache or Yavapai, and historic Euro-American occupations is also found among the sites. Archeological excavations have revealed well-preserved collections of pottery, agricultural tools, ornaments, textiles, and more. The diversity of the natural setting located between steep cliffs and bajadas (gently sloping hills) supports rich Sonoran Desert vegetation. The astonishing variety of plants provides habitat for over 200 species of wildlife.



Purpose of the Plan

The National Parks and Recreation Act of 1978 tasked the National Park Service (NPS) to prepare General Management Plans (GMP) for all national park units. The purpose of the General Management Plan is:

- To clearly describe specific resource conditions and visitor experiences in various management units throughout the park and
- To identify the kinds of management, use, and development that will be appropriate to achieving and maintaining those conditions.

The accompanying environmental documentation provides sufficient information to evaluate alternatives and provide the basis for a Record of Decision documenting the NPS's choice of a preferred action.

Need for the Plan

Tonto National Monument's previous management document was completed in 1962. Much has changed since then making the original plan insufficient to provide adequate guidance for today's management of the monument. There is potential for greatly increased tourism within Tonto Basin as a result of new and expanded recreational facilities at Roosevelt Lake, improved highway access from Globe and Payson, and the increased

growth of the Phoenix metropolitan area. A new GMP is needed to provide a rationale for making management decisions that affect the park's cultural and natural resources, visitors' understanding of the site, and park administration. This new plan will balance the protection of park resources with the needs of visitors and administration in a comprehensive approach. It includes measures for the preservation of the resources and indicates the types and general intensities of development. When completed, the final plan will set forth the basic management philosophy for the park.

The plan presents a proposed action and three alternatives. The consequences of implementing these actions on cultural and natural resources, visitor use, scenic viewsheds, nearby lands, partnerships, facilities, operational efficiency, and the socioeconomic environment are analyzed; so far as can be determined by a strategic plan. It documents the process used by the National Park Service in preparing a general management plan.

Planning Issues and Concerns

Cultural Resources – Archeological sites continue to deteriorate from both natural and human erosive forces compromising their structural integrity and research values. Cultural landscape features and ethnographic sites are not identified and documented.

Natural Resources – Changes in wildlife and vegetation species and populations are not documented and assessed. Threatened and endangered species are not identified. There are several non-native species in the park, some of which may be extremely disruptive to native species and habitats. The riparian area is integral to the overall health of the park by providing important habitat for wildlife in the Sonoran desert. Hydrological information to assess water use and its effects on groundwater sources and the riparian area are not known.

Natural Quiet – Impacts to natural sound from both internal and external activities and management practices are not measured and assessed.

Visitor Use, Experience, and Accessibility – Existing facilities, programs, and staffing are inadequate to provide visitor services for the existing and increasing numbers of visitors. The visitor center is not large enough to accommodate improved orientation information and an expanded educational program. The second floor facilities are not accessible. The museum exhibits are outdated and occupy inadequate space, which does not allow for rotation or expansion. The park has many artifacts that are not displayed for public view. During the busy spring season, the small restrooms do not accommodate all visitors and the parking area fills to capacity forcing visitors to either park unsafely along the entrance road shoulder or continue their journey without stopping.

Scenic Viewsheds - The contemporary scene surrounding the park still retains some scenic elements that were present at the time of the Salado occupation. Changing land uses inside and outside the park affect cultural as well as scenic viewsheds.

Adjacent Land/Partnerships – The park is completely surrounded by Tonto National Forest whose management is generally consistent with the park. However, some national forest recreational activities are not allowed in the park. Therefore, accurate boundary protection measures, such as fencing and enforcement patrols, are required, as are expanded partnerships with the U.S. Forest Service and other nearby landowners to reduce impacts from external activities, protect natural and

cultural resources, and increase the quality of interpretive and visitor services.

Facilities – Office and workspace is inadequate for current and anticipated increased staff levels. The visitor center lacks sufficient space for employees to work, conduct meetings, organize a library, and store equipment and supplies.

No residences are available to house seasonal employees or volunteers. Hiring employees and recruiting volunteers is difficult without having accommodations for them.

Due to the steep, rugged terrain, no handicapped accessible trails are available for use in the park.

Staffing – The existing interpretive staff is not large enough to handle the increasing number of visitors. Additional staff is needed to provide quality visitor service and experiences for the visiting public. The existing cultural and natural resource staff is not large enough to properly manage the resources entrusted to their care. Additional staff is needed to conduct high-quality preservation programs.

Boundary – The Cave Canyon watershed, which contains the park's only perennial surface water source, originates outside the monument and is potentially impacted from external activities.

The Planning Process

The planning process builds upon the logic established for national parks, starting with the national park system and all other applicable laws, regulations, and policies. The proposed action and alternatives displayed in this document are based on the purpose and significance of Tonto NM. Alternatives in the plan have three common components—*the mission statement, mission goals, and management prescriptions*. Each alternative responds differently in addressing the park's mission goals.

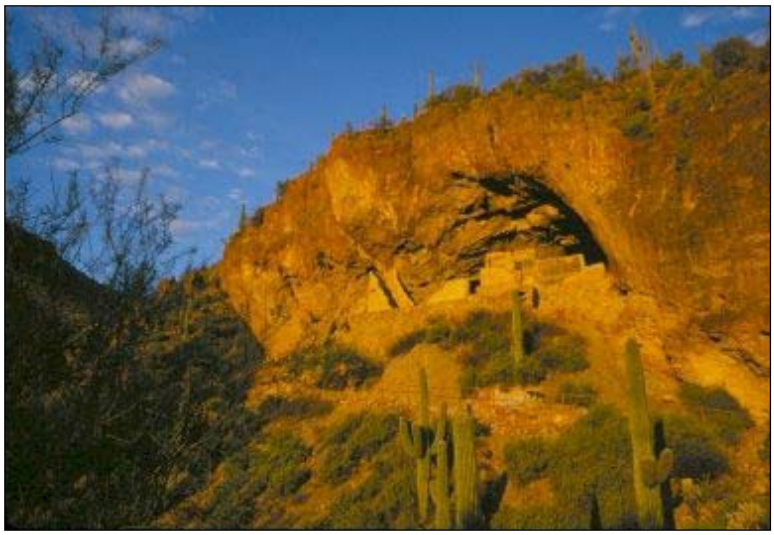
The mission statement is a short narrative that describes the park's desired future condition. It is meant to stand the test of time and reflect the park's purpose and significance. It expresses the management philosophy for the park and what the park is to be like in the future.

The park's mission goals capture the essence of the mission statement, providing clarity and priorities. These objectives are issue-, resource-, or geographic-specific. They may include products to be produced or conditions to be attained or maintained. As a whole, objectives are interrelated and interdependent on one another. The park's mission goals provide a basis for allocating resources and describing regions in the park.

Management prescriptions are geographically based. Prescriptions describe characteristics of the management region for which they were developed and define the outputs, activities, and projects for that region. The rationale for defining regional boundary delineations is included in this planning document.

Management prescriptions for each region are based on the character and condition of the resource involved. They are not only tied to local or park-wide needs but also take into consideration factors beyond park boundaries. A menu of available management prescriptions is developed. Each alternative revolves around a common theme, and the same set of prescriptions is applied differently over park lands depending on the theme of the alternative. Themes set the basis for developing distinctly different alternatives that provide a variety of visitor experience options.

The plan provides general or strategic guidance and is not detailed, specific, or highly technical in nature. Highly technical environmental analysis is to be done when funds become available to begin design of facilities, if prescribed by the management plan, when site-specific impacts can be addressed. All undertakings will also be subject to the National Historic Preservation Act's Section 106 review and compliance prior to implementation.



The National Park System

The national park system represents our national heritage and includes a collection of the nations most outstanding and significant natural, cultural, historic, and recreational resources.

The National Park Service's purpose of conserving resources—whether they are natural, cultural, historic, or recreational—recognizes the importance of preservation as an active management tool. This preservation principle respects both natural and human relationships and emphasizes the value of maintaining land for the purpose of preserving natural ecosystems, historic significance, and outstanding recreational opportunities.

Balanced against the protection and preservation of these resources is the value of public enjoyment by present and future generations. Human use often can threaten the very resources that the National Park Service is entrusted to protect. Many public debates have revolved around the balancing of these two National Park Service purposes. Whether it is telling a story or carefully protecting resources, the Service uses the principles of human and natural management to accomplish its mission. But at the very least, "these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system managed for the benefit and inspiration of all people." (16 USC 1a-1;1970)

Park Purpose

Each park in the National Park System is established for a specific purpose. The reason or reasons why Tonto National Monument was set aside is called its *park purpose*. The park purpose reflects current scientific or scholarly inquiry and interpretation. Purpose statements are based on enabling legislation, legislative history, and historic trends. Other legislation that affects each park unit is listed under Servicewide Law and Policies on the following page.

The following purpose statement reflects the mandates and legislative intent for the creation of Tonto National Monument:

> *Tonto National Monument preserves, protects, interprets, and manages prehistoric cliff dwellings, other archeological sites, cultural materials, and the associated*

Sonoran Desert environment where the Salado lived more than five centuries ago.

Park Significance

Each national park unit contains resources and values that make it special and nationally significant. Tonto National Monument fulfills a particular "niche" in the National Park System. Significance statements capture the essence of Tonto National Monument's importance to our nation's natural and cultural heritage. They describe the distinctiveness of the aggregate of resources that distinguishes Tonto National Monument as one of the units in the national park system that offers a unique experience within a regional, national, and global context.

Significance statements identify the exceptional values and resources that must be preserved and maintained to achieve the purpose of the park. These statements also help park managers set resource protection priorities and identify primary park interpretive themes and desirable visitor experiences.

- Tonto National Monument contains the only examples of prehistoric Salado culture in the National Park System, and the best-preserved Gila-phase cliff dwellings representing that culture that are interpreted and accessible to the general public.
- Three major and several smaller cliff dwellings, numerous other sites, artifacts, and the surrounding Sonoran Desert landscape have enormous potential for teaching about indigenous peoples and how they adapted and thrived in an arid environment.
- Tonto National Monument is uniquely positioned to instill public understanding of the Sonoran Desert and the need for the day-to-day preservation of its resources.
- Textiles from Tonto include some of the finest prehistoric examples in North America in regard to quantity, degree of preservation, variety of weaves, and weaving techniques.
- Tonto has a fine collection of Salado polychrome ceramics, which were among the most widely distributed throughout the prehistoric Southwest.

Legislative Background

Tonto National Monument was established by Presidential Proclamation No. 787 on December 19, 1907 (35 Stat. 2168) under the administration of the Department of Agriculture to protect "two prehistoric ruins of ancient cliff dwellings...of great ethnographic, scientific and educational interest...and one section of land upon which same are located."

Executive Order No. 6166 on June 10, 1933 (47 Stat. 1517) consolidated all functions of administration of certain areas, which included Tonto National Monument, into the Department of the Interior, National Park Service, thus moving it from the Department of Agriculture.

Monument boundaries were significantly expanded by Presidential Proclamation No. 2230 on April 1, 1937. This second proclamation recognized both "prehistoric ruins and ancient cliff dwellings" and added to the monument 480 acres of adjacent National Forest lands, "which are required for [their] proper care, management and protection." This brought the size to 1,120 acres. Both proclamations expressly warn against unauthorized appropriation, injury, or destruction of monument features and against settlement on these reserved lands.

Special Mandates

In addition to legislation, the following agreements affect the area's management:

- agreement with US Forest Service for wildland fire suppression
- agreement with Tonto Basin Fire Department for fire suppression and emergency medical service
- agreement with White Mountain Apache Tribe for archeological site preservation treatment
- agreement with Arizona Department of Environmental Quality for air quality monitoring
- agreement with Miami Public Schools for environmental education programs
- right-of-way permit with Salt River Project for power transmission line crossing the monument
- right-of-way permit with Telephone Data System for telephone line crossing the monument
- highway easement deed with Arizona Department of Transportation for State Route 188

Interagency Wildland Fire Suppression – A general agreement with Tonto Basin Ranger District, Tonto National Forest, U.S. Forest Service provides cooperation in wildland fire suppression.

Emergency Services – A general agreement with Tonto Basin Fire District provides cooperation in fire suppression and emergency medical services.

Archeological Site Preservation – A general agreement with White Mountain Apache Tribe provides cooperation in the preservation/repair/stabilization of archeological sites.

Air Quality – A general agreement with Arizona Department of Environmental Quality provides cooperation in air quality monitoring.

Environmental Education – A general agreement with Miami Public Schools provides cooperation in environmental education programs.

Power Transmission Line - A right-of-way permit granted to the Salt River Project Agricultural Improvement and Power District provides access for power transmission lines to cross the monument.

Telephone Lines - A right-of-way permit granted to Telephone Data Systems/Telecom provides access for telephone lines to cross the monument.

State Route 188 - A highway easement deed with the Arizona Department of Transportation grants monument land for the use of State Route 188.

Servicewide Law and Policies

Many laws, regulations, policies, and guidelines govern management and operations for NPS units. The following are those that apply to this planning effort:

National Park Service Organic Act
National Environmental Policy Act
National Historic Preservation Act
Archeological Resources Protection Act
American Indian Religious Freedom Act
Native American Graves Protection and Repatriation Act
Endangered Species Act
E.O. 11988: Floodplain Management
E.O. 11990: Wetlands Protection
Federal Water Pollution Control Act
Clean Air Act
Clean Water Act
Architectural Barriers Act
Rehabilitation Act
Americans with Disabilities Act
Government Performance and Results Act

Mission Statement (A Vision For The Future)

The following mission statement is based on input received during the management assessment. They are short narratives relating "what could be" in the future and are used in evaluating the appropriateness of various alternatives.

Set in the rugged beauty of Tonto Basin, Tonto National Monument preserves one of America's best surviving examples of a Gila-phase village (A.D. 1300 -1400) representing the Salado culture. Overlooking the basin, the Salado built their large multiple-room dwellings in shallow caves. The Salado and their predecessors also constructed many smaller villages on the ridges, bajadas, and open desert floor. The long-standing remaining walls together with handprints, pottery, fabric remnants, and smoke stains from fires help us envision what prehistoric Salado life was like in the rock shelters and on the valley floor.

Frequently perceived as vast, stark, and inhospitable, the Sonoran desert is, in reality, a rich and diverse environment. The change in elevation from the valley floor to the ridge tops provides a unique setting for a mixture of desert cactus, flowers, shrubs, and trees, including small deciduous forests in the protected canyons. The astonishing variety of plants provided the Salado with a diverse food source and habitat for more than 200 species of wildlife, some of which were hunted by the Salado.

Viewing the cliff dwellings and wandering through the remaining rooms surrounded by the Sonoran desert, visitors experience a segment of prehistoric times. Interpretive programs reflect the times of those who once lived here and their relationship to the surrounding landscape. Other activities include sightseeing, hiking, picnicking, observing nature, photography, and examining the cliff dwellings. The monument is a living classroom where opportunities abound for exploration, education, and inspiration.

The future of the monument lies within the bounds of past and present preservation. The National Park Service manages Tonto National Monument and accepts the challenge to preserve its cultural and natural resources for future generations. To meet the challenge, management decisions and actions affecting the park's resources are based on scientific

research. Long-term monitoring programs detect the changing trends of the natural and cultural resources. Deterioration of the cliff dwellings and other archeological sites is minimized with proper care, management, and protection. Active projects and programs protect native species and perpetuate ecological processes to the extent possible.

Partnerships with individuals, local communities, and a variety of local, state, and federal agencies and organizations will allow us to successfully achieve the monument's mission to preserve, protect, research, interpret, and manage the prehistoric sites of the Salado culture and their Sonoran desert environment. Additionally, partnerships assist in coordinating and providing a variety of high-quality services that meet our visitors' needs as well as those of the people in nearby communities.

Our children's children will be able to learn from and enjoy this monument as we have because its resources are and will be protected. Their memories and experiences will, indeed, last a lifetime.

GPRA Mission Goals

The Government Performance and Results Act of 1993 (GPRA) was enacted to make government agencies more effective and efficient. Planning for this GMP is consistent with the following Mission Goals established for GPRA.

Category I: Preserve Resources

- Mission Goal Ia: Natural and cultural resources and associated values of *Tonto NM* are protected, restored and maintained in good condition and managed within their broader ecosystem and cultural context.
- Mission Goal Ib: *Tonto NM* contributes to knowledge about natural and cultural resources and associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.

Category II: Provide for the Public Enjoyment and Visitor Experience

- Mission Goal IIa: Visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of *Tonto NM* facilities, services, and appropriate recreational opportunities.
- Mission Goal IIb: *Tonto NM* visitors understand and appreciate the preservation of the park and its resources for this and future generations.

Category IV: Ensure Organizational Effectiveness

- Mission Goal IVa: *Tonto NM* uses current management practices, systems, and technologies to accomplish its mission.
- Mission Goal IVb: *Tonto NM* increases its managerial resources through initiatives and support from other agencies, organizations, and individuals.

Park Mission Goals

The park's mission goals further refine management objectives and GPRA goals. For each desired future condition, the corresponding GPRA Goal is shown in parenthesis.

Prime Resource

Prime resource lands are defined as those resources that made a direct contribution to establishing the park as a unit of the national park system and are related to the park's purpose and significance. Other lands within the park are also important to protecting and supporting the prime resource, but are not considered to be the prime resource.

The cultural sites and the supporting natural environment of Tonto NM are considered the prime resource(s) of the

monument. Cultural resources of the monument include sixty-five archeological sites that represent varying cultural themes and pieces of the nation's heritage. (Indigenous American Populations—Southwestern Farmers, Prehistoric Architecture, Prehistoric Technology, Prehistoric Settlement Patterns, and Major Contributions to the Development of the Science of Archeology.)

The following resource-, geographic-, and issue-specific mission goals apply to Tonto National Monument.

Park Mission Goals—Resource Specific

- *Archeological Research - high quality archeological research program. (Ib, IVb)*

Conditions to be attained/maintained:

1) An up-to-date research program for a more complete understanding of our cultural resources relating to the Salado people is in place.
2) A broad network of partnership opportunities has been identified.

- *Archeology - protect and preserve archeological resources through a full-range of archeological investigations. (Ia, Ib)*

Conditions to be attained/maintained:

1) A complete inventory, evaluation, and enhanced documentation of archeological resources is available.
2) Site formation processes - including both natural and cultural agents of deterioration - are understood and incorporated into the management of archeological resources.
3) The integrity of archeological resources is maintained through periodic site monitoring, focused research, and preservation treatments where applicable.
4) Research and management is focused on understanding archeological resources within the framework of regional prehistory of the Tonto Basin and broad-scale strategies – including all public and private partners - for the protection and preservation of resources.
5) Enhanced understanding of archeological resources is incorporated into interpretive programs that stress both regional prehistory and preservation strategies.
6) Impacts of visitor use are minimized through enhanced education, protection, and preservation treatments.

- *Prehistoric and Historic Structures - protect and preserve prehistoric and historic structures. (Ia,Ib,IIa)*

Conditions to be attained/maintained:

1) All structures listed on the LCS are fully documented from the standpoint of archeological and architectural perspectives.
2) Site formation processes – including both natural and cultural agents of deterioration – are understood and incorporated into the management of structures.
3) Strategy for preserving the archeological, architectural, and structural integrity of prehistoric and historic structures is maintained through periodic site monitoring, focused research, and preservation treatments.
4) Prehistoric structures accessible to visitors are maintained in a safe, stable condition.

- *Cultural Landscapes - identify and manage cultural landscapes. (Ia, Ib, IIb)*

Conditions to be attained/maintained:

1) Cultural landscapes are inventoried, evaluated, and documented in the Cultural Landscape Automated Inventory Management System (CLAIMS) and in a Cultural Landscape Report.
2) A strategy for the management of cultural landscapes is based upon a sound understanding of both the resources themselves and formation processes affecting the landscape through time.
3) Cultural landscapes are considered in the management of the monument. Enhanced understanding of cultural landscapes is incorporated into interpretive programs that stress the evolution of overall landscape systems.

- *Ethnographic Resources - ethnographic studies completed to better support management of other types of cultural resources as well as ensuring management of ethnographic resources themselves. (Ia, Ib, IIb)*

Conditions to be attained/maintained:

1) Ethnographic resources are inventoried, evaluated, and documented.
2) A strategy for the management of ethnographic resources is based upon a sound understanding of the resources themselves and formation processes (including park management strategies both in the past and at present) that potentially affect their integrity.
3) Ethnographic resources are integrated into research and management programs related to archeological resources, structures, and cultural landscapes.
4) Enhanced understanding of ethnographic resources is incorporated into interpretive programs that stress the significance of American Indian groups to the regional history of the Tonto Basin.

■ *Historic Studies - identification of historical support studies importance and need. (Ib)*

Conditions to be attained/maintained:

1) Appropriate administrative, facilities, and legal histories are complete and focused on specific park needs and issues.
2) Historical studies that provide additional understanding and perspective for the effective overall management of park resources are available.

■ *Museum Collections/Curatorial - protect and preserve museum collections and provide high quality artifact preservation and exhibits. (Ia, IIa, IVa)*

Conditions to be attained/maintained:

1) Museum collections are fully cataloged, documented and preserved according to the guidelines established in the NPS Museum Management Program.
2) Inventories and collection histories of museum repositories throughout North American that contain artifacts from Tonto National Monument are available.
3) Environment of storage areas for artifacts and associated archives is maintained to insure the continued preservation of collections.
4) Environment of interpretive exhibits containing prehistoric and historic artifacts is maintained to insure the continued preservation of collections.

■ *Vegetation - protect native plant life as a part of the natural ecosystem. (Ia, Ib)*

Conditions to be attained/maintained:

1) Exotic species have been identified and controlled.
2) Trespass livestock and their impacts on resources have been identified, mitigated, and managed.
3) Research to understand the basin-wide fire history and ecology is prepared.
4) A T&E, rare, and candidate plant inventory is completed. Habitat for endangered species is protected or enhanced.
5) Impacts of visitor use are minimized.
6) All revegetation efforts focus on exclusive use of native materials.

■ *Wildlife - preserve native animal life as an integral part of the natural ecosystem. (Ia, Ib, IVb)*

Conditions to be attained/maintained:

1) Strategies are cooperatively developed with other agencies for wildlife management.
2) Endangered and threatened species are protected.
3) Native and non-native species inventories have been completed and species are monitored to the point that changes in population trends or characteristics can be identified and/or managed.
4) Facility development does not adversely impact wildlife and vegetative habitat.

■ *Air Quality - maintain the best possible air quality. (Ia, Ib)*

Conditions to be attained/maintained:

1) Facilities and activities within the park are in compliance with Clean Air Act requirements.
2) Park obtains and uses the necessary tools to gather and gain information in a cooperative effort to document air quality conditions for Tonto basin.
3) The park assists in an effort to develop a strategy and to use available information to remedy existing and prevent future air pollution effects on Tonto basin air quality.

- *Sound Quality - reduce the impacts of noise on cultural and natural resources and visitor experiences. (Ia, IIa)*

Conditions to be attained/maintained:

1) Tonto NM is identified on the aeronautics map.
2) All noise sources such as from vehicles, boats, aircraft, and mining activity are monitored and reduced, if possible.
3) Users are educated on noise effects on other visitors' experience.

- *Water Quality - manage and protect the water resources and aquatic ecosystems to maintain, rehabilitate, and preserve their inherent natural integrity in coordination with state and other federal agencies. (Ia, Ib)*

Conditions to be attained/maintained:

1) Facilities and activities within the park are in compliance with Clean Water Act requirements and other applicable federal, state, and local laws and regulations.
2) An adequate supply of potable water is available to meet visitor and operational needs on a year-round basis.

- *Human Resources - develop a strategy to determine the appropriate levels of staffing to meet management objectives. (IVa, IVb)*

Conditions to be attained/maintained:

1) Park staff is equipped with adequate resources to address visitor, resource, and administrative needs.
2) Park is adequately staffed and trained to address visitor, resource, and administrative needs.
3) Park works cooperatively with other federal, state, and local agencies and tribal entities to share resources for accomplishing objectives.

- *Interpretation – provide high quality personal services and interpretive programs using state-of-the-art methodologies. (IIa, IIb)*

Conditions to be attained/maintained:

1) The interpretive program connects the visitor to park resources, builds a local and national constituency, and gains public support, which, in turn, meets the objective of protecting park resources and its associated ecosystem.
2) Educational programming is provided year-round at existing park facilities and areas outside the park using appropriate natural and cultural resource themes.
3) Professional education programs and services are offered to international visitors.
4) A component of the interpretive message contains information on the protection and preservation of resources.

- *Outreach - provide effective and quality outreach programs to the general public using state-of-the-art technology and techniques. (IIb, IVb)*

Conditions to be attained/maintained:

1) Tonto NM story is understood by school children throughout the area.
2) Partnerships broaden the ability of the park to provide the story of Tonto NM to the general public.
3) Environmental and cultural awareness is provided through outreach programs.
4) High quality information is available to the public using state-of-the-art technology.

- *Visitor Use - develop a strategy to determine the appropriate levels of visitor use and experience and alternative strategies for maintaining the diversity of quality visitor experiences consistent with Tonto NM's purpose and significance. (Ia, IIa, IVa)*

Conditions to be attained/maintained:

1) A strategy has been developed with public input to guide the park in ensuring a quality visitor experience relative to resource preservation and development.
2) A strategy to determine and establish a carrying capacity that protects resources and provides a range of experiences has been developed.

- *Law Enforcement and Emergency Services - protect park resources and provide for visitor safety and quality experiences. (Ia, IIa, IVa)*

Conditions to be attained/maintained:

1) Strategy has been developed to guide the park and ensure a quality visitor experience and protection of park resources.
2) Professional emergency services are provided year-round to park visitors and staff either directly by park staff or through innovative cooperation.

■ *Viewsheds - minimize visual impacts on natural setting. (IIa, IVb)*

Conditions to be attained/maintained:

1) Management for viewsheds that are critical to providing quality experiences for park visitors is cooperatively coordinated with adjacent land management and transportation agencies.
2) The park and external partners provides opportunities for visitors to see the larger panoramic views of the monument and the rest of Tonto Basin.
3) Work cooperatively with other agencies and entities to develop a visual resource management strategy for land within and beyond the park boundary.

■ *Adjacent Lands - manage and protect the regional land-based ecosystems and cultural landscapes and maintain/preserve their inherent integrity throughout Tonto Basin in coordination with other federal and state agencies and tribes. (Ia, IVa, IVb)*

Conditions to be attained/maintained:

1) Other land management agencies and entities assist in achieving mutually agreed-upon preservation goals through recognition of common benefits and support.
2) NPS considers opportunities that may present themselves to acquire adjacent lands that complement the purpose of the park and fit within the management goals for the monument.
3) Interpretive programming is in place that addresses park and regional resource issues in the context of Tonto Basin.
4) Tonto NM is managed as part of the larger Tonto Basin ecosystem.
5) The park staff is able to inform visitors about resource issues on surrounding lands, and surrounding land management agencies and entities are able to communicate park resource issues to their visitors.
6) Research is facilitated in cooperation with other agencies and entities.

■ *Partnerships - develop strong partnership programs. (IVb)*

Conditions to be attained/maintained:

1) A strong and vibrant friends group supports the monuments mission and goals.
2) The park partners with institutions, organizations, and local, county, state, tribal, and federal agencies to share resources and experiences.
3) There is a consistent coordinated effort between all land management agencies and public interest to manage resources within Tonto Basin to create an understanding and mutual respect for individual management goals and concerns.

■ *Facilities - provide facilities that meet visitor and staff needs while minimizing their impact on the surrounding landscape and resources. (IIa, IVa)*

Conditions to be attained/maintained:

1) Facilities meet ADA standards where practical.
2) Adequate storage and workspace exist for all operations meeting all laws and mandates where applicable.
3) Trails meet visitor, educational, and safety needs.
4) Restrooms meet basic needs of staff and visitors.

Park Mission Goals - Geographic Specific

Resource opportunity areas (ROAs) are geographic delineations of the monument that contain similarities of character and resource values. Each ROA contributes in a different way to how people use the resources of that area. There are Four distinct ROAs in the monument - Cliff Dwelling, Lowlands, Uplands, and Cave Canyon Riparian.

■ *Cliff Dwellings ROA - conserve and protect cliff dwellings and its ecosystem. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

1) Cliff dwellings and their associated rock shelter environments are protected and preserved.
2) Visitors have the opportunity to view Tonto NM`s cultural resources up close and learn about the wealth of Salado culture.
3) Development is done in a sensitive way, blending with the natural landscape and protecting resources from visitor use impacts.
4) A strategy has been developed to identify acceptable levels of impacts, monitor use levels and resource conditions, and take prompt corrective action when unacceptable actions and impacts occur.
5) Visitors have the opportunity to contemplate and contrast the lifestyles and architecture associated with cultural resources in their surrounding natural setting.

▪ *Cave Canyon Riparian ROA - conserve and protect the fragile Cave Canyon riparian area and its ecosystem. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

1) The fragile riparian area is protected and preserved.
2) Development is done in a sensitive way, blending with the natural landscape and protecting resources from visitor use impacts.
3) Visitors have the opportunity to walk among the trees and appreciate the contrast of desert environment and the importance of water.
4) Visitors have an understanding of the relationship of the riparian area to prehistoric and historic uses.

▪ *Uplands ROA - conserve and protect the uplands scenic, cultural, and natural resources. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

1) Scenic views are preserved and protected in a natural setting.
2) Visitors have the opportunity to contemplate cultural and natural values of the park in a natural setting.
3) Visitors have the opportunity to understand the diverse Sonoran desert ecosystem.
4) Visitors have the opportunity to associate the cliff dwellings with the larger Salado settlement landscape of Tonto Basin.
5) Archeological sites in the Uplands ROA are protected and preserved.

▪ *Lowlands ROA - conserve and protect the lowlands scenic, cultural and natural resources. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

1) Scenic views are preserved and protected.
2) Visitors have the opportunity to gain an orientation and understanding of the cultural and natural values of the park.
3) Visitors have the opportunity to understand the diverse Sonoran desert ecosystem.
4) Visitors have the opportunity to associate the cliff dwellings with the larger Salado settlement landscape of Tonto Basin.
5) Archeological and historic sites in the Lowlands ROA are protected and preserved.
6) Visitors have an opportunity to understand the evolution of the cultural landscape from the 14th to the 20th centuries.

Park Mission Goals – Issue Specific

▪ *Legislative Action—Change the name "Tonto National Monument" to "Salado Cliff Dwellings National Monument and protect regional resources associated with the park's purpose to more accurately reflect the heritage values associated with the monument. (Ia, IVa, IVb)*

Conditions to be attained/maintained:

1) Legislation has been enacted by Congress to establish the new name for the monument that better reflects the significance of Tonto NM.
2) A boundary study is completed that would identify significant resources to be protected adjacent to the park.
3) Recommendations are made to Congress to adjust park boundaries to reflect the addition of significant resources.
4) Hunting trespass from the USFS road on the monument's northeast side is reduced or eliminated.

VISITOR EXPERIENCE AND THE PARK ENVIRONMENT

Beyond the resources management plan that identifies specific needs relative to individual program areas, such as natural and cultural resources, an overall resource management strategy to protect park resources needs to be developed. This enables the park to begin monitoring conditions and ensure that the goals related to resource management and visitor use can be achieved. The development of the Resource Opportunity Area (ROA) concept is the first step in incrementally moving the park toward the goal of addressing "carrying capacity."

Parks are composites of a variety of important cultural and natural resources. People value parks for many reasons - inspirational, educational, aesthetic, recreational, scientific, spiritual, and economic, among others. Significant differences relating to resource values and visitor use usually exist within different areas of a park. The uniqueness of these various areas and their relationship to one another as well as to lands beyond the park boundary, influence visitor use and management of the park. Describing a set of alternatives, the park's affected environment, and ultimately assessing impacts requires one to identify and categorize the resource values of a park.

These pieces of the park are called resource opportunity areas and may extend beyond the boundaries of the park. The evaluation of these areas requires the involvement of public and private interests in the area. The *ROAs* are referenced in the environmental consequence section and help to describe how park resources and visitor experiences may be affected.

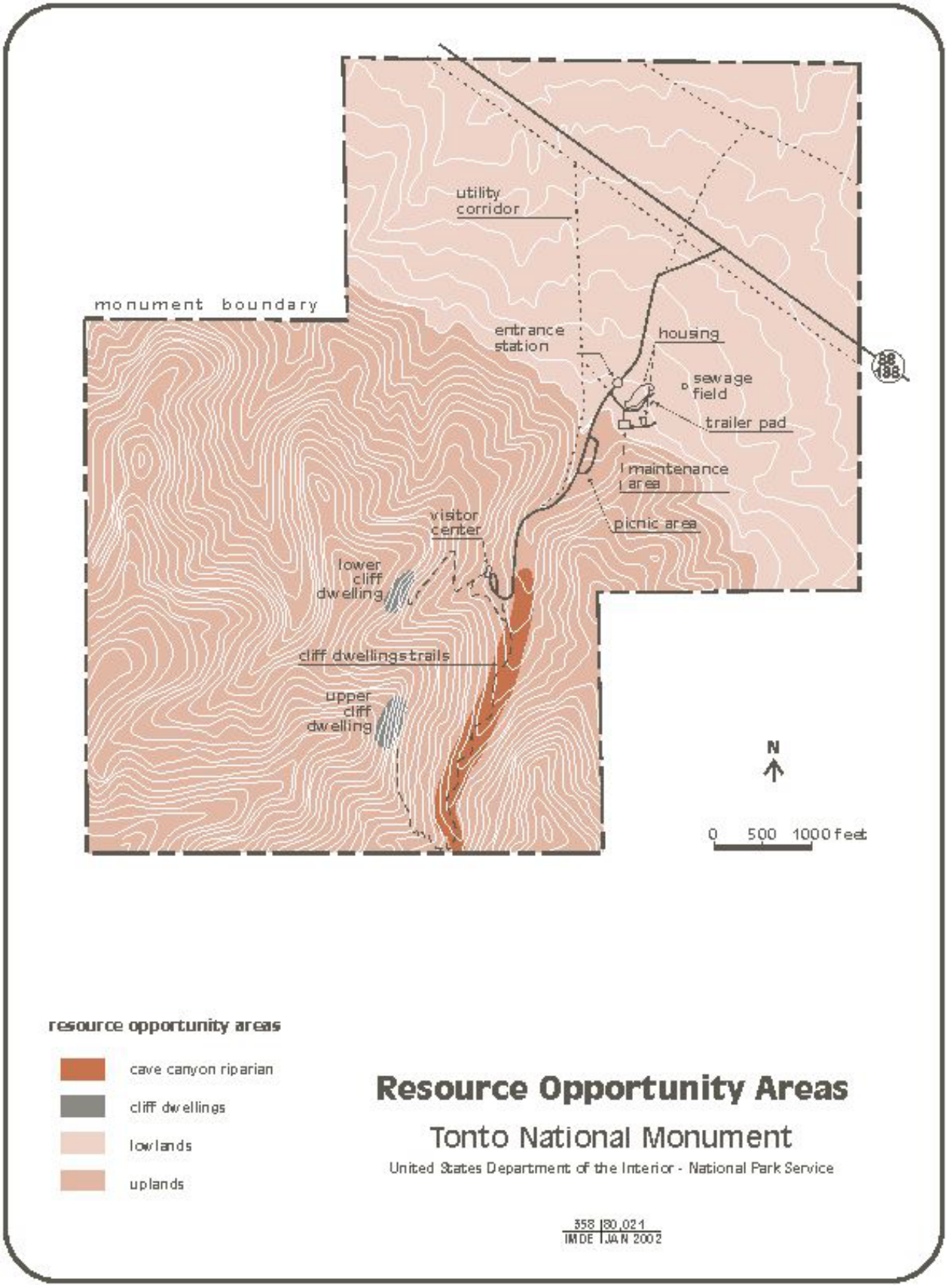
At Tonto National Monument, there are four distinct ROAs - Cliff Dwelling, Lowlands, Uplands, and Cave Canyon Riparian. Each contributes in a different way to how people use the resources of the site.

ROAs are important to incrementally plan for the protection of park resources from visitor overuse. They illustrate how visitors might relate to and use park resources and the relative importance of each area to the whole. They also provide the basis for understanding visitor experiences available within a park. At the same time, the physical resource attributes and visitor experiences are related to the park's purpose and significance.

ROAs identify sensitive resources where damage may occur from overuse. By identifying important resources and visitor experiences, the first steps needed to define carrying capacity and protect park resources from overuse are completed. Future VERP planning (Visitor Experience and Resource Protection) will eventually define carrying capacities needed to protect resources.

ROAs are geographic delineations of the National Monument that contain similarities of character and resource values. Each *ROA* includes a brief description of the following:

- Available recreational and interpretive opportunities.
- Resources that are unusually sensitive to human use.


utility corridor
monument boundary
entrance station
housing
sewage field
trailer pad
maintenance area
picnic area
visitor center
lower cliff dwelling
cliff dwellings trails
upper cliff dwelling
N
0 500 1000 feet
resource opportunity areas
cave canyon riparian
cliff dwellings
lowlands
uplands
Resource Opportunity Areas
Tonto National Monument
United States Department of the Interior - National Park Service
358 80,021
IMDE JAN 2002

- The management of cultural resources (archeological, ethnographic and cultural landscapes).
- The management of natural, scenic, geological, ecological, floral, and faunal resources.
- Development concerns.

Cliff Dwellings ROA

The Cliff Dwellings ROA contains the core of the monument's prime resource. The upper and lower cliff dwellings are the primary reasons for the monument's establishment and are the primary destination for nearly all visitors. The 40-room upper cliff dwelling and 19-room lower cliff dwelling are the largest archeological sites in the monument and provide valuable information about the Gila phase and Salado culture. Materials including plant remains and seeds, maize cobs, bones, tools, pottery, and textiles found in the dwellings, plus the structures themselves, provide the opportunity to investigate this important segment of prehistoric life. The Salado constructed the cliff dwellings in naturally formed caves, high up in the canyon walls. These caves or alcoves developed over thousands of years through cracking and spalling of ceiling deposits. Composed of ancient sedimentary rocks, fallen roof stones provided both a stable floor and readily available building material for construction of the dwellings.

The east-facing rock shelters provide a unique microclimate for wildlife. Largely unseen, bats, birds, rodents, and reptiles seek shade and shelter in the caves and honeybees build hives in the ceilings. Animals (primarily rodents) threaten the integrity of the remaining cultural deposits and the cliff dwelling walls by burrowing underground.

The rock shelters face Tonto Basin and provide broad vistas of sweeping landscapes that extend beyond the monument's boundaries to Roosevelt Lake, the Sierra Anchas, and other mountain ranges. As development both inside and outside the monument are immediately visible and evident from the cliff dwellings, this ROA is extremely sensitive in terms of preserving the remaining undeveloped land. The upper and lower cliff dwellings are reached by hiking designated trails through the Uplands ROA. The lower cliff dwelling is open year-round; the upper cliff dwelling is open November through April by guided tours.

Activities and resource concerns that occur within the Cliff Dwellings ROA include:

- Interpretive opportunities – Guided tours through the cliff dwellings provide the opportunity to explore and learn about the structures and those who lived there. Self-guided tours through the lower cliff

dwelling provide educational opportunities for visitors to experience the Salado story by themselves. Visitors have the opportunity to contemplate prehistoric lifestyles and associated architecture with their surrounding natural setting.

- Recreational opportunities– Walking through the cliff dwellings, visitors can closely examine the cultural resources. For those willing to exert some effort, some of the most spectacular distant and panoramic views are available. Abundant opportunities exist to photograph or sketch the cliff dwellings or the outstanding scenic views.
- Cultural resource management – To protect the cliff dwellings and prevent deterioration, stabilization and repair projects are on- going. Carrying capacity studies are needed for each cliff dwelling to plan and mitigate impacts from high levels of visitor use.
- Natural resource management – Animal disturbance and water erosion have threatened the integrity of the cliff dwellings. There is concern that rock movement and shifting walls and ceilings in the rock shelters may damage the cultural resources and raise public safety concerns.
- Development – To protect the cultural resources and provide for human safety, handrails, benches, steps, and retaining walls have been constructed and maintained in the rock shelters, especially in the lower cliff dwelling, which has higher visitation.

Lowlands ROA

The Lowlands ROA is, notably, the flattest area of the monument. This ROA slopes away from the base of the hills at the 2600-foot elevation down towards Roosevelt Lake. Approximately 75% of the monument's archeological sites are located in the

lowlands. Most of these sites represent the remains of small, one- to five-room surface structures. These sites help us understand where and why the Salado spent their time farming and gathering resources in this area. Two historic archeological sites reveal continuous use of the area after the Salado left.

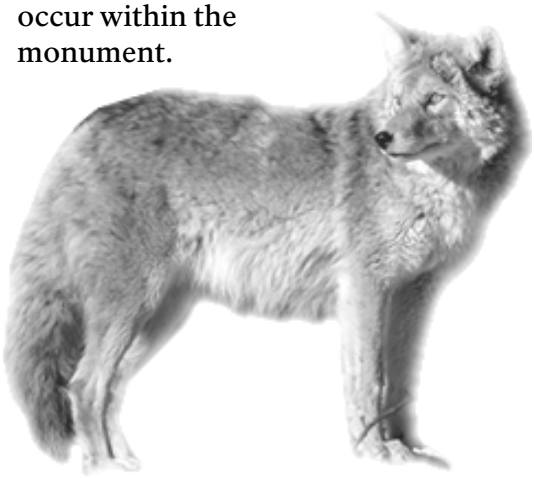
The desert lowlands are frequently perceived as vast, stark, and inhospitable. However, the area is, in reality, a rich and diverse desert environment. Intermittent springs and seeps provide water in the arid environment and support plant and animal diversity. The vegetation consists of rich succulent desert flora with a mixture of chaparral shrubs. In both the lowlands and the uplands, there are healthy stands of saguaro cactus, the characteristic plant of the Sonoran Desert.

Heavy clay soils are found throughout the monument and are highly susceptible to erosion. In the lowlands, erosion has been accelerated by loss of vegetation from past grazing that exposed the soils to heavy rainfalls and wind.

From the Lowlands ROA there are impressive views upward to the cliff dwellings, and outward beyond the monument boundaries to other features within Tonto Basin. This ROA is the only place for visitors to view the sunset and Four Peaks, a well-known landmark in the Mazatzal mountain range.

This ROA includes most of the development that has occurred within the monument. The monument's maintenance facilities, residences, utility corridor, and most of the roads are located here.

The state road passing through the monument and a U.S. Forest Service road just outside the monument to the east and southeast contribute to the spread of non-native vegetation and increase the potential for human-caused fires. Even though hunting is allowed on neighboring U.S. Forest Service lands, illegal poaching activities occur within the monument.



Activities and resource concerns that occur within the Lowlands ROA include:

- Interpretive opportunities – Visitors often have the impression that all Salado lived in cliff dwellings. The number of archeological sites in the lowlands demonstrates that the smaller, open, surface villages and farmsteads were the dominant settlement. This area provides opportunities to interpret farming, hunting, and resource use by the Salado and subsequent cultures that have occupied this area. Saguaro cactus, mesquite, jojoba, and other Sonoran desert plants can be interpreted for their role in Salado life.
- Recreational opportunities – From the road, visitors can view the natural setting of the monument and other features of Tonto Basin. Abundant opportunities exist to photograph or paint the outstanding scenic views.
- Cultural resource management – Cultural resources in the lowlands are fragile, especially those with standing walls, and are vulnerable to unauthorized entry. An on-going monitoring program to document changes in the archeological sites has been implemented. No preservation treatment has been applied to these sites.
- Natural resource management – Natural resource management activities may be needed to rehabilitate impacts from visitor use, park operations, and construction. Native species grown from local stock are used for revegetation projects. Non-native species are documented and controlled where possible. Boundary fences are inspected and repaired as needed to deter illegal intrusive activities yet allow wildlife movement.
- Development – The lowlands provide the most level and feasible location for the monument's facilities. All developments are as consistent with the park's cultural and natural features by way of architecture, color, and vegetative screening as possible and are maintained to NPS standards.
- External opportunities – Roosevelt Lake and associated U. S. Forest Service lands offer extensive boating, water skiing, fishing, hunting, and camping opportunities. Numerous Salado archeological sites, located in Tonto Basin under the jurisdiction of the USFS, were extensively researched in the early 1990s.

Uplands ROA

The Uplands ROA is the scenic background in which the cliff dwellings are viewed. It includes the steep slopes and ridge tops (2,600 to 4,000 feet) that form the prominent viewscape as seen from the monument's entrance and visitor center. The ridge tops also provide broad vistas of the lowlands as well as surrounding mountains, with views looking across ridges and down canyons. The upland's scenic vistas and views are affected by many modern developments both within and outside the monument. The increasing development over the years lends itself to contemplation for past, present, and future use by humans.

A few archeological sites are located in rockshelters in the uplands. These sites

vary in size from large multiple-room structures with interior masonry walls to one-room caves with little or no modification. Some of the upland archeological sites represent later occupation than those in the lowland and valley. Upland vegetation, wildlife, and water availability provided a diversity of resources beyond what the lowlands offered.

The uplands are more diverse than the lowlands in topography, geology, and vegetation providing a variety of wildlife habitats. The desert scrub vegetation extends up into the highlands where it changes into representatives of the semidesert grassland community on the ridgetops. Wildflowers are plentiful in the spring when moisture conditions are favorable. The uplands are less impacted by historic and present-day human activities than the other ROA's.

Due to the lack of open, level ground, facilities are difficult to construct in the uplands. However, the monument's visitor center, hiking trails, and picnic area are located here. At the top of the entrance road, the visitor center is perfectly located to view the lower cliff dwelling. Trails to both the lower and upper cliff dwellings begin from the visitor center area. Picnic facilities are provided along the entrance road.

This ROA may be affected by grazing, hunting, and fire management activities located on adjacent lands outside the monument's boundaries. Boundary fences should be relocated to protect all of the monument's lands.

Activities and resource concerns that occur within the Uplands ROA include:

- Interpretive opportunities – Guided and self-guided tours along the cactus patch and upper and lower cliff dwelling trails provide the opportunity to interpret the roles of hunting and the gathering of wild plants in Salado life. The geology and ecology of the Sonoran desert are also presented. Permanent and temporary

displays in the visitor center inform visitors about the monument's and surrounding area's resources.

- Recreational opportunities – Hiking, where allowed, is challenging in the uplands, with diverse topography, vegetation, and wildlife as incentives for exploration. Other recreational opportunities available are picnicking, photography, and nature study.
- Cultural resource management – Because of their standing walls, the cultural

resources of the uplands are fragile. An on-going monitoring program to document changes in the archeological sites has been implemented. Preservation treatment consisting of vegetation removal is applied to sites on the List of Classified Structures.

- Natural resource management – Natural resource management activities may be needed to rehabilitate impacts from visitor use, park operations, and construction. Native species grown from local stock are used for revegetation projects. Non-native species are documented and controlled where possible. Boundary fences are inspected and repaired as needed to deter illegal intrusive activities, yet allow wildlife movement.
- Development – Due to the topography, development in the uplands is difficult. However, this is the closest point visitors may drive to the cliff dwellings. Visitor administrative, and interpretive facilities are located here. All developments are as consistent with the park's cultural and natural features by way of architecture, color, and vegetative screening as possible. All facilities are maintained to NPS standards.
- External opportunities – South and west of the monument boundary, the upper Sonoran desert community offers hiking, hunting, horseback riding, and other backcountry wilderness opportunities.

Cave Canyon Riparian ROA

The Cave Canyon Riparian ROA is a place of contrasts. It is a lush, shaded, cool area in a desert environment characterized by heat, aridity, and bright sunlight. This ROA has the only

perennial water source found within the monument. The presence of water and rich soil in this arid environment provides habitat for a diversity of plants and animals, including many not found elsewhere in the monument. Arizona sycamore, walnut, and ash trees dominate the small deciduous forest community.

Because perennial water sources are infrequent in this arid environment, the Cave Canyon riparian area is essential for wildlife, which could be disturbed by overuse. The soils in this area are sensitive to trampling, soil compaction, and erosion.

Even though only a few archeological sites are located in the riparian area, intensive prehistoric use occurred in Cave Canyon. Water and the diversity of the forest vegetation provided for the needs of many of the Salado settlements in this area.

The trail to the upper cliff dwelling winds through Cave Canyon Riparian ROA. The upper cliff dwelling can be viewed from this trail. The trail has been damaged from occasional flash floods. If the trail continues to remain in the riparian area, repairs will be required after each flash flood event.

This ROA is highly sensitive to adjacent watershed uses associated with grazing and fire management outside Tonto National Monument. Cave Canyon water quality, bank erosion, and vegetation may change because of these activities which could affect downstream archeological sites and wildlife habitat. Increased water use from external wells has the potential to affect this area's natural balance.

Activities and resource concerns that occur within the Cave Canyon Riparian ROA include:

- Interpretive opportunities – The riparian area provides excellent opportunities for nature study, especially bird watching and viewing wildflowers. Major faulting, uplifting, and seismic activity displays the history of the monument's geological formation in its exposed strata. Prehistoric use of the springs and deciduous trees provides opportunity to discuss Salado use of the riparian area.
- Recreational opportunities – The Cave Canyon Riparian ROA provides a cool and refreshing walking experience. Visitors can study the vegetation and wildlife signs found in the riparian area and contrast them with those seen in the surrounding Sonoran desert. It is also a place to compare and contrast the cool, shady forest with the desert heat and surrounding open landscape.
- Cultural resource management – The few archeological sites in Cave Canyon are vulnerable to upstream activity outside the monument. An on-going monitoring program to document changes in the archeological sites has been implemented. No preservation treatment has been applied to these sites.
- Natural resource management – The riparian area should be monitored to document the effects of natural flash flood events and influences from human-caused activities inside and outside the monument. Natural resource management activities may be needed to rehabilitate impacts from human use and natural events. Non-native species are documented and controlled where possible.
- Development – The only facility located in this area is the trail to the upper cliff dwelling. Because this area is highly sensitive, future development should be minimal, if at all, with little or no impact to the watershed. The occasional flash floods rule!

MANAGEMENT PRESCRIPTIONS

Management prescriptions detail desired visitor experiences and resource conditions for various areas of the park. There are four prescriptions for management at Tonto National Monument - developed, restricted, interpretive corridor, and cliff dwellings. Specific guidance for each area is described using the following seven categories: access, experience and activities, interpretation, cultural resource management, natural resource management, facilities, and maintenance.

The following are the management prescriptions for Tonto National Monument.

Developed

This management prescription includes all major park development required to serve visitors and meet the needs of management. Facilities to serve visitors, administer park operations, and provide staff residences are located here. It also functions as the center for park operations.

This area accommodates the highest levels of use and human impacts. The area can be congested during the peak visitor season, so there is frequent contact with other visitors and park staff. Sights and sounds of vehicles and people predominate, as does the experience that is tied to traffic in the main road corridor.

Development and intensive use have substantially altered the setting of culturally significant resources and the natural environment. Although natural processes are perpetuated wherever possible, a high degree of encroachment and human intrusion in the natural environment is evident.

Access - Access is easy and by vehicle on surfaced roads. During the spring and fall open house, visitors are shuttled to and from the visitor center when the parking area fills to capacity. Sidewalks into and around the visitor center direct visitors to an overview and familiarity with park resources. Accommodations for visitors with physical impairments provide educational opportunities and views of the lower cliff dwelling and surrounding landscape.

Experience and Activities - This area presents the primary interpretative themes. Management emphasizes interpretation of the cultural significance and the environmental setting of the monument. Visitor activities are fairly structured and directed and involve little challenge. Visitor experience is facility dependent (visitor center). Visitor activities include orientation, education, viewing the surrounding landscape, photography, bird watching, plant identification, viewing the lower cliff dwelling, and picnicking. There is little or no opportunity for solitude.

Interpretation - Orientation is provided to all visitors. Impromptu and scheduled interpretive talks are given. Permanent and temporary displays provide park and area information. The Junior Ranger Program is available for children. Outreach/Parks as Classroom instruction is provided to 4th grade classes at Miami and Tonto Basin public schools on environmental and cultural resource issues.

Cultural Resource Management - Archeological sites are given proper care and protection. Hands-on activities are conducted when it is necessary to preserve cultural resources. Relatively intensive

resources management activities may be required to mitigate impacts from high levels of visitor use, park operations, and construction. Visitors are directed to sidewalks and trails to limit resource impacts. Compliance is done for all projects and involves coordination and consultation with the State Historic Preservation Office (SHPO) and Native American groups. Research is allowed for further understanding of cultural resources and the Salado culture.

Natural Resource Management - The natural character of the land is secondary to accommodating high use levels and protection of sensitive resources. Visitors are directed to sidewalks and trails to limit resource impacts. Vista modifications may be used to improve views.

Relatively intensive resources management activities may be required to mitigate impacts from high levels of visitor use, park operations, and construction. Significant soil, vegetation, and wildlife impacts occurring in high use sites could be mitigated through periodic closures, more clearly defining use corridors, and increased enforcement techniques. Only native species are used for revegetation, and preferably, stock grown from local seed. Compliance is done for all projects to assess impacts.

Research is allowed for further understanding of natural resources and processes.

Facilities - Developments are consistent with the park architecture. Facilities blend in with the surrounding natural and cultural landscape as much as possible. Existing and potential modifications include improved parking, restrooms, road maintenance, vista points, and other facilities to enhance visitor experience.

Office and workspace for staff needs to be expanded and relocated to improve operations. Houses are maintained to NPS standards.

Maintenance - Roads, buildings, signs, walks, benches, interpretative displays, and other facilities are maintained on a regular basis. Activities involve maintaining existing facilities, landscaping, protecting resources, restoring areas disturbed by human activities, and providing for human convenience, comfort, and safety. Power tools are used for routine maintenance activities, and heavy equipment is used for road and utility system repairs, development, and maintenance.

Restricted

The setting is a fairly unaltered natural landscape with scattered archeological features. The restricted area is the remote section of the park with rugged terrain and provides the backdrop scenery for the monument's archeological features.

Management restricts the types of uses in the restricted area and allows only permitted or guided activities. Archeological sites are protected and closed to the public. The natural environment is perpetuated. Human use into the natural environment is evident when adjacent to developed areas.

Access - Access is from trails or roads into the restricted area. The area has rugged terrain and no roads or trails. Motorized and non-motorized vehicles are not allowed.

Approved use for researchers or others conducting park business is by foot. Hikes are moderately to very challenging.

Experience and Activities - Protection of resources is the priority. Researchers are allowed to carry out scientific studies with an approved permit. Park staff conduct patrols and resources management activities.

Visitors are not allowed in this area but can observe the natural setting from trails, roads, and the visitor center.

Interpretation - No interpretive services are provided other than orientation and information presented from the visitor center, trails, and cliff dwellings.

Cultural Resource Management - All archeological sites are inventoried, monitored, and given proper care and protection. The resources management plan and preservation guides specify management decisions and address treatment of individual sites. Hands-on activities are conducted when it is necessary to preserve cultural resources. Compliance is done for all projects and involves coordination and consultation with SHPO and Native American groups. Research is allowed for further understanding of cultural resources and the Salado culture.

Natural Resource Management - Natural processes are unimpeded as much as possible. The resources management plan identifies issues, needed information, and appropriate actions to take. All plant and animal species are inventoried and monitored and mitigating measures (revegetation, removal of non-natives, etc.) are done as needed. Naturally occurring species are maintained or reestablished, and populations of sensitive species are protected and augmented. Compliance is done for all projects to assess impacts.

The natural environment is preserved to the maximum extent possible while accommodating low-level use for management purposes, projects, and research. Research is allowed for further understanding of natural resources and processes. Park staff maintains close watch to insure resource degradation does not occur from permitted activities.

Facilities - No facilities exist. Facilities may be provided to protect resources or provide for human safety.

Maintenance - Only archeological preservation activities occur here.

Interpretive Corridor

Management provides opportunities to hike on trails in a cultural and natural environment. The setting is a trail system leading from the visitor center to the cliff dwellings through various terrain and environmental features. Encounters with other visitors and NPS staff vary by season, activity, and trail.

Access - Public access is by foot and people are required to stay on designated trails. The cliff dwelling and cactus patch trails have regulated times. The upper cliff dwelling trail use is limited to guided tours. Hikes are moderately challenging.

No motorized or pack and saddle stock is allowed for public access. Motorized access is used on the lower cliff dwelling trail and saddle stock is sometimes used on the upper cliff dwelling trail for maintenance and ranger activities.

Experience and Activities - Ranger- and self-guided interpretive tours are available to help visitors learn about the resources. Exhibits or signs may be used to meet objectives of interpreting and protecting the resources.

Visitors must stay on the trail system so solitude is limited. There is a moderate degree of challenge and self-reliance from the varied tread and incline of the trails. The opportunity exists to seasonally experience the character of the cultural and natural resources. Visitor activities include viewing the surrounding landscape, hiking, painting, photography, learning the cultural context, and observing nature.

Interpretation - Guided tours for groups and the general public are provided year round to the lower cliff dwelling. Scheduled tours are provided November through April through the Cave Canyon riparian area to the upper cliff dwelling. Nature walks are presented along the Cactus Patch Trail. Self-guided trails are provided to the lower cliff dwelling and through the cactus patch.

Cultural Resource Management - Cultural sites are given proper care and protection. Hands on activities are conducted when it is necessary to preserve the cultural resources. Compliance is done for all projects and involves coordination and consultation with SHPO and Native American groups.

The trail system guides human use and minimizes impacts on cultural resources. The trails are constructed and maintained to minimize impacts on the adjacent restricted area. The interface with the restricted area is managed to mitigate or minimize impacts on cultural resources.

Natural Resource Management - The trail system guides human use and minimizes impacts on natural resources. The trails are constructed and maintained to minimize impacts on the adjacent restricted area. The interface with the restricted area is managed to mitigate or minimize impacts on natural resources. Compliance is done for all projects to assess impacts.

Facilities -The only facilities provided are trails, interpretive signs, benches, trashcans, and retaining walls. Additional facilities may be provided if they are essential to protect resources or provide for human safety. All facilities will blend in with the cultural and natural landscape as much as possible.

Maintenance - The trail system with vista sites is maintained to NPS standards to protect resources, restore disturbed areas, and provide for visitor safety. Vista site modification is done to allow views of the surrounding landscape. Power tools are allowed. Pack animals and motorized vehicles are used for park projects and activities.

Cliff Dwelling

This is a unique setting with multi-room prehistoric structures built in rock shelter alcoves that naturally formed in high canyon walls of sedimentary rock. It is a cultural landscape that reflects centuries of occupation and manipulation of the rock shelter. The cliff dwellings overlook Tonto Basin and Roosevelt Lake from high elevations providing a vast viewscape.

The varying temperatures and humidity in the alcoves create different microclimates and unique habitats for plants and wildlife. The rock shelters provide shade and relief from the desert heat.

Access - Travel is by foot on trails through the interpretive corridor. There is controlled access to both cliff dwellings. Walking through the dwellings can be moderately challenging. Permits are required for special uses at the cliff dwellings, such as commercial filming.

Experience and Activities - Ranger- and self-guided interpretive tours are available to help visitors learn about the surrounding landscape and cultural themes. The history of archeology and preservation methods is presented.

Visitors are exposed to the character of a prehistoric dwelling and can view construction techniques to see the materials and resources used, spatial design, setting, distance from food and water sources, etc. Visitors can compare Salado life in the cliff dwellings with the valley floor archeological sites. Solitude

can be found when the lower cliff dwelling is not crowded.

Visitor activities include viewing the surrounding landscape, examining the dwellings, painting and photography, learning the cultural context, and observing nature.

Interpretation - Guided tours and impromptu talks are given at the lower cliff dwelling. A self-guided brochure is also available to tour the lower cliff dwelling. Scheduled guided tours are conducted through the upper cliff dwelling. An open house is scheduled twice a year in March and November with rangers and volunteers stationed in both cliff dwellings.

Cultural Resource Management -The resources management plan and preservation guides specify management decisions and address treatment of individual sites. Archeological sites are given proper care and protection. Retaining the desired resource conditions requires intensive cultural resource management. Pest management activities are carried out to protect resources. Compliance is done for all projects and involves coordination and consultation with SHPO and Native American groups. Research is needed for further understanding of cultural resources and the Salado culture.

Natural Resource Management - The resources management plan identifies issues, needed information, and appropriate actions to take with natural resources in the cliff dwellings. Guided by the need to protect resources, employees, and visitors, pest management activities are carried out in compliance with an approved Integrated Pest Management Plan. Compliance is done for all projects to assess impacts. Research is needed for further understanding of how natural elements affect the cliff dwellings.

Facilities - Facilities include handrails, benches, and steps. Retaining walls prevent erosion of slopes. Additional facilities may be provided if they are essential to protect resources or provide for human safety. All facilities will blend in with the cultural and natural landscape as much as possible.

Maintenance - Maintenance activities protect resources and restore areas disturbed by human activities and natural events. Preservation and stabilization maintenance on the cliff dwellings is done routinely. Power tools are allowed.

A "no action" alternative, two action alternatives, and the National Park Service preferred alternative (D) are presented in this chapter. The preferred alternative is the final General Management Plan for Tonto National Monument and will guide the management and development of the monument for the next ten to fifteen years.

Alternative A - No Action

General Emphasis - Under the no-action alternative, existing visitor, administrative, maintenance, and residence facilities would be maintained to support current activities; *no new facilities would be built.* Information and sales activities, plus the museum, library, offices, and storage space would continue to be housed in the overcrowded visitor/administrative facility. No park housing would be available for seasonal employees or volunteers. Visitors would continue to wait in lines to use the restrooms and the visitor center parking area would continue to fill to capacity during the busy spring season.

Existing management operations would continue at present levels. The number and expertise of employees would be solely dependent on additional funding, available workspace, and training opportunities.

The existing limited cultural and natural resources programs would continue to operate as they have in the past, albeit with insufficient staff and park-based information to address critical issues.

The existing number and types of educational programs to enhance visitors' understanding and appreciation of the monument would continue to be provided. Interpretive programs would use existing equipment and methods that are less than desired to provide these unique educational opportunities.

Limited protection of the monument's facilities and resources would continue.

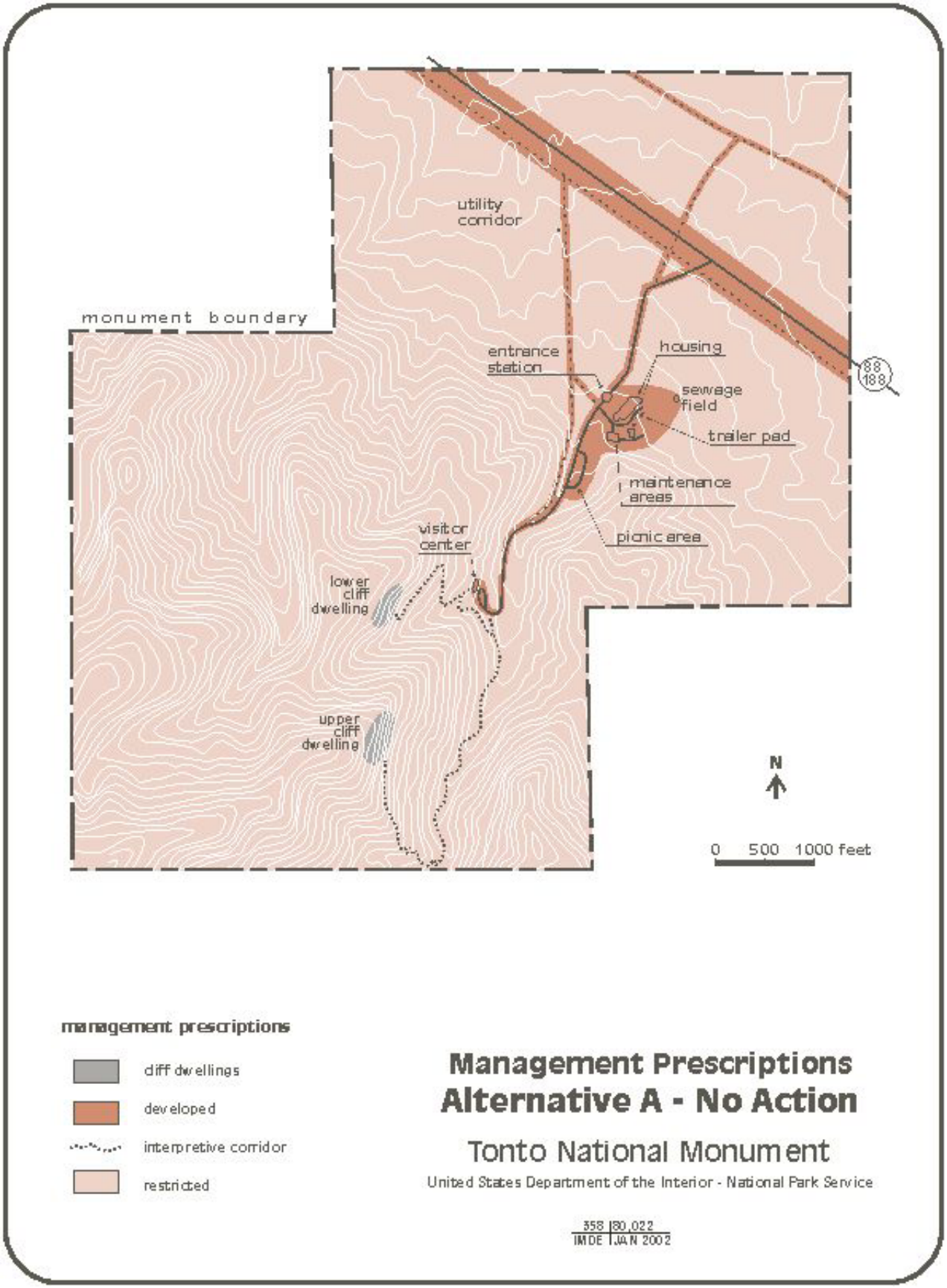
Existing relationships with partners, adjacent landowners, agencies, and tribes would continue.

Cultural Resources Management - A professional research and resource management program would continue on a limited basis with present staff levels.

The administrative facility, designed over 35 years ago, does not provide the space for offices, reference library, archives, or equipment storage required to conduct a cultural resources management program. Consequently, the amount of reference material, supplies, and equipment are limited and scattered throughout the building. Existing inadequate space to house offices, reference library, archives, supplies, and materials would continue.

The majority of museum collections would continue to be stored at the Western Archeological and Conservation Center (WACC) in Tucson, Arizona. The outdated museum displays would remain unchanged within the existing limited space.

Monitoring of archeological sites identified in1985 would continue when possible by interpretive staff. Only project-specific archeological surveys would be undertaken. A limited assessment and stabilization plan would be provided. Stabilization and preservation work on the cliff dwellings that has been accomplished intermittently in the past would continue using newer techniques. Emergency repairs would be made.


utility corridor
monument boundary
entrance station
housing
sewage field
trailer pad
maintenance areas
picnic area
visitor center
lower cliff dwelling
upper cliff dwelling
N
0 500 1000 feet
management prescriptions
cliff dwellings
developed
interpretive corridor
restricted
Management Prescriptions
Alternative A - No Action
Tonto National Monument
United States Department of the Interior - National Park Service
358 | 80,022
IMDE | JAN 2002

Needed ethnographic, historical, archeological, and landscape research reports would be prepared and available for use as funding and staffing permits.

Natural Resources Management – A professional research and resource management program would continue on a limited basis with present staff levels and assistance from the Phoenix-based Southern Arizona Office (NPS) and the Tucson-based Inventory and Monitoring Program (NPS) and Biological Resources Division (USGS).

The administrative facility, designed over 35 years ago, does not provide the space for offices, reference library, archives, or equipment storage required to conduct a natural resources management program. Consequently, the amount of reference material, supplies, and equipment are limited and scattered throughout the building. Existing inadequate space to house offices, reference library, archives, supplies, and materials would continue.

The monument's resources management plan, written in the 1970s, was substantially updated in the early 1990s and requires another update. The few action plans prepared to address environmental conditions and concerns would be maintained, but more are needed.

Comprehensive integrated pest management (IPM) plans were written to control pests threatening historic and prehistoric structures, human safety, vegetation, and wildlife. IPM methods have been, and would continue to be used, to combat rodents in the cliff dwellings and Africanized bees. These plans would be updated periodically.

Air quality measurements have been recorded in the monument during the past decade to monitor particulate sampling and visibility. The monument's security and location near the Class I Superstition Mountain Wilderness Area were determining factors in site selection. This existing monitoring program would continue.

Noise from aircraft overflights have been and would continue to be recorded when planes and helicopters fly too low or hover by the cliff dwellings. Some aircraft identification numbers have been and would continue to be read and owners contacted to educate them about the inappropriateness and safety hazard of flying low over parks. Noise from boats on Roosevelt Lake, vehicular traffic, or mine blasting has not been documented or monitored.

The vegetation inventory is 80% complete and would be finished with funding from the servicewide inventory and monitoring program. Studies on special habitats or species, such as the riparian community and saguaros, would be prepared when additional funding is available. The existing limited program to control non-native plants and restore disturbed areas with native plants would continue.

Wildlife vertebrates have been inventoried (approximately 95%) and long-term monitoring plots have been established. Complete inventory and monitoring would be completed with funding from the servicewide inventory and monitoring program. Special species or habitat studies, such as the riparian and cliff communities, would be prepared when additional funding is available.

The existing program to document human water consumption would continue. The NPS Water Resources Division has investigated and documented a statewide water rights determination. A complete inventory of all water sources has not been done and would be completed when funding allows. Two significant flash flood events occurred in Cave Canyon in the

1990s, but no quantifying measurements were taken.

The monument's soil was comprehensively surveyed and mapped in 1994. This was a comprehensive report so no other work would be needed except for project-specific investigations. A geologic study to accompany the soil survey and provide useful information about cave formations, hydrogeologic structure, etc., would be completed when funds are available.

Cliff Dwellings ROA - A comprehensive management plan to direct stabilization and preservation activities of the cliff dwellings would be developed and available to guide park staff when funding allows. The current limited levels of stabilization and preservation efforts would continue. No inventory and monitoring protocols would be available to direct the staff. Damage to the cliff dwellings from small mammals that burrow in the floor has been studied. IPM protocols have been and would continue to be used to remove rodents and to monitor further damage. Monitoring deterioration from the effects of other environmental variables would continue at minimal levels for protection. This limited data would be available for research purposes.

Park staff would continue to provide visitors with existing number of guided tours to the cliff dwellings. Protection of the cliff dwellings would rely on uniformed staff, when available, until such time as passive security measures would be added.

Uplands and Lowlands ROAs - A comprehensive integrated study to inventory and develop long-term monitoring protocols for wildlife was prepared in the late 1990s. Long-term monitoring plots for vegetation have existed since the late 1980s. Monitoring would continue with funding from the servicewide inventory and monitoring program. The results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and their processes in the uplands and lowlands.

The current level of programs to visitors that explain the resource diversity of the uplands and lowlands would continue.

Cave Canyon Riparian ROA - A comprehensive integrated study to inventory and develop long-term monitoring protocols for wildlife was prepared in the late 1990s. Long-term monitoring plots for vegetation have existed since the late 1980s. Monitoring would continue with funding from the servicewide inventory and monitoring program. The results would be used to develop a comprehensive management model to guide park staff in preserving the natural and cultural resources and determining the appropriate levels of visitor use in the riparian area.

The current level of interpretive programs for visitors in the riparian area would continue.

Human Resources - Park employees would continue to work in overcrowded facilities with insufficient supplies and equipment that impedes productive work. The number and expertise of staff would be solely dependent on additional funding, available workspace, and training. Staffing needs would not be met, even if funding were available, until adequate physical workspace can be provided.

Outreach and Interpretation - Initial contact with visitors would continue to take place at the existing visitor center. The existing limited number and type of interpretive programs presented at the monument and to schools and other off-site entities would continue. All programs would emphasize the need to protect

Tonto Basin's sensitive archeological sites and Sonoran desert ecosystem. Visitor experience through understanding would continue. Continuing to locate all of the interpretive services inside the park would make it easier for the public to directly connect the park story to the resources.

Visitor and Resource Protection - The present limited level of protection for the monument's facilities and resources would continue. The existing security systems would be maintained. A study for passive resource protection would be completed as funding allows. The existing law enforcement needs assessment would be periodically reviewed and updated. The current level of cooperative services with local law enforcement and other emergency agencies would be maintained. A plan to analyze the appropriate levels of visitor use and provide monitoring standards to protect visitor experiences and monument resources would be developed for existing conditions and use levels when funding allows.

Viewshed - A scenic viewshed analysis would be developed when possible.

Adjacent Lands - The existing relationships with adjacent and nearby land management agencies, tribes, and landowners to manage the surrounding land to minimize impacts on the monument's and surrounding Tonto Basin resources would continue at current levels. Adjacent land use would be monitored when sufficient funds and staff are available. A boundary study would be completed when possible to identify significant resources and recommend boundary adjustments to Congress.

Partnerships – Existing partnerships with the U.S. Forest Service, Environmental Protection Agency, U.S. Geological Survey/University of Arizona, Arizona departments of Transportation and Environmental Quality, State Historic Preservation Office, Gila County, Globe/Miami/Apache Junction chambers of commerce, Globe/Miami/Tonto Basin public schools, Salt River Project, and TDS Telecom in support of park missions and activities would continue. The possibility of forming a friends group to support the monument's mission and goals would be explored.

Land-Use Management - Existing land uses would not change with this alternative. A long-term land allocation plan using management prescriptions for monument uses would be prepared and implemented when funding allows. Existing management prescriptions (MP) can be broken down as follows:

- About 78 acres (6.9%) –Developed MP
- About 1033 acres (92.2%)-Restricted MP
- About 5 acres (0.5%)-Interpretive Corridor MP
- About 4 acres (0.4%)-Cliff Dwellings MP

Proposed Future Facility and Development Changes - Existing visitor, administrative, maintenance, and residential facilities, roads, and trails would be maintained to support present activities and programs. No new facilities or trails would be built. Consequently, no development costs would be incurred. Retaining the existing facilities would not impact park resources. Operational efficiency would not improve without increased workspace. Keeping the original use of the visitor center would retain the value of the National Register-eligible building.

The existing shuttle operation would continue to be used as needed when the parking area fills to capacity to transport visitors to and from their vehicles parked along the entrance road shoulder. The existing fences built on or near the boundary would be repaired as needed. No park housing would be available for seasonal employees or volunteers.

Operational Costs - Current Budget and Staff - The FY2001 budget for Tonto National Monuments is $734,000. (See operational Cost Table 1.) Current staffing levels include 13 permanent full-time equivalencies (FTEs)— Interpretation and Visitor Services (5.5), Administration (3), Maintenance (2.5), Natural Resources (1), and Cultural Resources (1). Due to the limited staff, all employees share visitor service, protection, and preservation responsibilities.

Development Costs - There are no development costs for the no-action alternative.

Future Plans and Studies - New plans would be written as funding and staffing allows.

Alternative B

General Emphasis - This alternative would construct a new state-of-the-art visitor center/administrative facility with associated infrastructure *within the monument* near the beginning of the entrance road to provide increased visitor educational experiences and accommodate staff workspace needs. Administrative staff would be moved out of the existing visitor center into offices in this new facility. The existing visitor center would then be remodeled into a learning center to provide a more in-depth and hands-on learning experience for park visitors.

Administrative, maintenance, interpretation, resource management, and protection activities would improve with the additional facilities and staff levels. Staff levels and expertise would be enhanced with increased funding, workspace, and training.

The cultural and natural resources programs would have an integrated approach, be raised to a higher standard, address diverse components, have sufficient professional-level staff and adequate reference materials.

Greatly increased educational experiences would be provided to enhance the visitor's understanding of the monument's values and protect cultural and natural resources. Interpretive programs would use the latest equipment and methods to provide educational material within a regional context so visitors could contemplate the Salado culture and its relationship to the surrounding Sonoran desert environment.

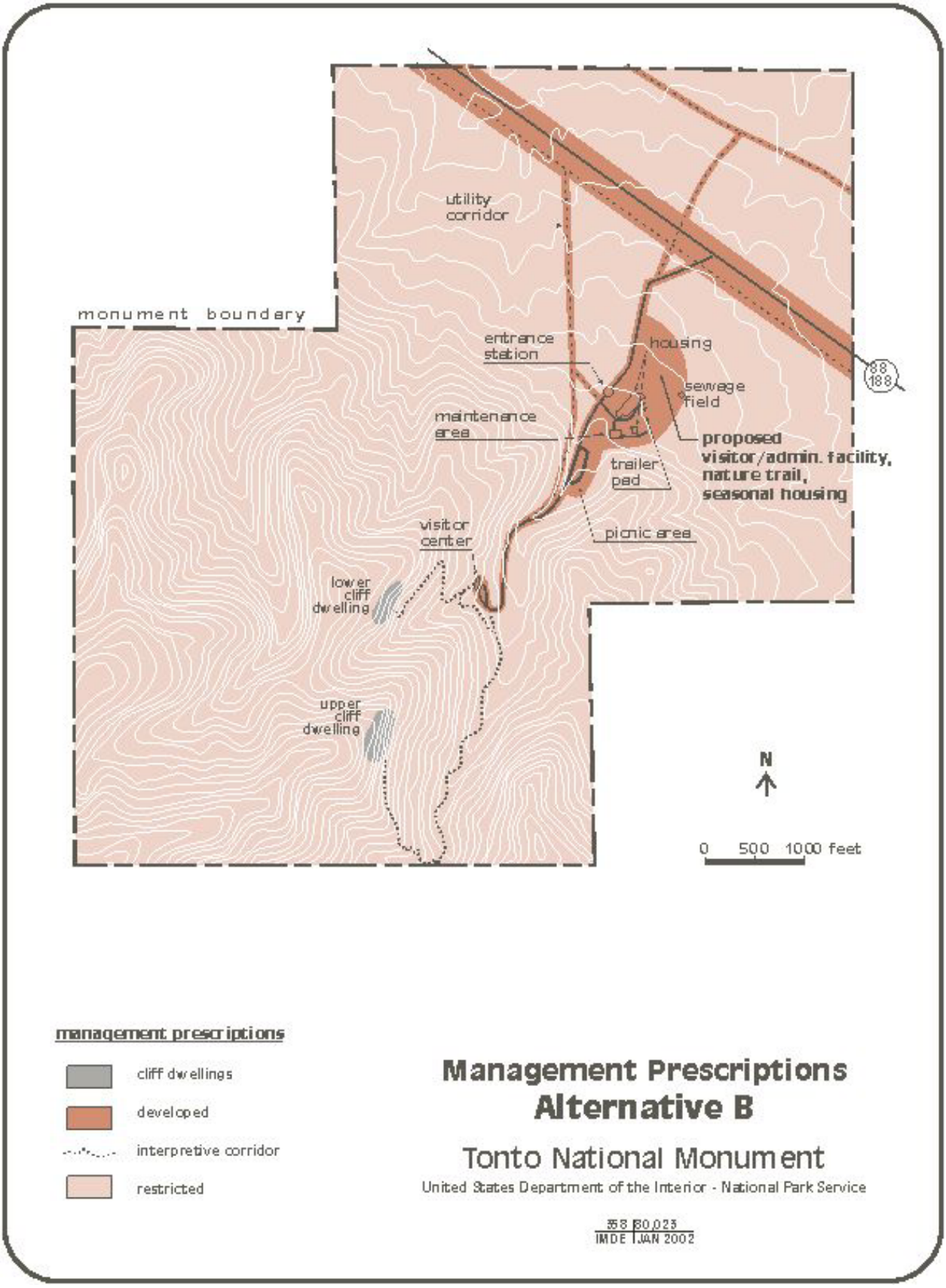
Heightened protection of the monument's facilities and resources would occur through increased NPS staffing and 24-hour security systems, and improved emergency services and cooperative law enforcement agreements.

The additional staff would create more opportunities to form partnerships with other agencies, tribes, educational institutions, and the private sector that leverage the park's ability to provide quality visitor services and protect monument resources.

Relationships with adjacent and nearby land management agencies, tribes, and landowners would be expanded to manage the surrounding land using sound ecological principles.

Cultural Resources Management - A professional research and resource management program and an integrated comprehensive program design for cultural resource investigation and management would be enhanced with added staff, expertise, and professional skills.

The new administrative offices and visitor center would provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the cultural resources management program. The new facility


utility corridor
monument boundary
entrance station
housing
sewage field
maintenance area
proposed visitor/admin. facility, nature trail, seasonal housing
trailer pad
visitor center
picnic area
lower cliff dwelling
upper cliff dwelling
88
188
N
0 500 1000 feet
management prescriptions
cliff dwellings
developed
interpretive corridor
restricted
Management Prescriptions
Alternative B
Tonto National Monument
United States Department of the Interior - National Park Service
358 80,023
IMDE JAN 2002

would provide sufficient space to update and expand museum exhibits.

Additional field studies and inventories of archeological sites would be done. A comprehensive, systematic program to monitor and evaluate archeological sites would be developed and implemented. An assessment and stabilization plan, subject to periodic review and update, would be developed, maintained, and implemented. Routine and emergency stabilization and preservation work would continue using better techniques and more skilled labor. All work would be documented and monitored for results. All previous stabilization efforts would be summarized in one report.

Ethnographic, archeological and historical research studies including oral histories, historical structures reports, and preservation guides would be completed and available for use. Cultural landscapes would be inventoried, documented, and evaluated.

Natural Resources Management -A professional research and resource management program and an integrated comprehensive program design for natural resource investigation and management would be enhanced with added staff, expertise, and professional skills.

The new administrative offices and visitor center would provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the natural resources management program.

The resources management plan would be updated routinely, and action plans would be prepared to address specific environmental conditions and concerns. The IPM plans would be updated and/or new ones written as needed.

The monument's existing cooperative air monitoring program would continue. Low-flying aircraft would continue to be recorded and corrective action taken. A monitoring protocol would be developed to record noise from aircraft, boats on the lake, vehicular traffic, and mine blasting. The effects of these noise levels on wildlife would be determined.

The vegetation inventory would be completed to the 95% level or above. Long-term monitoring plots would be read and data analyzed to track vital signs, species, and/or habitats. Strategies and protocols would be consistent with other parks in southern Arizona to compare results. Specialized studies would be undertaken for unique habitat and species. Native plants, preferably cultivated from onsite stock, would be used for landscaping or rehabilitating disturbed sites. A systematic approach would be taken to remove non-native plants and restore native vegetation.

Long-term monitoring plots for vertebrates would be read to track vital signs, species, and/or habitats. Strategies and protocols would be consistent with other parks in southern Arizona to compare results. More work would be done on invertebrate species. Specialized studies would be undertaken for unique habitat and species. A systematic approach would be taken to identify and restore habitat, if necessary.

A survey of water sources would be completed. Water quality and quantity would be documented and monitored to protect the sources for wildlife, vegetation, and humans. A procedure would be developed to document flashflood events.

If site-specific soil data were needed for projects, it would be acquired to augment existing information. The geology would be examined and a report prepared with special attention given to the cliff-dwelling alcoves to describe formation and stability.

Cliff Dwellings ROA - A comprehensive management model to direct cliff-dwelling stabilization and preservation activities including the effects from natural processes would be developed. This model would direct the staff to complete increased stabilization and preservation activities on an annual recurring basis. A program to comprehensively monitor the range of environmental variables affecting the cliff dwellings would be developed and implemented. Monitoring data would be collected continuously and evaluated. IPM techniques would continue to be used when necessary.

New interpretive programs would be developed to provide more opportunities for visitors to view and understand the cliff dwelling architecture and Salado life. More uniformed personnel would be available to provide additional information to visitors. Protection of the cliff dwellings would increase with additional uniformed staff and installation of passive security systems.

Uplands and Lowlands ROAs - Long-term monitoring plots would be read routinely and data analyzed. Results would be used to respond to resource threats. Data would be shared with other parks and entities in Arizona and elsewhere. In the monument, the results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and their processes in the uplands and lowlands.

The current level of programs to visitors that explain the resource diversity of the uplands and lowlands would increase.

Cave Canyon Riparian ROA - Long-term monitoring plots would be read routinely and data analyzed. Results would be used to respond to resource threats. Data would be shared with other parks and entities in Arizona and elsewhere. In the monument, the results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and determining the appropriate levels of visitor use in the riparian area.

The interpretive staff would provide more visitor education programs about the riparian area to communicate the importance of water, shade, and the deciduous forest in the arid desert.

Human Resources - Necessary workspace and supporting supplies and equipment would be available for park staff to address resource, administrative, interpretive, visitor, protection, and maintenance needs. The number and expertise of employees would increase. Training for all employees in all disciplines would be enhanced with increased staffing and funding. Stewardship of the monument would increase.

Outreach and Interpretation - A new accessible visitor center and associated interpretive trail would be built *within the monument* that uses state-of-the-art technology to provide educational and informational opportunities to the public about the monument and the rest of Tonto Basin. Initial contact with visitors would take place at this new facility. The number and/or type of interpretive programs presented to the public linking them to the monument's resources using preservation and other stewardship themes would increase. Visitor experience through understanding would substantially increase. Locating all of the interpretive services inside the park would make it easier for the public to directly connect the park story to the resources and ease their movement with simpler logistics.

The educational programs presented to schools and other off-site entities would be expanded. All programs would emphasize the need to protect the monument's

sensitive archeological sites and Sonoran desert ecosystem.

Visitor and Resource Protection - Additional staff and security systems would provide twenty-four-hour protection of the monument's facilities and resources. Cooperative agreements with local law enforcement agencies and other emergency services for supplemental support would be updated and/or developed.

The current law enforcement needs assessment would be periodically reviewed and updated. An assessment to identify needed levels of emergency medical, fire, and search and rescue services would be developed to include the new on-site facilities. A study for passive resource protection systems would be produced and implemented. A plan to analyze the appropriate levels of visitor use and provide monitoring standards to protect visitor experiences and monument resources would be developed and implemented.

Viewshed - A scenic viewshed analysis would be developed.

Adjacent Lands - Attempts to minimize impacts on park and surrounding Tonto Basin resources from incompatible uses of adjacent lands would be expanded through cooperative management and mutual agreements with adjacent landowners. Cooperative agreements with other agencies would also promote the rural landscape consistent with cultural and scenic values. A boundary study would be completed that would identify additional significant resources to be protected adjacent to the park including Cave Canyon watershed. The study would also include recommendations to Congress for adjustments to the park boundary. A fence would be constructed along the legal boundary to protect existing and new lands. All unneeded interior fencelines would be removed. More staff and funds would be needed to inventory and assess these new lands and provide protection.

Partnerships - Partnerships with local, state, and federal agencies, tribes, organizations, and individuals in support of park missions and activities would continue to be developed and expanded. The possibility of forming a friends group to support the monument's mission and goals would be explored.

Land-Use Management - This alternative would provide for a sufficient increase in facilities *inside the monument* that support high-quality public education, visitor experience, and accommodate staff workspace needs. The developed area has about seven more acres (6%) than the no-action alternative. The new facilities (see below) would be located near the existing maintenance and residential buildings in the lowlands. No changes in land use would occur to the interpretive corridor or cliff dwellings management prescriptions.

The existing rugged appearance of the monument's canyons, hills, and cliffs would not change.

This alternative uses management prescriptions that emphasize appropriate levels of visitor experiences with appropriate levels of development. Management prescriptions (MP) describe how the park would be managed. These can be broken down as follows:

- About 85 acres (7.6%)—Developed MP
- About 1,026 acres (91.6%)— Restricted MP
- About 5 acres (0.5%)—Interpretive Corridor MP
- About 4 acres (0.4%)—Cliff Dwellings MP

Proposed Future Facility and Development Changes

A new 3,500-square foot accessible visitor center and supporting infrastructure including road and parking would be built

within the monument. Locating the new facility inside the monument would improve visitor understanding and resource stewardship with the *greatest impact* to park resources. Use of this facility would require more staff and substantially increase operational and utility costs.

An associated accessible interpretive trail would be constructed.

Administrative functions would be removed from the existing facility and a new 2,000-square foot building would be constructed elsewhere inside the monument. Operational efficiency would increase with the added workspace, yet would be more difficult to maintain with a second visitor center.

The existing visitor facility would be remodeled into a learning center. All first floor rooms would be fully accessible. Changing the original use of the visitor center into a learning center would lessen the value of the National Register-eligible building.

An alternative transportation system to access park resources would be developed and implemented. Visitors would be transported from the new visitor center to the learning center during the busiest times of the year. The ATS would transport visitors the same distance as in the preferred alternative equaling costs, vehicles, and operation time.

The boundary would be completely fenced.

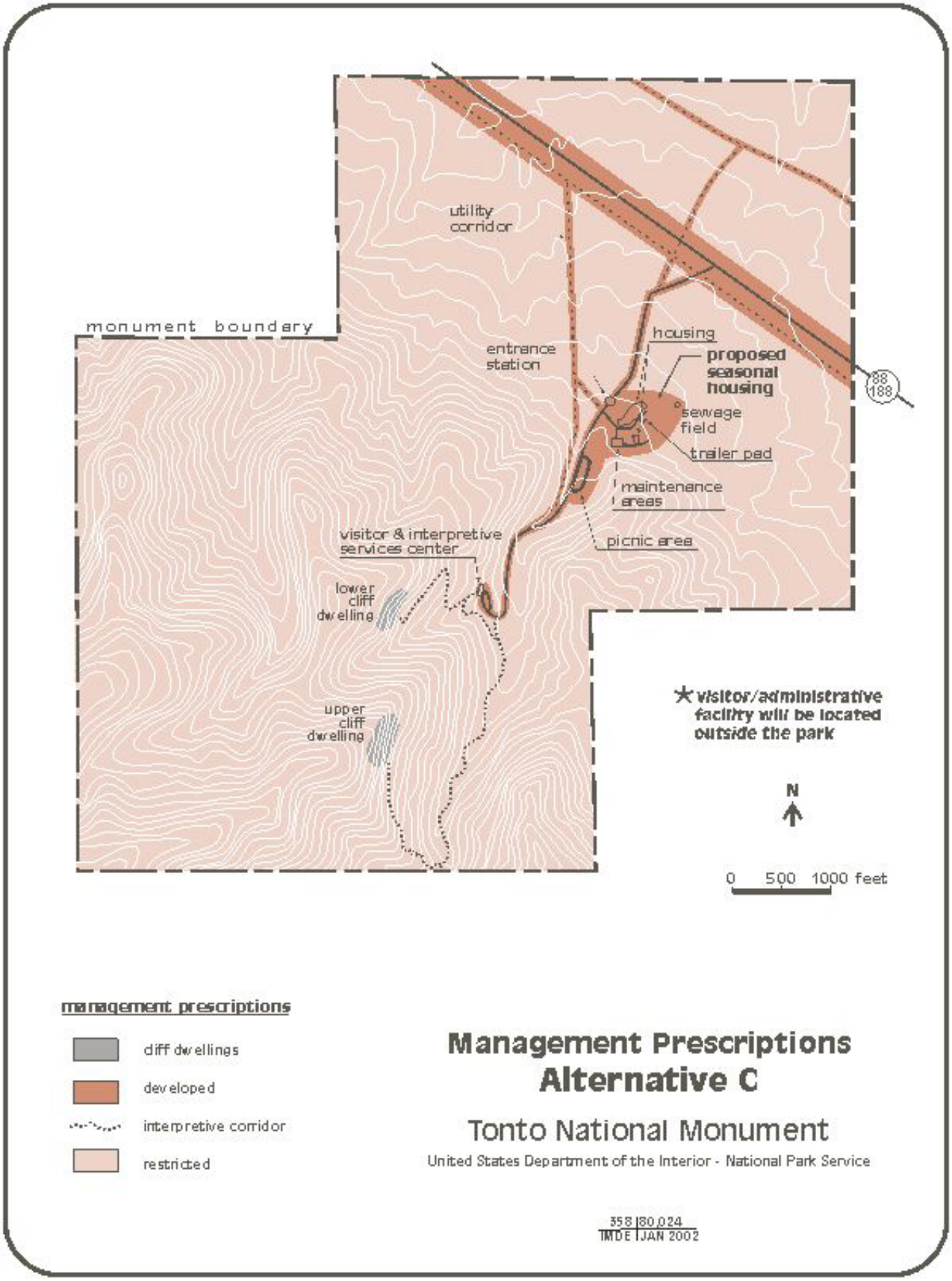
A new seasonal employee/volunteer residence would be constructed increasing the park's ability to obtain needed help for resource stewardship and visitor services.

Operational Costs - Under this alternative funding would be sought for an increase of 8 FTEs or $317,000 in base funding. (See Operational Cost Table 1.)

Development Costs - There would be an expenditure of $2,130,000. (See Table 2.)

Future Plans and Studies

- Security Plan
- Development Concept Plan
- Cultural Landscape Report -(CLR)
- Cultural Landscape Inventory – (CLI)
- Administrative History
- Historic Resource Study
- Historic Structures Report
- Ethnographic and Ethnohistory Studies
- Archeological Overview
- Assessment & Stabilization Plan
- Collections Management Plan
- Artifact Study with Institutional Involvement
- Environmental Condition Action Plan
- Vegetation Management Plan
- Viewshed Analysis
- Water Resource Assessment
- Response Need Assessment –(EMS/SAR)
- Passive Resource Protection Study
- VERP – Visitor Experience and Resource Protection Plan
- Comprehensive Interpretive Plan
- Alternative Transportation System Plan
- Boundary Study


utility corridor
monument boundary
entrance station
housing
proposed seasonal housing
sewage field
trailer pad
maintenance areas
picnic area
visitor & interpretive services center
lower cliff dwelling
upper cliff dwelling
88
188
★ visitor/administrative facility will be located outside the park
N
0 500 1000 feet
management prescriptions
diff dwellings
developed
interpretive corridor
restricted
Management Prescriptions
Alternative C
Tonto National Monument
United States Department of the Interior - National Park Service
358 80,024
IMDE JAN 2002

Alternative C

General Emphasis - This alternative is the same as Alternative B except that a new state-of-the-art visitor center and administrative facility with associated infrastructure would be built or an existing building remodeled *outside the monument* either in Roosevelt, Globe, or Payson to provide increased visitor educational experiences and accommodate staff workspace needs. Administrative staff would be moved out of the existing visitor center into this new facility. The existing visitor center would then be remodeled to expand visitor and interpretive services.

Administrative, maintenance, interpretation, resource management, and protection activities would improve with the additional facilities and staff levels. Staff levels and expertise would be enhanced with increased funding and training.

The cultural and natural resources programs would have an integrated approach, be raised to a higher standard, address diverse components, have sufficient professional-level staff, and have adequate reference materials.

Greatly increased educational experiences would be provided to enhance the visitor's understanding of the monument's values and protect cultural and natural resources. Interpretive programs would use the latest high-tech equipment and methods to provide educational material within a regional context so visitors could contemplate the Salado culture and its relationship to the surrounding Sonoran desert environment.

Heightened protection of the monument's facilities and resources would occur through increased NPS staffing and 24-hour security systems, and improved emergency services and cooperative law enforcement agreements.

The additional staff and new facilities located outside the monument would create more opportunities to form partnerships with other agencies, tribes, educational institutions, and the private sector that leverage the park's ability to provide quality visitor services and protect monument resources.

Relationships with adjacent and nearby land management agencies, tribes, and landowners would be expanded to manage the surrounding land using sound ecological principles.

Cultural Resources Management - A professional research and resource management program and an integrated comprehensive program design for resource investigation and management would be enhanced with added staff, expertise, and professional skills.

The new administrative offices and visitor center would provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the cultural resources management program. The new facility would provide sufficient space to update and expand museum exhibits.

Additional field studies and inventories of archeological sites would be done. A systematic program to monitor and evaluate archeological sites would be developed and implemented. An assessment and stabilization plan, subject to periodic review and update, would be developed, maintained, and implemented. Routine and emergency stabilization and preservation work would continue using better techniques and more skilled labor. All work would be documented and monitored for results. All previous stabilization efforts would be summarized in one report.

Ethnographic, archeological and historical research studies including oral histories,

historical structures reports, and preservation guides would be completed and available for use. Cultural landscapes would be inventoried, documented, and evaluated.

Natural Resources Management - A professional research and resource management program and an integrated comprehensive program design for natural resource investigation and management would be enhanced with added staff, expertise, and professional skills.

The new administrative offices and visitor center would provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the natural resources management program.

The resources management plan would be updated routinely, and action plans would be prepared to address specific environmental conditions and concerns. The IPM plans would be updated and/or new ones written as needed.

The monument's existing cooperative air monitoring program would continue. Low-flying aircraft would continue to be recorded and corrective action taken. A monitoring protocol would be developed to document noise from aircraft, boats on the lake, vehicular traffic, and mine blasting. The effects of these noise levels on wildlife would be determined.

The vegetation inventory would be completed to the 95% level or above. Long-term monitoring plots would be read and data analyzed to track vital signs, species, and/or habitats. Strategies and protocols would be consistent with other parks in southern Arizona to compare results. Specialized studies would be undertaken for unique habitat and species. Native plants, preferably cultivated from onsite stock, would be used for landscaping or rehabilitating disturbed sites. A systematic approach would be taken to remove non-native plants and restore native vegetation.

Long-term monitoring plots for vertebrates would be read to track vital signs, species, and/or habitats. Strategies and protocols would be consistent with other parks in southern Arizona to compare results. More work would be done on invertebrate species. Specialized studies would be undertaken for unique habitat and species. A systematic approach would be taken to identify and restore habitat, if necessary.

A complete survey of water sources would be done. Water quality and quantity would be documented and monitored to protect the sources for wildlife, vegetation, and humans. A procedure would be started to document flashflood events.

If site-specific soil data were needed for projects, it would be acquired to augment existing information. The geology would be examined and a report prepared with special attention given to the cliff dwelling alcoves to describe formation and stability.

Cliff Dwellings ROA - A comprehensive management model to direct cliff dwelling stabilization and preservation activities including the effects from natural processes would be developed. This model would direct the staff to complete increased stabilization and preservation activities on an annual recurring basis. Staff would continue to monitor damage caused by small mammals and other animals. A program to comprehensively monitor the range of environmental variables affecting the cliff dwellings would be developed and implemented. Monitoring data would be collected continuously and evaluated. IPM techniques would continue to be used when necessary.

New interpretive programs would be developed to provide more opportunities for visitors to view and understand the cliff dwelling architecture and Salado life. More uniformed personnel would be available to provide additional information to visitors. Protection of the cliff dwellings would increase with additional uniformed staff and installation of passive security systems.

Uplands and Lowlands ROAs - Long-term monitoring plots would be read routinely and data analyzed. Results would be used to respond to resource threats. Data would be shared with other parks and entities in Arizona and elsewhere. In the monument, the results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and their processes in the uplands and lowlands.

The current level of programs to visitors that explain the diverse resources of the uplands and lowlands would increase.

Cave Canyon Riparian ROA - Long-term monitoring plots would be read routinely and data analyzed. Results would be used to respond to resource threats. Data would be shared with other parks and entities in Arizona and elsewhere. In the monument, the results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and determining the appropriate levels of visitor use in the riparian area.

The interpretive staff would provide more visitor education programs about the riparian area to communicate the importance of water, shade, and the deciduous forest in the arid desert.

Human Resources - Necessary workspace and supporting supplies and equipment would be available for park staff to address resource, administrative, interpretive, visitor, protection, and maintenance needs. The number and expertise of employees would increase. Training for all employees in all disciplines would be enhanced with increased staffing and funding. Stewardship of the monument would increase.

Outreach and Interpretation - A new accessible visitor center would be built or an existing building remodeled *outside the monument* that uses state-of-the-art technology to provide educational and informational opportunities to the public about the monument and the rest of Tonto Basin.

The number and/or types of interpretive programs presented to the public linking them to the monument's resources using preservation and other stewardship themes would increase. Visitor experience through understanding would increase. Locating some of the interpretive services outside the park at the new visitor center would make it more difficult for the public to directly connect the park story to the resources and complicate their movement with complex logistics.

The educational programs presented to schools and other off-site entities would be expanded. All programs would emphasize the need to protect the monument's sensitive archeological sites and Sonoran desert ecosystem.

Visitor and Resource Protection - Additional staff and security systems would provide twenty-four-hour protection of the monument's resources and facilities. Cooperative agreements with local law enforcement agencies and other emergency services for supplemental support would be updated and/or developed.

The current law enforcement needs assessment would be periodically reviewed and updated. An assessment identifying

needed levels of emergency medical, fire, and search and rescue services would be developed to include new off-site facilities. A study for passive resource protection systems would be produced and implemented. A plan to analyze appropriate levels of visitor use and provide monitoring standards to protect visitor experiences and monument resources would be developed and implemented.

Viewshed - A scenic viewshed analysis would be developed.

Adjacent Lands - Attempts to minimize impacts on park and surrounding Tonto Basin resources from incompatible uses of adjacent lands would be expanded through cooperative management and mutual agreements with adjacent landowners. Cooperative agreements with other agencies would also promote the rural landscape consistent with cultural and scenic values. A boundary study would be completed that would identify additional significant resources to be protected adjacent to the park including Cave Canyon watershed. The study would also include recommendations to Congress for adjustments to the park boundary. A fence would be constructed along the legal boundary to protect existing and new lands. All unneeded interior fencelines would be removed. More staff and funds would be needed to inventory and assess these new lands and provide continued protection.

Partnerships - Partnerships with local, state, and federal agencies, tribes, organizations, and individuals in support of park missions and activities would continue to be developed and expanded. The possibility of forming a friends group to support the monument's mission and goals would be explored.

Land-Use Management - This alternative would provide for a sufficient increase in facilities *outside the monument* that support high-quality public education, visitor experience, and accommodate staff workspace needs. The developed area has one more acre than the no action alternative. The new facilities (see below) inside the monument would be located near the existing houses. No changes in land use would occur to the interpretive corridor or cliff dwellings management prescriptions. The existing rugged appearance of the monument's canyons, hills, and cliffs would not change.

This alternative uses management prescriptions that emphasize appropriate levels of visitor experiences with appropriate levels of development.

Management prescriptions (MP) describe how the park would be managed. These can be broken down as follows:

- About 78 acres (6.9%)—Developed MP
- About 1033 acres (92.2%)— Restricted MP
- About 5 acres (0.5%)—Interpretive Corridor MP
- About 4 acres (0.4%)—Cliff Dwellings MP

Proposed Future Facility and Development Changes

A new or upgraded accessible visitor/administrative facility and supporting infrastructure would be located *outside the monument* boundary. Locating the new facility outside the monument would provide the most improvements to visitor understanding and resource stewardship with the *least impact* to park resources. Use of this facility would require more staff and substantially increase operational and utility costs.

The existing visitor facility would be remodeled. The lobby, museum, publication sales area, and indoor interpretive programs would become more accessible. The original use of the visitor center (altering the value of the National Register-eligible building) would probably

change based on the location of the new visitor center. Operational efficiency would increase with the added workspace, yet would be more difficult to maintain with some employees stationed outside the park.

An alternative transportation system to access park resources would be developed and implemented to transport visitors from the new visitor center to the existing visitor center during the busiest times of the year. The ATS would transport visitors more miles in this alternative increasing costs, vehicles, and operation time.

The boundary would be completely fenced.

A seasonal employee/volunteer residence would be constructed increasing the park's ability to obtain needed help for resource stewardship and visitor services.

Operational Costs - Under this alternative funding would be sought for an increase of 9 FTEs or $354,000 in base funding. (See Operational Cost Table 1.)

Development Costs - There would be an expenditure of $2,068,000. (See Table 2.)

Future Plans and Studies

- Security Plan
- Development Concept Plan
- Cultural Landscape Report -(CLR)
- Cultural Landscape Inventory – (CLI)
- Administrative History
- Historic Resource Study
- Historic Structures Report
- Ethnographic and Ethnohistory Studies
- Archeological Overview
- Assessment & Stabilization Plan
- Collections Management Plan
- Artifact Study with Institutional Involvement
- Environmental Condition Action Plan
- Vegetation Management Plan
- Viewshed Analysis
- Water Resource Assessment
- Response Need Assessment –(EMS/SAR)
- Passive Resource Protection Study
- VERP – Visitor Experience and Resource Protection Plan
- Comprehensive Interpretive Plan
- Alternative Transportation System Plan
- Boundary Study

Alternative D – NPS Preferred

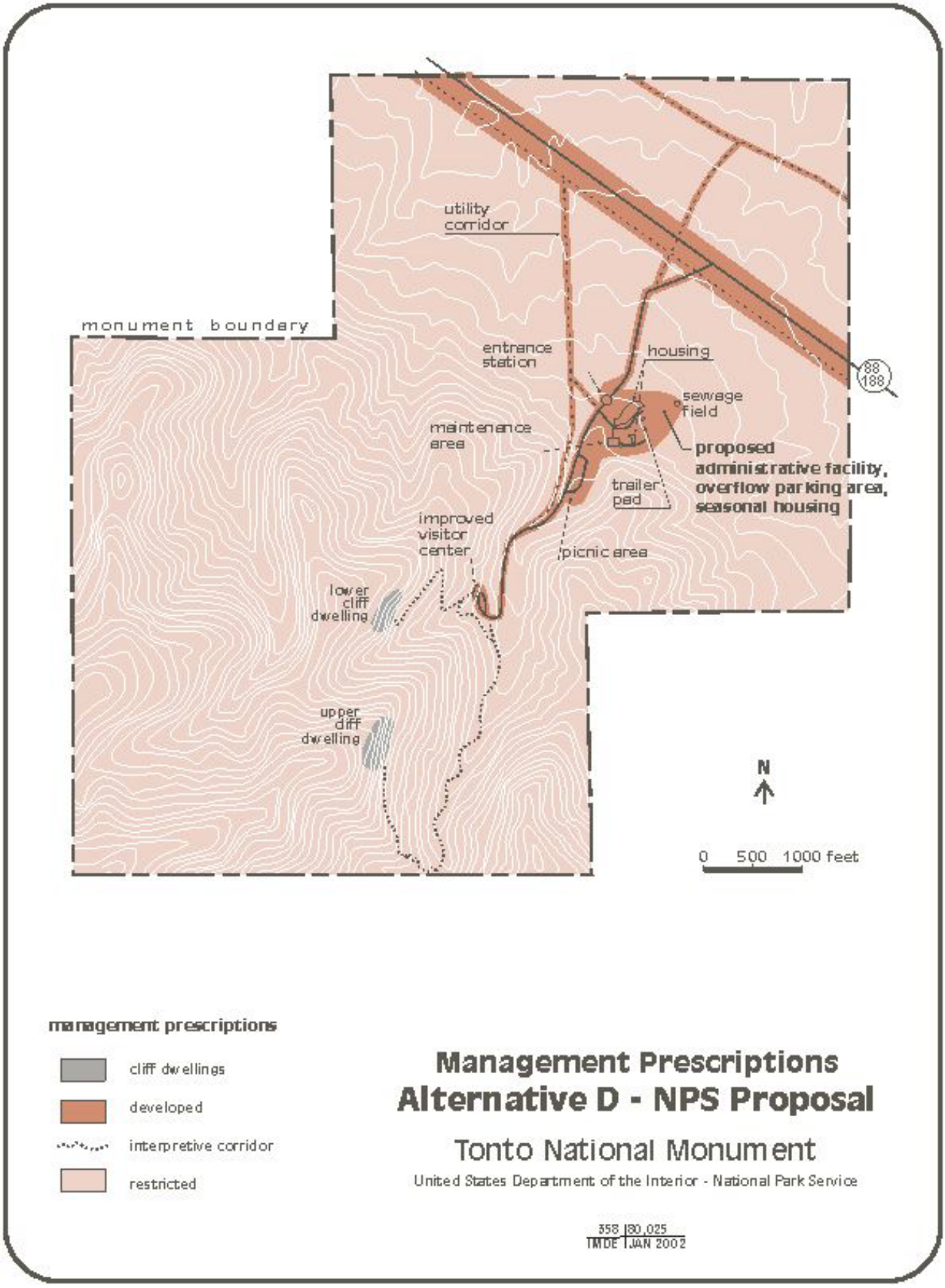
General Emphasis - This alternative is the National Park Service's proposal. It is similar to Alternatives B and C except that a *new visitor/administrative facility would not be built*. Instead, the administrative operation would be moved out of the existing visitor center to a new facility constructed *inside the monument* near the maintenance facility to accommodate staff workspace needs. The existing visitor center building would be remodeled to provide slightly increased visitor educational experiences.

Administrative, maintenance, interpretation, resource management, and protection activities would improve with the additional facilities and staff levels. Staff levels and expertise would be enhanced with increased funding and training.

The cultural and natural resources programs would have an integrated approach, be raised to a higher standard, address diverse components, have sufficient professional-level staff, and have adequate reference materials.

Slightly increased educational experiences would be provided to enhance the visitor's understanding of the monument's values and protect cultural and natural resources. Interpretive programs would use improved equipment and methods to provide educational material within a regional context so visitors could contemplate the Salado culture and its relationship to the surrounding Sonoran desert environment.

Heightened protection of the monument's facilities and resources would occur through increased NPS staffing and 24-


utility corridor
monument boundary
entrance station
housing
sewage field
maintenance area
proposed administrative facility, overflow parking area, seasonal housing
trailer pad
improved visitor center
picnic area
lower cliff dwelling
upper cliff dwelling
88
188
N
0 500 1000 feet
management prescriptions
cliff dwellings
developed
interpretive corridor
restricted
Management Prescriptions
Alternative D - NPS Proposal
Tonto National Monument
United States Department of the Interior - National Park Service
358 80,025
TMDE JAN 2002

hour security systems, and improved emergency services and cooperative law enforcement agreements.

The additional staff would create more opportunities to form partnerships with other agencies, tribes, educational institutions, and the private sector that leverage the park's ability to provide quality visitor services and protect monument resources.

Relationships with adjacent land management agencies, tribes, and landowners would be expanded to manage the surrounding land using sound ecological principles.

Cultural Resources Management - A professional research and resource management program and an integrated comprehensive program design for resource investigation and management would be enhanced with added staff, expertise, and professional skills.

The new administrative offices and remodeled visitor center would provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the cultural resources management program. The remodeled facility would provide some additional space to improve and expand museum exhibits.

Additional field studies and inventories of archeological sites would be done. A systematic program to monitor and evaluate archeological sites would be developed and implemented. An assessment and stabilization plan, subject to periodic review and update, would be developed, maintained, and implemented. Routine and emergency stabilization and preservation work would continue using better techniques and more skilled labor. All work would be documented and monitored for results. All previous stabilization efforts would be summarized in one report.

Ethnographic, archeological and historical research studies including oral histories, historical structures reports, and preservation guides would be completed and available for use. Cultural landscapes would be inventoried, documented, and evaluated.

Natural Resources Management - A professional research and resource management program and an integrated comprehensive program design for natural resource investigation and management would be enhanced with added staff, expertise, and professional skills.

The new administrative offices and remodeled visitor center would provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the natural resources management program.

The resources management plan would be updated routinely, and action plans would be prepared to address specific environmental conditions and concerns. The IPM plans would be updated and/or new ones written as needed.

The monument's existing cooperative air monitoring program would continue. Low-flying aircraft would continue to be recorded and corrective action taken. A monitoring protocol would be developed to document noise from aircraft, boats on the lake, vehicular traffic, and mine blasting. The effects of these noise levels on wildlife would be determined.

The vegetation inventory would be completed to the 95% level or above. Long-term monitoring plots would be read and data analyzed to track vital signs, species, and/or habitats. Strategies and protocols would be consistent with other parks in southern Arizona to compare results. Specialized studies would be

undertaken for unique habitat and species. Native plants, preferably cultivated from onsite stock, would be used for landscaping or rehabilitating disturbed sites. A systematic approach would be taken to remove non-native plants and restore native vegetation.

Long-term monitoring plots for vertebrates would be read to track vital signs, species, and/or habitats. Strategies and protocols would be consistent with other parks in southern Arizona to compare results. More work would be done on invertebrate species. Specialized studies would be undertaken for unique habitat and species. A systematic approach would be taken to identify and restore habitat, if necessary.

A complete survey of water sources would be done. Water quality and quantity would be documented and monitored to protect the sources for wildlife, vegetation, and humans. A procedure would be started to document flashflood events.

If site-specific soil data were needed for projects, it would be acquired to augment existing information. The geology would be examined and a report prepared with special attention given to the cliff dwelling alcoves to describe formation and stability.

Cliff Dwellings ROA - A comprehensive management model to direct cliff dwelling stabilization and preservation activities including the effects from natural processes would be developed. This model would direct the staff to complete increased stabilization and preservation activities on an annual recurring basis. Staff would continue to monitor damage caused by small mammals and other animals. A program to comprehensively monitor the range of environmental variables affecting the cliff dwellings would be developed and implemented. Monitoring data would be collected continuously and evaluated. IPM techniques would continue to be used when necessary.

Additional interpretive programs would be developed to provide more opportunities for visitors to view and understand the cliff dwelling architecture and Salado life. More uniformed personnel would be available to provide additional information to visitors. Protection of the cliff dwellings would increase with additional uniformed staff and installation of passive security systems.

Uplands and Lowlands ROAs - Long-term monitoring plots would be read routinely and data analyzed. Results would be used to respond to resource threats. Data would be shared with other parks and entities in Arizona and elsewhere. In the monument, the results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and their processes in the uplands and lowlands.

The current level of programs to visitors that explain the resource diversity would be increased.

Cave Canyon Riparian ROA - Long-term monitoring plots would be read routinely and data analyzed. Results would be used to respond to resource threats. Data would be shared with other parks and entities in Arizona and elsewhere. In the monument, the results would be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and determining the appropriate levels of visitor use in the riparian area.

The interpretive staff would provide more visitor education programs about the riparian area to communicate the importance of water, shade, and the deciduous forest in the arid desert.

Human Resources - Sufficient workspace and supporting supplies and equipment

would be available for park staff to address resource, administrative, interpretive, visitor, protection, and maintenance needs. The number and expertise of employees would increase. Training for all employees in all disciplines would be enhanced with increased staffing and funding. Stewardship of the monument would increase.

Outreach and Interpretation - The existing visitor center would be remodeled to provide increased educational and informational opportunities to the public about the monument and the rest of Tonto Basin. Initial contact with visitors would continue to take place at the existing visitor center. The number and/or types of interpretive programs presented to the public linking them to the monument's resources using preservation and other stewardship themes would slightly increase. Visitor experience through understanding would slightly increase. Locating all interpretive services in one location at the existing visitor center would make it easier for the public to directly connect the park story to the resources and ease their movement with simpler logistics.

The educational programs presented to schools and other off-site entities would be expanded. All programs would emphasize the need to protect the monument's sensitive archeological sites and Sonoran desert ecosystem.

Visitor and Resource Protection - Additional staff and security systems would provide twenty-four-hour protection of the monument's resources and facilities. Cooperative agreements with local law enforcement agencies and other emergency services for supplemental support would be updated and/or developed.

The current law enforcement needs assessment would be periodically reviewed and updated. An assessment identifying needed levels of emergency medical, fire, and search and rescue services would be developed to include new on-site facilities. A study for passive resource protection systems would be produced and implemented. A plan to analyze appropriate levels of visitor use and provide monitoring standards to protect visitor experience and resource protection would be developed and implemented.

Viewshed - A scenic viewshed analysis would be developed.

Adjacent Lands - Attempts to minimize impacts on park and surrounding Tonto Basin resources from incompatible uses of adjacent lands would be expanded through cooperative management and mutual agreements with adjacent landowners. Cooperative agreements with other agencies would also promote the rural landscape consistent with cultural and scenic values. A boundary study would be completed that would identify additional significant resources to be protected adjacent to the park including Cave Canyon watershed. The study would also include recommendations to Congress for adjustments to the park boundary. A fence would be constructed along the legal boundary to protect existing and new lands. All unneeded interior fencelines would be removed. More staff and funds would be needed to inventory and assess these new lands and provide continued protection.

Partnerships - Partnerships with local, state, and federal agencies, tribes, organizations, and individuals in support of park missions and activities would continue to be developed and expanded. The possibility of forming a friends group to support the monument's mission and goals would be explored.

Land-Use Management - This alternative would provide for a slight increase in

facilities *inside the monument* that support improved public education, visitor experience, and accommodate staff workspace needs. The developed area has two more acres than the no action alternative. The new facilities would be located near the existing maintenance facility in the lowlands. No changes in land use would occur to the interpretive corridor or cliff dwellings management prescriptions. The existing rugged appearance of the monument's canyons, hills, and cliffs would not change.

This alternative uses management prescriptions that emphasize appropriate levels of visitor experiences with appropriate levels of development. Management prescriptions (MP) describe how the park would be managed. These can be broken down as follows:

- About 79 acres (7.1%)—Developed MP
- About 1032 acres (92.1%)— Restricted MP
- About 5 acres (0.5%)—Interpretive Corridor MP
- About 4 acres (0.4%)—Cliff Dwellings MP

Proposed Future Facility and Development Changes

Administrative functions would be removed from the existing facility and a new 2,000-square foot building would be constructed elsewhere inside the park. The existing cultural landscape would be impacted by the new administrative facility yet no archeological sites would be affected. Operational efficiency would substantially increase with the added workspace and with one visitor center to maintain. Use of this facility would increase utility costs.

The existing visitor facility would be remodeled. Remodeling the existing facility would improve visitor access, understanding, and resource stewardship and would not impact park resources. The lobby, museum, publication sales area, and indoor interpretive programs would become more accessible. However, remodeling the visitor center is contingent upon construction of a new administrative facility, which would impact park resources. Keeping the original use of the visitor center (rather than constructing a new building) would retain the value of the National Register-eligible building.

A 10- to 50-vehicle transportation staging area would be developed and an alternative transportation system to access park resources would be developed and implemented to transport visitors from the new staging area near the entrance station to the visitor center during the busiest times of the year. The ATS would transport visitors the same distance as in Alternative B equaling costs, vehicles, and operation time.

The boundary would be completely fenced.

A seasonal employee/volunteer residence would be constructed increasing the park's ability to obtain needed help for resource stewardship and visitor services.

Operational Costs - Under this alternative funding would be sought for an increase of 6 FTEs or $242,000 in base funding required. (See Operational Cost Table 1.)

Development Costs - There would be an expenditure of $1,117,000. (See Table 2.)

Future Plans and Studies

- Security Plan
- Development Concept Plan
- Cultural Landscape Report -(CLR)
- Cultural Landscape Inventory – (CLI)
- Administrative History
- Historic Resource Study
- Historic Structures Report
- Ethnographic and Ethnohistory Studies
- Archeological Overview
- Assessment & Stabilization Plan
- Collection Management Plan
- Artifact Study with Institutional Involvement

- Environmental Condition Action Plan
- Vegetation Management Plan
- Water Resource Assessment
- Viewshed Analysis
- Response Need Assessment –(EMS/SAR)
- Passive Resource Protection Study
- VERP – Visitor Experience and Resource Protection Plan
- Comprehensive Interpretive Plan
- Alternative Transportation System Plan
- Boundary Study

Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "the environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in NEPA's Section 101." ("Forty Most Asked Questions Concerning Council on Environmental Quality's National Environmental Policy Act Regulations", 1981.)

Section 101 of the National Environmental Policy Act states that "…it is the continuing responsibility of the Federal Government to … (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradations, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice; (5) achieve a balance between population and resource use which would permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources." The environmentally preferable alternative for this project is based on these national environmental policy goals.

Alternative A – No Action. The No-Action Alternative continues the existing limited cultural and natural resource management programs and maintains the overcrowded visitor/administrative facility. This alternative would disturb the *least* amount of natural and cultural resources compared to the other alternatives; no new facilities would be constructed and the National Register eligible Mission 66-visitor center would not be remodeled. However, the existing limited cultural and natural resource education, protection, and preservation programs would continue to operate as they have in the past with insufficient staff and information. Therefore, this alternative would not result in the same level of protection of natural and cultural resources over the long-term as would occur with the three other alternatives. Consequently, the No-action Alternative does not satisfy provisions 1 and 4 of NEPA's Section 101.

Alternative B. Alternative B updates and improves the park's cultural and natural resource programs with the *greatest* amount of ground disturbance *inside* the park. About seven acres would be disturbed to construct the new visitor/administrative facility, associated parking lot, nature trail, and seasonal employee/volunteer residence. Improvements to parking would ultimately provide for increased safety of visitors. The cultural and natural resource education, protection, and preservation programs would *greatly improve* with sufficient staff and information.

Therefore, this alternative would result in better protection of natural and cultural resources over the long-term than Alternative A. However, Alternative B does not satisfy provision 3 of NEPA's Section 101.

Alternative C. Alternative C updates and improves the park's cultural and natural resource programs with the *least* amount of ground disturbance *inside* the park, but instead, disturbance would occur *outside* the park. Less than one acre would be disturbed inside the park to construct the seasonal employee/volunteer residence, but another six acres would be disturbed outside the park to construct the visitor/administrative facility and associated parking lot. The longer route of the alternative transportation system would heighten safety concerns. The cultural and natural resource education, protection, and preservation programs would *greatly improve* with sufficient staff and information. Therefore, this alternative would result in better protection of natural and cultural resources over the long-term than Alternative A. Consequently, Alternative C does not satisfy provisions 2 and 3 of NEPA's Section 101.

Alternative D – NPS Preferred. The Preferred Alternative strives to update and improve the park's cultural and natural resource programs with the *least* amount of ground disturbance *both inside and outside* the park. Less than two acres would be disturbed inside the park to construct the administrative facility, ATS staging area, and seasonal employee/volunteer residence; no facilities would be built outside the park. Improvements to parking would ultimately increase the safety of visitors. The cultural and natural resource education, protection, and preservation programs would *greatly improve* with sufficient staff and information. Therefore, this alternative would result in better protection of natural and cultural resources over the long-term than Alternative A. This alternative would realize each of the provisions of the national environmental policy goals.

The *environmentally preferable* alternative is *Alternative D* because it surpasses the other alternatives in realizing the full range of national environmental policy goals as stated in δ101 of the National Environmental Policy Act. Although the No-action Alternative and Alternative C achieve less disturbance of cultural and natural resources inside the park, the *NPS preferred alternative* does (1) provide a high level of protection of natural and cultural resources while concurrently attaining the widest range of neutral and beneficial uses of the environment with the least amount of degradation; and, (2) integrate resource protection with an appropriate range of visitor uses.

TABLE 1 OPERATIONAL COSTS (Increases in FTEs by Alternative)				
Description	**A***	**B****	**C****	**D****
Interpretation/VS	5.5*	5.0	6.0	3.0
Administration	3.0*	0.0	0.0	0.0
Maintenance	2.5*	1.0	1.0	1.0
Natural Resources	1.0*	1.0	1.0	1.0
Cultural Resources	1.0*	1.0	1.0	1.0
TOTAL Proposed Increase	0.0*	8.0	9.0	6.0

Alternative A: shows existing with no increase.
Alternative B: funding sought for an additional 8 FTEs or $317,000 for increased staff.
Alternative C: funding sought for an additional 9 FTEs or $354,000 for increased staff.
Alternative D funding sought for an additional 6 FTEs or $242,000 for increased staff.

** Existing FTEs*
*** Indicates Additional Full Time Equivalents (FTE)*

TABLE 2 POSSIBLE FUTURE DEVELOPMENT COSTS				
Description	**A**	**B**	**C***	**D***
Visitor Center (3500s.f.)		$ 784,000		
Administrative facility		$421,000		$421,000
Modify existing visitor center		$75,000	$75,000	$ 75,000
Asphalt-surfaced trail		$ 60,000		
Fence boundary		$163,000	$163,000	$163,000
Two-bedroom duplex		$152,000	$152,000	$152,000
Visitor Center and administrative facility (5500 s.f.) off site			$ 1,205,000	
Asphalt parking area		$81,000	$81,000	$ 99,000
Sub Total		**$1,736,000**	**$1,676,000**	**$910,000**
Shuttle Vans		$75,000	$100,000	$75,000
Project Planning and Advance Cost		$319,000	$292,000	$132,000
TOTAL		**$2,130,000**	**$2,068,000**	**$1,117,000**

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
General Emphasis	+ This alternative would maintain existing facilities. Park operations would continue at present levels.	+ This alternative would provide an increase and modification of park facilities. Park operations would increase with additional staff.	+ This alternative would provide additional facilities outside the park and modification of in-park facilities. Park operations would increase with additional staff.	+ Same as Alternative B.
	+ Existing visitor and administrative facilities would be maintained to support current activities. No new facilities would be built.	+ A new visitor/ administrative facility with associated infrastructure would be built *within the monument* to provide increased visitor education experiences and accommodate staff workspace needs.	+ A new visitor/ administrative facility with associated infrastructure would be built at a location *outside the monument* to provide increased visitor education experiences and accommodate staff workspace needs.	+ The administrative operation would be moved out of the existing building to new facility inside the park and the existing visitor center would be remodeled to improve visitor education experiences and accommodate staff workspace needs.
	+ Existing administrative, maintenance, interpretation, resource management, protection, and land use activities would continue at present levels.	+ Administrative, maintenance, interpretation, resource management, protection, and land use activities would improve with additional staff and facilities.	+ Same as Alternative B.	+ Same as Alternative B.
	+ The limited cultural and natural resources programs would not have an integrated approach, be raised to a higher standard, address diverse components, have sufficient staff, or have adequate reference materials on hand.	+ The cultural and natural resources programs would have an integrated approach, be raised to a higher standard, address diverse components, have sufficient professional-level staff, and have adequate reference materials.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Interpretive programs would use existing equipment and methods to provide educational opportunities.	+ Interpretive programs would use high-tech equipment and methods to provide educational material within a broader context so visitors could contemplate the Salado culture in relation to regional prehistory and the Sonoran desert environment.	+ Same as Alternative B.	+ Interpretive programs would use improved equipment and methods to provide educational material within a broader context so visitors could contemplate the Salado culture in relation to regional prehistory and the Sonoran desert environment.
	+ Existing educational experiences to enhance visitor's understanding of monument values and protect cultural and natural resources would continue.	+ Greatly increased educational experiences would enhance visitor's understanding of monument values and protect cultural and natural resources.	+ Same as Alternative B.	+ Increased educational experiences would enhance visitor's understanding of monument values and protect cultural and natural resources.

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
General Emphasis	+ Existing limited protection activities would continue.	+ Heightened protection would occur through increased NPS staffing and 24-hour security systems, and improved emergency services and cooperative law enforcement agreements.	+ Same as Alternative B	+ Same as Alternative B
	+ Existing relationships with partners would continue.	+ Additional staff would create more opportunities to form partnerships with other agencies, tribes, educational institutions, and the private sector that leverage the park's ability to provide quality visitor services and protect monument resources.	+ Additional staff and new facilities located outside the monument would create increased opportunities to form partnerships with other agencies, tribes, educational institutions, and the private sector that leverage the park's ability to provide quality visitor services and protect monument resources.	+ Same as Alternative B
	+Existing relationships with adjacent and nearby land management agencies, tribes, and landowners would continue.	+Relationships with adjacent and nearby land management agencies, tribes, and landowners to manage the landscape using sound ecological principles would be increased.	+ Same as Alternative B	+ Same as Alternative B
	+Staff levels and expertise would be opportune depending on funding and training.	+Staff levels would be increased and staff expertise would be enhanced.	+ Same as Alternative B	+ Same as Alternative B
Cultural Resources Management	+ A professional research and resource management program would continue on a limited basis with present staff levels.	+ A professional research and resource management program and an integrated comprehensive program design for resource investigation and management would be provided and implemented.	+ Same as Alternative B	+ Same as Alternative B
	+ Existing inadequate space and material for the reference library would continue.	+ The reference library would be expanded and organized into a dedicated space in the new facility.	+ Same as Alternative B	+ The reference library would be expanded and organized into a dedicated space in the remodeled facility.
	+ A limited assessment and stabilization plan would be provided. Current limited levels of stabilization would continue.	+ A comprehensive assessment and stabilization plan, subject to periodic review and update, would be developed, maintained, and implemented for both historic and prehistoric structures.	+ Same as Alternative B	+ Same as Alternative B

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
Cultural Resources Management	+ Existing program to monitor archeological sites would continue.	+ Archeological sites would be completely inventoried, monitored, evaluated, and stabilized, where applicable.	+ Same as Alternative B	+ Same as Alternative B
	+ Information on cultural landscapes would be gathered when possible.	+ Cultural landscapes would be inventoried, documented, evaluated, and managed.	+ Same as Alternative B	+ Same as Alternative B
	+ Needed ethnographic, archeological, and historical research would be completed as funding permits.	+ Appropriate ethnographic, archeological, and historical research studies would be completed and available for use.	+ Same as Alternative B	+ Same as Alternative B
	+ Management and display of museum collections would continue within existing limited space. Archives and photographs would continue to be housed in various locations.	+ The management and interpretation of in-park museum collections would greatly improve. Archives and photographs would be centrally organized with the creation of enhanced space.	+ Same as Alternative B.	+ Less space would be available than in Alt. B and C to improve the management and interpretation of in-park museum collections. Organization of archives and photographs would be slightly improved with the creation of increased space.
Natural Resources Management	+ A professional research and resource management program would continue on a limited basis with present staff levels.	+ A professional research and resource management program and an integrated comprehensive program design for resource investigation and management would be enhanced.	+ Same as Alternative B	+ Same as Alternative B
	+ Existing inadequate space and material for the reference library would continue.	+ The reference library would be expanded and organized into a dedicated space in the new facility.	+ Same as Alternative B	+ Same as Alternative B
	+ The park would continue to maintain existing number of specific action plans to address environmental conditions and concerns.	+ The park would develop specific action plans to address environmental conditions and concerns.	+ Same as Alternative B	+ Same as Alternative B
	+ The park's coordinated program for Class I air monitoring would continue.	+ Same as Alternative A	+ Same as Alternative A	+ Same as Alternative A
	+ Existing limited program to monitor aircraft noise would continue.	+ A noise management strategy would be developed and implemented.	+ Same as Alternative B	+ Same as Alternative B
	+ Existing program to control non-native plants and restore disturbed areas with native plants would continue.	+ Vegetation inventory would be completed and program would be established to monitor vegetation, control non-natives, and restore natives.	+ Same as Alternative B	+ Same as Alternative B

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
Natural Resources Management	+ Wildlife inventory and monitoring would be conducted, as funding is available.	+ Wildlife would be inventoried, monitored, and evaluated to restore habitat, if necessary.	+ Same as Alternative B	+ Same as Alternative B
	+ Existing documentation of human water use would continue. Water sources would be inventoried when funding allows.	+ Water sources would be inventoried, documented, and monitored to provide adequate supply for wildlife and human consumption.	+ Same as Alternative B	+ Same as Alternative B.
	+ Geological reports would be prepared when funding allows.	+ Geology would be examined and report prepared.	+ Same as Alternative B	+ Same as Alternative B
	+ Current IPM action plans would be updated and implemented.	+ IPM action plans identifying new pests would be updated and implemented.	+ Same as Alternative B	+ Same as Alternative B
Cliff Dwellings ROA	+ The limited program to monitor some environmental variables would continue. Some research data would be available.	+ A program to comprehensively monitor the range of environmental variables would be developed and implemented through collecting continuous data.	+ Same as Alternative B	+ Same as Alternative B
	+ Current limited levels of stabilization and preservation would continue.	+ Increased stabilization and preservation on an annual recurring basis would be provided.	+ Same as Alternative B	+ Same as Alternative B
	+ A management model would be developed when funding allows.	+ A comprehensive management model to direct stabilization and preservation activities including effects from natural processes and visitor use would be developed.	+ Same as Alternative B	+ Same as Alternative B
	+ Monitoring would continue at minimal levels necessary for protection.	+ Inventory and monitoring protocols for resources and processes would be developed and implemented.	+ Same as Alternative B	+ Same as Alternative B
	+ Existing security measures would continue.	+ Increased security (passive/active) would be provided.	+ Same as Alternative B	+ Same as Alternative B
	+ Current levels of visitor interaction would continue.	+ Increased opportunities for visitors to interact with uniformed staff would be provided.	+ Same as Alternative B	+ Same as Alternative B
	+ Current level of visitor opportunities to understand the resource diversity would continue.	+ Visitor opportunities to view and understand the resource diversity would be increased.	+ Same as Alternative B	+ Same as Alternative B

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
Uplands and Lowlands ROAs	+ A management model would be developed when funding allows.	+ A comprehensive management model to protect natural and cultural components and processes would be developed and implemented.	+ Same as Alternative B	+ Same as Alternative B
	+ Current level of visitor opportunities to understand the resource diversity would continue.	+ Visitor opportunities to understand the resource diversity would be increased.	+ Same as Alternative B	+ Same as Alternative B
Cave Canyon Riparian ROA	+ Inventory and monitoring protocols would be developed and implemented when funding allows.	+ Inventory and monitoring protocols for natural and cultural resources and processes would be developed and implemented.	+ Same as Alternative B	+ Same as Alternative B
	+ A management model would be developed when funding allows.	+ A comprehensive management model to preserve natural and cultural components and processes and determine the appropriate levels of visitor use would be developed and implemented.	+ Same as Alternative B	+ Same as Alternative B
	+ Current program of visitor awareness and education would continue.	+ Increased visitor awareness and education programs would be provided.	+ Same as Alternative B	+ Same as Alternative B
Human Resources	+ Existing resources and workspace for park staff would continue.	+ Adequate resources and workspace would be available for park staff to address resource, administrative, protection, visitor, and maintenance needs.	+ Same as Alternative B.	+ Less resources and workspace would be available than in Alternatives B and C, but more than in Alternative A.
	+ Staff levels would be opportune depending on funding.	+ Staff levels would increase by 8 FTEs.	+ Staff levels would increase by 9 FTEs.	+ Staff levels would increase by 6 FTEs.
	+ Staff training would be opportune depending on funding and staff availability.	+ Staff-training opportunities in all disciplines would increase.	+ Same as Alternative B.	+ Same as Alternative B.
Land Use Management	+Developed MP – about 78 acres.	+Developed MP – about 85 acres.	+Developed MP – about 78 acres.	+Developed MP – about 79 acres.
	Restricted MP – about 1033 acres.	Restricted MP – about 1026 acres.	Restricted MP – about 1033 acres.	Restricted MP – about 1032 acres.
	Interpretive Corridor MP – about 5 acres.	Interpretive Corridor MP – about 5 acres.	Interpretive Corridor MP – about 5 acres.	Interpretive Corridor MP – about 5 acres.
	Cliff Dwellings MP – about 4 acres.	Cliff Dwellings MP – about 4 acres.	Cliff Dwellings MP – about 4 acres.	Cliff Dwellings MP – about 4 acres.

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
Outreach and Interpretation	+The present visitor center would continue to provide existing levels of educational and informational opportunities.	+ A visitor center would be built on-site that uses state-of-the-art technology to provide increased educational and informational opportunities.	+ A visitor center would be built or remodeled off-site that uses state-of-the-art technology to provide increased educational and informational opportunities.	+ The existing visitor center would be remodeled to provide increased educational and informational opportunities.
	+The existing interpretive program would continue.	+ The interpretive program linking the visitor to the park's resources using preservation and other stewardship themes would increase.	+ Same as Alternative B.	+ Same as Alternative B.
	+Locating all interpretive services inside the park would be easier for visitors to connect the park story to the resources and ease their movement with simpler logistics.	+ Same as Alternative A.	+Locating some interpretive services outside the park would be more difficult for visitors to connect the park story to the resources and complicate their movement with complex logistics.	+ Same as Alternative A.
	+ The existing educational program to schools and other off-site entities would continue.	+ Geographic distribution of existing educational curriculum to schools, other off-site entities, and electronic medium would be expanded.	+ Same as Alternative B.	+ Same as Alternative B.
Visitor & Resource Protection	+ Current limited levels would be maintained.	+ Twenty-four-hour security of sites and facilities that includes the ability to provide the appropriate level of law enforcement response would be implemented.	+ Same as Alternative B.	+ Same as Alternative B.
	+ The law enforcement needs assessment would be updated and maintained.	+ The law enforcement needs assessment would be periodically reviewed and updated. An assessment identifying needed levels of EMS response, fire, and SAR services would be developed to include new on-site facilities.	+ The law enforcement needs assessment would be periodically reviewed and updated. An assessment identifying needed levels of EMS response, fire, and SAR services would be developed to include new off-site facilities.	+ Same as Alternative B.
	+ A study for passive resource protection would be completed when possible.	+ A study for passive resource protection would be produced and implemented.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Current level of cooperative services with local law enforcement and other emergency agencies would be maintained.	+ Cooperative agreements with local law enforcement agencies and other emergency services for supplemental support would be updated and/or developed.	+ Same as Alternative B.	+ Same as Alternative B.

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
Visitor & Resource Protection	+ A visitor experience and resource protection plan would be developed for existing conditions and use levels.	+ A visitor experience and resource protection plan to analyze appropriate levels of visitor use and provide monitoring standards would be developed and implemented.	+ Same as Alternative B.	+ Same as Alternative B.
Viewshed	+ A viewshed analysis would be developed when possible.	+ A viewshed analysis would be developed.	+ Same as Alternative B.	+ Same as Alternative B.
Adjacent Lands	+ Existing relationships with adjacent and nearby land management agencies, tribes, and landowners would continue.	+ Relationships with adjacent and nearby land management agencies, tribes, and landowners to manage the landscape using sound ecological principles would be expanded.	+ Same as Alternative B.	+ Same as Alternative B.
	+ A boundary study would be completed when possible to identify significant resources and recommend boundary adjustments to Congress.	+ A boundary study would be completed to identify significant resources and recommend boundary adjustments to Congress.	+ Same as Alternative B.	+ Same as Alternative B.
Partnerships	+ Existing partnerships would continue.	+ Partnerships with local, state, and federal agencies, tribes, organizations, and individuals in support of park missions and activities would continue to be developed and expanded.	+ Same as Alternative B.	+ Same as Alternative B.
	+ The possibility of establishing a friends group to support the monument's mission and goals would be explored.	+ Same as Alternative A	+ Same as Alternative A.	+ Same as Alternative A.
Possible Future Facility and Development Changes	+ A new visitor center *would not* be built.	+ A new 3,500-square foot accessible visitor/administrative facility and supporting infrastructure including road and parking area would be built *within the monument* to provide increased visitor experiences and public understanding and appreciation of park resources.	+ A new accessible visitor/administrative facility and supporting infrastructure would be located *outside the monument* to provide better visitor orientation and education to park resources.	+Same as Alternative A.
	+ No new costs would be incurred.	+ Use of this facility would require more staff and substantially increase operational and utility costs.	+ Use of this facility would require more staff and substantially increase operational and utility costs.	+ Use of the new administrative facility would increase utility costs.

TABLE 3 – COMPARISON OF ALTERNATIVES

	Alt. A – No Action	Alt. B	Alt. C	Alt. D – NPS Preferred
Possible Future Facility and Development Changes	+ An associated accessible interpretive trail *would not* be constructed.	+ An associated accessible interpretive trail *would be* constructed.	+ Same as Alternative A.	+ Same as Alternative A.
	+ Administrative functions would remain in the existing facility.	+ Administrative functions would be removed from the existing facility and a new 2,000-square foot building would be constructed elsewhere inside the park.	+ Administrative functions would be removed from the existing facility and included in the new off-site visitor center building	+ Same as Alternative B.
	+ Operational efficiency would not improve without increased workspace.	+ Operational efficiency would increase with added workspace, yet would be more difficult to maintain with second visitor center.	+ Operational efficiency would increase with added workspace, yet would be more difficult to maintain with some employee offices located outside the park.	+ Operational efficiency would substantially increase with added workspace and with one visitor center to maintain.
	+ The existing visitor center/administrative facility would be maintained.	+ The existing visitor center would be remodeled into a learning center to provide enhanced educational opportunities and more accessible areas.	+ The existing visitor center would be remodeled to expand access and visitor and interpretive services.	+ Same as Alternative C.
	+ Park resources would not be impacted without the construction of new facilities.	+ New visitor center would provide greatest impact to park resources.	+ New visitor center would provide least impact to park resources.	+ Remodeling visitor center would not impact park resources but new admin. facility would.
	+ Original use of National Register eligible-visitor center would be maintained.	+ Changing the original use of the visitor center into a leaning center would lessen the value of the building.	+ The original use of the visitor center would probably change.	+ Original use of National Register eligible-visitor center would be retained.
	+ The shuttle system used during busy times would continue as needed.	+ An alternative transportation system to access park resources would be developed and implemented with same costs as Alt. D.	+ An alternative transportation system to access park resources would be developed and implemented to include new visitor center location outside the monument with more costs than Alt. B and D.	+ An improved 10- to 50-vehicle transportation staging area for periods of increased visitation would be developed and an alternative transportation system to access park resources would be developed and implemented with same costs as Alt. B.
	+ Existing fences would continue to be repaired as needed.	+ The boundary would be completely and accurately fenced.	+ Same as Alternative B.	+ Same as Alternative B.
	+ No new housing would be constructed.	+ Seasonal employee/volunteer residence would be constructed.	+ Same as Alternative B.	+ Same as Alternative B.

TABLE 3 – COMPARISON OF ALTERNATIVES				
	Alt. A – No Action	**Alt. B**	**Alt. C**	**Alt. D – NPS Preferred**
Operational Costs	**+ Existing Staff** Interpretation/VS – 5.5 Administration – 3 Maintenance – 2.5 Natural Resources - 1 Cultural Resources – 1	**+ Existing Staff** Interpretation/VS – 5.5 Administration – 3 Maintenance – 2.5 Natural Resources - 1 Cultural Resources – 1 **+ Proposed Additions to Existing Staff** Interpretation/VS - 5 Administration – 0 Maintenance – 1 Natural Resources - 1 Cultural Resources – 1 **COST FOR ADDITIONAL STAFF $317,000**	**+ Existing Staff** Interpretation/VS – 5.5 Administration – 3 Maintenance – 2.5 Natural Resources - 1 Cultural Resources – 1 **+ Proposed Additions to Existing Staff** Interpretation/VS - 6 Administration – 0 Maintenance – 1 Natural Resources - 1 Cultural Resources - 1 **COST FOR ADDITIONAL STAFF $354,000**	**+ Existing Staff** Interpretation/VS – 5.5 Administration – 3 Maintenance – 2.5 Natural Resources - 1 Cultural Resources – 1 **+ Proposed Additions to Existing Staff** Interpretation/VS – 3 Administration – 0 Maintenance – 1 Natural Resources – 1 Cultural Resources – 1 **COST FOR ADDITIONAL STAFF $242,000**
Development Costs	+There are no development costs for the no-action alternative.	**TOTAL COST $2,130,000** (See Table 2 – Possible Future Development Costs)	**TOTAL COST $2,068,000** (See Table 2 – Possible Future Development Costs)	**TOTAL COST $1,117,000** (See Table 2 – Possible Future Development Costs)
Future Plans and Studies	+New plans would be written as staffing and funding allow.	**The following plans would be prepared:** + Security Plan +Development Concept Plan + Cultural Landscape Report -(CLR) + Cultural Landscape Inventory – (CLI) + Administrative History +Historic Resource Study +Historic Structures Report + Ethnographic and Ethnohistory Studies + Archeological Overview + Assessment & Stabilization Plan +Collections Management Plan + Artifact Study with Institutional Involvement + Environmental Condition Action Plan +Vegetation Management Plan + Water Resource Assessment +Viewshed Analysis + Response Need Assessment –(EMS/SAR) + Passive Resource Protection Study + VERP – Visitor Experience and Resource Protection Plan +Comprehensive Interpretive Plan +Alternative Transportation System Plan +Boundary Study	+ Same as Alternative B.	+ Same as Alternative B.

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES

	Alt. A—No Action	Alt. B	Alt. C	Alt. D—NPS Preferred
Archeological Resources	+ No new development would occur to impact archeological sites.	+ New development would avoid all archeological sites.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Deterioration of sites would continue from lack of information, procedures, and management.	+ Deterioration of cliff dwellings would decrease with improved stabilization and preservation methods and additional staffing.		
	+Site protection would remain inadequate without sufficient staff.	+Site protection would improve with additional staff and installation of security systems.		
	+Content of interpretive programs and museum exhibits would remain outdated without new research information.	+Content of interpretive programs and museum exhibits would improve with new research information.		
	Mitigation • Cultural resource information would be incorporated into planning and project decision-making. • Prior to the development of new facilities, Section 106 of the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resource Protection Act, and other historic preservation statutes and regulations would be followed.			
Cliff Dwelling Environment	+ No new development would occur to impact cliff dwelling environment.	+ No new development would impact cliff dwelling environment.	+ Same as Alternative B.	+ Same as Alternative B.
	+Cliff dwellings would be impacted by lack of information and routine stabilization.	+ Cliff dwellings would be preserved with increased information and annual stabilization.		
	+Rodents would impact cliff dwellings.	+IPM program would protect cliff dwellings from rodents.		
	+Cliff dwelling protection would remain less than adequate without sufficient staff.	+ Cliff dwelling protection would improve with increased staff and installation of security systems.		
	Mitigation • Cultural resource information would be incorporated into planning and project decision-making. • Prior to the development of new facilities, Section 106 of the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resource Protection Act, and other historic preservation statutes and regulations would be followed.			
Cultural Landscapes	+No new development would occur to impact cultural landscapes.	+New visitor/admin facility, associated parking area, nature trail, and residence would impact landscapes.	+Same as Alternative B except that only the new residence would impact landscapes.	+Same as Alternative B except that the new administrative facility, ATS staging area, and residence would impact landscapes.
	+Proper management of landscapes would be limited due to lack of information.	+Completed landscape inventory and report would provide better management.		
	+ Staff and adjacent landowners would work to minimize future external development.	+Increased staff and adjacent landowners would work to minimize future external development.		
	Mitigation • Cultural resource information would be incorporated into planning and project decision-making. • Project designs would include modifications to reduce impacts to cultural landscapes. • Size, configuration, and location of new facilities would be selected to reduce intrusion. • Natural color, topography, and native plants for screening would be used to blend new facilities with landscape. • Any modifications made to existing facilities would not impact the integrity of landscape elements.			

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
Historic Structures	+ No new development or modifications would occur to impact historic structures.	+ New development would avoid all LCS sites. Existing visitor center would be remodeled.	+ Same as Alternative B.	+ Same as Alternative B.
	+ No impacts would occur to the visitor center.	+ No impacts would occur to the exterior of the visitor center or its siting.		
	+ Irreversible changes would occur to LCS sites without proper documentation, procedures, and management.	+ Deterioration of LCS sites would decrease with improved stabilization and preservation methods and additional staffing.		
	+ Site and building protection would remain less than adequate without sufficient staff.	+ Site and building protection would increase with additional staff and installation of security systems.		
	+ Content of interpretive programs and museum exhibits would remain outdated without new research information.	+ Content of interpretive programs and museum exhibits would be improved with new research information.		
	Mitigation • Cultural resource information would be incorporated into planning and project decision-making. • Prior to the development of new or remodeling of existing facilities, Section 106 of the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resource Protection Act, and other historic preservation statutes and regulations would be followed. • All work would meet the *Secretary of Interior's Standards for Rehabilitation* and any other constraints mandated by *DO-28, Cultural Resource Management.*			
Ethnographic Resources	+ No new development would occur to impact ethnographic resources.	+ New facilities would have potential to impact ethnographic resources.	+ Same as Alternative B.	+ Same as Alternative B.
	+ Proper management of ethnographic resources would be limited due to lack of information.	+ Completed ethnographic study and report would provide better management.		
	+The story of all people occupying Tonto Basin would be incomplete.	+Accurate and complete story of all people occupying Tonto Basin would be presented.		
	Mitigation • Cultural resource information would be incorporated into planning and project decision-making. • All future planning requiring Section 106 clearance would include opportunities for review and input by tribal governments.			
Topography, Geology, and Soils	+ No new development would occur to impact undisturbed areas.	+ New construction would impact soil.	+ Same as Alternative B except that substantially less soil would be disturbed with the placement of the new visitor/admin facility outside the monument.	+ Same as Alternative B except that less soil would be disturbed with only the admin facility, residence, and ATS staging area constructed.
	+ Lack of information would provide unknown effects.	+ Expanded information would provide better management practices.		
	+ Soil compaction would continue in developed areas.	+ Soil compaction would continue in existing developed areas and increase in new areas, but all areas would be mitigated.		

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
	+ Soil compaction would continue from trespass grazing in areas not protected by boundary fences.	+ Soils would be protected from trespass grazing with construction of accurate boundary fence.		
	Mitigation • Placement of future facilities would be selected based on soil compatibility. • New development areas would be designed and landscaped to minimize impacts to soil. • Hardened surfaces would be built around new facilities. • Additional staff would monitor and rehabilitate impacted areas. • Education and interpretation would encourage visitors to use designated trails and walkways.			
Vegetation	+ No new development would occur to disturb vegetation.	+ New construction would remove vegetation.	+ Same as Alternative B except that significantly less vegetation would be disturbed with placement of the new visitor/admin facility outside the monument.	+ Same as Alternative B except that slightly less vegetation would be disturbed without the construction of the new visitor center.
	+ Lack of information would provide unknown effects.	+ Expanded information would provide better management practices.		
	+ Not all nonnative plants would be controlled.	+ Nonnative plants would increase in new construction areas, but would be controlled or eliminated.		
	+ Some impacted areas would be restored.	+ All impacted areas would be restored.		
	+ Trespass grazing would still trample vegetation and spread nonnative plants in areas not protected by boundary fence.	+ Vegetation would be protected from trespass grazing with construction of accurate boundary fence.		
	+ Content of interpretive programs would remain outdated without new research information.	+ Visitors would be educated about effects of nonnative plants on ecosystem.		
	Mitigation • New development areas would be designed and landscaped to minimize impacts to vegetation. • Existing plants would be removed and transplanted elsewhere or saved for later rehabilitation, if possible. • Additional staff would monitor and rehabilitate impacted areas. • Education and interpretation would encourage visitors to use designated trails and walkways.			
Wildlife	+ No new development would occur to destroy wildlife habitat.	+ New construction would remove wildlife habitat and disrupt wildlife habits.	+ Same as Alternative B except that significantly less wildlife habitat would be altered with placement of the new visitor/admin facility outside the monument.	+ Same as Alternative B except that slightly less wildlife habitat would be altered with construction of the administrative facility.
	+ Lack of information would provide unknown effects.	+ Expanded information would provide better management practices.		
	+ Less wildlife habitat would be protected without a boundary fence.	+ All wildlife habitat would be protected with construction of accurate boundary fence.		
	+ Potential-poaching activities would occur without sufficient law enforcement personnel.	+ Additional law enforcement staff would reduce poaching incidents.		

	TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES			
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
	Mitigation • New development areas would be designed and landscaped to minimize impacts to wildlife habitat and habits. • Additional staff would monitor and rehabilitate impacted areas. • New facilities would be located near existing developed areas. • All new fencelines would be built to provide safe wildlife crossings and would not be constructed in archeological sites.			
Threatened and Endangered Species	+ No new development would occur to impact T&E species or habitat. + Lack of information would provide unknown effects. + Content of interpretive programs would remain outdated without new research information.	+ Construction of new facilities would not affect T&E species and habitat. + Expanded information would provide better management practices. + Increased interpretive programs would educate about the need to protect T&E species from extinction.	+Same as Alternative B.	+Same as Alternative B.
	Mitigation • New development areas would be designed and landscaped to minimize impacts to threatened and endangered species. • Additional staff would monitor and rehabilitate impacted areas. • New facilities would not be located near T&E species. • Consultation with USFWS would continue for all projects that could potentially impact listed species.			
Water Resources, Floodplains, Wetlands	+ No new development would occur to destroy wetlands or floodplains. + Demand on groundwater resources would fluctuate with visitation levels. + Lack of information would provide unknown effects on groundwater and riparian area. + Content of interpretive programs would remain outdated without new research information. + Existing partnerships would work to reduce impacts from outside activities on riparian area.	+ No new development would be constructed in riparian area or floodplains. + New facilities would increase demand on groundwater resources. + Expanded information would provide better management of groundwater and riparian area. + Increased interpretive programs would educate visitors about the importance of protecting riparian areas in the Sonoran desert. + Expanded partnerships would reduce impacts from outside activities on riparian area.	+ Same as Alternative B except that significantly less water from the park would be consumed with placement of new visitor/admin facility outside the monument.	+ Same as Alternative B except that slightly less water from the park would be consumed without construction of new visitor center.
	Mitigation • Site planning would document potential impacts on ground water sources. • New facilities would not be located in wetlands or floodplains. • Consultation would continue with Army Corps of Engineers for all projects that could have potential impact on wetlands or floodplains.			
Air Quality	+ No construction activities would occur to impact air quality.	+ Air quality would be impacted over short and long term by construction and use of new facilities.	+ The same as Alternative B except that substantially fewer impacts would occur to air quality with placement of new visitor/admin facility outside the monument.	+ The same as Alternative B except that fewer impacts would occur to air quality without construction of a new visitor center.

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
	+ Air quality monitoring would continue. + Existing partnerships would work to reduce impacts on air quality from outside activities.	+ Air quality monitoring would continue. + Expanded partnerships would reduce impacts from outside activities on air quality.		
	Mitigation • Exposed soil would be covered or watered during construction activities to reduce dust levels. • Use of the alternative transportation system would reduce impacts to air quality from single vehicle emissions.			
Natural Quiet	+ Natural quiet would remain the same. Noise distraction would still occur around existing developed areas. + Noise disruptions from overflights would continue to be monitored. No documentation would be made for boat, traffic, and mine activity. + Existing partnerships would reduce external noise levels.	+ Noise levels would increase from construction and use of new and remodeled facilities. + All noise sources would be monitored. + Expanded partnerships would reduce external noise levels.	+ Same as Alternative B except that substantially less noise would occur over the long term to impact natural quiet with placement of the new visitor/admin facility outside the monument.	+ Same as Alternative B except that less noise would occur over the long term to impact natural quiet without the construction of the new visitor center.
	Mitigation • Use of the alternative transportation system would reduce impacts to noise levels from single vehicles.			
Visitor Use, Experience, Accessibility	+ Needs of current and future visitors would not be met. + Existing outdated, cramped, and/or inaccessible visitor services would be maintained. + Interpretive programming would not expand without increased staff. + Existing visitor center would remain partially accessible. + Fewer visitors would be contacted without a second facility. + All visitor services would be located in one area. + Parking lot would fill to capacity during busy season.	+ Needs of increasing visitors would be met. + Interpretive services would be expanded and improved. + Interpretive programming would expand with increased staff. + New facilities would be fully accessible. + More visitors would be contacted with second facility. + Visitor services would be split between two different areas. + New parking lot would ease parking difficulties during busy season.	+ Same as Alternative B except that overcrowded restrooms and parking lot would not be alleviated, the off-site visitor center would be more difficult to find and attract fewer visitors, and the existing natural setting and aesthetic appeal would remain intact with placement of the new visitor/admin facility outside the monument.	+ Needs of increasing visitors would slightly improve. + Interpretive services would slightly expand and improve. + Interpretive programming would expand with increased staff. + Existing facility would be made accessible. + Fewer visitors would be contacted without a second facility. + All visitor services would be located in one area. + New ATS staging area would ease parking difficulties during busy season.

	TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES			
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
	+ Restrooms would remain overcrowded during busy season.	+ New public restrooms would ease overcrowding.		+ New employee restrooms in admin. facility and new public restrooms in ATS staging area would alleviate some of the overcrowding.
	+ Visitor satisfaction would decrease.	+ Visitor satisfaction, experience, and education would increase.		+ Visitor satisfaction, experience, and education would slightly increase.
	+ Existing natural setting and aesthetic appeal along the entrance road would remain unchanged.	+ Existing natural setting and aesthetic appeal along the entrance road would decrease.		+ Existing natural setting and aesthetic appeal would slightly decrease with the construction of the new admin. facility.
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • Additional staffing would be needed for additional facilities and accommodate increased levels of visitation.			
Scenic Vistas, Viewsheds	+No impacts to scenic viewsheds inside monument would occur.	+Scenic viewsheds inside monument would be impacted with addition of new visitor/admin facility in lowlands.	+ Same as Alternative B except that impacts to scenic viewsheds would greatly decrease with placement of the new visitor center outside the monument.	+Same as Alternative B except that impacts to scenic viewsheds would slightly decrease with construction of the new admin facility, ATS staging area, and residence.
	+ Existing partnerships would continue to improve scenic viewsheds as seen from the monument.	+ Expanded partnerships would improve external scenic viewsheds from future impacts.		
	Mitigation • New development areas would be designed and landscaped to minimize impacts to scenic viewsheds. • Size, configuration, and location of new facilities would be selected to reduce intrusion. • Natural color, topography, and native plants for screening would be used to blend new facilities with landscape. • Medians planted with vegetation would lessen the visual impact from the parking area. • All concrete would be tinted to blend in with the natural soil color. • Any modifications made to existing facilities would not impact the integrity of scenic viewsheds.			
Adjacent Lands, Partnerships	+ Staff would work with adjacent landowners to reduce impacts from external activities.	+ Increased staff would encourage adjacent landowners to reduce impacts from external activities.	+ Same as Alternative B except that community connections would increase with relocation of administrative facilities outside the monument.	+ Same as Alternative B.
	+ Cooperative efforts would continue to provide educational opportunities and visitor services.	+ Expanded partnerships would increase quality and quantity of interpretive and visitor services.		
	Mitigation • None			
Visitor/Administrative Facility and Parking Area	+ No new impacts would occur to cultural and natural resources.	+ Cultural and natural resources would be impacted.	+ Same as Alternative B except that the new facility located outside the monument would not impact the park's cultural and natural resources and would not alleviate overcrowded restroom and parking conditions within the monument. The longer distance covered by the ATS system would heighten safety concerns.	+ Cultural and natural resources would be impacted less than Alternative B.

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES

	Alt. A—No Action	Alt. B	Alt. C	Alt. D—NPS Preferred
Visitor/Administrative Facility and Parking Area	+ Crowded facility; would not meet the needs of current and future visitor and staff levels.	+ Space would be available to meet the needs of current and future visitor and staff levels.		+ Slightly more space would be available to meet needs of current and future visitor and staff levels.
	+ No space would be available to conduct indoor interpretive programs.	+ Space would be available to house indoor interpretive programs.		+ Limited space would be available to house indoor interpretive programs.
	+ Sales area and museum would remain crowded.	+ Space would be available to expand sales area and museum.		+ Limited space would be available to expand sales area and museum.
	+ Waiting lines would continue for restroom use.	+ Additional restrooms would accommodate visitors.		+ Waiting lines would continue for restroom use.
	+ Lack of parking spaces would occur during spring season forcing visitors to park along road shoulder creating hazardous situation.	+ The new visitor center parking area would accommodate visitors and eliminate hazardous parking along road shoulder.		+ The new ATS staging area would accommodate visitors and eliminate hazardous parking along road shoulder.
	+ Visitor satisfaction and experience would decrease.	+ Visitor satisfaction and experience would increase.		+ Visitor satisfaction and experience would slightly increase.
	+ Basement offices would continue to be unsafe.	+ Basement would no longer be used for offices.		+ Basement would no longer be used for offices.
	+ Existing staff levels would not provide adequate protection for facilities.	+ Increased staff levels and 24-hour security would provide necessary protection for all facilities.		+ Increased staff levels and 24-hour security would provide necessary protection for all facilities.
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • Size, configuration, and location of new facilities would be selected to reduce intrusion. • Natural color, topography, and native plants for screening would be used to blend new facilities with landscape. • Additional staff would monitor and rehabilitate impacted areas. • No new development would be built on archeological sites. • Any modifications made to existing facilities would not impact the integrity of cultural landscapes and scenic viewsheds.			
Museum Collection and Reference and Archives Library	+ No change would occur to existing small museum and outdated exhibits.	+ Museum would expand and exhibits updated with current research information.	+ Same as Alternative B except that security risks to the museum collection would increase with new facility located outside the monument.	+ Less space would be available to expand and improve the museum.
	+ Visitor satisfaction and education would be less than desired.	+ Visitor satisfaction and education would increase.		+ Visitor satisfaction and education would slightly increase.
	+ Artifacts would continue to deteriorate without stringent environmental controls.	+ Condition and protection of artifacts would improve in new facility.		+ Condition and protection of artifacts would improve in remodeled facility.
	+ Lack of space for library materials would continue.	+ Space for library materials would substantially increase.		+ Space for library would slightly increase.
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • No new development would be built on archeological sites. • Any modifications made to existing facilities would not impact the integrity of cultural landscapes and scenic viewsheds.			

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
Employee Residences	+ No further impacts would occur to cultural and natural resources. + No facilities would be available to house seasonal employees and volunteers. + Monument's difficulty in obtaining seasonal employee and volunteer help would continue.	+ Impacts would occur to cultural and natural resources. + New facility would provide adequate accommodations for seasonal employees and volunteers. + Monument's ability to obtain seasonal employee and volunteer help would increase.	+ Same as Alternative B.	+ Same as Alternative B.
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • Size, configuration, and location of new facilities would be selected to reduce intrusion. • Natural color, topography, and native plants for screening would be used to blend new facilities with landscape. • Additional staff would monitor and rehabilitate impacted areas • No new development would be built on archeological sites. Any modifications made to existing facilities would not impact the integrity of cultural landscapes and scenic viewsheds.			
Trails	+ No further impacts would occur to cultural and natural resources. + No accessible trails would be constructed and available for visitor use.	+ New impacts would occur to cultural and natural resources. + One accessible nature trail would be constructed and available for visitor use.	+ Same as Alternative A.	+ Same as Alternative A.
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • Existing plants would be removed and transplanted elsewhere or saved for later rehabilitation, if possible. • Additional staff would monitor and rehabilitate impacted areas. • No new development would be built on archeological sites.			
Maintenance Facility, Entrance Station, VIP Trailer Pads, Roads, Picnic Area	+ Existing maintenance facility, entrance station, VIP trailer pads, roads, and picnic area would be maintained. + No further impacts would occur to cultural and natural resources.	+ Same as Alternative A.	+ Same as Alternative A.	+ Same as Alternative A.
	Mitigation • Any modifications made to existing facilities would not impact the integrity of cultural landscapes and scenic viewsheds.			
Operational Efficiency: Visitor Center and Headquarters	+ No new impacts would occur to cultural and natural resources. + Crowded facility; would not meet needs of current and future staff and visitor levels.	+ New impacts would occur to cultural and natural resources. + New facilities would meet needs of current and future staff and visitor levels.	+ Same as Alternative B except that more staff time would be used to travel between park facilities with placement of new visitor/admin facility outside monument and communication links would be more difficult to maintain.	+ Similar to Alternative B except that fewer impacts would occur to cultural and natural resources.

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
	+ Inadequate space would continue to exist for offices, meetings, library, equipment, and supplies. + Employee work efficiency and visitor satisfaction and experience would continue to decrease.	+ Adequate space for offices, meetings, library, equipment, and supplies would be provided. + Employee work efficiency and visitor satisfaction and experience would increase.		
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • Size, configuration, and location of new facilities would be selected to reduce intrusion. • Natural color, topography, and native plants for screening would be used to blend new facilities with landscape. • No new development would be built on archeological sites. • Any modifications made to existing facility would not impact the integrity of cultural landscapes and scenic viewsheds. • Additional staff would monitor and rehabilitate impacted areas.			
Water, Septic, and Solid Waste Systems	+ No new development would occur to impact cultural and natural resources.	+ Expanded water and sewer systems would impact cultural and natural resources.	+ Same as Alternative B except that significantly less impact would occur to groundwater resources with placement of new visitor/admin facility outside the monument.	+ Same as Alternative B except that slightly less impact would occur to groundwater resources with construction of admin facility.
	+ Lack of information would lead to unknown effects to vegetation, wildlife, and ground and surface water.	+ Research would provide proper management of vegetation, wildlife, and ground and surface water.		
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • Size, configuration, and location of new facilities would be selected to reduce intrusion. • Natural color, topography, and native plants for screening would be used to blend new facilities with landscape. • Additional staff would monitor and rehabilitate impacted areas. • No new development would be built on archeological sites.			
Commercial Services	+Space would continue to be too small to house SPMA operation.	+SPMA operation would expand.	+Same as Alternative B.	+ SPMA operation would expand slightly.
	+Visitor satisfaction, experience, and education would continue to decrease.	+Visitor satisfaction, experience, and education would increase.		+Visitor satisfaction, experience, and education would slightly improve.
	+SPMA would continue to contribute existing volunteers and funding to monument.	+SPMA volunteers and funding would increase.		+SPMA volunteers and funding would slightly increase.
	Mitigation • New development areas would be designed and landscaped to minimize impacts. • No new development would be built on archeological sites.			
Boundary	+ Cave Canyon watershed would continue to be potentially impacted from external activities. + Existing fencelines would be repaired as needed.	+ A boundary study would be initiated to protect external significant resources. + New fenceline would be constructed.	+ Same as Alternative B.	+ Same as Alternative B.
	+ New staff or funds would not be needed to inventory, assess, and protect new lands.	+ More staff and funds would be needed to inventory, assess, and protect new lands.		

TABLE 4 – SUMMARY OF IMPACTS OF ALTERNATIVES				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D—NPS Preferred**
	Mitigation • All new fencelines would be built to provide safe wildlife crossings and would not be constructed on archeological sites.			
Economic Contribution to Gateway Communities	+ No additional contributions would occur to the local community.	+ An increase of $3.2 million in total sales, $303,000 in tax revenue, and 32 additional jobs would occur over the short-term. + An increase of $458,000 in total sales, $43,000 in tax revenue, and five additional jobs would occur over the long-term.	+ An increase of $3.07 million in total sales, $291,000 in tax revenue, and 31 additional jobs would occur over the short-term. + An increase of $516,000 in total sales, $49,000 in tax revenue, and five additional jobs would occur over the long-term.	+ An increase of $1.82 million in total sales, $173,000 in tax revenue, and 18 additional jobs would occur over the short-term. + An increase of $344,000 in total sales, $32,000 in tax revenue, and three additional jobs would occur over the long-term.
	Mitigation • None.			

TABLE 5 – SUMMARY OF CUMULATIVE EFFECTS				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D— NPS Preferred**
Archeological Resources	+ Moderately adverse impacts would occur over long-term to archeological resources from lack of protection and preservation actions.	+ Moderately beneficial impacts would occur over long-term to archeological resources from increased protection and preservation actions.	+ Same as Alternative B.	+ Same as Alternative B.
Historic Character of Built Environment	+ Minor beneficial long-term impacts would occur to cultural landscapes from no new construction. + Moderately adverse impacts would occur over long-term to LCS sites and cultural landscape without needed reports and inventories. + No impacts would occur to the visitor center.	+ Moderate adverse long-term impacts would occur to cultural landscapes from new construction. + Moderately beneficial impacts would occur over long-term to LCS sites and cultural landscapes from acquired reports and inventories. + No adverse impacts would occur to the visitor center exterior and location.	+ Same as Alternative B except negligible adverse long-term impacts would occur to cultural landscapes from new construction.	+ Same as Alternative B except minor adverse long-term impacts would occur to cultural landscapes from new construction.
Ethnographic Resources	+ Minor adverse impacts would occur to ethnographic resources over the long-term from lack of information.	+ Moderately beneficial impacts would occur to ethnographic resources over the long-term with increased tribal participation.	+ Same as Alternative B.	+ Same as Alternative B.
Natural Systems and Processes	+ Minor beneficial impacts would occur without construction activities. + Moderately adverse impacts would occur over long-term to natural resources without adequate information for proper program management.	+ Moderate adverse impacts would occur from construction activities. + Moderately beneficial impacts would occur over long-term to natural resources with adequate information for proper program management.	+ Same as Alternative B except that negligible adverse impacts would occur from construction activities.	+ Same as Alternative B except that minor adverse impacts would occur from construction activities.
Air Quality and Natural Quiet	+ Minor beneficial impacts would occur without construction activities. + Minor adverse impacts would occur over long-term to air quality and natural quiet without adequate information for proper program management.	+ Moderate adverse impacts would occur from construction activities and use of the new facilities. + Minor beneficial impacts would occur over long-term to air quality and natural quiet with adequate information for proper program management.	+ Same as Alternative B except that negligible adverse impacts would occur from construction activities and use of the new facility.	+ Same as Alternative B except that minor adverse impacts would occur from construction activities and use of the new facilities.
Visitor Experience	+ Moderately adverse impacts would occur over long-term to visitor use, experience, and understanding without improved facilities, access, and programs.	+ Major beneficial impacts would occur over long-term to visitor use, experience, and understanding with improved facilities, access, and programs.	+ Same as Alternative B.	+ Moderately beneficial impacts would occur over long-term to visitor use, experience, and understanding with slightly improved facilities, access, and programs.

TABLE 5 – SUMMARY OF CUMULATIVE EFFECTS				
	Alt. A—No Action	**Alt. B**	**Alt. C**	**Alt. D— NPS Preferred**
Scenic vistas, Viewsheds	+ Minor beneficial impacts would occur over long-term to scenic vistas and viewsheds without additional facilities.	+ Moderate adverse impacts would occur over long-term to scenic vistas and viewsheds from additional visitor/admin facility and residence.	+ Negligible adverse impacts would occur over long-term to scenic vistas and viewsheds from additional residence.	+ Minor adverse impacts would occur over long-term to scenic vistas and viewsheds from additional admin facility, ATS, and residence.
Adjacent Lands and Economies	+ No construction activities would have minor beneficial impacts to adjacent landowners. + Negligible adverse impacts would occur to economies of nearby communities without construction activities and increased staff.	+ Moderate beneficial impacts would occur over long-term to adjacent landowners from expanded partnerships and use of sound ecological principles. + Negligible beneficial impacts would occur to economies of nearby communities over the long-term.	+ Beneficial or adverse impacts would occur over long-term to adjacent landowners depending on location of new facility. + Negligible beneficial impacts would occur to economies of nearby communities over the long-term.	+ Same as Alternative B.
Operational Efficiency	+ Major adverse impacts would occur over long-term to operational efficiency without improved facilities and operations and increased staff levels.	+ Major beneficial impacts would occur over long-term to operational efficiency from improved facilities and operations and increased staff levels.	+ Moderate beneficial impacts would occur over long-term to operational efficiency from improved facilities and operations and increased staff levels.	+ Major beneficial impacts would occur over long-term to operational efficiency from improved facilities and operations, and increased staff levels.

ENVIRONMENTAL CONSEQUENCES

Introduction

All action alternatives meet the park's mission goals previously described in the first chapter in different ways. Management prescriptions are used as the basis for all alternatives and are allocated differently. Alternatives for commercial services encompass allocation of resources consistent with the monument's purpose and significance, and also may include future actions in the monument by non-government entities. *Only those areas of the monument that could be affected are described. Future site-specific proposals after approval of this plan may require further surveys and environmental and historical compliance.*

Effects are documented in general terms in the environmental consequence section and are related to the descriptions of the resources described in this section. Impact topics have been selected on the basis of significant resources and the potential for beneficial or adverse effects on them by each alternative as required by law, regulation, and NPS policy. Topics that would not be impacted under any of the alternatives are not discussed. Impacts may be direct or indirect. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are still reasonably foreseeable.

Note: Area Land Use Plans – The Council on Environmental Quality directs that federal agencies must consider possible conflicts between their actions and actions listed in other area land use plans and/or policies. Tonto National Forest is the only entity that has a land use plan (USFS, 1985) for the area adjacent to the park. Monument and national forest staff have and would continue to develop a working relationship that reconciles any possible conflicts in land management policies and use. Therefore, the impact topic on land use plans is dismissed from further consideration.

Note: Environmental Justice – Executive Order 12898, "*General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). Therefore, Environmental Justice was dismissed as an impact topic in this document.

Note: Energy Requirements and Natural or Depletable Resource Requirements – Tonto National Monument would strive to incorporate the principles of sustainable design and development into all facilities and park operations. Sustainability can be described as the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy efficient and ecologically responsible materials and techniques.

The National Park Service's *Guiding Principles of Sustainable Design* (1993) provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of bio-diversity, and encourages responsible decisions. The guidebook describes principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitor uses with natural and cultural settings. Tonto National Monument reduces energy costs, eliminates waste, and conserves energy resources by using energy efficient and cost-effective technology. Energy efficiency would also be incorporated into any decision-making process during the design or acquisition of structures, as well as all decisions affecting park operations. The use of value analysis and value engineering, including life cycle cost analysis, would be performed to examine energy, environmental, and economic implications of proposed development. In addition, the monument encourages suppliers and contractors to follow sustainable practices and addresses sustainable park and non-park practices in interpretive programs.

Therefore, the impact topics on energy requirements and conservation potential and natural or depletable resource requirements and conservation potential are dismissed from further consideration.

Note: Prime and Unique Farmlands – In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resource Conservation Service as prime or unique. Prime or unique farmland is defined as soil, which particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resource Conservation Service (2000), the soil series comprising the project areas are useful primarily for rangeland and wildlife habitat and are not classified as prime or unique farmland. Thus, prime and unique farmlands will not be addressed as an impact topic.

Note: Wilderness Areas – The Wilderness Act of 1964 states that an area is suitable for wilderness designation if it contains at least 5,000 acres or is a sufficient size to make practicable its preservation and use in an unimpaired condition. A wilderness area must also be untrammeled by man, retain its primeval character without permanent improvements, be affected primarily by the forces of nature, managed to preserve natural conditions, and have outstanding opportunities for solitude. Tonto National Monument is not suitable for wilderness designation because of its size (1,120 acres), permanent improvements and inhabitants, and proximity to vehicular traffic and Roosevelt Lake recreational activities. Therefore, wilderness was dismissed as an impact topic in this document.

Cultural Resources — Archeology

Existing Conditions

Sixty-five archeological sites have been recorded within the boundaries of the monument. All of these sites are considered to be contributing properties of the Tonto National Monument National Register District and the entire monument is listed on the National Register of Historic Places. For the most part, these resources represent the remains of maize agriculturists associated with the Gila and Roosevelt phases commonly referred to as

the Salado culture (ca. A.D. 1000-1450). Two archeological sites, the Upper and Lower cliff dwellings, are the focal point for establishing the monument in 1907. The Lower Cliff Dwelling has been almost completely excavated and is open to the public daily, except Christmas Day. The Upper Cliff Dwelling is in near pristine condition and is open part of the year for reservation-only guided tours. The rest of the archeological sites are scattered throughout the monument and are closed to public entry.

A surface cultural-resource inventory of the monument was conducted in the mid-1980s (Tagg, 1985). Although this inventory is considered to be thorough and to modern standards, the potential does exist that undiscovered cultural resources might be present within the monument's boundaries. With the exception of the Upper and Lower cliff dwellings, which are stabilized by routine preservation maintenance, the remaining archeological sites within the monument are managed in an "as is" status. Park staff conducts routine monitoring of site condition and site locations are being located using GPS technology for the development of a GIS database.

Most impacts to archeological sites within the monument are natural (e.g., erosion and animal disturbance) and are considered to be minimal. The exception is the two cliff dwellings that require ongoing preservation maintenance to preserve these architectural/archeological sites. Although ceramic fragments become exposed and minor disturbance has been documented at a few of the sites, no severe cases of unauthorized collecting or site vandalism has been observed.

Impacts of Alternative A – No Action

Under Alternative A, no new development would occur to impact archeological sites. However, irreversible changes would still occur to the archeological sites without proper documentation, procedures, management, and protection. Archeological site integrity and subsurface materials would remain unevaluated. The structural integrity would be compromised without the information and staff needed to document and preserve the sites. The archeological sites would naturally deteriorate over time. Insufficient protection of the archeological sites would occur without adequate staff and passive security systems. The content of interpretive programs and museum exhibits would remain outdated without incorporating the most recent research information.

Impacts of Alternatives B, C, and D - NPS Preferred

Given the completion of the park-wide cultural resource inventory, the on-going site monitoring program, and the management prescriptions outlined in this GMP, there would be no impacts to known cultural resources from Alternatives B, C, and D. Construction of buildings, parking lots, and trails would not impact archeological resources as the alternatives are designed to avoid all known sites within the monument. The monument has a long history of consultation with professional archeologists at the NPS' Western Archeological and Conservation Center and the Southern Arizona Office. Given these associations, there would be no impacts to unknown resources as well since the monument consults with professional archeologists on every undertaking within the monument.

Having complete archeological inventories, overviews, assessments, and procedures would provide park management with the information needed to protect and interpret archeological resources. Future archeological resource management programs would improve

documentation, stabilization, and preservation of the archeological sites. These programs would include additional research and study of stabilization procedures and impacts to the sites from natural and cultural (visitation) processes. In addition, the monument would update and expand the content of interpretive programs to encompass local and regional cultural resources with new information gained from the additional research programs. This information would also be used to update museum exhibits and displays. Preservation and stabilization activities would continue to include formal consultation with Native American groups associated with the monument. The additional staff would provide increased protection of the cliff dwellings by monitoring and educating visitors at these sites.

Mitigation for Alternatives B, C, D

To mitigate any potential future impacts to archeological sites in Alternatives B, C, and D, the monument would continue to work with their professional advisors within the National Park Service, as well as seeking input from tribes and the State Historic Preservation Office. Cultural resource information would be incorporated into planning and project decision-making. Should any cultural resources be impacted by future development the monument would continue to follow policies and regulatory requirements under Section 106 of the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Archeological Resource Protection Act, and other historic preservation statutes and regulations. The monument would maintain close contact with agency, state, and Native American advisors to ensure that policy and regulatory requirements are met and archeological sites within the monument are protected.

Cultural Resources—Cliff Dwelling Environment

Existing Conditions

Throughout the American southwest alcoves or rock shelters provide diverse habitats or microenvironments for an array of plants, animals, and in the past, human activities. Depending upon aspect, surrounding landscape, presence or absence of water, character of rock surfaces, floor sediments, and overall morphology any given alcove may be either an oasis or nothing more than a small sheltered ledge on a cliff face. Within the monument both types of alcoves occur in abundance, however only fifteen distinct shelters exhibit evidence of past human modification through construction of buildings, delineation and use of open space, and modification of alcove environments. These fifteen sites preserve a particularly unique record of prehistoric settlement and adaptation in the Tonto Basin.

The same characteristics that attracted human settlement to the rock shelters also encourage a unique assemblage of insects, birds, rodents, and distinctive plants. In combination, the interaction of fauna and flora with the dynamic character of rock shelters – most noticeably in terms of rock stability and hydrology – produces a microenvironment that gives the outward appearance of stability while steadily transforming through time. Despite the often-remarkable preservation of archeological resources in rock shelters, it is the dynamic nature of these microenvironments that inherently affects buildings, artifacts, and the residue of human life in adverse ways. These factors require consistent monitoring, judicious preservation treatments, and mitigation through effective implementation of an integrated pest management program. Balancing the need to preserve both the

rich cultural and natural heritage of these rock shelters presents one of the most compelling challenges facing resource managers at Tonto National Monument. Although little information is presently available, future inventory of biological components as well as physical processes should enhance appreciation and management of the cliff dwelling environment.

Impacts of Alternative A – No Action

Under Alternative A, no new development would occur to impact the cliff dwelling environment. Limited levels of stabilization would continue to preserve the cliff dwellings. However, environmental, geological, hydrological, and cultural processes would compromise the structural integrity of the cliff dwellings because the effects of these processes would not be properly documented and the rate and deterioration of the cliff dwellings would not be assessed and mitigated. Impacts to the cliff dwellings from visitor use would not be monitored and appropriate levels of carrying capacity would not be determined. Insufficient protection of the cliff dwellings from these natural and cultural processes would occur without adequate staff.

Impacts of Alternatives B, C, and D - NPS Preferred

Under the three action alternatives, no new development would occur to impact the cliff dwelling environment. The implementation of a plan to assess the effects from environmental, geological, hydrological, and cultural processes on the cliff dwellings would result in an integrated preservation program. The rock alcove ecology would be better understood. More staff and improved stabilization treatment instituted on an annual recurring basis would further preserve the cliff dwellings. Impacts to the cliff dwellings from existing and increased levels of visitor use would decrease once appropriate carrying capacity levels are determined and implemented. Additional staff and installation of security systems would further protect the cliff dwellings.

Mitigation for Alternatives B, C, D

To mitigate any potential future impacts to the cliff dwellings, the monument would continue to work with their professional advisors in the National Park Service, as well as seeking input from tribes and the State Historic Preservation Office. Cultural resource information would be incorporated into planning and project decision-making. Should the cliff dwellings be impacted by future development the monument would continue to follow policies and regulatory requirements under Section 106 of the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Archeological Resource Protection Act, and other historic preservation statutes and regulations. The monument would maintain close contact with agency, state, and Native American advisors to ensure that policy and regulatory requirements are met and the cliff dwellings are protected.

Cultural Resources—Landscapes

Existing Conditions

A cultural landscape is a geographic area that may exhibit modification and use by communities varying in size, complexity, and character. However, cultural landscapes do not have to exhibit any human modifications or evidence or use. They can appear natural and their values can derive from uses that do not involve physical manipulations. These landscapes, often portraying long evolutionary histories, may reflect, a) locales associated

with specific historic events, activities or persons, b) intentional design according to the principles and stylistic convention of landscape architecture, c) settlement organization, architecture, land use, and patterns of movement that illuminate the history and culture of small to large communities, and d) natural and cultural resources that associated communities identify as having significant meaning. The National Park Service's cultural landscape program identifies and preserves a landscape's physical attributes, biotic systems, and use when that use contributes to its historical significance. The Cultural Landscape Inventory (CLI) - designed to identify cultural landscapes and record information on their location, historical development, character-defining features, and management – provides a basic automated inventory of cultural landscapes within a park. The Cultural Landscape Report provides an in-depth view of a cultural landscape through documentation, analysis, and evaluation of all components of a landscape and presents recommendations for long term preservation and management.

Neither a cultural landscape inventory nor report has been completed for the monument. Potentially significant cultural landscapes associated with the Salado culture, Apachean groups, Spanish and later Mexican expeditions, Euroamerican ranching efforts, and large-scale 20th century development are evident in physical remains, heavily modified locations, literary accounts, and traditional oral histories.

Impacts of Alternative A – No Action

No new development would occur to impact cultural landscapes. The lack of information on the monument's cultural landscapes would limit their proper management. Cultural landscape information would not be available for interpretive programs. All existing structures would continue to be visible, non-historic elements within the cultural landscape. However, it would be entirely impossible to remove existing modern-day development such as the monument's infrastructure, electrical transmission towers and lines, State Route 188, and Roosevelt Lake and associated facilities from view of the cliff dwellings. Monument staff would continue to work with adjacent landowners to minimize future external modern-day intrusions from the monument's cultural viewsheds.

Impacts of Alternative B

The completion of the cultural landscape inventory and report would provide management with an integrated view of the cultural and natural setting to protect the cultural landscape. However, the construction of the new visitor/administrative facility, associated parking area, and seasonal employee/volunteer residence within the monument would introduce more non-historic elements onto the cultural landscape. Vehicles parked by the visitor center and visitor and staff use of the new facility would also be visible. Increased monument staff would work with adjacent landowners to minimize future external modern-day intrusions from the monument's cultural viewsheds.

Impacts of Alternative C

Impacts to the cultural landscapes would be substantially less than those listed under Alternative B with the new visitor/administrative facility located outside the monument. Only the additional residence would impact the cultural landscape by introducing more non-historic elements.

Impacts of Alternative D - NPS Preferred

Impacts to the cultural landscapes would be slightly less than those listed under Alternative B. The new administrative facility, ATS staging area, and additional residence would impact the cultural landscape by introducing more non-historic elements.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Cultural resource information would be incorporated into planning and project decision-making. Design modifications would reduce impacts to the cultural landscape. The size, configuration, and location of the new facilities would be selected to reduce intrusion on cultural landscapes. Newly developed areas would blend in with the cultural landscape as much as possible using color, topography, and native plants for screening. Pending the completion of a cultural landscape inventory and report, any modifications made to existing structures would not impact the integrity of contributing or potentially contributing landscape elements.

Cultural Resources—Historic Structures—List of Classified Structures and Mission 66

Existing Conditions

The monument was completely surveyed for significant standing-wall structures in 1985 as part of an overall archeological evaluation. As a result, six archeological sites were identified and placed on the List of Classified Structures (LCS). These six structures consist of the upper and lower cliff dwellings, three smaller rock shelters, and one surface structure. The 1993 LCS report listed half of these structures in good condition and the other half in fair condition. Over the last sixty or so years, the upper and lower cliff dwellings have undergone various stabilization efforts. Both natural and cultural agents of deterioration are present. Natural agents causing decay include weathering, wildlife, and vegetation. Cultural impacts occur from visitors and historical pot hunting. The four smaller structures are monitored and encroaching vegetation is periodically removed.

In 1955 National Park Service Director Conrad Wirth embarked upon the Service's largest park improvement plan in an effort to address visitation pressures and the advent of the Service's fiftieth anniversary in 1966. The "Mission 66" program resulted in a variety of construction and improvement programs including the erection of a variety of new "visitor centers." According to Architectural Historian Christine Madrid, the concept of the "visitor center" did not exist in the National Park Service prior to Mission 66 despite its use in corporate and other government sectors. She writes, "Park Service planners, architects, and landscape architects devised the concept to incorporate visitor facilities, interpretive programs, and administrative offices in one structure."

Mission 66 visitor centers differed from their Civilian Conservation Corps predecessors in several aspects. For one, they were intended to be distinctive architectural expressions of the modern movement rather than the popular "rustic-style" of the 1930's. Secondly, the visitor centers were sited prominently and intentionally placed near park features for the benefit of resource interpretation. And third, the visitor centers were intended to address both visitor and park administrative needs. Twelve Mission 66

visitor centers are located in national park units in Arizona.

The monument's existing visitor center was one of fifty visitor centers designed by Cecil Doty during the National Park Service's "Mission 66" construction program. The siting of the building appears to be significant in that it is situated prominently in relation to the cliff dwellings, for which it serves as a gateway, and to the valley below, for which it frames a commanding view. No assessment has been made of the architectural qualities and features that convey the visitor center's historical significance. However, because of its architect and its siting in relationship to the primary resources, this building meets criteria for nomination to the National Register of Historic Places.

Impacts of Alternative A – No Action

No new development or modifications would occur to impact historic structures. No adverse impacts would occur to the existing visitor center, which would be maintained to support current activities. However, irreversible changes would occur to the archeological sites on the List of Classified Structures without proper documentation, procedures, management, and protection. Structure integrity would remain unevaluated and compromised without the information and staff levels needed to document and preserve the structures. The structures would naturally deteriorate over time. Insufficient protection of the classified structures would occur without adequate staff. Current research information about historic structures would not be available to augment interpretive programs and museum exhibits.

Impacts of Alternatives B, C, and D - NPS Preferred

In Alternatives B, C, and D, the existing visitor center would be remodeled thereby impacting the assumed to be eligible building. As noted under *existing conditions* above, the placement and exterior design are the building's qualifying features for nomination to the national register. All remodeling plans would be limited in design so as not to alter these important features. Any changes proposed for the interior of the building would respect the original design intent and building footprint. Both exterior and interior character defining features and treatments would be retained.

Construction of buildings, parking lots, and trails would not impact archeological sites on the List of Classified Structures as each alternative is designed to avoid all cultural resources within the monument. Future cultural resource management programs would improve stabilization and preservation of the cliff dwellings. These programs would include additional research and study of stabilization procedures and impacts to the sites from natural and cultural (visitation) processes. Preservation and stabilization activities would continue to include formal consultation with Native American groups associated with the monument.

In addition, the monument would update and expand the content of interpretive programs to encompass local and regional cultural resources with new information gained from the additional research programs. This information would also be used to update museum exhibits and displays. Additional staff would provide increased protection of the structures by monitoring and educating visitors at these sites.

Mitigation for Alternatives B, C, D

Only the interior of the visitor center would be changed. No modifications would occur to the exterior of the building or its setting in relation to the cliff dwellings. To mitigate any potential future

impacts to historic structures, the monument would continue to work with their professional advisors in the National Park Service, as well as seeking input from tribes and the State Historic Preservation Office. Cultural resource information would be incorporated into planning and project decision-making. Should any cultural resources be impacted by future development or remodeling the monument would continue to follow policies and regulatory requirements under Section 106 of the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Archeological Resource Protection Act, and other historic preservation statutes and regulations. The monument would maintain close contact with their professional, Native American, and public advisors to ensure that policy and regulatory requirements are met and the historic structures are protected. All work would meet the Secretary of Interior's Standards of Rehabilitation and any other constraints mandated by Director's Order-28, Cultural Resource Management.

Cultural Resources—Ethnography

Existing Conditions

Ethnographic resources are defined as park resources that have traditional subsistence, sacred ceremonial or religious, residential, or other cultural meaning for members of contemporary park-associated ethnic groups, including American Indians. Ethnographic resources may include museum objects, archeological sites, historic structures, landscape features, sacred areas, flora and fauna, minerals, and bodies of water. Even though contemporary tribes presently do not use monument resources, the history and presence of several tribes in the area indicate a potential for having ethnographic resources within the monument.

The only research-based information the monument has regarding associations of contemporary communities with monument resources is derived from a cultural affiliation study conducted for Casa Grande National Monument. That study (Stoffle, 1995) concluded that Salado archeological resources, such as those preserved at the monument, are associated with the Ak-Chin Indian Community, Gila River Indian Community, Hopi Tribe, Salt River Pima-Maricopa Indian Community, Tohono O'Odham Nation, and Zuni Pueblo. Other tribes and communities may also have affiliations with the monument. For example, Apache brownware ceramics found in the monument indicate an Apache presence in post-contact times. The White Mountain Apache Tribe has a particular interest in the monument's ruin stabilization program as a potential partnership and source of training for tribal members involved in stabilizing a similar site on the Fort Apache Indian Reservation. Therefore, the San Carlos Apache Tribe, Tonto Apache Tribe, White Mountain Apache Tribe, Yavapai Apache Tribe, and Yavapai Prescott Indian Tribe may also have interests in and/or affiliations with the monument.

Impacts of Alternative A – No Action

Adverse impacts would be unknown without a completed ethnographic survey and assessment. However, no new development would occur to impact potential ethnographic resources.

Impacts of Alternatives B, C, and D - NPS Preferred

Having a completed ethnographic study as well as increased tribal participation would provide park managers with the information needed to improve management of ethnographic resources. A

completed ethnographic study would enable the monument to present a more accurate and complete story of all people who occupied Tonto National Monument and the rest of Tonto Basin. However, additional developments would have the potential to impact ethnographic resources.

Mitigation for Alternatives B, C, D

All future planning requiring National Historic Preservation Act's Section 106 clearance would include opportunities for review and input by the above-mentioned tribal governments. Cultural resource information would be incorporated into planning and project decision-making.

Natural Resources—Topography, Geology, and Soils

Existing Conditions

Tonto National Monument is located on the southern edge of Tonto Basin, one of a series of large intermontane basins in east central Arizona. Geologically, this section of Arizona has been labeled the Central Highlands transition zone, separating the Colorado Plateau to the north and east and the Basin and Range Desert to the south and west (Chronic, 1983). This area is considered one of the most rugged terrains in the state. The monument's elevations range from 2,300 to 4,000 feet in the eastern foothills of the Mazatzal Mountains.

The exposed mountains are principally sedimentary rocks of the Apache group and the Gila conglomerate (Raup, 1959). Rocks of the Apache group consist of ocean floor sediments that were deposited a little more than a billion years ago during Precambrian time. The highest layer, composed mainly of dolomite, caps most of the ridgetops in the monument. The rock alcoves that house the cliff dwellings are located in a layer consisting primarily of thinly laminated siltstone. A process known as spalling, the breaking loose of the thin layers of siltstone, which then fall from the ceiling, formed the caves. The oldest layer, a dark red siltstone, can be seen below the visitor center in Cholla Canyon. This siltstone breaks into thin layers that were fashioned into weapons and tools by the Salado. After the Apache group was deposited, it was intruded by diabase, which is similar to basalt but has a higher iron and magnesium content. Diabase weathers into greenish colored soil and can be seen east of the visitor center across the canyon.

The Gila conglomerate is much younger and was deposited between one-half to 15 million years ago after many geologic events had affected the older rocks of the Apache group. Gravel, clay, and silica were cemented together to form the distinctive Gila conglomerate rock unit. Uplifting left parts of the Gila conglomerate high on the slopes as can be seen on the cliff face at the lower cliff dwelling.

The youngest material at the monument is rock debris, or talus, that is eroding from the higher cliffs and accumulates as veneer on the slopes and fill on the valley floor. This debris is composed of angular rock fragments, ranging in size from sand grains to boulders several feet in diameter. Deposits on the lower slopes are called bajadas or alluvial fans and are frequently cut by intermittent stream channels.

The present soil forming process began about 10,000 years ago at the end of the Pleistocene following a climate change to increased aridity. The soils occur in an orderly pattern related to the geology, landforms, climate, and natural vegetation. The soils are products of an arid to semiarid climate. Lack of water hinders decomposition of parent rock into soil building material. Organic matter and its

conversion into humus are reduced due to the sparse plant cover. Sheet flooding and flash flooding, which carries large volumes of soil and rock, accompany intense summer rainstorms. These factors result in slow soil formation and minimal horizon development.

A description of the monument soils, their location, and a discussion of the suitability, limitations, and management for specified uses was prepared in 1994 (Lindsey et al.). Soil scientists identified soils by color, texture, size and shape of aggregates, kind and amount of rock fragments, distribution of plant roots, and other features. Eleven different soil types were found in the monument. All soil types are well-drained loam, sand, or clay mixtures combined with gravel or cobble. Soil depths vary from shallow to very deep, which is indicative of their locations on the two- to ninety-percent slopes.

Impacts of Alternative A – No Action

Under the no-action alternative, no new development would occur to affect undisturbed areas and change the topography as presently viewed. However, the impacts to soils and geology would be mostly unknown due to the limited information and staff available to properly manage the resources. Accurate and current information would not be available to use in interpretive programs. Soil compaction, erosion, loss of soil permeability, changes in soil chemistry, and loss in soil insulation would still continue in areas of existing visitor and administrative use such as the upper and lower cliff dwellings, the upper cliff dwelling trail, visitor center, and the picnic, residential, and maintenance areas. The lack of adequate staff would not be able to successfully mitigate soil compaction in these areas. Trespass grazing would continue to compact soils in areas not protected by a boundary fence and those areas outside but immediately adjacent to the monument boundary.

Impacts of Alternative B

Expanded information about the soil and geological resources of the monument would be obtained providing the knowledge necessary to properly manage the resources and to monitor and mitigate impacts. This information would also be used to augment interpretive programs. Soils would still be impacted from new development in the Lowlands ROA. Future construction activity would remove about seven acres of soil and destroy soil structure. During construction activities, soil would temporarily undergo rapid erosion from wind and occasional monsoon storms. Afterward, the soil would be protected and preserved when drainage structures are in place and vegetation restored. Impacts to soil would still continue at existing and future visitor and administrative use areas, but all impacted areas would be mitigated. The additional interpretive programs presented would also increase impacts to the upper and lower cliff dwellings and upper cliff dwelling trail. Soils would be protected from trespass grazing in additional areas once an accurately placed boundary fence is constructed. Soils and geology in the Restricted ROA would not be affected. The topography as presently viewed would remain unchanged.

Impacts of Alternative C

The same impacts would occur as listed under Alternative B except that substantially less soil and geology would be disturbed with the placement of the new visitor/administrative facility outside the monument boundary. Impacts would still occur to one acre of soil and geology from constructing a new seasonal employee/volunteer residence.

Impacts of Alternative D - NPS Preferred

The same impacts would occur as listed under Alternative B except that less soil and geology would be disturbed without the construction of a new visitor center. Two acres of land would still be disturbed to build the administrative facility, seasonal employee/volunteer residence, and ATS staging area inside the monument.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Mitigation of impacts would include design modifications to reduce erosion. The placement of future development would be selected based on compatibility with soils and geology. Carefully designed and landscaped areas would minimize impacts to soil. Hardened surfaces would be built for use around new facilities. Additional staff levels would conduct careful and continuous monitoring to measure impacts and rehabilitate areas impacted by visitor and employee use. Mitigation measures would also include interpretive contacts with visitors to encourage them to stay on designated trails and walkways.

Natural Resources—Vegetation

Existing Conditions

Tonto National Monument lies near the northeastern edge of the Sonoran Desert. Five different plant communities are represented in the monument reflecting the diversity of the setting between the Mazatzal Mountains and the Salt River valley. The monument's plant species were first listed by Strong and Burgess in the 1960s and resurveyed by Brian in 1991. Further research resulted in a comprehensive description of the five plant communities and listed 297 species as the result of a partial survey (Jenkins et al., 1991). The largest families are Compositae with 48 species and Gramineae with 36 species. A total of 28 nonnative species were identified.

The five plant communities can be described as follows:

- Much of the monument is covered with typical Sonoran Desert Scrub vegetation consisting of a mixture of succulent cactus, flowers, and chaparral shrubs and trees. Jojoba, paloverde, mesquite, tomatillo, snakeweed, cholla, prickly pear, and saguaro dominate the mid- to lower slopes.
- On the higher slopes to the ridgetops, the vegetation transitions from Sonoran Desert Scrub to Semidesert Grassland represented by saguaro, cholla, sotol, agave, globe mallow, snakeweed, jojoba and various grasses.
- The vegetation on the high slopes varies markedly between the northwest and southeast slopes. The Interior Chaparral community is found on the north-facing slopes with mountain mahogany as the characteristic specie.
- The vegetation becomes dense and tall enough in the larger canyon bottoms and washes where sufficient water is available to form the Desert Riparian Scrub composed mainly of jojoba, mesquite, and catclaw acacia.
- The permanent spring in Cave Canyon supports a small Interior Southwestern Riparian Deciduous Forest dominated by netleaf hackberry and Arizona sycamore, ash, and walnut.

Past human activities have impacted the native vegetation. Prehistoric subsistence strategies undoubtedly modified the native

vegetation through manipulation of the landscape (e.g. field clearing or selective management of desired plants) and the introduction of various cultigens along with their associated weed species. Grazing occurred throughout the monument until boundary fencing excluded the activity in 1981. Several wildfires burned repeatedly over some sites, reducing tree, shrub, and cacti cover. Construction of state route 188 and park development has cleared land for roads, trails, and buildings. These activities have allowed nonnative vegetation to spread within the monument and possibly converted native grasses to a shrub cover at lower elevations. A listing of non-native plants within the monument was prepared in 1992 (Phillips).

Impacts of Alternative A – No Action

Under the no-action alternative, no new development would occur to disturb vegetation. But because sufficient staff is not available to routinely read and record monitoring plots, changes in vegetation would not be assessed and managed, if needed. Accurate and current information would not be available to use in interpretive programs. The existing limited staff would not be able to control all nonnative plants that diminish native vegetation communities. Disturbed areas around visitor and administrative use areas would continue to impact native plants and would only be restored when possible. Trespass grazing would continue to trample native vegetation and contribute to the spread of nonnative plants in areas not protected by an accurately constructed boundary fence.

Impacts of Alternative B

The increased staff levels would routinely monitor vegetation plots thereby providing the information needed to document changes and support proper management decisions. Vegetation communities would be better understood and documented including effects from past and potential future fires. This information would also be used to augment interpretive programs. Additional staff would control and/or eliminate nonnative species to reduce impacts on native plant communities. Restoring native plants in disturbed areas would minimize impacts from visitor and administrative uses. Trespass grazing would be removed from the monument eliminating damage to vegetation with the construction of an accurately placed boundary fence. Increased interpretive programming would include educating visitors about the negative impacts from nonnative plants on the natural Sonoran desert ecosystem.

Impacts to vegetation are related to those described for soils. The construction of additional facilities in the Lowlands ROA would impact about seven acres of vegetation. Non-native plants that invade disturbed areas would become more common.

Impacts of Alternative C

The same impacts would occur as listed under Alternative B except that significantly less vegetation would be affected with the placement of the new visitor/administrative facility outside the monument. Building a new seasonal employee/volunteer residence would still impact one acre of vegetation.

Impacts of Alternative D - NPS Preferred

The same impacts would occur as listed under Alternative B except that somewhat less vegetation would be affected without the construction of a new visitor center. Vegetation on two acres of land would still be impacted from constructing an administrative facility, seasonal

employee/volunteer residence, and ATS staging area.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to vegetation. Prior to construction, existing plants would be removed and transplanted elsewhere or saved for later rehabilitation, if possible. Newly developed areas would be replanted with native grasses, forbs, and shrubs. Careful and continuous monitoring would measure, record, and mitigate impacts to vegetation. Mitigation measures would also include interpretive contacts with visitors to encourage them to stay on designated trails and walkways.

Natural Resources—Wildlife

Existing Conditions

The diversity of the natural environment provides habitat for a variety of wildlife. Terrestrial invertebrates were identified and documented in 1995 (Price and Fondriest), terrestrial vertebrates in 1996 (Swann et. al.), and birds in 1999 (Hiett and Halvorson).

Invertebrates – Terrestrial invertebrates (insects and arachnids) are among the largest groups of wildlife in the world, comprising greater than 50% of all known species and are essential components of all terrestrial ecosystems. However, scientists have described a relatively low percentage of these species. A yearlong survey documented the relative diversity of terrestrial invertebrates in the monument. Species diversity is high; over 340 species were identified. Additional research could raise this number to well over 1,000 species.

Vertebrates - A variety of techniques were used to detect the presence and absence of mammals, reptiles, and amphibians due to their diverse lifestyles, including nocturnal and underground habits. Twenty-six species of terrestrial mammals, thirty-two species of reptiles, and six species of amphibians were confirmed during this study. A number of these species were observed in Cave Canyon's permanent spring area and not in any other location in the monument. The most common mammals are ground squirrels, ringtails, coyotes, skunks, whitetail deer, mice, desert cottontails, and collared peccary. A comprehensive survey of bats was not conducted. Bats were seen exiting both cliff dwellings on several occasions and roosts were located high above both caves. Six species of bats have been collected on several occasions in the past. Half of the thirty-two species of reptiles consisted of lizards and the other half were snakes. The six species of amphibians consisted of four toads and two frogs.

Birds - A survey was conducted from 1992 to 1995 to inventory bird species within the monument. Records were made during the February to July breeding season as well as during the fall and winter months. A field checklist was prepared listing the presence or absence, seasonal status, and abundance of individual species based on historic records and observations, current literature, and monitoring information collected during the study. This checklist lists a total of 165 different bird species. Some birds, such as nocturnal species, birds that primarily use cliff areas, or large birds that occur in low numbers, were difficult to survey accurately.

Impacts of Alternative A – No Action

Under the no-action alternative, no new development would occur to destroy wildlife habitat. But because there would be insufficient staff to read and record

monitoring plots, changes in wildlife species and populations would not be assessed. This lack of necessary information to better manage the wildlife would result in unknown effects. Accurate and up-to-date information would not be available to augment interpretive programs. Poaching activities would occur without sufficient law enforcement personnel. Less wildlife habitat would be protected without a legal boundary fence.

Impacts of Alternative B

The increased staff levels would routinely monitor wildlife plots thereby providing the information needed to document changes and support better management decisions. Wildlife ecology would be better understood and documented. This information would also be used to augment interpretive programs. Resource management activities would improve management of wildlife species by restoring habitat, if needed. Additional law enforcement staff would reduce poaching incidents. More wildlife would be protected with the construction of accurate boundary fences and by building these fences to accommodate safe wildlife crossings.

The construction of new facilities in the Lowlands ROA would alter about seven acres of wildlife habitat. During the construction there would be a temporary disturbance and displacement of wildlife. The surrounding land, however, would continue to provide abundant nesting, escape, and protective cover. Some small animals may be killed or forced to relocate to areas outside the project area, but this would not be expected to have any long-term effect upon local populations. Wildlife would be expected to move to revegetated areas following construction. The long-term use of these facilities by visitors and staff would also disrupt normal wildlife habits and movement patterns in the vicinity of the new buildings.

Impacts of Alternative C

The same impacts would occur as listed under Alternative B except that substantially less wildlife habitat would be altered and day-to-day wildlife movement and habits would not be disrupted with the placement of the new visitor/administrative facility outside the monument boundary. Constructing a new seasonal employee/volunteer residence would still affect one acre of wildlife habitat.

Impacts of Alternative D - NPS Preferred

The same impacts would occur as listed under Alternative B except that less wildlife habitat would be altered without the construction of a new visitor center in the lowlands. Two acres of wildlife habitat would still be affected from constructing the administrative facility, seasonal employee/volunteer residence, and ATS staging area.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to wildlife habitat. Newly developed areas would be replanted with native grasses and plants. New facilities would be located near existing developed areas to reduce impacts.

Natural Resources—Threatened and Endangered Species

Existing Conditions

A systematic survey to identify, record, and locate threatened, endangered, and sensitive species has not been conducted

in the monument. Of special concern are federally listed species that require protection under the Endangered Species Act and its amendments as well as state protected species. The threatened, endangered, and candidate species that have been documented within Gila County are the Arizona agave, Arizona hedgehog cactus, Arizona bugbane, bald eagle, cactus ferruginous pygmy owl, Mexican spotted owl, southwestern willow flycatcher, Chiricahua leopard frog, and seven fish species (US Fish and Wildlife Service, 1999).

Of these fifteen species, only the bald eagle and the Mexican spotted owl have been documented in the monument. The bald eagle is an uncommon resident throughout the year and has been seen soaring overhead. No bald eagle nest or perching areas have been reported in the monument. The Mexican spotted owl is a rare transient passing through the monument during the winter months (Hiett and Halvorson, 1999) and has been seen in the riparian area.

The Arizona agave occurs at elevations between 3,000 to 6,000 feet on steep rocky slopes in the transition zone between oak-juniper woodlands and mountain mahogany-oak scrub. The Arizona hedgehog cactus is found between 3,700 and 5,200 feet in interior chapparal and madrean evergreen woodlands. The Arizona bugbane grows on rich, fertile soils high in humus content, under deep shade, from 5,300 to 7,000 feet, in coniferous and riparian ecotones. The cactus ferruginous pygmy owl primarily ranges from New River (north) to Gila Box (east) to Cabeza Prieta Mountains (west). Critical habitat has been designated for the owl in Pima, Cochise, Pinal, and Maricopa counties. Southwestern willow flycatcher habitat consists of cottonwood, willow, and tamarisk vegetation communities along perennial rivers and streams. None of these habitats are found in the monument.

Impacts of Alternative A – No Action

Under the no-action alternative, no new development would occur to alter threatened and endangered species habitat. But because of the lack of a complete survey, locations and changes in species and populations would not be known. This lack of necessary information would result in unknown impacts to listed species. Accurate and current information would not be available for use in interpretive programs.

Impacts of Alternatives B, C, and D - NPS Preferred

A threatened and endangered species inventory would be completed. The increased staff would routinely monitor plots thereby providing the information needed to document species' locations and changes to better support management decisions. Threatened and endangered species ecology would be better understood and documented. Resource management activities would improve management of threatened and endangered species by restoring species and habitat, if needed. Increased interpretive programming would include educating visitors about the need to protect threatened and endangered species and habitat from extinction.

The construction of new facilities in the Lowlands ROA would not affect the above listed threatened and endangered species. The only listed species documented in the monument are the bald eagle and Mexican spotted owl. The bald eagle's habitat primarily consists of large trees or cliffs near open water with abundant prey. The Mexican spotted owl generally nests in canyons of older forests of mixed conifer or ponderosa pine/gambel oak. Neither of these habitats is found in the Lowlands

ROA. The cactus ferruginous pygmy owl nests in cavities in large saguaros, mesquites, and palo verde trees with diameters greater than six inches. No saguaros or large trees suitable for nesting would be destroyed in the Lowlands ROA. A 2001 survey (Benson) for Mexican spotted and cactus ferruginous pygmy owls found no owls. Habitat for the other listed species is not found in the park.

Mitigation for Alternatives B, C, D

Site planning, done at the time of the proposed action, would further document any potential effects on threatened and endangered species. New development would not be constructed near threatened, endangered, or sensitive species and habitats. Consultation with the U.S. Fish and Wildlife Service would continue for all projects that could have potential impact on listed species.

Natural Resources—Water Resources, Wetlands, Floodplains

Existing Conditions

Tonto National Monument's annual precipitation averages about 15 inches. Moisture is received in two distinct rainy seasons, during the summer months and again in late winter to early spring. Locally heavy monsoon thunderstorms or longer-lasting widespread frontal systems can cause sheet flooding or flash flooding. The latter rearranges the configuration of the monument's drainages and creates temporary water-filled floodplains. Snow occasionally falls in January, but rarely remains on the ground for more than a day or two (Burgess, 1965).

The watershed of the monument consists of a number of tributary drainages that start in or just outside the boundary and drain north towards Roosevelt Lake. Surface water flow is limited to spring discharges and intermittent stream flows following cloudbursts or extended periods of steady rainfall. No perennial streams or rivers exist in the monument's arid terrain; however, a perennial spring occurs in the Cave Canyon riparian zone. This riparian area has been designated a wetland by the U.S. Fish and Wildlife Service's national wetlands inventory. Intermittent springs and seeps may exist in other drainages and washes in the Lowlands ROA.

Roosevelt Dam was constructed from 1903 to 1911 and enlarged in 1996 to safely absorb flood flows from Tonto Creek and the Salt River and to control the release of water downstream. At an elevation of 2,300 feet, all land within the monument is located above Roosevelt Lake's storage level and associated floodplain.

Impacts of Alternative A – No Action

Under the no-action alternative, no new development would occur to adversely impact wetlands or floodplains. Demand on groundwater resources would continue to fluctuate according to visitation totals. But because of the lack of hydrological information to assess water use and its effects, impacts to ground water sources and the riparian area would not be known. Current and alternative water sources would not be identified. Sufficient staff would not be available to read wildlife and vegetation monitoring plots to assess changes in the riparian area from visitor use on the upper cliff dwelling trail, demands on groundwater resources, and upstream activities occurring on U.S. Forest Service land. This lack of necessary information would result in unknown impacts on the riparian area. Accurate and current information on the riparian area would not be available to use in interpretive programs. Existing partnerships would work to reduce

impacts from outside activities on the riparian area.

Impacts of Alternative B

A completed inventory of ground water sources and a study of the geohydrology of the watershed would support better management decisions. The increased staff would routinely monitor wildlife and vegetation plots thereby providing the information needed to document species' locations and changes and better manage the riparian area. Impacts from trail users in the riparian area would be assessed and controlled or reduced. Expanded partnerships with adjacent landowner agencies would work to reduce impacts from outside activities on the riparian area. Increased interpretive programming would include educating visitors about the importance of and need to protect riparian areas in the arid Sonoran desert ecosystem.

No new development would be constructed in the riparian area or floodplains. However, the additional facilities constructed in the lowlands would increase human water use and impact groundwater resources and the riparian area by reducing the amount of the existing water table.

Impacts of Alternative C

The same impacts would occur as listed under Alternative B except that significantly less groundwater would be consumed within the monument with placement of the new visitor/administrative facility outside the park. Water use would still increase over the no-action alternative because of the addition of a seasonal employee/volunteer residence.

Impacts of Alternative D - NPS Preferred

The same impacts would occur as listed under Alternative B except that slightly less groundwater from the monument would be consumed without construction of a new visitor center in the lowlands. Water use would still increase over the no-action alternative because of the addition of the administrative facility and seasonal employee/volunteer residence.

Mitigation for Alternatives B, C, D

Site planning, done at the time of the proposed action, would further document any potential effects on ground water sources. New development would not be constructed in the wetland or floodplains. Consultation with the Army Corps of Engineers would continue for all projects that could have potential impacts on wetlands or floodplains.

Natural Resources—Air Quality

Existing Conditions

Tonto National Monument is classified as a Class II Air Quality area. A Class II designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter, as specified in the 1963 Clean Air Act (42 U.S.C. 7401 *et seq*). Further, the Clean Air Act provides that the federal land manager has an affirmative responsibility to protect air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and public health) from adverse pollution impacts.

Low population levels and the lack of large industries in Tonto Basin have generally meant high standards of air quality and good visibility. However, poor air quality occurs significantly on a seasonal basis when extensive prescribed burning is

conducted on U.S. Forest Service and tribal lands. In addition, air quality may be lessened by air pollution from the large urban areas of Phoenix and Tucson, as well as from area copper mines (smelter emissions and tailings dust) and vehicular traffic on State Route 188.

The monument has been operating an IMPROVE (Interagency Monitoring of Protected Visual Environments) air quality sampling station since 1988. The monument was selected as an IMPROVE site to assist in monitoring the neighboring Class I Superstition Mountain Wilderness airshed by documenting particulate concentrations. The IMPROVE program, begun in 1987 as prescribed by the Clean Air Act, is a cooperative interagency effort to determine existing visual air quality levels in wilderness and national park areas, identify sources of human-made visibility impairments, and document long-term trends. The monument is working with the Arizona Department of Environmental Quality to install and operate additional air monitoring equipment. The new instruments consist of an open-air nephelometer and meteorological equipment. The nephelometer measures the scattering coefficient of a known volume of air and the meteorological equipment will track temperatures, relative humidity, wind speed, and wind direction.

Impacts of Alternative A – No Action

Under the no-action alternative, no construction activities would occur to impact air quality. Air quality monitoring with the IMPROVE and nephelometer instruments would continue. Existing partnerships would work to reduce impacts on air quality from outside activities.

Impacts of Alternative B

Air quality would be temporarily impacted from dust and vehicle emissions during construction of new facilities. Emissions from vehicles being driven to and parked at the new visitor/administrative facility would impact air quality over the long-term in the Lowlands ROA. Increased visitation would increase vehicle emissions reducing air quality in the park as well as Tonto Basin. Air quality monitoring with the IMPROVE and nephelometer instruments would continue. Negative impacts would be offset by using the ATS and expanding partnerships working to schedule prescribed burning activity in Tonto Basin when pollutants are otherwise at lower levels thereby improving air quality.

Impacts of Alternative C

The same impacts would occur as listed under Alternative B except that substantially fewer impacts would occur to air quality with the placement of the new visitor/administrative facility outside the monument. Air quality would be temporarily impacted during construction of the new seasonal employee/volunteer residence.

Impacts of Alternative D - NPS Preferred

The same impacts would occur as listed under Alternative B except that fewer impacts would occur to air quality without the construction and use of a new visitor center in the lowlands. Air quality would be temporarily impacted during construction of the new administrative facility, ATS staging area, and seasonal employee/volunteer residence. Emissions from vehicles being driven to and parked at the new administrative facility and ATS staging area would impact air quality over the long-term in the lowlands.

Mitigation for Alternatives B, C, D

Exposed soil would be covered or watered during construction activities to reduce dust levels. Use of an alternative transportation system would reduce impacts to air quality from single vehicle emissions along the monument entrance road. Construction-related emissions would be reduced when possible by properly maintaining and operating the equipment.

Natural Resources—Natural Quiet

Existing Conditions

Noise levels can affect visitors' experiences and the monument's natural resources. Vehicle and boat traffic, mining activity, maintenance activities by monument staff, and private and military aircraft overflights disrupt the natural quiet. The monument is located in the relatively remote and lightly populated Tonto Basin. Access to the monument is from State Route 188, which is moderately traveled. Vehicle use of the highway will likely increase once Arizona Department of Transportation improves State Route 188 from Globe and Payson into Tonto Basin. Blasting activities from copper mines to the southeast generate sound that disturbs the natural quiet of the monument. Noise from boating activity on Roosevelt Lake can also be heard. The only road into the monument is a one-mile dead end paved road. Visitors are exposed to higher amounts of noise at the visitor center and picnic area from normal road traffic. Infrequent overflights provide a temporary distraction to visitor experiences. Noise levels can also disrupt normal wildlife activity such as foraging, breeding, and nesting.

The irreplaceable, one-of-a-kind, archeological cliff dwellings are sensitive to vibrations caused by hovering helicopters (King and King, 1998). Touring helicopters hover at low altitudes just outside the monument's cliff dwellings and should stay at least 200 feet away from them to prevent damage to the walls.

No park service regulations exist to prohibit park overflights. Federal Aviation Administration (FAA) regulations request aircraft to maintain a minimum altitude of 2,000 feet above national park areas, but compliance is at the pilots discretion except in those few areas (e.g. Grand Canyon) where altitude restrictions or certain types of flight activity have been set by federal statute. The monument staff documents aircraft overflights when possible. When identification numbers can be ascertained, the staff works with the FAA in contacting pilots to seek compliance. This effort has been minimally effective with military aircraft.

Impacts of Alternative A – No Action

Under the no-action alternative, natural quiet levels would remain the same. Noise distraction would still occur around existing developed areas. Noise disruptions from overflights would continue to be monitored and reduced when possible. Natural quiet would continue to be impacted by boat, traffic, and mine activity. Existing partnerships would work to reduce noise levels from sources originating outside the monument.

Impacts of Alternative B

Noise levels would temporarily increase from construction activities building new facilities and remodeling the existing visitor center. Noise levels in the Lowlands ROA would increase over the long term from increased visitor and employee activity and vehicle use at the new visitor/administrative facility. Increased staff would monitor all noise sources. Negative impacts would be offset by use of

the ATS and expanded partnerships working to reduce noise levels from sources originating outside the monument.

Impacts of Alternative C

The same impacts would occur as listed under Alternative B except that substantially fewer impacts would occur to natural quiet in the monument over the long term with the placement of the new visitor/administrative facility outside the monument.

Impacts of Alternative D - NPS Preferred

The same impacts would occur as listed under Alternative B except that fewer impacts would occur to natural quiet over the long term without the construction of a new visitor center in the lowlands.

Mitigation for Alternatives B, C, D

The alternative transportation system would reduce noise levels from the many single vehicles being driven on the monument entrance road.

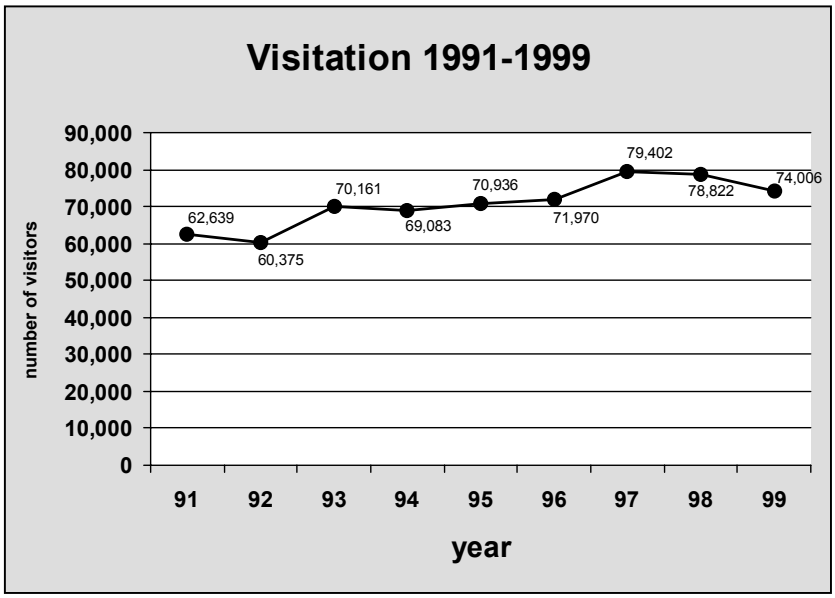
Visitor Use, Experience, Accessibility

Existing Conditions

Annual visitation has ranged from 60,400 to 79,400 over the past nine years. Of the 74,006 visitors who came to the monument in 1999, over half or 41,979 visitors arrived during the winter/spring months of January through April. Visitation is lowest during the hotter summer months. Daily use patterns show that visitation is highest on weekends and holidays. The percentage of year-round Arizona residents visiting the monument is lowest in the winter and highest in the summer (Moore and Crowe, 1993). Non-residents were highest in the winter reflecting Arizona's status as a seasonal haven for people from cooler climates. Visitation by non-U.S. residents was highest during the summer, although visitation from Canada peaked during the fall marking the influx of winter residents.

Visitation during the past nine years has stayed fairly constant. However, future visitation is expected to increase. The surrounding Tonto National Forest has completed construction of greatly expanded recreational facilities around Roosevelt Lake. These facilities include 1,500 individual campsites, eighty picnic sites, nine boat launch areas, and a new visitor center. The Arizona Department of Transportation is currently in the process of improving State Route 188 from Globe and Payson to the monument. It is expected that more people will use the park and Lake Roosevelt facilities once easier access into Tonto Basin has been constructed.

Visitor activities are fairly structured and directed at the monument. Visitors must stay on existing sidewalks to the visitor center and trails to the lower and upper



cliff dwellings. Access to the upper cliff dwelling is controlled by guided tours during the winter season, which protects the dwelling and provides for quality experiences. The lower cliff dwelling is open year-round. Depending on the season, visitors can expect the company of others as they tour the visitor center and cliff dwellings. Crowding can occur on weekends and holidays during the busy spring season.

At Tonto National Monument, visitors have the opportunity to experience and learn about Salado prehistoric life and their relationship to the surrounding Sonoran desert. Visitors can enter the remains of a multiple family dwelling and can view construction techniques to see the materials and resources that were used. At the visitor center, visitors can acquire information and view exhibits and electronic interpretive presentations. Other visitor activities include observing nature, picnicking, and photography.

The rugged topography of Tonto National Monument provides few opportunities for mobility impaired visitors. Accessible areas are the visitor center and picnic area, which meet accessibility requirements set forth by the American Disabilities Act. The visitor center's second floor theatre and observation deck are only reachable via a staircase. To accommodate physically challenged visitors; video equipment and a seating area have been incorporated into the first-floor museum. Because of the elevation gain, the trails to both cliff dwellings make the dwellings inaccessible to physically challenged visitors. The lower cliff dwelling can be seen from the visitor center parking area and through a telescope on the observation deck. A parking area from which to view the upper cliff dwelling is being constructed by the Arizona Department of Transportation on U.S. Forest Service land.

Impacts of Alternative A – No Action

Current visitation trends have shown increasing tendencies that may surge upon completion of highway improvements into Tonto Basin. Retaining the existing visitor use facilities without any improvements would not provide for the needs of current and expected increased numbers of visitors. The existing outdated, cramped, and/or inaccessible visitor services (museum exhibits, information lobby, publications sales area, theatre, observation deck, and parking area) would be maintained. Interpretive programs would not expand without additional staff. No space would be available to present indoor interpretive programs. No new accessible areas or trails would be constructed and available for use. Visitor satisfaction and accessibility of the existing visitor center would not improve. However, the existing visitor center's on-site location would continue to directly connect the visitor to the resource and would eliminate confusion by providing all visitor use facilities in one location. Yet, fewer visitors would be contacted without an additional facility as in Alternatives B and C. No additional parking spaces would be provided. When encountering the full parking lot, visitors would not be able to stop but would be forced to either circle the parking area while waiting for an opening or would simply leave the park continuing on their way. The natural setting and aesthetic appeal as visitors entered the monument would be retained; the lowlands area would not be developed for a new building.

Impacts of Alternative B

Increasing and improving visitor services and facilities would enhance visitor experience through understanding. New facilities combined with the remodeled existing visitor center and increased staff levels would enhance and expand

interpretive services (exhibits, displays, information lobby, publications sales area, and audiovisual and interpretive programs). The existing visitor center would be remodeled to provide more in-depth educational facilities in that building. All new facilities, including a nature trail, would be fully accessible. With these improvements, a wider range of visitor needs would be met. The new on-site visitor center would connect the visitor directly to the park resources and alleviate crowded conditions at the existing visitor center, restrooms, and parking area. Its placement near the beginning of the entrance road would be highly visible and easy to locate. The number and duration of visits would increase. However, visitors stopping at the new visitor center would be making an additional stop before reaching the cliff dwelling trails. Constructing additional facilities in the lowlands would provide for the needs of increased visitation, but would detract from the natural setting and aesthetic appeal as they enter the monument. Additional staff levels and cooperative services with local emergency agencies would provide increased emergency response levels for visitors and facilities.

Impacts of Alternative C

The impacts would be the same as Alternative B except that the new visitor/administrative facility would be located outside the monument. By placing the new facility outside the monument, the lowlands area would not be developed and its natural setting and aesthetic appeal would remain intact as visitors enter the monument. However, depending on its location, the new visitor center would be more difficult for the public to find. The park story would have to be repeated both in this building and in the existing visitor center. Information would be more difficult to explain or present without having the park resources on-hand or within view. By locating the new visitor center off-site, additional restrooms and parking spaces would not be available in the park to alleviate overcrowding and a new accessible nature trail would not be built.

Impacts of Alternative D - NPS Preferred

A similar impact would occur as listed under Alternative B except that no new visitor center would be built. Instead, the existing visitor center would be remodeled to partially improve and expand visitor and interpretive services. Crowded conditions would probably occur at the remodeled building during the busiest season. If visitation increases as projected, the remodeled visitor center would be adequate only for the ten- to fifteen-year life of this plan. The new ATS staging area would alleviate crowded conditions and provide ample spaces. This alternative addresses immediate concerns, but would not be adequate for the long-term. Construction of the new administrative facility would impact the natural setting and decrease aesthetic appeal as visitors enter the monument. A new accessible nature trail would not be built.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to natural and cultural resources. The size, configuration, and location of new monument facilities would be selected to reduce intrusion on scenic viewsheds and cultural landscapes. The new facilities would blend in with the natural environment as much as possible by use of natural colors and screening with native vegetation. Careful and continuous monitoring would measure, record, and

mitigate impacts to vegetation. No new development would be built on archeological sites. Additional staffing would be required to operate new facilities and accommodate increased levels of visitation.

Scenic Vistas, Viewsheds

Existing Conditions

Outstanding scenic vistas provide sweeping panoramas of the monument's cliff dwellings and the rugged Sonoran Desert landscape including, Roosevelt Lake, the Sierra Anchas and Mazatzal Mountains, and the remainder of Tonto Basin. Visitors can watch a fascinating display of changing shadows and light among the mountains, canyons, and valleys as the sun changes location in the sky. Viewpoints are maintained at the visitor center and along the lower cliff dwelling trail. The scenic vistas are occasionally disrupted by smoke from fire activities on nearby tribal and U.S. Forest Service lands. Smoke trapped in an inversion layer in the Tonto Basin can be so dense as to obscure the view of Roosevelt Lake from the visitor center, a straight-line distance of two miles.

Viewsheds are an integral part of the prehistoric scene at Tonto National Monument. However, increasing modern-day development both inside and outside the monument is becoming more visible from the cliff dwellings. Park management works to minimize the sight of internal development by using vegetation screens and colors that blend in with the surrounding landscape. The adjacent Tonto National Forest has completed constructing new recreational facilities around Roosevelt Lake. The new campgrounds and boat ramps at Windy Hill (located across the highway from the monument) are visible from the visitor center and cliff dwellings. Also visible are State Route 188 and the overhead transmission lines that parallel the highway.

Impacts of Alternative A – No Action

Impacts to scenic viewsheds looking into the monument would not change. Existing partnerships would work towards reducing impacts from future development and smoke from prescribed fires on scenic viewsheds as seen from the monument.

Impacts of Alternative B

The new visitor/administrative and residential facilities and associated parking areas would impact the monument's scenic viewshed. Expanded partnerships with adjacent agencies and nearby tribes would work to improve impacts to the scenic viewshed as seen from the monument caused by smoke from prescribed fires, addition of new facilities, and increased effects of visitation.

Impacts of Alternative C

The impacts to monument viewsheds would be substantially less than those described in Alternative B if the new visitor/administrative facility was located outside the scenic viewshed.

Impacts of Alternative D - NPS Preferred

The impacts to monument viewsheds would be less than those described in Alternative B because a new visitor center would not be constructed and only the new administrative facility, residence, and ATS staging area would impact the scenic viewshed.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to natural and cultural

resources. The size, configuration, and location of new monument facilities would be selected to reduce intrusion on scenic viewsheds. All new facilities would blend in with the natural environment as much as possible by use of natural colors and screening with native vegetation. The new visitor center parking area in Alternative B would use medians planted with native vegetation to interrupt and lessen the visual impacts from the large open surface area. All concrete would be tinted to blend in with the natural soil color. Any modifications to existing facilities would not add additional impacts to scenic viewsheds.

Adjacent Land, Partnerships

Existing Conditions

Tonto National Monument is completely surrounded by Tonto National Forest. Numerous recreational activities and limited livestock grazing occur on these lands administered by the U.S. Forest Service. Expanded campgrounds, picnic areas, and boat ramps were recently completed around Roosevelt Lake. Boating and fishing as well as hunting, horseback riding, and off-road driving are popular recreational activities. Limited cattle grazing occurs adjacent to the monument's east and south boundaries.

The community of Roosevelt has commercial facilities and residential areas scattered along State Route 188 two- to seven-miles distant from the monument. Private residences are concentrated in Lakeview Trailer Park, Roosevelt Estates, Quail Run, and Roosevelt Resort developments.

Specific impacts and values associated with land protection are the preservation of natural and cultural resources and the setting in which they occur. Management actions under each alternative seek to preserve the viewshed, protect the natural and cultural resources, and provide a quality visitor experience.

Park management has formed partnerships with the U.S. Forest Service, Environmental Protection Agency, U.S. Geological Survey/University of Arizona, Arizona departments of Transportation and Environmental Quality, State Historic Preservation Office, Gila County, Globe/Miami/Apache Junction chambers of commerce, Globe/Miami/Tonto Basin public schools, Salt River Project, and TDS Telecom in support of park missions and activities. Continual efforts to establish and expand partnerships may result in shared resource protection, public education, and renewed appreciation of the resources both within and outside the park. Expanded partnerships would include consultation with a variety of agencies and entities, including tribal governments, to ensure compliance with various laws, regulations, policies, and management directives.

Impacts of Alternative A – No Action

Monument staff would continue to work with adjacent and nearby landowners to reduce impacts to monument resources by decreasing detrimental external activities such as grazing, prescribed fire, spread of exotic plants, and poaching. Cooperative efforts would also continue with adjacent and nearby landowners to provide educational opportunities and public services.

Impacts of Alternatives B, C, and D - NPS Preferred

Monument staff would expand relations with adjacent and nearby landowners to manage their land in ways that would be compatible with monument values and reduce impacts to monument resources. Under Alternative C, there would be a positive benefit of increased community connection associated with the relocation

of administrative offices outside the monument. Expanded partnerships would increase the quality and quantity of interpretative and public services.

Facilities—Visitor/Administrative Facility, Parking Area (Including Public Safety)

Existing Conditions

Visitor/Administrative Facility - The 2,964-square-foot visitor/administrative facility was completed in 1964 around an existing restroom building. Structurally, the building is in good condition. It is sited against the side of a steep hill at the end of the entrance road. The facility was built to accommodate 55,000 annual visitors and provide workspace for five employees. The building also houses the information lobby, museum, publication sales area, library, storage room, and two public restrooms. A staircase to the second floor provides access to the theatre, observation deck, and lower cliff dwelling trail. Since 1964, visitation to the monument has increased to about 80,000 visitors annually. During the busy spring months, visitors must crowd into the lobby, museum, and sales area, and peer around each other in order to view the exhibits and sales items and must wait in line to use the public restrooms.

Nine permanent employees, one part-time association employee, and seasonal employees/volunteers now work out of office space that was originally designed for five people. The facility is not large enough to house all employees and their operations. There isn't sufficient space for offices, library, work area, meeting room, lunch area, and storage. Two offices have been incorporated into the basement storage area. The single exit from the basement is a safety hazard.

Parking Area - The small visitor center parking lot, with forty-six spaces, fills to capacity during the busy spring season. Large recreational vehicles and vehicles pulling boat trailers exacerbate this situation since only three of the spaces are large enough to accommodate them. When the parking lot is full, all monument employees and volunteers must park their vehicles in the residential area to provide parking spaces for visitors. Visitor entry into the parking area is then stopped until space is available. For those who don't want to wait, parking is available in the picnic area or along the entrance road shoulder. An employee or volunteer is then needed to shuttle visitors to and from their parked vehicles. It is not practical to enlarge the parking area because of its location on the side of a steep hill.

Impacts of Alternative A – No Action

Under the no-action alternative, the existing facilities would be maintained; no new facilities would be built. Consequently, no further encroachment would occur to the monument's natural and cultural resources. However, the existing visitor center would remain crowded during the spring months and would not meet the needs of existing and increasing visitation. Space would not be available to conduct indoor interpretive programs, expand museum exhibits and displays, and enlarge the sales area. The second floor theatre, observation deck, and lower cliff dwelling trail entrance would remain inaccessible. Visitors would continue to wait in lines to use the existing restroom facilities. Visitor satisfaction and experience would continue to decrease.

Adequate space would not be available for employees to work, conduct meetings, organize a library, and store equipment and supplies. The two basement offices would not meet health and safety standards. Existing staff levels would not

provide adequate protection for all facilities.

Without an additional parking area, visitors would continue to park in the picnic area or along the entrance road shoulder creating *unsafe* conditions. Visitor experience would continue to decrease.

Impacts of Alternative B

Under Alternative B, a new visitor/administrative facility and associated parking lot would be constructed inside the monument near the beginning of the entrance road. The existing visitor center would be remodeled into a learning center. An Alternative Transportation System (ATS) would transport visitors from the new visitor center to the learning center during the busy spring months. The new facility would encroach on and impact the monument's natural and cultural resources and scenic viewshed. This alternative would increase much-needed space for present and future levels of visitors and employees. Museum exhibits and displays and the sales area would be expanded and improved. Space would be available to conduct interpretive programs. Additional restroom facilities would accommodate present and increased levels of visitation, as would the new parking area. Visitor education, satisfaction, and experience would greatly increase.

Adequate space would be available for employees to work, conduct meetings, organize a library, and store equipment and supplies. Offices would no longer be located in the unsafe basement. Tremendous savings would be realized by having adequate storage facilities to safeguard equipment, supplies, and materials. Increased staff levels and 24-hour security systems would increase protection for all facilities.

With the new visitor center and the ATS in use, ample parking would be available during the busy spring months. Visitors would park their vehicles at the new visitor center and ride the transportation system the short distance to the existing visitor center to access the cliff dwelling trails. Visitor satisfaction and experience would greatly increase. The new parking facilities would also reduce the staff time needed to control traffic during special events such as the biannual open houses and would reduce the *safety hazard* created from the current practice of using road shoulders for overflow parking.

Impacts of Alternative C

Under Alternative C, the new visitor/administrative facility would be built or an existing building remodeled outside the monument either in Roosevelt, Globe, or possibly, Payson. The existing visitor center would be remodeled to enhance visitor services. An Alternative Transportation System (ATS) would transport visitors from the new visitor center to the existing facility during the busy spring months. Impacts would be the same as for Alternative B except that the new facility would not encroach on and impact the monument's natural and cultural resources and scenic viewshed. The ATS would cover more miles than in Alternatives B and D, thereby increasing costs and operation time. The increased distance would also heighten *safety risks* of transporting visitors.

Impacts of Alternative D - NPS Preferred

Under Alternative D, administrative functions would be removed from the existing facility to a new building inside the monument near the maintenance facility. The existing visitor center would be remodeled to provide enhanced visitor services and opportunities. Less space would be available to conduct interpretive

programs and expand and improve museum exhibits, displays, and the sales area than in Alternatives B and C. The second floor audiovisual viewing room and observation deck would be made accessible. Visitor education, satisfaction, and experience would increase. An Alternative Transportation System (ATS) would transport visitors from a new staging area near the entrance station to the visitor center during the busy spring months. Both the new administrative facility and ATS staging area would encroach on and impact the monument's natural and cultural resources and scenic viewshed.

Adequate space would be available for employees to work, conduct meetings, organize a library, and store equipment and supplies. Offices would no longer be located in the unsafe basement. Tremendous savings would be realized by having adequate storage facilities to safeguard equipment, supplies, and materials. Increased staff levels and 24-hour security systems would increase protection for all facilities.

A new parking area to stage the ATS would relieve traffic congestion at the existing visitor center. Locating the new ATS staging area near the entrance station would facilitate the control of vehicular traffic. The ATS would operate a shorter distance than in Alternatives B and C reducing *safety risks*, costs, and operation time. The ATS staging area would include amenities for visitors as they wait, such as restrooms and outdoor interpretive exhibits.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would minimize damage to natural and cultural resources. The size, configuration, and location of new monument facilities would be selected to reduce intrusion on scenic viewsheds and cultural landscapes. The new facilities would blend in with the natural environment as much as possible by using natural colors and native vegetation screens. Careful and continuous monitoring would measure, record, and mitigate impacts to vegetation. No new development would be built on archeological sites.

Museum Collections, Reference and Archives Library

Existing Conditions

Under the category of museum collections, objects are defined as material items possessing functional, aesthetic, cultural, symbolic, and scientific value. The monument's museum collection consists of a variety of artifacts and archeological samples, primarily prehistoric in age, with a few natural history or herbarium samples. In addition, archeological project archives are included under the category of museum collections. The majority of these artifacts and archives (69,000 items) are curated and stored at the Western Archeological and Conservation Center in Tucson, Arizona. Although the monument has a small collection on site for display in the museum and does have secure storage that meets NPS guidelines, the current facility was not designed for the stringent environmental controls for collections required by the NPS (see NPS Museum Handbook [revised]). All items are either in the process of being cataloged or are cataloged to NPS standards although some long term conservation of organic materials may be required in the near future.

Past excavations at the monument have yielded an incredible number of well-preserved perishable artifacts including

one of the finest collections of prehistoric fabrics in the Southwest. The Salado's weaving technology and artistry rivaled that of any contemporary southwestern culture. Pieces of finely woven cotton cloth depict different delicate weaving methods. Native plants woven into sandals, baskets, or mats show exquisite workmanship. The Salado were also accomplished at making beautiful multicolored ceramics. Polychrome pottery is one of the most popular types produced in the Southwest and is often called the hallmark of the Salado tradition. Inlaid turquoise jewelry, brightly painted arrows, and many other tools and implements for daily living reflect their creativity and artistic expressions.

Only 0.2% of the total artifact collection are displayed in six exhibit cases in the monument's twelve- by fourteen-foot exhibit room. These wall–mounted displays were installed when the building was constructed in 1964; there is no room to add additional exhibits. The displays depict Salado food gathering and cultivating, tools, pottery, clothing, and architectural style. Subsequent archeological research at the monument and elsewhere in Tonto Basin has provided new information about the Salado culture outdating the information presented in the thirty-five year-old exhibits. Information about the associated Sonoran desert ecosystem is not presented in these exhibits. During the busy spring months, an average of over 400 visitors crowd into the small museum each day.

Most of the monument's reference and archives library is located in the visitor/administrative facility where there is insufficient space to house and organize all volumes in one dedicated area. Reference materials are scattered among five different offices. Most of the volumes are arranged in six cupboards located above employees' desks. These employees must move in order for others to reach into the cupboards. There is no complete or centralized listing of all the documents. The remainder of the archives collection is stored at the Western Archeological and Conservation Center in Tucson, Arizona.

Impacts of Alternative A – No Action

Under the no-action alternative, the existing museum and reference and archives library would be maintained. The museum would continue to be too small to meet the needs of present and expected future levels of visitation. Adequate space would not be available to enlarge the museum or house the library and archive materials. The existing outdated thirty-five year-old exhibits would not present current and accurate information about the Salado culture and their surrounding Sonoran desert environment. Visitors would continue to crowd into the small museum or choose not to enter. The condition of the displayed artifacts would continue to deteriorate without stringent environmental controls required for proper storage. Monument staff would continue to spend time searching for needed reference materials if they, indeed, existed.

Impacts of Alternative B

Under Alternative B, a new visitor/administrative facility would be constructed inside the monument and the existing visitor center would be remodeled. This alternative would increase much-needed space for the museum and reference and archives library. Museum exhibits and displays would be expanded and improved with increased space and up-to-date research information. Visitor satisfaction and experience would substantially increase. Increased staff levels and 24-hour security systems would increase protection of the museum collection and archives. The condition of the displayed artifacts in the

new facility would improve with stringent environmental controls required for proper display. The library would be expanded, organized, and improved with increased space and staff.

Impacts of Alternative C

Under Alternative C, a new visitor/administrative facility would be constructed outside the monument and the existing visitor center would be remodeled. Impacts would be the same as listed under Alternative B except that emergency response time to the external facility by monument staff would take longer after working hours thereby increasing security risks to the museum collection and archives library.

Impacts of Alternative D - NPS Preferred

Under Alternative D, administrative functions would be removed from the existing facility to a new building inside the monument. The existing visitor center would be remodeled to provide enhanced visitor services and opportunities. Less space would be available than in Alternatives B and C to expand and improve museum exhibits and displays. Visitor satisfaction and experience would increase slightly. Increased staff levels and 24-hour security systems would provide for increased protection of the museum collection. The condition of the displayed artifacts would improve with additional environmental controls required for proper display.

Mitigation for Alternatives B, C, D

Mitigation measures for Alternatives B, C, and D would be the same for visitor/administrative facility.

Employee Residences

Existing Conditions

A two-bedroom and a three-bedroom house were constructed in 1953 and two three-bedroom houses were added in 1965. All residences have been adequately maintained over the years, but most of the original floor coverings and fixtures have never been updated. All of the houses have been made environmentally efficient with added insulation and smaller, tight-fitting windows and doors. These houses provide sufficient residences for permanent employees as long as additional housing is available in the communities of Roosevelt and Globe, where some of the employees reside. One of the three-bedroom houses was furnished for use by seasonal employees and volunteers until staff size increased in 2001. The park now has no housing for seasonal employees and volunteers.

Impacts of Alternative A – No Action

Under Alternative A, the existing residences would be maintained. No new residences would be built to further impact the viewshed or encroach upon the monument's natural and cultural resources. However, no residences would be available to house seasonal employees or volunteers. Hiring seasonal employees and obtaining volunteers would be more difficult without providing them accommodations. The existing residents would continue to provide quick response to emergency and law enforcement incidents.

Impacts of Alternatives B, C, and D - NPS Preferred

Under Alternatives B, C, and D one duplex would be constructed. The duplex would provide adequate housing for seasonal employees or volunteers and would increase the monument's ability to hire

them. The additional residence would provide increased timely response to emergency and law enforcement incidents by having more employees residing within the monument. The additional duplex would further impact the viewshed and encroach upon the monument's natural and cultural resources.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to natural and cultural resources. The size, configuration, and location of the facilities would be selected to reduce intrusion on scenic viewsheds and cultural landscapes. The new facility would blend in with the natural environment as much as possible by use of natural colors and screening with native vegetation. Careful and continuous monitoring would measure, record, and mitigate impacts to vegetation. No development would be built on archeological sites.

Trails

Existing Conditions

All trails within the monument are non-historic. The Lower Cliff Dwelling and Cactus Patch trails are constructed of asphalt or concrete. The trails are covered with a glued-on sand finish that provides an unobtrusive and non-slip surface and holds up well to foot traffic. The dirt/gravel Upper Cliff Dwelling trail is one and a half miles long. The section of the trail through Cave Canyon was destroyed by a flashflood in 1999. Minor repairs have been made to temporarily route visitors along the floor of the canyon.

Impacts of Alternatives A (No Action), C, and D (NPS Preferred)

Under Alternatives A, C, and D, all trails would be maintained to support current activities. No further impacts would occur to the monument's natural and cultural resources. No accessible trails would be constructed and available for use.

Impacts of Alternative B

Under Alternative B, a one-mile mobility impaired accessible nature trail would be constructed near the new visitor center within the monument. This alternative would provide the only accessible trail available for visitors thereby increasing visitor education, experience and satisfaction. However, the new trail would encroach on and affect the monument's natural and cultural resources and scenic viewshed.

Mitigation for Alternative B

Specific mitigation measures for the nature trail would be defined during the planning and carried out prior to or during project development. Design modifications to reduce damage to natural and cultural resources. The length and location of the trail would be selected to reduce intrusion on scenic viewsheds and cultural landscapes. Prior to construction, existing plants would be removed and transplanted elsewhere or saved for later rehabilitation, if possible. The trail would blend in with the natural environment as much as possible by use of vegetative screening. Careful and continuous monitoring would measure, record, and mitigate impacts to vegetation. The trail would not be built on archeological sites.

Maintenance Facility, Entrance Station, Roads, Volunteer Trailer Pad, Picnic Area

Existing Conditions

Maintenance Facility - The 2,048-square foot maintenance facility was built in 1978. Structurally, it is in good condition, but needs a few repairs. The original air conditioning system and garage doors need to be replaced. The electrical system requires upgrading. The building is located about one-half-mile from the visitor center. To provide needed space for supplies and vehicles, two storage sheds and three covered parking areas were later constructed within the maintenance yard.

Entrance Station - An entrance station is located in the middle of the entrance road about 0.3 mile from State Route 188. The four- by seven-foot booth was constructed in 1988. Structurally, it is in fair condition with electrical but no telephone service. Its design does not match the other public buildings in the monument. Cement-filled pipes and curbing do not provide proper safety barriers between vehicular traffic and employees working inside the building. Plans have been made to upgrade the entrance station by replacing exterior surfaces and installing telephone service. Safer traffic barriers will be constructed around the building. Vegetation will be added to screen the building from view as seen from the visitor center and cliff dwellings. The entrance station provides a degree of traffic control especially during special events, but due to low staffing levels, it is not prudent to keep an employee in the booth year-round. Employees are always required to staff the visitor center, so entrance fees are normally collected there.

Roads - A one-mile paved entrance road serves the visitor center with a one-tenth mile spur road to the residential/maintenance area. The one-way loop road through the picnic area is gravel.

The entrance road was initially designed for use by single vehicles in the early 1930s. The widths of the lanes vary in size and are too narrow in places to safely accommodate today's wider and longer vehicles. The two sharp curves in the road do not provide a safe sight distance for visitors unaccustomed to driving the road. The entrance road was last chip-sealed in 1994. The asphalt surface is now cracked and buckling and the edge is crumbling and eroding. Some areas of the roadbed have settled or compacted leaving depressions in the surface. The gravel road shoulders have also eroded.

The intersection of the park entrance road with State Route 188 is hazardous. The intersection sits at the crest of a hill, which obscures on-coming traffic in both directions. No turning lanes have been provided. Westbound vehicles must stop in the lane of traffic while waiting to turn into the monument.

Plans have been made to upgrade the entrance road by the end of 2002. These plans include relocating the intersection with State Route 188 and resurfacing the entire entrance road and visitor center parking area. The road base will be widened to accommodate uniform 12-foot wide lanes and two-foot wide shoulders. The radius of two sharp curves will be increased to improve sight distance and safety conditions.

Volunteer Trailer Pad - Two trailer pads were constructed in the residential area (one in 1992 and another 2001) for volunteers who have their own recreational vehicles. The trailer pads have complete utility connections and a wooden ramada that shades a picnic table.

Picnic Area - The picnic area consists of seven tables, each under a shade ramada. The picnic area was relocated in 1992 from the visitor center parking area to its new location about one-third mile from the visitor center. One picnic site and the modern restroom, constructed in 1997, are handicapped accessible. The picnic area and the restroom are in good condition.

Impacts of Alternatives A (No Action), B, C, and D (NPS Preferred)

Under all alternatives, the maintenance facility, entrance station, park roads, volunteer trailer pads, and picnic area would be maintained once upgrading has been completed to improve existing facilities. No further impacts would occur to the monument's natural and cultural resources.

Mitigation for All Alternatives

Any modifications made to the maintenance facility, entrance station, picnic area, trailer pads, and roads would be done so as not to impact archeological sites, cultural landscapes, and scenic viewsheds.

Operational Efficiency—Visitor Center and Headquarters

Existing Conditions

The visitor center building serves as both a visitor information/orientation/educational center and as the main administrative facility for the monument. The monument is currently authorized twelve permanent, full-time employees. Additional staff includes one part-time cooperating association employee, seasonal employees, volunteers, and researchers. All employees except those in the maintenance division work in the visitor center building.

The visitor center building is not large enough to house current staff members and their operations. The information lobby, museum, and sales area become crowded during the busy spring season. The second floor audio/visual theatre, observation deck, and lower cliff dwelling trail entrance are not accessible. There isn't sufficient space for offices, library, work area, meeting room, lunch area, and storage. Because the visitor center is assumed to be eligible for inclusion on the National Register of Historic Places and because it is located on the side of a steep hillside, the building cannot easily be enlarged.

Impacts of Alternative A – No Action

The effects of the no-action alternative would be a continuation of the present situation. The current visitor/administrative facility would not meet the needs of the staff and the current and anticipated increased levels of visitors. The overcrowded conditions would impact work efficiency, employee moral, and visitor satisfaction. Space would not be available to conduct meetings, organize a library, and store equipment and supplies. However, no impacts would occur to cultural and natural resources since no new buildings would be constructed. Having most of the employees working within one building would increase operational efficiency. Only one visitor/administrative facility would exist to staff, clean, and maintain compared to the two buildings in Alternatives B, C, and D.

Impacts of Alternative B

Impacts on operational efficiency would significantly increase with the construction of a new visitor/administrative facility within the monument and remodeling of the existing facility. Work efficiency would increase with additional office and storage space. Building security would increase. Visitors would be adequately served with a facility

large enough to meet their needs through space improvements. Tremendous savings would be realized by having adequate storage facilities to safeguard equipment, supplies, and materials. However, impacts would occur to cultural and natural resources from construction activities. Having employees' offices split between two buildings would decrease operational efficiency. Two visitor facilities would require increased staffing, cleaning, and maintaining compared to the one building in Alternative A.

Impacts of Alternative C

Impacts on operational efficiency would be similar but less than Alternative B with the construction of a new visitor/administrative facility outside the monument. Work efficiency would increase in the new facility with additional office and storage space, but additional time would be required to travel between the new facility and the monument. Communication links between employees would be difficult to maintain. However, no impacts would occur to the monument's cultural and natural resources with construction of the new facility off-site.

Impacts of Alternative D - NPS Preferred

Impacts on operational efficiency would be similar to Alternative B with the removal of administrative functions to a new facility and the remodeling of the existing visitor center. Work efficiency would increase somewhat in the new facility with additional office and storage space. However, fewer impacts would occur to cultural and natural resources without the construction of a new visitor center. Only one visitor facility would require staffing compared to the two buildings in Alternatives B and C, but the new administrative facility would require additional cleaning and upkeep.

Mitigation for Alternatives B, C, D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to natural and cultural resources. The size, configuration, and location of new monument facilities would be selected to reduce intrusion on scenic viewsheds and cultural landscapes. The new facilities would blend in with the natural environment as much as possible by use of natural colors and screening with native vegetation. Careful and continuous monitoring would measure, record, and mitigate impacts to vegetation. New facilities would not be constructed on archeological sites.

Water, Septic, and Solid Waste Systems

Existing Conditions

A 145-foot well, drilled at an intersection of two geologic faults, supplies the monument's domestic water needs. However, the extent of groundwater resources is not well known. Existing water sources provide adequate volume for current domestic needs but the volume declines periodically. It is unclear whether this decline is a simple drought-water flow relationship. Block faulting (which could potentially shift unexpectedly) as well as minimal sedimentary formations capable of aquifer function characterize the underlying geology. It is not known if or how the expected increased water demand following escalated recreational use of Roosevelt Lake, which is down-slope of the monument, and from within and above the monument will affect the groundwater reservoir.

Separate sewage systems serve the visitor center and the maintenance/residential

area. The visitor center system discharges into a 5,000-gallon septic tank and drains into a leech field located at the edge of Cave Canyon drainage near the monument's well. This system is operating at its maximum design capacity during peak visitation periods although no leakage has occurred. The maintenance/residential area system discharges waste into a separate 5,000-gallon septic tank and drains into a trans-evaporative system northeast of the residential area. To increase capacity and remove the need for the old visitor center leach field, these two sewage systems were combined into a new expanded system in 2002 that included a new leech field and septic tank.

A transfer station serves solid waste disposal needs for the monument. Gila County operates this transfer station on U.S. Forest Service land four miles east of the monument. Since the transfer station isn't a permanent operation, future disposal options are unclear but may include regular trips to distant landfills by monument staff.

Impacts of Alternative A – No Action

The effects of the no-action alternative would be a continuation of the present situation. However, impacts to ground and surface water resources, vegetation, and wildlife would not be known without an assessment to determine the effects of increased groundwater withdrawal from existing and future internal and external visitor and employee demands and activities.

Impacts of Alternative B

Under Alternative B, the new visitor/administrative facility built within the monument would further impact groundwater and natural resources by requiring expansion of the existing water and sewer systems. However, an assessment to determine the effects of increased groundwater withdrawal on ground and surface water, vegetation, and wildlife would be conducted. This information would provide monument staff with the knowledge needed to properly manage groundwater resources. Expanded partnerships would consider contracting waste management systems including recycling efforts.

Impacts of Alternative C

Impacts would be substantially less than Alternative B with the construction of a visitor/administrative facility outside the monument. The addition of the seasonal employee/volunteer residence would not require expansion of the existing water and sewer systems and therefore, would not significantly impact groundwater and other natural resources.

Impacts of Alternative D - NPS Preferred

Impacts would be similar but less than Alternative B with only the addition of the administrative facility and seasonal employee/volunteer residence. Groundwater and other natural resources would be somewhat impacted from the expansion of the existing water and sewer systems.

Mitigation for Alternatives B and D

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to natural and cultural resources. The size, configuration, and location of new water and sewer systems would be selected to reduce intrusion on scenic viewsheds and cultural resources. The new systems would blend in with the natural environment as much as possible by screening and rehabilitating disturbed areas with native vegetation. Careful and

continuous monitoring would measure, record, and mitigate impacts to vegetation. Water and sewer system expansions would not be located on archeological sites.

Commercial Services

Existing Conditions

The only commercial service currently provided in the monument is the sale of public educational and convenience items by Southwest Parks and Monument Association (SPMA). SPMA is a nonprofit organization authorized by Congress to operate visitor center bookstores in more than fifty western parks. Proceeds from this activity are returned to the parks to aid and promote their educational and scientific programs. At Tonto National Monument, all sales items are displayed in a corner of the visitor center lobby between the information desk and the exit doors to the second floor and lower cliff dwelling trail. SPMA began providing this service in the late 1970s with one small display case for books. Presently, nine different cases displaying the sales items have been crowded into the ten- by sixteen-foot space allowing only two- to four-foot wide walking aisles. The highest shelves are six feet from the floor. Total sales have risen dramatically from $22,150 in 1982 (earliest figures available) to $90,165 in 2000.

The gateway communities of Roosevelt, Tonto Basin, and Globe provide basic commercial public services such as lodging, food, and gas. The adjacent Tonto National Forest provides camping, picnicking, hiking, and boating facilities.

Impacts of Alternative A – No Action

The no-action alternative would be a continuation of the present situation. One part-time SPMA employee would continue to manage the association operation. Space inside the existing visitor center would continue to be too small to house the present display of SPMA sales items creating an overcrowded area and denying visitors access to the educational items. Physically handicapped visitors cannot reach the publications on the upper shelves. Adequate space would not be available for proper storage of merchandise. Visitor satisfaction, experience, and education would decrease. However, the current excellent selection of educational publications would continue to be offered. SPMA would continue to contribute the existing level of volunteers and funding towards monument operations.

Because commercial lodging, food, and gas services are available from local communities, plus the fact that the monument land base is very small and preserves numerous archeological sites, these services would not be provided inside the monument. The addition of in-park facilities would require more parkland to be developed and would strain the park's existing small water and sewage system.

Impacts of Alternative B

The addition of the new visitor center within the monument would greatly expand and improve SPMA's operation by providing needed display and storage space. Substantially more funds would be generated to assist in the monument's operation. Excellent educational and thematic publications would easily be accessible to visitors. Visitor satisfaction, experience, and understanding of the monument would substantially increase. However, the new visitor center would encroach on and adversely impact the monument's cultural and natural resources.

Impacts from commercial lodging, food, and gas services would be the same as for Alternative A.

Impacts of Alternative C

Same as Alternative B. The addition of the new visitor center outside the monument would greatly expand and improve SPMA's operation by providing needed display and storage space. Substantially more funds would be generated to assist the monument's operation. Excellent educational and thematic publications would easily be accessible to visitors. Visitor satisfaction, experience, and understanding of the monument would substantially increase. But because the new visitor center would be built outside the monument, no encroachment would occur to the monument's cultural and natural resources.

Impacts from commercial lodging, food, and gas services would be the same as for Alternative A.

Impacts of Alternative D - NPS Preferred

The remodeling of the existing visitor center would slightly expand and improve SPMA's operation by providing a little more display and storage space. A few more funds would be generated to assist the monument's operation. Excellent, educational, and thematic publications would be more accessible to visitors. Visitor satisfaction, experience, and understanding of the monument would increase. But because a new visitor center would not be built, no encroachment would occur to the monument's cultural and natural resources.

Impacts from commercial lodging, food, and gas services would be the same as for Alternative A.

Mitigation for Alternative B

Specific mitigation measures for future development projects would be defined during the planning for each project and carried out prior to or during project development. Design modifications would reduce damage to natural and cultural resources. The size, configuration, and location of new visitor facility would be selected to reduce intrusion on scenic viewsheds. The new facility would blend in with the natural environment as much as possible by use of natural colors and screening with native vegetation. Careful and continuous monitoring would measure, record, and mitigate impacts to vegetation. No development would occur on archeological sites.

Boundary

Existing Conditions

When the monument was established and enlarged, boundary lines were drawn following section lines instead of locating them along ecological or archeological features. Cave Canyon, the largest watershed draining into the monument, begins on U.S. Forest Service land. Activities and practices that occur in the headwaters of Cave Canyon can negatively impact the monument's downstream natural and cultural resources. These activities include grazing, hunting, off-road vehicle use, erosion from roads, use of firefighting chemicals and equipment, and possibly prescribed burning. Cave Canyon's stream channel, water quality, vegetation, and wildlife habitat may change because of these activities. Water use from external wells in this drainage has the potential to affect this area's natural balance. The monument's only perennial surface water source is located in Cave Canyon and is listed as a wetland by the U.S. Fish and Wildlife Services' national wetlands inventory.

The 1985 archeological survey documented that vandalism and the construction of bulldozed firelines had disturbed archeological sites near the boundary, both within and outside the monument.

Due to the rugged terrain, the monument's 'boundary' fence was built for ease of construction and does not necessarily follow the legal boundary. Most deviations are inside the monument allowing trespass and incompatible uses. The fence was not built to allow for safe wildlife crossings.

Impacts of Alternative A – No Action

Under the no-action alternative, the Cave Canyon watershed would continue to be potentially impacted from external activities. The existing boundary fence would be repaired and maintained as constructed. New staff or funds would not be needed to inventory, assess, and protect new monument lands.

Impacts of Alternatives B, C, and D - NPS Preferred

Alternatives B, C, and D would attempt to preserve and protect the entire Cave Canyon watershed by initiating a boundary study including recommended adjustments to Congress. A fence would then be constructed along the legal boundary to protect these new lands. All unneeded interior fencelines would be removed. More staff and funds would be needed to inventory and assess these new lands and provide continued protection.

Mitigation for Alternatives B, C, D

All new fencelines would be built to provide safe wildlife crossings and would not be constructed through archeological sites.

Economic Contribution To Gateway Communities

Existing Conditions

The exact amount of socioeconomic increases cannot be predicted because of the general nature of this plan. We can estimate the effect of future possible actions, however, using output from *the Money Generation Model & Money Generation Model II (1992,1999)*. These impacts are shown for each alternative and should be considered general estimates. Current visitation is flat, so no additional information for the future is estimated other than to say that if additional visitation did occur, each additional 1000 visits would contribute benefits to the local economy.

The existing budget of $734,000 and thirteen full time employees for the park along with the existing visitation of approximately 74,000 visits annually provide income to the local economy. Total combined sales are about .6 million annually from park operating expenditures and .99 million from existing visitation. Total increased tax revenue gained from park-related activities is approximately $37,000 annually and from existing visitation is about $71,000 annually. Operations and use of the park has resulted in approximately thirty-six jobs being created for the local community.

For every 1,000 additional party nights calculated using the *MGMII*, approximately $18,000 in combined sales is added to the local economy along with approximately $2,150 in increased tax revenue. About nine-tenths of a job is also created. For every $1,000 expended by the park, approximately $2,000 in combined sales is added to the local economy along with $190 in increased tax revenue. One tenth of a job would also be created.

Impacts of Alternative A - No-Action

There is no additional contribution to the local economy from this alternative.

Impacts of Alternative B

This alternative would provide a slight short-term increase to the local economy. There are two types of estimated increases: short-term (from capital investment) and

long-term (from an increase in the annual operating budget).

In the short term, it is estimated that an expenditure of about $1.6 million would create a one-time benefit to the economy. The benefits would be an increase of $3.2 million in total combined sales, approximately $303,000 in tax revenue, and approximately thirty-two additional jobs. This would not necessarily occur in the local economy.

In the long term, there would be an additional annual contribution resulting from an increase of $229,000 in the annual operating budget. The benefits would be an increase of $458,000 in total combined sales, approximately $43,000 in tax revenue, and approximately five additional jobs.

Impacts of Alternative C

This alternative would provide a slight short-term increase to the local economy. There are two types of estimated increases: short-term (from capital investment) and long-term (from an increase in the annual operating budget).

In the short term, it is estimated that an expenditure of about $1.53 million would create a one-time benefit to the economy. The benefits would be an increase of $3.07 million in total combined sales, approximately $291,000 in tax revenue, and approximately thirty-one additional jobs. This would not necessarily occur in the local economy.

In the long term, there would be additional annual contribution resulting from an increase of $258,000 in the annual operating budget. The benefits would be an increase of $516,000 in total combined sales, approximately $49,000 in tax revenue, and approximately five additional jobs.

Impacts of Alternative D - NPS Preferred

This alternative would provide a slight short-term increase to the local economy. There are two types of estimated increases: short-term (from capital investment) and long-term (from an increase in the annual operating budget).

In the short term, it is estimated that an expenditure of about $.91 million would create a one-time benefit to the economy. The benefits would be an increase of $1.82 million in total combined sales, approximately $173,000 in tax revenue, and approximately eighteen additional jobs. This would not necessarily occur in the local economy.

In the long term, there would be additional annual contribution resulting from an increase of $172,000 in the annual operating budget. The benefits would be an increase of $344,000 in total combined sales, approximately $32,000 in tax revenue, and approximately three additional jobs.

Cumulative Effects

Cumulative effects were determined by combining the impacts of each alternative with other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects within the Tonto National Monument area and, if applicable, the surrounding region.

Impairment of Park Resources or Values

In addition to determining the environmental consequences of the preferred and other alternatives, National Park Service policy (Management Policies, 2001) requires analysis of potential effects to determine whether or not actions would impair park resources.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgement of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the monument; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. A determination on impairment is included in the analysis of each impact topic for all alternatives.

Scenarios

Tonto Basin Recreational Facilities: In 1996, the Bureau of Reclamation modified Roosevelt Dam because it was determined that the probable maximum flood in the basin would have brought more water into the reservoir than the original dam was designed to safely release. The enlarged dam vastly increased Roosevelt Lake's recreation potential. As part of the dam modification project, new recreational facilities were constructed around Roosevelt Lake in Tonto National Forest. The new facilities added 1,500 individual campsites, eighty picnic sites, a group campground, nine boat launch areas, six fish cleaning stations, and a new visitor center. There is potential for increased tourism within Tonto Basin as a result of the increased recreational facilities.

Tonto Basin Transportation: Arizona Department of Transportation is undertaking a project to realign the 30-mile section of State Route 188 between Globe and the monument. Upon completion, the improved highway will provide easier access into Tonto Basin from Globe/Miami.

Regional Population: Maricopa County (Phoenix metropolitan area) is the second fastest growing county in the United States. Increased growth of the Phoenix area may increase demand for use of parks such as Tonto National Monument. These population increases have not yet resulted in significant increased visitation to the monument. A popular day-trip from the Phoenix metropolitan area is a loop drive along the scenic Apache Trail (State Route 88) to Tonto Basin and the monument and then returning through Globe/Miami and Superior.

External Activities: Tonto National Forest has developed a prescribed fire burn plan for 1,400 acres adjacent to the south boundary of the monument. The goals of this burn plan are to improve forage conditions and reduce the build up of fine dead fuels. Other activities occurring on forest service lands adjacent to the park include hunting, grazing, and off-road vehicle use.

Tonto National Monument: The National Park Service's proposed expanded facilities and operation described under Alternative D would not be expected to substantially increase visitation to the monument and the rest of Tonto Basin.

Long-Term Integrity Of Archeological Resources

Methodology

All available information on known archeological sites was compiled (Tagg, 1985). Map locations of archeological sites were compared with locations of proposed developments and modifications to existing facilities to determine potential for impacts.

Effects to resources may be beneficial or adverse, direct or indirect, and either short- or long-term. The following definitions were used in analyzing effects on archeological resources and the cliff dwelling environment:

Negligible – The impact on these resources is not measurable or perceptible.

Minor – The impact on these resources is measurable or perceptible, but it is localized within a relatively small area of a site or group of sites and would not have a permanent effect on the integrity of any of these resources.

Moderate – The impact on these resources is sufficient to cause a change in site integrity, but the impact remains localized to one or a few sites. The change is measurable and perceptible. Adverse impacts could be mitigated through stabilization, data collection, or some other means.

Major – The impact on these resources is substantial, noticeable and permanent.

Beneficial – A positive change in the condition or appearance of these resources, or a change that moves the resource towards a desired condition.

Adverse – A change that moves the resource away from a desired condition or detracts from its appearance.

Short-term – An effect that within a short period of time (generally one or two years but no more than five years) would no longer be detectable as the resource returns to its pre-disturbance condition.

Long-term – A change in a resource or its condition that does not return to pre-disturbance conditions and for all practical purposes is considered permanent.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – Historic and prehistoric properties are identified and

inventoried and their significance and integrity are evaluated under National Register criteria. The qualities that contribute to the eligibility for listing of historic properties or archeological sites on the National Register of Historic Places are protected in accordance with the Secretary of the Interior's Standards.

Source – National Historic Preservation Act; Executive Order 11593 Cultural Environment; Archeological and Historic Preservation Act; Archeological Resources Protection Act; the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Programmatic Memorandum of Agreement Among the NPS, Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); NPS Management Policies; Director's Order 28 – Cultural Resource Management; Tonto National Monument enabling legislation.

Effects of Alternative A – No Action

Impact Analysis

Under the no-action alternative, no new facilities would be built; existing facilities would be maintained. Therefore, no impacts would occur to archeological resources as a result of construction activities.

Visitors currently have unsupervised access to the lower cliff dwelling and access the upper cliff dwelling via ranger-guided tours. The remaining sites in the monument are closed to public entry, although enforcement of the closure is hampered by a lack of adequate staff to conduct routine patrols and monitoring. The expected increase in park visitors would impact the cliff dwellings through both inadvertent actions and deliberate vandalism. Inadvertent impacts include touching original plasters, picking up or otherwise displacing pottery sherds and other artifacts, compacting cultural deposits, plus the incremental cumulative effects of thousands of people walking around and through the rooms over time. Intentional vandalism includes removing artifacts, inscribing graffiti, damaging walls, and probing or digging in sites. Some of these impacts are mitigated through stabilization of site architecture. Archeological resources adjacent to the park boundary would continue to be vulnerable to surface disturbance, inadvertent damage, and vandalism.

The deterioration of archeological sites would also continue from lack of information, stabilization procedures, and proper management. Long-term monitoring, assessment, and stabilization programs would not be conducted to properly care for and preserve archeological resources. Over the long-term, the lack of adequate protection and preservation actions would adversely affect site integrity.

Cumulative Effects

Past management strategies have limited visitor impacts at archeological sites to the two stabilized cliff dwellings. Implementation of the no-action alternative would not open any additional sites to visitation impacts. No construction activities would take place to adversely impact archeological resources. However, the no-action alternative would have a long-term adverse effect on archeological sites, because threats to the archeological sites would continue. Existing staff levels undertaking emergency stabilization practices would not be able to carry out long-term management goals to preserve and protect the cultural resources through comprehensive monitoring, assessment, and mitigation programs.

The continuing growth of the Phoenix metropolitan area and the improved highways and U.S. Forest Service facilities

in Tonto Basin would potentially result in increased adverse impacts to the monument's archeological resources such as vandalism, incidental artifact collection, inadvertent destabilization of walls, and social trailing. Under Alternative A, insufficient NPS law enforcement capabilities would not be able to protect archeological resources from these adverse impacts.

Within Tonto Basin, improved highways and recreational facilities have adversely impacted individual archeological sites. As recreational users grow, impacts on surrounding U.S. Forest Service lands and resources would continue to increase, resulting in the possible degradation of archeological sites. As archeological sites are adversely impacted outside the park, the relative rarity and importance of the archeological resources within the monument would increase.

Conclusion - The no-action alternative would result in moderately adverse affects to preserving the long-term integrity of the monument's archeological resources from the lack of protection and preservation actions. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's archeological resources.

Effects of Alternative B

Impact Analysis

Under this alternative a new visitor/administrative facility, associated parking lot, seasonal employee/volunteer residence, and nature trail would be built and the existing visitor center remodeled. Construction of new and remodeling of existing facilities would not impact or destroy archeological resources or the cliff dwelling environment because no archeological sites are located in the proposed development areas. The location of the new visitor center may enhance long-term integrity of archeological resources by providing visitors with more education about the importance/significance/fragility of cultural resources thereby lessening their impacts on the cliff dwellings.

Visitors currently have unsupervised access to the lower cliff dwelling and access the upper cliff dwelling via ranger-guided tours. The remaining sites in the monument are closed to public entry. The expected increase in park visitors would impact the cliff dwellings through both inadvertent actions and deliberate vandalism until a carrying capacity study was completed to limit visitation at any given time. Impacts would be mitigated through stabilization of site architecture and increased staff levels conducting routine patrols and monitoring programs. The increased personnel at the cliff dwellings as well as the better monitoring of these and other sites would provide increased protection to archeological resources. The presence of uniformed personnel has been demonstrated to be an effective deterrent to inappropriate behaviors that would result in resource damage. Archeological resources adjacent to the park boundary would continue to be vulnerable to surface disturbance, inadvertent damage, and vandalism. These impacts would be mitigated by having sufficient staff levels to patrol and monitor the vulnerable sites.

The deterioration of archeological sites would be reduced with increased

information, stabilization procedures, and proper management. Long-term monitoring, assessment, and stabilization programs would be conducted to properly care for and preserve archeological resources. Over the long-term, protection and preservation actions would benefit site integrity.

Cumulative Effects

Past management strategies have limited visitor impacts at archeological sites to the two stabilized cliff dwellings. Implementation of this alternative would not open any additional sites to visitation impacts. This alternative would have a long-term moderate beneficial effect on archeological sites. Increased staff along with developed guidelines would be more effective in carrying out long-term management goals to preserve and protect the cultural resources entrusted to its care. Threats to the archeological sites would diminish through monitoring, assessment, and mitigation programs. The new constructed facilities would not impact archeological sites because no sites were found in these areas during the 1985 archeological survey. The additional visitor center would create positive benefits from visitors receiving more education and an enhanced appreciation of the cultural resources. However, relative to existing conditions, the net effect would be a minor increase in degradation of the cliff dwellings due to increased visitor access and associated impacts, but moderately beneficial impacts would result from better preservation programs. Negative impacts would be offset to some degree by visitors receiving more education, the implementation of a carrying capacity, and increased protection capabilities under this alternative.

The continuing growth of the Phoenix metropolitan area and the improved highways and U.S. Forest Service facilities in Tonto Basin would potentially result in increased visitation and adverse impacts to the monument's archeological resources such as vandalism, incidental artifact collection, inadvertent destabilization of walls, and social trailing. Under Alternative B, sufficient NPS law enforcement capabilities would be able to protect archeological resources from these adverse impacts. Within Tonto Basin, improved highways and recreational facilities have adversely impacted individual archeological sites. As recreational users grow, impacts on surrounding U.S. Forest Service lands and resources will continue to increase, resulting in the possible degradation of archeological sites. As archeological sites are adversely impacted outside the park, the relative rarity and importance of the archeological resources within the monument would increase.

Conclusion – This alternative would result in moderately beneficial effects to preserving the long-term integrity of the monument's archeological resources from increased protection and preservation actions. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's archeological resources.

Effects of Alternative C

Impact Analysis

Under Alternative C, a new visitor/administrative facility would be

constructed outside the monument. A new seasonal employee/volunteer residence would still be constructed inside the park. The impact analysis would be the same as listed under Alternative B.

Cumulative Effects

Same as Alternative B.

Conclusion - Same as Alternatives B and D. This alternative would result in moderately beneficial effects to preserving the long-term integrity of the monument's archeological resources from increased protection and preservation actions. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's archeological resources.

Effects of Alternative D - NPS Preferred

Impact Analysis

Under Alternative D, an administrative facility, seasonal employee/volunteer residence, and ATS staging area would be constructed within the monument. The impact analysis would be the same as listed under Alternative B.

Cumulative Effects

Same as Alternative B.

Conclusion - Same as Alternatives B and C. This alternative would result in moderately beneficial effects to preserving the long-term integrity of the monument's archeological resources from increased protection and preservation actions. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's archeological resources.

Historic Character of the Built Environment

Methodology

The National Historic Preservation Act requires agencies to take into account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places. In 1966, the entire monument was listed on the National Register. The existing visitor center, although not nominated, meets criteria for nomination to the national register. The monument was completely surveyed for significant standing-wall structures in 1985. As a result, six archeological sites including the two cliff dwellings were listed on the List of Classified Structures (LCS). Although a cultural landscape inventory has not been completed, potentially significant cultural landscapes are evident. Locations of known resources were compared with locations of proposed developments and modifications to existing facilities to determine potential for impacts. The following definitions were used in analyzing effects on cultural landscapes and historic structures:

Negligible – The impact on these resources is at the lower levels of detection.

Minor – The impact on these resources is slight, but measurable and would not have a permanent effect on the integrity of any of these resources.

Moderate – The impact on these resources is readily apparent.

Major – The impact on these resources is severely adverse or exceptionally beneficial.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – Historic and prehistoric properties are identified and inventoried and their significance and integrity are evaluated under National Register criteria. The qualities that contribute to the eligibility for listing of historic properties or archeological sites on the National Register are protected in accordance with the Secretary of the Interior's Standards.

Source – National Historic Preservation Act; Executive Order 11593 Cultural Environment; Archeological and Historic Preservation Act; Archeological Resources Protection Act; the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Programmatic Memorandum of Agreement Among the NPS, Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); NPS Organic Act; NPS Management Policies; Director's Order 28 – Cultural Resource Management; Tonto National Monument enabling legislation.

Effects of Alternative A – No Action

Impact Analysis

Under this alternative, the existing Mission 66-visitor center is maintained and no new structures would be built. Therefore, no impacts would occur to cultural landscapes and historic structures from construction activities. Impacts to the cliff dwellings and other LCS sites would be the same as listed under Long-term Integrity of Archeological Resources for Alternative A.

Cumulative Effects

Implementation of the no-action alternative would not open any additional LCS sites other than the two cliff dwellings to visitation impacts. No construction activities would take place to impact LCS sites, cultural landscapes, and the Mission 66-visitor center. However, the no-action alternative would have a long-term moderate adverse effect on LCS sites, because threats to them would continue. Existing staff and continued emergency stabilization practices would not be able to carry out long-term management goals to preserve and protect the LCS sites through comprehensive monitoring, assessment, and mitigation programs. Minor adverse impacts would occur to cultural landscapes without completed inventories and reports to guide park managers in the long-term.

Within Tonto Basin, additional recreational and commercial facilities and their users have impacted the cultural landscape. Improved highways and recreational facilities have adversely impacted individual archeological sites. As recreational users grow, impacts on surrounding U.S. Forest Service lands and resources would continue to increase, resulting in the possible degradation of archeological sites and cultural landscapes. As archeological sites and cultural landscapes are impacted outside the park, the relative rarity and importance of these resources within the monument would increase.

Conclusion - The no-action alternative would have minor beneficial long-term

effects on cultural landscapes without the construction of new facilities. However, the no-action alternative would have a long-term moderate adverse effect on cultural landscapes and LCS sites without needed inventories, reports, and preservation programs. The Mission 66-visitor center would not be affected. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's historical resources.

Effects of Alternative B

Impact Analysis

Under this alternative, a new visitor/administrative facility, associated parking lot, nature trail, and seasonal employee/volunteer residence would be constructed within the park and the interior of the existing Mission 66-visitor center would be remodeled. The new facilities would impact unidentified cultural landscape features. However, an inventory would be conducted and a report prepared to mitigate impacts to cultural landscapes. No impacts would occur to LCS sites because none of these sites are located in the proposed development areas. No alterations would be made to the existing visitor center's exterior design or its strategic placement.

Cumulative Effects

The additional facilities would have moderate adverse and long-term impacts on unidentified cultural landscape features. However, the new visitor center would create positive benefits from visitors receiving more education and an enhanced appreciation of the cultural landscapes and LCS sites. Negative impacts would be offset with the knowledge gained from having completed cultural landscape inventories and reports to guide park managers in the long-term. No adverse impacts would occur to the existing Mission 66-visitor center because the exterior design would not be changed. The cumulative effects on LCS sites would be the same that's described under Long-term Integrity of Archeological Resources for Alternative B.

Within Tonto Basin, recreational facilities, commercial businesses, and other modern developments have compromised the integrity of the cultural landscape. These impacts would be adversely moderate and long-term. As development increases, the importance of protecting the cultural landscape within the monument increases.

Conclusion – The actions under this alternative would have moderate adverse long-term impacts on unidentified cultural landscape features from construction of new facilities. This alternative would result in moderately beneficial long-term effects to cultural landscapes and LCS sites from information gained and preservation practices used. There would be no adverse impacts to the Mission 66-visitor center's exterior or location. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's historical resources.

Effects of Alternative C

Impact Analysis

The impact analysis would be similar to Alternative B except that the new visitor/administrative facility and associated parking lot would be constructed outside the monument. Depending on its location, the addition of this facility would contribute to increased development in Tonto Basin. Only the additional seasonal employee/volunteer residence would be built within the monument; the existing Mission 66-visitor center would be remodeled. The new residence would still impact unidentified cultural landscape features, but these impacts would be significantly less than Alternative B. No impacts would occur to LCS sites because no archeological sites are located in the proposed development area. No alterations would be made to the existing visitor center's exterior or its strategic placement.

Cumulative Effects

Only the additional residence would have negligible adverse and long-term impact on unidentified cultural landscape features within the monument since the new visitor/administrative facility would be built outside the park. Negative impacts would be significantly less than in Alternative B and would be offset with the information gained from having completed cultural landscape inventories and reports to guide park managers in the long-term. As in Alternative B, no adverse impacts would occur to the existing visitor center because the exterior design would not be changed. The cumulative effects on LCS sites would be the same that's described under Long-term Integrity of Archeological Resources for Alternative B.

Within Tonto Basin, recreational facilities, commercial businesses, and other modern developments have compromised the integrity of the cultural landscape. These impacts would be adversely moderate and long-term and increased with the addition of the new visitor center outside the monument. As development increases, the importance of protecting the cultural landscape within the monument increases.

Conclusion – Similar to Alternative B. The actions under Alternative C would have negligible adverse long-term impacts on unidentified cultural landscape features from construction of the new residence. Alternative C would result in moderately beneficial long-term effects to LCS sites and cultural landscapes from information gained and preservation practices used. There would be no adverse impacts to the Mission 66-visitor center's exterior and location. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's historical resources.

Effects of Alternative D - NPS Preferred

Impact Analysis

Under this alternative, a new administrative facility, ATS staging area, and seasonal employee/volunteer residence would be constructed inside the park and the interior of the existing Mission 66-visitor center would be remodeled. The new facilities would impact unidentified cultural landscape features, but locating the new facilities near the existing maintenance/residential area would minimize these impacts. No impacts would occur to LCS sites because no archeological sites are located in the

proposed development areas. As in Alternatives B and C, no alterations would be made to the existing visitor center's exterior or its strategic placement.

Cumulative Effects

The additional structures would have minor adverse and long-term impact on unidentified cultural landscape features. Negative impacts would be offset with the information gained from having completed cultural landscape inventories and reports to guide park managers in the long-term. As in Alternatives B and C, no adverse impacts would occur to the existing visitor center because the exterior design would not be changed. The cumulative effects on LCS sites would be the same that's described under Long-term Integrity of Archeological Resources for Alternative B.

Within Tonto Basin, recreational facilities, commercial businesses, and other modern developments have compromised the integrity of the cultural landscape. These impacts would be adversely moderate and long-term. As development increases, the importance of protecting the cultural landscape within the monument increases.

Conclusion – Similar to Alternative B. The actions under the proposed alternative would have minor adverse long-term impacts on unidentified cultural landscape features from construction of new facilities. The proposed alternative would result in moderately beneficial long-term effects to LCS sites and cultural landscapes from knowledge gained and preservation practices used. There would be no adverse impacts to the Mission 66-visitor center's exterior and location. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's historical resources.

Long-Term Integrity of Ethnographic Resources

Methodology

The only research-based information the monument has regarding associations of contemporary communities with monument resources is derived from a cultural affiliation study conducted for Casa Grande National Monument. This study concluded that the Ak-Chin Indian Community, Gila River Indian Community, Hopi Tribe, Salt River Pima-Maricopa Indian Community, Tohono O'Odham Nation, and Zuni Pueblo are associated with Salado archeological resources. Other tribes that may also have affiliations with the monument are San Carlos Apache Tribe, Tonto Apache Tribe, White Mountain Apache Tribe, Yavapai Apache Tribe, and Yavapai Prescott Indian Tribe. Because ethnographic resources are tied to communities' cultural identities, effects to the resources would occur in perpetuity. Therefore, the duration of impacts to ethnographic resources would be forever. The definitions of the intensity of potential impacts to ethnographic resources are as follows:

Negligible – The impact is at the lower levels of detection.

Minor – The impact is slight, but detectable.

Moderate – The impact is readily apparent.

Major – The impact is severely adverse or exceptionally beneficial.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – Appropriate cultural anthropological research is conducted in cooperation with park-associated groups. All agencies shall accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and avoid adversely affecting the physical integrity of these sacred sites. NPS general regulations on access to and use of natural and cultural resources in parks will be applied in an informed and balanced manner that is consistent with park purposes and does not unreasonably interfere with native American use of traditional areas or sacred resources and does not result in degradation of park resources. The park consults with traditionally associated native Americans regarding planning, management, and operational decisions that affect subsistence activities, sacred materials or places, or other ethnographic resources with which they are historically associated. The identities of community consultants and information about sacred and other culturally sensitive places and practices will be kept confidential when research agreements or other circumstances warrant. Native Americans and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains will be consulted when remains may be disturbed or are encountered on park lands.

Source – National Historic Preservation Act; Executive Order 13007 American Indian Sacred Sites; Executive Order 11593 Cultural Environment; American Indian Religious Freedom Act; Native American Graves Protection and Repatriation Act; Presidential Memorandum of April 29, 1994 on Government-to-Government Relations with Tribal Governments; Programmatic Memorandum of Agreement Among the NPS, Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); NPS Management Policies; Director's Order 28 – Cultural Resource Management.

Effects of Alternative A – No Action

Impact Analysis

Under the no-action alternative, no new facilities would be built; existing facilities would be maintained. Therefore, no impacts would occur to ethnographic resources as a result of construction activities. However, under the no-action alternative, no information would be available to tie the monument to those tribes whose ethnographic resources are related. Any negative impacts that presently occur to archeological sites as a result of use or vandalism would potentially affect ethnographic resources. Conversely, any protection to archeological sites that is currently afforded by lack of access constitutes a major beneficial effect on archeological sites as ethnographic resources. The culturally appropriate interpretive messages about tribal histories and values would continue to be unknown.

Cumulative Effects

Past management strategies have limited visitor impacts at archeological sites to the two stabilized cliff dwellings. Implementation of the no-action alternative would not open any additional sites to visitation impacts. No construction activities would take place to adversely impact ethnographic resources. However, the no-action alternative would adversely affect ethnographic resources without a completed ethnographic survey and assessment.

Within Tonto Basin, improved highways and recreational and commercial facilities have impacted individual archeological sites. As recreational users grow, impacts on surrounding U.S. Forest Service lands and resources would continue to increase, resulting in the possible degradation of ethnographic resources.

Conclusion – Minor adverse impacts would occur to ethnographic resources over the long-term from lack of information necessary to manage the resource. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's ethnographic resources.

Effects of Alternative B

Impact Analysis

Same as described under Long-term Integrity of Archeological Resources and Historic Character of the Built Environment for Alternative B. Any negative effects to archeological sites and cultural landscapes would also constitute an impact to the sites as ethnographic resources. Even though the new visitor/administrative facility, parking lot, and seasonal employee/volunteer residence would not be built on archeological sites, they would alter the cultural landscape. Completed ethnographic surveys and assessments would identify the tribes culturally affiliated to the park. Improved interpretive media and educational messages would have a positive effect on the cultural values associated with ethnographic resources by increasing tribal participation in telling the stories of their own histories and relationships to park resources. Increased education about the cultural values associated with ethnographic resources would help minimize some of the potential negative effects to archeological sites due to inadvertent destructive activities or vandalism.

Cumulative Effects

Cumulative effects of this alternative on ethnographic resources would primarily be minor to moderate beneficial long-term effects as a result of increasing tribal participation in park actions and practices. A moderately beneficial effect would result from the improved interpretive media and educational messages provided to park visitors. Increased tribal involvement in interpretation would assist in educating the public about the significance of park resources in tribal history and contemporary cultural values and possibly result in decreasing direct impacts to archeological sites.

Within Tonto Basin, improved highways and recreational and commercial facilities have impacted individual archeological sites. As recreational users grow, impacts on surrounding U.S. Forest Service lands and resources would continue to increase, resulting in the possible degradation of ethnographic resources.

Conclusion – Moderately beneficial long-term impacts would occur to ethnographic resources with increased tribal participation. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for

enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's ethnographic resources.

Effects of Alternative C

Impact Analysis

Same as Alternative B except that the new visitor/administrative facility and parking lot would be built outside the monument. Only the seasonal employee/volunteer residence would be built within the monument near the existing residences. This new facility would not be located on archeological sites nor would unduly affect the cultural landscape. Completed ethnographic surveys and assessments would identify the tribes culturally affiliated to the park. Improved interpretive media and educational messages would have a positive effect on the cultural values associated with ethnographic resources by increasing tribal participation in telling the stories of their own histories and relationships to park resources. Increased education about the cultural values associated with ethnographic resources would help minimize some of the potential negative effects to archeological sites due to inadvertent destructive activities or vandalism.

Cumulative Effects

Same as Alternative B.

Conclusion – Same as Alternatives B and D. Moderately beneficial long-term impacts would occur to ethnographic resources with increased tribal participation. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's ethnographic resources.

Effects of Alternative D - NPS Preferred

Impact Analysis

Same as Alternative B except that new construction would consist of an administrative facility, ATS staging area, and seasonal employee/volunteer residence. None of these facilities would be built on archeological sites, but would affect the cultural landscape. Completed ethnographic surveys and assessments would identify the tribes culturally affiliated to the park. Improved interpretive media and educational messages would have a positive effect on the cultural values associated with ethnographic resources by increasing tribal participation in telling the stories of their own histories and relationships to park resources. Increased education about the cultural values associated with ethnographic resources would help minimize some of the potential negative effects to archeological sites due to inadvertent destructive activities or vandalism.

Cumulative Effects

Same as Alternative B.

Conclusion – Same as Alternatives B and C. Moderately beneficial long-term impacts would occur to ethnographic resources with increased tribal participation. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of

Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's ethnographic resources.

Long-Term Integrity of Natural Systems and Processes (Soils, Vegetation, Wildlife, Threatened and Endangered Species, Water Resources)

Methodology

All available information on known natural resources was compiled. No research has been conducted on groundwater resources. Map locations of sensitive resources and wetlands were compared with locations of proposed developments and modifications to existing facilities to determine potential for impacts. Predictions about short- and long-term site impacts were based on these studies. Intensity of effects are defined below:

Negligible – An action that may change a population or individuals of a species or a natural physical resource, but the change will be so small that it will not be of any measurable or perceptible consequence to the population.

Minor – An action that may change a population or individuals of a species or a natural physical resource, but the change will be small and if it is measurable, it will be a small and localized consequence to the population.

Moderate – An action that will have some change to a population or individuals of a species or a natural physical resource. The change will be measurable and will have a sufficient consequence to the population but is more localized.

Major – An action that will have a noticeable change to a population or individuals of a species or a natural physical resource. The change will be measurable and will have a substantial and possible permanent consequence to the population.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – Populations of native plant and animal species function in as natural a condition as possible except where special management considerations are warranted. Federal-and state-listed threatened and endangered species and their habitats are sustained.

Source – National Environmental Policy Act; Endangered Species Act; Executive Order 13112 Invasive Species; NPS Organic Act; NPS Management Policies.

Effects of Alternative A – No Action

Impact Analysis

Potential impacts to the long-term integrity of natural systems and processes would occur from existing facilities, their use, and adequate protection and management of natural resources. Under the no-action alternative, no new facilities would be built so no impacts would occur to natural resources from construction activities.

The park's diverse wildlife habitats and wetland have been left relatively undisturbed. Most development has occurred in a small section of the park along the entrance road. Visitor use is and would remain restricted to existing facilities, trails, and two cliff dwellings between 8:00am and 5:00pm, daily. All

other areas within the park are closed to visitor access. Allowing restricted use of the monument has and would help to protect the long-term integrity of natural systems and processes. However, enforcement of the closure is unreliable due to the lack of adequate staff to conduct routine patrols and monitoring programs.

Past conservative management practices have impacted the long-term integrity of natural systems and processes. Insufficient staff has not and would not be available to conduct the monitoring activities and programs required to properly manage the natural resources. The park does not have adequate information on groundwater resources that describes its relationship to use from both within and outside the park or how this use affects the spring in Cave Canyon.

Cumulative Effects

Current use patterns and levels have had a negligible to minor negative impact to natural processes in the monument since its creation. The expected increase in visitor use levels would also have a negligible to minor negative impact on natural processes in the monument because all use is restricted to developed areas and the two cliff dwellings.

No construction activities would occur to impact natural resources, but natural resources would be impacted from the lack of information, procedures, and proper management. Long-term monitoring, assessment, and management programs would not be conducted to properly care for and preserve the diverse habitats and water sources. Over the long-term, the lack of adequate protection and management actions would adversely affect natural resources.

External activities outside park boundaries consist of camping, boating, picnicking, off-road vehicular activity, hunting, cattle grazing, prescribed fires, and other activities that threaten park resources. These activities pose a moderate threat to natural resources by affecting natural plant and animal processes. Activities located at the head of Cave Canyon may threaten the park's downstream riparian area. The increased development and use of U.S. Forest Service facilities below the park may affect the park's groundwater reservoir. Adequate staff does not exist to properly conduct routine boundary patrols and record impacts to park resources from these activities.

Conclusion – The no-action alternative, with no new construction plus concentrated use in existing developed areas, would have a minor beneficial effect of preserving existing natural processes and systems. However, moderately adverse impacts would occur over the long-term without adequate information and programs to manage the park's natural resources. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's natural resources.

Effects of Alternative B

Impact Analysis

Potential impacts to the long-term integrity of natural systems and processes would occur from proposed development, their use, and increased protection and management programs. Land-use consumption would increase by about seven acres with the construction of the new visitor/administrative facility, associated parking lot, interpretive trail,

and seasonal employee/volunteer residence. Water and sewer systems would be expanded and human consumption of groundwater would increase. Construction of the new facilities and associated infrastructure would entail removal of vegetation and leveling of ground for site preparation thereby decreasing the amount of wildlife habitat available. Wildlife movement would be temporarily disrupted and some small animals may be killed, but this would not be expected to have any long-term adverse effect upon local populations. For T&E species, only the cactus ferruginous pygmy owl habitat would possibly be affected by new construction. The other Gila county listed species' habitats do not occur in the proposed construction areas. Secondary effects to natural processes would include the spread of invasive weed species and long-term vegetation management to protect the structures. Concentration of new facilities near the entrance road would keep additional impacts to natural processes localized in this area. No facilities would be built in the wetland or floodplains.

This new development would increase use levels and impacts to the Lowlands ROA. More natural resources would be subjected to visitation damage and increase the need for monitoring and mitigation of impacts. However, closure of the park between 5:00pm and 8:00am and limiting visitors to developed areas would continue to restrict visitor impacts on natural resources. The additional visitor center would create positive benefits from the public receiving more education and an enhanced appreciation of the natural resources. The new interpretive trail in an area where no public use exists would increase impacts to natural resources. Minor impacts would occur to wildlife from disruption of movement corridors over the long-term, but trail use would only be available during the park's limited open hours. The trail would be hard surfaced to prevent soil compaction, erosion, and social trailing. There would be no measurable change from visitor impacts on existing conditions in other areas of the park because visitors are restricted to trails and facilities.

This alternative would enhance the existing limited natural resource program by increasing staff levels. Vegetation programs, such as the control of non-native plants and the rehabilitation of impacted areas, would help restore the natural environment. Completed inventory and ongoing monitoring programs would provide park management with information needed to properly mitigate and manage natural resources. Protection of the natural resources would also increase with additional staff.

Cumulative Effects

The addition of the new facilities and their use would result in moderate adverse impacts to natural resources in these areas. However, concentrating the new structures near existing facilities would keep these impacts localized.

Any increased impacts would be offset to some extent by greater public awareness of resource issues and impacts acquired through participating in increased interpretive programs at expanded facilities. Overall, threats to the natural resources would diminish and moderate beneficial long-term impacts would occur through inventory, monitoring, assessment, and mitigation programs undertaken by increased staff levels. Protection of the natural resources would increase with additional staff providing a minor to moderate long-term beneficial impact.

External activities along park boundaries consist of off-road driving, hunting, cattle

grazing, prescribed fires, and other activities that threaten park resources. These activities pose a moderate threat to natural resources by affecting natural plant and animal processes. Grazing cattle introduce new grass species and manipulate native vegetation that interferes with natural plant processes. Hunting affects animal populations and sometimes leads to illegal poaching of park wildlife. Off-road activities create new roads, compact soils, increase erosion and disrupt normal wildlife movements. The U.S. Forest Service's Windy Hill recreational facilities may draw from the same groundwater reservoir that the monument uses. Under this alternative, adequate staff would be available to properly conduct routine boundary patrols and record impacts to park resources from these external activities.

The park's new facilities coupled with the additional U.S. Forest Service recreational facilities and their use would cause a minor to moderate adverse long-term impact to groundwater resources.

Conclusion – Moderate adverse impacts from construction activities and the use of the additional facilities would be offset by positive benefits derived from the public receiving more education and an enhanced appreciation of the natural resources and increased protection of the park by additional staff. Overall, moderately beneficial long-term impacts to natural resources would occur from improved resource management, protection, and interpretive programs. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's natural resources.

Effects of Alternative C

Impact Analysis

Similar to Alternative B except that less land would be disturbed and fewer demands would be placed on groundwater inside the park with construction of the new visitor/administrative facility and parking lot outside the monument. Only the seasonal employee/volunteer residence would be built within the monument. Improved interpretive media and educational messages would have a positive effect on natural resources by increasing educational opportunities. Protection and proper management of the natural resources would also increase with additional staff.

Construction of the new facility outside the park would impact natural resources in that area unless an existing building is remodeled for use.

Cumulative Effects

Similar to Alternative B except the addition of fewer facilities within the park would have fewer adverse impacts to natural resources in these areas. However, placement of a new facility outside the park would increase demands on external natural resources. Cumulative effects of this alternative on natural resources would be moderately beneficial and long-term as a result of increased staff and programs to properly manage the resources. A moderately beneficial effect would also result from the improved interpretive media and educational messages provided to the public.

Conclusion – Similar to Alternative B. Negligible adverse impacts from construction activities would be offset by positive benefits derived from the public

receiving more education and an enhanced appreciation of the natural resources and increased protection of the park by additional staff. Overall, moderately beneficial long-term impacts to natural resources would occur from improved resource management, protection, and interpretative programs. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's natural resources.

Effects of Alternative D - NPS Preferred

Impact Analysis

Same as Alternative B except that new construction would consist of an administrative facility, ATS staging area, and seasonal employee/volunteer residence. Fewer resources would be impacted than in Alternative B, but more than in Alternative C. Placement of the new facilities near the existing maintenance/residential area would concentrate impacts to this already disturbed area. Connecting new utilities to the existing system would disturb fewer resources than in Alternative B. Improved interpretive media and educational messages would have a positive effect on the natural resources by increasing educational opportunities. Protection and proper management of the natural resources would also increase with additional staff.

Cumulative Effects

Similar to Alternative B except that the addition of fewer facilities inside the park would cause minor adverse impacts to natural resources in these areas. Cumulative effects of this alternative on natural resources would be moderately beneficial and long-term as a result of increased staff and programs to properly manage the resources. A moderately beneficial effect would also result from the improved interpretive media and educational messages provided to the public.

Conclusion – Similar to Alternative B. Minor adverse impacts from construction activities would be offset by positive benefits derived from the public receiving more education and an enhanced appreciation of the natural resources and increased protection of the park by additional staff. Overall, moderately beneficial long-term impacts to natural resources would occur from improved resource management, protection, and interpretive programs. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's natural resources.

Long-Term Quality of Air and Natural Quiet

Methodology

All available information on air quality and natural quiet was compiled. This information includes data gathered from

the air quality-monitoring program. No site-specific research has been conducted on natural quiet levels occurring both inside and outside the park. Noise and air pollution sources from proposed developments and modifications to existing facilities were compared with existing noise and pollution sources to determine potential for impacts. Intensity of effects are defined below:

Negligible – The impact is at the lowest levels of detection.

Minor – The impact is slight, but detectable.

Moderate – The impact is readily apparent.

Major – The impact is severe or of exceptional benefit.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – Air quality and natural quiet related values would be protected from sources emanating from within and outside park boundaries.

Source – Clean Air Act; NPS Organic Act; NPS Management Policies.

Effects of Alternative A – No Action

Impact Analysis

Potential impacts to air quality and natural quiet would occur from existing development, visitor and employee use of these facilities, and existing management programs. Natural sounds particularly those of birds and wind generally predominate in the park. Under the no-action alternative, no new facilities would be built. Therefore, no impacts would occur to air quality or natural quiet from construction activities. Visitor and employee use would continue to generate noise at existing facilities, roads, and trails. Air quality would continue to be impacted from vehicle emissions along the park roads and parking areas. Natural sound and/or air quality would also be impacted from external sources such as traffic on State Route 188, recreational users at Roosevelt Lake, aircraft overflights, management practices at Tonto National Forest and tribal lands, Phoenix metropolitan area, and mining activity. The park does not have adequate information on noise and pollution sources occurring both within and outside the park to measure impacts and properly manage natural quiet and air quality.

Cumulative Effects

The no-action alternative would not contribute to cumulative effects on air quality and natural quiet. Current visitor and employee use patterns and levels would have a negligible impact on air quality and natural quiet in the monument. The expected increase in visitor use levels would have a negligible to minor negative impact on air quality and natural quiet in the monument.

External activities from aircraft, boats, vehicles, and mines would continue to interrupt the level of natural quiet found in the park. Prescribed fires, mining activity, Phoenix metropolitan area, and vehicular traffic would continue to adversely impact Tonto Basin air quality. These activities pose a minor adverse threat to natural resources and visitor experiences by affecting air quality and natural quiet over the long term.

Conclusion – The no-action alternative, which has no new development plus continued concentrated use in developed areas of the monument, would have a minor beneficial impact by not further degrading existing air quality and natural quiet levels. However, minor adverse impacts would occur over the long-term without adequate information on noise and pollution sources for proper program

management. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's air quality and natural quiet.

Effects of Alternative B

Impact Analysis

Potential impacts to air quality and natural quiet would occur from proposed development and modifications, visitor and employee use of these facilities, and enhanced management programs. Visitor and staff use of the Lowlands ROA would increase with the added nature trail, visitor/administrative facility, and seasonal employee/volunteer residence. Construction activities and traffic and use patterns at these new facilities would negatively impact air quality and natural quiet. However, use of the new visitor/administrative facility would only occur during the park's limited daytime operating hours. The use of an alternative transportation system would reduce single vehicle emissions and noise levels along the entrance road. Proper documentation and monitoring of noise sources would occur with additional staff.

Natural sound and/or air quality would also be impacted from external sources such as traffic on State Route 188, recreational users at Roosevelt Lake, aircraft overflights, management practices at Tonto National Forest and tribal lands, Phoenix metropolitan area, and mining activity. Expanded partnerships would work to reduce noise levels and improve air quality in Tonto Basin.

Cumulative Effects

Construction activities would cause moderate adverse, but short-term, impacts to air quality and natural quiet. New traffic and use patterns would increase the frequency and duration of noise levels and reduce air quality along the entrance road. Coupled with the increased U.S. Forest Service recreational facilities and use, a minor adverse long-term impact would occur to the basin's air quality and natural quiet. However, the use of an alternative transportation system would provide a moderate beneficial improvement to air quality and natural quiet by reducing single vehicle emissions along the entrance road. Reducing single vehicle noise and activity would increase visitors' ability to enjoy the natural sounds near the cliff dwellings and enhance opportunities to see and hear wildlife providing a major long-term beneficial impact for park visitors. Also, increased staff and programs to properly manage the resources would result in minor beneficial effects. Expanded partnerships would work to reduce noise levels and improve air quality thereby providing minor long-term beneficial impacts.

Conclusion - There would be moderate adverse impacts to air quality and natural quiet from increased facilities and usage in the park as well as from neighboring U.S. Forest Service lands, but expanded staff and partnerships would provide minor long-term beneficial impacts by reducing noise levels and improving air quality. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the

monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's air quality and natural quiet.

Effects of Alternative C

Impact Analysis

Similar to Alternative B except that the new visitor/administrative facility and parking lot would be built outside the monument. Only the seasonal employee/volunteer residence would be built within the park. Therefore, less demand would be placed on the park's air quality and natural quiet, yet placement of the facility outside the park would increase impacts to that particular area. Proper documentation and monitoring of noise sources would occur with additional staff.

Cumulative Effects

Similar to Alternative B except that less demands would be placed on the park's air quality and natural sound with the placement of the visitor/administrative facility outside the park. New traffic and use patterns would cause negative impacts to natural quiet and air quality outside the park at this new facility. A negligible adverse long-term impact would occur to the park's air quality and natural quiet with the addition of a new seasonal employee/volunteer residence.

Conclusion – Similar to Alternative B. There would be negligible adverse impacts to air quality and natural quiet from the increased facility and use in the park, but minor adverse impacts to the basin's air quality and natural quiet. Expanded staff and partnerships would provide minor long-term beneficial impacts by reducing noise levels and improving air quality. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's air quality and natural quiet.

Effects of Alternative D - NPS Preferred

Impact Analysis

Similar to Alternative B except that new construction would consist of an administrative facility, ATS staging area, and seasonal employee/volunteer residence. Construction activities and traffic and use patterns at these new facilities would negatively impact air quality and natural quiet. However, use of the new administrative facility would only occur during the park's daytime operating hours. The ATS staging area would only be used when the existing visitor center parking area fills to capacity during the busy winter/spring season. The use of an alternative transportation system would reduce single vehicle emissions and noise levels along the entrance road. Proper documentation and monitoring of noise sources would occur with additional staff.

Cumulative Effects

Similar to Alternative B except that fewer developments would be constructed along the entrance road to impact air quality and natural sound. A minor adverse long-term impact would occur to air quality and natural quiet with the addition and use of the new facilities. Cumulative effects of this alternative on air quality and natural sound would be minor beneficial and long-term as a result of increased staff and

programs to properly manage the resources.

Conclusion – Similar to Alternative B. There would be a minor adverse impact to air quality and natural quiet from increased facilities and usage in the park as well as from neighboring U.S. Forest Service lands, but expanded staff and partnerships would provide minor long-term beneficial impacts by reducing noise levels and improving air quality. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment of the monument's air quality and natural quiet.

Ability to Use, Experience, and Access Park Resources

Methodology

This topic analyzes visitors' ability to access, use, experience, and understand park and Tonto Basin resources. Visitor surveys, observations of visitation use patterns, and an assessment of existing facilities and programs available for visitors were used to estimate the effects from each alternative. A visitor survey was conducted March 2000 (University of Idaho) to gather visitor opinions about facilities, services, and recreational opportunities. The impact on the ability of the visitor to experience a full range of park resources was analyzed by examining resources mentioned in the park significance statement. Known public activities and facilities available at Tonto National Forest were considered in addition to visitor trends and plans for the monument to determine whether any of these, when considered as cumulative impacts, would significantly impact visitor experience. Intensity of effects are defined as follows:

Negligible – The impact is barely detectable, and/or will affect few visitors.

Minor – The impact is slight, but detectable, and/or will affect some visitors.

Moderate – The impact is readily apparent and/or will affect many visitors.

Major – The impact is severely adverse or exceptionally beneficial and/or will affect the majority of visitors.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – To provide for public enjoyment while leaving resources unimpaired for future generations.

Source – Americans with Disabilities Act; NPS Organic Act; NPS Management Policies.

Effects of Alternative A – No Action

Impact Analysis

Use - Under the no-action alternative, visitor opportunities to experience park resources would not change and would remain concentrated within a small section of the park. The types of experiences would be essentially the same as those that have been available for the past several decades. For the majority of visitors, a one- to two-hour stay incorporating the visitor center's museum, theatre, and observation deck, lower cliff dwelling, and picnic area would continue to constitute the entire experience. (Length of stay increases during winter months when visitors attend upper cliff dwelling guided tours.) The average one- to two-hour

length of stay provides visitors only a glimpse of the total resources protected within the monument, although this fact may not be evident to them. The consolidated services at the visitor center would be easy for visitors to find and use. However, a full parking lot would discourage use of this area; the park's primary facilities.

Access - Only the two cliff dwellings can be visited, but because access to the cliff dwellings is moderately difficult, some visitors lack the opportunity to experience the dwellings themselves. Viewing the cliff dwellings from the parking areas does not provide the sense of what they or other archeological sites would be like. No equivalent experience is currently available. This is a major adverse impact for those who are physically unable to negotiate park trails and are therefore unable to experience any actual prehistoric structures. No other views or access to other archeological structure types are provided.

Visitors with mobility disabilities have difficulty reaching a limited range of park facilities. The first floor of the visitor center is accessible and all visitors have access to the information desk for personal discussions with park staff, museum exhibits, publications sales area, and restrooms providing these areas aren't crowded. However, aisles are barely adequate in the museum and sales area and sales items on top shelves aren't reachable. No handicapped access is available to the second-floor theatre and observation deck. A few chairs and a small monitor have been squeezed into the museum to provide an accessible viewing area for audio/visual programs.

Understanding - Museum exhibits, wayside signs along the Lower Cliff Dwelling and Cactus Patch trails, ranger-guided tours, brochures, and sales publications interpret various cultural and natural features, as well as the lifeways of the people who lived in the basin. However, the museum exhibits are outdated, inaccurate, and cannot be expanded because of limited space. The twenty-four-seat theatre is not large enough for rangers to present indoor interpretive programs to groups of visitors and/or school classes. The biodiversity of the monument is minimally interpreted along the Cactus Patch and Lower Cliff Dwelling trails, but not in the museum.

Experience - The quality of the visitor experience is good, although limited by the area available for use. The inability to venture further away from the modern human environment inside the park represents a minor impact.

It is often difficult to find solitude in the park for more than a few moments at a time. Facilities are concentrated in a relatively small area and, according to park staff, crowding is common during the busy spring months and when school classes visit the park.

Visitor activities are fairly regimented, with use restricted to established roads and trails. Access to the upper cliff dwelling is limited to a few ranger-guided tours per week during the winter/spring months. Traditional interpretive services would continue as in the past, consisting primarily of self- and ranger-guided tours. Continuation of these activities would be of moderate to major importance to convey an understanding of Salado life to visitors and ensure preservation of the cliff dwellings.

Cumulative Effects

Although 98% of visitors surveyed in March 2000 expressed overall satisfaction with their visit, continued lack of access to a full range of resources presents a moderate adverse impact to the total visitor experience. The lack of handicapped access to the cliff dwellings is

a major adverse impact for those who can't hike to them. Impacts on visitors thus range from beneficial to adverse, depending upon individual abilities. The current lack of a complete and accurate interpretive story is a moderate adverse impact for park visitors. The perceived-uncrowded atmosphere is a major benefit for today's visitors; deterioration of this quality would be a major adverse impact. A variety of less structured and more diverse opportunities exist immediately outside park boundaries providing moderate to major benefits for most visitors.

Conclusion – Impacts to visitor use, experience, and accessibility would have a moderate adverse long-term effect without improved facilities, access, and programs. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to visitor use of the monument.

Effects of Alternative B

Impact Analysis

Use - In this alternative, a new visitor center would be built near the park entrance and the existing visitor center would be remodeled. The new visitor center would provide space for new interpretive exhibits and display more artifacts. Educational programs would then be available at the remodeled visitor center. A more complete understanding of the kinds of archeological structures that make the park unique would be available to visitors from experiencing updated exhibits, displays, and interpretive programs. Visitors would have the additional opportunity to experience the natural habitat of the lowland community via the new nature trail. This new visitor center would require visitors to make an additional stop before reaching the cliff dwelling trails. Visitor services would not be consolidated in one area creating greater difficulty in use of the park.

Access - This alternative is the only one that would expand access to the lowland environment by constructing an accessible nature trail in conjunction with the new visitor center.

Remodeling the existing visitor center and construction of the new building would ensure full visitor accessibility to both structures. Exhibits and services would be designed for universal accessibility and would include equivalent experiences for the two cliff dwellings that would remain inaccessible, due to terrain.

Understanding - The new visitor center would provide orientation information to visitors enhancing their ability to plan activities as they arrive. Space would be available for up-to-date museum exhibits, artifact displays, and educational programs for large groups. Interpretive programs would increase. The existing visitor center would provide in-depth learning opportunities in a more personal setting. The new visitor center would offer additional opportunities for visitor interactions with rangers.

Experience – The opportunity for visitors to experience solitude would be enhanced in this alternative. Spreading out use through a larger area of the park would mean that encounters with other visitors would be lessened. The possibility of regulating numbers of visitors would ensure less crowded conditions in the park if/when faced with future visitation increases.

Personal freedoms would be restricted at times, depending on the future need to regulate visitation numbers. Those visitors arriving at peak times would be unable to visit when they wished, or be required to arrive by some form of shuttle vehicle.

The U.S. Forest Service, Arizona Department of Transportation, metropolitan Phoenix, and local residents may work in combination to increase total visitation to the park from the recent increase in recreational facilities, improved highways entering the basin, increased regional population, and improved commercial facilities. Increased visitation from any of these contributing factors would adversely impact uncrowded visitor experiences within the park. Increased visitation would also require an increased need for law enforcement patrols and emergency response. In this alternative, a moderate to major long-term benefit is expected from NPS actions. The increased length of stay by visitors because of the new facilities would increase their ability to understand park resources, since visitors would probably devote more time to exhibits, interpretive programs, or otherwise learning about the park.

Cumulative Effects

The expanded experiences would provide a major benefit affecting all visitors over the long-term. The changes in fixed interpretive services would be a major beneficial impact for visitors. Opening up the lowlands with an accessible nature trail would be a moderate beneficial impact. Providing full accessibility to both visitor centers would be a major beneficial impact. Adverse impacts would still exist, because not all natural and cultural resources would be visited, but these impacts would be mitigated by alternative experiences incorporated into new visitor center exhibits. Physical alterations of the existing visitor center building would result in moderate to major, but short-term, adverse impacts for visitors present during the construction period. Most impacts would be mitigated by first ensuring completion of the new visitor center with interpretive exhibits. There would be a moderate to major beneficial impact to park visitors afforded a relatively uncrowded experience. Restricted freedoms would be a moderate to major adverse impact, but would be offset by the activities provided by the neighboring Tonto National Forest.

Conclusion – This alternative would result in moderate adverse impacts to several aspects of visitor experiences during construction and remodeling, but these impacts would be short-term. The new visitor center and remodeled existing visitor center would provide space for new museum exhibits, artifact displays, and indoor interpretive programs for visitors and organized school classes. Access to the Sonoran desert would be increased via the additional self-guided nature trail providing a major beneficial long-term impact. The new visitor center and nature trail would be fully accessible to visitors and provide information on resources, which, because of rugged terrain, cannot be made accessible. More facilities would be accessible than in the other alternatives thereby providing major long-term benefits. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to visitor use of the monument.

Effects of Alternative C

Impact Analysis

Same as Alternative B except that the new visitor/administrative facility would be built outside the monument and a new accessible nature trail would not be built. Placing the new visitor center outside the park would reach more people if it were easily found. But, if the new building were located in Globe or Payson, it would create confusion as to where the park is located and what is there. The new visitor center would be separate from the park thereby duplicating the need to repeat the park story and orientation information in both visitor centers and causing loss of continuity in the story-building process. Visitor services would not be consolidated in one area creating greater difficulty in use of the park. Access into the lowlands would not be provided without the new nature trail.

Cumulative Effects

Same as Alternative B except that the lowlands would not be opened via an accessible nature trail.

Conclusion – Same as Alternative B except that less of the Sonoran desert would be accessible without the self-guided nature trail in the lowlands. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to visitor use of the monument.

Effects of Alternative D - NPS Preferred

Impact Analysis

Use - Similar to Alternative B except that a new visitor center would not be built; only the existing visitor center would be remodeled. Less space would be available for new interpretive exhibits and displaying more artifacts than in Alternatives B and C. Less information and interpretive programs would be available without a new visitor center. A more complete understanding of the kinds or archeological structures that make the park unique would be available to visitors from experiencing better exhibits, displays, and interpretive programs than what is presently available. The consolidated services at the visitor center would be easy for visitors to find and use.

Access - A new nature trail would not be built to expand access into the lowland environment. Remodeling the existing visitor center would ensure full accessibility to the structure. The two cliff dwellings would remain inaccessible, due to terrain.

Understanding – Remodeling the existing visitor center would provide more space for museum exhibits, artifact displays, and educational programs for large groups than what is now available, but less than would be provided in Alternatives B and C. Opportunities for in-depth interpretive and education presentations would increase but not as much without a new visitor center as proposed in Alternatives B and C.

Experience – The opportunity for visitors to experience solitude would not be enhanced, because use of facilities would not be spread throughout a larger area of or outside the park. Encounters with other visitors would not be lessened unless the numbers of visitors were regulated if/when

the park is faced with future visitation increases.

Cumulative Effects

Similar to Alternative B except that a new visitor center would not be built and the lowlands would not be opened up via an accessible nature trail. The limited expanded experiences would provide a moderate benefit affecting visitors over the long-term. The changes in fixed interpretive services would be a moderate beneficial impact for park visitors. Providing full accessibility to the remodeled visitor center would be a major beneficial impact. Physical alterations of the existing visitor center building would result in major, but short-term, adverse impacts for visitors present during the construction period. There would be a moderate to major adverse impact to park visitors from a relatively crowded experience.

Conclusion – Similar to Alternative B. Alternative D would result in moderate to major adverse impacts to several aspects of visitor experience during remodeling, but these impacts would be short-term. The remodeled existing visitor center would provide space for new museum exhibits, artifact displays, and indoor interpretive programs for visitors and organized school classes. These improved facilities would provide a moderately beneficial long-term impact. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to visitor use of the monument.

Scenic Vistas, Viewsheds

Methodology

All information on scenic vista location points in the park and their commanding views into and out of the park was compiled. Locations of proposed modern developments and modifications to existing facilities were compared with existing development locations both within and outside the park to determine potential for impacts. Intensity of effects are defined below:

Negligible – The impact is barely detectable, and/or will affect few viewsheds.

Minor – The impact is slight, but detectable, and/or will affect some viewsheds.

Moderate – The impact is readily apparent and/or will affect many viewsheds.

Major – The impact is severely adverse or exceptionally beneficial and/or will affect most viewsheds.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – Visual impacts on the natural and cultural setting are minimized to provide panoramic views of the park and Tonto Basin.

Source – NPS Organic Act; NPS Management Policies.

Effects of Alternative A – No Action

Impact Analysis

Under the no-action alternative, no new facilities would be built. Therefore, no new impacts would occur to viewsheds from construction activities or new structures as would in the other alternatives. The view from the visitor center and two cliff

dwellings overwhelms. From here people can see across Roosevelt Lake to the Sierra Anchas Mountains. Looking at the scenery was rated 'very good' by 82% of the visitors during the survey. To many visitors, the desert environment appears natural and minimally altered despite many changes from modern development. The ability to experience this perceived cultural environment is a benefit for visitors.

Cumulative Effects

No additional development would preserve the existing viewscape in the park as seen from both inside and outside the park. External development would always pose a minor adverse threat to viewsheds as seen from inside the park.

Conclusion - A minor beneficial long-term impact would occur to the park's scenic vistas and viewsheds without additional facilities constructed. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's scenic vistas and viewsheds.

Effects of Alternative B

Impact Analysis

More structures would be visible within the monument from the addition of the visitor/administrative facility, associated parking lot, and seasonal employee/volunteer residence. The new visitor/administrative facility and parking area would be located along and be visible from the entrance road. However, expanded partnerships with adjacent agencies would work to improve impacts to the scenic viewshed as seen from the monument caused by smoke from prescribed fires, development, and increased effects of visitation.

Cumulative Effects

The additional development would impact the existing viewscape in the park as seen from both inside and outside the park. External development would always pose a minor adverse threat to viewsheds as seen from inside the park.

Conclusion – A major adverse impact would occur to scenic vistas during construction of the new facilities, but these impacts would be short-term. The additional facilities would cause a moderate adverse impact over the long-term to the park's viewsheds. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's scenic vistas and viewsheds.

Effects of Alternative C

Impact Analysis

Similar to Alternative B except that the new visitor/administrative facility and parking lot would be built outside the monument. Only the seasonal employee/volunteer residence would be built within the monument and would be placed in the housing area with the existing four residences. Therefore, fewer facilities would impact the park's viewsheds than proposed in Alternatives B and D. However, the new

visitor/administrative facility outside the park would still impact the monument's viewshed if it were constructed within sight of the park's scenic vistas and would impact the scenic views of Tonto Basin.

Cumulative Effects

Similar to Alternative B. The additional residence would negligibly impact the existing viewscape in the park as seen from both inside and outside the park. The new visitor/administrative facility outside the park would increase external development in Tonto Basin posing a minor adverse threat to viewsheds as seen from inside and outside the park.

Conclusion – Alternative C would result in a minor adverse impact during construction of the park's new residence, but this impact would be short-term. A negligible adverse impact would occur to the park's viewsheds from the new residence. A negligible to minor adverse impact would occur to the park's and Tonto Basin's viewsheds depending on the location of the new visitor/administrative facility. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's scenic vistas and viewsheds.

Effects of Alternative D - NPS Preferred

Impact Analysis

Similar to Alternative B except that new construction would consist of an administrative facility, ATS staging area, and seasonal employee/volunteer residence. A new visitor center would not be constructed in the park and would not add a visual intrusion as in Alternative B. The new administrative facility and residence would be located near the existing maintenance/residential area to consolidate these visual intrusions in this one area.

Cumulative Effects

The additional development would impact the existing viewscape in the park as seen from both inside and outside the park. External development would always pose a minor adverse threat to viewsheds as seen from inside the park.

Conclusion – The proposed alternative would result in major adverse impacts during construction of these new facilities, but these impacts would be short-term. The additional facilities would cause a minor adverse impact over the long-term to the park's viewsheds. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's scenic vistas and viewsheds.

Impacts to Adjacent Lands and Economies of Gateway Communities

Methodology

Concerns covered by this section include effects on neighboring landowners' property and operations from the park's proposed physical and program changes.

The park is completely surrounded by Tonto National Forest; the nearest private land is located in Roosevelt. Roosevelt, Tonto Basin, Globe, Payson, and Apache Junction are considered gateway communities. Tourism contributes partly to Gila County's income. It's not the intent of the park's added developments to attract significantly greater numbers of visitors but rather to better serve visitors, improve operational efficiency, and increase protection and management of monument resources. Levels of intensity of impacts were defined as follows:

Negligible – The impact on adjacent neighbors is not measurable or perceptible.

Minor – The impact is slight, but detectable, and/or will affect neighbors.

Moderate – The impact is readily apparent and will cause a change in the daily lives of neighbors. The change may be temporary but severe, or less severe but long-term.

Major – The impact on neighbors is severely adverse or exceptionally beneficial.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – The park's intent is not to attract more visitors but to better serve visitors, improve operational efficiency, and increase protection and management of park resources.

Source – NPS Management Policies.

Effects of Alternative A – No Action

Impact Analysis

The no-action alternative would not construct any new facilities. No impacts would occur to neighboring landowners from construction activities. The appearance of the basin would not change. No opportunities would exist for a limited number of landowners to benefit economically by selling or leasing land for new facilities. No new jobs would be created without construction projects for new facilities. Business opportunities would not increase at local commercial establishments.

Resource protection, education for visitors, and renewed visitor appreciation of the resources would continue with existing partnerships formed with other agencies, tribes, educational institutions, and the private sector. Management of land surrounding the monument would continue to improve by encouraging adjacent and nearby land management agencies, tribes, and landowners to use sound ecological principles. The combined effects of the actions by all land and resource management agencies would result in impacts to one another and to park neighbors.

Cumulative Effects

Beneficial impacts would occur to the rural character of Tonto Basin because no new facilities would be built. Economic gain would be adversely impacted without construction of new facilities, and increased staff and operating budget. Existing partnerships with other agencies, tribes, and landowners would continue to impact their workloads, but the net result of these partnerships would have minor beneficial results for resource protection and visitor education.

Conclusion – No construction activities would have a minor beneficial impact on Tonto Basin and nearby landowners. Impacts to gateway community economies would be negligibly adverse without construction activities and increased staff.

Effects of Alternative B

Impact Analysis

This alternative would construct new facilities inside the monument. Impacts to nearby landowners from construction activities would range from beneficial to adverse depending upon individual feelings about this proposal. Locating these facilities inside the park would increase negative impacts on monument resources, but would not change the appearance of the basin outside the park. There would not be an opportunity for a limited number of landowners to benefit economically by selling or leasing land on which this facility would be built. However, a limited economical opportunity for landowners would exist by providing commercial shuttle services to the visiting public. During the actual construction phase, construction traffic would increase to the monument impacting neighbors. On the other hand, jobs created from and materials needed for construction projects coupled with the increase in staff levels and operating budget would provide employment opportunities for area residents and increase business opportunities for local venders.

Resource protection, education for visitors, and renewed visitor appreciation of the resources would increase with expanded partnerships formed with other agencies, tribes, educational institutions, and the private sector. Management of land surrounding the monument would improve by encouraging adjacent and nearby land management agencies, tribes, and landowners to use sound ecological principles. The combined effects of the actions by all land and resource management agencies would result in impacts to one another and to park neighbors.

Cumulative Effects

Beneficial impacts would occur to the rural character of Tonto Basin by locating all new facilities within the monument. Economic gain would be beneficial but short-term during construction of the new facilities and for the long-term with additional staff levels and an increased operating budget. Expanded partnerships with other agencies, tribes, and landowners would increase their workloads causing an adverse impact, but the net result of increased partnerships would have moderately beneficial results for resource protection and visitor education.

Conclusion – A moderately beneficial long-term impact would occur to adjacent land managers and partnerships. A negligible beneficial impact would occur to economies of gateway communities over the long-term.

Effects of Alternative C

Impact Analysis

Alternative C would construct a new visitor/administrative facility outside the monument. This facility would include a visitor/administrative complex, parking lot, and shuttle service. Considerable activity would be associated with this complex such as vehicles entering and exiting, shuttle staging, departing, and arriving, and deliveries of supplies to support monument operations. Locating these types of activities outside the park would reduce their negative impacts on monument resources and visitor experiences, but would change the appearance and use of this mostly rural area. Impacts to nearby landowners would range from beneficial to adverse depending upon individual feelings about this proposal. There would be an opportunity for a limited number of landowners to benefit economically by selling or leasing land on which this facility

would be built or by providing commercial shuttle services to the visiting public. However, during the actual building phase, construction activity and traffic would increase to impact neighbors. On the other hand, jobs created from the construction projects coupled with the increase in staff levels and operating budget would provide employment opportunities for area residents and increase business opportunities for commercial establishments.

Resource protection, education for visitors, and renewed visitor appreciation of the resources would increase with expanded partnerships formed with other agencies, tribes, educational institutions, and the private sector especially with placement of the new visitor/administrative facility outside the monument. Management of land surrounding the monument would improve by encouraging adjacent and nearby land management agencies, tribes, and landowners to use sound ecological principles. The combined effects of the actions by all land and resource management agencies would result in impacts to one another and to park neighbors.

Cumulative Effects

Changes in the rural character of Tonto Basin have been restricted to the dam, marina area, Roosevelt Estates, Quail Run, Spring Creek Store, and Roosevelt Resort. The remainder of the area is encompassed in Tonto National Forest. Economic gain would be beneficial during short-term construction of the new facilities and for the long-term with additional staff levels and an increased operating budget. Alternative C, when added to previous developments, would have an impact that could be either beneficial, if economic gain were one result, or adverse if nearby landowners did not favor this change in the existing character of the immediate area.

Expanded partnerships with other agencies, tribes, and landowners would increase their workloads causing an adverse impact, but the net result of increased partnerships would have moderately beneficial results for resource protection and visitor education.

Conclusion – A consideration of impacts to adjacent landowners does not lend itself to analysis and definitive conclusions. There would be a potential for fairly significant (either beneficial or adverse) impacts to a relatively few neighbors and much smaller impacts to neighbors living further away. In fact, impacts may be arranged along a gradient from major to negligible as one moves away from the proposed construction site. A negligible beneficial impact would occur to economies of gateway communities over the long-term.

Effects of Alternative D - NPS Preferred

Impact Analysis

The proposed alternative would construct new facilities within the monument. The impact analysis would be the same as Alternative B.

Cumulative Effects

Same as Alternative B.

Conclusion – Same as Alternative B. A moderate beneficial long-term impact would occur to adjacent land managers and partnerships. A negligible beneficial impact would occur to economies of gateway communities over the long-term.

Operational Efficiency

Methodology

Operational efficiency, for the purpose of this analysis, refers to adequacy of the

staffing levels and quality and effectiveness of the infrastructure used in the operation of the park in order to adequately protect and preserve vital park resources. This analysis considers existing and needed staffing levels and the adequacy and effectiveness of the infrastructure used in park operations to provide adequate space for effective visitor experiences and staff needs. Facilities include housing for staff required to work and live in the park, visitor orientation facilities (visitor centers, interpretive trails), and the necessary administrative buildings (office and workspace for park staff) to support park operations. The presence and adequacy of water, sewer, electric, and telephone utilities needed to facilitate park operations was also analyzed.

Discussion of impacts on park operations focuses on (1) ability to protect and preserve resources, (2) existing and needed staff members, (3) existing and needed facilities, (4) communication (telephones, radio, computers, etc), and (5) appropriate utilities (sewer, water, electric). Park staff knowledge was used to evaluate the impacts of each alternative based on the current description of park facilities and operational efficiency presented in the Affected Environment section of this document. Definitions for levels of impacts to operational efficiency are as follows:

Negligible – An action that may change the park operation, but the change will be so small that it will not be of any measurable or perceptible consequence.

Minor – An action that may change the park operation, but the change will be small and that if it is measurable, it will be a small and localized.

Moderate – An action that will have some change to the park operation. The change will be measurable and will have a sufficient consequence.

Major – An action that will have a noticeable change to the park operation. The change will be measurable and will have a substantial and possible permanent consequence.

Regulations and Policies

Current laws and policies require that the following conditions be achieved in the park:

Desired Condition – The NPS will provide appropriate facilities and staff necessary for resource protection and visitor enjoyment.

Source – NPS Management Policies.

Effects of Alternative A – No Action

Impact Analysis

Under the no-action alternative, the existing facilities and staff levels would remain.

Facilities - Implementation of the no-action alternative would impact the park's facilities and their use by visitors and employees. The existing visitor center would remain inadequate because of the crowded conditions. Much-needed space would not be available to meet the needs of current and future staff and visitor levels. Existing exhibits would remain outdated and incorrect. No space would be available to conduct indoor interpretive programs. The association sales area would remain crowded. The library would remain disorganized and difficult to use. Management of the park's cultural and natural resources would be impacted from the lack of adequate work and storage space. No handicapped accessible trails would be available for visitor use. The existing visitor center parking area would not accommodate current and future levels of visitors. The monument would not be able to obtain needed assistance (seasonal employees and volunteers)

without sufficient park housing accommodations.

Utilities – Existing restroom facilities would not accommodate visitors during the busiest times of the year.

Staffing – Implementation of the no-action alternative would impact park management efforts. Given current staffing levels, a reasonable amount of efficiency has been maintained. However, there are serious limitations in the park's ability to provide adequate and acceptable levels of resource protection, preservation, and visitor services. Monument staff would not be able to efficiently and effectively carry out long-term management goals to preserve and protect the cultural and natural resources entrusted to its care. Threats to the resources would continue without completed inventory, monitoring, assessment, mitigation, and management programs. Heightened protection of the monument's facilities and resources would not occur without increased staffing. Visitor care and safety would continue at the existing level with current staffing and cooperating emergency services.

Visitor Use – Under the no-action alternative, visitor use of the park would continue as it exists. The interpretive staff would provide the same level of educational experiences to visitors' both inside and outside the monument. Interpretation and visitor orientation programs would remain less than desired.

Increased growth of the Phoenix metropolitan area and improved facilities within Tonto Basin would increase interest in the park. The result would be an increase in the need for the monument's visitor services and facilities, which would not be available under this alternative. Increased visitation would also increase interest and demand on U.S. Forest Service land surrounding the park. Since the two agencies have differing missions, the potential exists for inconsistent and incompatible uses to occur adjacent to the park boundaries. Unregulated and unauthorized access along park boundaries would result in intentional and unintentional impacts to park resources. Under Alternative A, sufficient law enforcement staff would not be available to patrol these areas.

Cumulative Effects

The no-action alternative would result in no changes to the park operation causing adverse effects. Current staff have achieved a certain level of efficiency; however the existing limited facilities and staff levels inhibit the park's ability to provide adequate levels of resource protection, preservation, and visitor services. Additional facilities and staff would not be available to properly manage the monument's resources and enhance visitor experiences. The existing staff levels would not be able to handle increased visitation and their impacts to park resources

Conclusion – The no-action alternative would have a major long-term adverse effect on the overall management of the park and its unique resources without improved facilities and operations, and increased staff levels. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's resources or values.

Effects of Alternative B

Impact Analysis

Under this alternative, a new visitor/administrative facility, parking lot, nature trail, and seasonal employee/volunteer residence would be built inside the park and the existing visitor center would be remodeled.

Facilities - The additional facilities would beneficially impact visitor experiences and the management of the monument's cultural and natural resources. However, the additional facilities would require increased cleaning and upkeep activities and costs. Much-needed space would finally be available to meet the needs of current and future staff and visitor levels. Orientation and educational programs would be more effective with the new and increased exhibits, displays, and indoor program areas. Dedicated space would house the library. The additional parking area would help to alleviate crowded conditions at the existing visitor center. The new nature trail would provide the only opportunity for physically challenged visitors to access the Sonoran desert. The seasonal employee/volunteer residence would finally provide sufficient accommodations and increase the monument's ability to obtain seasonal employees and volunteers.

Impacts associated with construction of the facilities would consist of compliance and mitigation of impacts to natural and cultural resources. There would be substantial costs for short-term construction and long-term maintenance needs.

Utilities – Additional restroom facilities in the new visitor center would accommodate visitors during the busiest times of the year.

Staffing - Staff levels would increase by eight FTEs. Monument staff would be more efficient and effective in carrying out long-term management goals to preserve and protect the cultural and natural resources entrusted to its care. Threats to the resources would diminish through completed inventory, monitoring, assessment, mitigation, and management programs. The interpretive staff would provide greatly increased educational experiences to visitors' both inside and outside the monument enhancing understandings about the Salado culture and surrounding Sonoran desert environment. Protection of the monument's facilities and resources and visitor care and safety would improve with additional staffing and locating all employees within the park.

Demands on administrative staff would increase during the purchasing and contracting for supplies, materials, and services when construction and remodeling projects are occurring. Maintenance staff would have increased workloads to clean and maintain new facilities. Prior to construction, resource management staff would have increased workloads associated with consultation, compliance, and clearance for the proposed facilities.

Visitor Use - The new accessible nature trail would provide increased opportunities for all visitors to experience the desert lowlands.

Growth of the Phoenix metropolitan area and increased use of Tonto Basin would have a minor to moderate long-term effect on the park's operational efficiency. The most significant effect would be an increase in the number of visitors coming to the park and to the national forest surrounding the park. Since the two agencies have differing missions, the potential exists for inconsistent and incompatible uses to occur adjacent to and encroach on park boundaries. Such use

would result in unregulated and unauthorized access in closed areas of the park resulting in intentional and unintentional impacts to park resources. This activity would have moderate to major long-term impacts to operational efficiency resulting in an increased need for law enforcement patrols to protect park resources.

Cumulative Effects

The additional facilities and staff levels proposed under this alternative would provide major and long-term beneficial management of the monument's resources and enhance visitor experiences. Adverse impacts would occur as a result of the proposed construction of the new facilities and rehabilitation of the existing visitor center. However, these actions would be short-term. Once built and rehabilitated, these facilities would have long-term minor impacts in the form of increased maintenance and upkeep needs, but would provide long-term major beneficial impacts to the overall management and enjoyment of the park.

Under this alternative, more staff would sufficiently handle increased visitation and their impacts to park resources by providing adequate levels of resource protection, preservation, and visitor services. Increased staff would provide major beneficial impacts to the long-term management goals of preserving and protecting the park's cultural and natural resources. Major beneficial impacts would occur to visitor services with additional staffing to greatly enhance visitor protection and educational programs.

Conclusion – This alternative would provide major long-term beneficial experiences for visitors and management of the monument's cultural and natural resources from improved facilities and operations and increased staff levels. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's resources or values.

Effects of Alternative C

Impact Analysis

Under Alternative C, a new visitor/administrative facility would be constructed outside the monument and the existing visitor center would be remodeled.

Facilities – Same as Alternative B except that the new visitor center would be located outside the park. The additional parking facilities would be provided outside the park instead of inside the park where the need exists. Also, vehicles, supplies, personnel, and funds would increase with the shuttle system's longer distance from the new visitor center to the park than in Alternatives B and D.

Utilities – Additional restroom facilities would be provided outside the park in the new visitor center instead of inside the park where the need exists.

Staffing – Similar to Alternative B except that staff levels would increase by nine FTEs. Even though the new facility would provide much-needed benefits to park operations, impacts would occur to communications, logistics, and costs incurred from the increased distance between the new facility and the monument.

Visitor Use – Same as Alternative B except that visitors would not be able to experience the desert lowlands without a

new visitor center and nature trail built in that area.

Cumulative Effects

Same as Alternative B except that fewer adverse impacts would occur within the park with construction of the new visitor center outside the park.

Conclusion – Similar to Alternative B. This alternative would have a moderate long-term beneficial effect on operational efficiency from improved facilities and operations and increased staff levels. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's resources or values.

Effects of Alternative D - NPS Preferred

Impact Analysis

Under alternative D, a new administrative facility, seasonal employee/volunteer residence, and ATS staging area would be constructed and the interior of the existing Mission 66-visitor center would be remodeled.

Facilities - Less space than in Alternatives B and C would be available to meet the needs of current and future staff and visitor levels. However, less funds and time would be needed to build, clean, upkeep, and staff the new facility than in Alternatives B and C. The additional ATS staging area would help to alleviate crowded conditions at the existing visitor center. No new nature trail would be constructed to provide opportunities for physically handicapped visitors to access the Sonoran desert. The seasonal employee/volunteer residence would finally provide sufficient accommodations and increase the monument's ability to obtain seasonal employees and volunteers.

Utilities – Additional restroom facilities in the new administrative facility for employees and at the ATS staging area for visitors would help to alleviate demand on the visitor center restrooms during the busiest times of the year.

Staffing - Staff levels would increase by six FTEs. Monument staff would be more efficient and effective than in Alternative A in carrying out long-term management goals to preserve and protect cultural and natural resources. Threats to the resources would diminish through completed inventory, monitoring, assessment, mitigation, and management programs. Interpretation and visitor orientation programs would be more effective than in Alternative A, but less effective than in Alternatives B and C with slightly expanded exhibits, displays, and indoor program areas. The interpretive staff would provide a few more educational experiences to visitors' both inside and outside the monument enhancing understandings about the Salado culture and surrounding Sonoran desert environment. Protection of the monument's facilities and visitor care and safety would improve with additional staffing and locating all employees within the park.

Demands on administrative staff would increase over Alternative A, but would be less than Alternatives B and C during the purchasing and contracting for supplies, materials, and services when construction and remodeling projects are occurring. Maintenance staff would have more work to clean and maintain new facilities than in Alternative A, but these workloads would

be less than in Alternatives B and C. Prior to construction, resource management staff would have increased workloads associated with consultation, compliance, and clearance for the proposed facilities, but these workloads would be less than in Alternatives B and C.

Visitor Use - Increased growth of the Phoenix metropolitan area and improved facilities within Tonto Basin would increase interest in the park. The number of visitors coming to the park would increase. The result would be an increase in the need for the monument's visitor services, which would not be solved with this alternative. Increased visitation would also increase interest and demand on U.S. Forest Service land surrounding the park. Since the two agencies have differing missions, the potential exists for inconsistent and incompatible uses to occur adjacent to the park boundaries. Unregulated and unauthorized access along park boundaries would result in intentional and unintentional impacts to park resources and increase the need for more law enforcement patrols by NPS staff.

Cumulative Effects

The additional facilities and staff would provide moderate and long-term beneficial management of the monument's resources and enhance visitor experiences. There would be moderate adverse impacts as a result of the proposed rehabilitation of the existing visitor center and construction of the new administrative facility. However, these actions would be short-term. Once constructed and rehabilitated, the facilities would require maintenance for the long-term, but less than is needed in Alternatives B and C, and would provide moderately beneficial impacts to the long-term management and enjoyment of the park.

Under this alternative, more staff would sufficiently handle increased visitation and their impacts to park resources by providing adequate levels of resource protection, preservation, and visitor services. Increased staff would provide major beneficial impacts to the long-term management goals of preserving and protecting the park's cultural and natural resources. Major beneficial impacts would occur to visitor services with additional staffing to greatly enhance visitor protection and educational programs.

Conclusion – The proposed alternative would have a major long-term beneficial effect on visitor experiences and management of the monument's cultural and natural resources from improved facilities and operations and increased staff levels. Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Tonto National Monument; (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the monument; or (3) identified as a goal in this plan or other relevant National Park Service planning documents, there would be no impairment to the monument's resources or values.

CONSULTATION/COORDINATION

Public Involvement, Agencies Consulted

The Notice of Intent to prepare an Environmental Impact Statement was published in the Federal Register on September 14, 1999. This thirty-day public review period was announced via an internet web site, newsletters, and press releases. Public workshops were also held in Tonto Basin, Roosevelt, and Globe, Arizona. This Environmental Impact Statement will be available for public review for a minimum of 60 days.

The following agencies were contacted during preparation of the plan:

U.S. Fish and Wildlife Service

U.S. Forest Service

U.S. Geological Survey

Arizona State Historic Preservation Office

Planning Team

National Park Service

Lee Baiza, ***Superintendent, Tonto NM*** – BS in Criminal Justice from New Mexico State University, 23 years NPS at four different NPS areas. Responsible for overall process, purpose and need, alternatives, facilities, operational efficiency, cumulative effects, partnerships, and final recommendation to Regional Director.

Christopher Marvel, ***Team Captain/Lead Planner, Intermountain SO-Denver*** – BLA/BS NYS College of Environmental Science and Forestry/Syracuse University, 23 years Government (10 USFS, 12 NPS.) Responsible for general coordination/documentation, purpose and need, alternatives, tables, contract coordination, and economic contributions.

Lori Kinser, ***Visual Information Specialist, Intermountain SO-Denver*** – 26 years as a primary provider of graphic support. Responsible for the production of Graphics.

Shirley Hoh, ***Resource Manager, Tonto NM*** – BS in Natural Resources from The Ohio State University, 23 years NPS at 8 different areas. Responsible for park coordination, mission statement, ROAs, management prescriptions, alternatives, affected environment, environmental consequences, bibliography, and consultation/coordination.

Susan Hughes, ***Chief Ranger, Tonto NM*** – BS in Natural Resource Recreation from University of Arizona, 16 years NPS. Responsible for providing insight and reviewing visitor use/experience, interpretation, and visitor/resource protection.

Eddie Colyott, ***Park Ranger, Tonto NM*** – Certified Archeological Instructor with Eastern Arizona College for 7 years, 20 years NPS, 3 years USFS. Responsible for providing insight and reviewing cultural resources, visitor use/experience, interpretation, and visitor/resource protection.

Dwayne Collier, ***Superintendent, Southern Arizona Office*** – BS in Wildlife Management from New Mexico State University, 31 years NPS at 7 NPS areas. Responsible for providing and managing professional and technical support to parks in Southern Arizona. Provided perspective on visitor use and visitor/resource protection components.

Kathy Davis, ***formerNatural Resource Manager, Southern Arizona Office*** – Masters of Forestry from University of Montana, 21 years NPS, 3 years USFS, 5 years CSIRO in Australia. Responsible for providing input for mission statement, management prescriptions, alternatives, affected environment, and environmental consequences.

Lee Benson, ***former Wildlife Biologist, Southern Arizona Office*** – BS in Zoology from Colorado State University, 6 years NPS, 3 years

BLM. Provided perspective and input on mission statement, management prescriptions, alternatives, affected environment, and environmental consequences. Responsible for GMP maps.

Scott Travis, ***former Archeologist, Southern Arizona Office*** – MA in Anthropology and History from Northern Arizona University, BS in Anthropology and History from Northern Arizona University, 17 years NPS. Responsible for cultural resource components of the park's mission goals, ROA's management prescriptions, and environmental consequences.

Gregory L. Fox, ***former Archeologist, Western Archeological and Conservation Center*** – Ph.D. in Anthropology from University of Missouri-Columbia, MA in anthropology from University of Nebraska-Lincoln, 9 years NPS. Responsible for assessing effects of GMP on cultural resources.

U.S. Geological Survey

Bill Halvorson, ***Supervisory Research Ecologist, Sonoran Desert Field Station of the U.S. Geological Service Western Ecological Research Center*** – Ph.D. in Plant Ecology from Arizona State University, 5 years USGS, 3 years NBS, 12 years NPS, 2 years HCRS, 8 years University of Rhode Island. Responsible for assisting with ecological setting and scientific integrity.

Contributors

Chris Hansen, *Administrative Support Clerk, Tonto NM*

Miguel Estrada, *Exhibit Specialist, Tonto NM*

Lupe Carrasco, *Administrative Officer, Tonto NM*

Ruben Avalos, *Facility Manager, Tonto NM*

Janet Lenon, *Park Guide, Tonto NM*

Stephen Rudolph, *formerPark Guide, Tonto NM*

Jan Ryan, *former Chief Ranger, Tonto NM*

Joel Straw, *former Facility Manager, Tonto NM*

Sam Henderson, *Superintendent, Flagstaff Area Parks*

Frank Walker, *former Superintendent, Saguaro NP*

Steve Whitesell, *Superintendent, San Antonio Missions NHP*

Tara Travis, *former Historian, Southern Arizona Office*

Sara Quirarte, *Personnel Management Specialist, Southern Arizona Office*

Phil Clark, *former Engineer, Southern Arizona Office*

Jill Cowley, *Landscape Architect, NPS Intermountain Support Office*

Stephanie Rodeffer, *Chief Museum Collections Repository, Western Archeological and Conservation Center*

Trinkle Jones, *Archeologist, Western Archeological and Conservation Center*

Jim Rancier, *Lake Mead NRA*

Tina Terrell, *Tonto National Forest*

Joe Sitarzewski, *Tonto National Forest*

Don Goldman, *NPS (retired)*

Joan Mitchel, *NPS (retired)*

Catherine Colby, *NPS (retired)*

List of Recipients

Federal Government

Karen Wade, *Regional Director, NPS - Intermountain Region*

Michael Snyder, *Deputy Regional Director, NPS – Intermountain Region*

Ernest Ortega, *Superintendent, NPS – Intermountain Support Office*

Superintendent, *Casa Grande Ruins NM*

Superintendent, *Chiricahua NM and Fort Bowie NHS*

Superintendent, *Coronado NM*

Superintendent, *Montezuma Castle NM and Tuzigoot NM*

Superintendent, *Organ Pipe Cactus NM*

Superintendent, *Saguaro NP*

Superintendent, *Tumacacori NHP*

Don Swann, *Saguaro NP*

Carol Kruse, *Flagstaff Area Parks*

Jim Rancier, *Lake Mead NRA*

David Roberts, *Black Canyon of the Gunnison NP*

Michael Stuckey, *Petrified Forest NP*

Jan Ryan, *Tonto NM (retired)*

Beth Morgan, *Tonto NM Volunteer*

Clark Franz, *Tonto NM Volunteer*

Jim Vowels, *Tonto NM Volunteer*

George Teague, *Center Manager, Western Archeological and Conservation Center*

Forest Supervisor, *Tonto National Forest*

District Ranger, *Tonto Basin Ranger District, Tonto National Forest*

District Ranger, *Globe Ranger District, Tonto National Forest*

Regional Director, *U.S. Fish and Wildlife Service*

John McCain, *United States Senator*

Jon Kyl, *United States Senator*

J.D. Hayworth, *United States Congressman*

State Government

Jim Garrison, *State Historic Preservation Officer, Arizona State Historic Preservation Office*

Local Government

Mayor, *Globe, Arizona*

Mayor, *Miami, Arizona*

Mayor, *Payson, Arizona*

Executive Director, *Globe/Miami Chamber of Commerce*

Executive Director, *Payson Chamber of Commerce*

Executive Director, *Apache Junction Chamber of Commerce*

Tribal Government

Chairman, *Hopi Tribe*

President, *Salt River Pima-Maricopa*

Chairman, *San Carlos Apache Tribe*

Chair, *Tonto Apache Tribe*

Chairman, *White Mountain Apache Tribe*

Chairman, *Yavapai Apache Tribe*

President, *Yavapai Prescott Indian Tribe*

Governor, *Zuni Heritage and Historic Preservation Office*

Organizations

David Simon, *Executive Director, The National Park Foundation*

Tim Priehs, *Executive Director, Southwest Parks and Monument Association*

REFERENCES CITED

Benson, Lee. 2001. *Survey Results for Mexican spotted and cactus ferruginous pygmy owls.* Correspondence available at Tonto National Monument.

Brian, Nancy. 1991. *Resurvey of 1961 line intercept transects at Tonto National Monument, Arizona. T*echnical Report No. 38, Cooperative National Park Resources Studies Unit, University of Arizona, Tucson, Arizona.

Briceland, Richard. 1990. *Money Generation Model*. National Park Service, Statistical Office, Washington, DC.

Burgess, Robert L. 1965. *A checklist of the vascular flora of Tonto National Monument, Arizona*. Journal of the Arizona Academy of Science, 3(4).

Chronic, Halka. 1983. *Roadside Geology of Arizona*. Mountain Press Publishing Company, Missoula, Montana.

Dean, Jeffrey S. 2000. *Salado*. University of New Mexico Press, Albuquerque, New Mexico.

Hiett, Katherine L. and W.L. Halvorson. 1999. *Inventory and Assessment of Avifauna and a Monitoring Protocol Proposal for Tonto National Monument, Arizona. T*echnical Report No. 62, Cooperative Park Studies Unit, University of Arizona, Tucson, Arizona.

Jenkins, P., F. Reichenbacher, K. Johnson, and A. Gundor. 1991. *Vegetation Inventory, Classification, and Monitoring for Tonto National Monument*. Cooperative Parks Studies Unit Technical Report 95/50. Biological Resources Division, USGS. University of Arizona, Tucson, Arizona.

King, Kenneth and E. King. 1998. *Tonto National Monument Vibration Investigation*. Southwest Parks and Monument Association Grant #98-13. Available at Tonto National Monument.

Lindsay, Bruce A., D.G. Robinett, and F.R. Toupal. 1994. *Soil Survey of Tonto National Monument. U*.S. Department of Agriculture, Soil Conservation Service.

Madrid, Christine L. *The Emergence of the Mission 66 Visitor Centers*. Masters thesis, University of Virginia, Charlottesville, Virginia.

Michigan State University. 2000. *Money Generation Model Version 2 (MGM2), Estimating Regional Impacts of Park Visitor Spending*. National Park Service, Michigan State University, Department of Park, Recreation and Tourism Resources, Lansing, MI.

Moore, Steven D. and J.L.Crowe. 1993. *A Survey of Visitors in Four National Monuments in Central, Arizona*. Cooperative National Park Resources Studies Unit, University of Arizona, Tucson, Arizona.

National Park Service. 1964. *Master Plan, Tonto National Monument*. National Park Service, Denver Service Center, Denver, Colorado.

National Park Service. 1990. *National Park Service Properties in the National Register of Historic Places*. National Park Service, Washington Office, Washington DC.

National Park Service. 1993. *Guiding Principles of Sustainable Design*. National Park Service, Dept. of the Interior, Washington, DC.

National Park Service. 1996. *National Park Service Strategic Plan—Final Draft*. National Park Service, Washington Office, Washington DC

National Park Service. 1997. *Government Performance and Results Act,* Strategic Plan and Annual Performance Plans, Tonto National Monument. Tonto National Monument, National Park Service.

National Park Service. 1998. *Planners' Sourcebook*. Director's Order 2, Park Planning. National Park Service, Washington Office, Washington D. C.

National Park Service. 2000. *Management Polices 2001*. U.S. Department of the Interior, Washington, D.C.

Natural Resources Conservation Service. 2000. *Summary Report 1997 National Resources Inventory*. U.S. Department of Agriculture, Washington, D.C.

Phillips, Barbara G. 1992. *Status of non-native plant species, Tonto National Monument, Arizona.* Technical Report No. 46, Cooperative national Park Resources Studies Unit, University of Arizona, Tucson, Arizona.

Pierson, L. M. 1952. *Excavations at the Lower Ruin and Lower Ruin Annex, Tonto National Monument.* In "Archeological Studies at Tonto National Monument, Arizona" edited by L. R. Caywood in 1962. Southwestern Monuments Association Technical Series 2. Southwest Archeological Center, Globe, Arizona.

Price, Peter W. and S.M. Fondriest. 1995. *Terrestrial Invertebrate Survey of Tonto National Monument, Arizona.* Department of Biological Sciences, Northern Arizona University, Flagstaff, Arizona.

Raup, Robert B., Jr. 1959. *Some Geologic Features of the Tonto National Monument, Gila, County, Arizona*. MS, Western Archeological and Conservation Center, Tucson, Arizona.

Steen, C. 1940. *Excavations at the Upper ruin, Tonto National Monument.* In "In "Archeological Studies at Tonto National Monument, Arizona" edited by L. R. Caywood in 1962. Southwestern Monuments Association Technical Series 2. Southwest Archeological Center, Globe, Arizona.

Strong, Charles W. 1962. Untitled report on vegetation survey. Unpublished report, available at Tonto National Monument.

Swann, Don E., C.R. Schwalbe, R.C. Murray, and W.W. Shaw. 1996. *An Inventory of the Terrestrial, Vertebrates at Tonto National Monument, Arizona.* Cooperative Park Studies Unit, University of Arizona, Tucson, Arizona.

Tagg, M. D. 1985. *Tonto National Monument: an Archeological Survey. W*estern Archeological and Conservation Center, National Park Service, Publication in Anthropology No. 31.

U.S. Fish and Wildlife Service. 1999. Correspondence. Available at Tonto National Monument.

U.S. Forest Service. 1985. *Environmental Impact Statement, Tonto National Forest Plan*. Available at Tonto National Forest.

University of Idaho. 2000. Tonto National Monument, 2000 Visitor Survey Card Data Report. Cooperative Park Studies Unit for the National Park Service, University of Idaho, Moscow, ID.

APPENDIX 1: LEGISLATION

TONTO NATIONAL MONUMENT

Establishment: Proclamation (No. 787) of December 19, 1907

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

(No. 787-Dec. 19, 1907-35 Stat. 2168)

WHEREAS, two prehistoric ruins of ancient cliff dwellings situated upon public lands of the United States, and located in the region commonly known as the Tonto Drainage Basin, about two miles south of the Salt River Reservoir, Gila County, Arizona, are of great ethnologic, scientific and educational interest and it appears that the public interests would be promoted by reserving these relics of a vanished people as a National Monument with as much land as may be necessary for the proper protection thereof;

NOW, THEREFORE, I, Theodore Roosevelt, President of the Untied States of America, by virtue of the power in me vested by section two of the Act of Congress approved June 8, 1906, entitled "An Act for the Preservation of American Antiquities," do hereby set aside as the Tonto National Monument, subject to any valid interest or rights, the prehistoric cliff dwelling ruins and one section of land upon which same are located, situated in Gila County, Arizona, more particularly described as follows, to wit:

Section thirty-four, unsurveyed, in township four north, range twelve east of the Gila and Salt River Meridian, Arizona, as shown upon the diagram hereto attached and made a part of this Proclamation.

Warning is hereby expressly given to all unauthorized persons not to appropriate, excavate, injure or destroy any of the prehistoric ruins or remains thereof declared to be a National Monument, or to locate or settle upon any of the lands reserved and made a part of said Monument by this Proclamation.

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

DONE at the City of Washington this 19th day of December in the year of our Lord one thousand nine hundred and seven, and of the Independence of the United States the one hundred and thirty-second.

Theodore Roosevelt

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

(No. 2230-Apr. 1, 1937-50 Stat. 1825)

WHEREAS, the area in the State of Arizona established as the Tonto National Monument by Proclamation of December 19, 1907, has situated thereon prehistoric ruins and ancient cliff dwellings which are of great ethnologic, scientific and educational interest to the public; and

WHEREAS, it appears that there are certain government-owned lands reserved by proclamation of January 13, 1908, as a part of the Tonto National Forest, adjacent to the boundaries of the said Monument, which are required for the proper care, management and protection of the said historic ruins and ancient cliff dwellings:

NOW, THEREFORE, I Franklin D. Roosevelt, President of the Untied States of America, under and by virtue of the authority vested in me by Section 1 of the act of June 4, 1897, ch. 2, 30 Stat. 11, (U.S.C., title 16, sec. 473), and section 2 of the act of June 8, 1906, ch. 3060, 34 Stat. 225 (U.S.C., title 16, sec. 431), do proclaim that, subject to all valid existing rights, the following-described lands in Arizona are hereby excluded from the Tonto National Forest and reserved from all forms of appropriation under the public-land laws and added to and made a part of the Tonto National Monument:

T.4N., R.12E., sec. 26, SW1/4; sec. 27, SE1/4; sec. 35, NW1/4 (unsurveyed), containing approximately 480 acres.

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

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this monument as provided in the act of Congress entitled "An Act to Establish a National Park Service, and for other purposes," approved August 25, 1916 (ch. 408, 39 Stat. 535, U.S.C., title 16, secs. 1 and 2), and acts supplementary thereto or amendatory thereof; Provided, that the administration of the monument shall be subject to the withdrawal for the Salt River Irrigation project, Arizona.

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

Done at the City of Washington this first day of April in the year of our Lord nineteen hundred and thirty-seven and of the Independence of the United States the one hundred and sixty-first.

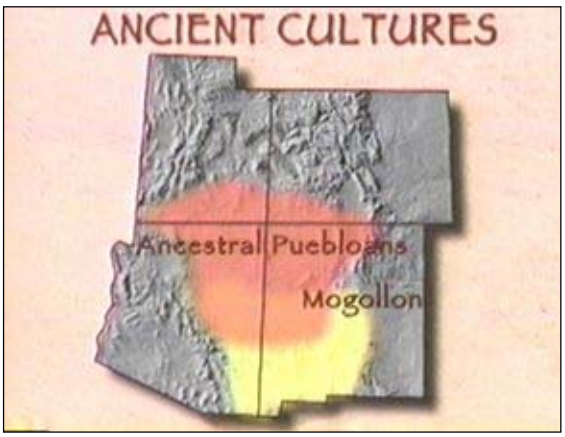
Franklin D. Roosevelt

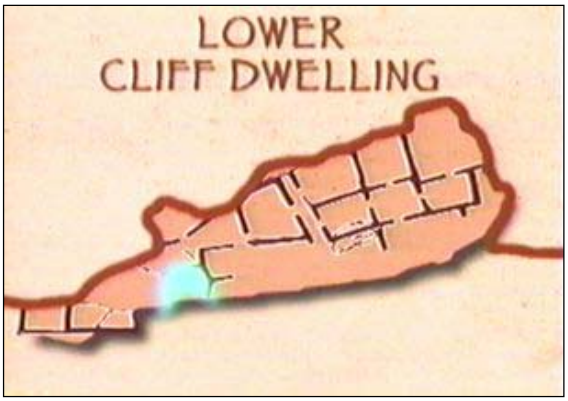
APPENDIX 2: FUTURE PLANS AND STUDIES

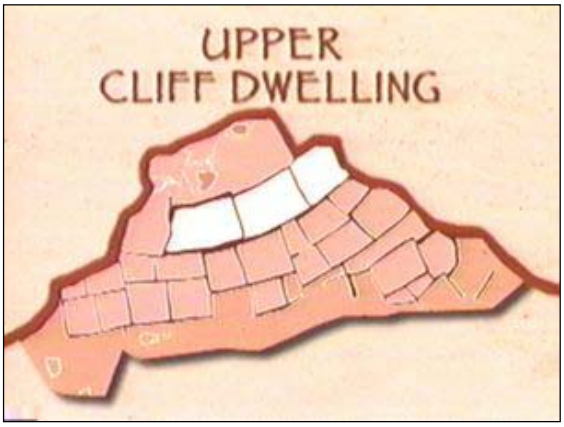
Future plans and studies needed for TONTO NM include:

- Fire management plan
- Cultural landscape inventory and report
- Historic resource study
- Collections management plan
- Artifact study with institutional involvement
- Administrative history
- Environmental condition action plan
- Vegetation management plan
- Water resource assessment
- Historic structures preservation guide
- Assessment and stabilization plan
- Ethnographic Overview and Assessment and Ethnohistorical Studies
- Development Concept Plan
- Comprehensive interpretive plan
- Viewshed analysis
- Response need assessment (EMS/SAR)
- Passive resource protection study
- Security plan
- VERP – visitor experience and resource protection plan
- Alternative transportation system plan
- Boundary study

Rock shelters overlooking Tonto Basin shield adobe cliff dwellings that are nearly 700 years old. They were home to the archeological phenomenon known as the Gila phase representing an element of the Salado culture. This culture has a widespread distribution in the Tonto Basin and was named by archeologists in the early 20th century for the Rio Salado that flows through the basin. The first permanent settlements date from the latter half of the 8th century A.D. Hohokam colonists, expanding their domain in what are now the lower Gila and Salt River valleys, moved into Tonto Basin. By A.D. 850 the Hohokam were established in pithouse villages where they lived for a few hundred years. Through time several distinct changes in their way of life occurred. Pottery styles, construction methods, settlement patterns, and other traits indicated that by A.D. 1150, the inhabitants of the basin no longer followed the Hohokam traditions, or those of any other Southwestern group. Other cultures including the Mogollon located near the Little Colorado River may also have moved into the Tonto Basin. All of these various cultures may have combined to develop into the Salado culture.







Like their predecessors, the Salado were farmers. Their pueblo villages dotted the riverside near irrigated fields of corn, beans, pumpkins, amaranth, and cotton. Groups ventured into the hills to hunt and gather plants. They exchanged surplus food and goods with neighbors, thus joining the trade network that reached from Colorado to Mexico, and to the Gulf of California. As the Salado prospered, their numbers increased. By the early 1300s some of them moved into the surrounding foothills, building single and two-story pueblo dwellings. The highlands offered a bounty of useful plants and animals. Steep slopes and rough terrain made farming difficult.

The Salado culture was present in the Tonto Basin for about 300 years. Sometime

between A.D. 1400 and 1450 they left the basin for reasons that are not apparent today.

Prime resources at Tonto National Monument are the Annex, Lower Cliff Dwelling, Upper Cliff Dwelling, two smaller remote cliff dwellings, and one open site. All six of these sites are on the National Park Service List of Classified Structures. The Lower Cliff Dwelling has 16 ground-floor rooms, three of which had a second story. Next to this is the 12-room Annex. The Upper Cliff Dwelling was much larger with 32 ground-floor rooms and eight on the second story. There are also 59 smaller sites: 12 rock shelters, 26 field houses, 16 two-to-five room sites, three large pueblos (more than five rooms), three Apache or Yavapai wickiup sites, one historic site, and one large unknown rock pile (possibly a grave). The entire monument was placed on the National Register of Historic Places as an Archeological District in September 1966.

Written history reveals some of the activities that transpired here after the Salado left. Literature (Pierson 1952, Steen 1954, Tagg 1985) stated that early Spanish activity occurred in the Tonto Basin between 1539 and 1540. De Niza/Coronado's expedition reportedly entered the basin while seeking the Seven Cities of Cibola. It would seem likely that they became aware of the cliff dwellings although no mention of them exists in their journals.

In 1821 Mexico was declared independent of Spain. With this, Mexican occupation of the Southwest began. Tonto Basin was an active route for Mexican military operations, and the Tonto cliff dwellings may have been well known by soldiers and scouts at that time.

Apache brownware ceramics found in the monument indicates an Apache/Yavapai presence in the monument.

After the Mexican-American War of 1848 the United States took possession of the Arizona Territory. Between 1850 and 1870 feeble attempts at ranching in the basin were discouraged by constant raiding from the Tonto Apaches. In 1867 Fort Reno was established near what is now Punkin Center, Arizona, located 15 miles north of the cliff dwellings. Soldiers at Fort Reno staged military operations against the Tonto Apache. In 1872 the "Tonto Campaign" finally brought Apache raiding and warfare in the basin to an end.

In 1875 European-American ranchers and settlers successfully inhabited the basin. Cowboys from the Hashknife Ranch were credited with the discovery of the cliff dwellings, but in reality they only served to promote interest in the cliff dwellings. Ranching and grazing activities during this time used the two springs in the monument as well as the vegetation.

Explorer Adolph Bandelier visited the Tonto cliff dwellings in 1886. His journal, published in 1893, provided the first sketches and literary account of the cliff dwellings.

Roosevelt Dam was constructed between 1903 and 1911. Tours to the dam site were initiated by the Southern Pacific Railroad, and as part of the tour, people were brought to the cliff dwellings. This conceivably was the first commercialization of the cliff dwellings. In 1907 due to growing impact and visitation, President Theodore Roosevelt signed a proclamation creating Tonto National Monument. Under authority of the USFS, the cliff dwellings experienced increased visitation and growing impacts and vandalism. Due to the continued destruction of the cliff dwellings, authority for their protection was transferred to the National Park Service in 1933.

APPENDIX 4: PUBLIC COMMENTS & NPS RESPONSE

This section outlines errata made to the draft EIS and incorporated into the final EIS. None of the changes modify any of the alternatives. Changes were necessary to clarify management prescriptions, improve document organization and bring EIS information in line with existing site conditions, some of which changed since the publication of the DEIS.

NPS Responses To Substantive Comments

In this section, the National Park Service has listed and responded to substantive comments received from the public about the draft General Management Plan/Environmental Impact Statement.

All public comments on the draft GMP/EIS were reviewed by park staff, but only those comments which where considered to be substantive have received responses in this section. Substantive comments, as defined by the Council on Environmental Quality and the National Park Service are comments which do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EIS.
- Question, with reasonable basis, the adequacy of environmental analysis.
- Present reasonable alternatives other than those presented in the EIS.
- Cause changes or revisions in the proposal.(NPS Director's Order #12 Handbook,

Public Comments

Substantive comments are organized in the following table for convenience. The left column contains the question or comment with the person's name who submitted the comment in brackets. The right column contains the National Park Service's Reply.

Comments are arranged alphabetically by sources identified in the brackets []. Agencies and organizations that are referenced in the Public Response Chart are identified below. Wherever amendments have been made to the draft plan, those changes also occur in the final plan.

Abbreviations not depicted above for organizations and agencies include "GMP" for General Management Plan, "EIS" for Environmental Impact Statement, "DEIS" for Draft Environmental Impact Statement, "FEIS" for Final Environmental Impact Statement, and for "FAA" Federal Aviation Administration. The term "monument" refers specifically to Tonto National Monument. "NPS" refers to the National Park Service, whose Superintendent at Tonto administers the national monument.

COMMENT	NPS RESPONSE
[Arizona State Historic Preservation Office] The SHPO concurs from an archaeological point of view.	**[Tonto NM]** NPS management appreciates your support of alternative D and its long-term beneficial effect on the management of the monument's archaeological resources.
[Jill Cowley] As far as addressing cultural landscape (CL) resources, it looks good. One minor comment – on page 83, first line under CL existing conditions, it says that cultural landscapes "inherently exhibit modification and use…". This is misleading – cultural landscapes do not have to exhibit any human modifications or evidence of use – they can appear "natural", and their cultural landscape values can derive from uses or values that do not involve physical manipulations.	**[Tonto NM]** The cultural landscape reference on page 83 was modified. The first two sentences were changed to read as follows, "A cultural landscape is a geographic area that may exhibit modification and use by communities varying in size, complexity, and character. However, cultural landscapes do not have to exhibit any human modifications or evidence of use – they can appear natural and their values can derive from uses that do not involve physical manipulations."
[Kendrick Holder] …you want more land to expand. That gives the U.S. Forest Service an excuse to remove more cattle. So does a drought. They have protected the brush and trees so long all it can do is burn. The environmentalists like all of this. Before the F.S., the weeds and brush burned but left the trees. Now it all goes up in smoke. As far as remodeling the monument, I think it is OK now.	**[Tonto NM]** The primary mission of the NPS is to preserve and protect natural and cultural resources and to provide for the public enjoyment of these resources for present and future generations. One of the goals of the GMP is to complete a boundary study that would identify significant natural and/or cultural resources outside the park boundary that should also be protected. The GMP is a guide to ensure that the infrastructure of the park is able to meet the needs of present-day and future expected levels of increased visitation and provide for positive visitor experiences. Staff needs must also be met in order to ensure protection of the resources. The proposed alternative D best addresses these issues.
[Hopi Tribe] The Hopi cultural Preservation Office has reviewed the draft EIS/GMP for Tonto NM. We support Alternative D-NPS Preferred, because the document demonstrates that thee proposed alternative would have a long-term beneficial effect on the management of the monuments cultural and natural resources, and there would be no major adverse impacts to the monument's resources or values.	**[Tonto NM]** NPS management appreciates your support of alternative D and its long-term beneficial effect on the management of the monument's cultural and natural resources.
[William P. O'Brien] Under the section on Mission 66 (page 85) the preferred alternative states that "only the interior of the building would be changed." It would seem that after calling out the significance of the structure as illustrative of the Mission 66 history of the NPS and of architect Cecil Doty, that the present statement should be amplified.	**[Tonto NM]** The following statements was added to page 86 under Impacts of Alternatives B, C, and D – NPS Preferred at the end of the first paragraph: "Any changes proposed for the interior of the building would respect the original design intent and building footprint. Both exterior and interior character defining features and treatments would also be retained."

COMMENT	NPS RESPONSE
[Margaret J. Rasmussen] My inclination is to go with the NPS Preferred Alternative D. Alternative D would allow for better visitor experience and administration of the park.	**[Tonto NM]** NPS management appreciates your support of alternative D and its long-term beneficial effect on the management of the monument's cultural and natural resources and visitor experience.
[Margaret J. Rasmussen] I am curious about the comprehensive IPM regarding combating Africanized bees (pg. 33). What precautions are being used should more aggressive Africanized bees swarm or attack visitors?	**[Tonto NM]** The comprehensive IPM plan states that the monument will identify and monitor pests, their locations, populations, and threats, in this case, to employees and visitors. Once the threats have surpassed acceptable limits, control measures will be undertaken.
[Jan Ryan] On page 5, at the top left, is the purpose statement for Tonto. The way it reads is that "Tonto National Monument educates prehistoric cliff dwellings," which of course is an impossibility.	**[Tonto NM]** The word "educates" was removed from this statement.
[Jan Ryan] On page 31, under Cultural Resources Management, 3rd paragraph: the museum COLLECTIONS are not outdated, just the exhibits/facilities that house them.	**[Tonto NM]** This sentence was changed to read, "The outdated museum displays would remain unchanged within existing limited space."
[Jan Ryan] I agree 100% that Alternative D is the best for Tonto, with alternative B as a close second, for a lot of reasons.	**[Tonto NM]** NPS management appreciates your support of alternative D and its long-term beneficial effect on the management of the monument's cultural and natural resources.
[US Environmental Protection Agency (USEPA)] Surface Water and Ground Water Quality – On page 112, the FEIS should clarify the phrase "signs of overload," specifically if human waste has been released into the environment, and potential effects associated with this. It also states that the two [septic] systems will be combined into a single system by 2002, although it is unclear if the septic tanks' consolidation is part of this project or a separate action (this should be clarified in the Final EIS). The FEIS should address if the NPS has evaluated the feasibility of methods to manage human waste other than a septic system such as a small-scale wastewater treatment plant. The Clean Water Act Section 402 permits are needed for construction activities disturbing five or more acres.	**[Tonto NM]** No human wastes have been released into the environment from the visitor center leech field. The following sentences were changed in the paragraph on page 112 regarding sewage systems to read. "This system is operating at its maximum design capacity during peak visitation periods although no leakage has occurred." "To increase capacity and remove the need for the old visitor center leech field, these two sewage systems were combined into a new expanded system in 2002 that included a new leech field and septic tank." It is not feasible to construct a small-scale wastewater treatment plant within the monument. All construction projects identified in Alternative D would disturb less than five acres. Therefore, no Section 402 permits would be required.
[USEPA] Hazardous Materials – The FEIS should address if remodeling work [in the existing visitor center] may disturb or require the removal of hazardous materials such as lead-based paint or asbestos-containing materials.	**[Tonto NM]** Proper procedures for sampling and removing, if necessary, hazardous materials such as lead-based paint or asbestos-containing materials during the remodeling of the existing visitor center will be addressed during the planning and compliance phases of this project.

COMMENT	NPS RESPONSE
[USEPA] Pesticides – The DEIS does not address if products regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) are used at the monument. If FIFRA-regulated products are used at the monument, the list of applicable requirements on page 6 ("Servicewide Law and Policies") should note that FIFRA is an applicable requirement.	**[Tonto NM]** Even though FIFRA- regulated products may be used at the monument, it is not the intent of the GMP to list every applicable law and guideline that governs management of the monument. On page 6, the GMP lists the most applicable laws, regulations, policies, and guidelines that apply to this planning effort.
[USEPA] Air Quality – The FEIS should address if emissions from construction machinery (including air toxic emissions) can be reduced during the project's construction phase. A discussion of mitigation to reduce emissions from construction-related activities should be presented in the FEIS.	**[Tonto NM]** The following statements were added to the mitigation for air quality for alternatives B, C, and D on page 97: "Construction–related emissions would be reduced when possible by properly maintaining and operating the equipment." More detailed mitigation efforts will be addressed during preconstruction conferences for each development project undertaken.
[USEPA] Noise – The DEIS indicates that planes and helicopters can fly too low or hover over the cliff dwellings, resulting in structural damage. The FEIS should address whether such actions are prohibited by law and subject to enforcement actions by the NPS and/or the FAA. The FEIS should address if noise or vibration from low-flying or hovering planes and helicopters has an adverse effect on wildlife.	**[Tonto NM]** There are no FAA or NPS regulations to prohibit low-flying aircraft over the majority of NPS areas. That is why the monument relies solely on educational efforts to address this issue. The following statement was added to the end of the paragraph on aircraft monitoring on pages 38, 44, and 49: "The effects of these noise levels on wildlife would be determined."
[USEPA] Pollution Prevention and Mitigation – The FEIS should reference how the proposed project can meet the intent of guidance issued by the Council on Environmental Quality (CDQ) on integrating pollution prevention opportunities in National Environmental Protection Act planning, documents and decisions. We have attached pollution prevention checklists that can be utilized in developing the FEIS.	**[Tonto NM]** The Environmental Consequences section of the GMP (pages 79 to 155) addresses the general effects of the planning document on the environment including pollution prevention. Prior to any new construction, a new NEPA document will be prepared that addresses the effects on the environment in more detail including items on the pollution prevention checklists.
[USEPA] Applicable Requirements – Page 6 identifies several Federal laws applicable to the planning effort. Page 11 indicates the need to maintain "an adequate supply of potable water," regulated under the Safe Drinking Water Act (SWDA). The list on page 6 should include SDWA. Other applicable statures may include the FIFRA, Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act, and the Pollution Prevention Act.	**[Tonto NM]** It is not the intent of the GMP to list every applicable law and guideline that governs management of the monument. On page 6, the GMP lists the most applicable laws, regulations, policies, and guidelines that apply to this planning effort.

COMMENT	NPS RESPONSE
[James Vowels] On page 13, I learned that there is legislative activity to change the name of the monument.	**[Tonto NM]** To clarify, changing the name of the monument is listed as a mission goal; it is not underway at this time.
[James Vowels] Throughout the plan, in reference to the visitor center building, it is consistently stated that the building is to be remodeled to provide "SLIGHTLY" increased visitor educational experiences. This is indeed unfortunate! Outreach and Interpretation (page 51), again it is stated that the visitor experience would SLIGHTLY increase. Unfortunate! Over the years more and more groups are coming to the monument for an enriching experience.	**[Tonto NM]** Alternative D will provide more space in the visitor center for visitor educational experiences than what is now available. Building new visitor centers as recommended in Alternatives B and C would provide the most space, but would disturb more natural resources, be more visible from the cliff dwellings, require more staff to operate, and more funds to construct, operate, and maintain. The existing visitor center cannot be enlarged because of its potential historical significance and location. However, increased interpretive programming is not solely dependent on infrastructure space except during inclement weather.
[James Vowels] I understand the impact that Mission 66 (page 85) has upon any major remodeling on the existing structure, but the visitor is going to see little increase in the display of museum exhibits (page 49). The vast majority of museum collections will continue to be stored at the Western Archeological and Conservation Center in Tucson, Arizona.	**[Tonto NM]** By moving the administrative offices out of the visitor center, more space will be available for increased visitor educational experiences including museum displays. However, increasing exhibit space may not be necessary once the displays are redesigned and updated. Because of the visitor center's limited space, it would be impossible to display all of the monument's artifacts.
[James Vowels] On page 100, it was great to see that a parking area is being constructed by the Arizona Department of Transportation on U.S. Forest Service land. Well done!	**[Tonto NM]** NPS management appreciates your support of the new upper cliff dwelling vista site and its long-term beneficial effect on visitors' experience of this cultural resource. The new vista site will include interpretive signs about the upper cliff dwelling as well as the rest of the monument and Tonto National Forest. This construction project began in 2002.
[Yavapai Prescott Indian Tribe] Please be advised that the Yavapai are a distinct language group and not related to the Apache. Therefore, we would appreciate it if you would not refer to them together as you do on page 87, paragraph 4.	**[Tonto NM]** The word "Yavapai" was removed from this sentence.

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-26a

General Management Plan Summary

TONTO

National Monument • Arizona

Table of Contents

INTRODUCTION **1**

Tonto National Monument 1
Purpose of the Plan 1
Need for the Plan 1
Planning Issues and Concerns 2
The Planning Process 3
The National Park System 4
Park Purpose 4
Park Significance 5
Legislative Background 5
Special Mandates 6
Servicewide Law and Policies 6

MISSION STATEMENT (A VISION FOR THE FUTURE) **7**

GPRA Mission Goals 8
Park Mission Goals 8

VISITOR EXPERIENCE AND THE PARK ENVIRONMENT **15**

MANAGEMENT PRESCRIPTIONS **25**

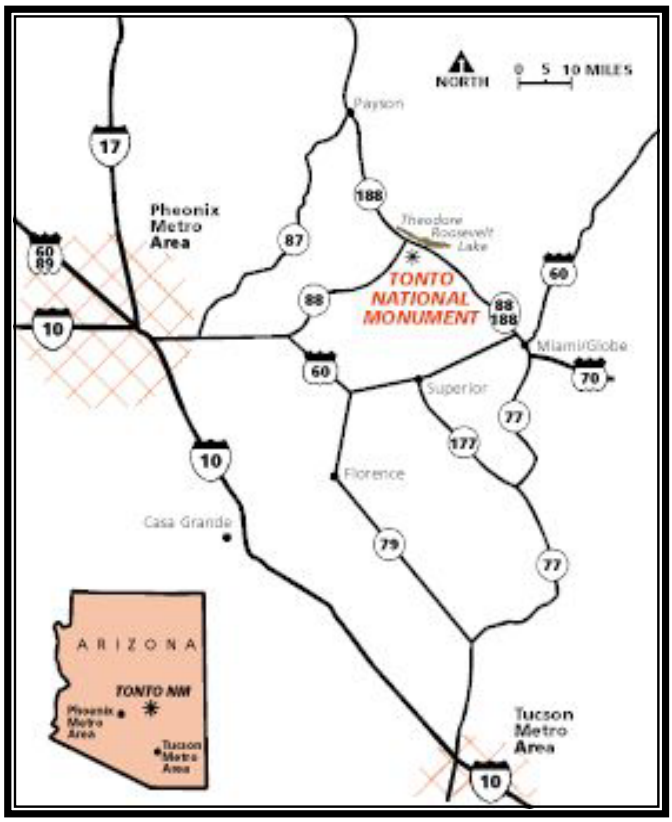
Developed 25
Restricted 26
Interpretive Corridor 27
Cliff Dwelling 28

THE PLAN **31**

INTRODUCTION

Tonto National Monument

Tonto National Monument is located in east central Arizona's Gila County only 50 air miles east of Phoenix in a rapidly changing regional environment. The monument was established to protect numerous prehistoric archeological sites including two Gila-phase cliff dwellings of the Salado culture. The primary sites are the Upper and Lower Cliff Dwellings. Rock shelters overlooking Tonto Basin have protected the nearly 700 year-old masonry cliff dwellings. Thirteen smaller remote cliff dwellings and fifty surface sites also have been documented in the monument. Six of the archeological sites are on the List of Classified Structures. Evidence of Archaic, Apache or Yavapai, and historic Euro-American occupations is also found among the sites. Archeological excavations have revealed well-preserved collections of pottery, agricultural tools, ornaments, textiles, and more. The diversity of the natural setting located between steep cliffs and bajadas (gently sloping hills) supports rich Sonoran Desert vegetation. The astonishing variety of plants provides habitat for over 200 species of wildlife.



Purpose of the Plan

The National Parks and Recreation Act of 1978 tasked the National Park Service (NPS) to prepare General Management Plans (GMP) for all national park units. The purpose of the General Management Plan is:

- To clearly describe specific resource conditions and visitor experiences in various management units throughout the park and
- To identify the kinds of management, use, and development that will be appropriate to achieving and maintaining those conditions.

The accompanying environmental documentation provides sufficient information to evaluate alternatives and provide the basis for a Record of Decision documenting the NPS's choice of a preferred action.

Need for the Plan

Tonto National Monument's previous management document was completed in 1962. Much has changed since then making the original plan insufficient to provide adequate guidance for today's management of the monument. There is potential for greatly increased tourism

within Tonto Basin as a result of new and expanded recreational facilities at Roosevelt Lake, improved highway access from Globe and Payson, and the increased growth of the Phoenix metropolitan area. A new GMP is needed to provide a rationale for making management decisions that affect the park's cultural and natural resources, visitors' understanding of the site, and park administration. This new plan will balance the protection of park resources with the needs of visitors and administration in a comprehensive approach. It includes measures for the preservation of the resources and indicates the types and general intensities of development. When completed, the final plan will set forth the basic management philosophy for the park.

The plan presents a proposed action and three alternatives. The consequences of implementing these actions on cultural and natural resources, visitor use, scenic viewsheds, nearby lands, partnerships, facilities, operational efficiency, and the socioeconomic environment are analyzed; so far as can be determined by a strategic plan. It documents the process used by the National Park Service in preparing a general management plan.

Planning Issues and Concerns

Cultural Resources – Archeological sites continue to deteriorate from both natural and human erosive forces compromising their structural integrity and research values. Cultural landscape features and ethnographic sites are not identified and documented.

Natural Resources – Changes in wildlife and vegetation species and populations are not documented and assessed. Threatened and endangered species are not identified. There are several non-native species in the park, some of which may be extremely disruptive to native species and habitats. The riparian area is integral to the overall health of the park by providing important habitat for wildlife in the Sonoran desert. Hydrological information to assess water use and its effects on groundwater sources and the riparian area are not known.

Natural Quiet – Impacts to natural sound from both internal and external activities and management practices are not measured and assessed.

Visitor Use, Experience, and Accessibility – Existing facilities, programs, and staffing are inadequate to provide visitor services for the existing and increasing numbers of visitors. The visitor center is not large enough to accommodate improved orientation information and an expanded educational program. The second floor facilities are not accessible. The museum exhibits are outdated and occupy inadequate space, which does not allow for rotation or expansion. The park has many artifacts that are not displayed for public view. During the busy spring season, the small restrooms do not accommodate all visitors and the parking area fills to capacity forcing visitors to either park unsafely along the entrance road shoulder or continue their journey without stopping.

Scenic Viewsheds - The contemporary scene surrounding the park still retains some scenic elements that were present at the time of the Salado occupation. Changing land uses inside and outside the park affect cultural as well as scenic viewsheds.

Adjacent Land/Partnerships – The park is completely surrounded by Tonto National Forest whose management is generally consistent with the park. However, some national forest recreational activities are not allowed in the park. Therefore, accurate boundary protection measures, such as fencing and enforcement patrols, are required, as are

expanded partnerships with the U.S. Forest Service and other nearby landowners to reduce impacts from external activities, protect natural and cultural resources, and increase the quality of interpretive and visitor services.

Facilities – Office and workspace is inadequate for current and anticipated increased staff levels. The visitor center lacks sufficient space for employees to work, conduct meetings, organize a library, and store equipment and supplies.

No residences are available to house seasonal employees or volunteers. Hiring employees and recruiting volunteers is difficult without having accommodations for them.

Due to the steep, rugged terrain, no handicapped accessible trails are available for use in the park.

Staffing – The existing interpretive staff is not large enough to handle the increasing number of visitors. Additional staff is needed to provide quality visitor service and experiences for the visiting public. The existing cultural and natural resource staff is not large enough to properly manage the resources entrusted to their care. Additional staff is needed to conduct high-quality preservation programs.

Boundary – The Cave Canyon watershed, which contains the park's only perennial surface water source, originates outside the monument and is potentially impacted from external activities.

The Planning Process

The planning process builds upon the logic established for national parks, starting with the national park system and all other applicable laws, regulations, and policies. The proposed action and alternatives displayed in this document are based on the purpose and significance of Tonto NM. Alternatives in the plan have three common components—*the mission statement, mission goals, and management prescriptions*. Each alternative responds differently in addressing the park's mission goals.

The mission statement is a short narrative that describes the park's desired future condition. It is meant to stand the test of time and reflect the park's purpose and significance. It expresses the management philosophy for the park and what the park is to be like in the future.

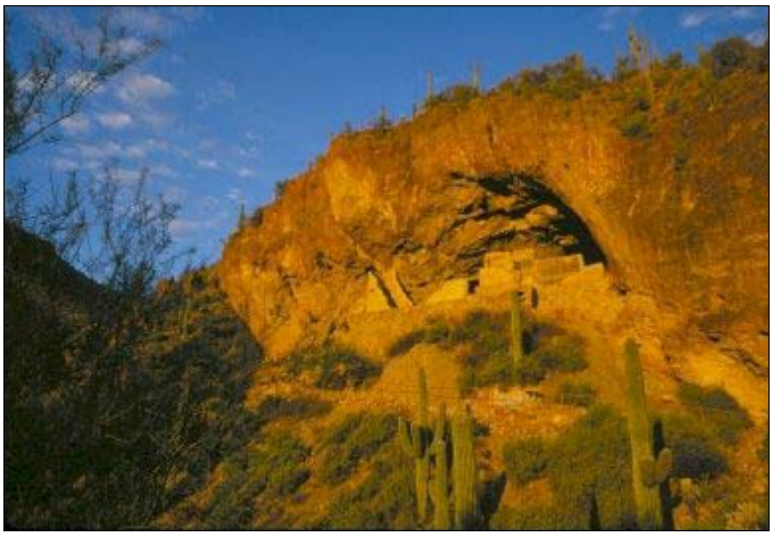
The park's mission goals capture the essence of the mission statement, providing clarity and priorities. These objectives are issue-, resource-, or geographic-specific. They may include products to be produced or conditions to be attained or maintained. As a whole, objectives are interrelated and interdependent on one another. The park's mission goals provide a basis for allocating resources and describing regions in the park.

Management prescriptions are geographically based. Prescriptions describe characteristics of the management region for which thy were developed and define the outputs, activities, and projects for that region. The rationale for defining regional boundary delineations is included in this planning document.

Management prescriptions for each region are based on the character and condition of the resource involved. They are not only tied to local or park-wide needs but also take into consideration factors beyond park boundaries. A menu of available management prescriptions is developed. Each alternative revolves around a common theme, and the same set of prescriptions is applied differently over park lands depending on the theme of the alternative. Themes set the basis for developing distinctly different alternatives

that provide a variety of visitor experience options.

The plan provides general or strategic guidance and is not detailed, specific, or highly technical in nature. Highly technical environmental analysis is to be done when funds become available to begin design of facilities, if prescribed by the management plan, when site-specific impacts can be addressed. All undertakings will also be subject to the National Historic Preservation Act's Section 106 review and compliance prior to implementation.



The National Park System

The national park system represents our national heritage and includes a collection of the nations most outstanding and significant natural, cultural, historic, and recreational resources.

The National Park Service's purpose of conserving resources—whether they are natural, cultural, historic, or recreational—recognizes the importance of preservation as an active management tool. This preservation principle respects both natural and human relationships and emphasizes the value of maintaining land for the purpose of preserving natural ecosystems, historic significance, and outstanding recreational opportunities.

Balanced against the protection and preservation of these resources is the value of public enjoyment by present and future generations. Human use often can threaten the very resources that the National Park Service is entrusted to protect. Many public debates have revolved around the balancing of these two National Park Service purposes. Whether it is telling a story or carefully protecting resources, the Service uses the principles of human and natural management to accomplish its mission. But at the very least, "these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system managed for the benefit and inspiration of all people." (16 USC 1a-1;1970)

Park Purpose

Each park in the National Park System is established for a specific purpose. The reason or reasons why Tonto National Monument was set aside is called its *park purpose*. The park purpose reflects current scientific or scholarly inquiry and interpretation. Purpose statements are based on enabling legislation, legislative history, and historic trends. Other legislation that affects each park unit is listed under Servicewide Law and Policies on the following page.

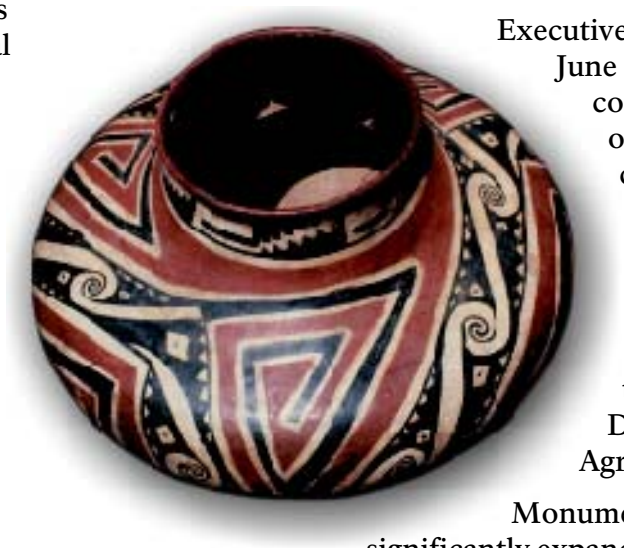
The following purpose statement reflects the mandates and legislative intent for the creation of Tonto National Monument:

Tonto National Monument preserves, protects, interprets, and manages prehistoric cliff dwellings, other archeological sites, cultural materials, and the associated Sonoran Desert environment where the Salado lived more than five centuries ago.

Park Significance

Each national park unit contains resources and values that make it special and nationally significant. Tonto National Monument fulfills a particular "niche" in the National Park System. Significance statements capture the essence of Tonto National Monument's importance to our nation's natural and cultural heritage. They describe the distinctiveness of the aggregate of resources that distinguishes Tonto National Monument as one of the units in the national park system that offers a unique experience within a regional, national, and global context.

Significance statements identify the exceptional values and resources that must be preserved and maintained to achieve the purpose of the park. These statements also help park managers set resource protection priorities and identify primary park interpretive themes and desirable visitor experiences.



- Tonto National Monument contains the only examples of prehistoric Salado culture in the National Park System, and the best-preserved Gila-phase cliff dwellings representing that culture that are interpreted and accessible to the general public.
- Three major and several smaller cliff dwellings, numerous other sites, artifacts, and the surrounding Sonoran Desert landscape have enormous potential for teaching about indigenous peoples and how they adapted and thrived in an arid environment.
- Tonto National Monument is uniquely positioned to instill public understanding of the Sonoran Desert and the need for the day-to-day preservation of its resources.
- Textiles from Tonto include some of the finest prehistoric examples in North America in regard to quantity, degree of preservation, variety of weaves, and weaving techniques.
- Tonto has a fine collection of Salado polychrome ceramics, which were among the most widely distributed throughout the prehistoric Southwest.

Legislative Background

Tonto National Monument was established by Presidential Proclamation No. 787 on December 19, 1907 (35 Stat. 2168) under the administration of the Department of Agriculture to protect "two prehistoric ruins of ancient cliff dwellings...of great ethnographic, scientific and educational interest...and one section of land upon which same are located."

Executive Order No. 6166 on June 10, 1933 (47 Stat. 1517) consolidated all functions of administration of certain areas, which included Tonto National Monument, into the Department of the Interior, National Park Service, thus moving it from the Department of Agriculture.

Monument boundaries were significantly expanded by Presidential Proclamation No. 2230 on April 1, 1937. This second proclamation recognized both "prehistoric ruins and ancient cliff dwellings" and added to the monument 480 acres of adjacent National Forest lands, "which are required for [their] proper care, management and protection." This brought the size to 1,120 acres. Both proclamations expressly warn against

unauthorized appropriation, injury, or destruction of monument features and against settlement on these reserved lands.

Special Mandates

In addition to legislation, the following agreements affect the area's management:

- agreement with US Forest Service for wildland fire suppression
- agreement with Tonto Basin Fire Department for fire suppression and emergency medical service
- agreement with White Mountain Apache Tribe for archeological site preservation treatment
- agreement with Arizona Department of Environmental Quality for air quality monitoring
- agreement with Miami Public Schools for environmental education programs
- right-of-way permit with Salt River Project for power transmission line crossing the monument
- right-of-way permit with Telephone Data System for telephone line crossing the monument
- highway easement deed with Arizona Department of Transportation for State Route 188

Interagency Wildland Fire Suppression – A general agreement with Tonto Basin Ranger District, Tonto National Forest, U.S. Forest Service provides cooperation in wildland fire suppression.

Emergency Services – A general agreement with Tonto Basin Fire District provides cooperation in fire suppression and emergency medical services.

Archeological Site Preservation – A general agreement with White Mountain Apache Tribe provides cooperation in the preservation/repair/stabilization of archeological sites.

Air Quality – A general agreement with Arizona Department of Environmental Quality provides cooperation in air quality monitoring.

Environmental Education – A general agreement with Miami Public Schools provides cooperation in environmental education programs.

Power Transmission Line - A right-of-way permit granted to the Salt River Project Agricultural Improvement and Power District provides access for power transmission lines to cross the monument.

Telephone Lines - A right-of-way permit granted to Telephone Data Systems/Telecom provides access for telephone lines to cross the monument.

State Route 188 - A highway easement deed with the Arizona Department of Transportation grants monument land for the use of State Route 188.

Servicewide Law and Policies

Many laws, regulations, policies, and guidelines govern management and operations for NPS units. The following are those that apply to this planning effort:

National Park Service Organic Act
National Environmental Policy Act
National Historic Preservation Act
Archeological Resources Protection Act
American Indian Religious Freedom Act
Native American Graves Protection and Repatriation Act
Endangered Species Act
E.O. 11988: Floodplain Management
E.O. 11990: Wetlands Protection
Federal Water Pollution Control Act
Clean Air Act
Clean Water Act
Architectural Barriers Act
Rehabilitation Act
Americans with Disabilities Act
Government Performance and Results Act

Mission Statement (A Vision For The Future)

The following mission statement is based on input received during the management assessment. They are short narratives relating "what could be" in the future and are used in evaluating the appropriateness of various alternatives.

Set in the rugged beauty of Tonto Basin, Tonto National Monument preserves one of America's best surviving examples of a Gila-phase village (A.D. 1300 -1400) representing the Salado culture. Overlooking the basin, the Salado built their large multiple-room dwellings in shallow caves. The Salado and their predecessors also constructed many smaller villages on the ridges, bajadas, and open desert floor. The long-standing remaining walls together with handprints, pottery, fabric remnants, and smoke stains from fires help us envision what prehistoric Salado life was like in the rock shelters and on the valley floor.

Frequently perceived as vast, stark, and inhospitable, the Sonoran desert is, in reality, a rich and diverse environment. The change in elevation from the valley floor to the ridge tops provides a unique setting for a mixture of desert cactus, flowers, shrubs, and trees, including small deciduous forests in the protected canyons. The astonishing variety of plants provided the Salado with a diverse food source and habitat for more than 200 species of wildlife, some of which were hunted by the Salado.

Viewing the cliff dwellings and wandering through the remaining rooms surrounded by the Sonoran desert, visitors experience a segment of prehistoric times. Interpretive programs reflect the times of those who once lived here and their relationship to the surrounding landscape. Other activities include sightseeing, hiking, picnicking, observing nature, photography, and examining the cliff dwellings. The monument is a living classroom where opportunities abound for exploration, education, and inspiration.

The future of the monument lies within the bounds of past and present preservation. The National Park Service manages Tonto National Monument and accepts the challenge to preserve its cultural and natural resources for future generations. To meet the challenge, management decisions and actions affecting the park's resources are based on scientific

research. Long-term monitoring programs detect the changing trends of the natural and cultural resources. Deterioration of the cliff dwellings and other archeological sites is minimized with proper care, management, and protection. Active projects and programs protect native species and perpetuate ecological processes to the extent possible.

Partnerships with individuals, local communities, and a variety of local, state, and federal agencies and organizations will allow us to successfully achieve the monument's mission to preserve, protect, research, interpret, and manage the prehistoric sites of the Salado culture and their Sonoran desert environment. Additionally, partnerships assist in coordinating and providing a variety of high-quality services that meet our visitors' needs as well as those of the people in nearby communities.

Our children's children will be able to learn from and enjoy this monument as we have because its resources are and will be protected. Their memories and experiences will, indeed, last a lifetime.

GPRA Mission Goals

The Government Performance and Results Act of 1993 (GPRA) was enacted to make government agencies more effective and efficient. Planning for this GMP is consistent with the following Mission Goals established for GPRA.

Category I: Preserve Resources

- Mission Goal Ia: Natural and cultural resources and associated values of *Tonto NM* are protected, restored and maintained in good condition and managed within their broader ecosystem and cultural context.
- Mission Goal Ib: *Tonto NM* contributes to knowledge about natural and cultural resources and associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.

Category II: Provide for the Public Enjoyment and Visitor Experience

- Mission Goal IIa: Visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of *Tonto NM* facilities, services, and appropriate recreational opportunities.
- Mission Goal IIb: *Tonto NM* visitors understand and appreciate the preservation of the park and its resources for this and future generations.

Category IV: Ensure Organizational Effectiveness

- Mission Goal IVa: *Tonto NM* uses current management practices, systems, and technologies to accomplish its mission.
- Mission Goal IVb: *Tonto NM* increases its managerial resources through initiatives and support from other agencies, organizations, and individuals.

Park Mission Goals

The park's mission goals further refine management objectives and GPRA goals. For each desired future condition, the corresponding GPRA Goal is shown in parenthesis.

Prime Resource

Prime resource lands are defined as those resources that made a direct contribution to establishing the park as a unit of the national park system and are related to the park's purpose and significance. Other lands within the park are also important to protecting and supporting the prime resource, but are not considered to be the prime resource.

The cultural sites and the supporting natural environment of Tonto NM are considered the prime resource(s) of the

monument. Cultural resources of the monument include sixty-five archeological sites that represent varying cultural themes and pieces of the nation's heritage. (Indigenous American Populations—Southwestern Farmers, Prehistoric Architecture, Prehistoric Technology, Prehistoric Settlement Patterns, and Major Contributions to the Development of the Science of Archeology.)

The following resource-, geographic-, and issue-specific mission goals apply to Tonto National Monument.

Park Mission Goals—Resource Specific

- *Archeological Research - high quality archeological research program. (Ib, IVb)*

Conditions to be attained/maintained:

1) An up-to-date research program for a more complete understanding of our cultural resources relating to the Salado people is in place.
2) A broad network of partnership opportunities has been identified.

- *Archeology - protect and preserve archeological resources through a full-range of archeological investigations. (Ia, Ib)*

Conditions to be attained/maintained:

1) A complete inventory, evaluation, and enhanced documentation of archeological resources is available.
2) Site formation processes - including both natural and cultural agents of deterioration - are understood and incorporated into the management of archeological resources.
3) The integrity of archeological resources is maintained through periodic site monitoring, focused research, and preservation treatments where applicable.
4) Research and management is focused on understanding archeological resources within the framework of regional prehistory of the Tonto Basin and broad-scale strategies – including all public and private partners - for the protection and preservation of resources.
5) Enhanced understanding of archeological resources is incorporated into interpretive programs that stress both regional prehistory and preservation strategies.
6) Impacts of visitor use are minimized through enhanced education, protection, and preservation treatments.

- *Prehistoric and Historic Structures - protect and preserve prehistoric and historic structures. (Ia,Ib,IIa)*

Conditions to be attained/maintained:

7) All structures listed on the LCS are fully documented from the standpoint of archeological and architectural perspectives.
8) Site formation processes – including both natural and cultural agents of deterioration – are understood and incorporated into the management of structures.
9) Strategy for preserving the archeological, architectural, and structural integrity of prehistoric and historic structures is maintained through periodic site monitoring, focused research, and preservation treatments.
10) Prehistoric structures accessible to visitors are maintained in a safe, stable condition.

- *Cultural Landscapes - identify and manage cultural landscapes. (Ia, Ib, IIb)*

Conditions to be attained/maintained:

11) Cultural landscapes are inventoried, evaluated, and documented in the Cultural Landscape Automated Inventory Management System (CLAIMS) and in a Cultural Landscape Report.
12) A strategy for the management of cultural landscapes is based upon a sound understanding of both the resources themselves and formation processes affecting the landscape through time.
13) Cultural landscapes are considered in the management of the monument. Enhanced understanding of cultural landscapes is incorporated into interpretive programs that stress the evolution of overall landscape systems.

- *Ethnographic Resources - ethnographic studies completed to better support management of other types of cultural resources as well as ensuring management of ethnographic resources themselves. (Ia, Ib, IIb)*

Conditions to be attained/maintained:

14) Ethnographic resources are inventoried, evaluated, and documented.
15) A strategy for the management of ethnographic resources is based upon a sound understanding of the resources themselves and formation processes (including park management strategies both in the past and at present) that potentially affect their integrity.
16) Ethnographic resources are integrated into research and management programs related to archeological resources, structures, and cultural landscapes.
17) Enhanced understanding of ethnographic resources is incorporated into interpretive programs that stress the significance of American Indian groups to the regional history of the Tonto Basin.

■ *Historic Studies - identification of historical support studies importance and need. (Ib)*

Conditions to be attained/maintained:

18) Appropriate administrative, facilities, and legal histories are complete and focused on specific park needs and issues.
19) Historical studies that provide additional understanding and perspective for the effective overall management of park resources are available.

■ *Museum Collections/Curatorial - protect and preserve museum collections and provide high quality artifact preservation and exhibits. (Ia, IIa, IVa)*

Conditions to be attained/maintained:

20) Museum collections are fully cataloged, documented and preserved according to the guidelines established in the NPS Museum Management Program.
21) Inventories and collection histories of museum repositories throughout North American that contain artifacts from Tonto National Monument are available.
22) Environment of storage areas for artifacts and associated archives is maintained to insure the continued preservation of collections.
23) Environment of interpretive exhibits containing prehistoric and historic artifacts is maintained to insure the continued preservation of collections.

■ *Vegetation - protect native plant life as a part of the natural ecosystem. (Ia, Ib)*

Conditions to be attained/maintained:

24) Exotic species have been identified and controlled.
25) Trespass livestock and their impacts on resources have been identified, mitigated, and managed.
26) Research to understand the basin-wide fire history and ecology is prepared.
27) A T&E, rare, and candidate plant inventory is completed. Habitat for endangered species is protected or enhanced.
28) Impacts of visitor use are minimized.
29) All revegetation efforts focus on exclusive use of native materials.

■ *Wildlife - preserve native animal life as an integral part of the natural ecosystem. (Ia, Ib, IVb)*

Conditions to be attained/maintained:

30) Strategies are cooperatively developed with other agencies for wildlife management.
31) Endangered and threatened species are protected.
32) Native and non-native species inventories have been completed and species are monitored to the point that changes in population trends or characteristics can be identified and/or managed.
33) Facility development does not adversely impact wildlife and vegetative habitat.

■ *Air Quality - maintain the best possible air quality. (Ia, Ib)*

Conditions to be attained/maintained:

34) Facilities and activities within the park are in compliance with Clean Air Act requirements.
35) Park obtains and uses the necessary tools to gather and gain information in a cooperative effort to document air quality conditions for Tonto basin.
36) The park assists in an effort to develop a strategy and to use available information to remedy existing and prevent future air pollution effects on Tonto basin air quality.

■ *Sound Quality - reduce the impacts of noise on cultural and natural resources and visitor experiences. (Ia, IIa)*

Conditions to be attained/maintained:

37) Tonto NM is identified on the aeronautics map.
38) All noise sources such as from vehicles, boats, aircraft, and mining activity are monitored and reduced, if possible.
39) Users are educated on noise effects on other visitors' experience.

■ *Water Quality - manage and protect the water resources and aquatic ecosystems to maintain, rehabilitate, and preserve their inherent natural integrity in coordination with state and other federal agencies. (Ia, Ib)*

Conditions to be attained/maintained:

40) Facilities and activities within the park are in compliance with Clean Water Act requirements and other applicable federal, state, and local laws and regulations.
41) An adequate supply of potable water is available to meet visitor and operational needs on a year-round basis.

■ *Human Resources - develop a strategy to determine the appropriate levels of staffing to meet management objectives. (IVa, IVb)*

Conditions to be attained/maintained:

42) Park staff is equipped with adequate resources to address visitor, resource, and administrative needs.
43) Park is adequately staffed and trained to address visitor, resource, and administrative needs.
44) Park works cooperatively with other federal, state, and local agencies and tribal entities to share resources for accomplishing objectives.

■ *Interpretation – provide high quality personal services and interpretive programs using state-of-the-art methodologies. (IIa, IIb)*

Conditions to be attained/maintained:

45) The interpretive program connects the visitor to park resources, builds a local and national constituency, and gains public support, which, in turn, meets the objective of protecting park resources and its associated ecosystem.
46) Educational programming is provided year-round at existing park facilities and areas outside the park using appropriate natural and cultural resource themes.
47) Professional education programs and services are offered to international visitors.
48) A component of the interpretive message contains information on the protection and preservation of resources.

■ *Outreach - provide effective and quality outreach programs to the general public using state-of-the-art technology and techniques. (IIb, IVb)*

Conditions to be attained/maintained:

49) Tonto NM story is understood by school children throughout the area.
50) Partnerships broaden the ability of the park to provide the story of Tonto NM to the general public.
51) Environmental and cultural awareness is provided through outreach programs.
52) High quality information is available to the public using state-of-the-art technology.

■ *Visitor Use - develop a strategy to determine the appropriate levels of visitor use and experience and alternative strategies for maintaining the diversity of quality visitor experiences consistent with Tonto NM's purpose and significance. (Ia, IIa, IVa)*

Conditions to be attained/maintained:

53) A strategy has been developed with public input to guide the park in ensuring a quality visitor experience relative to resource preservation and development.
54) A strategy to determine and establish a carrying capacity that protects resources and provides a range of experiences has been developed.

■ *Law Enforcement and Emergency Services - protect park resources and provide for visitor safety and quality experiences. (Ia, IIa, IVa)*

Conditions to be attained/maintained:

55) Strategy has been developed to guide the park and ensure a quality visitor experience and protection of park resources.
56) Professional emergency services are provided year-round to park visitors and staff either directly by park staff or through innovative cooperation.

- *Viewsheds - minimize visual impacts on natural setting. (IIa, IVb)*

Conditions to be attained/maintained:

57) Management for viewsheds that are critical to providing quality experiences for park visitors is cooperatively coordinated with adjacent land management and transportation agencies.
58) The park and external partners provides opportunities for visitors to see the larger panoramic views of the monument and the rest of Tonto Basin.
59) Work cooperatively with other agencies and entities to develop a visual resource management strategy for land within and beyond the park boundary.

- *Adjacent Lands - manage and protect the regional land-based ecosystems and cultural landscapes and maintain/preserve their inherent integrity throughout Tonto Basin in coordination with other federal and state agencies and tribes. (Ia, IVa, IVb)*

Conditions to be attained/maintained:

60) Other land management agencies and entities assist in achieving mutually agreed-upon preservation goals through recognition of common benefits and support.
61) NPS considers opportunities that may present themselves to acquire adjacent lands that complement the purpose of the park and fit within the management goals for the monument.
62) Interpretive programming is in place that addresses park and regional resource issues in the context of Tonto Basin.
63) Tonto NM is managed as part of the larger Tonto Basin ecosystem.
64) The park staff is able to inform visitors about resource issues on surrounding lands, and surrounding land management agencies and entities are able to communicate park resource issues to their visitors.
65) Research is facilitated in cooperation with other agencies and entities.

- *Partnerships - develop strong partnership programs. (IVb)*

Conditions to be attained/maintained:

66) A strong and vibrant friends group supports the monuments mission and goals.
67) The park partners with institutions, organizations, and local, county, state, tribal, and federal agencies to share resources and experiences.
68) There is a consistent coordinated effort between all land management agencies and public interest to manage resources within Tonto Basin to create an understanding and mutual respect for individual management goals and concerns.

- *Facilities - provide facilities that meet visitor and staff needs while minimizing their impact on the surrounding landscape and resources. (IIa, IVa)*

Conditions to be attained/maintained:

69) Facilities meet ADA standards where practical.
70) Adequate storage and workspace exist for all operations meeting all laws and mandates where applicable.
71) Trails meet visitor, educational, and safety needs.
72) Restrooms meet basic needs of staff and visitors.

Park Mission Goals - Geographic Specific

Resource opportunity areas (ROAs) are geographic delineations of the monument that contain similarities of character and resource values. Each ROA contributes in a different way to how people use the resources of that area. There are Four distinct ROAs in the monument - Cliff Dwelling, Lowlands, Uplands, and Cave Canyon Riparian.

- *Cliff Dwellings ROA - conserve and protect cliff dwellings and its ecosystem. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

73) Cliff dwellings and their associated rock shelter environments are protected and preserved.
74) Visitors have the opportunity to view Tonto NM`s cultural resources up close and learn about the wealth of Salado culture.
75) Development is done in a sensitive way, blending with the natural landscape and protecting resources from visitor use impacts.

76) A strategy has been developed to identify acceptable levels of impacts, monitor use levels and resource conditions, and take prompt corrective action when unacceptable actions and impacts occur.
77) Visitors have the opportunity to contemplate and contrast the lifestyles and architecture associated with cultural resources in their surrounding natural setting.

▪ *Cave Canyon Riparian ROA - conserve and protect the fragile Cave Canyon riparian area and its ecosystem. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

78) The fragile riparian area is protected and preserved.
79) Development is done in a sensitive way, blending with the natural landscape and protecting resources from visitor use impacts.
80) Visitors have the opportunity to walk among the trees and appreciate the contrast of desert environment and the importance of water.
81) Visitors have an understanding of the relationship of the riparian area to prehistoric and historic uses.

▪ *Uplands ROA - conserve and protect the uplands scenic, cultural, and natural resources. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

82) Scenic views are preserved and protected in a natural setting.
83) Visitors have the opportunity to contemplate cultural and natural values of the park in a natural setting.
84) Visitors have the opportunity to understand the diverse Sonoran desert ecosystem.
85) Visitors have the opportunity to associate the cliff dwellings with the larger Salado settlement landscape of Tonto Basin.
86) Archeological sites in the Uplands ROA are protected and preserved.

▪ *Lowlands ROA - conserve and protect the lowlands scenic, cultural and natural resources. (Ia, IIa, IIb, IVa)*

Conditions to be attained/maintained:

87) Scenic views are preserved and protected.
88) Visitors have the opportunity to gain an orientation and understanding of the cultural and natural values of the park.
89) Visitors have the opportunity to understand the diverse Sonoran desert ecosystem.
90) Visitors have the opportunity to associate the cliff dwellings with the larger Salado settlement landscape of Tonto Basin.
91) Archeological and historic sites in the Lowlands ROA are protected and preserved.
92) Visitors have an opportunity to understand the evolution of the cultural landscape from the 14th to the 20th centuries.

Park Mission Goals – Issue Specific

▪ *Legislative Action—Change the name "Tonto National Monument" to "Salado Cliff Dwellings National Monument and protect regional resources associated with the park's purpose to more accurately reflect the heritage values associated with the monument. (Ia, IVa, IVb)*

Conditions to be attained/maintained:

93) Legislation has been enacted by Congress to establish the new name for the monument that better reflects the significance of Tonto NM.
94) A boundary study is completed that will identify significant resources to be protected adjacent to the park.
95) Recommendations are made to Congress to adjust park boundaries to reflect the addition of significant resources.
96) Hunting trespass from the USFS road on the monument's northeast side is reduced or eliminated.

VISITOR EXPERIENCE AND THE PARK ENVIRONMENT

Beyond the resources management plan that identifies specific needs relative to individual program areas, such as natural and cultural resources, an overall resource management strategy to protect park resources needs to be developed. This enables the park to begin monitoring conditions and ensure that the goals related to resource management and visitor use can be achieved. The development of the Resource Opportunity Area (ROA) concept is the first step in incrementally moving the park toward the goal of addressing "carrying capacity."

Parks are composites of a variety of important cultural and natural resources. People value parks for many reasons - inspirational, educational, aesthetic, recreational, scientific, spiritual, and economic, among others. Significant differences relating to resource values and visitor use usually exist within different areas of a park. The uniqueness of these various areas and their relationship to one another as well as to lands beyond the park boundary, influence visitor use and management of the park. Describing a set of alternatives, the park's affected environment, and ultimately assessing impacts requires one to identify and categorize the resource values of a park.

These pieces of the park are called resource opportunity areas and may extend beyond the boundaries of the park. The evaluation of these areas requires the involvement of public and private interests in the area. The *ROAs* are referenced in the environmental consequence section and help to describe how park resources and visitor experiences may be affected.

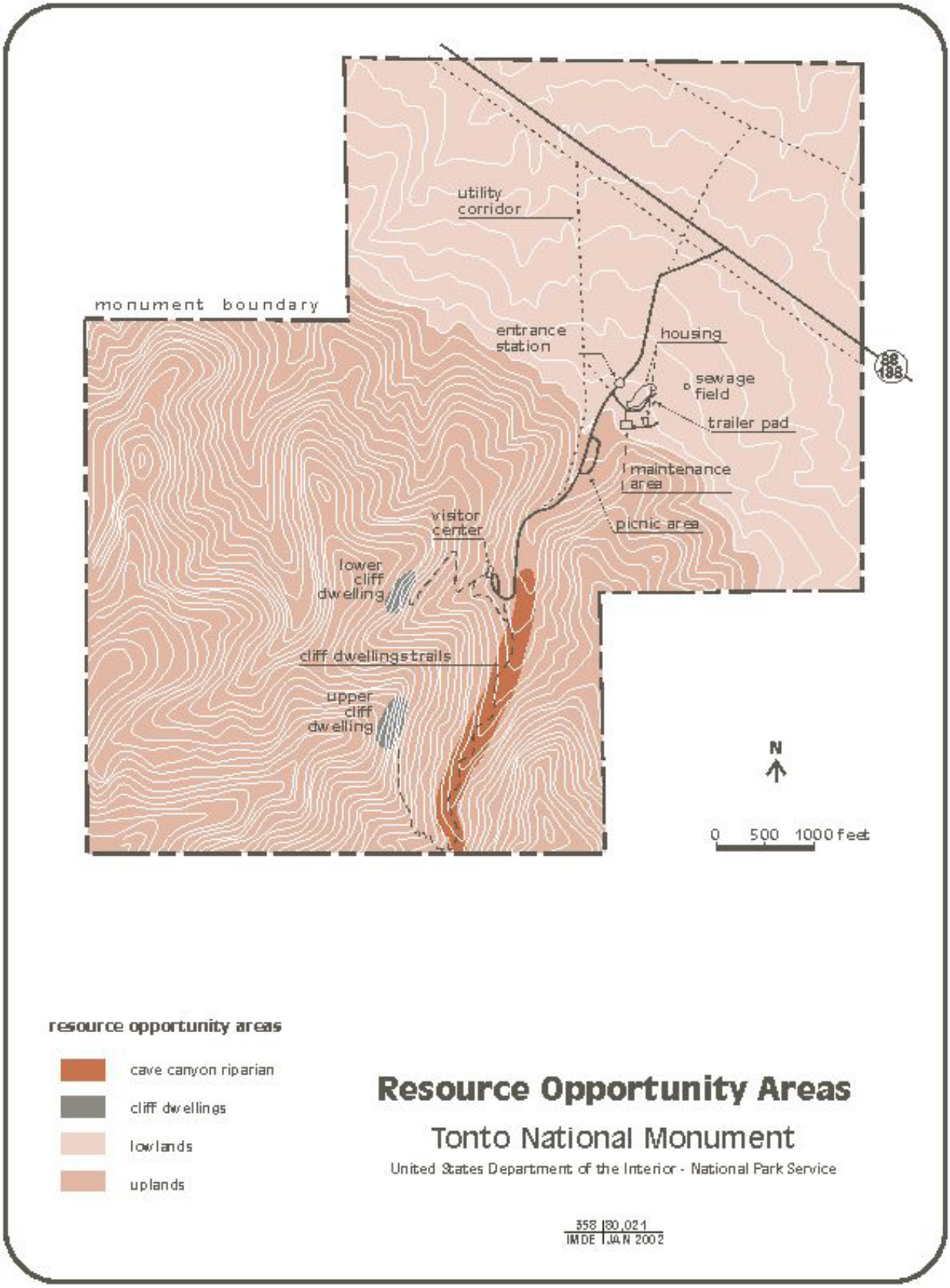
At Tonto National Monument, there are four distinct ROAs - Cliff Dwelling, Lowlands, Uplands, and Cave Canyon Riparian. Each contributes in a different way to how people use the resources of the site.

ROAs are important to incrementally plan for the protection of park resources from visitor overuse. They illustrate how visitors might relate to and use park resources and the relative importance of each area to the whole. They also provide the basis for understanding visitor experiences available within a park. At the same time, the physical resource attributes and visitor experiences are related to the park's purpose and significance.

ROAs identify sensitive resources where damage may occur from overuse. By identifying important resources and visitor experiences, the first steps needed to define carrying capacity and protect park resources from overuse are completed. Future VERP planning (Visitor Experience and Resource Protection) will eventually define carrying capacities needed to protect resources.

ROAs are geographic delineations of the National Monument that contain similarities of character and resource values. Each *ROA* includes a brief description of the following:

- Available recreational and interpretive opportunities.
- Resources that are unusually sensitive to human use.


utility corridor
monument boundary
entrance station
housing
sewage field
trailer pad
maintenance area
picnic area
visitor center
lower cliff dwelling
cliff dwellings trails
upper cliff dwelling
N
0 500 1000 feet
resource opportunity areas
cave canyon riparian
cliff dwellings
lowlands
uplands
Resource Opportunity Areas
Tonto National Monument
United States Department of the Interior - National Park Service
358 80,021
IMDE JAN 2002

The management of cultural resources (archeological, ethnographic and cultural landscapes).

- The management of natural, scenic, geological, ecological, floral, and faunal resources.
- Development concerns.

Cliff Dwellings ROA

The Cliff Dwellings ROA contains the core of the monument's prime resource. The upper and lower cliff dwellings are the primary reasons for the monument's establishment and are the primary destination for nearly all visitors. The 40-room upper cliff dwelling and 19-room lower cliff dwelling are the largest archeological sites in the monument and provide valuable information about the Gila phase and Salado culture. Materials including plant remains and seeds, maize cobs, bones, tools, pottery, and textiles found in the dwellings, plus the structures themselves, provide the opportunity to investigate this important segment of prehistoric life. The Salado constructed the cliff dwellings in naturally formed caves, high up in the canyon walls. These caves or alcoves developed over thousands of years through cracking and spalling of ceiling deposits. Composed of ancient sedimentary rocks, fallen roof stones provided both a stable floor and readily available building material for construction of the dwellings.

The east-facing rock shelters provide a unique microclimate for wildlife. Largely unseen, bats, birds, rodents, and reptiles seek shade and shelter in the caves and honeybees build hives in the ceilings. Animals (primarily rodents) threaten the integrity of the remaining cultural deposits and the cliff dwelling walls by burrowing underground.

The rock shelters face Tonto Basin and provide broad vistas of sweeping landscapes that extend beyond the monument's boundaries to Roosevelt Lake, the Sierra Anchas, and other mountain ranges. As development both inside and outside the monument are immediately visible and evident from the cliff dwellings, this ROA is extremely sensitive in terms of preserving the remaining undeveloped land. The upper and lower cliff dwellings are reached by hiking designated trails through the Uplands ROA. The lower cliff dwelling is open year-round; the upper cliff dwelling is open November through April by guided tours.

Activities and resource concerns that occur within the Cliff Dwellings ROA include:

- Interpretive opportunities – Guided tours through the cliff dwellings provide the opportunity to explore and learn about the structures and those who lived there. Self-guided tours through the lower cliff dwelling provide educational opportunities for visitors to experience the Salado story by themselves. Visitors have the opportunity to contemplate prehistoric lifestyles and associated architecture with their surrounding natural setting.
- Recreational opportunities - Walking through the cliff dwellings, visitors can closely examine the cultural resources. For those willing to exert some effort, some of the most spectacular distant and panoramic views are available. Abundant opportunities exist to photograph or sketch the cliff dwellings or the outstanding scenic views.

- Cultural resource management – To protect the cliff dwellings and prevent deterioration, stabilization and repair projects are on- going. Carrying capacity studies are needed for each cliff dwelling to plan and mitigate impacts from high levels of visitor use.
- Natural resource management – Animal disturbance and water erosion have threatened the integrity of the cliff dwellings. There is concern that rock movement and shifting walls and ceilings in the rock shelters may damage the cultural resources and raise public safety concerns.
- Development – To protect the cultural resources and provide for human safety, handrails, benches, steps, and retaining walls have been constructed and maintained in the rock shelters, especially in the lower cliff dwelling, which has higher visitation.

Lowlands ROA

The Lowlands ROA is, notably, the flattest area of the monument. This ROA slopes away from the base of the hills at the 2600-foot elevation down towards Roosevelt Lake. Approximately 75% of the monument's archeological sites are located in the lowlands. Most of these sites represent the remains of small, one- to five-room surface structures. These sites help us understand where and why the Salado spent their time farming and gathering resources in this area. Two historic archeological sites reveal continuous use of the area after the Salado left.

The desert lowlands are frequently perceived as vast, stark, and inhospitable. However, the area is, in reality, a rich and diverse desert environment. Intermittent springs and seeps provide water in the arid environment and support plant and animal diversity. The vegetation consists of rich succulent desert flora with a mixture of chaparral shrubs. In both the lowlands and the uplands, there are healthy stands of saguaro cactus, the characteristic plant of the Sonoran Desert.

Heavy clay soils are found throughout the monument and are highly susceptible to erosion. In the lowlands, erosion has been accelerated by loss of vegetation from past grazing that exposed the soils to heavy rainfalls and wind.

From the Lowlands ROA there are impressive views upward to the cliff dwellings, and outward beyond the monument boundaries to other features within Tonto Basin. This ROA is the only place for visitors to view the sunset and Four Peaks, a well-known landmark in the Mazatzal mountain range.

This ROA includes most of the development that has occurred within the monument. The monument's maintenance facilities, residences, utility corridor, and most of the roads are located here. The state road passing through the monument and a U.S. Forest Service road just outside the monument to the east and southeast contribute to the spread of non-native vegetation and increase the potential for human-caused fires. Even though hunting is allowed on neighboring U.S. Forest Service lands, illegal poaching activities occur within the monument.

Activities and resource concerns that occur within the Lowlands ROA include:

- Interpretive opportunities – Visitors often have the impression that all Salado lived in cliff dwellings. The number of archeological sites in the lowlands demonstrates that the smaller, open, surface villages and farmsteads were the dominant settlement. This area provides opportunities to interpret farming, hunting, and resource use by the Salado and subsequent cultures that have occupied this area. Saguaro cactus, mesquite, jojoba, and other Sonoran desert plants can be interpreted for their role in Salado life.
- Recreational opportunities – From the road, visitors can view the natural setting of the monument and other features of Tonto Basin. Abundant opportunities exist to photograph or paint the outstanding scenic views.
- Cultural resource management – Cultural

resources in the lowlands are fragile, especially those with standing walls, and are vulnerable to unauthorized entry. An ongoing monitoring program to document changes in the archeological sites has been

implemented. No preservation treatment has been applied to these sites.

- Natural resource management – Natural resource management activities may be needed to rehabilitate impacts from visitor use, park operations, and construction. Native species grown from local stock are used for revegetation projects. Non-native species are documented and controlled where possible. Boundary fences are inspected and repaired as needed to deter illegal intrusive activities yet allow wildlife movement.
- Development – The lowlands provide the most level and feasible location for the monument's facilities. All developments are as consistent with the park's cultural and natural features by way of architecture, color, and vegetative screening as possible and are maintained to NPS standards.
- External opportunities – Roosevelt Lake and associated U. S. Forest Service lands offer extensive boating, water skiing, fishing, hunting, and camping opportunities. Numerous Salado archeological sites, located in Tonto Basin under the jurisdiction of the USFS, were extensively researched in the early 1990s.

Uplands ROA

The Uplands ROA is the scenic background in which the cliff dwellings are viewed. It includes the steep slopes and ridge tops (2,600 to 4,000 feet) that form the prominent viewscape as seen from the monument's entrance and visitor center. The ridge tops also provide broad vistas of the lowlands as well as surrounding mountains, with views looking across ridges and down canyons. The upland's scenic vistas and views are affected by many modern developments both within and outside the monument. The increasing development over the years lends itself to contemplation for past, present, and future use by humans.

A few archeological sites are located in rock shelters in the uplands. These sites vary in size from large multiple-room structures with interior masonry walls to one-room caves with little or no modification. Some of the upland archeological sites represent later occupation than those in the lowland and valley. Upland vegetation, wildlife, and water availability provided a diversity of resources beyond what the lowlands offered.

The uplands are more diverse than the lowlands in topography, geology, and vegetation providing a variety of wildlife habitats. The desert scrub vegetation extends up into the highlands where it changes into representatives of the semidesert grassland community on the ridgetops. Wildflowers are plentiful in the spring when moisture conditions are favorable. The uplands are less impacted by historic and present-day human activities than the other ROA's.

Due to the lack of open, level ground, facilities are difficult to construct in the uplands. However, the monument's visitor center, hiking trails, and picnic area are located here. At the top of the entrance road, the visitor center is perfectly located to view the lower cliff dwelling. Trails to both the lower and upper cliff dwellings begin from the visitor center area. Picnic facilities are provided along the entrance road.

This ROA may be affected by grazing, hunting, and fire management activities located on adjacent lands outside the monument's boundaries. Boundary fences

should be relocated to protect all of the monument's lands.

Activities and resource concerns that occur within the Uplands ROA include:

Interpretive opportunities – Guided and self-guided tours along the cactus patch and upper and lower cliff dwelling trails provide the opportunity to interpret the roles of hunting and the gathering of wild plants in Salado life. The geology and ecology of the Sonoran desert are also presented. Permanent and temporary displays in the visitor center inform visitors about the monument's and surrounding area's resources.

- Recreational opportunities – Hiking, where
- allowed, is challenging in the uplands, with diverse topography, vegetation, and wildlife as incentives for exploration. Other recreational opportunities available are picnicking, photography, and nature study.
- Cultural resource management – Because of their standing walls, the cultural resources of the uplands are fragile. An on-going monitoring program to document changes in the archeological sites has been implemented. Preservation treatment consisting of vegetation removal is applied to sites on the List of Classified Structures.
- Natural resource management – Natural resource management activities may be needed to rehabilitate impacts from visitor use, park operations, and construction. Native species grown from local stock are used for revegetation projects. Non-native species are documented and controlled where possible. Boundary fences are inspected and repaired as needed to deter illegal intrusive activities, yet allow wildlife movement.
- Development – Due to the topography, development in the uplands is difficult. However, this is the closest point visitors may drive to the cliff dwellings. Visitor administrative, and interpretive facilities are located here. All developments are as consistent with the park's cultural and natural features by way of architecture, color, and vegetative screening as possible. All facilities are maintained to NPS standards.
- External opportunities – South and west of the monument boundary, the upper Sonoran desert community offers hiking, hunting, horseback riding, and other backcountry wilderness opportunities.

Cave Canyon Riparian ROA

The Cave Canyon Riparian ROA is a place of contrasts. It is a lush, shaded, cool area in a desert environment characterized by heat, aridity, and bright sunlight. This ROA has the only perennial water source found within the monument. The presence of water and rich soil in this arid environment provides habitat for a diversity of plants and animals, including many not found elsewhere in the monument. Arizona sycamore, walnut, and ash trees dominate the small deciduous forest community.

Because perennial water sources are infrequent in this arid environment, the Cave Canyon riparian area is essential for wildlife, which could be disturbed by overuse. The soils in this area are sensitive to trampling, soil compaction, and erosion.

Even though only a few archeological sites are located in the riparian area, intensive prehistoric use occurred in Cave Canyon. Water and the diversity of the forest vegetation provided for the needs of many of the Salado settlements in this area.

The trail to the upper cliff dwelling winds through Cave Canyon Riparian ROA. The upper cliff dwelling can be viewed from this trail. The trail has been damaged from occasional flash floods. If the trail continues to remain in the riparian area, repairs will be required after each flash flood event.

This ROA is highly sensitive to adjacent watershed uses associated with grazing and fire management outside Tonto National Monument. Cave Canyon water quality,

bank erosion, and vegetation may change because of these activities which could affect downstream archeological sites and wildlife habitat. Increased water use from external wells has the potential to affect this area's natural balance.

Activities and resource concerns that occur within the Cave Canyon Riparian ROA include:

- Interpretive opportunities – The riparian area provides excellent opportunities for nature study, especially bird watching and viewing wildflowers. Major faulting, uplifting, and seismic activity displays the history of the monument's geological formation in its exposed strata. Prehistoric use of the springs and deciduous trees provides opportunity to discuss Salado use of the riparian area.
- Recreational opportunities – The Cave Canyon Riparian ROA provides a cool and refreshing walking experience. Visitors can study the vegetation and wildlife signs found in the riparian area and contrast them with those seen in the surrounding Sonoran desert. It is also a place to compare and contrast the cool, shady forest with the desert heat and surrounding open landscape.

- Cultural resource management – The few archeological sites in Cave Canyon are vulnerable to upstream activity outside the monument. An on-going monitoring program to document changes in the archeological sites has been implemented. No preservation treatment has been applied to these sites.
- Natural resource management – The riparian area should be monitored to document the effects of natural flash flood events and influences from human-caused activities inside and outside the monument. Natural resource management activities may be needed to rehabilitate impacts from human use and natural events. Non-native species are documented and controlled where possible.
- Development – The only facility located in this area is the trail to the upper cliff dwelling. Because this area is highly sensitive, future development should be minimal, if at all, with little or no impact to the watershed. The occasional flash floods rule!

Management Prescriptions

Management prescriptions detail desired visitor experiences and resource conditions for various areas of the park. There are four prescriptions for management at Tonto National Monument - developed, restricted, interpretive corridor, and cliff dwellings. Specific guidance for each area is described using the following seven categories: access, experience and activities, interpretation, cultural resource management, natural resource management, facilities, and maintenance.

The following are the management prescriptions for Tonto National Monument.

Developed

This management prescription includes all major park development required to serve visitors and meet the needs of management. Facilities to serve visitors, administer park operations, and provide staff residences are located here. It also functions as the center for park operations.

This area accommodates the highest levels of use and human impacts. The area can be congested during the peak visitor season, so there is frequent contact with other visitors and park staff. Sights and sounds of vehicles and people predominate, as does the experience that is tied to traffic in the main road corridor.

Development and intensive use have substantially altered the setting of culturally significant resources and the natural environment. Although natural processes are perpetuated wherever possible, a high degree of encroachment and human intrusion in the natural environment is evident.

Access - Access is easy and by vehicle on surfaced roads. During the spring and fall open house, visitors are shuttled to and from the visitor center when the parking area fills to capacity. Sidewalks into and around the visitor center direct visitors to an overview and familiarity with park resources. Accommodations for visitors with physical impairments provide educational opportunities and views of the lower cliff dwelling and surrounding landscape.

Experience and Activities - This area presents the primary interpretative themes. Management emphasizes interpretation of the cultural significance and the environmental setting of the monument. Visitor activities are fairly structured and directed and involve little challenge. Visitor experience is facility dependent (visitor center). Visitor activities include orientation, education, viewing the surrounding landscape, photography, bird watching, plant identification, viewing the lower cliff dwelling, and picnicking. There is little or no opportunity for solitude.

Interpretation - Orientation is provided to all visitors. Impromptu and scheduled interpretive talks are given. Permanent and temporary displays provide park and area information. The Junior Ranger Program is available for children. Outreach/Parks as Classroom instruction is provided to 4th grade

classes at Miami and Tonto Basin public schools on environmental and cultural resource issues.

Cultural Resource Management - Archeological sites are given proper care and protection. Hands-on activities are conducted when it is necessary to preserve cultural resources. Relatively intensive resources management activities may be required to mitigate impacts from high levels of visitor use, park operations, and construction. Visitors are directed to sidewalks and trails to limit resource impacts. Compliance is done for all projects and involves coordination and consultation with the State Historic Preservation Office (SHPO) and Native American groups. Research is allowed for further understanding of cultural resources and the Salado culture.

Natural Resource Management - The natural character of the land is secondary to accommodating high use levels and protection of sensitive resources. Visitors are directed to sidewalks and trails to limit resource impacts. Vista modifications may be used to improve views.

Relatively intensive resources management activities may be required to mitigate impacts from high levels of visitor use, park operations, and construction. Significant soil, vegetation, and wildlife impacts occurring in high use sites could be mitigated through periodic closures, more clearly defining use corridors, and increased enforcement techniques. Only native species are used for revegetation, and preferably, stock grown from local seed. Compliance is done for all projects to assess impacts. Research is allowed for further understanding of natural resources and processes.

Facilities - Developments are consistent with the park architecture. Facilities blend in with the surrounding natural and cultural landscape as much as possible. Existing and potential modifications include improved parking, restrooms, road maintenance, vista points, and other facilities to enhance visitor experience.

Office and workspace for staff needs to be expanded and relocated to improve operations. Houses are maintained to NPS standards.

Maintenance - Roads, buildings, signs, walks, benches, interpretative displays, and other facilities are maintained on a regular basis. Activities involve maintaining existing facilities, landscaping, protecting resources, restoring areas disturbed by human activities, and providing for human convenience, comfort, and safety. Power tools are used for routine maintenance activities, and heavy equipment is used for road and utility system repairs, development, and maintenance.

Restricted

The setting is a fairly unaltered natural landscape with scattered archeological features. The restricted area is the remote section of the park with rugged terrain and provides the backdrop scenery for the monument's archeological features.

Management restricts the types of uses in the restricted area and allows only permitted or guided activities. Archeological sites are protected and closed to the public. The natural environment is perpetuated. Human

use into the natural environment is evident when adjacent to developed areas.

Access - Access is from trails or roads into the restricted area. The area has rugged terrain and no roads or trails. Motorized and non-motorized vehicles are not allowed.

Approved use for researchers or others conducting park business is by foot. Hikes are moderately to very challenging.

Experience and Activities - Protection of resources is the priority. Researchers are allowed to carry out scientific studies with an approved permit. Park staff conduct patrols and resources management activities.

Visitors are not allowed in this area but can observe the natural setting from trails, roads, and the visitor center.

Interpretation - No interpretive services are provided other than orientation and information presented from the visitor center, trails, and cliff dwellings.

Cultural Resource Management - All archeological sites are inventoried, monitored, and given proper care and protection. The resources management plan and preservation guides specify management decisions and address treatment of individual sites. Hands-on activities are conducted when it is necessary to preserve cultural resources. Compliance is done for all projects and involves coordination and consultation with SHPO and Native American groups. Research is allowed for further understanding of cultural resources and the Salado culture.

Natural Resource Management - Natural processes are unimpeded as much as possible. The resources management plan identifies issues, needed information, and appropriate actions to take. All plant and animal species are inventoried and monitored and mitigating measures (revegetation, removal of non-natives, etc.) are done as needed. Naturally occurring species are maintained or reestablished, and populations of sensitive species are protected and augmented. Compliance is done for all projects to assess impacts.

The natural environment is preserved to the maximum extent possible while accommodating low-level use for management purposes, projects, and research. Research is allowed for further understanding of natural resources and processes. Park staff maintains close watch to insure resource degradation does not occur from permitted activities.

Facilities - No facilities exist. Facilities may be provided to protect resources or provide for human safety.

Maintenance - Only archeological preservation activities occur here.

Interpretive Corridor

Management provides opportunities to hike on trails in a cultural and natural environment. The setting is a trail system leading from the visitor center to the cliff dwellings through various terrain and environmental features. Encounters with other visitors and NPS staff vary by season, activity, and trail.

Access - Public access is by foot and people are required to stay on designated trails. The cliff dwelling and cactus patch trails have regulated times. The upper cliff dwelling trail use is limited to guided tours. Hikes are moderately challenging.

No motorized or pack and saddle stock is allowed for public access. Motorized access is used on the lower cliff dwelling trail and saddle stock is sometimes used on the upper cliff dwelling trail for maintenance and ranger activities.

Experience and Activities - Ranger- and self-guided interpretive tours are available to help visitors learn about the resources. Exhibits or signs may be used to meet objectives of interpreting and protecting the resources.

Visitors must stay on the trail system so solitude is limited. There is a moderate degree of challenge and self-reliance from the varied tread and incline of the trails. The opportunity exists to seasonally experience the character of the cultural and natural resources. Visitor activities include viewing the surrounding landscape, hiking, painting, photography, learning the cultural context, and observing nature.

Interpretation - Guided tours for groups and the general public are provided year round to the lower cliff dwelling. Scheduled tours are provided November through April through the Cave Canyon riparian area to the upper cliff dwelling. Nature walks are presented along the Cactus Patch Trail. Self-guided trails are provided to the lower cliff dwelling and through the cactus patch.

Cultural Resource Management - Cultural sites are given proper care and protection. Hands on activities are conducted when it is necessary to preserve the cultural resources. Compliance is done for all projects and involves coordination and consultation with SHPO and Native American groups.

The trail system guides human use and minimizes impacts on cultural resources. The trails are constructed and maintained to minimize impacts on the adjacent restricted area. The interface with the restricted area is managed to mitigate or minimize impacts on cultural resources.

Natural Resource Management - The trail system guides human use and minimizes impacts on natural resources. The trails are constructed and maintained to minimize impacts on the adjacent restricted area. The interface with the restricted area is managed to mitigate or minimize impacts on natural resources. Compliance is done for all projects to assess impacts.

Facilities -The only facilities provided are trails, interpretive signs, benches, trashcans, and retaining walls. Additional facilities may be provided if they are essential to protect resources or provide for human safety. All facilities will blend in with the cultural and natural landscape as much as possible.

Maintenance - The trail system with vista sites is maintained to NPS standards to protect resources, restore disturbed areas, and provide for visitor safety. Vista site modification is done to allow views of the surrounding landscape. Power tools are allowed. Pack animals and motorized vehicles are used for park projects and activities.

Cliff Dwelling

This is a unique setting with multi-room prehistoric structures built in rock shelter alcoves that naturally formed in high canyon walls of sedimentary rock. It is a cultural landscape that reflects centuries of

occupation and manipulation of the rock shelter. The cliff dwellings overlook Tonto Basin and Roosevelt Lake from high elevations providing a vast viewscape.

The varying temperatures and humidity in the alcoves create different microclimates and unique habitats for plants and wildlife. The rock shelters provide shade and relief from the desert heat.

Access - Travel is by foot on trails through the interpretive corridor. There is controlled access to both cliff dwellings. Walking through the dwellings can be moderately challenging. Permits are required for special uses at the cliff dwellings, such as commercial filming.

Experience and Activities - Ranger- and self-guided interpretive tours are available to help visitors learn about the surrounding landscape and cultural themes. The history of archeology and preservation methods is presented.

Visitors are exposed to the character of a prehistoric dwelling and can view construction techniques to see the materials and resources used, spatial design, setting, distance from food and water sources, etc. Visitors can compare Salado life in the cliff dwellings with the valley floor archeological sites. Solitude can be found when the lower cliff dwelling is not crowded.

Visitor activities include viewing the surrounding landscape, examining the dwellings, painting and photography, learning the cultural context, and observing nature.

Interpretation - Guided tours and impromptu talks are given at the lower cliff dwelling. A self-guided brochure is also available to tour the lower cliff dwelling. Scheduled guided tours are conducted through the upper cliff dwelling. An open house is scheduled twice a year in March and November with rangers and volunteers stationed in both cliff dwellings.

Cultural Resource Management - The resources management plan and preservation guides specify management decisions and address treatment of individual sites. Archeological sites are given proper care and protection. Retaining the desired resource conditions requires intensive cultural resource management. Pest management activities are carried out to protect resources. Compliance is done for all projects and involves coordination and consultation with SHPO and Native American groups. Research is needed for further understanding of cultural resources and the Salado culture.

Natural Resource Management - The resources management plan identifies issues, needed information, and appropriate actions to take with natural resources in the cliff dwellings. Guided by the need to protect resources, employees, and visitors, pest management activities are carried out in compliance with an approved Integrated Pest Management Plan. Compliance is done for all projects to assess impacts. Research is needed for further understanding of how natural elements affect the cliff dwellings.

Facilities - Facilities include handrails, benches, and steps. Retaining walls prevent erosion of slopes. Additional facilities may be provided if they are essential to protect resources or provide for human safety. All facilities will blend in with the cultural and natural landscape as much as possible.

Maintenance - Maintenance activities protect resources and restore areas disturbed by human activities and natural events. Preservation and stabilization maintenance on the cliff dwellings is done routinely. Power tools are allowed.

General Emphasis – The plan provides for moving the administrative operation out of the existing visitor center and relocating the function to a new facility constructed *inside the monument* near the maintenance facility to accommodate staff workspace needs. The existing visitor center building will be remodeled to provide slightly increased visitor educational experiences.

Administrative, maintenance, interpretation, resource management, and protection activities will improve with the additional facilities and staff levels. Staff levels and expertise will be enhanced with increased funding and training as funds become available.

The cultural and natural resources programs will have an integrated approach, be raised to a higher standard, address diverse components, have sufficient professional-level staff, and have adequate reference materials.

Slightly increased educational experiences will be provided to enhance the visitor's understanding of the monument's values and protect cultural and natural resources. Interpretive programs will use improved equipment and methods to provide educational material within a regional context so visitors could contemplate the Salado culture and its relationship to the surrounding Sonoran desert environment.

Heightened protection of the monument's facilities and resources will occur through increased NPS staffing and 24-hour security systems, and improved emergency services and cooperative law enforcement agreements.

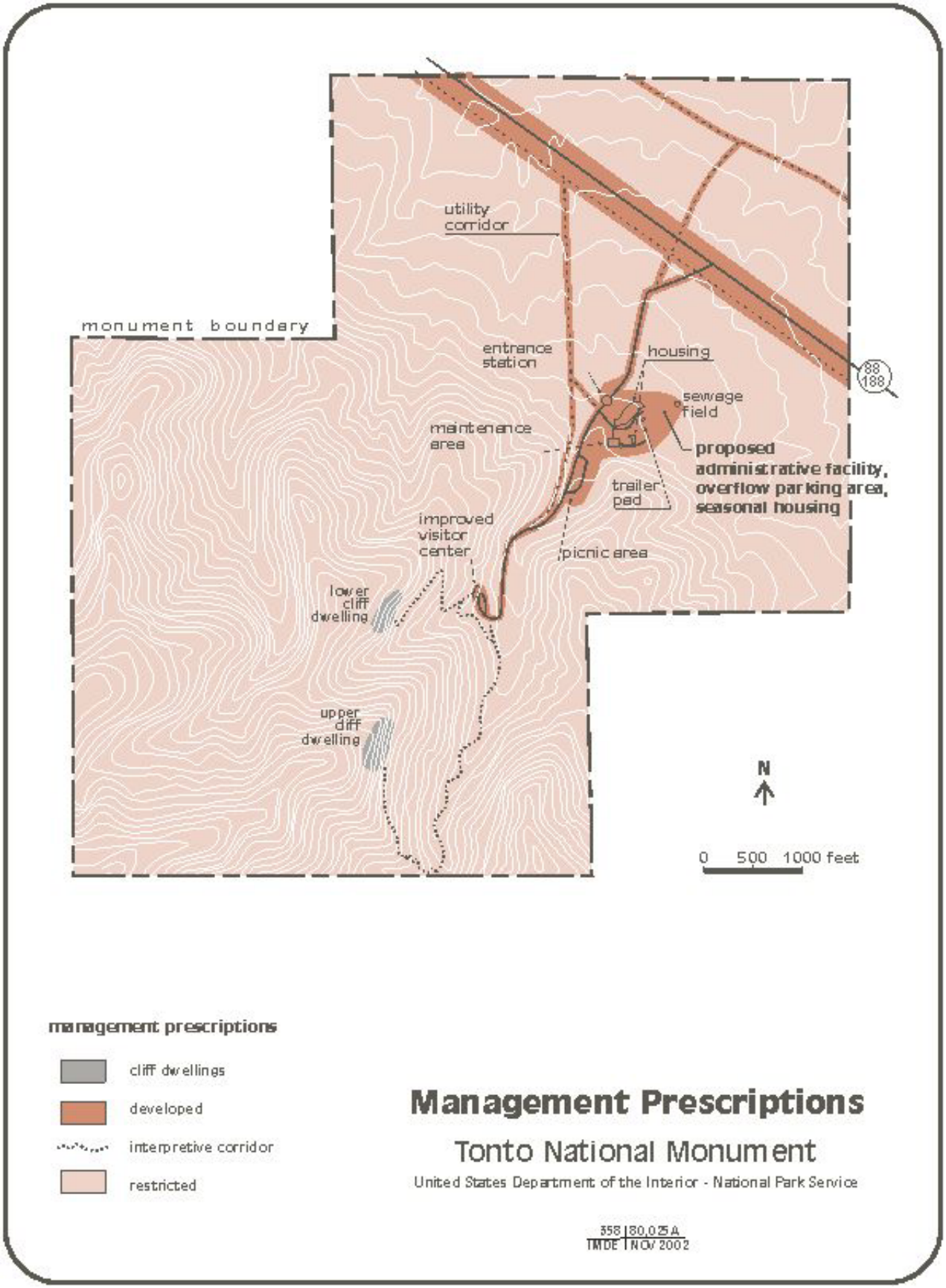
The additional staff will create more opportunities to form partnerships with other agencies, tribes, educational institutions, and the private sector that leverage the park's ability to provide quality visitor services and protect monument resources.

Relationships with adjacent land management agencies, tribes, and landowners will be expanded to manage the surrounding land using sound ecological principles.

Cultural Resources Management - A professional research and resource management program and an integrated comprehensive program design for resource investigation and management will be enhanced with added staff, expertise, and professional skills as funds become available.

The new administrative offices and remodeled visitor center will provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the cultural resources management program. The remodeled facility will provide some additional space to improve and expand museum exhibits.

Additional field studies and inventories of archeological sites will be done. A systematic program to monitor and evaluate archeological sites will be developed and implemented. An assessment and stabilization plan, subject to periodic review and update, will be developed, maintained, and implemented. Routine and emergency stabilization and preservation work will continue using better techniques and more skilled labor. All work will be documented and monitored for results. All previous


utility corridor
monument boundary
entrance station
housing
88
188
sewage field
maintenance area
proposed administrative facility, overflow parking area, seasonal housing
trailer pad
improved visitor center
picnic area
lower cliff dwelling
upper cliff dwelling
N
0 500 1000 feet
management prescriptions
cliff dwellings
developed
interpretive corridor
restricted
Management Prescriptions
Tonto National Monument
United States Department of the Interior - National Park Service
558 | 80,025 A
TMDE | NOV 2002

stabilization efforts will be summarized in one report.

Ethnographic, archeological and historical research studies including oral histories, historical structures reports, and preservation guides will be completed and available for use. Cultural landscapes will be inventoried, documented, and evaluated.

Natural Resources Management - A professional research and resource management program and an integrated comprehensive program design for natural resource investigation and management will be enhanced with added staff, expertise, and professional skills as funds become available.

The new administrative offices and remodeled visitor center will provide dedicated space for employees to work, organize a reference library, and store supplies and equipment required for the natural resources management program.

The resources management plan will be updated routinely, and action plans will be prepared to address specific environmental conditions and concerns. The IPM plans will be updated and/or new ones written as needed.

The monument's existing cooperative air monitoring program will continue. Low-flying aircraft will continue to be recorded and corrective action taken. A monitoring protocol will be developed to document noise from aircraft, boats on the lake, vehicular traffic, and mine blasting.

The vegetation inventory will be completed to the 95% level or above. Long-term monitoring plots will be read and data analyzed to track vital signs, species, and/or habitats. Strategies and protocols will be consistent with other parks in southern Arizona to compare results. Specialized studies will be undertaken for unique habitat and species. Native plants, preferably cultivated from onsite stock, will be used for landscaping or rehabilitating disturbed sites. A systematic approach will be taken to remove non-native plants and restore native vegetation.

Long-term monitoring plots for vertebrates will be read to track vital signs, species, and/or habitats. Strategies and protocols will be consistent with other parks in southern Arizona to compare results. More work will be done on invertebrate species. Specialized studies will be undertaken for unique habitat and species. A systematic approach will be taken to identify and restore habitat, if necessary.

A complete survey of water sources will be done. Water quality and quantity will be documented and monitored to protect the sources for wildlife, vegetation, and humans. A procedure will be started to document flashflood events.

If site-specific soil data were needed for projects, it will be acquired to augment existing information. The geology will be examined and a report prepared with special attention given to the cliff dwelling alcoves to describe formation and stability.

Cliff Dwellings ROA - A comprehensive management model to direct cliff dwelling stabilization and preservation activities including the effects from natural processes will be developed. This model will direct the staff to complete increased stabilization and preservation activities on an annual recurring basis. Staff will continue to monitor damage caused by small mammals and other animals. A program to comprehensively monitor the range of environmental variables affecting the cliff dwellings will be developed and implemented. Monitoring data will be collected continuously and evaluated.

IPM techniques will continue to be used when necessary.

Additional interpretive programs will be developed to provide more opportunities for visitors to view and understand the cliff dwelling architecture and Salado life. More uniformed personnel will be available to provide additional information to visitors. Protection of the cliff dwellings will increase with additional uniformed staff and installation of passive security systems.

Uplands and Lowlands ROAs - Long-term monitoring plots will be read routinely and data analyzed. Results will be used to respond to resource threats. Data will be shared with other parks and entities in Arizona and elsewhere. In the monument, the results will be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and their processes in the uplands and lowlands.

The current level of programs to visitors that explain the resource diversity will be increased.

Cave Canyon Riparian ROA - Long-term monitoring plots will be read routinely and data analyzed. Results will be used to respond to resource threats. Data will be shared with other parks and entities in Arizona and elsewhere. In the monument, the results will be used to develop a comprehensive management model to guide park staff in protecting the natural and cultural resources and determining the appropriate levels of visitor use in the riparian area.

The interpretive staff will provide more visitor education programs about the riparian area to communicate the importance of water, shade, and the deciduous forest in the arid desert.

Human Resources - Sufficient workspace and supporting supplies and equipment will be available for park staff to address resource, administrative, interpretive, visitor, protection, and maintenance needs. The number and expertise of employees will increase. Training for all employees in all disciplines will be enhanced with increased staffing and funding. Stewardship of the monument will increase.

Outreach and Interpretation - The existing visitor center will be remodeled to provide increased educational and informational opportunities to the public about the monument and the rest of Tonto Basin. Initial contact with visitors will continue to take place at the existing visitor center. The number and/or types of interpretive programs presented to the public linking them to the monument's resources using preservation and other stewardship themes will slightly increase. Visitor experience through understanding will slightly increase. Locating all interpretive services in one location at the existing visitor center will make it easier for the public to directly connect the park story to the resources and ease their movement with simpler logistics.

The educational programs presented to schools and other off-site entities will be expanded. All programs will emphasize the need to protect the monument's sensitive archeological sites and Sonoran desert ecosystem.

Visitor and Resource Protection - Additional staff and security systems will provide twenty-four-hour protection of the monument's resources and facilities. Cooperative agreements with local law enforcement agencies and other emergency services for supplemental support will be updated and/or developed.

The current law enforcement needs assessment will be periodically reviewed

and updated. An assessment identifying needed levels of emergency medical, fire, and search and rescue services will be developed to include new on-site facilities. A study for passive resource protection systems will be produced and implemented. A plan to analyze appropriate levels of visitor use and provide monitoring standards to protect visitor experience and resource protection will be developed and implemented.

Viewshed - A scenic viewshed analysis will be developed.

Adjacent Lands - Attempts to minimize impacts on park and surrounding Tonto Basin resources from incompatible uses of adjacent lands will be expanded through cooperative management and mutual agreements with adjacent landowners. Cooperative agreements with other agencies will also promote the rural landscape consistent with cultural and scenic values. A boundary study will be completed that will identify additional significant resources to be protected adjacent to the park including Cave Canyon watershed. The study will also include recommendations to Congress for adjustments to the park boundary. A fence will be constructed along the legal boundary to protect existing and new lands. All unneeded interior fencelines will be removed. More staff and funds will be needed to inventory and assess these new lands and provide continued protection.

Partnerships - Partnerships with local, state, and federal agencies, tribes, organizations, and individuals in support of park missions and activities will continue to be developed and expanded. The possibility of forming a friends group to support the monument's mission and goals will be explored.

Land-Use Management - This alternative will provide for a slight increase in facilities *inside the monument* that support improved public education, visitor experience, and accommodate staff workspace needs. The developed area has two more acres than the no action alternative. The new facilities will be located near the existing maintenance facility in the lowlands. No changes in land use will occur to the interpretive corridor or cliff dwellings management prescriptions. The existing rugged appearance of the monument's canyons, hills, and cliffs will not change.

This alternative uses management prescriptions that emphasize appropriate levels of visitor experiences with appropriate levels of development. Management prescriptions (MP) describe how the park will be managed. These can be broken down as follows:

- About 79 acres (7.1%)—Developed MP
- About 1032 acres (92.1%)— Restricted MP
- About 5 acres (0.5%)—Interpretive Corridor MP
- About 4 acres (0.4%)—Cliff Dwellings MP

Proposed Future Facility and Development Changes

Administrative functions will be removed from the existing facility and a new 2,000-square foot building will be constructed elsewhere inside the park. The existing cultural landscape will be impacted by the new administrative facility yet no archeological sites will be affected. Operational efficiency will substantially increase with the added workspace and with one visitor center to maintain. Use of this facility will increase utility costs.

The existing visitor facility will be remodeled. Remodeling the existing facility will improve visitor access, understanding, and resource stewardship and will not impact park resources. The lobby, museum, publication sales area,

and indoor interpretive programs will become more accessible. However, remodeling the visitor center is contingent upon construction of a new administrative facility, which will impact park resources. Keeping the original use of the visitor center (rather than constructing a new building) will retain the value of the National Register-eligible building.

A 10- to 50-vehicle transportation staging area will be developed and an alternative transportation system to access park resources will be developed and implemented to transport visitors from the new staging area near the entrance station to the visitor center during the busiest times of the year. The ATS will transport visitors the same distance as in Alternative B equaling costs, vehicles, and operation time.

The boundary will be completely fenced.

A seasonal employee/volunteer residence will be constructed increasing the park's ability to obtain needed help for resource stewardship and visitor services.

Operational Costs - Under this alternative funding will be sought for an increase of 6 FTEs or $242,000 in base funding required.

Development Costs - There will be an expenditure of $1,117,000.

Future Plans and Studies

- Security Plan
- Development Concept Plan
- Cultural Landscape Report -(CLR)
- Cultural Landscape Inventory – (CLI)
- Administrative History
- Historic Resource Study
- Historic Structures Report
- Ethnographic and Ethnohistory Studies
- Archeological Overview
- Assessment & Stabilization Plan
- Collection Management Plan
- Artifact Study with Institutional Involvement
- Environmental Condition Action Plan
- Vegetation Management Plan
- Water Resource Assessment
- Viewshed Analysis
- Response Need Assessment –(EMS/SAR)
- Passive Resource Protection Study
- VERP – Visitor Experience and Resource Protection Plan
- Comprehensive Interpretive Plan
- Alternative Transportation System Plan
- Boundary Study

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.