

APPENDICES

APPENDIX A	REFERENCES AND CONTRIBUTORS	A-1
APPENDIX B	ACRONYMNS AND DEFINITIONS.....	B-1
APPENDIX C	FINDING OF NO SIGNIFICANT IMPACT	C-1
APPENDIX D	FMP EA MITIGATION MEASURES.....	D-1
APPENDIX E	SPECIES LIST	E-1
APPENDIX F	FMP EA CONSULTATION RECORD	F-1
APPENDIX G	LIST OF CLASSIFIED STRUCTURES	G-1
APPENDIX H	SUPPLEMENTAL INFORMATION	
H-1.	Contact List.....	H-1
H-2.	Pinnacles Area Run Card	H-3
H-3.	Weather Information Management System Walk-through	H-5
H-4.	Dispatch Protocol.....	H-7
H-5.	NFDRS Indices and Park Visitor Fire Restrictions	H-9
H-6.	Staff Fire Qualifications.....	H-11
H-7.	Fire Step-up Plan (SOP 37).....	H-13
H-8.	Pinnacles National Monument FireFamilyPlus Graph.....	H-15
H-9.	Delegation to Monument FMO from Superintendent	H-17
H-10.	Central Coast Group Annual Operating Plan, MOU Pinnacles NM and USFS, Los Padres NF	H-19
H-11.	MIT Guidelines.....	H-25
H-12.	Minimum Tool Flow Chart.....	H-37
H-13.	Wildland Fire Situation Analysis.....	H-41
H-14.	Example of Delegation of Authority Form	H-55
H-15.	Briefing Checklist Template	H-57
H-16.	Agency Administrator’s Briefing to the Incident Management Team....	H-59
H-17.	Capitalized Equipment Inventory	H-65
H-18.	Prescribed Fire Plan Example	H-67
H-19.	Monterey Bay Unified Air Pollution Control Board SMP & Permit Application	H-87
H-20.	Pinnacles National Monument FMU Vegetation Map	H-123
APPENDIX I	WILDLAND AND PRESCRIBED FIRE MONITORING AND RESEARCH PLAN (to be added in 2008)	
APPENDIX J	INFORMATION, EDUCATION AND PREVENTION PLAN (to be added in 2008)	

APPENDIX A

REFERENCES AND CONTRIBUTORS

A.1. References Cited

- Anderson, H.E. 1982. Aids to determining fuel models for estimating fire behavior. General Technical Report INT-122.
- Anderson, M. Kat, and Michael J. Moratto. 1996. Native American Land-Use Practices and Ecological Impacts. In: Status of the Sierra Nevada: Vol. 2. Assessments and Scientific Basis for Management Options, pp. 187-206. University of California, Davis Wildland Resources Center Report No. 37.
- Bell, Gordon B. 1958. The Uses of Meteorological Data in Large-Scale Air Pollution Surveys. Menlo Park, CA: Stanford Research Institute.
- Bocek, Barbara R. 1984. Ethnobotany of Costanoan Indians, California, Based on Collections by John P. Harrington. *Economic Botany* 38:240-255.
- Bureau of Land Management (BLM). 2006. Proposed Resource Management Plan and Final Environmental Impact Statement. June 2006. California State Office.
- California Air Resources Board (CARB). 2007. Section 1.3. Wildfires. <http://www.arb.ca.gov/ei/areasrc/onehtm/one9-3.htm>.
- Department of Agriculture (DOA). 2001. Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment. Secretaries of the Departments of Agriculture and Interior and Western Governors.
- Fitzgerald, Kathleen, and Shaun Provencher. 2001. Cultural Landscape Inventory, Level I: Pinnacles Trail System, Pinnacles National Monument. On file at Pinnacles National Monument.
- Fried, Jeremy S., Margaret S. Torn, and Evan Mills. 2003. The impact of climate change on wildfire severity: A regional forecast for northern California. *Climatic Change* 00: 1–23, 2003.
- Gilliam, H. 2002. 2nd Edition. *Weather of the San Francisco Bay Region*. Berkeley (CA): Univ. of California Press. California Natural History Guides, No. 63.
- Greenlee, J. and A. Moldenke. 1982. History of wildland fires in the Gabilan Mountains region of Central Coastal California.
- Hammett, Julia E. 1991. Ecology of Sedentary Societies without Agriculture: Paleoethnobotanical Indicators from Native California. Doctoral Dissertation, University of North Carolina, Chapel Hill.
- Hannah, L., G. F. Midgley, T. Lovejoy, W. J. Bond, M. Bush, J. C. Lovett, D. Scott, F. I. Woodward. 2002. Conservation of Biodiversity in a Changing Climate. *Conservation Biology* 16 (1), 264–268. doi:10.1046/j.1523-1739.2002.00465.x

APPENDIX A – FINDING OF NO SIGNIFICANT IMPACT

- Intergovernmental Panel on Climate Change (IPCC). 2001. *Climate Change 2001: The Scientific Basis*. Cambridge University Press.
- Keeley, Jon E. 2002. Native American Impacts on Fire Regimes of the California Coastal Ranges. *Journal of Biogeography* 29:303-320.
- King, Chester. 2000. Native American Indian Cultural Sites in the Santa Monica Mountains. On file at Santa Monica Mountains National Recreation Area.
- _____. 1993. Fuel Use and Resource Management: Implications for the Study of Land Management in Prehistoric California and Recommendations for a Research Program. In: *Before the Wilderness: Environmental Management by Native Californians*, Thomas C. Blackburn and Kat Anderson, eds., pp. 279-298. Menlo Park, CA: Ballena Press.
- Lewis, Henry T. 1993. Patterns of Indian Burning in California: Ecology and Ethnohistory. In: *Before the Wilderness: Environmental Management by Native Californians*, Thomas C. Blackburn and Kat Anderson, eds., pp. 55-116. Menlo Park, CA: Ballena Press.
- Lewis, Henry T. 1989. Non-Agricultural Management of Plants and Animals: Alternative Burning Strategies in Northern Australia. In: *Wildlife Production Systems: Economic Utilisation of Wild Ungulates*, Robert J. Hudson, K. R. Drew, and L. M. Baskin, eds., pp. 54-74. Cambridge: Cambridge University Press.
- Lewis, Henry T., and Theresa A. Ferguson. 1999. Yards, Corridors, and Mosaics: How to Burn a Boreal Forest. In: *Indians, Fire and the Land in the Pacific Northwest*, Robert Boyd, ed., pp. 164-184. Corvallis: Oregon State University Press.
- Moritz, M.A., J.E. Keeley, E.A. Johnson and A.A. Schaffner. 2004. Testing a basic assumption of shrubland fire management: how important is fuel age? *Frontiers in Ecology and the Environment*, 2:67-72.
- National Interagency Fire Center (NIFC). 2006. *Interagency Standards for Fire and Fire Aviation Operations*. Federal Fire and Aviation Leadership Council. January 1, 2006. <http://www.fire.blm.gov/Standards/redbook.htm>.
- _____. 2001. Review and Update of the 1995 Federal Wildland Fire Management Policy, Interagency Federal Wildland Fire Management Policy Review Working Group, National Interagency Fire Center, Boise, ID.
- National Park Service (NPS). 2006. *Management Policies, the Guide to Managing the National Park Service*. August 31, 2006. pp. 288.
- _____. 2006b. Reference Manual 18, Wildland and Prescribed Fire Management Policy. Published to the Internet and last updated 9/26/06. http://www.nps.gov/fire/fire/fir_wil_pla_reference18.cfm.
- _____. 2006c. Finding of No Significant Impact, Pinnacles National Monument Fire Management Plan.

APPENDIX A – REFERENCES AND CONTRIBUTORS

- _____. 2005. Pinnacles National Monument, Fire Management Plan, Environmental Assessment. Prepared by Mangi Environmental Group, Mc. Lean, Virginia. April 2005.
- _____. 2005. Director's Order 18: Wildland Fire Management. Issued 12/31/2005 http://www.nps.gov/fire/download/fir_wil_do18.pdf. Published by the Office of the Director of the National Park Service, Washington, D.C.
- _____. 2003. Director's Order #60, Aviation Management. <http://www.nps.gov/policy/DOrders/DO60final.pdf>. 10/28/03.
- _____. 2003b. Fire Monitoring Handbook. Fire Management Program Center, NIFC, Boise, ID.
- _____. 1999. Natural and Cultural Resource Management Plan: Pinnacles National Monument.
- _____. 1986. Fire Management Plan: Pinnacles National Monument.
- _____. 1976. General Management Plan: Pinnacles National Monument.
- National Weather Service. 2007. National Weather Service Glossary. <http://www.weather.gov/glossary/>
- National Wildfire Coordinating Group (NWCG). 2000. Wildland and Prescribed Fire Qualifications System Guide (PMS 310-1). http://www.nwcg.gov/pms/docs/310-1_2000.pdf
- Provencher, Shaun, Kathleen Fitzgerald, and Len Warner. 2002. Cultural Landscape Inventory, Level II: Pinnacles East Entrance District. On file at Pinnacles National Monument.
- Rothermel, R.C. 1983. How to predict the spread and intensity of forest and range fires. PMS 436-1, NFES 1573.
- Ruddiman, W. F. 2003. The anthropogenic greenhouse era began thousands of years ago. *Climatic Change*, 61:261–293.
- Siefkin, Nelson, 2004. Epistemology Gone Wrong: One Resource Manager's Attempt to Understand Aboriginal Burning. On file at National Park Service, Division of Fire Management, Pacific West Regional Office, Oakland, CA.
- Union of Concerned Scientists. 2004. Climate Change in California: Choosing our Future. Summary of Emissions Pathways, Climate Change and Impacts on California in the Proceedings of the National Academy of Sciences.
- United States Forest Service. 2004. Fire Effects Information System. Rocky Mountain Research Station, Fire Sciences Laboratory. Online at <http://www.fs.fed.us/database/feis>.
- Verran, R. 1982. The fog and San Francisco. Palo Alto (CA): Pacific Books.

APPENDIX A – FINDING OF NO SIGNIFICANT IMPACT

A.2 Contributors

Roger Wong, Fire Management Officer, Point Reyes National Seashore

Wendy Poinsot, Fire Program Planner, San Francisco Bay Area Network Parks

Tom Leatherman, Former Chief of Natural Resources, Pinnacles National Monument

Dana Sullivan, Protection Operations Supervisor, Pinnacles National Monument

Denise Louie, Chief of Natural Resources, Pinnacles National Monument

Alison Forrestel, Fire Ecologist, San Francisco Bay Area Network Parks

Jennifer Chapman, Fire Education, Prevention, and Information Specialist, San Francisco Bay Area Network Parks

Sharon Franklet, Botanist, Pinnacles National Monument

Mario Marquez, Fire Management Officer, BLM Hollister Field Office

APPENDIX B

ACRONYMNS AND DEFINITIONS

B.1. ACRONYMS

AMR = Appropriate Management Response

AOP = Annual Operating Plan

BAER = Burned Area Emergency Response

BAR = Burned Area Rehabilitation

BLM= Bureau of Land Management

CAA = Clean Air Act

CARB = California Air Resources Board

CDC = California Department of Corrections

CDF = California Department of Forestry and Fire Protection (also Calfire)

CCC = Civilian Conservation Corps

CWA = Clean Water Act

CWPP = Community Wildfire Prevention Plan

DOI = Department of the Interior

DPA = Direct Protection Area

EA = Environmental Assessment

ECC = Emergency Command Center

EIS = Environmental Impact Statement

EPA = Environmental Protection Agency

ERC = Energy Release Component

ES = Emergency Stabilization

ESA = Endangered Species Act

FCST = Forecast Zone

FMC = Fire Management Committee

FMO = Fire Management Officer

FMP = Fire Management Plan

APPENDIX B – ACRONYMS AND DEFINITIONS

FMU = Fire Management Unit

FONSI = Finding of No Significant Impact

FPA = Fire Program Analysis

FRA = Federal Responsibility Area

FWS = U. S. Fish and Wildlife Service

GGNRA = Golden Gate National Recreation Area

GIS = Geographic Information Systems

GMP = General Management Plan

IA = Initial Attack

IC = Incident Commander

ICC = International Code Council

ICS = Incident Command System

IPCC = Intergovernmental Panel on Climate Change

IPM = Integrated Pest Management

IQCS = Incident Qualification and Certification System

IDT = Interdisciplinary Team

LCS = List of Classified Structures

MBUAPCD = Monterey Bay Unified Air Pollution Control District

NEPA = National Environmental Policy Act

NFDRS = National Fire Danger Rating System

NFPORS = National Fire Plan Operations and Reporting System

NHPA = National Historic Preservation Act

NIFC = National Interagency Fire Center

NO_x = Nitrogen oxide

NPS = National Park Service

NRHP = National Register of Historic Places

PCHA = Personal Computer Historical Analysis

PM₁₀, PM_{2.5} = Particulate matter less than 10 microns, less than 2.5 microns, respectively

PRNS = Point Reyes National Seashore

PSA = Predictive Services Area

RAWS = Remote Automated Weather Station

RMP = Resource Management Plan

ROSS = Resource Ordering System Status

SAD = Suppression Activity Damage

SHPO = State Historic Preservation Officer

SOx = Sulfur oxide

SRA = State Responsibility Area

USGS = United States Geological Survey

WFMI = Wildland Fire Management Information System

WFSA = Wildland Fire Situation Analysis

WIMS = Weather Information Management System

B.2. SELECTED DEFINITIONS FROM THE NATIONAL WILDLIFE COORDINATING GROUP (NWCG) <http://www.nwcg.gov/pms/pubs/glossary/index.htm>

Annual Operating Plan (for Fire Weather) (AOP) -- 1 A procedural guide which describes fire meteorological services provided within the Geographic Area of responsibility, including the National Interagency Fire Center. The guide is based on the National Interagency Agreement and applicable Geographic Area Memorandum of Agreement.

Appropriate Management Response – Any specific action suitable to meet Fire Management Unit (FMU) objectives. Typically, the AMR ranges across a spectrum of tactical options (from monitoring to intensive management actions). The AMR is developed by using Fire Management Unit strategies and objectives identified in the Fire Management Plan.

Blow-up – Sudden increase in fireline intensity or rate of spread of a fire sufficient to preclude direct control or to upset existing suppression plans. Often accompanied by violent convection and may have other characteristics of a fire storm.

Burning Index – 1) An estimate of the potential difficulty of fire containment as it relates to the flamelength at the head of the fire. 2) A relative number related to the contribution that fire behavior makes to the amount or effort needed to contain a fire in a specified fuel type. Doubling the burning index indicates that twice the effort will be required to contain a fire in that fuel type as was previously required, providing all other parameters are held constant.

Confinement – 1) The status of a wildfire suppression action signifying that a control line has been completed around the fire, and any associated spot fires, which can reasonably be expected to stop the fire's spread. 2) The act of controlling hazardous spilled or leaking materials.

APPENDIX B – ACRONYMS AND DEFINITIONS

Containment – The status of a wildfire suppression action signifying that a control line has been completed around the fire, and any associated spot fires, which can reasonably be expected to stop the fire's spread.

Contingency Plan -- The portion of a prescribed fire plan, incident action plan, or wildland fire use implementation plan that identifies possible but unlikely events and the contingency resources needed to mitigate those events.

Controlled – The completion of control line around a fire, any spot fires therefrom, and any interior islands to be saved; burned out any unburned area adjacent to the fire side of the control lines; and cool down all hot spots that are immediate threats to the control line, until the lines can reasonably be expected to hold under the foreseeable conditions.

Delegation of Authority -- A statement provided to the incident commander by the agency executive delegating authority and assigning responsibility. The delegation of authority can include objectives, priorities, expectations, constraints and other considerations or guidelines as needed. Many agencies require written delegation of authority to be given to incident commanders prior to their assuming command on larger incidents.

Direct Protection Area -- That area for which a particular fire protection organization has the primary responsibility for attacking an uncontrolled fire and for directing the suppression action. Such responsibility may develop through law, contract, or personal interest of the firefighting agent (e.g., a lumber operator). Several agencies or entities may have some basic responsibilities (e.g., private owner) without being known as the fire organization having direct protection responsibility.

Energy Release Component (ERC) -- The computed total heat release per unit area (British thermal units per sq. ft.) within the flaming front at the head of a moving fire.

Fire Frequency – A general term referring to the recurrence of fire in a given area over time.

Fire Management Area (FMA) – One or more parcels of land having a common set of fire management objectives.

Fire Management Plan (FMP) – A plan which identifies and integrates all wildland fire management and related activities within the context of approved land/resource management plans. It defines a program to manage wildland fires (wildfire, prescribed fire, and wildland fire use). The plan is supplemented by operational plans, including but limited to preparedness plans, preplanned dispatch plans, and prevention plans. Fire Management Plan's assure that wildland fire management goals and components are coordinated.

Fire Management Unit (FMU) – A land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, etc. that set it apart from the characteristics of an adjacent FMU. The FMU may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives.

APPENDIX B – ACRONYMS AND DEFINITIONS

Holding Actions – All actions taken to stop the spread of a fire.

Initial Attack (IA) – A planned response to a wildfire given the wildfire's potential fire behavior. The objective of initial attack is to stop the spread of the fire and put it out at least cost. An aggressive suppression action consistent with firefighter and public safety and values to be protected.

Local Responsibility Area -- Lands on which neither the state nor the federal government has any legal responsibility for providing fire protection.

Management Action Points – Geographic points on the ground or specific points in time where an escalation or alternative of management actions is warranted. These points are defined and the management actions to be taken are clearly described in an approved Wildland Fire Implementation Plan (WFIP) or Prescribed Fire Plan. Timely implementation of the actions when the fire reaches the action point is generally critical to successful accomplishment of the objectives. Also called Trigger Points.

Maximum Manageable Area (MMA) – The maximum geographic limits of spread within which a wildland fire use fire is allowed to spread.

Mitigation Actions – On-the-ground actions that will serve to increase the defensibility of the Maximum Management Area (MMA); check, direct, or delay the spread of fire; and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical non-fire tasks, specific fire applications, and limited suppression actions. These actions will be used to construct firelines, reduce excessive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "black lines" through controlled burnouts, and to limit fire spread and behavior.

Preparedness – 1) Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination. 2) Mental readiness to recognize changes in fire danger and act promptly when action is appropriate. 3) The range of deliberate, critical tasks, and activities necessary to build, sustain, and improve the capability to protect against, respond to, and recover from domestic incidents.

Prescribed Fire – Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met, prior to ignition.

Prescribed Fire Plan – A plan required for each fire application ignited by management. Plans are documents prepared by qualified personnel, approved by the agency administrator, and include criteria for the conditions under which the fire will be conducted (a prescription). Plan content varies among the agencies.

Prescription – Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions.

Protecting Agency -- Agency responsible for providing direct incident management within a specific geographical area pursuant to its jurisdictional responsibility or as

APPENDIX B – ACRONYMS AND DEFINITIONS

specified and provide by contract, cooperative agreement, etc.

Responsible Fire Agency -- Agency with primary responsibility for fire suppression on any particular land area.

San Francisco Bay Area Network – A network of parks in the San Francisco Bay Area, originally convened for inventory and monitoring responsibilities, but often used to facilitate collaboration, information sharing, and economies of scale in for other areas of shared management responsibility. The eight parks of the San Francisco Bay Area Network are Muir Woods National Monument, Golden Gate National Recreation Area, Point Reyes National Seashore, Pinnacles National Monument, Fort Point National Historic Site, Eugene O’Neill Historic Site, John Muir Historic Site and Presidio of San Francisco.

Smoke Management – The policies and practices implemented by air and natural resource managers directed at minimizing the amount of smoke entering populated areas or impacting sensitive sites, avoiding significant deterioration of air quality and violations of National Ambient Air Quality Standards, and mitigating human-caused visibility impacts in Class I areas.

Threatened and Endangered Species – Species that have declined so drastically that the US Fish and Wildlife Service or the National Marine Fisheries Service, under the authority granted by the Endangered Species Act, has determined that federal action is necessary to protect them. Threatened species are considered slightly more at risk than endangered species, but both are usually treated with similar caution.

Unified Command -- In ICS, unified command is a unified team effort which allows all agencies with jurisdictional responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating authority, responsibility, or accountability.

Wildfire – An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildland Fire – Any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined: wildfire, wildland fire use, and prescribed fire.

Wildland Fire Implementation Plan (WFIP) – A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response to a wildland fire.

Wildland Fire Situation Analysis (WFSA) – A decision-making process that evaluates alternative wildfire suppression strategies against selected environmental, social, political, and economic criteria, and provides a record of those decisions.

Wildland Fire Use – The application of appropriate management response (AMR) to naturally-ignited wildfires to accomplish specific resource management objectives in pre-defined designated areas outlined in a Fire Management Plan. Operational management is described in the Wildland Fire Implementation Plan (WFIP).

APPENDIX C

FINDING OF NO SIGNIFICANT IMPACT

Fire Management Plan

Pinnacles National Monument

The National Park Service prepared an Environmental Assessment (EA) on the Pinnacles National Monument Fire Management Plan in accord with the National Environmental Policy Act [(NEPA); 42 USC 4321 et.seq.] and NPS Director's Order 12, the NPS guidelines for NEPA compliance, and in compliance with Director's Order 18 for fire management. The EA which assessed the potential impacts of two programmatic strategies for implementing fire management at Pinnacles National Monument was presented to the public and interested agencies for review and comment. This decision (FONSI) documents the decision-process undertaken in selecting an alternative to implement an updated fire management program, summarizes the basis for determining that the selected alternative would not have significant adverse effects on the environment, and outlines the NEPA process supporting development and analysis of the fire management plan. The administrative files containing the EA and including documentation of regulatory agency consultations and public involvement constitute the complete record on which the FONSI is based.

Background

Pinnacles National Monument (Monument) is located inland of the Central Coast region of California; the western portion of the Monument is in Monterey County and the eastern portion in San Benito County. The lands surrounding the east side are primarily ranchlands while agricultural use is predominant on the west side. The closest towns are Hollister (35 miles north), King City (28 miles south), and Soledad (10 miles west). The Monument has two access roads. The east side of the Monument is accessed via State Route 25 to State Route 146, which ends at the Monument boundary. The west entrance is accessed from U.S. Highway 101 via State Route 146, which ends at the Monument boundary. There is no connecting roadway through the Monument.

The Monument was established by Theodore Roosevelt Presidential Proclamation in 1908 under the authority of the Antiquities Act (34 Stat. 225, 16 U.S.C. 431) stating that "the natural formations, known as Pinnacles Rocks, with a series of caves underlying them...are of scientific interest, and it appears that the public interests would be promoted by reserving these formations and caves as a National Monument, with as much land as may be necessary for the proper protection thereof." After its establishment, a series of land additions between 1923 and 2000 increased the Monument's size to its current 24,585 acres. Congress in 1976 designated 13,270 acres within Pinnacles NM as Wilderness, to be managed in conformance with the 1964 Wilderness Act; currently roughly 65% of the Monument is designated as Wilderness (16,048 acres).

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

The Central Coast Region of California, noted for its scenic coastline and numerous recreational opportunities lies to the west of the Monument and the densely developed Santa Clara Valley lies just beyond the San Benito County line. The city of Hollister, the County Seat of San Benito County, is the largest of the three towns near the Monument with a population of 36,555 (US census 2003). Serving as a bedroom community for workers in Santa Clara Valley to the north, the population of Hollister grew more than 70% during the 1990's. The population of San Benito County as a whole is also growing quickly though at roughly half the rate of Hollister. King City and Soledad in Monterey County have fairly stable populations of approximately 11,000 residents each. Annual visitation to the Pinnacles averaged 179,000 people over the past 2 decades and 166,000 visitors per year since the year 2000.

Purpose and Need for the Fire Management Plan

NPS Management Policies and Director's Order #18 for Wildland Fire Management require that each park unit with vegetation capable of burning prepare a fire management plan (FMP) that conforms to Federal Wildland Fire Management Policy (2001b). Current federal policy stresses protection of firefighter and public safety, protection of public and private property, and incorporation of cultural and natural resource objectives into fire management actions. The Monument needs to update its 1986 FMP to bring it into conformance with current federal wildland fire policy and NPS requirements for FMPs. The FMP revision will address areas added to the Monument since 1986, changes in the environmental and regulatory settings that have occurred over the past two decades and will allow for new fire management strategies and research goals to be adopted that reflect recent strides made in the fields of fire ecology and fire science.

FMP Planning Background

Sections of Pinnacles NM management documents that have addressed wildland fire management in part, such as the 1977 General Management Plan and the 1999 Resource Management Plan, and the entire 1986 FMP will be updated or/and superseded on the subject of fire management through the current FMP process. When these documents were prepared, it was thought that holding to a strict fire suppression strategy over the past century had "resulted in an unnaturally dense and over-mature vegetative cover over most of the park." At that time, it was assumed that the Monument had a relatively frequent fire return interval and that suppression had resulted in unnaturally high fuel loads.

Based on review of relevant information gathered to date on fire history, estimates are that an average of one large fire (approximately 2,500 acres) occurred in the Monument every nine years with a reported fire return interval of 40 years. Recent research by Jon E. Keeley and other experts has produced convincing evidence that the suppression of fires in chaparral areas of California has largely been misinterpreted. Thirty fires of various sizes have been documented over the last 80 years, indicating that fire continues to be a significant influence at Pinnacles. During the 1970s, a number of prescribed burns were used to convert chaparral areas to grasslands, in an effort to reduce hazardous fuels. It is now evident that these prescribed fires contributed to the long-term alteration of vegetation communities from native to non-native species -- the

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

very changes that fire suppression is often blamed for causing. With the adoption of the updated FMP, fire management strategies will be implemented that incorporate the findings of recent research results and improvements to fire management techniques. The updated FMP will employ an adaptive management strategy to allow the fire management program to continue to incorporate new information and techniques as they become available (the administrative record for the FMP will be kept current as any modifications are adopted, and cultural and natural compliance updated as appropriate).

A programmatic EA was prepared to better understand the potential environmental effects that could result from implementation of fire management alternatives, including impacts of wildland fire suppression, creation and/or maintenance of defensible spaces, and the option to use prescribed fire to achieve resource management objectives. Environmental issues identified during scoping, and evaluated in the EA, include soils and geology, water resources, vegetation, wildlife, wilderness, air quality, visitor use and experience, human health and safety, and cultural resources. In keeping with the programmatic level of environmental impact analysis in the EA, future projects not identified and analyzed in site-specific detail will be further evaluated and additional cultural orland natural compliance completed as appropriate.

As discussed in the EA, the overall goals and objectives which would need to be addressed by the desired FMP update include the following:

Goal 1. *Suppress all wildland fires considering firefighter and public safety, while maintaining consistency with resource objectives.*

Objectives:

- √ Insure all fire management activities sustain no injuries to the public and ensure that the number of fire management staff lost time injuries does not exceed 60% of the 1999-2003 five year average.
- √ Complete a risk analysis for properties adjacent to the Monument by 2008.

Goal 2. *Implement a prescribed burn program to address ecological needs of plant and animal communities in the park, with special chaparral ecosystem emphasis.*

Objectives:

- √ Review and evaluate monitoring data every five years to determine the influence of fire on the ecosystem.
- √ If it is determined that over a 10 year period of time there has not been a fire >2000 acres, a prescribed burn will be conducted.

Goal 3. *Reduce hazard fuels accumulations in defensible space areas.*

Objectives:

- √ Around structures in the developed zones change fuel conditions so that, by 2008, under extreme weather conditions, predicted flame lengths will be less than 4 feet. Width will range from 50 to 100 feet of structures depending on adjacent fuels.

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

- √ Identify areas along roads that would potentially inhibit egress during fire events and treat areas to reduce the potential threats to expedient evacuation of staff and visitors during a fire event. Annually review roads for proper clearances regarding egress in an emergency and retreat areas as needed.
- √ Annually maintain minimum clearances directly adjacent to roads, <2 feet, to reduce the potential for spread of fires from these corridors.

Goal 4. *Manage all wildland fire incidents in accordance with accepted interagency standards, using appropriate management strategies and tactics, and maximizing efficiency via interagency coordination and cooperation.*

Objective:

- √ Annually review and update existing cooperative agreements and the FMP with state and local agencies in order to facilitate close working relationships and mutual cooperation regarding fire management activities.

Goal 5. *Develop and conduct monitoring program with recommended standard monitoring levels commensurate with the scope of the fire management program, and use the information gained to continually evaluate and improve fire management.*

Objectives:

- √ Monitor all fires >100 acres, using standard protocols, for severity, behavior and resources affected.
- √ Annually review and update information in the FMP based on monitoring data collected during wildland and prescribed fire events.

Goal 6. *Support fire research and integrate knowledge gained through this and other research into future fire management decisions and actions.*

Objectives:

- √ Identify and prioritize fire research needs and develop at least one funding proposal by 2008.
- √ Review current fire research annually and incorporate any new pertinent information during the annual review of the FMP.

Goal 7. *Develop and maintain professional and technical expertise in all aspects of fire management.*

Objectives:

- √ Provide annual refresher training for all red-carded employees, and facilitate their participation on wildland fire assignments, in order to maintain qualifications.
- √ Create and implement annual fire training-development plans for each employee.
- √ Annually update and train all staff regarding current and new fire operations and procedures.

- √ Plan and conduct all fire management activities in accordance with all applicable laws, policies, and regulations.

Goal 8. *Reduce the potential for impacts to natural and cultural resources from suppression activities.*

Objectives:

- √ Incorporate the minimum impact tactics into all suppression activities, to the greatest extent feasible and appropriate.
- √ By 2007, develop a resource advisory guide so that appropriate management responses and strategies are developed for site specific resource concerns in the park.
- √ Subsequent to the development of the resource advisor guide, for every wildland fire event, identify and implement appropriate management responses and strategies that address site specific resource concerns.

Goal 9. *Minimize direct, operational and indirect impacts to cultural resources as a result of fire management actions*

Objectives:

- √ For every planned and unplanned fire management action, implement, as appropriate, each mitigation identified in Attachment 1.
- √ By 2005, complete GIS database containing locational information for all cultural resources in the Monument (archeological sites, structures, cultural landscapes, etc.) and make available for fire management planning purposes;
- √ By 2010, alter fuel conditions in 50% of Developed Area FMU such that predicted flame lengths under extreme fire conditions will be less than four feet.

Goal 10. *Improve understanding of the role of aboriginal burning and other activities on the biotic communities of the Monument*

Objective:

- √ Seek funding for a comprehensive study, including literature searches, review of existing biological and anthropological data, and consultation with contemporary Native Americans.

Goal 11. *Promote public understanding of fire management programs and objectives.*

Objective :

- √ By 2007, develop and implement public fire information and prevention plans, annually.

Goal 12. *NPS staff and visitors are protected from unhealthy levels of air pollution from prescribed fires. Average visibility within the Monument is not impaired to levels worse than the dirtiest 20th percentile as a result of prescribed fires.*

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

Objective:

- √ Ambient concentrations of particulate matter (PM-10, PM-2.5), as measured at critical receptor sites, will not exceed national ambient air quality standards, as established by the US EPA.
- √ Visibility will not be allowed to degrade to levels within the worst 20th percentile, for more than four consecutive days.

Selected Alternative

The FMP alternative selected by the NPS for implementation at Pinnacles NM is Alternative 2, identified and analyzed as the Preferred Alternative in the 2004 EA - no changes or modifications have been made. Under this alternative, all wildland fires, regardless of origin or location in the Monument, will be suppressed in a manner that minimizes environmental impacts of suppression activities. No wildland fire use will be permitted. A guide for resource advisors will be developed so that staff trained on sensitive resources in the Monument can guide suppression activities and avoid impacts from these activities. All wildland fire suppression activities will adhere to Minimum impact tactics (MIT) guidelines.

Under the Selected Alternative, the Monument is split into three Fire Management Units (FMUs), differentiated by type of setting, management objectives and fire management strategies:

1. *Developed Area FMU (376 Acres)* includes all lands within 50 meters of paved roads and within 100 meters of structures or capital improvements in the Monument. Main components of this FMU are the Bear Gulch Headquarters area, the Chalone Housing/maintenance area, the Chaparral Ranger Station/picnic area, the proposed Westside development area, and all paved roads. These areas have been significantly altered by the development of Monument facilities, including historic structures and trails, some of which were built by the CCC in the 1930s. The developed area is located primarily in areas with riparian vegetation near seasonal or perennial water sources. The management strategy in this FMU is to reduce fire hazard and create defensible space around Monument structures and paved roads in the developed area using mechanical treatment methods as the primary tool to create and maintain defensible space around each of the Monument's structures to a distance of 50 to 100 feet.

2. *Adaptive Management FMU (203 Acres)* is made up of parcels scattered throughout the Monument that contain high concentrations of invasive, exotic plant species. The management strategy in this FMU is to reduce overall risk to firefighters and the public, reduce costs of future suppression efforts through fuel reduction efforts and to eradicate tracts of non-native invasive plants while fostering revegetation by native plants. Prescribed fire would be used throughout this FMU to eradicate starthistle (*Centaurea solstitialis*) and summer mustard (*Hirschfeldia incana*). Monument staff would burn approximately 10-50 acre plots annually for three consecutive years in the spring before either of these plants flower. Though both plants respond favorably to fire, burning prior to flowering avoids new seed production. Burning successively over three years should

deplete the rootstock's stores of energy and deplete the existing seedbank, increasing the effectiveness of eradication efforts. Mechanical treatments to reduce fuel accumulation or to eradicate invasive plant populations may be used alone or to support prescribed burning projects to increase effectiveness. Areas in this FMU may be treated intensely for several years until objectives are met, and then left untreated until natural fires burn through the area.

3. *Wilderness FMU* (23,505 Acres) includes all areas further than 50 meters from paved roads, and 100 meters from buildings and structures that are not in the Adaptive Management FMU. The Wilderness FMU constitutes most of the natural lands within the Monument and includes the 16,048 acres of designated Wilderness. Fire management actions in this FMU will focus on the protection of life and property in full wildland fire suppression; and in the Wilderness areas preserving or restoring wilderness resources and character. Techniques used in this FMU include full wildland fire suppression and the use of prescribed fire to restore and maintain ecosystem structure and function (the latter following completion of a Monument-wide Wilderness Management Plan). "Minimum tools" will be used for projects necessary to be conducted in Wilderness.

The Monument may supplement naturally occurring wildland fire with a very conservative prescribed burn program for the Wilderness FMU. The fire history indicates that, from an ecological standpoint, a "natural" fire interval is being maintained for most areas of the Monument. Therefore, the prescribed burning will focus on projects that meet the ecological needs of the ecosystem. Research has shown that wildland fire burn approximately 2,500 acres over roughly nine year intervals; the prescribed burn program will use these numbers as a baseline objective. If equivalent acreage has not accrued by wildland fires over a 10-year period, management could initiate a prescribed burn of this size in the Wilderness or Adaptive Management FMUs in areas that have not burned in more than 25 years.

The Selected Alternative best meets the FMP goals and objectives developed for Pinnacles NM. It requires full suppression of all wildland fires for firefighter and public safety while ensuring resource protection to the greatest extent feasible. It allows for an incremental prescribed burning program focused on supporting ecosystem health of the chaparral community supported by baseline data from the Monument's fire history analysis. It will protect or restore Wilderness characteristics. The Selected Alternative supports the goals of using mechanical treatment for fuel reduction and to create defensible space and ensure roadside clearance. Public and staff health and safety are primary considerations of the Selected Alternative eschewing wildland fire use as having too high an inherent risk, limiting research burning to relatively small, manageable tracts and supporting staff training and public and community notification and education.

Other Alternatives Considered

Under the No Action alternative, NPS would continue to manage wildland fire under the broad guidelines developed in the 1986 FMP. The Monument would be divided into two FMUs: the Natural Fire Management Zone (NFMZ) and the Conditional Fire Management Zone (CFMZ).

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

The intent of the NFMZ was to allow wildland fire to continue to exert its influence on ecosystems with minimal human interference. Wildland fire use in the NFMZ would be controlled through the creation of a zone of reduced fuels in the CFMZ that would act as a barrier to contain wildland fire use within the NFMZ. The barrier would be created by using prescribed fires to burn off tracts of chaparral. Prescribed fires were to be conducted in the fall, under less extreme fire hazard conditions, to reduce the potential for escape and conversion to a wildland fires. The buffer zone would need to be reburned regularly.

After adoption of the 1986 FMP, it became increasingly apparent that maintaining the buffer zone would be difficult to accomplish and ecologically undesirable. Burning in the fall would not mimic the natural fire regime. The disturbance from creating the buffer could open parklands to invasive non-native species, particularly along the Monument boundary. Additionally, the impacts of burning chaparral have been shown to be much more adverse than previously realized.

Based on this new information, neither wildland fire use nor prescribed burning were used as proposed in the 1986 FMP. Since the buffer zone was not constructed, and little prescribed burning occurred, fire management activities have been governed by the following guidelines:

- Full suppression of all wildland fires, using MIT Guidelines;
- Prescribed burning and mechanical treatments to reduce fuel accumulations around structures and re-establishing native vegetation in areas invaded by non-native plants.

The No Action Alternative was not selected for implementation as its strategies do not conform to current Federal Wildland Fire Management policy and would not meet many of the goals and objectives developed for updating the FMP. The 1986 plan is based on a strategy that may be infeasible to complete due to staffing and funding limitations, constructing large zones of reduced vegetation to act as barriers would not contribute to the goal of providing defensible space in developed areas or protection of life and safety and would not contribute to the goal of promoting the ecological requirements of the chaparral community through FMP actions.

During scoping for the FMP, it was determined that wildland fire use is not suitable for Pinnacles NM. The potential risks to human health and safety and natural/cultural resources would outweigh any potential resource benefits that would be obtained from allowing limited wildland fire use. Due to the unpredictable fire behavior and volatility of chaparral vegetation, combined with the small size of Pinnacles, it would not be possible to allow a fire to burn and maintain the necessary level of safety. The control of fire spread is further complicated by very few roads, limited staffing and limited access within the Monument. Rather than create artificial barriers for wildland fire, fires may be allowed to burn to natural boundaries, aided by use of backfiring techniques, while concentrating direct suppression where needed to protect lives and property. As a result, no alternatives based on these practices were developed for consideration in the EA.

Environmentally Preferred Alternative

The “environmentally preferred” alternative is the alternative that will promote the national environmental policy as expressed by §101 of NEPA. This includes alternatives that:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk of 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 that supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use that will 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 scarce resources.

The Preferred Alternative as described in the EA (and selected for implementation) was deemed to be the “environmentally preferred” alternative. It has the best opportunity to result in “the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources”. Under this alternative, fire management activities would restore and maintain native plant communities, protect life and property within and adjacent to the parklands and help minimize undesirable fire effects on Monument resources. This alternative best protects and preserves the historic, cultural, and natural resources and Wilderness in the Monument for current and future generations.

The No Action is not environmentally preferred. As noted above, the fire management strategies used to develop the program in 1986 have been shown, through research and experience, to be largely infeasible and could result in potentially adverse effects on the environment not anticipated when the FMP was developed. In continuing the existing fire management effort, the No Action alternative could eventually result in extensive alteration of largely undisturbed areas of the Monument to form the wildland fire containment barrier around the core area where wildland fire use would be permitted. The creation of the barrier may promote the revegetation of these areas by opportunistic non-native invasive plants and the degradation of important wildlife habitat. Limited staffing and funding are other factors that make the creation and maintenance of the barrier infeasible.

Public Involvement and Agency Consultation

The public scoping period for the Fire Management Plan/Environmental Assessment

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

was held from June 21 - July 12, 2004. Scoping for the FMP included in-house consultation with regional NPS fire management and resource management professionals and Monument management and staff. Public involvement in the scoping process was sought by mailing a newsletter providing information and asking for comment to contiguous landowners (63 contacts) and mailing the same letter to the Monument's general interest mailing list (232 contacts). A press release announcing the scoping period and public meeting was mailed to two local media outlets (The Pinnacle, the primary San Benito County newspaper, and The Rustler, the King City newspaper). A public meeting was held Jefferson School on Old Hernandez Road on May 11, 2005 at 6:00 p.m.; 5 members of the public attended plus Monument staff. The questions focused on how wildfire would be managed, evacuation measures, and historic building protection. No new information or concerns were raised during any of these outreach efforts.

The NPS conducted informal consultation as required under §7 of the Endangered Species Act. Initial correspondence with the US Fish and Wildlife Service (FWS) was begun on September 8, 2004 and supplemented with additional information on April 25, 2005. Consultation focused on potential impacts to the California condor, the California red-legged frog and proposed critical habitat of the frog. In a biological opinion issued May 27, 2005, the FWS concurred with the NPS determination that FMP implementation, with the incorporation of mitigation measures, would be not likely to adversely affect the listed species and potentially significant effects to the listed species would be sufficiently minimized to a less than significant level or fully avoided.

Consultation with the California State Historic Preservation Officer (SHPO) was undertaken on March 8, 2005. The Monument requested concurrence with its finding that the proposed action was not likely to adversely affect buildings or structures listed on or eligible for the National Register of Historic Places; no objection was provided. These contacts will be maintained for the duration of the approved fire management program, and additional SHPO consults will be initiated as appropriate for any future projects not analyzed in site-specific detail in the EA.

The EA was made available for public review and comment during a 30-day period from April 26, 2005 to May 26, 2005. Local and regional news media, agencies, tribes, libraries, and museums were notified of the availability of the EA. No comments were received on the document and no changes to the text of the EA or modifications to the alternatives were needed as a result.

Mitigation Measures

Minor impacts to natural resources and cultural could occur during suppression of wildland fires and in conjunction with prescribed burning and mechanical fuel reduction projects. The NPS has incorporated the mitigation measures developed as part of the NEPA process as integrated elements of the Selected Alternative for the Pinnacles FMP. With the commitment by the NPS to implement the FMP with the measures included as part of the assessment, all potentially significant adverse environmental impacts FMP implementation would either be avoided or reduced to a less than significant level. Assuring the implementation of the mitigation measures adopted

through the approval of this FONSI is the responsibility of the Monument Superintendent. The mitigation measures are listed in Attachment 1 to this FONSI.

Why the Selected Alternative Will Not Have a Significant Effect

By adhering to the above noted measures in implementing the Selected Plan, the NPS has determined that there will be not significant environmental consequences. As defined at 40 CFR §1508.27, from the regulations of the Council on Environmental Quality that implement the provisions of NEPA, significance is determined by examining the following criteria:

Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

There are both potentially beneficial and adverse impacts from the Selected Alternative. The adverse impacts from FMP implementation would have less than significant effects on the environment with incorporation of the mitigation measures listed in Attachment 1. Prescribed fire would produce minor benefits to soils, vegetation, wildlife, and Wilderness. There would also be benefits to cultural resources due to prescribed fire, as there would be reduced risk of catastrophic fire and consequent damage to cultural resources during suppression activities.

Minor, localized, and short-term adverse impacts to soils, air quality, water resources, wildlife and wilderness are possible from the result of fire suppression activities. “Minimum tools” will be used for any activities determined to be required for protecting Wilderness. There is potential for short-term adverse minor impacts to visitor use and experience from a possible closure of trails or the full Monument, or impacts to visitor experience from nuisance effects of smoke from prescribed fire. There is potential for negligible to minor impacts to cultural resources that are reduced by application of cultural resources mitigation measures and MIT guidelines.

The degree to which the proposed action affects public health or safety.

When conducting fire management activities, human health and safety is the primary concern. In implementing the Selected Alternative, every precaution will be taken to protect human health and safety during fire management activities. Most impacts to human health and safety are minor, beneficial and long-term due to the overall reduction in hazard from wildland fire through fuel reduction required as part of the Selected Alternative. There is potential for short-term minor adverse impacts as well. Wildland fire suppression and management of hazard fuels provides protection to the public, but entails a minor hazard to firefighters from smoke inhalation, contact with firefighting foams or retardants, or from burns. Proper training and strict adherence to guidelines minimizes these risks. Similarly, notification of the public, including neighboring land management agencies, Monument neighbors and visitors, prior to prescribed burns, and strict adherence to procedures and guidelines for managing fire and smoke, will minimize dangers to the public and to firefighters.

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, and wetlands.

Pinnacles NM was recognized as having special qualities when it was established in 1908. The Presidential Proclamation establishing the monument recognized that “the natural formations, known as Pinnacles Rocks, with a series of caves underlying them...are of scientific interest.” The Monument is rich in cultural resources. A total of 28 archeological sites have been recorded and numerous others, known to Monument staff, await formal documentation. Of these, 25 represent Native American occupations, while three are the remnants of homesteads settled in the late 1900s or early twentieth century. A total of 42 structures are listed on the LCS for the Monument, 31 of which have been determined eligible for listing on the National Register of Historic Places. Five potential cultural landscapes have been identified within the Monument: Chalone CCC Camp, Lyons Homestead, Pinnacles East Entrance District, Pinnacles Ranch, and Pinnacles Trail System. More than 7,500 cataloged items are curated in the Monument museum, located in the Bear Gulch developed area. The updated fire management program includes numerous measures to safeguard these resources; SHPO consults will be undertaken for any future projects not specifically identified and analyzed in the EA.

Degree to which the effects on the quality of the human environment are likely to be highly controversial, or are highly uncertain or involve unique or unknown risks.

There were no controversial impacts identified during the EA and no controversial issues were raised during scoping or public review of the EA. The Selected Alternative does not have identified risks associated with it that are unique or unknown, and there are no effects associated with the Selected Alternative that are highly uncertain identified during the analysis for the EA or during the public review of the EA.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Selected Alternative establishes a framework for Monument-wide fire management planning but potential effects have been reduced to a level that is less than significant or wholly avoided. The purpose of the fire management plan and program is to protect natural and cultural resources of the Monument from wildland fire or wildfire suppression activities, in accordance with NPS requirements. Under this program, hazardous fuels reductions and possible use of prescribed fire use would be conducted in a manner consistent with cultural and natural resource management goals. While it is anticipated that these actions will continue to produce overall positive impacts on Monument resources, if it is determined at some future date through annual FMP review that the FMP is not meeting its goals and objectives or is out of conformance with this FONSI, these activities will be reassessed, and, modified or discontinued. The operational FMP will serve as a manual for day-to-day standards for implementing the Selected Alternative and its mitigation measures.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

The Monument has a number of structures eligible for listing on the National Register of Historic Places. It also includes five potential cultural landscapes. The Selected Alternative was developed with assistance and oversight from cultural resources staff at the Pacific West Regional office. The actions described in the fire management plan and EA would help to protect the park's unique cultural resources. The EA was written in compliance of Section 106 of the National Historic Preservation Act. Consultation with the California State Historic Preservation Officer was initiated on March 8, 2005.

Degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

There are two federally listed species known to exist within the boundaries of Pinnacles National Monument: the federally threatened California red-legged frog (*Rana aurora draytonii*), and the federally endangered California condor (*Gymnogyps californianus*). Formal consultation with the U.S. Fish and Wildlife Service, outlined in a biological opinion issued May 27, 2005, resulted in concurrence with our determination that there would be no adverse impacts to either of these species from proposed fire management activities with the following avoidance measures in place: 1) mechanical fuels treatments and prescribed burning would not be applied to habitat occupied or potentially occupied by the California red-legged frogs, 2) water would not be drafted from streams or reservoirs occupied by the California red-legged frog, 3) retardants and other fire chemicals would not be used for prescribed fires, 4) erosion control measures would be employed after prescribed burns, when appropriate, 5) aircraft would not be employed for prescribed burning activities, 6) fire clearances would be completed around the condor facility to protect the structure during wildfire, 7) prescribed burning and fuel treatments would be timed to minimize disturbance to California condors and conducted such that adverse smoke effects would be avoided, and 8) burn activities would be modified or suspended in order to avoid negative effects to the California condor.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts; and whether the action threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment.

As documented in the EA, the NPS determined that there would be no significant cumulative impacts associated with the Selected Alternative, nor do any of the actions to be implemented violate federal, state, or local environmental protection laws.

Impairment

The NPS has determined that implementing the Selected Alternative will not result in an impairment of the critical resources and values of Pinnacles NM. This conclusion is based on a thorough consideration of the environmental impact analysis completed for the FMP, due consideration of public scoping comments and relevant scientific studies, coordination with other interested agencies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies 2001. The strategy described for the Selected Alternative will not impair natural or cultural resources or values that are (1) necessary to fulfill specific purposes identified in the

APPENDIX C – FINDING OF NO SIGNIFICANT IMPACT

enabling legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, and (3) identified as a goal in the park’s general management plan or other NPS planning documents.

Conclusion

Based on the environmental impact analysis completed, and with due consideration for the minor nature of concerns surface during public scoping (and lack of public comments received on the EA), the NPS has determined that the Selected Alternative will not have a significant effect on the quality of the human environment. Negative environmental impacts that could occur are negligible or minor in intensity. There are no significant impacts to natural resources or threatened-endangered species; the FWS concurs with this determination. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the new fire plan will not violate any federal, state, or local environmental protection law. Based on the foregoing, it has been determined that an EIS is not required for updating the FMP, and as a result the new fire management program will be implemented as soon as practicable.

Recommended: _____

Superintendent, Pinnacles National Monument Date

Approved: _____

Regional Director, Pacific West

Date

APPENDIX D – FMP MITIGATION MEASURES

<p>Potential Effect</p>	<p>Mitigation Measure</p>
<p>General Effect, Multiple Impact Topics. Fire management actions could result in significant impacts to Monument resources if not carefully planned to mitigation or avoid potential effects to important Monument resources and the visitor experience.</p>	<p>GEN-1. To ensure that implementation of projects under the fire management plan conforms to NEPA assessment for the FMP, subsequent 5-year plans and individual projects will be subject to NPS project review. Prior to approval, all projects will be subject to the NPS internal review process wherein an interdisciplinary team evaluates whether the potential effects of proposed projects have been adequately addressed in the FMP EA. Conformance to the conclusions in the FMP EA will be documented for the NEPA record by a Memo to File. If the interdisciplinary team concludes that the project has the potential for new environmental effects not addressed in the EA or effects greater than those assessed in the EA, a separate environmental process would be conducted (EA 3-18). GEN-2. A resource advisor guide will be developed for the use of Monument staff to identify sensitive resources (such as sensitive soils, vegetation, and cultural resources) in the Monument during wildland fire events (EA p.3-12).</p>
<p>Soil Resources Trampling, fire line construction, ground disturbance during invasive plant eradication treatments, use of heavy equipment for suppression actions may result in vegetation damage, compaction of soils, increased soil erosion, increased sedimentation flowing to water bodies.</p>	<p>SOI-1. When mopping up after a fire, avoid using excessive amounts of water to extinguish fires to reduce the potential for erosion from hydrologic boring action. If available, soaker hoses, sprinklers or foggers will be used in place of high-pressure fire hoses to avoid boring into and loosening soils. (EA p. 3-6) SOI-2. Implement MIT techniques to lessen impacts to soils such as building the minimum width fire line needed, locating campsites in areas that will not compact easily, alternating travel routes to and from the fire and staging areas, and installing waterbars and sediment dams following burns to prevent erosion. (EA p. 3-7 and Appendix A, MIT Guidelines) SOI-3. Mechanical treatments will minimize the removal and disturbance of ground cover and surface soils (EA p.3-9). SOI-4. Prescribed fire would be conducted on a relatively small scale affecting approximately 10-50 acres per yr and would be planned for relatively flat areas of the Monument (EA p. 3-9).</p>
<p>Water Resources The water quantity of surface water resources could be impacted by actions associated with wildland fire suppression or prescribed burning.</p>	<p>WAT-1. During fire suppression, water will be used in lieu of fire retardant whenever possible. If retardant must be used, a non-fugitive dye-free type will be chosen, and bodies of water avoided (EA p. 3-8). See also SS-6. WAT-2. Implement MIT techniques to lessen impacts to water quality such as locating firefighter's camps and toilets a minimum of 200 feet from water sources and digging latrines sufficiently deep (EA p. 3-9 and Appendix A.)</p>

APPENDIX D – FMP MITIGATION MEASURES

Potential Effect	Mitigation Measure
<p>Vegetation. Fire management actions may damage or destroy individual native plants, plant populations, damage plant habitat and remove</p>	<p>VEG-1. Areas subject to prescribed burning will be monitored to track changes in vegetation composition (EA p.3-12). VEG-2. Implement MIT techniques that lessen impacts to vegetation such as avoid cutting live trees or removing limbs unless the tree/limbs represent a safety hazard or will cause fire spread (Appendix A).</p>
<p>Special Status Species General Avoidance Measures Implementing the FMP would have indirect and direct impacts on special status species and their habitat. General avoidance measures SS-1 through SS-4 have been developed through consultation with the USFWS for the Pinnacles FMP and will be applied by fire management staff whenever an action implementing the FMP has potential to affect a listed species or its habitat.</p>	<p>ESA-1. Known populations of special-status animal species would be monitored to ensure long-term impacts are avoided. GIS maps of population locations will be kept current and available for consultation in case of uncontrolled wildland fire and for planning prescribed burns. (FWS) ESA-2. When conducting prescribed burns in areas occupied by species of special concern, including federally-listed species, the following general avoidance measure will be employed: water will not be drafted from creeks or reservoirs occupied by the California red-legged frog and burns will be conducted during low sensitivity times. (FWS) ESA-3. Fire suppression activities will avoid ground disturbance within known natural sites of federally listed species (e.g. critical habitat, known areas where T&E species exist). When a wildland fire suppression activity (e.g. hand line construction) is not discretionary and deemed necessary to protect human life or property in or around these resource locations, it will involve as little ground disturbance as possible and be located as far outside of resource boundaries as possible. (EA, p. 3-16) ESA-4. If new populations of special status species are discovered or existing populations expand to a larger habitat area, species-specific and site-specific measures will be applied. This new information will be incorporated into administrative record of the FMP through the project review process (EA Appendix C, p. C-6).</p>
<p>Special Status Species California Red-legged Frog (CRLF) CRLF could be affected by removal of emergent vegetation, cover vegetation, shading vegetation, prey habitat, or through the acceleration of runoff and sedimentation into streams, the disruption of breeding behavior or the drawdown of water supplies. Avoidance measures SS-4 through SS-6 will protect CRLF habitat from the potential effects of implementing the FMP.</p>	<p>ESA-5. To protect California red-legged frogs, areas to be treated by mechanical means or prescribed fire will have a buffer area of 100 feet from suitable aquatic habitat and 300 feet from known occupied habitat. In the Bear Gulch area, where structures are closer than the required setbacks, a biologist will survey the sites prior to and during activities to ensure no California red-legged frogs are present. If frogs are found during these surveys, these areas will be avoided. (FWS) ESA-6. For wildland fire control and prescribed fire activities, erosion control measures will be implemented where project actions could leave soils exposed to runoff prior to revegetation. Natural recovery of native vegetation is generally quick in this area and additional treatments are not typically necessary. However, in disturbed areas with little potential for immediate native plant recovery, erosion control measures may include</p>

APPENDIX D – FMP MITIGATION MEASURES

Potential Effect	Mitigation Measure
	<p>covering exposed soils with weed-free chipped material, native duff, or erosion control blankets. (FWS)</p> <p>ESA-7. Retardant and other fire chemicals will not be used for prescribed fire activities.(FWS)</p> <p>See also WAT-1.</p>
<p>Special Status Species California Condor (CACO) California condors may be held in a flight pen facility in the Monument. This facility could potentially be threatened by wildfires. The birds could potentially be affected by smoke from wildland fires and prescribed burns. Avoidance measures SS-7 through SS-9 will be applied if there is the potential that the CACO facility will be affected by smoke.</p>	<p>ESA-8. The NPS has provided the California Department of Forestry and Fire Prevention (CDF), the agency responsible for wildfire suppression in the Monument, with maps and a briefing on the CACO reintroduction program. This will foster awareness of CACO-related sensitive areas and issues in the event of a wildfire emergency (EA Appendix C, p. C-9).</p> <p>ESA-9. Aircraft are advised to avoid the entire Monument, including areas occupied by the California condor, during non-emergency activities such as prescribed burns. (FWS)</p> <p>ESA-10. Fire clearance will be completed around the condor facility to protect the structure during wildfire. These clearances will be conducted in conjunction with the condor crew and with a biologist present to avoid adverse effects to condors both inside and outside the captive facility, (e.g., they will occur at night or during trap-ups). (FWS)</p> <p>ESA-11. Prescribed burns will be evaluated for potential effects to the California condors in the release facility. This may lead to changes in timing, location, smoke effects, aircraft use and methods of burning. If necessary, burn activities will be modified or suspended in order to avoid negative effects to the California condor. (FWS)</p> <p>ESA-12. The wind will be monitored and burns planned to avoid smoke at the condor release facility and commonly used roost sites. (FWS)</p> <p>ESA-13. In the event that a wildland fire threatens the California condor release site, those birds kept within confinement at the site will be evacuated to a temporary safe zone as outlined in the established evacuation plan. Any birds that could not safely be evacuated from the site will be released from the flight pen (EA p. 3-16).</p>

APPENDIX D – FMP MITIGATION MEASURES

Potential Effect	Mitigation Measure
<p>Wilderness Character Adverse impacts to wilderness.</p>	<p>WIL-1. Prescribed fires will not be conducted within designated Wilderness until the Wilderness Management Plan for the Monument is approved (EA p. 3-21).</p> <p>WIL-2. All fire management activities deemed essential to undertake in designated Wilderness will be implemented using “minimum tools” as required by the 1964 Wilderness Act and Director’s Order 41. Short-term impacts (e.g. noise, visual impacts) on the wilderness experience would be mitigated through the use of “minimum impact tactics” (EA p. 3-21).</p>
<p>Air Quality, Nuisance Smoke. Prescribed burns produce smoke that generates particulates and pollutants into the air basin.</p>	<p>AIR-1. All burn plans will have clear objectives and staff will monitor impacts of smoke on the human and natural environments.</p> <p>AIR-2. Prescribed burns ignited in close proximity to structures used by Monument visitors will be implemented during times of the year when visitation is low and only where the prevailing winds will carry the smoke away from the structures.</p> <p>AIR-3. Current and predicted weather forecasts will be use along with test fires to determine smoke dispersal.</p> <p>AIR-4. Smoke dispersal will be visually monitored at set intervals during the course of all prescribed burns. If air quality standards are exceeded or smoke creates a hazard or nuisance, especially in or near smoke sensitive areas, the prescribed burn will be extinguished.</p> <p>AIR-5. An Air Quality Monitoring Plan will be developed and implemented for management ignited prescribed fires larger than 100 acres or expected to last for more than three days.</p> <p>AIR-6. When prescribed fires are conducted, Monument notification will include the BLM local communities that may experience smoke; Monument staff; and Monument visitors (All EA p. 3-23 – 3-24).</p>
<p>Visitor Experience During prescribed fires or mechanical fuel reduction projects, certain areas of the Monument may be closed for public health and safety reasons.</p>	<p>VIS-1. Mechanical treatments in both the Developed and Adaptive Management FMUs would be completed during weekdays, when visitation is low.</p> <p>VIS-2. Monument neighbors, visitors and local residents will be notified of all fire management projects and wildland fires that have the potential to affect them.</p> <p>VIS-3. Prescribed fires will not be ignited in close proximity to Monument structures during periods of peak visitation (All EA p.3-26).</p>

APPENDIX D – FMP MITIGATION MEASURES

Potential Effect	Mitigation Measure
<p>Public Health and Safety</p> <p>The health and safety of visitors, firefighters, staff and Monument neighbors could be impacted by hazards presented by a wildland fire or prescribed burn.</p>	<p>PHS-1. The Monument superintendent or designee may, as a safety precaution, temporarily close all or part of the Monument to the visiting public.</p> <p>PHS-2. Smoke on roadways will be monitored and traffic control provisions taken to ensure motorist safety during fire events at the Monument. The following procedures will be taken to compensate for reduced visibility when a paved road is affected by smoke (the incident commander on a particular event will determine visibility levels):</p> <ul style="list-style-type: none"> • Posting of "Smoke on Road" signs on either side of the affected area • Reducing the posted speed limit when visibility is strongly reduced and escorting vehicles as necessary, and • Closing the road to traffic when visibility is severely reduced (All EA p. 3-29). <p>See also VE-1, VE-2 and VE-3.</p>
<p>Cultural Resources</p> <p>Prescribed Fire and Mechanical Thinning Projects could impact known or unidentified subsurface or surface cultural resources or affect historic structures or cultural landscapes.</p>	<p>CUL-1. For each project, Fire staff will provide a burn plan and/or pertinent information specified in RM 18, Ch. 10 (e.g., detailed project description, maps, anticipated fire intensity, etc.) to Resource staff from which a determination of potential impacts can be made. Information should be provided at least 6 months prior to project implementation.</p> <p>CUL-2. Background research will be conducted in advance of each project to ascertain the presence and significance of previously cultural resources, previous cultural resources inventories, sensitivity of previously unsurveyed areas, vulnerability of recorded resources to proposed actions, etc.</p> <p>CUL-3. Consultation with Native Americans will occur per current Monument policy.</p> <p>CUL-4. All areas of proposed ground disturbance will be inspected in the field using methods appropriate to local topography, vegetation, ground visibility, and suspected resource form and vulnerability. Inventory will be performed by the appropriate subject matter experts.</p> <p>CUL-5. All newly recorded cultural resources will be documented to current professional standards on appropriate state of California (DPR 523) and/or NPS forms.</p> <p>CUL-6. If it is determined that cultural resources of concern are threatened by a given fire management action, steps will be take to mitigate those threats.</p> <p>CUL-7. With regard to <i>direct impacts</i>, the following measures, at a minimum, may be employed:</p>

APPENDIX D – FMP MITIGATION MEASURES

Potential Effect	Mitigation Measure
	<p>1. Exclude fire from the resource by use of fire breaks, wet lines, fire retardant, etc.</p> <p>2. Remove on-site fuels to reduce fire temperature and/or duration;</p> <p>3. Permanent or temporary removal of vulnerable artifacts; and</p> <p>4. Avoid placing burn piles on or adjacent to resources.</p> <p>CUL-8. <i>Operational impacts</i> will be minimized by:</p> <ol style="list-style-type: none"> 1. Avoiding ground disturbance on and upslope from cultural resources; 2. If ground disturbance will occur on or adjacent to a cultural resource, appropriate tools, equipment and activities will be employed (e.g., hand tools and minimal foot traffic on archeological resources); 3. Prior to implementation, operations personnel will be educated on cultural resources of the Monument, historic resources preservation laws, and proper protocol; and 4. If necessary, a cultural resource specialist will monitor operations on and around known or suspected cultural resources. <p>CUL-9. The following may be used to mitigate <i>indirect impacts</i> after prescribed fire and mechanical thinning projects:</p> <ol style="list-style-type: none"> 1. Soils on and adjacent to cultural resources will be assessed for erosion potential. If recognized, noninvasive preventative measures such as scattered vegetation cuttings and geofabric matting are preferred, and vulnerable resources will be monitored long-term; 2. Vulnerable resources will be inspected for the presence of hazard trees. If necessary, these will be removed through consultation with a cultural resource specialist; 3. Post-project archeological inventory will be conducted if survey conditions improve (e.g., improved ground visibility). Any previously undocumented resources will be recorded to current professional standards; 4. All previously recorded and newly recorded archeological resources will be evaluated for vulnerability to looting. If potential is recognized, measures will be taken to mitigate impacts, including artifact removal, camouflaging through burial under soil or vegetation, and monitoring. <p>CU-10. For each project or group of projects, a XXX form and accompanying</p>

Potential Effect	Mitigation Measure
<p>Cultural Resources</p> <p>Suppression of wildland fire and subsequent rehabilitation actions could impact known or unidentified subsurface or surface cultural resources or affect historic structures or cultural landscapes. The following measures (CU-13 through CU-17) will be employed to minimize impacts to cultural resources from wildfire suppression and rehabilitation actions:</p>	<p>documents will be submitted to the Pacific West Region Section 106 coordinator for review and processed under the terms of the 1995 Programmatic Agreement among the NPS, ACHP, and National Conference of SHPOs.</p> <p>CU-11. In the event of unanticipated effects, project activities will cease (if possible) and the CA SHPO, PWR Cultural Resource Division, and other interested parties contacted as needed. The effects will be documented, stabilization and/or mitigation implemented as needed. Project activities will not resume until it can be determined that no additional impacts will occur.</p> <p>CU-12. In the event of discoveries during project activities, all work will cease (if possible) in proximity to the discovery until the nature and vulnerability of the resource can be determined. Any effects will be documented, stabilization and/or mitigation implemented as needed. The CA SHPO, PWR Cultural Resource Division, and other interested parties will be contacted, as needed. Project activities will not resume until it can be determined that no additional impacts will occur.</p> <p>CUL-13. A resource advisor, identified in a delegation of authority, will be assigned to all incidents within or adjacent to the Monument. The appropriate technical specialists will be ordered to serve as camp and/or line advisors;</p> <p>CUL-14. A GIS database containing cultural resources information (e.g., locations of archeological sites, structures, cultural landscapes) will be compiled and provided to Fire Management. This database will be updated as necessary;</p> <p>CUL-15. For all incidents exceeding one operational period, the CA SHPO, PWR Cultural Resource Division, and other interested parties will be contacted as needed;</p> <p>CUL-16. A resource advisor will participate in the design and implementation of all rehabilitation and stabilization activities that have the potential to result in impacts to cultural resources;</p> <p>CUL-17. At the conclusion of each incident, the Chief of Resources Management or designated representative will prepare a report summarizing cultural resource impacts, mitigation and stabilization practices, etc. This report will be submitted to the CA SHPO, PWR Cultural Resource Division, and other interested parties.</p>

APPENDIX E –SPECIES LISTS

APPENDIX E

SPECIES LISTS

Rare Plants Pinnacles National Monument		
Scientific Name	Common Name	CNPS* Ranking
<i>Pentachaeta exilis ssp. aeolica</i>	slender Pentachaeta	1B.2
<i>Plagiobothrys uncinatus</i>	hooked popcorn flower	1B.2
<i>Malacothamnus aboriginum</i>	Indian Valley bush mallow	1B.2
<i>Eriogonum nortonii</i>	Pinnacles buckwheat	1B.3
<i>Delphinium californicum ssp. interius</i>	Hospital Canyon larkspur	1B.2

*CNPS = California Native Plant Society, Inventory. <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>
 1B.2 -- Plants Rare, Threatened, or Endangered in California and elsewhere. In California in particular, fairly endangered (20-80% occurrences threatened).
 1B.3 – Plants Rare, Threatened, or Endangered in California and elsewhere. In California in particular, not very endangered (<20% of occurrences threatened or no current threats known)

Federally listed Wildlife Species Pinnacles National Monument		
Scientific Name	Common Name	ESA Status
<i>Gymnogyps californicus</i>	California condor	Endangered
<i>Rana aurora draytonii</i>	California red-legged frog	Threatened

Invasive Non-native Plants and Proposed Treatments Pinnacles National Monument			
Scientific Name	Common Name	Est. Acres Impacted	Acres Targeted for Treatment
<i>Amaranthus albus</i>	Tumbleweed	1	0
<i>Amaranthus retroflexus</i>	Red-root Pigweed	1	0
<i>Anthriscus caucalis</i>	Bur-chervil	14,000	0
<i>Apium graveolens</i>	Celery	100	0
<i>Conium maculatum</i>	Poison Hemlock	15	15
<i>Scandix pecten-veneris</i>	Sheperd's Needle	5	0
<i>Torilis nodosa</i>	Hedge Parsley	5	0
<i>Anthemis cotula</i>	Mayweed	5	0
<i>Artemisia biennis</i>	Biennial Sagewort	1	0
<i>Carduus tenuiflorus</i>	Slender-flowered Thistle	100	0
<i>Centaurea melitensis</i>	Napa Thistle	10,000	0
<i>Centaurea solstitialis</i>	Yellow Starthistle	250	175

APPENDIX E – SPECIES LISTS

Invasive Non-native Plants and Proposed Treatments Pinnacles National Monument			
Scientific Name	Common Name	Est. Acres Impacted	Acres Targeted for Treatment
<i>Cirsium vulgare</i>	Bull Thistle	15	15
<i>Cotula coronopifolia</i>	Brass-buttons	1	0
<i>Dittrichia graveolens</i>	Stinkweed	300	300
<i>Filago gallica</i>	Narrow-leaved Filago	18,000	0
<i>Gnaphalium luteo-album</i>	Everlasting	5	0
<i>Hypochaeris glabra</i>	Smooth Cat's-ear	18,000	0
<i>Hypochaeris radicata</i>	Hairy Cat's-ear	1,000	0
<i>Lactuca serriola</i>	Prickly Lettuce	5,000	0
<i>Senecio vulgaris</i>	Common Groundsel	5,000	0
<i>Silybum marianum</i>	Milk Thistle	100	50
<i>Sonchus asper ssp. asper</i>	Prickly Sow Thistle	3,000	0
<i>Sonchus oleraceus</i>	Common Sow Thistle	1,000	0
<i>Taraxacum officinale</i>	Common Dandelion	1	0
<i>Xanthium spinosum</i>	Spiny Cocklebur	100	0
<i>Xanthium strumarium</i>	Cocklebur	100	0
<i>Pectocarya penicillata</i>	Winged Pectocarya	1	0
<i>Brassica nigra</i>	Black Mustard	4,000	1,000
<i>Brassica rapa</i>	Field Mustard	1	0
<i>Capsella bursa-pastoris</i>	Shepherd's Purse	5	0
<i>Draba verna</i>	Witlow Grass	3,000	0
<i>Hirschfeldia incana</i>	Summer Mustard	4,000	1,000
<i>Raphanus sativus</i>	Wild Radish	5	0
<i>Rorippa nasturtium-aquaticum</i>	Water Cress	400	0
<i>Sisymbrium orientale</i>	Hedge Mustard	5	0
<i>Cerastium glomeratum</i>	Mouse-ear Chickweed	14,000	0
<i>Herniaria hirsuta ssp. cinerea</i>	Grey Herniaria	2,000	0
<i>Sagina apetala</i>	Dwarf Pearl-wort	1	0
<i>Silene gallica</i>	Windmill Pink	3,000	0
<i>Spergula arvensis ssp. arvensis</i>	Starwort	1,000	0
<i>Spergularia rubra</i>	Purple Sand Spurry	1,000	0
<i>Stellaria media</i>	Common Chickweed	10,000	0
<i>Stellaria pallida</i>	Common Chickweed	1	0
<i>Atriplex serenana var. serenana</i>	Saltbush	1	0
<i>Chenopodium album</i>	Lamb's Quarters	1	0
<i>Salsola tragus</i>	Russian Thistle	20	20
<i>Crassula tillaea</i>	Moss Pygmy-weed	1	0
<i>Cyperus difformis</i>		5	0

APPENDIX E – SPECIES LISTS

Invasive Non-native Plants and Proposed Treatments Pinnacles National Monument			
Scientific Name	Common Name	Est. Acres Impacted	Acres Targeted for Treatment
<i>Medicago polymorpha</i>	California Burclover	5	0
<i>Melilotus alba</i>	White Sweetclover	1	1
<i>Melilotus indica</i>	Sourclover	1,000	0
<i>Vicia sativa ssp. sativa</i>	Spring Vetch	5,000	0
<i>Vicia villosa ssp. varia</i>	Winter Vetch	5,000	0
<i>Erodium botrys</i>	Broad-leaved Filaree	10,000	0
<i>Erodium brachycarpum</i>	Filaree	10,000	0
<i>Erodium cicutarium</i>	Red-stemmed Filaree	20,000	0
<i>Erodium moschatum</i>	White-stemmed Filaree	1,000	0
<i>Iris pseudacorus</i>	Horticultural Iris	1	1
<i>Lamium amplexicaule</i>	Giraffe's Head	1	0
<i>Marrubium vulgare</i>	Horehound	200	60
<i>Mentha xpiperita</i>	Peppermint	50	0
<i>Mentha spicata var. spicata</i>	Spearmint	50	0
<i>Yucca whipplei</i>	Our Lord's Candle	10	10
<i>Malva parviflora</i>	Cheeseweed	1	1
<i>Plantago lanceolata</i>	English Plantain	1	1
<i>Plantago major</i>	Common Plantain	1	1
<i>Aira caryophyllea</i>	Silver European Hairgrass	15,000	0
<i>Arundo donax</i>	Giant Reedgrass	2	2
<i>Avena barbata</i>	Slender Wild Oat	18,000	0
<i>Avena fatua</i>	Wild Oat	6,000	0
<i>Bromus arenarius</i>	Australian Chess	10,000	0
<i>Bromus diandrus</i>	Ripgut Grass	20,000	0
<i>Bromus hordeaceus</i>	Soft Chess	22,000	0
<i>Bromus madritensis ssp. rubens</i>	Red Brome	22,000	0
<i>Bromus trinii</i>	Chilean Chess	100	0
<i>Cynodon dactylon</i>	Bermuda Grass	1	0
<i>Gastridium ventricosum</i>	Nit Grass	5,000	0
<i>Hordeum murinum ssp. leporinum</i>	Barnyard Foxtail	5,000	0
<i>Hordeum vulgare var. trifurcatum</i>	Common Barley	5,000	0
<i>Lamarckia aurea</i>	Golden Top	5,000	0
<i>Lolium perenne</i>	Perennial Rye Grass	1	0
<i>Lolium temulentum</i>	Darnel	1	0
<i>Piptatherum miliaceum</i>	Smilo grass	1	1
<i>Poa annua</i>	Annual Bluegrass	5,000	0
<i>Poa bulbosa</i>	Bulbous Bluegrass	1	0
<i>Polypogon interruptus</i>	Ditch Beardgrass	5,000	0

APPENDIX E – SPECIES LISTS

Invasive Non-native Plants and Proposed Treatments Pinnacles National Monument			
Scientific Name	Common Name	Est. Acres Impacted	Acres Targeted for Treatment
<i>Polypogon monspeliensis</i>	Annual Beardgrass	5,000	0
<i>Vulpia bromoides</i>	Six-weeks Fescue	0	0
<i>Vulpia myuros var. myuros</i>		10,000	0
<i>Polygonum arenastrum</i>	Common Knotweed	1,000	0
<i>Rumex acetosella</i>	Sheep Sorrel	1	0
<i>Rumex crispus</i>	Curly-leaved Dock	5,000	0
<i>Portulaca oleracea</i>	Common Purslane	1	1
<i>Potamogeton nodosus</i>	Long-leaved Pondweed	3	0
<i>Anagallis arvensis</i>	Scarlet Pimpernel	5,000	0
<i>Rubus discolor</i>	Himalayan Blackberry	5	5
<i>Galium aparine</i>	Goose Grass	5,000	0
<i>Galium parisiense</i>	Wall Bedstraw	5,000	0
<i>Verbascum blattaria</i>	Moth Mullein	1	1
<i>Verbascum thapsus</i>	Woolly Mullein	1	1
<i>Veronica anagallis-aquatica</i>	Water Speedwell	1,000	0
<i>Ailanthus altissima</i>	Tree of Heaven	1	1
<i>Nicotiana acuminata var. multiflora</i>	Man-flowered Tobacco	1	0
<i>Nicotiana glauca</i>	Tree Tobacco	1	1
<i>Solanum americanum</i>	Small-flowered Nightshade	1	0
<i>Solanum rostratum</i>	Buffalo Berry	1	1
<i>Tamarix ramosissima</i>	Tamarisk	1	1
<i>Urtica urens</i>	Dwarf Nettle	5,000	0
<i>Tribulus terrestris</i>	Puncturevine	15	15

Non-native Wildlife Species Pinnacles National Monument			
Scientific Name	Common Name	Acres Impacted	Control Proposed?
<i>Pieris rapae</i>	Cabbage White Butterfly	12,000	N
<i>Apis mellifera</i>	European Honey Bee	24,265	Y
<i>Megachile apicalis</i>	Leaf cutter bee	8,000	N
<i>Lepomis cyanellus</i>	Green Sunfish	0	Y
<i>Gambusia affinis</i>	Mosquito Fish	4	Y
<i>Alectoris chukar</i>	chukar	1,800	N
<i>Melagris gallopavo</i>	wild turkey	1,200	N
<i>Columba livia</i>	Rock Dove	4,800	N
<i>Sturnus vulgaris</i>	European Starling	1,200	N
<i>Passer domesticus</i>	House Sparrow	100	N
<i>Sus scrofa</i>	Wild pig	12,000	Y



United States Department of the Interior



FISH AND WILDLIFE SERVICE
 Ventura Fish and Wildlife Office
 2493 Portola Road, Suite B
 Ventura, California 93003

IN REPLY REFER TO:
 PAS 1739.2097.3570

May 27, 2005

Memorandum

To: Superintendent, Pinnacles National Monument, Paicines, California

From: Division Chief, Santa Barbara/Ventura/Los Angeles Counties,
 Ventura Fish and Wildlife Office, Ventura, California *Richard S. Ferrin*

Subject: Pinnacles National Monument Fire Management Plan, San Benito County,
 California

We have reviewed your revised request, dated April 25, 2005, and received in our office on May 2, 2005, for our concurrence with your determination that prescribed burning and fuel reduction activities outlined in your draft Fire Management Plan are not likely to adversely affect the federally endangered California condor (*Gymnogyps californianus*) or the threatened California red-legged frog (*Rana aurora draytonii*). Your proposed Fire Management Plan for Pinnacles National Monument (Monument) provides a framework for three fire management strategies: prescribed burning, mechanical fuel treatments, and wildfire suppression. You have requested informal consultation on activities related to prescribed burning and mechanical fuel treatments, but not on fire suppression activities. Consultation on fire suppression activities will be dealt with on an emergency basis during individual suppression events as needed. Details of fire suppression activities are not discussed further in this memorandum.

Under your preferred alternative, as outlined in the environmental assessment (National Park Service 2005), mechanical fuel reduction treatments would primarily be used to reduce fire hazard and create defensible space around park structures and paved roads. Hazard fuels, such as dead, down, and diseased timber, and all other burnable woody vegetation, would be removed around park structures to a distance of 50 to 100 feet. These developed areas add up to approximately 375 acres within the Monument. Mechanical treatments (e.g., weed whacking) may also be used to remove accumulations of invasive exotic plant species acting as hazard fuels.

Prescribed fire would be used to eradicate invasive species such as starthistle (*Centaurea solstitialis*) and summer mustard (*Hirschfeldia incana*). Park staff would plan to burn 10 to 50 acres per year in the spring, prior to the flowering period, for 3 consecutive years in order to eradicate these exotic species from the area. Burning prior to flowering ensures that there would be no new seed production. Areas infested with invasive plants that would be treated by prescribed fire total approximately 200 acres within the Monument. Prescribed fire may also be used to meet the ecological needs and maintain ecosystem health within the Monument.

June 2007

Superintendent, Pinnacles National Monument

2

The fire history of the area indicates that approximately 2,500 acres burn naturally every 9 years. If a fire of that size has not occurred in the Monument in a 10-year period, a prescribed burn of this size would be planned. Areas considered suitable for prescribed fires would be habitats that had not burned in over 25 years.

You have proposed to implement the following measures during implementation of the fire management plan to avoid adverse effects to listed species (additional details of avoidance measures are outlined in the environmental assessment (National Park Service 2005)):

- 1) Known populations of listed and special status species would be monitored to ensure long-term impacts are avoided.
- 2) When conducting prescribed burns in areas occupied by species of special concern, including federally listed species, the following general avoidance measures would be employed: water would not be drafted from creeks or reservoirs and burns would be conducted during low sensitivity times.
- 3) Measures specifically designed to avoid impacts to the California red-legged frog include:
 - a) Areas to be treated by mechanical means or prescribed fire would have a buffer of 100 feet from suitable aquatic habitat and 300 feet from known occupied habitat. In the Bear Gulch area, where structures are closer than the required setbacks, a biologist would survey the sites prior to and during activities to ensure no California red-legged frogs are present. If frogs are found during these surveys, these areas would be avoided.
 - b) For prescribed fire activities (and wildfire control), erosion control measures would be implemented where project actions could leave soils exposed to runoff prior to revegetation. Natural recovery of native vegetation is generally quick in this area and additional treatments are not typically necessary. However, in disturbed areas with little potential for immediate native plant recovery, erosion control measures may include covering exposed soils with weed-free chipped material, native duff, or erosion control blankets.
 - c) Retardants and other fire chemicals would not be used for prescribed fire activities.
- 4) Measures specifically designed to avoid impacts to the California condor include:
 - a) The entire Monument is avoided by aircraft, including areas occupied by the California condor, during all non-emergency activities.
 - b) Fire clearances would be completed around the condor facility to protect the structure during wildfire. Fire clearances would be conducted in conjunction with the condor crew and with a biologist present to avoid adverse effects to condors both inside and outside the captive facility (e.g., they would occur at night or during trap-ups).

Superintendent, Pinnacles National Monument

3

- c) Prescribed burns would be evaluated for potential effects to the California condors in the release facility. This may lead to a change in the timing, location, smoke effects, aircraft use, and methods of burning. If necessary, burn activities would be modified or suspended in order to avoid negative effects to the California condor.
- d) The wind would be monitored and burn planned to avoid smoke at the condor release facility and commonly used roost sites.

We concur with your determination that the prescribed burning and fuel treatment plans described in the fire management plan for Pinnacles National Monument are not likely to adversely affect the California red-legged frog or California condor. Our concurrence is based primarily on the avoidance measures outlined above, including: 1) mechanical fuel treatments and prescribed burning would not be applied to habitat occupied or potentially occupied by the California red-legged frog, 2) water would not be drafted from streams or reservoirs occupied by the California red-legged frog, 3) retardants and other fire chemicals would not be used for prescribed fires, 4) erosion control measures would be employed after prescribed burning, when appropriate, 5) aircraft would not be employed for prescribed burning activities, 6) fire clearances would be completed around the condor facility to protect the structure during wildfire, 7) prescribed burning and fuel treatments would be timed to minimize disturbance to California condors and conducted such that adverse smoke effects would be avoided, and 8) burn activities would be modified or suspended in order to avoid negative effects to the California condor.

Additionally, the fire management plan may ultimately benefit the California red-legged frog and California condor by reducing the severity and extent of future wildfires as a result of the proposed fuel modifications. A reduction in the severity and extent of a wildfire is likely to result in reduced erosion and sediment deposition into streams, a reduced likelihood that the condor facility would burn in a wildfire, and a reduced likelihood that a California condor would be overcome by fire or smoke effects during a severe wildfire.

No further consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended, is required at this time. If you become aware of new information regarding the design or implementation of the proposed project, or that a listed species has been adversely affected by the project, we recommend that you contact us as soon as possible to assess the need for further consultation. Any prescribed burning or fuel treatment projects not specifically contemplated by your fire management plan that may adversely affect a listed species would require separate section 7 consultation under the Endangered Species Act of 1973, as amended.

If you have any questions, please contact Creed Clayton of this office at (805) 644-1766, extension 335.

APPENDIX G – LIST OF CLASSIFIED STRUCTURES

APPENDIX G**LIST OF CLASSIFIED STRUCTURES AT
PINNACLES NATIONAL MONUMENT****CULTURAL LANDSCAPES**

Pinnacles East Entrance District
Pinnacles Trail System

CLASSIFIED STRUCTURES	
Chief Ranger's Residence	002
Bear Gulch Comfort Station	017
Moses Spring Comfort Station	018
Gas and Oil House	200
Horse Barn	202
Bear Gulch Dam	HS1
Visitor Center	001
East Entrance Pylon North	HS2
East Entrance Pylon South	HS3
High Peaks Comfort Station	400
Chalone Peak Comfort Station	403
One Car Garage	023
Retaining wall, Chief Ranger Residence	HS5
Stone stairs and walks, Chief Ranger Residence	HS6
High Peaks Trail	HS7
Tunnel Trail	HS8
Condor Gulch Trail	HS9
Moses Spring Trail	HS10
Bear Gulch Caves	HS11
Rock Wash near Chalone Maintenance Area	HS12
Bear Gulch Road	HS13
Chalone Peak Trail	HS14
Maintenance Shop	300

APPENDIX G – LIST OF CLASSIFIED STRUCTURES

Truck and Car Garage	301
Tack Room	302
Ranger Office	004
Conference Room	005
Maintenance & Compliance Office	008
Residence/Dorm “Honeymoon Cabin”	010
Interpretive Laboratory	013
Superintendent’s Office	006
Administration Office	007
Box culvert with wing walls	HS22
Stone guard wall	HS21
Masonry Culverts and Headwalls	HS20
Storage Shed	306
Stone Tree Wells	HS19
Chalone Creek Road	HS16
Eastern Approach Road	HS17
Moses Spring Monumenting Area	HS18
Condor Gulch Road	HS15
Superintendent’s Residence	019