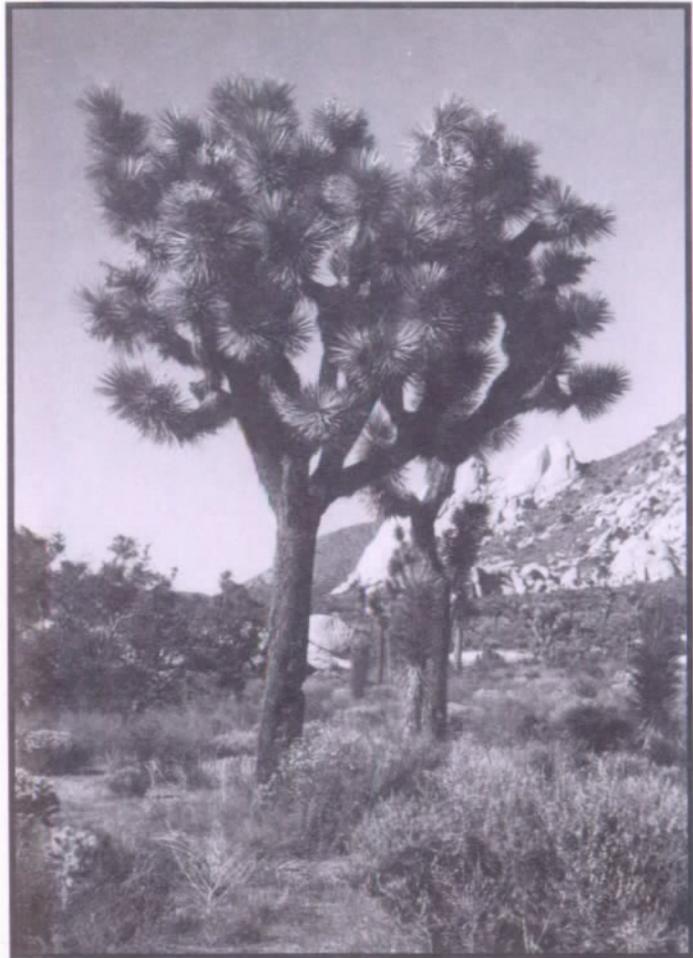


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**General Management Plan
Development Concept Plans
Environmental Impact Statement**



JOSHUA TREE
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**Final
General Management Plan
Development Concept Plans
Environmental Impact Statement**

**Joshua Tree National Park
Riverside and San Bernardino Counties, California**

On October 31, 1994, Public Law 103-433 added 234,000 acres to the Joshua Tree National Monument and changed its status from national monument to national park. The land that was added by the legislation is mainly adjacent to backcountry and wilderness areas. It is largely undeveloped and its management will be addressed in the wilderness and backcountry management plan currently being developed, which will serve as an amendment to this plan. This general management plan addresses only the land that was included prior to the 1994 legislation.

This General Management Plan / Development Concept Plans / Environmental Impact Statement was prepared in order to offer a proposal and two alternatives for the management, use, and development of Joshua Tree National Park. In this plan, which affects mainly the developed areas of the park, the proposal calls for a change of management and use to more adequately protect and interpret significant resources. The proposed action would result in an increased visitor awareness of opportunities and a broader range of visitor choices and experiences. Visitor contact facilities and services would be provided at each of the three main park entrances. Interpretive programs and the system of wayside exhibits would be expanded. Resource management programs would also be increased. Facilities in developed areas would be replaced or redesigned to increase effectiveness, reduce impacts on natural and cultural resources, and improve aesthetic quality. The capacity of some picnic areas and campgrounds would be expanded, but no new campgrounds would be developed. The National Park Service would encourage the provision of visitor facilities in the surrounding communities. Day use parking in the most heavily used areas of the park and along primary roads would be expanded, primarily in previously disturbed areas.

The alternatives included in addition to the proposal include no action (alternative B) and minimum requirements (alternative C). The no-action alternative describes the continuation of current management strategies. Under this alternative visitor and park support facilities would be maintained in their present locations. There would be no interpretive improvements. The main roads would continue to be reconstructed as funding became available. The minimum requirements alternative would primarily rehabilitate deteriorated or undersized facilities on their current sites. Individual camp and picnic sites and parking areas would be better delineated to reduce impacts on surrounding environment and improve their appearance. Capacity of campgrounds and picnic areas would not change. Day use parking would be restricted to the designated parking areas only. The main visitor center would remain at the Oasis of Mara, and exhibits would be replaced. The interpretive wayside system would be upgraded.

The environmental consequences of the proposed action and alternatives are fully documented. This document has been reviewed by the National Park Service, other agencies, and the public. Comments received and NPS responses are printed at the end of this document. For further information contact:

Superintendent, Joshua Tree National Park
74485 National Park Dr.
Twenty-nine Palms, CA 92277



SUMMARY

On October 31, 1994, Public Law 103-433 increased the size of the monument and changed its designation from national monument to national park. Most of the additional land is undeveloped and is adjacent to backcountry and wilderness, and its management will be addressed in the wilderness and backcountry management plan, which will amend this general management plan. Surveys, data gathering and analysis, scoping, and public involvement will be undertaken as part of the planning process for the additional land. The new plan will follow National Environmental Policy Act guidelines and will have an accompanying environmental impact statement. This general management plan and environmental impact statement deals mainly with developed areas of the park. Together with the wilderness and backcountry plan it would serve as a comprehensive management plan for the park.

An agreement has been reached within the Department of the Interior to approach planning and management of the 25-million acre California Desert region on an integrated ecosystem basis. The California Desert has been designated an official pilot project of the national performance review to demonstrate effective ecosystem management, planning, and agency reinvention efforts. Joshua Tree National Park will be an active partner in these multiagency, multispecies ecosystem management plans. Geographically, Joshua Tree National Park will be influenced by three proposed ecosystem plans — the northern and eastern Colorado Desert coordinated management plan, the west Mojave Desert coordinated management plan, and the Coachella Valley habitat conservation management plan. These plans will be consistent with direction offered in this general management plan as they affect management of the park.

This document includes a general management plan, development concept plans, and an environmental impact statement for Joshua Tree National Park. Two alternatives (a no-action alternative and a minimum requirements alternative) are also evaluated.

The proposed action is the National Park Service's general management plan for the park. It would minimize disturbance to resources and increase visitor activities and services. Day use capacity in the most heavily used areas of the park would be expanded, primarily in disturbed areas. Visitor awareness of the many opportunities and experiences would be increased. The opportunities for wilderness and trail experiences would be expanded.

Management of developed land and wilderness would be enhanced through an array of implementation plans that decrease threats to the wilderness by removing incompatible uses and development. The proposal would close off some of the illegal access to the park in order to decrease the vandalism, theft, and destruction now taking place in areas with uncontrolled access. Incompatible uses would be removed from the backcountry. Placement of new and replacement of existing expansion bolts for technical rock climbing in wilderness would continue to be prohibited until studies currently in progress have been completed. Cooperative planning and agreements with adjacent landowners and other agencies would be increased to preserve ecological units that extend across park boundaries. Inventory, monitoring, research, and patrol of park resources would be maximized.

SUMMARY

Management of visitors and reduction of impacts would be addressed through the redesign of developed areas to separate user groups, reduce congestion, contain and direct uses, improve routes between visitor destinations, and provide additional day use parking. All major roads would be reconstructed. A network of clearly designated new and existing roads, trails, parking areas, and shuttle routes would improve circulation and distribution of visitors in the most heavily used areas.

Orientation, trip planning assistance, and introduction to the primary interpretive and educational themes would be provided at the three main entrances. A new visitor center near the west entrance would focus on the ecology of the Mojave Desert. The north entrance visitor center would be converted to a visitor information and cultural center. The south entrance visitor contact facility would be replaced with a larger facility and would focus on the resources of the Colorado Desert. Interpretive exhibits and services would be expanded along the major roads and developed areas.

Park support facilities would be upgraded or expanded in their current locations to provide an effective operation and minimize new disturbance. There would be no development or construction for concessions operations in the park.

This alternative would result in approximately 104 acres of disturbance; however, approximately 25 acres of this would be in areas where the vegetation and soil are already disturbed. Additionally, almost 6 acres would be returned to natural conditions through revegetation. An undetermined additional number of acres in the backcountry would be revegetated following removal of inappropriate development or use. Joshua trees would be impacted, and an attempt to salvage trees for revegetation would be necessary. There would be no significant impact on the desert tortoise or other wildlife, and the proposal would reduce the current impacts at Cottonwood Oasis. Cultural resources would be better protected, interpreted, and managed, and vandalism would be reduced. The visual intrusions from new development would be minimized and the scenic quality protected. Visitor experience, understanding, and appreciation would significantly improve.

The no-action alternative (alternative B) describes the continuation of current management strategies. Visitor and park support facilities would be maintained in their present locations. Planning would be internally focused; there would be limited cooperative planning with other agencies. Resource damage or visitor conflicts would be dealt with on a case-by-case basis. The main roads in the park would continue to be reconstructed as funding allowed. This alternative would have few additional impacts on resources except for road reconstruction that would impact about 91 acres adjacent to the main roads. Visitor safety would be improved.

The minimum requirements alternative (alternative C) outlines the limited management actions necessary to repair and clean up facilities and reduce impacts on natural and cultural resources. Day use parking would be restricted to designated parking areas, which would be clearly delineated. Existing visitor experiences and opportunities to enjoy the park would continue.

As under the proposal, management of the park would be enhanced through the development of an array of implementation plans to evaluate threats to the wilderness. Incompatible uses and developments would be removed. Some of the illegal access routes

would be closed. Cooperative planning and agreements with adjacent landowners and other agencies would be increased to preserve ecological units that extend across park boundaries. Incompatible uses would be removed from the backcountry. The placement of new, and replacement of existing, expansion bolts in wilderness for technical rock climbing would remain prohibited until studies currently in progress have been completed.

Inventory, monitoring, and research would be increased with the focus of areas of special expertise. Patrol of the boundaries would be increased.

Management of visitor use would reduce impacts on the resources by better delineating individual camping, picnicking, and parking sites and trails. No new parking areas would be provided.

The current visitor center at the north entrance would be the primary entrance — offering orientation, trip planning assistance, and interpretation. A fee collection station would continue to serve the west entrance. The south entrance visitor contact station would be expanded moderately to increase information and orientation functions. Interpretive exhibits along the major roads and developed areas would be updated. Interpretive services would be increased primarily at Keys Ranch.

Park support facilities would be upgraded to improve park operations and minimize new disturbance.

Implementation of the minimum requirements alternative would result in about 94 acres of disturbance; however, approximately 23 of these acres are in areas where vegetation and soil are already disturbed. Almost 6 acres of previously disturbed land would be returned to natural conditions. An undetermined number of acres in the backcountry would be revegetated following removal of inappropriate developments or uses. No impacts on wildlife would be expected. The minimum requirements alternative would reduce the current impacts on Cottonwood Oasis by reducing foot traffic damage. Cultural resources would be better protected and better interpreted. Vandalism would be reduced somewhat. Impacts on scenic quality would be minimal, and the designed appearance of the Oasis of Mara and headquarters would have a positive effect. Some restoration of natural features and closure of some roads would also have a positive impact. Visitor experience would be improved, although parking in the most heavily used areas of the park would not change.



CONTENTS

Purpose of and Need for the Plan 1

Introduction 3

Brief Description of the Park 3

Planning Direction 7

Park Purpose 7

Resource Significance 8

Natural Resources 8

Cultural Resources 9

Recreational Resources 9

Primary Interpretive Themes 10

Management Goals 10

Planning Issues and Management Concerns 12

Visitor Use 12

Land Management 12

Adjacent Land Use 13

Resources Management 13

Roads and Circulation 13

Park Operations and Support Facilities 14

Interrelationships with Other Plans, Studies, and Proposals 14

Resources Management Plan 14

Land Protection Plan 14

Interpretive Prospectus 15

Wilderness and Backcountry Management Plan 15

Climbing Management Plan 15

Abandoned Mine Inventories 15

Trails Plan 16

Accessibility Plan 16

Transportation Study and 1991 Road Reconstruction Environmental
Assessment 16

Alternatives, Including the Proposed Action 17

Parkwide Alternatives 19

Alternative A — Proposed Action 20

General Description 20

Management Zoning 20

Natural Zones 21

Cultural Zones 21

Park Development Zone 22

Backcountry / Wilderness Management 22

Adjacent Land Use 22

CONTENTS

Resources Management	25
Archeological, Ethnographic, and Historic Resources	26
Native American Consultations	27
Visitor Use	31
Information and Interpretation	31
Primary Visitor Information Facilities	32
Interpretive Signs and Exhibits	34
Other Visitor Facilities	35
Park Roads and Circulation	35
Park Road Guidelines	36
Road Improvements	39
Parking Area Improvements	43
Operations	51
Housing	51
Administration and Maintenance	51
Design Character Guidelines and Sustainable Design	51
Access for People with Disabilities	52
Plan Implementation	52
Alternative B — No Action	55
General Description	55
Management Zoning	55
Backcountry and Wilderness Management	55
Resources Management	55
Archeological, Ethnographic, and Historic Resources	56
Native American Consultations	56
Visitor Use	56
Information and Interpretation	56
Primary Visitor Information Facilities	56
Interpretive Signs and Exhibits	57
Other Visitor Facilities	57
Park Roads and Circulation	57
Operations	57
Plan Implementation	57
Alternative C — Minimum Requirements	61
General Description	61
Management Zoning	61
Backcountry and Wilderness Management	61
Resources Management	62
Archeological, Ethnographic, and Historic Resources	62
Native American Consultations	63
Visitor Use	63
Information and Interpretation	63
Primary Visitor Information Facilities	63
Interpretive Signs and Exhibits	63
Other Visitor Facilities	64

- Park Roads and Circulation 64
 - Road Improvements 64
 - Parking Area Improvements 64
- Operations 65
 - Housing 65
 - Administration and Maintenance 65
 - Design Character Guidelines and Sustainable Design 65
 - Access for People with Disabilities 65
- Plan Implementation Priorities 66

Alternative Development Concept Plans 75

- Headquarters Planning Unit 79
 - Background 79
 - Alternative A — Proposed Action 79
 - Information and Interpretation 79
 - Visitor Facilities 80
 - Roads and Circulation 80
 - Operations 80
 - Alternative B — No Action 80
 - Information and Interpretation 80
 - Visitor Facilities 81
 - Roads and Circulation 81
 - Operations 81
 - Alternative C — Minimum Requirements 81
 - Information and Interpretation 81
 - Visitor Facilities 81
 - Roads and Circulation 81
 - Operations 82

- Indian Cove Planning Unit 87
 - Background 87
 - Alternative A — Proposed Action 87
 - Information and Interpretation 88
 - Visitor Facilities 88
 - Roads and Circulation 88
 - Operations 88
 - Alternative B — No Action 89
 - Information and Interpretation 89
 - Other Visitor Facilities 89
 - Roads and Circulation 89
 - Operations 89
 - Alternative C — Minimum Requirements 89
 - Information and Interpretation 89
 - Visitor Facilities 90
 - Roads and Circulation 90
 - Operations 90

CONTENTS

Covington Planning Unit 93
 Background 93
 Covington Flats 93
 Black Rock Canyon 93
 Little San Bernardino Mountains 93
 Alternative A — Proposed Action 93
 Information and Interpretation 94
 Other Visitor Facilities 94
 Roads and Circulation 94
 Operations 97
 Alternative B — No Action 97
 Information and Interpretation 97
 Visitor Facilities 97
 Roads and Circulation 97
 Operations 97
 Alternative C — Minimum Requirements 97
 Information and Interpretation 98
 Visitor Facilities 98
 Roads and Circulation 98
 Operations 98

Lost Horse Planning Unit 101
 Background 101
 Alternative A — Proposed Action 102
 Information and Interpretation 102
 Visitor Facilities 103
 Roads and Circulation 103
 Operations 104
 Alternative B — No Action 104
 Information and Interpretation 105
 Visitor Facilities 105
 Roads and Circulation 105
 Operations 105
 Alternative C — Minimum Requirements 105
 Information and Interpretation 106
 Visitor Facilities 106
 Roads and Circulation 106
 Operations 107

Pinto Wye Planning Unit 111
 Alternative A — Proposed Action 111
 Information and Interpretation 111
 Visitor Facilities 111
 Roads and Circulation 112
 Operations 112
 Alternative B — No Action 112
 Information and Interpretation 112
 Visitor Facilities 113

Roads and Circulation	113
Operations	113
Alternative C — Minimum Requirements	113
Information and Interpretation	113
Visitor Facilities	113
Roads and Circulation	113
Operations	115
Transition Planning Unit	118
Alternative A — Proposed Action	118
Information and Interpretation	118
Visitor Facilities	118
Roads and Circulation	118
Operations	119
Alternative B — No Action	119
Information and Interpretation	119
Visitor Facilities	119
Roads and Circulation	119
Operations	120
Alternative C — Minimum Requirements	120
Information and Interpretation	120
Visitor Facilities	120
Roads and Circulation	120
Operations	120
Pinto Basin Planning Unit	123
Alternative A — Proposed Action	123
Information and Interpretation	123
Visitor Facilities	124
Roads and Circulation	124
Operations	124
Alternative B — No Action	124
Information and Interpretation	124
Visitor Facilities	124
Roads and Circulation	124
Operations	125
Alternative C — Minimum Requirements	125
Information and Interpretation	125
Visitor Facilities	125
Roads and Circulation	125
Operations	125
Cottonwood Planning Unit	129
Alternative A — Proposed Action	129
Information and Interpretation	129
Visitor Facilities	131
Roads and Circulation	131
Operations	131

CONTENTS

Alternative B — No Action	132
Information and Interpretation	132
Visitor Facilities	132
Roads and Circulation	132
Operations	132
Alternative C — Minimum Requirements	132
Information and Interpretation	133
Visitor Facilities	133
Roads and Circulation	133
Operations	133
Alternatives Considered but Rejected	136
The Affected Environment 137	
The Natural Environment	139
Climate	139
Geology and Soils	139
Natural Hazards	140
Vegetation	140
Wildlife	143
Species of Special Concern	143
Vegetation	143
Wildlife	144
Water Resources	145
Floodplains	146
Wetlands and Riparian Habitats	146
Water Rights	146
Water Quality	147
Air Quality	147
The Cultural Environment	149
Archeology	149
History	149
Ethnography	150
Archeological Surveys and Historical Studies	155
Types of Sites	155
National Register Status	155
Regional and Adjacent Land Use	161
Visitor Use	163
Access and Circulation	163
Visitation	163
Visitor Activities	165
Frontcountry Experiences	165
Threshold Experiences	166
Backcountry Experiences	166

Environmental Consequences 167

Introduction 169

Derivation of Impact Topics 169

Impact Topics Dismissed from Further Analysis 169

Impact Topics Analyzed 169

Native Vegetation and Soils 169

Species of Special Concern 169

Wetlands and Riparian Habitats 170

Cultural Resources 170

Visual Resources 170

Visitor Use and Experience 170

Impacts on Natural Resources 171

Impacts on Native Vegetation and Soil 171

Alternative A — Proposed Action 171

Alternative B — No Action 172

Alternative C — Minimum Requirements 172

Impacts on Species of Special Concern 174

Impacts on Joshua Trees 174

Alternative A — Proposed Action 174

Alternative B — No Action 174

Alternative C — Minimum Requirements 175

Impacts on the Desert Tortoise 175

Alternative A — Proposed Action 175

Alternative B — No Action 176

Alternative C — Minimum Requirements 176

Impacts on Wetlands and Riparian Habitat 176

Alternative A — Proposed Action 176

Alternative B — No Action 177

Alternative C — Minimum Requirements 177

Impacts on Cultural Resources 178

Alternative A — Proposed Action 178

Analysis 178

Conclusion 178

Alternative B — No Action 179

Analysis 179

Conclusion 179

Alternative C — Minimum Requirements 179

Analysis 179

Conclusion 180

Impacts on Visual Resources 181

Alternative A — Proposed Action 181

Analysis 181

Conclusion 181

CONTENTS

Alternative B — No Action	181	
Analysis	181	
Conclusion	182	
Alternative C — Minimum Requirements	182	
Analysis	182	
Conclusion	182	
Impacts on Visitor Use and Experiences	183	
Alternative A — Proposed Action	183	
Analysis	183	
Conclusion	184	
Alternative B — No Action	185	
Analysis	185	
Conclusion	186	
Alternative C — Minimum Requirements	186	
Analysis	186	
Conclusion	187	
Cumulative Impacts	188	
Natural Resources	188	
Cultural Resources	188	
Visitor Experience	189	
Consultation and Coordination		191
Public Involvement	193	
Scoping Process and Issues and Alternatives Raised	193	
Response to the 1994 Legislation	195	
Agencies, Organizations, and Persons to Whom Copies of the Document Have Been Sent	195	
Summary of Public Comments on the Draft Environmental Impact Statement	197	
Comments and Responses	199	
Appendixes / Preparers and Contributors / Bibliography / Index		281
Appendix A: Cost Estimates	283	
Appendix B: Compliance	292	
Appendix C: Consultation with the U.S. Fish and Wildlife Service	296	
Appendix D: Legislation	300	
Preparers and Contributors	319	
Bibliography	321	
Index	325	

TABLES

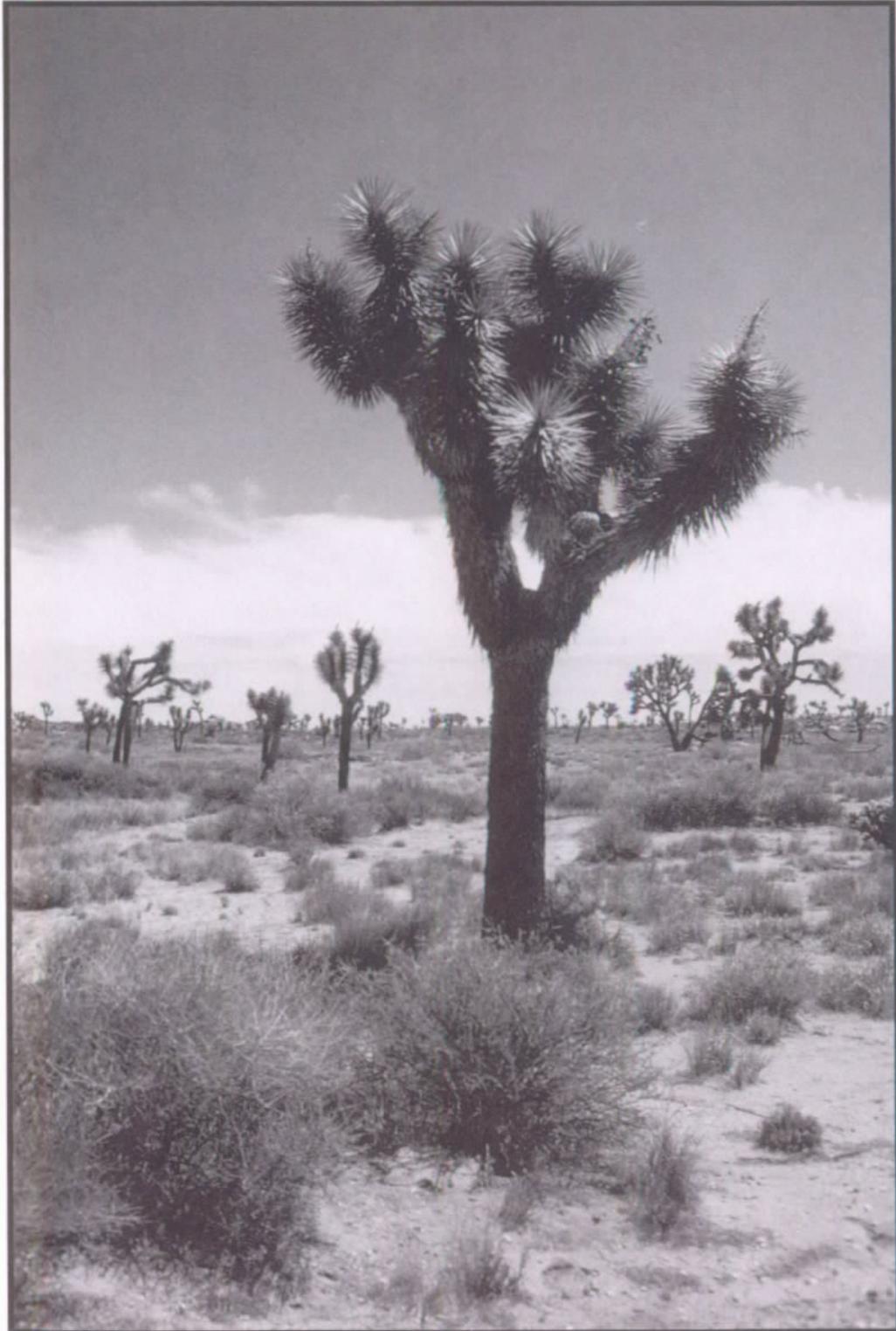
- 1: Listed on the National Register of Historic Places 29
- 2: Determined Eligible for Listing on the National Register of Historic Places 30
- 3: Visitor Use Areas — Designated Parking, Lost Horse and Pinto Wye Planning Units, Proposed Action 46
- 4: Recommended Staffing 53
- 5: Visitor Use Areas — Designated Parking, Lost Horse and Pinto Wye Planning Units, Alternative B 58
- 6: Recommended Staffing 66
- 7: Visitor Use Areas — Designated Parking, Lost Horse and Pinto Wye Planning Units, Alternative C 69
- 8: Summary of Alternatives 70
- 9: Summary of the Impacts of the Proposed Action and the Alternatives 74
- 10: Alternative Actions — Headquarters, Oasis of Mara 85
- 11: Alternative Actions — Indian Cove 92
- 12: Alternative Actions — Covington 100
- 13: Alternative Actions — Lost Horse 109
- 14: Alternative Actions — Pinto Wye 116
- 15: Alternative Actions — Transition 121
- 16: Alternative Actions — Pinto Basin 128
- 17: Alternative Actions — Cottonwood 134
- 18: Summary of Impacts Under Alternative A — the Proposed Action 171

MAPS

- Region 4
- Vicinity 5
- Alternative A — Proposed Action, Management Zones 23
- Alternative A — Proposed Action, by Planning Unit 37
- Proposed Road Improvements 41
- Parking Pullouts 47
- Alternative A — Proposed Action, Hidden Valley and Barker Dam areas 49
- Alternative B — No Action, by Planning Unit 59
- Alternative C — Minimum Requirements, by Planning Unit 67
- Planning Units 77
- Alternative A — Proposed Action, Headquarters 83
- Alternative A — Proposed Action, Indian Cove Campground 91
- Alternative A — Proposed Action, Covington 95
- Alternative A — Proposed Action, Black Rock Campground 96
- Alternative A — Proposed Action, Lost Horse 108
- Alternative A — Proposed Action, Pinto Wye 114
- Alternative A — Proposed Action, Pinto Basin 127
- Alternative A — Proposed Action, Transition/Cottonwood 130
- Desert Biomes 141
- Prehistoric Cultural Resources 151
- Historic Cultural Resources 153
- Access and Circulation 165



PURPOSE OF AND NEED FOR THE PLAN





INTRODUCTION

The purpose of and need for federal action is to adopt a general management plan for Joshua Tree National Park. It will guide natural and cultural resource management, visitor use, general development, park administration, and operations for the next 10 to 15 years. The plan is needed to address problems and management concerns related to resource protection, visitor use, and park operations.

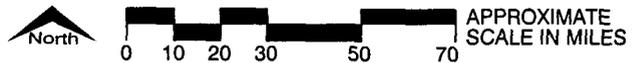
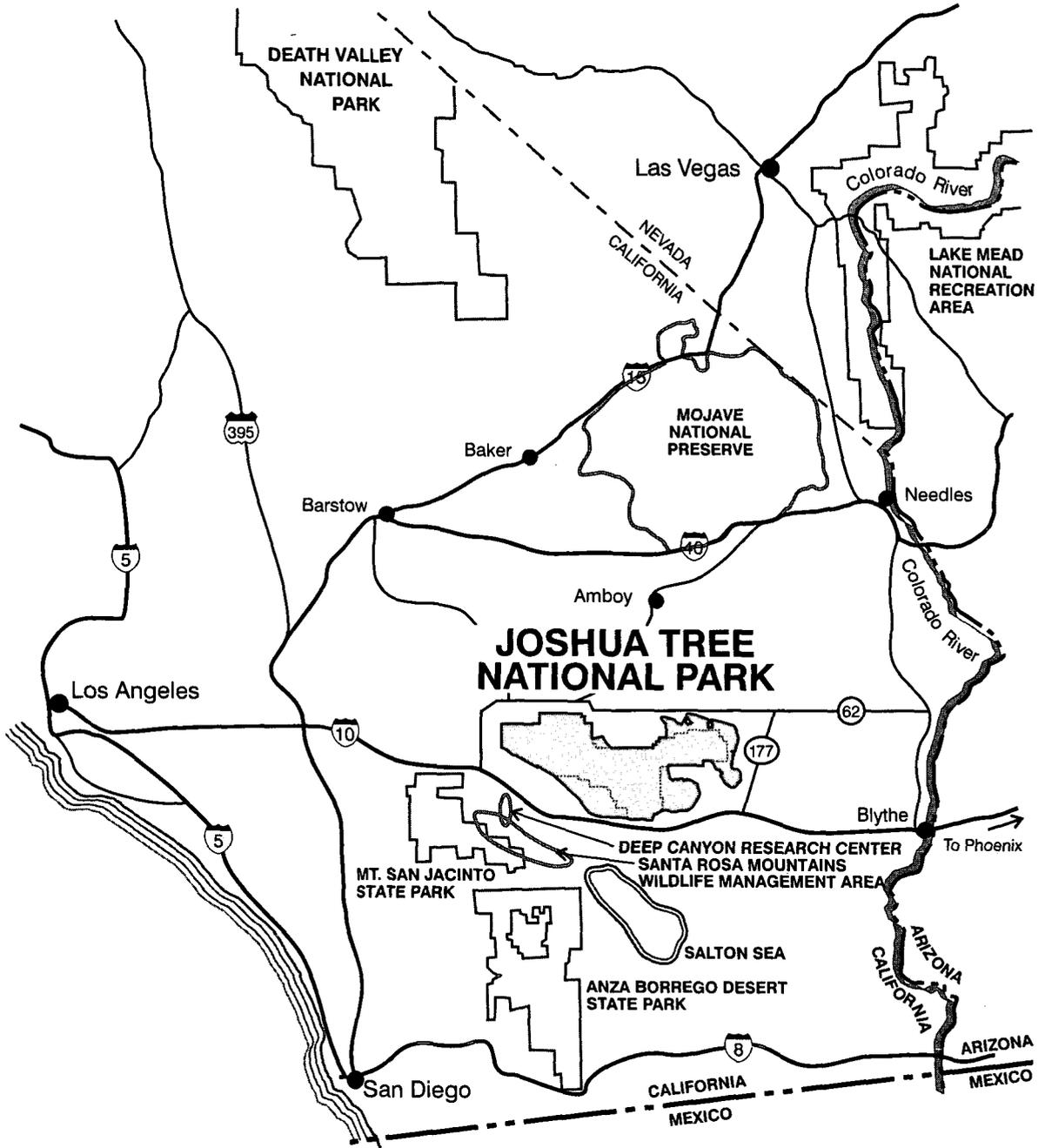
This *Draft General Management Plan / Development Concept Plans / Environmental Impact Statement* was prepared for Joshua Tree National Monument and had nearly completed the review process when legislation was passed that added 234,000 acres and changed the designation of the area from national monument to national park. Most of the additional land is undeveloped and adjacent to wilderness sections of the park. This plan mainly addresses the developed areas of the park. A management plan for the new areas will be included in the wilderness and backcountry management plan, which will include additional public involvement and an environmental impact statement. A number of surveys of the additional land, identification of public concerns, and a level of detail beyond the scope of this plan will be necessary to provide data needed to determine appropriate management of backcountry and wilderness. The new plan, together with this general management plan, are intended to fulfill the requirements of the 1994 legislation. The 1994 legislation called for the establishment of a commission that would advise the secretary of the interior on the plans.

This document presents a proposed action and two alternatives, including a no-action alternative, for the management of Joshua Tree National Park. It will serve as the guiding management plan for the park in conjunction with the wilderness and backcountry management plan and ecosystem plans. The proposal and alternatives in this document recommend actions that would better protect the resources and better serve the visitor. This document also analyzes the environmental consequences of implementing the proposed action and each of the alternatives.

BRIEF DESCRIPTION OF THE PARK

Joshua Tree National Park is located in the Mojave and Colorado Deserts of southern California (figure 1). It lies along the east-west transverse ranges of the Little San Bernardino Mountains. The south boundary follows the base of these mountains along the northern perimeter of the Coachella Valley; the north boundary is defined by the Morongo Basin. The park is in San Bernardino and Riverside Counties.

Of the park's 794,000 acres, 593,490 are legislated wilderness — set aside for the preservation of natural, cultural, historic, and scenic resources. The compressed transition zone between the Mojave and Colorado Deserts makes it possible to cross from one desert to the other within less than 65 miles. The park contains all or portions of numerous mountain ranges including the San Bernardino, Cottonwood, Hexie, Pinto, Coxcomb, and Eagle ranges. The eastern portion averages 2,000 feet above sea level while the western half is mostly above 4,000 feet. Extremes in elevation range from 1,000 feet at Pinto Well to 5,900 feet at Quail Mountain. Major valleys include the Pinto Basin, Juniper Flats, Covington Flats, Pleasant, Queen, and Lost Horse.

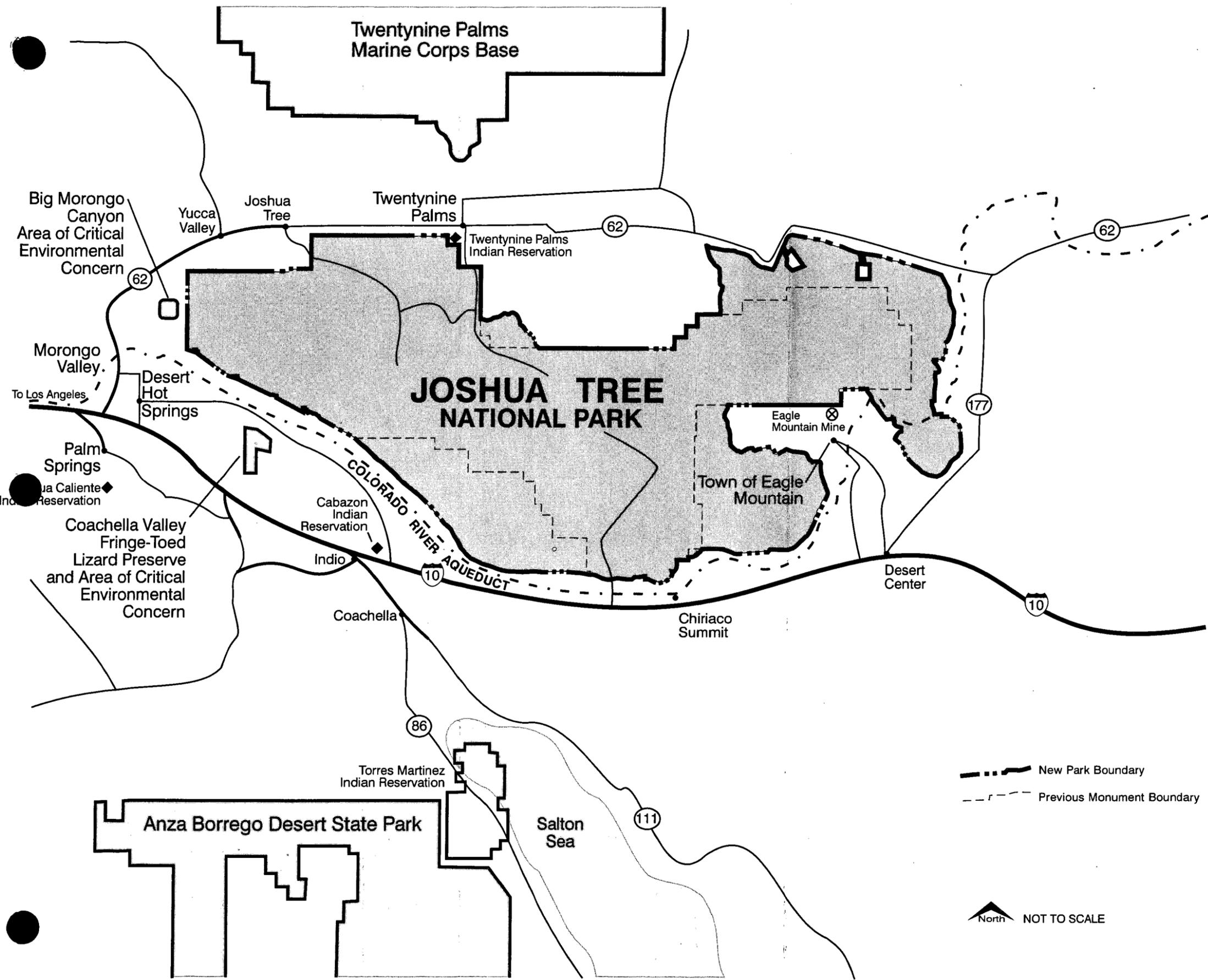


NOTE: Management of the land added to Joshua Tree National Monument by the park legislation will be addressed in the wilderness and backcountry management plan.

REGION

JOSHUA TREE NATIONAL PARK
 UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 DSC/Dec. '94/156/20,043A

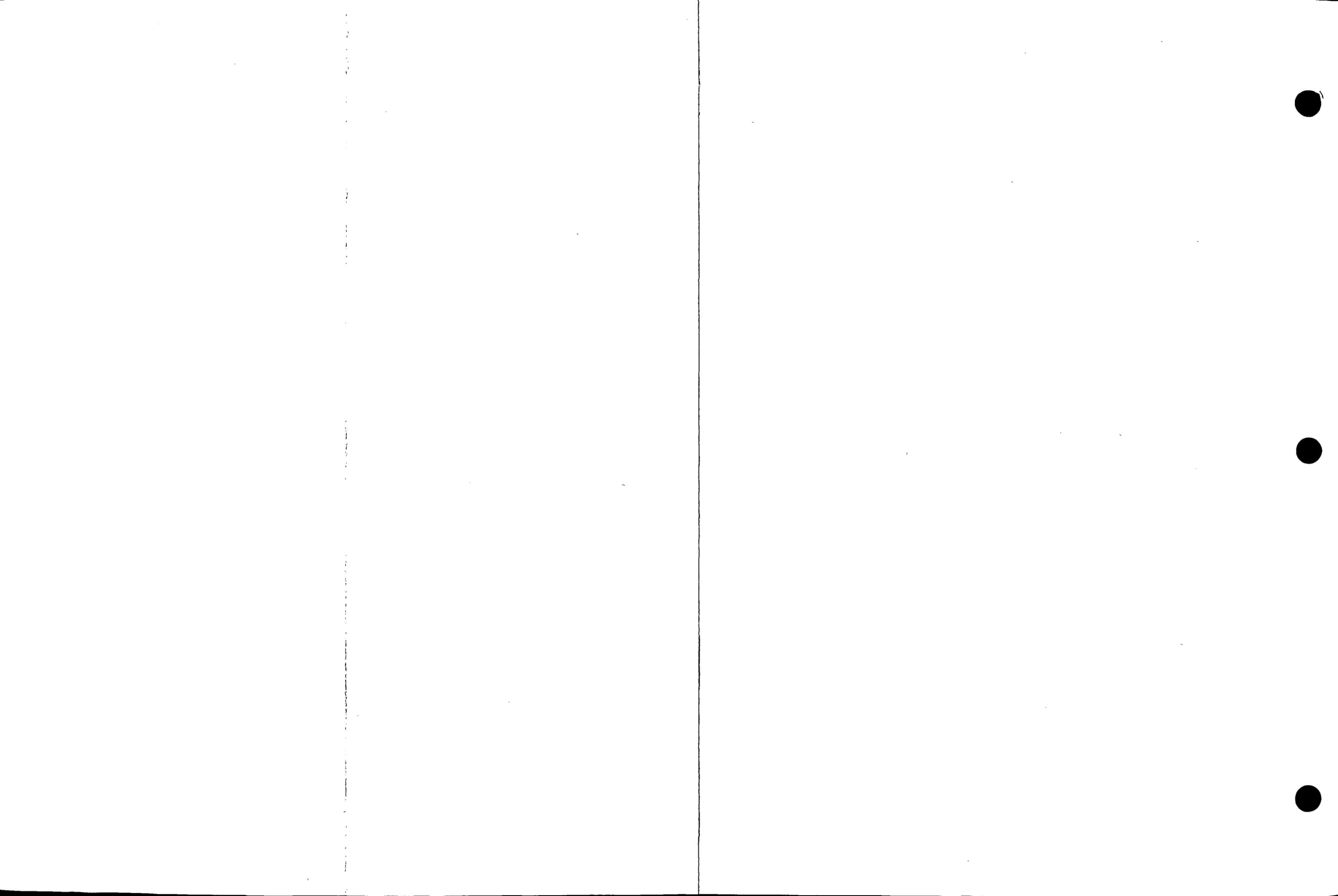
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NOTE: Management of the land added to Joshua Tree National Monument by the national park legislation will be addressed in the wilderness and backcountry management plan.

VICINITY MAP
JOSHUA TREE NATIONAL PARK
 UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 DSC/Aug '93/156/20,014B

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Unusual desert plants and animals and spectacular geological features are all important. Although the name Joshua Tree implies that the park has a natural history focus, the area also has a rich and varied cultural history. Humans, from prehistoric times to the present, have been an integral component of this desert environment.

PLANNING DIRECTION

Management goals were defined to guide the formulation of the proposed action and alternatives. These goals were based on the purposes of the park, protection of the significant resources, and communication of the primary interpretive themes to visitors. Planning issues and management concerns were also determined based on input from park staff and the public. Identifying each of these elements was a separate step in the planning process, and the results are briefly described in the following sections. They provide a context for the proposed action and alternatives as each describes a different management approach for achieving management goals and resolving issues.

PARK PURPOSE

Joshua Tree National Monument was established as a unit of the national park system by Presidential Proclamation No. 2193 on August 10, 1936 (50 Stat. 1760) because its "lands contain historic and prehistoric structures and have situated thereon various objects of historic and scientific interest . . . it appears that it would be in the public interest to reserve such lands as a national monument, to be known as the Joshua Tree National Monument" (see appendix D). While the language in the presidential proclamation indicates a strong cultural resource emphasis, the legislative history reveals that another major reason for the establishment of the monument was preservation of the natural resources of the Colorado and Mojave Deserts. The natural resource preservation emphasis was so strong that the original name contemplated for the monument was Desert Plants National Park.

Public Law 81-837, 64 Stat. 1033 reduced the size and revised the boundaries of Joshua Tree National Monument in 1950. Almost 300,000 acres that were known to contain significant mineral reserves were deleted, leaving the monument at approximately 560,000 acres. Public Law 103-433 added 234,000 acres to Joshua Tree National Monument and changed its status from national monument to national park.

Through the NPS organic act (1916), Congress set forth the purpose of the national park system, which is "to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such manner and such means as will leave them unimpaired for the enjoyment of future generations" (16 USC Sec. 1). On October 20, 1976, Public Law 94-567 designated 429,690 acres as wilderness and 37,550 acres as potential wilderness in the monument. On October 31, 1994, Public Law 103-433 designated an additional 163,000 acres of wilderness. Wilderness is an area "where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain," and "which is protected and managed so as to preserve its natural conditions." Management of the wilderness sections of the park must comply with the Wilderness Act of 1964 and NPS wilderness management policies. National Park Service *Management Policies* (NPS 1989) state that "Wherever a wilderness area is designated within a park, the

preservation of wilderness character and resources becomes an additional statutory purpose of the park."

In March 1984 the monument was established as part of a biosphere reserve system that includes Joshua Tree and Death Valley National Monuments, Anza Borrego Desert State Park, Santa Rosa Mountains Wildlife Management Area, and Deep Canyon Research Center. Biosphere reserves are set aside by the United Nations Educational, Scientific, and Cultural Organization under its Man and the Biosphere Program (MAB), which is an international program of scientific cooperation dealing with human-environmental interactions throughout all geographic and climatic areas in the world. There are 311 biosphere reserves in 81 countries; 47 are in the United States. The purpose of these biosphere reserves is to establish a network of protected samples of the world's major ecosystem types. Reserves are devoted to the conservation of natural areas that provide a standard against which human impact on the environment can be measured. The Center for Arid Lands Restoration was subsequently established to serve as an information center in support of the MAB program.

Based on the enabling and wilderness legislation, the legislation of October 1994, and biosphere reserve status, the purposes of Joshua Tree National Park are to:

protect and interpret areas, sites, structures, and various artifacts associated with occupations by prehistoric, historic, and contemporary Native American groups, historic miners, and subsistence cattle ranchers

protect and interpret the biologically diverse examples of the Mojave and Colorado desert ecosystems

serve as a natural laboratory for understanding and managing the Mojave and Colorado desert ecosystems

preserve the character and values of wilderness in the park

provide visitors with opportunities to experience and enjoy natural and cultural resources through compatible recreational activities

In summary, the purpose of Joshua Tree National Park is to preserve unimpaired the natural and cultural resources of the Mojave and Colorado Deserts so that they can be interpreted, understood, and enjoyed by present and future generations.

RESOURCE SIGNIFICANCE

Natural Resources

Joshua Tree National Monument was originally set aside to preserve an ecologically dynamic component of the California Desert — much more than just the Joshua trees. The east-west Transverse ranges support examples of Mojave and Colorado Desert ecosystems. The elevations range from 6,000 feet to near sea level, which creates an unusual compressed transition zone between the two deserts.

Early proponents envisioned a representative segment of the two deserts that would be large enough to embrace a self-sustaining natural system. This system contains the visible and invisible biotic and abiotic components that link the elements. Living elements influence each other and are influenced by climate, fire, earthquakes, and other natural phenomena.

Cultural Resources

The geological and biological diversity of the Joshua Tree area provided for early human subsistence. In the post Pleistocene, the climate was milder and wetter than it is now. The Pinto Basin was a shallow lake 5,000 to 7,000 years ago, narrowing to a river or stream. Along its banks lived the people of the Pinto Basin complex. Big game hunting was the predominant means of subsistence because the water and lush vegetation lured animals to the area. As the climate changed, the Pinto Basin slowly dried up and people left in search of water. They moved outside what is now the park to the palm canyons of the lower valleys and to the cooler mountains and only returned to the area seasonally to trade, hunt, and harvest.

The park contains the early Pinto culture sites and traces of other prehistoric and historic American Indian cultures, as well as those of Euro-American gold mining, homesteading, and subsistence cattle ranching. The park is archeologically, ethnographically, and historically diverse. It exhibits a continuum of cultural adaptations and includes a significant collection of prehistoric and historic American Indian artifacts and late 19th century and early 20th century non-Indian artifacts. These artifacts document the park's importance to east-west migrations from prehistoric times. The remnants of past human occupations illustrate the adaptations that different groups made to the arid desert environment.

Recreational Resources

The natural and cultural resources of the park provide outstanding recreational opportunities for the more than 1.2 million visitors that come to the area annually.

The wilderness provides an opportunity for solitude in nature and for primitive recreation such as hiking and backpacking. Clean air ensures an extensive visual range, and mountains, basins, canyons, massive boulders and rock outcrops, and desert plant life combine to make outstanding scenery.

Topographic relief and the associated change in air temperature encourage year-round visitor use. The park provides some of the most diverse desert wildflower displays in the southwestern United States. There is also a wide variety of wildlife, including coyotes, jackrabbits, desert tortoises, bighorn sheep, tarantulas, golden eagles, and roadrunners.

Opportunities to see, photograph, and study cultural resources also draw visitors. Old mines, ranches, and prehistoric rock art are all popular.

Massive boulders and rock outcrops provide some of the best rock climbing in the United States. Many families like to camp so they can scramble on the maze of boulders in the park. Skilled and novice technical rock climbers from around the world are attracted to the challenging climbing routes.

PRIMARY INTERPRETIVE THEMES

The following primary interpretive themes are the most important ideas for visitors to understand about the park:

- (1) Joshua Tree National Park is comprised of two biologically different desert environments, the Mojave and the Colorado, which merge within its boundaries to create an unusual ecological transition zone. Lush palm tree oases and historic springs draw attention to the importance of water in the desert environment.
- (2) The Joshua tree, with its unusual shape and adaptation, is a perfect vehicle for understanding the interdependence of organisms living in the desert.
- (3) Plants and animals have evolved to survive in the heat and drought. These adaptations produced an interesting array of life forms. Humans, from prehistoric times to present, also adapted to an environment with little water. People who have made this area their home have adapted and have provided a colorful and varied human history.
- (4) The picturesque landscape features, including the mountain ranges, desert basins, and rock piles, all contribute to the significance of the park. The dynamic processes that formed this area, including erosion and earthquakes, continue.
- (5) Deserts have suffered a great deal of human abuse. The arid landscapes are slow to heal, and tracks made by a single vehicle in desert soil can often be seen many years later. Fragile desert ecosystems survive in a delicate balance. They quickly manifest even the subtle environmental changes brought about by humans. Protection of the California Desert can only be accomplished from an ecosystemwide perspective that promotes harmonious relationships between people and the environment. The "leave no trace" ethic must be taught to visitors to the park.

There are a number of natural and cultural history interpretive themes present in the broader context of the national park system, including plains, plateaus, and mesas; cuestas and hogbacks; mountains; vulcanism; sculpture of the land; caves and springs; Triassic-Cretaceous periods; Paleocene-Eocene epochs; Oligocene-Recent epochs; deserts; streams; cultural development: Indigenous American populations; European colonial exploration and settlement; westward expansion of the British colonies and the United States 1763-1898; and science.

MANAGEMENT GOALS

The following management goals were developed to achieve the monument's (and now the park's) purpose, protect significant resources, and impart the primary interpretive themes:

Manage land and wilderness to preserve them unimpaired for future generations.

Participate cooperatively in the preservation of ecological units that extend beyond the park boundary.

Improve knowledge of natural and cultural resources.

Manage visitation more effectively and reduce impacts associated with dispersed and poorly defined visitor use facilities.

Educate park visitors regarding the NPS mission and the natural and cultural resources of the park.

Facilitate cooperative planning throughout the California Desert ecosystem with other public agencies and communities.

Improve park circulation; focus on safety, visual quality, and visitor experience.

Improve the effectiveness of park operations.

These eight goals would be accomplished in different ways and to varying degrees by the proposed action or the alternatives.

PLANNING ISSUES AND MANAGEMENT CONCERNS

The last master plan for Joshua Tree National Monument was completed in 1964. Since that time southern California has experienced tremendous growth. Over 18 million people reside within a four-hour drive of the park. As a result, visitation has increased significantly; there has been nearly a 50% increase over the past decade. This has resulted in a number of impacts on natural and cultural resources and has also brought changes in the type and quality of the visitor experience. The primary planning concern at Joshua Tree pertains to the effects of this increasing use.

Other related issues involve the effects of human use and development throughout the park and the escalating development around the boundary. Planning issues and concerns were identified through meetings with other interested government agencies and the public (see the "Consultation and Coordination" section).

VISITOR USE

Inadequate control over the actions of the increased numbers of visitors has resulted in a number of problems. There are conflicts among user groups (horseback riders, hikers, climbers, sightseers, campers) for some of the more popular resource areas in the park. Competition for popular use areas is decreasing the quality of the visitor experience for all users. Campsites, parking, trails, and picnic sites are not clearly defined, which causes confusion, damage to resources, and reduced visual quality from expanding eroded areas and social trails. Campgrounds operate at capacity during some weekends and during the spring, so some visitors attempt to camp illegally.

The location of the visitor center in Twentynine Palms greatly limits the park's ability to contact a large segment of park visitors. Most visitors enter the park from either the Joshua Tree/west entrance or the Cottonwood/south entrance. The small fee station kiosk at the Joshua Tree entrance and the Cottonwood information station are inadequate to serve the numbers of visitors passing through. Many of the visitors who enter through these stations never stop at the Twentynine Palms Visitor Center. Some facilities do not meet current standards for accessibility.

Interpretive media and facilities throughout the park are dated and inadequate and contribute little to the understanding or appreciation of the purpose and significance of the park. Desert environments have traditionally been viewed as wastelands where almost any human activity was acceptable. The park is being damaged and abused because many of the visitors are not aware of the significance of the area, the fragile nature of the resources, or the types of behavior appropriate to a national park.

LAND MANAGEMENT

Effective protection of park land, particularly wilderness, is hampered by the current zoning scheme that was adopted in 1978 and has not been reevaluated. Various developments such as roads, borrow pits, abandoned mines, artificial wildlife watering devices, buildings,

nonnative vegetation, and private inholdings exist throughout the park. They alter the natural and cultural landscapes, impact native plants and wildlife, and affect wilderness values.

The drilling of holes for expansion bolts for climbing aids in rocks has created an urgent need to evaluate this practice in the park. Since February 1993 the placement of new bolts and the replacement of existing bolts has been prohibited in wilderness until studies can be completed to examine impacts.

ADJACENT LAND USE

Developments and other land uses adjacent to the boundary threaten the integrity of the park's resources, views, and wilderness values. Surrounding land use has changed significantly since creation of the monument. Subdivisions, utility corridors, mining, military facilities, and agricultural interests are, in some cases, right along the boundary. Eagle Mountain landfill has been proposed near the southeast boundary. Concerns include impacts to the desert tortoise and other wildlife, trash blowing, leaks, and air quality degradation. Development would intrude on the scene and diminish the naturalness and solitude of the wilderness. Other concerns include effects from air and water pollutants, invasion of nonnative species from adjacent land, and noisy overflights that affect wilderness solitude. The park's resources are also seriously threatened by illegal activities and uncontrolled access along the boundaries, such as offroad vehicle use, theft of desert vegetation and archeological resources, wood cutting, and dumping of hazardous and domestic wastes.

Fulfillment of the biosphere reserve concept and long-term protection of ecological units that extend outside the boundary are also made more difficult by land use and development around the park. The boundaries were revised in the early 1950s to accommodate mineral extraction. The configuration that had been designed by biologists to protect the natural systems of the two deserts was destroyed in many areas. Consequently, wildlife and vegetation systems were fragmented by uses such as hunting and mining and other developments.

RESOURCES MANAGEMENT

Effective implementation of natural and cultural resources management programs has been hampered by lack of adequate inventories. This includes identification and determination of integrity and significance of cultural resources according to national register criteria. Due to limited staffing and funding, most projects have no critical inventory priority; immediate needs are addressed on a case-by-case basis.

ROADS AND CIRCULATION

Much of the road system is inadequate and in poor condition. The roads were originally built by miners to accommodate wagons and teams and have been improved through the years. The sequence of improvements has resulted in roads too narrow for present use, an inadequate base, alignment and drainage problems, an insufficient number of turnouts and parking areas, and safety hazards (especially for recreational vehicles along curves).

Magnificent large and old Joshua trees grow at the edge of the pavement where they are susceptible to impacts. Some roads have already been improved to meet national park road standards. Others, however, are deteriorating because they were not designed for current use.

The parking areas, like the roads, are no longer adequate to serve current visitation levels and patterns. As a result, visitors park in nearby lots (designated for other attractions or functions) or on the roadsides and walk cross-country to the sites they want to visit. This creates expanding bare spots at the edges of roads and parking areas, and social trails across fragile terrain. Damage to vegetation, soil, and visual quality results.

PARK OPERATIONS AND SUPPORT FACILITIES

Administrative offices, work space, storage, parking, and the native plant nursery are inadequate in size, location, and configuration. Many functions are scattered in trailers, quarters, and added-on rooms. Housing for most permanent and seasonal employees in the park is adequate, but many of the park residences require some rehabilitation (i.e., refinished cabinets, new counter tops, new floor coverings, new wall coverings, and new plumbing fixtures). Some of the utility systems are in poor condition.

The current staffing level is inadequate to provide increased levels of visitor assistance and resource protection. Large portions of the park are not patrolled on a regular basis. Many inappropriate and illegal activities are damaging the resources.

INTERRELATIONSHIPS WITH OTHER PLANS, STUDIES, AND PROPOSALS

The general management plan provides the framework for developing and coordinating other more detailed plans and studies. Separate environmental compliance documents for these plans would tier from this general management plan / environmental impact statement.

Resources Management Plan

The 1993 *Resources Management Plan, Joshua Tree National Monument* outlines the programs necessary to address resource management issues and provide long-term protection of both cultural and natural resources. The National Park Service believes that the plan will adequately address the management of the land added in the 1994 act. Management of natural and cultural resources will be guided by the recommendations in the resources management plan, which is reviewed annually and updated as necessary.

Land Protection Plan

The general management plan, through management zoning, would determine land use in the park. That determination would establish land to be protected because of important resource values, land to be available for public use, and land where other uses would be compatible. The current *Land Protection Plan* (NPS 1986) identifies protection methods for

nonfederal land in the park and recommends the purchase of those tracts from willing sellers. It would be revised based on the management zoning proposals identified in the approved general management plan.

Interpretive Prospectus

An interpretive prospectus for the park is being developed based on the purpose, management goals, and interpretive themes that were developed during the general management plan process. The interpretive prospectus will provide guidance on the development of specific techniques to provide information and education to visitors.

Wilderness and Backcountry Management Plan

This plan is currently being developed to provide specific guidance for the management of the natural zone identified in the general management plan and the additional land added by the 1994 legislation. The natural zone includes designated and proposed wilderness. The wilderness and backcountry management plan will examine what types of uses and activities are appropriate and will determine the desired balance between uses in backcountry wilderness areas to allow for different types of recreation. Such uses must be consistent with the natural state of the areas and cannot undermine or alter them. The plan will also address rehabilitation of the backcountry.

Climbing Management Plan

The climbing management plan guides the regulation of rock climbing in the park. Joshua Tree has become one of the most popular rock climbing areas in the world. The popularity of climbing has soared in the park. The climbing management plan was released to the public in February 1993. It details several studies necessary to understand the effects of climbing on the resources and proposed guidelines for managing climbing until the studies are completed. The general management plan incorporates the recommendations for studies and interim guidelines identified in the climbing management plan. The climbing management plan will be a component of the wilderness and backcountry management plan.

Abandoned Mine Inventories

Abandoned mines exist in every management zone. Some are historically significant or have become important habitat for certain wildlife species such as bats. Some mines leach waste into the soil. The park inventories abandoned mines, determines public safety issues, and sets priorities for mitigating hazards as funds become available. Securing mine shafts and adits with steel mesh nets unobtrusively reduces hazards to visitors without significantly altering the historic character of the sites. The nets also allow bats access to the mines. This program will continue. The general management plan summarizes management recommendations from the resources management plan regarding those mines with historical and interpretive significance.

Trails Plan

Changes in visitor use patterns, the desire of local municipalities to connect regional trails to the park, and the parking areas proposed in the general management plan would require development of a regional trails plan to allow visitors convenient access to the park. A regional trails plan will be developed that will provide direction for the establishment of a trails system. Access to popular areas will be provided where the lack of defined trails is causing significant resource impacts.

Accessibility Plan

An accessibility plan would be developed to ensure that all current and proposed facilities would comply with applicable laws, regulations, and NPS guidelines.

Transportation Study and 1991 Road Reconstruction Environmental Assessment

A transportation study was completed in 1984 that documented use levels throughout the monument and made recommendations for rehabilitating and upgrading deteriorating roads to solve specific safety and transportation problems. A separate environmental assessment for the reconstruction of Park Boulevard, Keys View Road, and Indian Cove Road and associated visitor use areas was completed in 1991. These documents were used to provide information and direction during the formulation of proposals for vehicle circulation and parking.