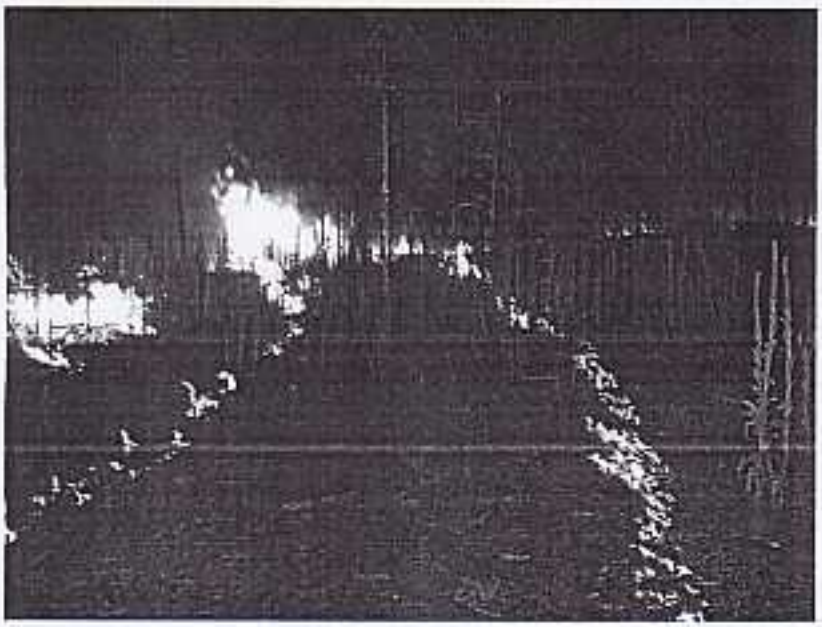
Bureau of Land Management
Arizona Strip Fire Management Zone

Fire Management Plan

2004



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Arizona Strip Fire Management Zone Fire Management Plan

I. Introduction

A. Purpose

The purpose of the Bureau of Land Management (BLM) Arizona Strip Fire Management Zone Fire Management Plan (ASFMZ-FMP) is to identify and integrate all wildland fire management guidance, direction, and activities required to implement national fire policy and fire management direction from the Arizona Strip District Resource Management Plan (RMP), Arizona Strip RMP Desert Amendment, and the Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (LUPA). Arizona Strip Field Office implementation plans and the Arizona Statewide LUPA allow fire to be restored as an integral part of ecosystems to meet resource management objectives. The ASFMZ-FMP directs activities for fire and resource personnel to improve protection of human life and property through aggressive fire protection, reduction of hazardous fuels, and restoration of fire damaged ecosystems. This plan highlights management direction to facilitate development and implementation of fire management strategies.

The fire management organization outlined in the FMP is used in the development of annual budget requests and annual work plans. Proposed actions, alternatives, and environmental analyses, in compliance with the National Environmental Policy Act (NEPA), will be based on these strategies and developed for implementation of site-specific projects. In addition, this FMP lays the foundation for future collaborative efforts involving interagency partners and state and local cooperators.

The Risk Assessment and Mitigation Strategies (RAMS) is a planning process used to develop prevention, mitigation, and fuels programs as part of a comprehensive fire management program. Summary reports are in Appendix A.

The Interagency Fire Management Plan template and interim guidance were used to develop the ASFMZ-FMP.

A Glossary is provided in Appendix B to clarify technical terms. A list of acronyms is provided in Appendix C.

B. Relationship to Environmental Compliance

All fire management objectives, desired future conditions, constraints, and activities contained within this plan are consistent with the Arizona Statewide LUPA. Direction in the RMP, Arizona Strip RMP Desert Amendment, Wilderness Management Plans, and existing implementation plans is used as guidance in the development of fire management objectives (see Chapter II, section C).

C. Collaborative Process Identification

The ASFMZ-FMP is a strategic document identifying approved fire management direction determined by the Arizona Statewide LUPA (analyzed in the environmental assessment), Arizona Strip District RMP (analyzed in the environmental impact statement), and Arizona Strip RMP Desert Amendment (analyzed in the environmental assessment). In January and February 2003, letters were sent by the BLM Deputy State Director to Arizona Federal, State, and County agencies and to Tribal contacts providing background information on the Arizona Statewide LUPA process. They were invited to attend one or more of the public meetings or to contact BLM if they would like a separate meeting. Tribal representatives were contacted to obtain information on potential issues and concerns they might have. All information obtained was fully considered in the Arizona Statewide LUPA and associated National Environmental Policy Act (NEPA) process. Formal consultation and conference pursuant to Section 7 of the Endangered Species Act was completed for the Arizona Statewide LUPA. Section 7 consultation is not required for ASFMZ-FMP.

The ASFMZ-FMP meets the national requirement that FMPs be developed for all acres of burnable vegetation on BLM-administered public lands, and that they be linked closely with the approved Land Use Plan. The ASFMZ-FMP also meets regulatory NEPA compliance requirements as it is a strategic document that does not make resource management decisions or project specific implementation decisions and therefore is categorically excluded from further NEPA analysis (Categorical Exclusion 516 DM2, Appendix 1, Chapter 2, 1.10). Prior to implementing specific fire management projects, additional environmental analysis and compliance with other federal and state regulatory requirements such as the National Historic Preservation Act, the Endangered Species Act, the Clean Water Act, and the Clean Air Act will be required.

Under a project related to the Arizona Statewide LUPA, The Nature Conservancy (TNC), a non-profit conservation organization, reviewed and provided an independent, scientific evaluation of the ecological validity of fire management polygons used in the 1998 ASFMZ-FMP. TNC's efforts directly support the update of this FMP.

D. Authorities

The "Principal Wildland Fire Laws" reference guide dated October 2003 consolidates in one guide applicable laws covering the BLM fire management program. The guide should be referenced for a more detailed list.

Authorities for the Fire Management program are listed below:

1. Protection and Suppression

a. BLM Lands Generally: Statutory Law

Protection Act of September 20, 1922: Protection of Timber Resource (16 U.S.C. § 594)

Taylor Grazing Act: Protection of Grazing Districts and Other Interior Lands (43 U.S.C. § 315a)

Federal Land Policy and Management Act (FLPMA): Preservation and Protection of BLM Lands (43 U.S.C. §§ 1701-52)

Wildfire Disaster Recovery Act of 1989: Protection of National Forests: Reforestation; Management: Report on Rehabilitation Needs (16 U.S.C. § 551b)

Wildfire Disaster Recovery Act of 1989: Protection of National Forests: Reforestation; Management: Planning for Fire Protection (16 U.S.C. § 551c)

Appropriations Act: Wildland Fire Management (2001)

b. BLM Lands Generally: Administrative Law

Fire Management: Wildfire Prevention (43 C.F.R. § 9212.0 et seq.)

Fire Management: Wildfire Prevention, Prohibited Acts on BLM Lands (43 C.F.R. § 9212.1)

Fire Management: Wildfire Prevention, Fire Prevention Orders (43 C.F.R. § 9212.2)

Fire Management: Wildfire Prevention, Permits (43 C.F.R. § 9212.3)

Fire Management: Wildfire Prevention, Penalties (43 C.F.R. § 9212.4)

Forest Management: Sales of Forest Products May Include Provisions for Fire Safety (43 C.F.R. § 5424.0-6)

Visitor Services: Closures and Restriction Orders, Recreation Management (43 C.F.R. § 8364.1)

Recreation Management: Temporary Closure of Lands (43 C.F.R. § 9268.3)

State and Local Laws (43 C.F.R. § 8365.1-7) Executive Order No. 11644: Use of Off-Road Vehicles on Public Lands

c. Specific BLM Lands: Administrative Law

1. National Wilderness Preservation System

Regulations for Administration and Use of Wilderness Areas (43 C.F.R. § 19.6)

Emergency Functions in Wilderness Areas (43 C.F.R.

Provisions to Control Fire, Insects, and Disease in Wilderness Areas (43 C.F.R. § 6304.22)

Wild & Scenic Rivers and National Trails System Acts

Emergency Motorized Vehicle Use on National Scenic Trails (43 C.F.R. § 8351.1-1)

Special Rules Exempting Fire Fighters on Official Duty (43 C.F.R. § 8351.2-1)

Prohibition on Fire within National Wild & Scenic River System (43 C.F.R. § 8351.2-1e)

d. Other DOI Lands (Non-BLM): Statutory Law

National Wildlife System Administration Act of 1966: Interagency Agreements (42 U.S.C. § 668dd)

2. Prescribed Fire and Fire Use

a. BLM Lands Generally: Statutory Law

McSweeney-McNary Act (16 U.S.C. § 1647) – repealed.

Taylor Grazing Act (43 U.S.C. § 315a)

Federal Land Policy and Management Act (FLPMA) (43 U.S.C. §§1701-52)

Appropriations Act: Wildland Fire Management (2001)

b. State Lands: Statutory Law

Pittman-Robertson Wildlife Restoration Act or Federal Aid in Wildlife Restoration (16 U.S.C. § 669)

3. Contracts, Cooperative Agreements, Grants and Community Assistance

a. BLM Generally: Statutory Law, Contracts

Federal Property and Administrative Services Act: Guidelines for Contracting (40 U.S.C. § 471)

Federal Land Policy and Management Act (FLPMA) (43 U.S.C. §§ 1701-52)

Federal Grant and Cooperative Agreement Act: Using Procurement Contracts, Grants and Cooperative Agreements (31 U.S.C. §§ 6301-6307)

Federal Grant and Cooperative Agreement Act: Intergovernmental Cooperation: Authority to Provide Specialized or Technical Services (31 U.S.C. § 6505)

Federal Grant and Cooperative Agreement Act: Intergovernmental Cooperation (31 U.S.C. §§ 6501-6508)

Economy Act of 1932: Interagency Orders for Goods and Services (31 U.S.C. § 1535)

b. BLM Generally: Statutory Law, Cooperative Agreements, Grants

Federal Grant and Cooperative Agreement Act: Using Procurement Contracts, Grants and Cooperative Agreements (31 U.S.C. §§ 6301-6307)

Federal Grant and Cooperative Agreement Act: Using Procurement Contracts and Grant and Cooperative Agreements: Authority to Vest Title in Tangible Personal Property for Research (31 U.S.C. § 6306)

Federal Grant and Cooperative Agreement Act: Using Procurement Contracts and Grant and Cooperative Agreements: Use of Multiple Relationships for Different Parts of Jointly Financed Projects

Reciprocal Fire Protection Act of 1955: Reciprocal Fire Protection Agreements (42 U.S.C. § 1856 (a)-(d))

Fish and Wildlife Coordination Act: Protection and Conservation of Wildlife: Game, Fur-bearing Animals and Fish (16 U.S.C. § 661).

Appropriations Act: Wildland Fire Management (2001)

Appropriations Act: Wildland Fire Management (Public Law 107-63 (HR 2217))

Supplemental Appropriations of 1982 (U.S.C.C.A.N. 96 Stat. 837)

c. State Lands: Statutory Law

Conservation Programs on Government Lands (16 U.S.C. § 670(h))

d. International Agreements Generally

Wildfire Suppression Assistance Act of 1989 (42 U.S.C. § 1856(m) - (p))

e. Specific International Agreements, U.S./Canada and U.S./Mexico

Wildfire Suppression Assistance Act of 1989 (42 U.S.C. § 1856(m) - (p))

f. Community Assistance

Appropriations Act: Wildland Fire Management (2001)

g. Non-DOI Lands: Administrative Law

Emergency Fire Protection Aid to Other Fire Departments Not Within DOI (43 C.F.R. § 28)

h. BLM Generally: Administrative Law, Grants

Grants of Equipment and Supplies from DOI to State and Local Grantees (43 C.F.R. §§ 12.72 & 12.73)

Enforcement of Grants (43 § C.F.R. 12.83)

4. Major Disasters and Emergencies

a. Statutory Law

Major Disaster Assistance Programs: Fire Management Assistance (42 U.S.C. § 5187)

Federal Fire Prevention and Control Act of 1974 as amended: The Federal Emergency Management Administration's Ability to Engage BLM and Other Federal Agencies (15 U.S.C. § 2201)

National Historic Preservation Act: Historic Sites, Buildings, etc. (16 U.S.C. § 464)

b. Administrative Law

Emergency Management and Requested Assistance (44 C.F.R. § 10.13)

Fire Prevention and Control: Assistance by Other Federal Agencies (44 C.F.R. § 206.5)

Donation or Loan of Federal Equipment and Supplies (44 C.F.R. § 206.6)

Implementation of Assistance from Other Federal Agencies (44 C.F.R. § 206.7)

Reimbursement of Other Federal Agencies (44 C.F.R.§ 206.8)

Nonliability of Federal Government (44 C.F.R. § 206.9)

Standards and Reviews (44 C.F.R. § 206.13)

Recovery of Assistance: Liable Party (44 C.F.R. § 206.15)

Audit and Investigations (44 C.F.R. § 206.16)

Designation of Affected Areas and Eligible Assistance (44 C.F.R. § 206.40)

Responsibilities of Coordinating Officers (44 C.F.R. § 206.42)

Emergency Support Teams (44 C.F.R. § 206.43)

Available Assistance under Emergency Declarations (44 C.F.R. § 206.62)

Provision of Assistance Limited to the Immediate and Short Term (44 C.F.R § 206.63)

Coordination of Assistance under the Federal Coordinating Officer (44 C.F.R. § 206.64)

Cost Sharing (44 C.F.R. § 206.65)

Duplication of Benefits to Individuals and Families (44 C.F.R. § 206.191)

Direct Federal Assistance (44 C.F.R. § 206.208)

Fire Suppression Assistance (44 C.F.R. § 206.390)

FEMA-State Agreement Governs Federal Assistance (44 C.F.R. § 206.391)

Providing Assistance (44 C.F.R. § 206.393)

Expense Recovery (44 C.F.R. § 206.394)

5. Other Federal Laws that May Apply

National Environmental Policy Act of 1970 (NEPA) (42 U.S.C. §§ 4321-4370e)

Endangered Species Act of 1973 (ESA) (16 U.S.C. §§ 1531 - 1544)

Clean Water Act of 1948, as amended 1966, 1972 (CWA) (33 U.S.C. §§ 1251 – 1387)

The Clean Air Act of 1970 (CAA) (42 U.S.C. §§ 7401 - 7671q)

Wilderness Act of 1964 (16 U.S.C. §§ 1131-1136)

Antiquities Act of 1906 (16 U.S.C. §§ 431-433)

National Historic Preservation Act of 1966 (NHPA), as amended (1992) (16 U.S.C. §§ 470 et seq.)

6. Other Guidance

United States Department of the Interior Manual (910 DM 1.3).

1995 Federal Wildland Fire Management Policy

2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update)

1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures.

II. Relationship to Land Management Planning/Fire Policy

A. Policy

The ASFMZ-FMP adheres to the following established fire policy:

- BLM Manual Section 1740 and BLM Manual Handbook H-1740-1 – provide guidance and procedures for management and treatment of renewable resources, including utilization of management prescribed fire and emergency fire rehabilitation.

- BLM Handbook H-9214 Prescribed Fire Management describes the authority and policy for prescribed fire use on public lands administered by the BLM.

- BLM Manual Section 1752 – provides guidance for emergency fire rehabilitation. Emergency fire rehabilitation measures to prevent accelerated soil erosion and establishment of noxious weeds are incorporated. Fire line rehabilitation would include restoration of surface contours and closure to vehicles.

- 43 CFR 9212.0-6 Policy - It is the policy of the BLM to take all necessary actions to protect human life, the public lands and the resources and improvements thereon through the prevention of wildfires. Wherever possible, the Bureau of Land Management's actions will complement and support State and local wildfire prevention actions.

- September 2000, *Managing the Impacts of Wildfires on Communities and the Environment*.

- October 2000, *National Cohesive Strategy* - goal is to coordinate an aggressive, collaborative approach to reduce the threat of wildland fire to communities and to restore and maintain land health (www.fireplan.gov).

- August 2001, *Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment -10 Year Comprehensive Strategy and May 2002, Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10 Year Comprehensive Strategy – Implementation Plan* - provide a suite of core principles and four goals. The core principles include the concepts of collaboration, priority setting, and accountability. The four goals are:

  1. Improve Prevention and Suppression
  2. Reduce Hazardous Fuels
  3. Restore Fire Adapted Ecosystems
  4. Promote Community Assistance

  The strategy provides a foundation for wildland agencies to work closely with all levels of government, tribes, conservation, and commodity groups and community-based restoration groups to reduce wildland fire risk to communities and the environment.

- *Interagency Standards for Fire and Fire Aviation Operations* - describes policy and operations for all fire related activities in the DOI and USDA, as amended annually.

- August 2002, *Healthy Forests - An Initiative for Wildfire Prevention and Stronger Communities*.

Additionally, the *2001 Review and Update of the1995 Federal Wildland Fire Policy* states:

1. **Safety:** Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.

2. **Fire Management and Ecosystem Sustainability:** The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.

3. **Response to Wildland Fire:** Fire, as a critical natural process, will be integrated into land and RMPs and activities on a landscape scale, and across agency boundaries. Response to wildland fire is based on ecological, social, and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected dictate the appropriate management response to the fire.

4. **Use of Wildland Fire:** Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on approved Fire Management Plans and will follow specific prescriptions contained in operational plans.

5. **Rehabilitation and Restoration:** Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, and safety, and to help communities protect infrastructure.

6. **Protection Priorities:** The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.

7. **Wildland Urban Interface:** The operational roles of federal agencies as partners in the Wildland Urban Interface are wildland firefighting, hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, State, or local governments. Federal agencies may assist with exterior structural protection activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding. (Some federal agencies have full structural protection authority

for their facilities on lands they administer, and may also enter into formal agreements to assist State and local governments with full structural protection.)

8. **Planning:** Every area with burnable vegetation must have an approved FMP. FMPs are strategic plans that define a program to manage wildland and prescribed fires based on the area's approved land management plan. FMPs must provide for firefighter and public safety; include fire management strategies, tactics, and alternatives; address values to be protected and public health issues; and be consistent with resource management objectives, activities of the area, and environmental laws and regulations.

9. **Science:** FMPs and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program. Scientific results must be made available to managers in a timely manner and must be used in the development of land management plans, FMPs, and implementation plans.

10. **Preparedness:** Agencies will ensure their capability to provide safe, cost-effective fire management programs in support of land and RMPs through appropriate planning, staffing, training, equipment, and management oversight.

11. **Suppression:** Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.

12. **Prevention:** Agencies will work together and with their partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.

13. **Standardization:** Agencies will use compatible planning processes, funding mechanisms, training and qualification requirements, operational procedures, values-to-be-protected methodologies, and public education programs for all fire management activities.

14. **Interagency Cooperation and Coordination:** Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.

15. **Communication and Education:** Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs. These programs will be continuously improved through the timely and effective exchange of information among all affected agencies and organizations.

16. **Agency Administrator and Employee Roles:** Agency administrators will ensure that their employees are trained, certified, and made available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Employees with operational, administrative, or other skills will support the wildland fire program as necessary. Agency administrators are responsible and will be held accountable for making employees available.

17. **Evaluation:** Agencies will develop and implement a systematic method of evaluation to determine effectiveness of projects through implementation of the 2001 Federal Fire Policy. The evaluation will assure accountability, facilitate resolution of areas of conflict, and identify resource shortages and agency priorities.

B. Direction in the Arizona Statewide LUPA

The Arizona Statewide LUPA includes the use of fire and other vegetative treatments as tools to achieve resource management objectives. Fire management also includes adaptive management for wildland fire; allows fire to resume a more natural ecological role within each ecosystem; and allows the use of prescribed fire and mechanical, chemical and biological treatments to meet resource objectives and reduce hazardous fuels on public lands inside and outside wildland-urban interface (WUI) areas. Desired future conditions and land use allocations for fire management are listed in chapter III section D. The Arizona Statewide LUPA includes an extensive list of conservation measures which will be followed as part of the ASFMZ-FMP (Appendix D).

The Arizona Strip Field Office is currently developing monument management plans for the Vermilion Cliffs and Grand Canyon-Parashant national monuments and revising the RMP for lands in the Public Domain. A separate Record of Decision will be signed for each of the three plans. Once signed, the next version of the ASFMZ-FMP will tier to these plans rather than the Arizona Statewide LUPA.

C. Conformance with Arizona Strip Field Office Direction:

The ASFMZ-FMP will help meet the goals, standards, objectives, and/or desired future conditions in the following plans:

- RMP: Fire and fuels management decisions in the RMP were updated in the Arizona Statewide LUPA to comply with current fire policy and guidance and to fully integrate fire and fuels management direction found in the latest Department of Interior and BLM resource program guidance for BLM-administered public lands.

- Arizona Strip RMP Desert Amendment: Decisions and guidelines pertaining to fire and fuels management and their impacts to desert tortoise are incorporated in the conservation measures for the Arizona Statewide LUPA. No mechanical treatment or conversion is allowed in the Areas of Critical Environmental Concern (ACEC) established to protect desert tortoise unless it benefits or improves habitat management for listed species.

- Mt. Trumbull Resource Conservation Area Plan (June 1995)

- Wilderness Management Plans (WMP) for the Cottonwood Point (1991), Grand Wash Cliffs (1990), Paiute and Beaver Dam Mountains (1990), Paria Canyon-Vermilion Cliffs, and Mt. Trumbull and Mt. Logan (1990) wilderness areas. Fire management direction in the Paiute and Beaver Dam Mountains WMP is superceded by the Arizona Strip RMP Desert Amendment.

- Proclamations for the Grand Canyon-Parashant and Vermilion Cliffs national monuments (2000)

- Parashant Interdisciplinary Management Plan, Arizona Strip Field Office and Lake Mead National Recreation Area (October 1997)

- Arizona Strip Riparian Fire Suppression Plan (Draft)

Direction in the Biological Opinion for Emergency Fire Suppression in the Pakoon Basin and Programmatic Fire Suppression During 1996 on the Arizona Strip District, BLM is incorporated in Arizona Statewide LUPA conservation measures.

III. Wildland Fire Management Strategies

A. General Management Considerations

To comply with direction provided in current National Fire Plan guidance; the Statewide LUPA; Arizona Strip District RMP; Arizona Strip RMP Desert Amendment; Mt. Trumbull Resource Conservation Area Plan; WMPs for the Cottonwood Point, Grand Wash Cliffs, Paiute and Beaver Dam Mountains, Paria Canyon-Vermilion Cliffs, and Mt. Trumbull and Mt. Logan wilderness areas; Proclamations for the Grand Canyon-Parashant and Vermilion Cliffs national monuments; Parashant Interdisciplinary Management Plan, and the Arizona Strip Riparian Fire Suppression Plan (Draft); the ASFMZ will implement the following fire management guidance. The ASFMZ will:

- Use fire to restore and/or sustain ecosystem health based on sound scientific principles and information, balanced with other societal goals, including public health and safety, and air quality.

- Identify appropriate management response (AMR) goals, objectives, and constraints by specific Fire Management Units (FMU) within the ASFMZ. All wildland fire management activities will be managed as described in the FMU guidance outlined in chapter III, section D.

- Provide an AMR on all wildland fires, with emphasis on minimizing suppression costs, considering fire fighter and public safety, benefits and values to be protected consistent with resource objectives, standards, and guidelines.

- Meet management goals and objectives by implementing wildland fire use and prescribed fire, mechanical, chemical, and biological treatments. Allow fire to function in its ecological role when appropriate for the site and situation.

- Employ fire prevention strategies that reduce human ignitions with special emphasis in campgrounds and transportation corridors.

- Use fire as a management tool to improve the ecological condition of range ecosystems and maintain natural plant community diversity.

- Work collaboratively with communities at risk within the WUI to develop plans for risk reduction. The Federal Register Notice list is located at: http://www.fireplan.gov/ and http://www.fireplan.gov/communities_at_risk.cfm and is not inclusive of all communities.

- Work collaboratively with federal, state, and local partners to develop cross boundary management strategies and prioritize cross agency fire management actions.

B. Wildland Fire Management Goals

The ASFMZ will conduct all wildland fire management actions in compliance with the 1995 Federal Wildland Fire Policy and the 2001 Federal Wildland Fire Policy Update guiding principles. These principles are:

- Firefighter and public safety are the highest priority in every fire management activity.
- Assess risk to communities in terms of direct wildland fire impact and economic values, and implement effective programs to mitigate that risk through collaborative planning and projects.
- Implement the full range of wildland fire and fuels management practices, including prescribed fire, fire use, mechanical, chemical, biological, and cultural treatments that will move all affected landscapes toward desired future condition as described in the Arizona Statewide LUPA.
- Establish partnerships with all interagency cooperators to facilitate coordinated fire management activities.
- Maintain an efficient and effective organization for the suppression of wildland fires consistent with the values at risk.
- Encourage close coordination and collaboration among specialists within the Arizona Strip Field Office and among the Arizona Strip Field Office and federal, interested organizations, private landowners, state, and local partners.
- Develop and use the best scientific information available to deliver technical and community assistance to support ecological, economic, and social sustainability.
- Allow wildland fire to protect, maintain, and enhance resources, and as nearly as possible be allowed to function in its ecological role when appropriate for the site and situation.
- Create an integrated approach to fire and resource management.

Specific fire and fuels programmatic direction for each FMU in the ASFMZ is outlined in chapter III, section D of the ASFMZ-FMP.

C. Wildland Fire Management Options

Wildland fire and fuels management options for the ASFMZ will include the following:

- Wildland fire suppression using AMR
- Wildland fire use (Wildland fire use plans must be completed prior to the implementation of wildland fire use. The ASFMZ-FMP identifies FMUs where wildland fire use will be considered.)

- Prescribed fire
- Non-fire fuels treatments and ecological restoration– mechanical, manual, chemical, and biological
- Post fire rehabilitation
- Community protection, community assistance, and rural fire assistance

The AMR concept represents a range of available management responses to wildland fires. Responses range from full fire suppression to managing fires for resource benefits (fire use). Management responses applied to a fire will be based on objectives derived from the land use allocations (see chapter III, section D); relative risk to resources, the public and firefighters; potential complexity; and the ability to defend management boundaries. Any fire that occurs in an area designated for fire use can be managed for resource benefits if it meets the prescribed criteria from an approved FMP and fire use plan.

The ASFMZ will provide an AMR on all wildland fires with fire fighter and public safety as the first priority. Minimizing environmental damage as a result of suppression activities, and protecting private property, economic benefits, and resource values consistent with BLM policy, resource objectives, and standards and guidelines will be emphasized.

The ASFMZ and its cooperators will respond to each wildland fire in a timely manner with appropriate suppression resources, based on established fire management direction, interagency agreements, and approved operating plans.

AMR actions will be pre-defined in FMPs and other operating plans. This pre-planning allows for the development of fire management strategies which meet the objectives established in the Arizona Statewide LUPA, the Arizona Strip District RMP, and associated implementation plans.

The ASFMZ will implement fuels treatments, community assistance, education and mitigation programs, rehabilitation, and ecological restoration actions to implement management plan direction. Ecosystem sustainability will be emphasized.

Color Country is an interagency fire organization that covers approximately 14 million acres of public lands in southwestern Utah and northwestern Arizona. An interagency fire team handles fire management responsibilities (e.g., preparedness, suppression, extended attack), with dispatching occurring from the Color Country Interagency Fire Center (CCIFC) Dispatch in Cedar City. Color Country includes public lands managed by the BLM (Cedar City, St. George, Arizona Strip, and Kanab field offices; Arizona State Lands [fire protection responsibility by the Arizona Strip Field Office]; Grand Staircase Escalante, Vermilion Cliffs, and Grand Canyon-Parashant [jointly administered by BLM and the National Park Service] national monuments; and the Escalante Field Station); U.S. Forest Service (Pine Valley, Cedar City, Powell, Escalante, and Teasdale ranger districts); National Park Service (NPS) (Zion and Bryce Canyon national parks, Cedar Breaks and Pipe Spring national monuments, and Glen Canyon National Recreation Area); Utah Division of Forestry, Fire and State Lands Southwest State Area; and the Bureau of Indian Affairs Southern Paiute Agency. The Color Country South Zone covers BLM public lands

administered by the Arizona Strip and St. George field offices and lands administered by the Pine Valley Ranger District of the Dixie National Forest. The interagency fire team does not manage prescribed fire for the St. George Field Office.

The Grand Canyon-Parashant National Monument is located on public lands administered by BLM and the National Park Service. The monument is jointly managed by the Arizona Strip Field Office and Lake Mead National Recreation Area. Cooperative fuels treatment projects may be implemented across agency boundaries within the monument. The ASFMZ and Lake Mead National Recreation Area cooperate and provide assistance on wildland fire suppression actions as needed.

D. Description of Wildland Fire Management Strategies by Fire Management Unit

The ASFMZ consists of 2,768,046 acres of BLM-administered public lands within the area known as the "Arizona Strip," which is located in the northern portions of Coconino and Mohave counties, Arizona, north and west of the Colorado River. All BLM-administered lands administered by the ASFMZ are covered under this FMP. These lands have been split into 27 FMUs based on broad vegetation classifications, management constraints (e.g., wilderness areas, desert tortoise habitat), access, values to be protected, fire history, and objectives that set each FMU apart from the management characteristics of adjacent FMUs (see maps in Appendices E and F). Management areas within the Arizona Strip Field Office include the Grand Canyon-Parashant National Monument, Vermilion Cliffs National Monument, and 1.68 million acres of non-monument public lands. These management designations do not impact fire management, so monument boundaries are not incorporated in FMU boundaries.

The dominant vegetation community types in the ASFMZ include Mojave desert scrub, Mojave-Great Basin transition, Great Basin, plains grassland, interior chaparral, ponderosa pine, and riparian. Within the Great Basin, areas dominated by pinyon-juniper and sagebrush are differentiated by FMU because management objectives and strategies differ. The Colorado Plateau transition consists of the rocky slopes and cliffs along the edge of the Paria Plateau and in the canyons of Kanab Creek. The vegetation here is generally a transition between plains grassland and Great Basin.

Two FMUs were developed for riparian corridors where management constraints, values to be protected, and objectives set them apart from the surrounding areas (Virgin River and Kanab Creek Riparian). Numerous seeps and springs exist within the ASFMZ, and special consideration will be given to protect these areas. Protection will be similar to that provided for riparian corridors.

Desired Future Conditions from the Arizona Statewide LUPA:

- Fire is recognized as a natural process in fire-adapted ecosystems and is used to achieve objectives for other resources.

- Fuels in WUI areas are maintained at non-hazardous levels to provide for public and fire fighter safety.

- Prescribed fire activities comply with federal and state air quality regulations.

- Each vegetation community is maintained within its natural range of variation in plant composition, structure, and function, and fuel loads are maintained below levels that are considered to be hazardous.

The Arizona Statewide LUPA assigns BLM-administered public lands to one of the following two land use allocations for fire management (see map in Appendix G):

Allocation 1 – Wildland Fire Use: Areas suitable for wildland fire use for resource management benefit. This allocation includes areas where wildland fire is desired, and there are few or no constraints for its use. Where conditions are suitable, unplanned and planned wildfire may be used to achieve desired objectives, such as to improve vegetation, wildlife habitat or watershed conditions, maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives. Where fuel loading is high but conditions are not initially suitable for wildland fire, fuel loads are reduced by mechanical, chemical or biological means to reduce hazardous fuels levels and meet resource objectives (includes WUI areas).

Allocation 2 – Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit. This allocation includes areas where mitigation and suppression are required to prevent direct threats to life or property. It includes areas where fire never played a large role, historically, in the development and maintenance of the ecosystem, and some areas where fire return intervals were very long. It also includes areas (including some WUI areas) where an unplanned ignition could have negative effects to the ecosystem unless some form of mitigation takes place. Mitigation may include mechanical, biological, chemical, or prescribed fire means to maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives.

From Table 2.1 Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management. The vegetation communities that exist in the ASFMZ are identified below.

Vegetation Community Type	Desired Future Conditions	Land Use Allocation
Great Basin Pinyon-Juniper Woodland	The Desired Future Conditions are that annual weeds such as cheatgrass are controlled, ladder fuels and downed woody debris are limited or not present, and juniper and pinyon pine tree densities and cover occur at their historic range of variation.	1
Mohave Desert Scrub	The Desired Future Conditions are for an adequate cover and mix of natural plant species that have good vigor. The Desired Future Conditions are for fire to control or reduce the exotic annual weeds such as red brome and to limit woody vegetation to non-hazardous levels.	2
Great Basin Desert Scrub	The Desired Future Conditions are for fire to naturally reduce annual weed densities and cover, limit or reduce the invasion of juniper, and for the densities of shrubs, such as big sagebrush, to be maintained within their historic range of variability.	1
Plains and Great Basin Grasslands	The Desired Future Conditions are for a predominance of perennial grass cover, reduced cover of annual grasses, and for fire to naturally inhibit the invasion of woody shrubs such as rabbitbrush, snakeweed, and big sagebrush.	1
Interior Chaparral	The Desired Future Conditions are that fire naturally maintains shrub cover while reducing annual grass cover, the invasion of woody plants such as juniper and pinyon pine are controlled, and the average age of chaparral stands is reduced through controlled fire or mechanical treatment.	1
Riparian	The Desired Future Conditions are that annual weed cover and density is controlled and ladder fuels and downed woody debris are limited or not present. Disturbances such as livestock grazing, mining, and off road vehicle travel, that can potentially reduce natural vegetation cover and vigor, are managed to maintain adequate cover and mix of natural plant species.	2
Montane Conifer Forest	The Desired Future Conditions are that dog-hair thickets are controlled, ladder fuels and downed woody debris are limited or not present, a high percent of large trees are maintained, and tree stand vigor is maintained through controlled fire and mechanical treatments.	1

Cultural resources: Less than 5% of the ASFMZ has been inventoried for cultural resources, resulting in 3,500 cultural resource properties recorded thus far. Only a few of these sites have been scientifically investigated. Various cultural groups occupied a range of time periods in the Planning Area, from at least 12,000 years ago to the late 1940s. The greatest number of sites date from the Puebloan period (700-1300 A.D). American Indian groups either currently or historically living in or adjacent to the Planning Area have cultural ties to the area, including the Hopi, Southern Paiute, Hualapai, and Havasupai, and Navajo tribes.

Cultural resources across the ASFMZ vary in makeup and sensitivity to fire. From chipped-stone scatters to historic ranches, fire effects are of concern. In general, resources that are the most susceptible to damage from wildland fire occur in woodlands (ponderosa pine and pinyon-juniper), where high fuel loads are more apt to carry fire and where fires burn with the greatest intensity. Rock art and wooden features associated with historic mining, logging, and grazing are vulnerable to damage or destruction from fire. When suppressing fires, care should be taken to preserve cultural resources and environmental settings. Cultural resource inventories must be conducted prior to the implementation of fuels treatment projects.

Domestic livestock grazing: The BLM administers 150 grazing allotments and manages them in cooperation with 118 permittees throughout the ASFMZ. The Arizona Standards for Rangeland Health and Guidelines for Grazing Administration evaluation process has identified some areas where fire use could improve rangeland conditions. This information will be used in determining AMR. In general, the relative value of forage that could be lost through wildland fire ranges from high in the Grassland and ponderosa pine FMUs to moderate in the House Rock Valley, Pinyon Juniper, Sagebrush, Cheatgrass, Paria Canyon-Vermilion Cliffs Wildernesses and riparian FMUs to low in the desert, interior chaparral, Kanab Creek Wilderness, Buckskin Mountain, Colorado Plateau Transition, Wolf Hole PJ, and Shivwits FMUs (see RAMS report). Range improvements throughout the ASFMZ are susceptible to fire damage including fences, corrals, waters, and pipelines.

Visual resources: Visual resource inventory management (VRM) classes are based on three determinations: scenic quality, visual sensitivity, and distance zones, with the most important to visitors probably being scenic quality. Scenic values in the ASFMZ are varied and plentiful. They are important, not only for their intrinsic value, but also for what visitors experience in the "foreground" as they pass by, as well as their connectivity to backgrounds provided by the outstanding scenery in the surrounding region. Scenic quality is described as the visual appeal of an area. The rating is based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Scenery is classified as A, B, or C, with A being the highest scenic quality. VRM classes can impact the types of fuels treatments considered for an area and are described below.

- **Class I:** This class is given to lands that have a special designation already in place for the protection of scenic values. Examples are areas that have been designated as wilderness, wild and scenic rivers, or natural areas. The objective of this class is to fully

retain or enhance the existing character of the landscape. Changes to the landscape character in Class I happen primarily through natural ecological processes.

- **Class II:** Areas that have a high scenic quality, and where people are highly sensitive to changes in the scenery, are given a Class II rating. The objective of this class is to retain the existing character of the landscape. The level of change to the landscape characteristics should be low. Proposed changes to the landscape may be seen, but should not attract the attention of the casual observer. Any changes must duplicate the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

- **Class III:** Scenic quality of lands with this classification may be good to very good. The overall class rating is not high enough to meet the objectives defined as Class II. The objective of this class is to partially retain the existing character of the landscape. The level of change to the landscape characteristics should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the landscape.

- **Class IV:** In comparison to other lands in the region, these areas are mundane, with similar-looking vegetation and little change in landform. People are generally less sensitive to changes here. The objective is to provide for management activities that require major modification of the existing landscape. Proposed projects or management activities may occur here and obviously be in contrast to the landscape. However, mitigation is still required to attempt to reduce any unnecessary degradation of scenic quality.

The following sections describe each FMU including fire management objectives and strategies. Where FMUs have similar vegetation, desired future conditions, objectives, and fire management strategies but differ by wilderness designation, access, response time, or fire history, FMU descriptions are combined in one section.

Tortoise Habitat FMU (01) (271,136 acres)
Tortoise Habitat Wilderness FMU (08) (47,113.572)

1. FMU Description

a) General Description – The Tortoise Habitat FMU includes desert tortoise habitat outside of designated wilderness areas (see map p. 132). It includes the ACECs designated to protect desert tortoise habitat (Beaver Dam Slope, Virgin Slope, and Pakoon ACECs) and other areas identified as desert tortoise habitat. The Tortoise Habitat Wilderness FMU includes desert tortoise habitat within the Beaver Dam Mountains, Paiute, and Grand Wash Cliffs wilderness areas (see map p. 139). The desert tortoise (Mojave population) is a threatened species.

b) Characteristics - Low shrubs dominate these FMUs, with creosote bush being the most common shrub. Creosote bush communities are typically open and species-poor, and occur in areas with considerable amounts of bare ground. Native grasses are relatively rare and cacti relatively common. Joshua tree communities are found near the bases of mountain ranges and are rare in the eastern Mojave Desert. Other common species include Mormon tea, broom snakeweed, blackbrush, white bursage, California buckwheat, Wright eriogonum, galleta, and bush muhly.

Fire can cause rapid and profound changes to desertscrub vegetation because most desert plants are not adapted to large disturbances by fire (Esque et al. 2003). Exotic annual grasses including *Bromus* spp. and *Schimus arabicus* have invaded much of the Mojave Desert. These grasses cure standing, creating continuous fuels that allow fires to spread. The fires kill native vegetation and allow exotic annual grasses to dominate the landscape and thus increase the number and size of fires and proliferation of annuals. This fire/grass cycle can lead to type conversions from vegetation that provides desert tortoise habitat to exotic annual grasslands (Brooks 1999, Esque et al. 2003). The remaining Joshua tree forests and pockets of native vegetation are considered important resources to protect.

Fire can impact tortoises directly by killing animals and eliminating vegetation cover. Indirect effects include changes in diet composition and loss of vegetation cover, leading to increased predation and loss of protection from temperature extremes (Esque et al. 2003).

Occupied, suitable, and potential habitat for Southwestern willow flycatchers (endangered) exists along the Beaver Dam Wash. This species has been observed in the Tortoise Habitat FMU. Sensitive plants in both FMUs include Beaver Dam breadroot, sticky wild eriogonium, and three hearts.

c) Fire History –

Most wildland fires are caused by lightning during May through September. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause by FMU	Number of Fires	Acres Burned
Tortoise Habitat		
Lightning	92	31,368
Total	121	34,664
Tortoise Habitat Wilderness		
Lightning	57	34,781
Total	77	35,791

Fires have converted approximately 150,000 acres of Mojave Desert shrub to exotic annual grasslands since the mid-1970s, mostly along the east side of the Pakoon Basin below the Grand Wash Cliffs and north up Mud Mountain. The size and intensity of wildland fires are generally linked to brome production.

d) Fire Regime Condition Class (FRCC) – The historic fire return interval was greater than 250 years (Wright and Bailey 1982, Schussman and Gori 2004). Preliminary estimates for the Mojave Desert within the ASFMZ suggest that approximately 25% is FRCC 1, 15% is FRCC 2, and 60% is FRCC 3. Surveys have not been conducted. All fires will be suppressed to minimize additional conversion from Mojave Desert shrub to exotic annual grasslands.

e) Values at Risk –

Both FMUs: Desert tortoise habitat, native desert vegetation including Joshua trees, cultural resources, riparian vegetation in the adjacent Virgin River Riparian FMU, domestic livestock forage, and range improvements.

Tortoise Habitat Wilderness FMU: Wilderness values

A resource advisor will be assigned or contacted for all wildland fires. Their focus will be on desert tortoise and other special status species, cultural resources, and in the Tortoise Habitat Wilderness FMU, wilderness protection objectives.

Minimum impact suppression tactics (MIST) will be used in all areas with known Federally protected species, habitat, or wilderness values. See the Interagency Standards for Fire and Fire Aviation Operations 2004, appendix 11-5 (or its updates) for MIST guidelines.

Visual Resources: Statutory wilderness portions (Tortoise Habitat Wilderness FMU) are classified as VRM Class I, which requires preservation of the existing character of the landscape. The Tortoise Habitat FMU has a mix of VRM Class II, III, and IV. Along the lower Grand Wash Cliffs, west slope of the Virgin Mountains, The Cockscomb, and in the Beaver Dam Mountains, scenic quality is rated high (A). In the Million Hills and along

Beaver Dam Wash, scenic quality is rated moderate (B). The majority of both FMUs have a high sensitivity (H) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management (tortoise ACECs, wilderness).
Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities in Grand Wash Cliffs, Beaver Dam Mountains, and Paiute Wildernesses (Tortoise Habitat Wilderness FMU), including hiking, horseback riding, hunting, camping, geocaching, and viewing wildlife (bighorn sheep, tortoise). In much of the Pakoon, Virgin Slope, and Beaver Dam Slope (Tortoise Habitat FMU), visitors rely heavily on the natural-appearing landscapes and outstanding conditions for seclusion from others for their high quality recreation experiences and benefits. The Old Spanish National Historic Trail passes through the northern portions of FMU 01, parallel to Highway 91 and the Virgin River. The Virgin River Canyon Recreation Area (Tortoise Habitat FMU) is a significant recreation facility in the Cedar Pockets area of the Virgin River Gorge. In the Tortoise Habitat FMU, a number of desert springs, Joshua Tree forests, and desert canyons provide important opportunities for visitors to view nature, vehicle explore, hike, and photograph.

f) Human Environment/Communities at Risk –

Tortoise Habitat FMU: This FMU has several communities within the unit boundaries. There are multiple areas with sub-divided, residential properties that are not associated with a specific community. There are also recreation sites, resource values, range improvements, utility lines, substations and communication sites within the FMU that may be at risk. Prevention, education, and mitigation efforts for most of the subdivided areas can be made through local fire departments, but many will require outreach by direct contact. The risk level to each community is based on fuels, topography, the current state of fire prevention preparedness, and unique aspects of each. Above or below average precipitation can greatly affect the risk to each community and individual areas by increasing or decreasing the amount of fuel available to a fire. Special considerations will be made for communities with increased risk.

The following communities at risk lie within the boundaries of the Tortoise Habitat FMU: Scenic, Beaver Dam, Littlefield, Arvada, and Desert Springs. Ranches and cabins include Wayne's Well, Middle Well, Lower Well, Grand Gulch Mine, and Tassi Ranch. The Pakoon Springs Administrative Site is in the Tortoise Habitat FMU.

Tortoise Habitat Wilderness FMU: The Virgin River Campground is near the boundary of this FMU.

The Cedar Pockets Powerline and Telephone Line pass through both FMUs. The Navajo McCullough Power Transmission Line passes through the Tortoise Habitat FMU.

2. Fire Management Objectives –

The primary fire management objective is no loss of native desert vegetation. The fire suppression objective is to hold fires to <150 acres for 90% of ignitions to protect desert

tortoise habitat and native desert vegetation. All wildland fires will be suppressed with minimum surface disturbance in accordance with the guidelines in Duck et al. (1995) and conservation measures for the Arizona Statewide LUPA (Appendix D). Native desert vegetation is not adapted to fire and there is high potential for type conversion to exotic annual grasslands. Values at Risk and Human Environment/Communities at Risk will be protected.

Community Protection and Assistance Objectives for the Tortoise Habitat FMU include educating the public in fire prevention and mitigation activities, working with local news media to provide fire prevention information and updates to the public, building strong collaborative relationships with local governments and fire departments, and developing partnerships with homeowner organizations, permitees, and other groups to assist communities in reducing the risk from wildfire.

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. All wildland fires will be suppressed with minimum surface disturbance in accordance with the guidelines in Duck et al. (1995) and conservation measures for the Arizona Statewide LUPA (Appendix D) to minimize impacts to desert tortoise and native plants and to minimize the spread of exotic annual grasses. A resource advisor will be assigned or contacted for all fires. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in this fuel type are usually direct or indirect attack using hand crews, engines where possible, air tankers and helicopter, patrol and mop up. In years of heavy and continuous grass fuels, fires will grow to large acreages and burn through multiple burning periods. Emphasize use of aircraft (helicopter and single engine air tanker [SEAT]) to minimize surface disturbance.

Tortoise Habitat Wilderness FMU: Fire management will be consistent with the Paiute and Beaver Dam Mountains and Grand Wash Cliffs Wilderness Management Plans. MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime 90 to 115 degrees; nighttime 70 to 80 degrees, and relative humidity 5% to 15%), open and hidden mine shafts and pits, dump sites containing hazardous materials, power lines, venomous animals, and low-level military aircraft training area and routes. Fires may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media. Scattered WUI areas adjacent to public land are a safety concern for fire fighters due to the residences and out buildings, propane tanks, and roads with limited turn outs and access.

b) Wildland Fire Use - These FMUs are classified as Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit.

c) Prescribed Fire - No prescribed burns will be implemented in native desert vegetation unless associated with scientific research. Prescribed fire could be used to restore historic ecological conditions around seeps and springs, including Grapevine and Pakoon springs. Conservation measures from the Arizona Statewide LUPA will be implemented for any treatments.

d) Non-Fire Fuels Treatments - No mechanical treatments will be implemented within the three ACECs unless they improve habitat management for desert tortoise. In high rainfall years with correspondingly high forb and grass production, existing roads may be graded to create temporary fuel breaks and anchor points. Non-fire fuels treatments could be used to restore historic ecological conditions around seeps and springs, including Grapevine and Pakoon springs. Conservation measures from the Arizona Statewide LUPA will be implemented for any treatments.

e) Post Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. The spread of exotic annual grasses and conversion of Mojave Desert shrub vegetation to exotic annual grasslands will be minimized. In the past, rehabilitation has had limited success due to low, infrequent precipitation. Surface disturbing activities related to fire management and rehabilitation activities can create additional weed and watershed issues, and may outweigh potential benefits. Restoration will not include planting or seeding non-native plants. Conservation measures from the Arizona Statewide LUPA will be implemented for restoration and rehabilitation activities.

f) Community Protection and Assistance (Prevention and Mitigation) –

- Pursue formation of fire safe councils in all communities at risk.
- Work collaboratively with communities and other partners to develop a Community Wildfire Protection Plan (CWPP) and update or amend the FMP as necessary to incorporate mitigation and prevention recommendations and priorities developed by the community or outlined in the CWPP.
- Provide fire restriction and emergency closure information to the public.
- Present fire mitigation and prevention information to local schools.
- Present fire ecology information to local youth groups to help enhance the understanding and support the BLM management activities.
- Coordinate information relating to funding and training opportunities to rural fire departments to enhance their fire fighting capacity.
- Provide informational brochures and materials to communities and homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.
- Produce mini campaigns each year to address the priority fire cause which may include some of the following: billboards, flyers, Fire Safe Council ads, and radio public service announcements (PSAs).
- Participate in residential assessments and provide education to homeowners.

- Conduct presentations to local homeowner groups explaining “Defensible Space” and fire prevention risks and mitigation.
- Provide educational signing, outreach to public land groups, prevention patrols, and contacts.

Mojave FMU (10) (285,327 acres)
Mojave Wilderness FMU (02) (25,120 acres)

1. FMU Description

a) General Description – The Mojave FMU contains portions of the Mojave Desert and transition between the Mojave Desert and Great Basin vegetation outside of designated wilderness areas that are not desert tortoise habitat (see map p. 141). The Mojave Wilderness FMU contains the same types of areas within designated wilderness areas (Beaver Dam Mountains and Paiute wilderness areas) that are not desert tortoise habitat (see map p. 133).

b) Characteristics – Vegetation in the Mojave Desert is described for the Tortoise Habitat and Tortoise Habitat Wilderness FMUs. Vegetation in the Great Basin is described for the pinyon-juniper and sagebrush FMUs. The transition between Mojave Desert and Great Basin contains some plant species from each area, but most closely resembles the Mojave Desert. Historically, wildland fires were a function of woody plant condition and density. More precipitation supports a greater annual grass fuel load than the Mojave Desert, resulting in a grass/fire regeneration cycle and susceptibility to type conversion. There is a large transition area in lower Whitmore Canyon, one along the Grand Wash Cliffs and the Virgin Mountains, and another south of St. George.

Blackbrush communities occur in the transition between Mojave Desert and Great Basin. Blackbrush is typically found on gentle slopes above creosote bush communities and below the interior chaparral or big sagebrush/pinyon-juniper communities (Bradley and Deacon 1967, Randall 1972, Beatley 1976). Blackbrush communities are characterized by relatively high cover (50%) of low stature (50 cm tall) evergreen woody shrubs, dominated by blackbrush, which can comprise 90 to 95% of the total plant cover (Shreve 1942). Blackbrush is usually killed by fire and may take over 100 years to re-establish itself. It is co-dominant with other native species such as creosote, juniper, desert almond, Anderson wolfberry, and yucca. Dominant alien species include cheatgrass and filaree. These communities change little over several decades, exhibiting very low reproductive rates and very slow growth.

Federally listed species (Mojave FMU): Holmgren milkvetch (endangered) and Siler pincushion cactus (threatened)

Sensitive plants (Mojave FMU): Gierisch mallow and Trumbull beardtongue

Sensitive plants (Mojave Wilderness FMU): crevice penstemon

c) Fire History –

Most wildland fires are caused by lightning during May through September. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause by FMU	Number of Fires	Acres Burned
Mojave		
Lightning	152	60,133
Total	189	60,405
Mojave Wilderness		
Lightning	16	1,596
Total	35	1,628

Fire size and intensity are currently a function of exotic annual grass production, particularly brome production. In the transition between Mojave Desert and Great Basin, woody species density is also a factor. Additional precipitation in the transition supports a higher exotic annual grass fuel load than in the Mojave Desert. Blackbrush can take hundreds of years to re-establish after fire. Large fires have altered vegetation along the Grand Wash Cliffs and in the Virgin Mountains. Both FMUs are susceptible to conversions from native vegetation to exotic annual grasslands.

d) Fire Regime Condition Class (FRCC) – The historic fire return interval in the Mojave Desert was greater than 250 years (Wright and Bailey 1982, Schussman and Gori 2004) and probably more frequent in the transition between the Mojave Desert and Great Basin. Preliminary estimates for the Mojave Desert and transition areas within the ASFMZ suggest that approximately 25% is FRCC 1, 15% is FRCC 2, and 60% is FRCC 3. Surveys have not been conducted. All fires will be suppressed to minimize additional conversion from native vegetation to exotic annual grasslands.

e) Values at Risk –

Both FMUs: Native desert vegetation, blackbrush, cultural resources, special status species, domestic livestock forage, and range improvements.

Mojave Wilderness FMU: Wilderness values

A resource advisor will be assigned to any fire that escapes initial attack or potentially impacts Federally protected species or their habitats. The resource advisor's focus will be on desert vegetation and blackbrush, cultural resources, special status species, and in the Mojave Wilderness FMU, wilderness protection objectives.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness portions (Mojave Wilderness FMU) are classified as VRM Class I, which requires preservation of the existing character of the landscape. Much

of the southern, remote portions of the Mojave FMU are VRM Class II, while the St. George Basin area has a mix of VRM Class II, III, and IV. Along the upper Grand Wash Cliffs, Virgin Ridge, Virgin Mountains, Beaver Dam Mountains, Virgin Gorge, Hurricane Cliffs, eastern St. George Basin, and portions of Whitmore, Parashant and Andrus Canyons, scenic quality is rated high (A). In the southern portion of the Mojave FMU in the St. George Basin, scenic quality is rated moderate (B). The majority of both FMUs have a high sensitivity (H) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management (wilderness). However, much of the St. George Basin portion of the Mojave FMU is rated as medium sensitivity (M).

Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities, in Beaver Dam Mountains and Paiute Wildernesses (Mojave Wilderness FMU), including hiking, horseback riding, hunting, camping, geocaching, and viewing wildlife (bighorn sheep). In portions of the St. George Basin, northern Pakoon, Virgin Ridge, southern Grand Wash Cliffs, Parashant Canyon and Andrus Canyon (Mojave FMU), visitors rely heavily on the natural-appearing landscapes and outstanding conditions for seclusion from others for their high quality recreation experiences and benefits. The Little Black Mountain Petroglyph Site (Mojave FMU) is an important recreation facility in the St. George Basin area. Additionally, the Dutchman Trail and the Sunshine Trail in that same area are important for mountain biking. Most of the eastern St. George Basin is critical to the Rhino Rally; a competitive motorcycle event held each February. Portions of the Honeymoon Trail, Temple Trail and Old Spanish National Historic Trail pass through the basin. Throughout much of the Mojave FMU, the variety of transportation routes, desert canyons, mountain ridges provide important opportunities for visitors to view nature, vehicle explore, hike, rock climb and photograph.

f) Human Environment/Communities at Risk – There are no communities at risk in these FMUs.

Mojave FMU: Private ranches and cabins in include Jacob's Well Cabin, Slats Jacobs Ranch, Keith Nay's Ranch, Grand Gulch Mine, and Bar 10-Woods Ranch. The Whitney Pass Administrative Site is in the Mojave FMU. The Navajo-McCullough and Nevada Power Company power transmission lines pass through this FMU.

Mojave Wilderness FMU: The Virgin River Campground is near the boundary of this FMU.

2. Fire Management Objectives –

The primary fire management objective is no loss of native desert vegetation or blackbrush. The fire suppression objective for Mojave Desert shrub vegetation is to hold fires to <150 acres for 90% of ignitions and for blackbrush to hold fires to ≤25 acres for 90% of ignitions with minimum surface disturbance to protect native desert vegetation and reduce the chance of type conversion to exotic annual grassland. Values at Risk and Human Environment/Communities at Risk will be protected. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community Protection and Assistance objectives include providing public education and working with private ranchers, cabin owners, and permitees.

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. All wildland fires will be suppressed with minimum surface disturbance to minimize impacts to native plants and to minimize the spread of exotic annual grasses. A resource advisor will be assigned or contacted for all fires. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in this fuel type are usually direct attack using hand crews, engines where possible, air tankers and helicopters dropping water to knock down the fire edge, patrol and mop up. In years of heavy and continuous grass fuels, fires will grow to large acreages and burn through multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Mojave Wilderness FMU: Fire management will be consistent with the Paiute and Beaver Dam Mountains Wilderness Management Plan. MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime 90 to 115 degrees, nighttime 70 to 80 degrees, and relative humidity 5% to 15%), power lines, open and hidden mine shafts and pits, dump sites containing hazardous materials, venomous animals, and low-level military aircraft training area and routes. Fires may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media. Scattered WUI areas adjacent to public land are a safety concern for fire fighters due to the residences and out buildings, propane tanks, and roads with limited turn outs and access.

b) Wildland Fire Use – These FMUs are classified as Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit.

c) Prescribed Fire – No prescribed burns will be implemented in native desert vegetation or blackbrush unless associated with scientific research. Prescribed fire could be used to restore historic ecological conditions around seeps and springs. Conservation measures from the Arizona Statewide LUPA will be implemented for any treatments.

d) Non-fire Fuels Treatments – In high rainfall years with correspondingly high forb and grass production, existing roads may be graded to create temporary fuel breaks and anchor points. Non-fire fuels treatments may be used to restore historic ecological conditions.

Conservation measures from the Arizona Statewide LUPA will be implemented for any treatments.

e) Post-Fire Rehabilitation and Restoration – All wildland fires will be assessed for rehabilitation and restoration needs. The spread of exotic annual grasses and conversion of Mojave Desert shrub and transition vegetation to exotic annual grasslands will be minimized. In the past, rehabilitation has had limited success due to low, infrequent precipitation. Efforts have been slightly more successful in the transition than the Mojave Desert due to slightly higher precipitation. Surface disturbing activities related to fire management and rehabilitation activities can create additional weed and watershed issues, and should be minimized. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented for rehabilitation and restoration activities where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) – Prevention and mitigation efforts include public education by utilizing local media outlets, educational signing, outreach to public land use groups, prevention patrol, and contacts.

Interior Chaparral FMU (07) (6,149 acres)
Interior Chaparral Wilderness FMU (03) (27,693 acres)

1. FMU Description

a) General Description – The Interior Chaparral FMU includes interior chaparral vegetation outside of designated wilderness areas (see map p. 138), and the Interior Chaparral Wilderness FMU includes interior chaparral vegetation within the Paiute Wilderness Area (see map p. 134).

b) Characteristics – Chaparral shrubs are adapted to fire and typically resprout from root crowns or germinate from long-lived seeds following fire. Typical species include manzanita, shrub live oak, sumac, mountain mahogany, ceanothus, buckthorn, cliffrose, and turpentine bush. Grasses and forbs are less abundant in mature stands of interior chaparral, but may become abundant following fire and in younger, more open stands.

Exclusion of fire has lead to pinyon and juniper encroachment at higher elevations. Exotic annual grasses such as brome have invaded these FMUs, particularly at lower elevations. These grasses can increase fire frequency to the point where even the fire-adapted interior chaparral species cannot recover.

Interior chaparral is relatively limited in the ASFMZ, and is an important vegetation community for wildlife. Game species such as mule deer and bighorn sheep use several plant species as forage and others as cover. Distinct from the communities above and below it, interior chaparral provides a significant amount of wildlife habitat diversity. The Arizona Game and Fish Department (AGFD) and BLM have cooperated in habitat projects to benefit mule deer, including a series of chaining treatments to break up the monotypic stands of pinyon-juniper and increase the "edge" between brush and open areas.

Although this FMU could benefit from periodic burning under appropriate conditions, suppression actions may be needed to protect adjacent ponderosa pine stands and other resource values from high intensity fire. Fuels and restoration projects could be implemented to restore or mimic the natural fire regime, reduce fuel loads, and create a mosaic of seral stages.

Sensitive plants (both FMUs): Black Rock daisy

c) Fire History –

Most wildland fires are caused by lightning during July and August. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause by FMU	Number of Fires	Acres Burned
Interior Chaparral		
Lightning	3	1,464
Total	4	1,467
Interior Chaparral Wilderness		
Lightning	33	111
Total	36	259

This is a fire-adapted vegetative community. The historic fire regime was moderate to intense fires every 20-100 years, resulting in a mosaic of seral stages (Wright and Bailey 1982, Schussman and Gori 2004). The size and intensity of wildland fires is currently dependent on brome production and the age, condition, and density of woody species. Wildland fire is usually driven by slope and wind, and can easily replace mature, single age stands.

d) Fire Regime Condition Class (FRCC) – The historic fire return interval was 20-100 years (Wright and Bailey 1982, Schussman and Gori 2004). Preliminary estimates within the ASFMZ suggest that approximately 0% is FRCC 1, 45% is FRCC 2, and 55% is FRCC 3. Surveys have not been conducted. Treatments could be implemented to reduce fuel loads and restore a mosaic of seral stages, but no projects are currently planned.

e) Values at Risk –

Both FMUs: Wildlife habitat, cultural resources, special status species, ponderosa pine in adjacent FMUs (Black Rock and Black Rock Wilderness), livestock forage, and range improvements. Large, high intensity wildland fire could result in serious erosion problems.

Ponderosa pine is at highest risk in the high east slope of Sullivan Canyon and at the Black Rock Administrative Site.

Interior Chaparral Wilderness FMU: Wilderness values

A resource advisor will be assigned or contacted for any fire that escapes initial attack or potentially impacts Federally protected species or their habitats. Their focus will be on wildlife habitat, cultural resources, special status species, and in the Mojave Wilderness FMU, wilderness protection objectives.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness portions (Interior Chaparral Wilderness FMU) are classified as VRM Class I, which requires preservation of the existing character of the landscape. The Interior Chaparral FMU is entirely in VRM Class II, where the objective is to retain the existing character of the landscape by keeping the level of change to the characteristic landscape low. In all of the Interior Chaparral Wilderness FMU and almost all of the Interior Chaparral FMU, scenic quality is rated high (A). In the remaining portion of The Interior Chaparral FMU on Black Rock Mountain, scenic quality is rated moderate (B). Likewise, the majority of both FMUs have a high sensitivity (H) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management (wilderness). However, the Black Rock Mountain portion of the Interior Chaparral FMU is rated as medium sensitivity (M).

Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities in the Paiute Wilderness (Interior Chaparral Wilderness FMU), including hiking, horseback riding, hunting, camping, and viewing wildlife (deer). In the Buggy Draw, Virgin Ridge, and Cougar Spring area (Interior Chaparral FMU), visitors rely heavily on the natural-appearing landscapes and outstanding conditions for seclusion from others for their high quality recreation experiences and benefits. The Cougar Spring Trailhead (Interior Chaparral FMU) is the only formal, but small, recreation site. Numerous old roads serve as the Paiute Trails system in the Interior Chaparral Wilderness FMU, accessing important scenic vistas from Virgin Ridge, Mt. Bangs, Black Rock Mountain and Pocum Cove. Throughout much of the Interior Chaparral FMU, the Black Rock, Elbow Canyon, and Tom and Cull Wash roads are important transportation routes for public access to desert canyons and mountains that provide excellent opportunities to view nature, vehicle explore, camp, hike, picnic and photograph.

f) Human Environment/Communities at Risk – There are no communities at risk in these FMUs.

Interior Chaparral FMU: Private ranches and cabins include the Cougar Spring rock house.

2. Fire Management Objectives –

The primary fire management objective is to prevent large-scale, stand-replacing wildland fires. The fire suppression objective is to hold fires to ≤50 acres for 90% of the ignitions that are suppressed. Fire size is limited to provide a mosaic of seral stages for wildlife. Fire should be prevented from spreading to ponderosa pine in adjacent FMUs. Values at Risk and Human Environment/Communities at Risk will be protected. Fuels treatments may be implemented to meet desired future conditions, including restoring the historic fire regime, creating a mosaic of seral stages, and improving wildlife habitat and forage. When the mosaic of seral stages is restored, treated areas will be evaluated for wildland fire use to return fire to its natural role in this ecosystem. Wildland fire use may be appropriate under some conditions. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community protection and assistance objectives include providing public education and working with private ranchers and permitees.

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned or contacted for any fire that escapes initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in interior chaparral are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, suppression strategies and tactics are usually indirect. Fires in interior chaparral usually go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Interior Chaparral Wilderness FMU: Fire management will be consistent with the Paiute and Beaver Dam Mountains Wilderness Management Plan. MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime in the low 100s, nighttime in the 60s, and relative humidity 10% to 15%), open and hidden mine shafts may be present, dump sites may be present and contain hazardous materials, venomous animals, and low-level military aircraft area and routes. Steep terrain with slopes averaging 30% to 40% are common and some locations exceed 70%. Thick interior chaparral shrubs may limit escape routes and safety zones. Fires may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media.

b) Wildland Fire Use – These FMUs are classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. The implementation of wildland fire use could help meet desired future conditions in areas pre-treated with prescribed fire and/or non-fire fuels treatments. Without pre-treatment, it would be difficult to achieve the desired mosaic of seral stages. A wildland fire use plan must be developed prior to the implementation of wildland fire use.

c) Prescribed Fire – Prescribed fire can be an effective tool for reducing hazardous fuels and meeting other desired future conditions in interior chaparral. If treatments are proposed, an interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Fire and fuels management specialists will work closely with local air quality regulators to ensure prescribed fire emissions stay within permitted levels. Any treatments in the wilderness FMUs would need to be consistent with

Wilderness Management Plans and comply with minimum tool requirements. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

d) Non-fire Fuels Treatments – Interior chaparral can be treated mechanically to achieve desired future conditions. If treatments are proposed, an interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Any treatments in the wilderness FMUs would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

e) Post-Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) – Prevention and mitigation efforts include public education through media outlets, educational signing, outreach to public land use groups, prevention patrols, and contacts.

Black Rock Ponderosa Pine FMU (06) (2,124 acres)
Black Rock Ponderosa Pine Wilderness FMU (04) (3,112 acres)
Parashant-Nixon Ponderosa Pine (09) (21,185 acres)
Mt. Trumbull and Mt. Logan Wildernesses FMU (11) (108,635 acres)

1. FMU Description

a) General Description – Within the ASFMZ, ponderosa pine communities are found in small isolated pockets at the highest elevations. The Black Rock Ponderosa Pine FMU includes the ponderosa pine stands on Black Rock Mountain outside of designated wilderness (see map p. 137). The Black Rock Ponderosa Pine Wilderness FMU includes ponderosa pine stands within the Paiute Wilderness Area on Black Rock Mountain (see map p. 135). The Parashant-Nixon Ponderosa Pine FMU includes the ponderosa pine stands outside of wilderness on Mt. Trumbull and Mt. Logan and near Mt. Dellenbaugh (see map p. 140). The Mt. Trumbull and Mt. Logan Wildernesses FMU includes the ponderosa pine stands within the Mt. Trumbull and Mt. Logan wilderness areas (see map p. 142).

b) Characteristics – The species most commonly associated with ponderosa pine is Gambel oak. Small clumps of quaking aspen may also grow in the general area, often near a meadow. Other species include New Mexican locust and serviceberry, both usually as shrubs or small trees. The understory of more open stands supports abundant grasses and forbs. Shrubs present include those from adjoining communities along with scattered individuals of mountain snowberry, Oregon grape, common juniper, and Oregon boxwood.

Several species of wildlife are dependent upon ponderosa pine, including Kaibab squirrels, goshawks, and Merriam's turkey. Some species of neo-tropical migratory songbirds are found only in close association with pine. Ponderosa pine stands provide important summer range for mule deer.

Prior to about 1870, frequent (<10 years), low intensity fires killed young trees and shrubs, minimized ladder fuels, and maintained open stands of ponderosa pine with herbaceous understories. More than 100 years of fire suppression have created dense, closed canopy forests with abundant litter, continuous fuels, and limited herbaceous vegetation. Trees must compete for limited moisture and nutrients, and are at risk of stand-replacing fires.

Northern Arizona University's Ecological Restoration Institute (NAU/ERI) and AGFD are conducting on-going research projects on ponderosa pine restoration treatments at Mt Trumbull in the Parashant-Nixon Ponderosa Pine FMU. Much of this work involves returning the ponderosa pine forest to a state resembling its pre-settlement condition. Treatments to accomplish this include raking litter, mechanical removal and thinning of trees, prescribed burning, seeding, and temporarily excluding livestock. The BLM, NAU/ERI, and the AGFD are currently conducting wildlife studies to evaluate the effects of treated and non-treated areas on species diversity, success, and behavior.

Federally listed species: There is no evidence of Mexican spotted owls breeding in the ASFMZ.

Sensitive wildlife: Northern goshawks

Sensitive plants (Black Rock Ponderosa Pine and Black Rock Ponderosa Pine Wilderness FMUs): Black Rock daisy

c) Fire History –

Most wildland fires are caused by lightning during June through September. The second greatest cause of wildland fires was campfires. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause by FMU	Number of Fires	Acres Burned
Black Rock Ponderosa Pine		
Lightning	5	2
Total	9	2
Black Rock Ponderosa Pine Wilderness		
Lightning	5	2
Total	7	2
Parashant-Nixon Ponderosa Pine		
Lightning	99	43
Total	117	506[1]
Mt. Trumbull & Mt. Logan Wildernesses		
Lightning	54	213
Total	56	412[2]

[1]Campfires lead to 247 burned acres and debris burning lead to 198 burned acres.
[2] Debris burning lead to 197 burned acres.

d) Fire Regime Condition Class (FRCC) – The historic fire return interval was 2-12 years (USFS Fire Effects Information System; Baisan and Swetnam 1990; Swetnam, Basian, Caprio, and Brown 1992; Schussman and Gori 2004). Preliminary estimates within the ASFMZ suggest that approximately 15% is FRCC 1, 20% is FRCC 2, and 65% is FRCC 3. Surveys have not been conducted. Treatments to reduce fuel loads and move areas in FRCC 2 and 3 to FRCC 1 are planned in the Parashant-Nixon Ponderosa Pine FMU. All ponderosa pine FMUs could benefit from the implementation of fuels and ecological restoration treatments.

e) Values at Risk –

Both FMUs: Wildlife habitat, cultural resources, pre-settlement ponderosa pine trees, special status species, domestic livestock forage, and range improvements.

Black Rock Ponderosa Pine Wilderness FMU and Mt. Logan and Mt. Trumbull Wildernesses FMUs: Wilderness values

A resource advisor will be assigned or contacted for any fire that escapes initial attack or potentially impacts Federally protected species or their habitats. Their focus will be on wildlife habitat, cultural resources, special status species, and in the wilderness FMUs, wilderness protection objectives.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness portions (Black Rock Ponderosa Pine Wilderness FMU, Mt. Trumbull and Mt. Logan Wilderness FMU) are classified as VRM Class I, which requires preservation of the existing character of the landscape. The Black Rock Ponderosa Pine FMU and the Parashant-Nixon Ponderosa Pine FMU are entirely in VRM Class II, where the objective is to retain the existing character of the landscape by keeping the level of change to the characteristic landscape low. In all of the Black Rock Ponderosa Pine Wilderness FMU, the Black Rock Ponderosa Pine FMU, and most of The Mt. Trumbull and Mt. Logan Wilderness FMU, scenic quality is rated high (A). In the Bull Point portion of the Mt. Trumbull and Mt. Logan Wilderness FMU and in all of the Parashant-Nixon Ponderosa Pine FMU, scenic quality is rated moderate (B). All of The Black Rock Ponderosa Pine Wilderness FMU, the Mt. Trumbull and Mt. Logan Wilderness FMU, and the majority of the Parashant-Nixon Ponderosa Pine FMU have a high sensitivity (H) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management (ACECs, special recreation management areas [SRMA], wilderness). However, the Parashant-Nixon Ponderosa Pine FMU unit west of Mt. Trumbull and the southern portion of the Black Rock Ponderosa Pine FMU are rated as medium sensitivity (M).

Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities, in the Paiute, Mt. Trumbull, and Mt. Logan Wildernesses (Black Rock Ponderosa Pine Wilderness, Mt. Trumbull and Mt. Logan Wilderness FMU), including hiking, horseback riding, hunting, camping, and viewing wildlife (deer, turkey, kaibab squirrel). In portions of the Castle Peak and Death Valley Lake areas (Parashant-Nixon Ponderosa Pine FMU), visitors rely on the natural-appearing landscapes and good conditions for seclusion from others for their high quality recreation experiences and benefits. The Parashant-Nixon Ponderosa Pine FMU and the Mt. Trumbull and Mt. Logan Wilderness FMU are encompassed within the Mt. Trumbull SRMA and the Parashant SRMA, which draws attention to the fact that these areas are an important recreation focus for both BLM recreation management and public use. The Mt. Trumbull Trailhead and Sawmill/Uinkaret Pueblo (Parashant-Nixon Ponderosa Pine FMU) and the Black Rock Mountain area (Black Rock Ponderosa Pine FMU) are the only formal, but small, recreation facilities. The Mt. Trumbull and Mt. Logan trails access important scenic vistas from various points along the trails and from the summits of both mountains. Portions of the Temple Trail (marked with wooden posts) pass through Parashant-Nixon Ponderosa Pine FMU, west of Mt. Trumbull. Throughout much of the Black Rock Ponderosa Pine FMU and the Parashant-Nixon Ponderosa Pine FMU, County Roads 5 and 103 and BLM Roads 1004, 1044, and 1064 are critical transportation routes for public access to mountain and ponderosa pine areas that

provide excellent opportunities to view nature, vehicle explore, geocache, camp at the many existing roadside campsites, hike, hunt, picnic, photograph and escape summer heat.

f) Human Environment/Communities at Risk – There are no communities at risk in the Ponderosa Pine FMUs. Private ranches, cabins, administrative sites, and authorized uses include:

Black Rock Ponderosa Pine FMU: Black Rock Administrative Site, Black Rock fire lookout, Black Rock Communication Site, and Blake's Cabin (private cabin).

Parashant-Nixon Ponderosa Pine FMU: Mt. Trumbull Administrative Site, Parashant Field Station, Mathis Ranch, Logan Repeater, Death Valley Lake Repeater, and Potato Valley cabins and ranches.

2. Fire Management Objectives – The primary fire management objective is to prevent stand-replacing wildland fires. The fire suppression objective is to hold fires to ≤10 acres for 90% of ignitions. Values at Risk and Human Environment/Communities at Risk will be protected. Prescribed fire and mechanical treatments will be implemented to meet desired future conditions including reducing hazardous fuels and restoring pre-settlement forest conditions. As historic forest conditions are restored, treated areas will be evaluated for wildland fire use to return fire to its natural role in this ecosystem. Wildland fire use may be appropriate under some conditions. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community protection and assistance objectives include providing public education and working with private ranchers, cabin owners, and permitees.

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned or contacted for any fire that escapes initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in ponderosa pine are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, suppression strategies and tactics are usually indirect. Fires in ponderosa pine usually go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Black Rock Ponderosa Pine Wilderness FMU: Fire management will be consistent with the Paiute and Beaver Dam Mountains Wilderness Management Plan. When suppression actions are required in wilderness areas, MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Mt. Trumbull and Mt. Logan Wildernesses FMU: Fire management will be consistent with the Mt. Trumbull and Mt. Logan Wilderness Management Plan. When suppression actions are required in wilderness areas, MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime in the upper 90s, nighttime in the 60s, and relative humidity 10% to 15%), venomous animals, low-level military aircraft training area and routes. Steep terrain with slopes averaging 30% to 40% are common and some locations exceed 70%. These areas receive relatively high recreational use. Scattered WUI areas adjacent to public land are a safety concern for fire fighters due to the residences and out buildings, propane tanks, and roads with limited turn outs and access. Fires on Black Rock may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media.

b) Wildland Fire Use – These FMUs are classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. Extensive fuels and ecological restoration treatments must be implemented prior to allowing wildland fire use. Under the appropriate conditions, low intensity ground fires (FIL ≤2) from September through June could help meet desired future conditions. A wildland fire use plan must be developed prior to the implementation of wildland fire use.

FIL 1: 0-2 ft FL, FIL 2: 2-4 ft FL, FIL 3: 4-6 ft FL, FIL 4: 6-8 ft FL, FIL 5: 8-12 ft FL, FIL 6: 12 + ft FL

c) Prescribed Fire – Cool season broadcast and pile burning will be used to meet desired future conditions including reducing hazardous fuels and restoring pre-settlement forest conditions in ponderosa pine. Fuels treatments are currently planned in the Parashant-Nixon Ponderosa Pine FMU. Areas are typically pre-treated mechanically. Where needed, steps will be taken to protect pre-settlement trees (e.g., raking around trunks). An interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Fire and fuels management specialists will work closely with local air quality regulators to ensure prescribed fire emissions stay within permitted levels. Any treatments in the wilderness FMUs would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

d) Non-fire Fuels Treatments – Mechanical thinning will be used to meet desired future conditions including reducing hazardous fuels and restoring pre-settlement forest conditions in ponderosa pine. Treatments are currently planned in the Parashant-Nixon Ponderosa Pine FMU. Mechanical treatments are typically implemented prior to broadcast or pile burning. An interdisciplinary approach will be used to determine the best site-specific mix of

treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Any treatments in the wilderness FMUs would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

e) Post-Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) –

Prevention and mitigation efforts include public education through local media outlets, educational signing, outreach to public land use groups, prevention patrols, and contacts.

Cheatgrass FMU (12) (37,171 acres)

1. FMU Description

a) General Description – The Cheatgrass FMU consists of the polygons identified as Cheatgrass Infested Areas in The Nature Conservancy (TNC) report An Ecological Assessment of the BLM's Current Fire Management Plans: Materials and Recommendations for Future Fire Planning (Schussman and Gori 2004) (see map p. 143).

b) Characteristics – During field surveys for their ecological assessment, TNC observed burned sites where cheatgrass was dominant and native species were rare or absent and other sites where native perennial grasses were vigorously growing and cheatgrass was rare. Without pre-burn information on species composition, it is unclear what effect the burns had on the spread and relative abundance of cheatgrass at the different sites. The report recommends that the presence of cheatgrass should be considered in wildland fire management and fuels treatment projects. Burns should be conducted cautiously in areas where cheatgrass is present and should be accompanied by pre- and post-burn monitoring.

The majority of the Cheatgrass FMU was formerly plains grassland. Cheatgrass has invaded other FMUs and vegetative communities that were not surveyed by TNC. The management objectives and strategies for the Cheatgrass FMU apply to all cheatgrass-infested areas in the ASFMZ.

Federally Listed Species: Siler pincushion cactus (threatened), Fickeisen pincushion cactus (candidate)

c) Fire History –

Most wildland fires are caused by lightning during June, July, and August. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause	Number of Fires	Acres Burned
Lightning	41	1,689
Total	51	1,689

d) Fire Regime Condition Class (FRCC) – Cheatgrass drastically alters the areas it invades, increasing fire frequency and reducing or eventually eliminating many native plant species.

e) Values at Risk – The primary concern is the loss of native plants to cheatgrass invasion. Other values at risk include special status species, domestic livestock forage, range improvements, and cultural resources.

A resource advisor will be assigned or contacted for any fire that escapes initial attack or potentially impacts Federally protected species. Their focus will be on minimizing the spread of cheatgrass and special status species.

MIST will be used in all areas with known Federally protected species or habitat.

Visual Resources: Portions of this FMU, one-half mile either side of County Roads 5, 30, and 103 and BLM Roads 1004, 1069, 1001, and 1055 are VRM Class II, where the objective is to retain the existing character of the landscape by keeping the level of change to the characteristic landscape low. The majority is VRM Class IV, where the objective is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. A small amount of VRM Class III is in the area of Wolf Hole Valley and Mustang Knoll. Along the Hurricane Cliffs, scenic quality is rated high (A). Wolfhole Mountain, Seegmiller Mountain, the Mustang Knoll area, Poverty Knoll, the Antelope Knoll area, and a small area north of Sandridge Wash, are rated moderate (B) for scenic quality. The majority of the FMU has a medium sensitivity (M) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management.

Recreation: Dispersed recreation activities include hiking, horseback riding, camping, Christmas tree cutting, fuel wood gathering, and vehicle exploring. Visitors rely on the natural-appearing landscapes for their recreation experiences and benefits. The Mt. Trumbull School House is the only formal, but small, recreation facility. The Seegmiller Mountain area is part of a larger off highway vehicle (OHV) event area. Throughout much of the Cheatgrass FMU, County Roads 5, 30, and 103 and BLM Roads 1004, 1069, 1001, and 1055 are important transportation routes for the public to access other recreation destinations and for providing good opportunities to view nature, vehicle explore.

f) Human Environment/Communities at Risk – The Mt. Trumbull community is a community at risk in this FMU. The Mt. Trumbull School House Interpretive Site is also in this FMU. Private ranches and cabins include Wolf Hole cabins 1 and 2 and Harley Iverson's ranch and cabins. The Navajo-McCullough Power Transmission Line passes through this FMU.

2. Fire Management Objectives – The primary objective is to minimize the loss of native plants to cheatgrass invasion. The fire suppression objective is to hold fires to ≤150 acres for 90% of ignitions. Values at Risk and Human Environment/Communities at Risk will be protected. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community protection and assistance objectives include educating the public about fire prevention and mitigation activities, working with local news media to provide fire prevention information and updates to the public, and developing partnerships with homeowner organizations, ranchers, cabin owners, and permitees to assist communities and residents with reducing the risk from wildland fire.

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned or contacted for any fire that escapes initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in cheatgrass are usually direct attack using hand crews, engines where possible, air tankers and helicopters dropping water to knock down the fire edge, patrol and mop up. In years with high grass production, fires are more likely to go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime temperatures may exceed 100 degrees, nighttime temperatures range from 60 to 70 degrees, and relative humidity ranges from 5% to 15%), power lines, venomous animals, and low-level military aircraft training area and routes.

b) Wildland Fire Use – This FMU is classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit in the Arizona Statewide LUPA because the area was classified based on its historical condition (i.e., plains grassland). However, wildland fire use will not be considered until the area is restored to plains grassland.

c) Prescribed Fire – No treatments are planned.

d) Non-fire Fuels Treatments – No treatments are planned. Chemical treatments could be implemented if likely to reduce cheatgrass. Conservation measures from the Arizona Statewide LUPA would be implemented where applicable.

e) Post-Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) –

- Increase public awareness, participation, and cooperation pertaining to the mitigation of fire threats in the WUI.
- Educate area population on the basic principles of fire ecology and fire's role in the environment.
- Build public support for fuels reduction efforts in and around the WUI.

- Develop and implement collaborative mitigation and prevention strategies with the community at risk.
- Reduce the risk of human-caused wildland fires, with special emphasis on recreationist-caused fires.
- Provide fire restriction and emergency closure information to the public.
- Provide informational brochures and materials to homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.
- Provide educational signing, outreach to public land groups, prevention patrols, and contacts.

Grassland FMU (13) (640,625 acres)
House Rock Valley FMU (14) (123,564 acres)

1. FMU Description

a) General Description – The Grassland FMU includes the grasslands associated with the Main Street/Hurricane Rim/Clayhole Valley area (see map p. 144). The House Rock Valley FMU includes the grasslands in House Rock Valley and adjacent Colorado Plateau transition near Marble Canyon (see map p. 145).

b) Characteristics – Historically, perennial and annual grasses covered much of these FMUs in a clumpy, relatively continuous carpet interspersed with shrubs and forbs. Frequent fires limited woody species, and the pattern of vegetation was varied. Changes in fuel continuity from past management practices and fire suppression activities essentially eliminated fire from these grasslands, resulting in increased shrub densities, loss of perennial grasses, and spread of non-native species (Humphrey 1963, 1987; Bahre 1991; Schussman and Gori 2004). Typical grass genera include grama, muhly, needlegrass, wheatgrass, brome, galleta, fescue, and dropseed. An occasional cactus, shrub, or juniper may also be present, usually along the edge of the grassland or in microhabitats. Pockets of sagebrush occur in the FMU.

The grassland FMU consists mostly of vast areas of relatively flat terrain compared to the surrounding canyons and plateaus. There are few trees in the FMU, although a few pinyons and junipers are scattered throughout the unit. Grasslands provide important habitat for pronghorn antelope. There is potential habitat for Southwestern willow flycatchers along some of the tributaries of Kanab Creek.

The grass component of the House Rock Valley FMU consists of perennial grasses with low fire occurrence and low risk to large fires. Some shrubs are interspersed throughout the area. Fire has not played a significant role in the FMU. The grasslands provide important habitat for pronghorn antelope and House Rock Valley chisel-toothed kangaroo rats (sensitive). The California condor (endangered) release site is near the northwestern portion of the FMU. Brady pincushion cactus (endangered), Fickeisen pincushion cactus (candidate), and Paradine pincushion cactus (sensitive) grow in the FMU.

The two FMUs share the same variety of ecological sites, with one exception. Both areas have the following ecosites: Sandy Upland, Loamy Upland, Shallow Loamy, and Sandy Loam Uplands; however, only the Houserock Valley FMU has Gravelly Upland ecosites. The underlying soil series that determine the ecosites differ to a greater degree. The differences center around the degree of calcification and moisture regime. The Houserock Valley FMU has much drier soils then the Clayhole and surrounding areas (Grassland FMU). This is also confirmed by the precipitation data collected in both areas. The Clayhole area averages between 9 and 11 inches annually, and the Houserock Valley area averages 7 to 9 inches annually. This difference is enough to limit the likelihood of invasion by larger woody species.

TNC conducted a grassland assessment and analysis to determine the extent of vegetation changes and identify the best remaining native and restorable grasslands in Arizona (Schussman and Gori 2004). This information should be considered by fire and fuels management programs because fire is a primary tool for reducing shrub cover and increasing perennial grass cover (McPherson 1995 Brunson et al. 2001, Schussman and Gori 2004). Care must be taken because under some conditions, fire can potentially encourage the spread of exotic grasses (Robinett 1994, Schussman and Gori 2004). The information provided by TNC can be used to prioritize grassland areas for fire management and restoration (Schussman and Gori 2004).

The majority of the Grassland FMU was categorized as Native grassland with low shrub cover (Type A) and shrub-invaded native grassland with restoration potential (Type B).

> **Type A:** grassland with <10% shrub cover whose herbaceous component is entirely or predominantly native perennial grasses and herbs; non-native perennial grasses are uncommon or absent.
>
> **Type B:** grassland composed of native perennial grasses and herbs (non-natives absent or uncommon) with 10-35% total shrub cover and mesquite or juniper cover <15%. A key characteristic of this type is its restoration potential-that is, shrub cover can be reduced using prescribed burns and the site restored back to Type A grassland either immediately or after some period of grazing rest (<15 years) when sufficient fine fuels have accumulated for fire spread (Brunson et al. 2001).

For Type A grasslands, TNC recommends periodic burning to prevent encroaching shrubs from increasing and maintenance of the historic fire regime. For Type B grasslands, they recommend fire restoration management to reduce shrubs and increase the vigor and cover of perennial grasses.

T&E Species (Grassland FMU): Jones' cycladenia (threatened), Siler pincushion cactus (threatened), Fickeisen pincushion cactus (Candidate). Potential habitat for SWIFL in tributaries of Kanab Creek.

T&E Species (House Rock Valley FMU): California condor (endangered) release site near northwestern portion of FMU, Brady pincushion cactus (endangered), Fickeisen pincushion cactus (candidate)

Sensitive plants (Grassland FMU): canyon rose, Toana milkvetch

Sensitive plants (House Rock Valley FMU): Paradine pincushion cactus (sensitive)

c) Fire History –

Most wildland fires in the Grassland FMU are caused by lightning during June, July, and August. Only two fires burning <1 acre were reported in the House Rock Valley FMU from 1980 to 2003. The following wildland fires and burned acres were reported in the Grassland FMU from 1980 to 2003.

Cause	Number of Fires	Acres Burned
Grassland FMU		
Lightning	45	3,371
Total	57	3,720

d) Fire Regime Condition Class (FRCC) – The historic fire return interval was 10-30 years (NRCS MLRU descriptions, Schussman and Gori 2004). Preliminary estimates within the ASFMZ suggest that approximately 10% is FRCC 1, 20% is FRCC 2, and 70% is FRCC 3. Surveys have not been conducted. WFU and restoration treatments as recommended by TNC could be implemented to maintain Type A grasslands and restore Type B grasslands.

e) Values at Risk –

Both FMUs: Pronghorn habitat, riparian resources and potential Southwestern willow flycatcher habitat along the tributaries of Kanab Creek, cultural resources, special status species, domestic livestock forage, and range improvements.

A resource advisor will be assigned or contacted for any fire potentially impacting riparian resources, potential Southwestern willow flycatcher habitat along the tributaries of Kanab Creek, or other Federally protected species or their habitats.

MIST will be used in all areas with known Federally protected species or habitat.

Visual Resources: The Grassland FMU is a mix of VRM Class II and IV, with a small amount of Class III. Those portions that are Class II, where the objective is to retain the existing character of the landscape by keeping the level of change to the characteristic landscape low, are generally the scene areas of major transportation corridors. The House Rock Valley FMU contains a roughly equal mix of VRM Class II and III, with the Class II being in the northern half, in proximity to the Vermilion Cliffs.

Scenic quality in both FMUs is rated low (C) and the sensitivity is either low (L) to medium (M). The exception is that portion of the House Rock Valley FMU that is within sight of the southern Vermilion Cliffs, which has a sensitivity rating of high (H).

Recreation: Significant portions of the Honeymoon and Dominguez/Escalante Historic trails are within the Grassland FMU. Portions of the Great Western Trail are within the House Rock Valley FMU. Opportunities exist for dispersed recreation in both FMUs, including camping, hunting, sightseeing, vehicle exploring, and cultural/historic studies. Numerous scenic overlooks exist in the House Rock Valley FMU above the Colorado River.

f) Human Environment/Communities at Risk – These FMUs have several communities within their boundaries. There are areas with sub-divided, residential properties that are not associated with a specific community. There are also recreation sites, resource values, range improvements, utility lines, substations and communication sites within the FMU that may be at risk. Prevention, education, and mitigation efforts for most of the subdivided areas can be made through local fire departments, but many will require outreach by direct contact. The risk level to each community is based on fuels and topography, the current state of fire prevention preparedness, and unique aspects of each. Above or below average precipitation can greatly affect the risk to each community and individual areas by increasing or decreasing the amount of fuel available to a fire. Special considerations will be made for communities with increased risk

Grassland FMU: Communities at risk include Colorado City and Fredonia. Private ranches and cabins include Atkins cabin, Black Knolls, Don Esplin Ranch, Foremaster Gates, Harley Iverson's cabin, Little Tank, Esplin Ranch, and Rock Crossing/Force Tank Cabin. The Point-of-Rock Communication Site and Colorado City air strip are located in this FMU, and the Navajo-McCullough Power Transmission Line and other power distribution lines pass through this FMU.

House Rock Valley FMU: Communities at risk include Cliff Dwellers, Marble Canyon, and Vermilion Cliffs. Private ranches and cabins include the House Rock cabin.

2. Fire Management Objectives – The fire suppression objective is to hold fires of FIL>4 to 500 acres for 90% of ignitions. Values at Risk and Human Environment/Communities at Risk will be protected. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community protection and assistance objectives include educating the public in fire prevention and mitigation activities, working with local news media to provide fire prevention information and updates to the public, building strong collaborative relationships with local governments and fire departments, and developing partnerships with homeowner organizations, permitees, and other groups to assist communities in reducing the risk from wildland fire.

FIL 1: 0-2 ft FL, FIL 2: 2-4 ft FL, FIL 3: 4-6 ft FL, FIL 4: 6-8 ft FL, FIL 5: 8-12 ft FL, FIL 6: 12 + ft FL

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned or contacted for any fire potentially impacting riparian resources and potential Southwestern willow flycatcher habitat along the tributaries of Kanab Creek. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics in grasslands are usually direct attack using hand crews, engines where possible, air tankers and helicopters dropping water to knock down the fire edge, patrol and mop up. Fires in grasslands are usually quickly contained. In years with high grass production, fires are more likely to go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime temperatures may exceed 100 degrees, nighttime temperatures range from 60 to 70 degrees, and relative humidity ranges from 5% to 15%), power lines, venomous animals, rocky canyon walls and steep drop offs, and low-level military aircraft training area and routes.

b) Wildland Fire Use – This FMU is classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit in the Arizona Statewide LUPA. Wildland fire use may be appropriate for fires at FIL ≤4 to meet desired future conditions and resource objectives. A wildland fire use plan must be developed prior to the implementation of wildland fire use. If a plan is implemented, wildland fire use could be used to maintain Type A grasslands and restore Type B grasslands by decreasing shrub densities and increasing perennial grasses. Wildland fire use could also be considered in pockets of sagebrush to reduce shrub cover.

c) Prescribed Fire – Treatments could be considered for the Grassland FMU. It is unlikely treatments would improve conditions in the House Rock Valley FMU. Prescribed fire could be used to maintain Type A grasslands and restore Type B grasslands by decreasing shrub densities and increasing perennial grasses. If treatments are proposed, an interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Information in Schussman and Gori (2004) should be considered when prioritizing treatment areas. Prescribed fire may also be considered in sagebrush pockets. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Fire and fuels management specialists will work closely with local air quality regulators to ensure prescribed fire emissions stay within permitted levels. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

d) Non-fire Fuels Treatments – Pockets of sagebrush in the Grassland FMU may be treated chemically to reduce shrub cover, increase species diversity, and increase herbaceous ground cover. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

e) Post-Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) –

- Pursue formation of fire safe councils in all communities at risk.
- Work collaboratively with communities and other partners to develop a CWPP and update or amend the FMP as necessary to incorporate mitigation and prevention recommendations and priorities developed by the community or outlined in the CWPP.
- Provide fire restriction and emergency closure information to the public.
- Present fire mitigation and prevention information to local schools.
- Present fire ecology information to local youth groups to help enhance the understanding and support the BLM management activities.
- Coordinate information relating to funding and training opportunities to rural fire departments in to enhance their fire fighting capacity.
- Provide informational brochures and materials to communities and homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.
- Produce mini campaigns each year to address the priority fire cause which may include some of the following: billboards, flyers, Fire Safe Council ads, and radio PSAs.
- Participate in residential assessments and provide education to homeowners.
- Conduct presentations to local homeowner groups explaining "Defensible Space" and fire prevention risks and mitigation.
- Provide educational signing, outreach to public land groups, prevention patrols, and contacts.

Pinyon-Juniper FMU (27) (341,307 acres)
Wolf Hole PJ FMU (26) (45,653 acres)
Shivwits FMU (23) (36,019 acres)
Buckskin Mountain (21) (45,234 acres)
Paria Plateau (20) (205,921 acres)
Cottonwood Point Wilderness (15) (6,633 acres)

1. FMU Description

a) General Description – These FMUs all consist of Great Basin vegetation dominated by pinyon and juniper. The primary differences between the Pinyon-Juniper FMU (see map p. 158) and Wolf Hole PJ FMU (see map p. 157) are a shorter response time and history of more ignitions in the Pinyon-Juniper FMU. The Shivwits FMU (see map p. 154) includes the steep slopes of the Upper Grand Wash Cliffs. The steep terrain makes this FMU less accessible than the adjacent Pinyon Juniper FMU. The Buckskin Mountain FMU (see map p. 152) provides crucial winter range for mule deer. Cliffrose is an important component of this habitat, and treatments have been implemented to encourage regeneration. The Paria Plateau FMU (see map p. 151) includes the Paria Plateau and Ferry Swale. Although lightning strikes have hit individual trees, fire generally has not spread to other vegetation and suppression activities have been limited. The Cottonwood Point Wilderness FMU (see map p. 146) includes the Cottonwood Point Wilderness Area.

b) Characteristics – Great Basin vegetation includes grasslands, shrublands, and woodlands. The vegetation composition changes over time based on the type and amount of disturbance, or lack thereof. Herbaceous grass-dominated communities have become less prevalent as grazing and fire suppression have allowed woody species to become established, and often to dominate an area.

Sagebrush is the most widespread of the typical Great Basin plant communities. Common associates include black greasewood, big sagebrush, winterfat, spiny hopsage, blue grama, needle-and-thread, wild ryes, cheatgrass, Indian ricegrass, and alkali sacaton. Other dominant shrubs include blackbrush, shadscale, and Mormon tea. Exotic annual grasses have invaded parts of the Great Basin, but have not impacted the fire ecology as drastically as they have in Mojave desertscrub.

Pinyon and juniper are the dominant woodland species. Common pinyon is the most abundant pinyon species, but singleleaf pinyon does occur. Utah juniper is the most common juniper, with one-seed juniper occasionally found. The understories of pinyon-juniper and dense mature juniper woodlands are species-poor, containing widely scattered shrubs, forbs, and small clumps of grass. Grasses are the most common understory component. Predominant (or formerly predominant) grasses include grama, Arizona fescue, prairie junegrass, Indian ricegrass, needlegrass, dropseed, and squirreltail. Shrubs may include sagebrush, cliffrose, serviceberry, rabbitbrush, shadscale, and winterfat. Understory plants are most common along the edges of the zone. Bare ground is very common. Utah juniper is a climax species in a number of pinyon-juniper, sagebrush, grassland, and shrub-steppe communities.

Pinyon Juniper FMU: Siler pincushion cactus (threatened), Trumbull beardtongue (sensitive)

Wolf Hole PJ FMU: Black Rock daisy (sensitive)

Buckskin Mountain FMU: Within 10 miles of California condor (endangered) release site, cliff milkvetch (sensitive), Paradine pincushion cactus (sensitive)

Paria Plateau FMU: California condor (endangered) release site, Paradine pincushion cactus (sensitive), Siler fishhook cactus (sensitive)

California condor release site: The condor release site atop the Vermilion Cliffs just north of the wilderness boundary and overlooking House Rock Valley consists of a large flight cage usually holding some live condors. The flight cage consists of chain-link netting. On one end of the cage is a plywood shed that protects the birds from the weather. Nearby there are at least two plywood blinds from which to watch the condors, and a second small pen. A primitive water system is piped to the cage from a set of barrels. Some food for the condors (calf carcasses), packs, radio-telemetry equipment, etc., is also present.

East of the flight cage a few hundred yards back towards the road is a large white wall tent where the personnel stay when on site. A couple of four-wheelers are normally parked by the tent, with some other equipment used for camping or to take care of the birds. Approximately 10 large kennel boxes are usually stacked there. Typically two or three pickup trucks are parked where the road and the trail meet.

There is a well established trail from the road to the tent and to the flight cage. The entire facility covers approximately 10 acres. The area is sandy with numerous openings in the vegetation, some pinyon-juniper vegetation, and outcroppings of sandstone. Usually one to three personnel are present. Often in addition to the condors held captive in the flight cage, free flying condors are found on top of the cage and in the surrounding immediate area.

c) Fire History –

Most wildland fires are caused by lightning during July and August. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause by FMU	Number of Fires	Acres Burned
Pinyon Juniper		
Lightning	144	3,162
Total	162	3,496
Wolf Hole PJ		
Lightning	93	40
Total	95	60
Shivwits		
Lightning	9	2,976
Total	11	3,031
Buckskin Mountain		
Lightning	9	22
Total	10	62[1]
Paria Plateau		
Lightning	26	37
Total	26	37
Cottonwood Point Wilderness		
Lightning	1	<1
Total	1	<1

[1]Campfires caused 40 acres of wildland fire.

d) Fire Regime Condition Class (FRCC) – Fire history is poorly understood in pinyon-juniper woodlands. There are no reliable estimates of mean fire intervals for low-severity surface fires. Fire rotation for high-severity fires has only been estimated in two studies (400 and 480 years), and fires sometimes burn with mixed severity (Baker and Shinneman 2004). Some published estimates suggest the historic fire return interval was 10-30 years (USFS Fire Effects Information System, Wright and Bailey 1982, Schussman and Gori 2004). Preliminary estimates within the ASFMZ suggest that approximately 25% is FRCC 1, 40% is FRCC 2, and 35% is FRCC 3. Surveys have not been conducted.

e) Values at Risk –

All FMUs: California condors, other special status species, cultural resources, domestic livestock forage, and range improvements, old growth stands of pinyon-juniper (e.g., Dark Forest).

Cottonwood Point Wilderness FMU: Wilderness values

A resource advisor will be assigned to any fire potentially impacting California condors, other federally protected species or their habitats, or cultural resources, and assigned or contacted for other fires exceeding initial attack.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness in the Cottonwood Point Wilderness FMU 15 is classified as VRM Class I, which requires preservation of the existing character of the landscape. The Paria Plateau and Ferry Swale areas (Paria Plateau FMU) are entirely VRM Class II, where the objective is to retain the existing character of the landscape by keeping the level of change to the characteristic landscape low. The Buckskin Mountain, Shivwits, Wolf Hole PJ, and Pinyon Juniper FMUs are a mix of VRM Class II, III, and IV, with Class II areas consisting mainly of major transportation corridors.

Scenic quality on the Paria Plateau and within the Cottonwood Point Wilderness is rated high (A). All other FMUs are rated moderate (B) to low (C), except for the area in the South Grand Wash Cliffs which is high (A). All areas listed have sections that fall within national monument boundaries, and these areas have a high (H) sensitivity rating. Outside monument boundaries, the sensitivity rating is either medium (M) or low (L).

Recreation: Opportunities exist for hiking, camping, hunting, sightseeing, vehicle exploring, and cultural/historic studies at the following sites: The Nampaweap Rock Art site is within the Pinyon Juniper FMU; the Grand Staircase scenic overlook and the Buckskin Mountain portion of the Arizona trail are within the Buckskin Mountain FMU; the Grand Wash Bench trailhead is within the Shivwits FMU; the Navajo trailhead, West Bench Pueblo and Signature Rock cultural sites are within the Paria Plateau FMU, as are significant portions of the Honeymoon and Dominguez/Escalante Historic Trails; the Virgin River Gorge overlook is located in the Wolf Hole PJ FMU.

e) Human Environment/Communities at Risk –

Pinyon Juniper FMU: Includes White Sage, a community at risk. It also includes the following administrative sites: Mount Trumbull and Poverty Mountain. The following private ranches and cabins are located in this FMU: Marshall Ranch, Kenworthy Ranch, Craig Ranch, Toroweap Valley Cabin, Clarence and Bundy Family Ranch, and Wildcat/Esplin Ranch. The Navajo-McCullough Power Transmission Line and other power distribution lines pass through this FMU. Potato Valley cabins, ranches, and water facility are also in this FMU.

Wolf Hole FMU: Includes the following administrative sites: Imlay Airstrip and Black Rock. The following private cabins are located in this FMU: Blake's cabin and Wolf Hole Cabin 2.

Cottonwood Point Wilderness FMU: Cane Beds, Colorado City, and cabins near the wilderness boundary.

Shivwits FMU: Hudson Point Repeater

Buckskin Mountain FMU: The Navajo-McCullough Power Transmission Line passes through this FMU.

Paria Plateau FMU: California condor release site (see description under Values at Risk). The Navajo-McCullough Power Transmission Line passes through this FMU.

2. Fire Management Objectives – The fire suppression objective is to hold fires of FIL >4 to 1,000 acres for 90% of ignitions. Values at Risk and Human Environment/Communities at Risk will be protected. Prescribed fire and non-fire fuels treatments will be implemented to meet desired future conditions including reducing hazardous fuels and restoring pinyon and juniper densities and cover to their historic range of variation. Potential resource objectives include increasing understory vegetation and available forage for wildlife and domestic livestock. Wildland fire use may be appropriate under some conditions. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Community protection and assistance objectives include educating the public about fire prevention and mitigation activities, working with local news media to provide fire prevention information and updates to the public, developing partnerships with homeowner organizations, ranchers, cabin owners, and permitees to assist the community and residents in reducing the risk from wildfire.

FIL 1: 0-2 ft FL, FIL 2: 2-4 ft FL, FIL 3: 4-6 ft FL, FIL 4: 6-8 ft FL, FIL 5: 8-12 ft FL, FIL 6: 12 + ft FL

3. Fire Management Strategies -

a) Suppression – Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned to any fire potentially impacting California condors, other federally listed species, or cultural resources, and assigned or contacted for other fires exceeding initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable.

Suppression strategies and tactics are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, extreme fire behavior can occur with live fuel moistures below 90%. With extreme fire behavior conditions, suppression strategies and tactics in this mixed fuel type are usually indirect, and fires typically go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Cottonwood Point Wilderness: Fire management will be consistent with the Cottonwood Point Wilderness Management Plan. When suppression actions are required in wilderness areas, MIST will be used and coordinated with wilderness area management objectives and

guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime in the 100s, nighttime in the 60s and 70s, and relative humidity 5% to 15%), power lines, venomous animals, low-level military aircraft training area and routes. Thick pinyon-juniper can limit escape routes and safety zones. Steep terrain exists, particularly along the Grand Wash Cliffs and in the Shivwits FMU. Scattered WUI areas adjacent to public land are a safety concern for fire fighters due to the residences and out buildings, propane tanks, and roads with limited turn outs and access. Fires in the Wolf Hole PJ and Cottonwood Point Wilderness FMUs may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media.

b) Wildland Fire Use – These FMUs are classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. Wildland fire use may be appropriate for fires at FIL ≤4 to meet desired future conditions and resource objectives. A wildland fire use plan must be developed prior to the implementation of wildland fire use.

c) Prescribed Fire – Broadcast and pile burning may be used to meet desired future conditions including reducing hazardous fuels and restoring pinyon and juniper densities and cover to their historic range of variation. If ecological restoration projects are implemented in old-growth stands of pinyon-juniper, some pre-settlement trees will be protected. Fuels treatments will focus on treating encroaching stands of pinyon-juniper. Cliffrose may be treated in the Buckskin Mountain FMU to improve browse for mule deer. Broadcast burning may also be used in sagebrush. An interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Fire and fuels management specialists will work closely with local air quality regulators to ensure prescribed fire emissions stay within permitted levels. Any treatments in the wilderness FMUs would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Highest treatment priorities are in the Pinyon Juniper, Wolf Hole, Shivwits, and Buckskin Mountain FMUs. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

d) Non-fire Fuels Treatments – Mechanical thinning will be used to meet desired future conditions including reducing hazardous fuels and restoring pinyon and juniper densities and cover to their historic range of variation. Mechanical treatments may be implemented prior to broadcast or pile burning. Cliffrose may be treated mechanically in the Buckskin Mountain FMU to improve browse for mule deer. Chemical treatments may be implemented in sagebrush and pinyon-juniper to meet desired future conditions and resource objectives. An interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Any treatments in the wilderness FMUs would

need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Highest treatment priorities are in the Pinyon Juniper, Wolf Hole, Shivwits, and Buckskin Mountain FMUs. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

e) Post-Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) –

- Increase public awareness, participation, and cooperation pertaining to the mitigation of fire threats in the WUI.
- Educate area population on the basic principles of fire ecology and fire's role in the environment.
- Build public support for fuels reduction efforts in and around WUI.
- Develop and implement collaborative mitigation and prevention strategies with community at risk.
- Reduce the risk of human-caused wildland fires.
- Provide fire restriction and emergency closure information to the public.
- Provide informational brochures and materials homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.
- Provide educational signing, outreach to public land groups, prevention patrols, and contacts.

Sagebrush FMU (24) (411,089 acres)
Sullivan Sagebrush FMU (25) (265,399 acres)
Great Basin Wilderness FMU (05) (37,171 acres)

1. FMU Description

a) General Description – The Sagebrush (see map p. 155) and Sullivan Sagebrush (see map p. 156) FMUs consist of Great Basin vegetation which is dominated by sagebrush. Response times are greater and fewer fires have been reported in the Sagebrush FMU than in the Sullivan Sagebrush FMU. Chemical treatments are often implemented in sagebrush to increase species diversity and herbaceous ground cover, improving wildlife habitat, livestock forage, and watershed condition. The Great Basin Wilderness FMU includes the Great Basin vegetation within the Paiute and Grand Wash Cliffs wilderness areas. Fuels treatments are a low priority in this FMU.

b) Characteristics - Great Basin vegetation includes grasslands, shrublands, and woodlands. The vegetation composition changes over time based on the type and amount of disturbance, or lack thereof. Herbaceous grass-dominated communities have become less prevalent as grazing and fire suppression have allowed woody species to become established, and often to dominate an area.

Sagebrush is the most widespread of the typical Great Basin plant communities. Common associates include black greasewood, big sagebrush, winterfat, spiny hopsage, blue grama, needle-and-thread, wild ryes, cheatgrass, Indian ricegrass, and alkali sacaton. Other dominant shrubs include blackbrush, shadscale, and Mormon tea. Exotic annual grasses have invaded parts of the Great Basin, but have not impacted the fire ecology as drastically as they have in Mojave desertscrub.

Pinyon and juniper are the dominant woodland species. See description of pinyon-juniper FMUs for additional information.

Sagebrush FMU: Fickeisen pincushion cactus (candidate), Trumbull beardtongue (sensitive)

Sullivan Sagebrush FMU: Siler pincushion cactus (threatened), Fickeisen pincushion cactus (candidate)

c) Fire History - Most wildland fires are caused by lightning during June, July, and August. The following wildland fires and burned acres were reported from 1980 to 2003.

Cause by FMU	Number of Fires	Acres Burned
Sagebrush		
Lightning	74	329
Total	86	340
Sullivan Sagebrush		
Lightning	453	28,564
Total	460	28,566
Great Basin Wilderness		
Lightning	53	205
Total	53	205

d) Fire Regime Condition Class (FRCC) – The historic fire return interval was approximately 20-70 years (USFS Fire Effects Information System, Wright and Bailey 1982, Miller and Rose 1999, Miller and Tausch 2001, Schussman and Gori 2004). Preliminary estimates within the ASFMZ suggest that approximately 25% is FRCC 1, 40% is FRCC 2, and 35% is FRCC 3. Surveys have not been conducted.

e) Values at Risk - Special status species, cultural resources, domestic livestock forage, and range improvements.

Great Basin Wilderness FMU: Wilderness values

A resource advisor will be assigned or contacted for any fire that escapes initial attack or potentially impacts Federally protected species or their habitats.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness portions of the Great Basin Wilderness FMU (Paiute and Grand Wash Cliffs) are classified as VRM Class I, which requires preservation of the existing character of the landscape. The Sagebrush and Sullivan Sagebrush FMUs are a mix of VRM Class II, III, and IV. Those portions that are Class II, where the objective is to retain the existing character of the landscape by keeping the level of change to the characteristic landscape low, are generally the areas that are visible from major transportation corridors. Throughout the Great Basin Wilderness FMU, scenic quality is rated high (A). In the Sagebrush and Sullivan Sagebrush FMUs, scenic quality is an even mix of moderate (B) and low (C). The exception is the Parashant and Andrus Canyon areas, where the scenic quality is rated high (A). All of the Great Basin Wilderness FMU and portions of the Sagebrush and Sullivan Sagebrush FMUs fall within the Grand Canyon Parashant National Monument, and these areas have a high sensitivity (H) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management. In areas outside the monument (portions of the Sagebrush and Sullivan Sagebrush FMUs), sensitivity is an even mix of medium (M) and low (L).

Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities in the Paiute and Grand Wash Cliffs Wilderness areas (Great Basin Wilderness FMU), including hiking, horseback riding, hunting, camping, and viewing wildlife (deer). Similar conditions exist in the Parashant and Andrus Canyon areas in the GCPNM (Sagebrush and Sullivan Sagebrush FMUs). Four scenic overlooks are located within these three FMUs: Tweeds Point, Grama Canyon Overlook, Mule Point, and the Parashant Overlook. The Mokaac Trailhead is located in the Sullivan Sagebrush FMU and the Willow Springs trailhead is within the Sagebrush FMU. The Temple Historic Trail passes through a portion of the Sagebrush FMU.

f) Human Environment/Communities at Risk –

Sagebrush FMU: Communities at risk include White Sage and the Mt. Trumbull community. The private ranches and cabins in this FMU include the Wildcat/Espline Ranch, Bar 10 lodge and airstrip, Woods Ranch, Toroweap Valley cabin, and Langs Run. The Navajo-McCullough Power Transmission Line and other power distribution lines pass through this FMU.

Sullivan Sagebrush FMU: Administrative sites include the Imlay Airstrip and Black Rock Administrative Site. The private ranches and cabins include Wolf Hole Cabins 1, 2, and 3; Atkin's cabin; Little Tank; Esplin Ranch; and Blake's Cabin.

2. Fire Management Objectives - The fire suppression objective is to hold fires of FIL >4 to <500 acres for 90% of ignitions. Values at Risk and Human Environment/Communities at Risk will be protected. Prescribed fire and non-fire fuels treatments may be implemented to meet desired future conditions and resource objectives including increase species diversity and herbaceous ground cover and reducing hazardous fuels. The majority of treatment acres of sagebrush in the Sagebrush and Sullivan Sagebrush FMUs involve chemical treatments. Pinyon-juniper may be treated with prescribed fire and/or mechanical treatments. Wildland fire use may be appropriate under some conditions. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community protection and assistance objectives include educating the public about fire prevention and mitigation activities, working with local news media to provide fire prevention information and updates to the public, and developing partnerships with homeowner organizations, ranchers, cabin owners, and permitees to assist communities and residents in reducing the risk from wildland fire.

FIL 1: 0-2 ft FL, FIL 2: 2-4 ft FL, FIL 3: 4-6 ft FL, FIL 4: 6-8 ft FL, FIL 5: 8-12 ft FL, FIL 6: 12 + ft FL

3. Fire Management Strategies –

a) Suppression - Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource

advisor will be assigned or contacted for any fire that escapes initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, extreme fire behavior can occur with live fuel moistures below 90%. With extreme fire behavior conditions, suppression strategies and tactics in this mixed fuel type are usually indirect, and fires typically go into multiple burning periods. Emphasize use of aircraft (helicopter and SEAT) to minimize surface disturbance.

Great Basin Wilderness FMU: Fire management will be consistent with the Paiute and Beaver Dam Mountains and Grand Wash Cliffs Wilderness Management Plans. MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime in the 100s, nighttime in the 60s and 70s, and relative humidity 5% to 15%), power lines, venomous animals, low-level military aircraft training area and routes. Thick vegetation can limit escape routes and safety zones. Steep terrain exists, particularly along the Grand Wash Cliffs. Scattered WUI areas adjacent to public land are a safety concern for fire fighters due to the residences and out buildings, propane tanks, and roads with limited turn outs and access. Fires in the Sullivan Sagebrush and Great Basin Wilderness (Paiute Wilderness Area) FMUs may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media.

b) Wildland Fire Use – These FMUs are classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. Wildland fire use may be appropriate for fires at FIL ≤4 to meet desired future conditions and resource objectives. A wildland fire use plan must be developed prior to the implementation of wildland fire use.

c) Prescribed Fire – Broadcast burning may be used in sagebrush to meet desired future conditions including increasing species diversity and herbaceous ground cover and reducing hazardous fuels. Broadcast and pile burning may be used in pinyon-juniper (see description for pinyon-juniper FMUs). An interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., cultural) will be conducted to prevent the unintended loss of other resource values. Fire and fuels management specialists will work closely with local air quality regulators to ensure prescribed fire emissions stay within permitted levels. Any treatments in the Great Basin Wilderness FMU would need to be consistent with the Wilderness Management Plans and comply with minimum tool requirements. No treatments are planned in the Great Basin Wilderness FMU. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

d) Non-Fire Fuels Treatments – Sagebrush is treated chemically to meet desired future conditions including increasing species diversity and herbaceous ground cover and reducing hazardous fuels. These treatments are typically proposed by the range staff. Mechanical treatments may be implemented in the Sagebrush and Sullivan Sagebrush FMUs to meet desired future conditions and resource objectives. No treatments are planned in the Great Basin Wilderness FMU. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

e) Post Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) –

- Increase public awareness, participation, and cooperation pertaining to the mitigation of fire threats in the WUI.
- Educate the area population on the basic principles of fire ecology and fire's role in the environment.
- Build public support for fuels reduction efforts in and around the WUI.
- Develop and implement collaborative mitigation and prevention strategies with communities at risk.
- Reduce the risk of human-caused wildland fires, with special emphasis on recreationist-caused fires
- Provide fire restriction and emergency closure information to the public.
- Provide informational brochures and materials to homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.
- Provide educational signing, outreach to public land groups, prevention patrols, and contacts.

Kanab Creek Wilderness FMU (16) (6,803 acres)
Paria Canyon-Vermilion Cliffs Wilderness FMU (17) (89,825 acres)
Colorado Plateau Transition FMU (22) (30,431 acres)

1. FMU Description

a) General Description – These FMUs are classified as Colorado Plateau transition. The Kanab Creek Wilderness FMU includes the portion of the Kanab Creek Wilderness on BLM-administered lands (see map p. 147). The majority of this wilderness area is in the Kaibab National Forest. The Paria Canyon-Vermilion Cliffs Wilderness FMU includes this wilderness area (see map p. 148). The Colorado Plateau transition FMU includes the rocky slopes and cliffs in the canyons of Kanab Creek (see map p. 153). Fire has not played a large role in these FMUs.

b) Characteristics – These FMUs consists of the rocky slopes and cliffs along the edge of the Paria Plateau and in the canyons of Kanab Creek, including portions of Hack, Sunshine, and Grama canyons. The vegetation here is generally a transition between grassland and Great Basin. It consists of scattered juniper, cacti, grasses, and an occasional shrub. Vegetation is often similar to what occurs in adjacent FMUs. These steep-walled canyons provide habitat for bighorn sheep and peregrine falcons.

The Paria Canyon-Vermilion Cliffs Wilderness FMU includes a portion of the Paria River and associated riparian area. This riparian area does not support potential or suitable habitat for Southwestern willow flycatchers. Few fires have been reported in the FMU. The FMU contains bighorn sheep habitat and some habitat for the House Rock Valley chisel-toothed kangaroo rat (sensitive).

Paria Canyon-Vermilion Cliffs Wilderness FMU: Welsh's milkweed (threatened), Siler fishhook cactus (sensitive), House Rock Valley chisel-toothed kangaroo rat (sensitive). The California condor (endangered) release site is near the southwestern boundary of the FMU. California condors have nested in this FMU, and a chick hatched in 2004.

Colorado Plateau Transition: Grand Canyon rose (sensitive)

c) Fire History - Most wildland fires are caused by lightning during July and August. The following wildland fires and burned acres were reported from 1980 to 2003. No fires were reported in the Colorado Plateau Transition FMU.

Cause by FMU	Number of Fires	Acres Burned
Kanab Creek Wilderness		
Lightning	1	<1
Total	1	<1
Paria Canyon-Vermilion Cliffs Wilderness		
Lightning	3	<1
Total	4	16[1]

[1]From debris burning

d) Fire Regime Condition Class (FRCC) –Information on the historic fire return interval for this transition area was not found in the literature. Based on fire history and the prevalence of cliffs, it is unlikely that fire played a large role in these FMUs.

e) Values at Risk - Special status species, cultural resources, domestic livestock forage, and range improvements.

A resource advisor will be assigned or contacted for any fire that escapes initial attack or potentially impacts Federally protected species or their habitats or cultural resources.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness (Kanab Creek Wilderness and Paria Canyon-Vermilion Cliffs Wilderness FMUs) is classified as VRM Class I, which requires preservation of the existing character of the landscape. The Colorado Plateau Transition FMU is comprised entirely of VRM Class II. In the Kanab Creek and Paria Canyon – Vermilion Cliffs FMUs, scenic quality is rated high (A). In the Colorado Plateau Transition FMU, scenic quality is also rated high (A) for the majority of the area. There are small sections, generally in the southernmost portions, that have a scenic quality rating of Moderate (B). All three FMUs have a high sensitivity (H) rating, except for the small sections mentioned above, which have a low (L) rating. A high rating is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management.

Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities, in the Kanab Creek and Paria Canyon – Vermilion Cliffs wildernesses, including hiking, backpacking, canyoneering, horseback riding, hunting, camping, scenic photography, wildlife viewing (bighorn sheep, mule deer, mountain lion), and archaeological site viewing. In the Colorado Plateau Transition FMU, particularly in the drainages of Hack and Grama Canyons, many of these same attributes exist. In these areas, visitors rely heavily on the natural-appearing landscapes and outstanding conditions for seclusion from others for their high quality recreation experiences and benefits.

Paria Canyon and Coyote Buttes are two of the most sought after destinations for hikers, backpackers and outdoor photographers in the desert southwest. The popularity is so great that visitor use limits have been imposed through an active fee demonstration program.

Wild and Scenic Rivers: Approximately 27 miles of proposed Wild & Scenic River corridor (as much as ½ mile wide) along the Paria River has outstanding values related to fish and wildlife, riparian, geologic, cultural, scenic quality and recreational opportunities. Note: this is only that section of the Paria River in Arizona. An additional seven miles is found in Utah.

f) Human Environment/Communities at Risk – There are no communities at risk within the boundaries of these FMUs. (See recreation under Values at Risk.)

2. Fire Management Objectives – The fire suppression objective is to hold fires of FIL >4 to <500 acres for 90% of ignitions. Values at Risk will be protected. No treatments are planned due to the lack of fire history and steep terrain. Wildland fire use may be appropriate under some conditions. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed where applicable.

Community protection and assistance objectives include providing public education in prevention and mitigation efforts.

FIL 1: 0-2 ft FL, FIL 2: 2-4 ft FL, FIL 3: 4-6 ft FL, FIL 4: 6-8 ft FL, FIL 5: 8-12 ft FL, FIL 6: 12 + ft FL

3. Fire Management Strategies –

a) Suppression - Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned or contacted for any fire that escapes initial attack. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable. MIST will be used in all areas with known Federally protected species or habitat.

Suppression strategies and tactics are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, extreme fire behavior can occur with live fuel moistures below 90%. With extreme fire behavior conditions, suppression strategies and tactics in this mixed fuel type are usually indirect, and fires typically go into multiple burning periods.

Kanab Creek Wilderness FMU: MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Paria Canyon-Vermilion Cliffs Wilderness: Fire management will be consistent with the Paria Canyon-Vermilion Cliffs Wilderness Management Plan. MIST will be used and coordinated with wilderness area management objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime in the 100s, nighttime in the 60s and 70s, and relative humidity 5% to 15%), venomous animals, low-level military aircraft training area and routes. Steep, rocky terrain exists throughout these FMUs. The Paria Canyon and other canyons are susceptible to flash flooding.

b) Wildland Fire Use – These FMUs are classified as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. Wildland fire use may be appropriate for fires at FIL ≤4 to meet desired future conditions and resource objectives. A wildland fire use plan must be developed prior to the implementation of wildland fire use.

c) Prescribed Fire – No treatments are planned due to the lack of fire history and steep terrain. Any treatments in the wilderness FMUs would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

d) Non-Fire Fuels Treatments – No treatments are planned due to the lack of fire history and steep terrain. Any treatments in the wilderness FMUs would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

e) Post Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) – Prevention and mitigation efforts include educational signing, outreach to public land use groups, prevention patrols, and contacts.

Virgin River FMU (18) (6,460 acres)
Kanab Creek Riparian FMU (19) (1,439 acres)

1. FMU Description

a) General Description – The Virgin River FMU includes the Virgin River riparian corridor (see map p. 149). The majority of the FMU is outside of wilderness, but portions are within the Beaver Dam Mountains and Paiute wilderness areas. The Kanab Creek Riparian FMU includes the riparian corridor along Kanab Creek (see map p. 150).

b) Characteristics - Riparian areas compose less than one percent of the ASFMZ, but are among its most productive and important ecosystems. Riparian areas typically have a greater diversity of flora and fauna than adjacent uplands. Healthy riparian systems filter and purify water as it moves through them. Healthy riparian areas reduce sediment loads and enhance soil stability, provide microclimatic moderation when contrasted to extremes in adjacent areas, and contribute to groundwater recharge and base flow.

Historically, fire was probably uncommon in these FMUs. Flammable fuel loads may have increased dramatically because flooding, which removed litter and woody debris, is much less common and vegetation has become more contiguous. In many areas, native vegetation has been replaced by tamarisk, a highly flammable exotic. Tamarisk can recolonize rapidly following a fire, so each initiation of a burn cycle can successively enhance its dominance of a site. Human-caused wildland fires near transportation corridors and communities can contribute to this cycle.

Virgin River FMU: Provides occupied, suitable, and potential habitat for Southwestern willow flycatchers (threatened). Western yellow-billed cuckoos (candidate) have been verified in the area. Woundfin (endangered), Virgin River chub (endangered), and Virgin spinedace (conservation agreement) inhabit the river. Critical habitat for the woundfin and Virgin River chub is designated in this FMU. A fire ignited in this FMU could potentially spread into desert tortoise (threatened) habitat in the adjacent uplands. Crevice penstemon (sensitive) grows in the FMU.

Kanab Creek FMU: No Southwestern willow flycatchers have been documented along Kanab Creek, but suitable and potential habitat exists in the FMU.

c) Fire History – Most fires occur during May through September depending on human activity along the Virgin River. The following wildland fires and burned acres were reported from 1980 to 2003. No fires were reported in the Kanab Creek Riparian FMU.

Cause by FMU	Number of Fires	Acres Burned
Virgin River		
Lightning	2	1
Total	8[1]	113

[1]Fires were also caused by equipment (2), smoking (1), debris burning (1), a child (1), and miscellaneous (1).

d) Fire Regime Condition Class (FRCC) – The historic fire return interval was approximately 35-200 years (USFS Fire Effects Information System, Schussman and Gori 2004). Preliminary estimates within the ASFMZ suggest that approximately 4% is FRCC 1, 1% is FRCC 2, and 95% is FRCC 3. Surveys have not been conducted.

e) Values at Risk – Riparian resources, special status species, cultural resources, domestic livestock forage, and range improvements.

Virgin River FMU: wilderness values in the Beaver Dam Mountains and Paiute wilderness areas

A resource advisor will be assigned or contacted for all wildland fires. Their focus will be on riparian resources, special status species, cultural resources, and in the Beaver Dam Mountains and Paiute wilderness areas, wilderness protection objectives.

MIST will be used in all areas with known Federally protected species, habitat, or wilderness values.

Visual Resources: Statutory wilderness portions of the Virgin River FMU are classified as VRM Class I, which requires preservation of the existing character of the landscape. The Kanab Creek Riparian FMU is comprised entirely of VRM Class II. Along the stretch of the Virgin River FMU, where it passes through the Virgin River Gorge, scenic quality is rated high (A). In the Kanab Creek Riparian FMU, scenic quality is also rated high (A). Both FMUs have a high sensitivity (H) rating, which is a measure of public concern for scenic quality based on public interest, adjacent land uses, and special area management (tortoise ACECs).

Recreation: Outstanding opportunities exist for primitive and unconfined recreation activities, in the Beaver Dam Mountains and Paiute Wildernesses (portions of the Virgin River FMU), including hiking, horseback riding, hunting, camping, geocaching, and viewing wildlife (bighorn sheep, tortoise). In the Kanab Creek drainage (Kanab Creek Riparian FMU), particularly in the vicinity of Water and Gunsight Canyons, visitors rely heavily on the natural-appearing landscapes and outstanding conditions for seclusion from others for their high quality recreation experiences and benefits.

Wild and Scenic Rivers: Approximately 30 miles of proposed Wild & Scenic River corridor (as much as ½ mile wide) along the Virgin River has outstanding values related to fish and wildlife, riparian, geologic, cultural, scenic quality and recreational opportunities.

f) Human Environment/Communities at Risk –

The Virgin River FMU has several communities at risk within its boundaries. There are multiple areas with sub-divided, residential properties that are not associated with a specific community. There are also recreation sites, resource values, range improvements, utility lines, substations and communication sites within the FMU that may be at risk. Prevention, education, and mitigation efforts for most of the subdivided areas can be made through local

fire departments, but many will require outreach by direct contact. The risk level to each community is based on fuels, topography, the current state of fire prevention preparedness, and unique aspects of each. Above or below average precipitation can greatly affect the risk to each community and individual areas by increasing or decreasing the amount of fuel available to a fire. Special considerations will be made for communities with increased risk.

Virgin River FMU: Communities at risk include Littlefield, Beaver Dam, Scenic, Arvada and Desert Springs. The Virgin River Campground is adjacent to this FMU.

2. Fire Management Objectives – The fire suppression objective is to hold fires to ≤5 acres in tamarisk and <1 acre in cottonwood and willow for 90% of ignitions. Applicable conservation measures in the Arizona Statewide LUPA (Appendix D), including those specific to riparian areas, will be followed. Values at Risk and Human Environment/Communities at Risk will be protected. Prescribed fire and non-fire fuels treatments may be implemented to meet desired future conditions and resource objectives including reducing hazardous fuels and maintaining or restoring native vegetation.

Community protection and assistance objectives include educating the public about fire prevention and mitigation activities, working with local news media to provide fire prevention information and updates to the public, building strong collaborative relationships with local governments and fire departments, and developing partnerships with homeowner organizations, permitees, and other groups to assist communities in reducing the risk from wildland fire.

3. Fire Management Strategies –

a) Suppression - Firefighter and public safety is the first priority in all fire management strategies and suppression actions. An AMR will be used on all wildland fires. A resource advisor will be assigned or contacted for all wildland fires. Wildland fires will be suppressed according to conservation measures for the Arizona Statewide LUPA (Appendix D) where applicable and the Riparian Fire Suppression Plan (Draft). MIST will be used in riparian areas and all areas with known Federally protected species or habitat. Operational guidelines in the *Interagency Standards for Fire and Fire Aviation Operations 2004* (or updates), "Environmental Guidelines for Delivery of Retardant or Foam Near Waterways" and "Environmental Procedures for Application of Fire Chemicals," pp. 12-4 to 12-5 will be applied.

Suppression strategies and tactics are dependent on fire intensity. For low intensity fires, allow for direct attack. For high intensity fires, extreme fire behavior can occur with live fuel moistures below 90%. With extreme fire behavior conditions, suppression strategies and tactics in this mixed fuel type are usually indirect, and fires typically go into multiple burning periods.

Virgin River FMU (areas in the Beaver Dam Mountains and Paiute wilderness areas): Fire management will be consistent with the Paiute and Beaver Dam Mountains Wilderness Management Plan. MIST will be used and coordinated with wilderness area management

objectives and guidelines. If more than minimum impacting tools are required, management approval will be required prior to use.

Health and Safety - Safety hazards to firefighters include extreme temperatures (daytime 90 to 115 degrees, nighttime 70 to 80 degrees, and relative humidity 5% to 15%), power lines, venomous animals, low-level military aircraft training area and routes. Tamarisk trees are an extremely volatile fuel. Dense tamarisk stands may limit escape routes and safety zones. Quick sand may be present. Communities at risk are a safety concern for fire fighters due to the residences and out buildings, propane tanks, and roads with limited turn outs and access. Fires in the Virgin River FMU may be visible to the public and create local news media interest. This can increase interest and visits to the area, which can create safety issues for fire personnel, the public, and the media.

b) Wildland Fire Use – These FMUs are classified as Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit.

c) Prescribed Fire – Prescribed fire may be used to meet desired future conditions and resource objectives including reducing hazardous fuels and maintaining or restoring native vegetation. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed including measures for treatments in riparian areas and measures for Southwestern willow flycatchers and other Federally listed species. Timing restrictions will be followed to protect Federally listed species. An interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., wildlife, cultural) will be conducted to prevent the unintended loss of other resource values. Fire and fuels management specialists will work closely with local air quality regulators to ensure prescribed fire emissions stay within permitted levels. Any treatments in the Beaver Dam Mountains and Paiute wilderness areas would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements.

d) Non-Fire Fuels Treatments – Mechanical and chemical treatments may be used to meet desired future conditions and resource objectives including reducing hazardous fuels and maintaining or restoring native vegetation. Conservation measures in the Arizona Statewide LUPA (Appendix D) will be followed including measures for treatments in riparian areas and measures for Southwestern willow flycatchers and other Federally listed species. Timing restrictions will be followed to protect Federally listed species. An interdisciplinary approach will be used to determine the best site-specific mix of treatments to accomplish fuels reduction and other resource goals and objectives. Appropriate pre-treatment surveys (e.g., wildlife, cultural) will be conducted to prevent the unintended loss of other resource values. Any treatments in the Beaver Dam Mountains and Paiute wilderness areas would need to be consistent with Wilderness Management Plans and comply with minimum tool requirements.

e) Post Fire Restoration and Rehabilitation – All wildland fires will be assessed for rehabilitation and restoration needs. Seeding of native species will be emphasized unless non-intrusive, non-native species are considered appropriate for use where native species are

not available, are not economically feasible, cannot achieve ecological objectives as well as non-native species, and/or cannot compete with already established non-native species. Conservation measures from the Arizona Statewide LUPA will be implemented where applicable.

f) Community Protection and Assistance (Prevention and Mitigation) –

- Pursue formation of fire safe councils in all communities at risk.
- Work collaboratively with communities and other partners to develop a CWPP and update or amend the FMP as necessary to incorporate mitigation and prevention recommendations and priorities developed by the community or outlined in the CWPP.
- Provide fire restriction and emergency closure information to the public.
- Present fire mitigation and prevention information to local schools.
- Present fire ecology information to local youth groups to help enhance the understanding and support the BLM management activities.
- Coordinate information relating to funding and training opportunities to rural fire departments to enhance their fire fighting capacity.
- Provide informational brochures and materials to communities and homeowners on reducing fire risks. Provide Defensible Space fire education materials at events.
- Use local media outlets to encourage defensible space and to mitigate current fire causes.
- Produce mini campaigns each year to address the priority fire cause which may include some of the following: billboards, flyers, Fire Safe Council ads, and radio PSAs.
- Participate in residential assessments and provide education to homeowners.
- Conduct presentations to local homeowner groups explaining "Defensible Space" and fire prevention risks and mitigation.
- Provide educational signing, outreach to public land groups, prevention patrols, and contacts.

IV. Fire Management Components

A. Wildland Fire Suppression

1. Fire Planning Unit Fire History

The ASFMZ Fire Management Program is responsible for the protection of 2,768,046 acres of BLM-administered public lands in the Arizona Strip Field Office. The fire season is usually May through early October, with the number of starts peaking in June and July. From 1980 to 2003, there was an average of 85 annual wildland fire starts, ranging from 37 starts in 1987 and 2002 to 161 starts in 1996. These fires burned an average of 7,450 acres per year. Lightning was the most common cause of fires, accounting for approximately 81% of starts and 96% of the acres burned. Eighty-nine percent of fires burned less than 10 acres, with less than 2% consuming over 1,000 acres. See Appendix H for ASFMZ fire history graphs.

Wildland Fires and Acres Burned in the ASFMZ 1980-2003

Year	Number of Fires	Acres Burned	Year	Number of Fires	Acres Burned
1980	110	62,737	1992	104	685
1981	85	1,146	1993	66	13,517
1982	47	421	1994	103	2,456
1983	63	4,452	1995	124	30,757
1984	91	770	1996	161	3,509
1985	57	538	1997	52	542
1986	72	21,685	1998	87	290
1987	37	746	1999	92	18,943
1988	107	8,727	2000	155	3,465
1989	41	505	2001	151	767
1990	44	16	2002	37	1,772
1991	50	61	2003	110	297

2. Suppression/Preparedness Actions

The ASFMZ uses AMR to suppress wildland fires. Responses range from full fire suppression to managing fires for resource benefits. Management responses are based on firefighter and public safety, FMU objectives (see chapter III, section D), relative risk to resources, potential complexity, the ability to defend management boundaries, current conditions, and potential costs. As fire use plans are completed for FMUs designated as Wildland Fire Use: Areas suitable for wildland fire use for resource benefit, wildland fire use will become a potential management option.

Required fire operations/suppression plans can be found in the Interagency Standard for Fire and Fire Aviation Operations 2004 (or updates) and the Office of Fire and Aviation website at http://www.fire.blm.gov. All plans for the ASFMZ are located in the South Zone Interagency Logistics Center

Firefighter and public safety is the first priority in all fire management and suppression actions.

BLM's operational roles in the WUI are wildland firefighting, hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of tribal, state, or local governments. Federal agencies may assist with exterior structural protection activities under formal interagency agreements that specify the mutual responsibilities of the partners, including funding (Interagency Standards for Fire and Fire Aviation Operations 2004, page 01-3).

Agency administrators will ensure that their employees are trained, certified, and made available to participate in the wildland fire program locally, regionally, and nationally as the situation demands. Employees with a valid Red Card or other requested skills will support the wildland fire program as necessary. Agency administrators are responsible and accountable for making employees available (Interagency Standards for Fire and Fire Aviation Operations 2004, page 01-4).

Emergency section 7 consultation protocol: The following protocol was developed with the U.S. Fish and Wildlife Service (USFWS) as part of the Arizona Statewide LUPA. It applies to wildland fires that may impact Federally listed species or their habitats. Reporting requirements are described in Appendix I.

BLM will contact the appropriate USFWS biologist as soon as practical once a wildfire starts if they determine that a listed species or critical habitat could be affected by the fire or fire suppression activities. FWS will work with BLM during the emergency response to apply the appropriate conservation measures and make other site-specific recommendations. If the general framework for fire suppression actions as described in this consultation cannot be applied during the suppression activities (e.g., conservation measures, terms and conditions, standard operating procedures, etc.), BLM will consult on an emergency basis after the fire on any activities that may have affected the listed species or habitat. If this framework is followed, BLM will report to USFWS on the actions taken and effects to the species and its habitat following the fire, but no further consultation on that incident would be required.

3. Fire Prevention, Community Education, Community Risk Assessment, and other Community Assistance Activities

The fire prevention, education, and mitigation program work loads were developed and identified using RAMS.

a) Annual Prevention Program - The ASFMZ Fire Prevention Program strives to develop and apply efficient and effective prevention efforts to minimize unwanted human-caused wildfires. The prevention program focuses on mitigation through education aimed at changing people's behavior through awareness and knowledge. This is accomplished through printed materials, mass media, personal contacts, group and school presentations, signing, displays, events, and parades.

The fire prevention program is focused on reducing the risk from wildland fire in WUI areas. A primary goal is to work collaboratively and cooperatively with communities, agencies, groups, organization, and private home owners to develop and implement citizen driven solutions for mitigating wildfire hazards and risks. The prevention, fire, and fuels staffs will continue to develop cohesive partnerships with community stakeholders. Those partnerships will increase community and public awareness and help them understand and appreciate the importance of hazardous fuel reduction and risk mitigation. The ASFMZ is collaborating with fire departments, counties, and other cooperators in preparing community wildfire protection plans, which will establish guidelines and procedures for managing incidents with high risk or catastrophic potential.

b) Special Orders and Closures - During times of high fire danger, restrictions and closures may be imposed to mitigate the risk of wildland fires. Emergency closures have a substantial impact on the public and are only used under the most severe conditions. All special orders and closures will be coordinated with local cooperators and regional agencies. The ASFMZ Fire Management Officer will make recommendations to Field Office Managers for the approval of restrictions and closures. Those restrictions and closure recommendations will follow the guidelines outlined in the Interagency Closures and Restriction Tool Box and will be implemented in the interest of public safety.

c) Industrial Operations and Fire Precautions - Industrial operations are limited and have little impact on BLM public lands as a source of wildfire ignitions in the ASFMZ. Some commercial mining and logging operations are active in the ASFMZ.

4. Training Activities

a) Qualification and Fireline Refresher - Only qualified personnel will participate in wildland firefighting activities, prescribed fire implementation projects, and support functions. A list of qualified personal, training records, and annual requirements are maintained in the South Zone Interagency Logistics Center, in accordance with the *Interagency Standard for Fire and Fire Aviation Operations 2004* (or update) and Bureau policy.

b) Fire Season Readiness - Preparedness Reviews will be completed in June of each year. Established fire seasons on the ASFMZ vary based on precipitation. The ASFMZ can expect the fire season to last from May through early September.

5. Detection

The ASFMZ maintains a lookout at Black Rock during the established fire season. A lookout on Mt. Logan is staffed as needed based on lightning and weather patterns. Daily monitoring of weather and lighting patterns may trigger ASFMZ-wide aerial recons by helicopter or fixed-wing aircraft. The ASFMZ also relies on reports from other agencies, field office employees, and the public.

6. Fire Weather and Fire Danger

The ASFMZ is included in the Color Country Interagency National Fire Danger Rating System (NFDRS) Operating Plan, which is updated annually. This plan is available in the South Zone Interagency Logistics Center. The calculation of daily and forecasted outputs in the Weather Information Management System (WIMS) is completed by the Color Country Interagency Fire Center in Cedar City, Utah. The Enterprise remote automated weather station (RAWS) is used for Color Country NFDRS. The following weather stations are maintained by the ASFMZ for fire weather.

Station	Manual/RAWS	State	Latitude	Longitude
Trumbull	Manual	AZ	36:40:00	113:20:00
Black Rock	Manual	AZ	36:42:00	113:42:00
Logan	RAWS	AZ	36:22:00	113:11:00
Olaf	RAWS	AZ	36:30:00	113:49:00
Tweedy	RAWS	AZ	36:35:00	113:43:00
Robinson	RAWS	AZ	36:28:14	112:50:29
Nixon Flat	RAWS	AZ	36:23:24	113:09:08
BLPort	RAWS	AZ	36:47:25	113:44:50
Yellow John	RAWS	AZ	36:09:15	113:32:30
St. George	Manual	UT	37:06:00	113:34:00

7. Aviation Management

The ASFMZ has two aircraft contracts for one helicopter and two SEATs located in St. George, Utah. The South Zone Interagency Aviation Plan is available in the South Zone Interagency Logistics Center.

8. Initial Attack

a) FMU Suppression Priorities – All wildland fires in the ASFMZ will be managed with suppression actions consistent with preplanned dispatch protocols in conformance with resource management objectives identified in this FMP. Tactics and strategies will be based on the current and predicted weather and fire behavior. Firefighter and public safety are always the first priority. The following information will be used to determine initial attack priorities.

The highest priority FMUs for initial attack are ranked below. Priority ranking is based on input from the resource staff and resource management objectives.

1) Ponderosa pine FMUs (Black Rock Ponderosa Pine FMU, Black Rock Ponderosa Pine Wilderness FMU, Parashant-Nixon Ponderosa Pine FMU, and Mt. Trumbull and Mt. Logan Wilderness FMU)

2) Desert tortoise habitat FMUs (Tortoise Habitat FMU and Tortoise Habitat Wilderness FMU)

3) Virgin River FMU

4) Mojave Desert FMUs (Mojave FMU and Mojave Wilderness FMU) FMUs

5) Grassland FMU

As fire complexity increases, additional staffing will be requested as appropriate and consistent with incident complexity.

Based on the 1998 FMP, the initial attack resources for the FPU are: 1 helicopter, 2 SEATs, 4 engines, 1 water tender, and 1 reserve engine (non-working capital fund).

Initial attack dispatch and fire reporting procedures for Color Country are located in the CCIFC Dispatch in Cedar City, Utah.

b. **Dispatch –** CCIFC Dispatch is located in Cedar City, Utah. Normal dispatch hours from June 1 through September 30 are 0700 to 1900 hours seven days a week. As activity warrants, CCIFC Dispatch will staff as long as necessary.

All fire incidents are reported to CCIFC Dispatch, and CCIFC dispatches resources to incidents. Once on scene, all resources report to CCIFC Dispatch for all communications.

The ASFMZ does not have an automatic dispatch system. Dispatchers will initiate an appropriate dispatch considering location, expected fire behavior, fuels, time of day, time of year and availability of resources. The "closest resource concept" will be the guiding principle in all dispatch operations. The Initial Attack Incident Commander has the responsibility to assess the situation and adjust the type and quantity of resources being dispatched. When in High to Extreme fire danger or when other Color Country resources are not available, additional resources will be ordered as needed.

c. Logistics Centers – Color Country has local logistics centers at the Arizona Strip Field Office and Zion National Park. Normal hours of operation for the South Zone Interagency Logistics Center, located in St. George, UT, are 0800 to 1800 hours from June 1 through September 30. As activity warrants, the center is staffed as long as necessary.

9. Extended Attack and Large Fire Suppression

Generally fires that exceed the ability of local resources to reach containment within the first operational period should be referred to as extended attack incidents. The transition from extended attack from a Type III to a Type II or I Incident Management Team will occur when the extended attack organization cannot realize containment objectives within 2-3 operational periods beyond initial attack. In actual practice, however, it is most likely that a decision to mobilize an Incident Management Team will be made during the initial attack phase. Color Country has three Type III Incident Management Teams.

A Wildland Fire Situation Analysis (WFSA) should be completed to evaluate suppression responses to wildland fires that have exceeded initial attack response or exceeded planned management capability. Enhanced resource values may be a collateral benefit of the planned action under the WFSA, but cannot be part of the objective of the action.

10. Other Fire Suppression Considerations

FMU specific special considerations are described in individual FMU descriptions, chapter III, section D.

B. Wildland Fire Use

1. Wildland Fire Use Areas

Several FMUs have been identified as potential wildland fire use areas. These FMUs may be analyzed for wildland fire use in the future. The following FMUs may be considered for wildland fire use. FMUs are not listed in order of priority.

1) Interior Chaparral FMU
2) Interior Chaparral Wilderness FMU
3) Black Rock Ponderosa Pine FMU
4) Black Rock Ponderosa Pine Wilderness FMU
5) Parashant-Nixon Ponderosa Pine FMU
6) Mt. Trumbull and Mt. Logan Wilderness FMU
7) Grassland FMU
8) House Rock Valley FMU
9) Pinyon Juniper FMU
10) Wolf Hole PJ FMU
11) Shivwits FMU
12) Buckskin Mountain FMU
13) Paria Plateau FMU
14) Cottonwood Point Wilderness FMU
15) Sagebrush FMU
16) Sullivan Sagebrush FMU
17) Great Basin Wilderness FMU
18) Kanab Creek Wilderness FMU
19) Paria Canyon-Vermilion Cliffs Wilderness FMU
20) Colorado Plateau Transition FMU

2. Preplanned Implementation Procedures

Designating wildland fire use areas in the ASFMZ would require the development of approved wildland fire use plans. The wildland fire use plans would outline required implementation procedures for all wildland fire use fires. Wildland fire use plans would address the following criteria: Initial Actions Procedures, Required Personnel, Public

Information, Prescribed Conditions, Planning, and Documentation. These plans would require Endangered Species Act Section 7 consultation with the U.S. Fish and Wildlife Service and Section 106 consultation with the State Historic Preservation Officer (SHPO).

C. Prescribed Fire

It is anticipated that the ASFMZ will conduct fuels treatments on an average of 4,000-10,000 acres of BLM-administered lands annually, based on current out year planning.

1. Planning and Documentation

a) Prescribed Fire Summary

Appropriate NEPA analysis and documentation will be completed for all fuels management projects. Fuels and fire staff will coordinate with resource staff specialists, agency cooperators, and the affected public during project planning and development. All prescribed fire projects will have approved NEPA documentation and an approved burn plan prior to implementation. Project areas must have archaeological and wildlife clearances. Where applicable, conservation measures from the Arizona Statewide LUPA will be implemented.

Prescribed burning is conducted throughout the year. Broadcast burning of ponderosa pine is typically conducted from fall through early spring. Broadcast burning of sagebrush and pinyon-juniper is conducted from late spring through fall. Pile burning may be conducted at any time in some locations, though most burning occurs during the winter to reduce the risk of escaped fire. A list of proposed fuels treatment projects for a minimum of three years beyond the current fiscal year is maintained in the RAMS program. This program will be updated annually to ensure that fuels treatment projects are identified for out-years.

Priorities for projects are determined based on the following criteria:

1) Fuels reduction near federally listed communities at risk from wildfire, as needed.
2) Fuels reduction around other communities of interest, as needed.
3) Treatment of FRCC 3 and FRCC 2 lands.
4) Maintenance of FRCC 1 lands.

The following acres are proposed for prescribed burning planning and implementation as discussed in the RAMS assessment. See RAMS summary report in Appendix A.

Fiscal Year	Acres
2005	2,319
2006	1,638
2007	6,100

1) **Contractor Projects** - Opportunities for contractors to manage and implement fuels treatments by prescribed fire are currently limited due to the potential liability

involved with prescribed burning. Contract crews and equipment may be used for mechanical fuels reduction projects such as thinning and preparation work prior to prescribed burning. Implementation of non-fire fuels treatments may be conducted by contracting non-federal resources.

Contract resources are currently being used for logging and mechanical thinning projects as well as the application of herbicide on sagebrush.

2) **Acres Treated in FRCC 2 Moved to FRCC 1 -**

Approximately 80% of the treatment acres proposed in the National Fire Plan Operations and Reporting System (NFPORS) for 2005 are in FRCC 2. The majority of these treatment acres are in ponderosa pine and sagebrush. Treatments are also planned in pinyon-juniper.

3) **Acres Treated in FRCC 3 Moved to FRCC 2 or 1**

Approximately 20% of the treatment acres proposed in NFPORS for 2005 are in FRCC 3. The majority of these treatment acres are in ponderosa pine. Treatments are also planned in pinyon-juniper.

b) Fuels Personnel - See organization table in Chapter 5 and Appendix J. All fuels personnel will be qualified and current with NWCG standards.

c) Monitoring - The ASFMZ is developing a monitoring plan to provide minimum guidelines for pre-burn, post-burn, and for burn day weather, smoke, and vegetation monitoring. In the interim, monitoring of fuels management projects is implemented on a project-specific basis and is used to help determine if project objectives are met.

Treatments for the Mt. Trumbull Restoration project are associated with scientific studies being conducted by researchers with the NAU/ERI, other universities, and the AGFD. Results are presented at scientific conferences and published in peer-reviewed scientific literature.

d) Map - Project maps are maintained as part of the project file for each completed fuels project. Field Office GIS and fuels staff are developing an ArcView theme for fuels treatments which will also be maintained in RAMS.

2. Air Quality and Smoke Management

a) Class 1 Airshed and Clean Air Corridors – Air quality is generally good. Airsheds within the ASFMZ are managed as Class 2, except for airsheds within the Grand Canyon National Park and wilderness areas, which are managed as Class 1. Smoke from wildland fires and prescribed burns can impact the adjacent Class 1 airsheds under some weather conditions.

b) Smoke Sensitive areas - There are no air quality non-attainment areas in the ASFMZ.

c) Local/Regional Smoke Management Restrictions/Procedures - Smoke management policies and procedures are regulated by the Arizona Department of Environmental Quality (ADEQ). Regulations enforced by ADEQ meet all national and regional air quality standards. All prescribed fires conducted in the ASFMZ must be approved by ADEQ. Approval is contingent on annual burn registration, burn plan approval, and approval of daily burn requests. Smoke modeling and mapping are required for most prescribed burns.

D. Non-Fire Fuel Treatments – Most treatments are either manual or mechanical pre-treatments for prescribed burns, or the application of herbicide on sagebrush. Manual and mechanical treatments include thinning with chainsaws, piling, and contracted logging. Mechanical treatments also may be used where prescribed fire is not safe or viable. Chemical treatments are typically proposed by the range and wildlife staffs. Non-fire fuels treatments require appropriate NEPA analysis and documentation. Project areas must have archaeological and wildlife clearances. Where applicable, conservation measures from the Arizona Statewide LUPA will be implemented.

The following acres are proposed for non-fire fuels treatment implementation as discussed in the RAMS assessment. No biological treatments are planned. See RAMS summary report in Appendix A.

Fiscal Year	Mechanical & Thinning Acres	Chemical Acres
2005	837	8,350
2006	10	2,000
2007	0	1,500

Approximately 70% of mechanical treatment acres proposed in NFPORS for 2005 are in FRCC 2. The majority of these treatment acres are in ponderosa pine. Treatments are also planned in sagebrush and pinyon-juniper. Approximately 30% of mechanical treatment acres proposed in NFPORS for 2005 are in FRCC 3. All of these treatment acres are in ponderosa pine.

For the chemical treatment acres proposed in NFPORS for 2005, approximately 70% are in FRCC 2 and approximately 30% are in FRCC 3. All chemical treatments are planned in sagebrush.

The ASFMZ will be implementing biomass utilization stewardship contract projects including a combination of logging and firewood removal. See RAMS summary reports in Appendix A.

E. Emergency Stabilization and Rehabilitation - An interim Emergency Stabilization and Rehabilitation Handbook is available and provides operational guidance for applying emergency stabilization and rehabilitation policy. It includes a common cost-effectiveness analysis for evaluating proposed actions, a standard project accomplishment report format,

and a mechanism for archiving and broadly disseminating the results of monitoring treatment effectiveness. Additional Departmental guidance and procedures are contained in 620 DM 3.

The ASFMZ does not have a Normal Fire Rehabilitation Plan. If emergency stabilization and rehabilitation is needed, an interdisciplinary burned area rehabilitation team will be formed, and plans will be developed at that time. Specific Emergency Stabilization and Rehabilitation actions may be considered on a case-by-case basis depending on the severity of the burn, vegetation type, and resource values at risk.

F. Community Protection/Community Assistance – Littlefield is the only community within the ASFMZ that is listed on the Federal Register as community at risk from wildfire. This community has not completed a Community Wildfire Protection Plan. Several meetings with the rural fire department have been held to address the community situation. Collaborative planning efforts have not begun with the community.

There are six communities of interest within the ASFMZ that are at risk from wildfire. There are also numerous scattered ranches and cabins through out the ASFMZ.

The following communities are identified as needing Community Wildfire Protection Plans:

- Littlefield / Beaver Dam
- Scenic
- Colorado City
- Mount Trumbull Community (FMU 27 PJ WUI in RAMS)
- Fredonia
- White Sage

The Rural Fire Assistance Program was a new initiative in 2001 under National Fire Plan Community Assistances. The Rural Fire Assistance Program improves the local fire capability by assisting rural fire departments in meeting basic needs for wildland fire equipment, training, organization, and prevention activities. Of greater importance, the safety of both rural and Federal firefighters is enhanced when local departments are fully equipped with proper wildland safety equipment, updated radios, well rounded training curriculum, and other essential tools for wildland firefighting.

BLM has built the Rural Fire Assistance program around interagency cooperation and collaboration with the State, local fire departments, and other federal wildland agencies.

- Through collaboration, a one stop process has been established for both Department of Agriculture and Interior Rural Fire Assistance grants. One application is sent out and made available on the web to fire departments.
- An interagency panel made up of federal, state, state fire marshal and rural fire district association representatives review and make selections for grants.
- BLM established an agreement with Arizona State Lands Department (ASLD) to collectively manage the award of RFA grants. The ASLD administers the grants for

the BLM. This provides needed funding to ASLD, saves BLM FTE and ensures funding for grants are carried out.

The ASFMZ has been actively involved in the Rural Fire Assistance program. The Fire Education Specialist and Fire Management Officer have contacted local rural fire chiefs to explain the benefits of the program and provide assistance on grant preparation. Three rural fire assistance grants have been awarded to communities within the ASFMZ (Colorado City and Littlefield).

V. Organization and Budget

A. Budget and Organization

This organization table represents staffing for fiscal year 2004. The 2004 table of the implemented year fire organization is in Appendix J.

Resource	Current Staffing[1]	Desired Staffing	Normal Activation	Sub Activity	Cost
FMO	1 PFT	1 PFT	Yearly	2810	$89,500
AFMO	1 PFT	1 PFT	Yearly	2810	$76,100
Logistics Coordinator	1 CSLT	1 CSLT	April-Sept.	2810	$46,200
Supervisory Dispatcher	0 PFT	1 PFT	Yearly	2810	$46,300
Dispatcher	1 TEMP	1 TEMP	June-Aug.	2810	$23,200
Dispatcher	1 TEMP	1 TEMP	May-Sept.	2810	$15,500
Helitack Lead	1 PFT	1 PFT	Yearly	2810	$65,000
Helitack Asst. Lead	1 CSLT	1 CSLT	April-Sept.	2810	$31,500
Helitack Lead Crew	1 CSLT	1 CSLT	April-Sept.	2810	$29,400
Helitack Crew	1 TEMP	1 TEMP	June-Sept.	2810	$8,900
Helitack Crew	1 TEMP	1 TEMP	June-Sept.	2810	$8,900
Helitack Crew	1 TEMP	1 TEMP	June-Sept.	2810	$8,900
Helitack Crew	1 TEMP	1 TEMP	June-Aug.	2810	$7,900
Helitack Crew	1 TEMP	1 TEMP	June-Aug.	2810	$7,900
Helitack Crew	1 TEMP	1 TEMP	June-Aug.	2810	$7,900
Fire Ops Specialist	1 PFT	1 PFT	Yearly	2810/23/24	$58,800
Engine Module Supervisor (Heavy Engine)	1 CSLT	1 CSLT	April-Sept.	2810	$30,000
Engine Module Leader	1 CSLT	1 CSLT	April-Sept.	2810	$23,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$9,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$9,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$9,000
Firefighter	0 TEMP	1 TEMP	May-Sept.	2810	$6,000
Engine Module Supervisor (Heavy Engine)	1 CSLT	1 CSLT	April-Sept.	2810	$30,000
Engine Module Leader	1 CSLT	1 CSLT	May-Sept.	2810	$27,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$9,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$7,000

Firefighter	0 TEMP	1 TEMP	May-Sept.	2810	$6,000
Engine Module Supervisor (Medium Engine)	1 CSLT	1 CSLT	April-Sept.	2810	$28,000
Engine Module Leader	1 CSLT	1 CSLT	May-Sept.	2810	$21,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$9,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$7,000
Firefighter	0 TEMP	1 TEMP	May-Sept.	2810	$6,000
Engine Module Supervisor (Light Engine)	0 CSLT	1 CSLT	April-Sept.	2810	$30,000
Engine Module Leader	1 CSLT	1 CSLT	May-Sept.	2810	$21,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$9,000
Firefighter	1 TEMP	1 TEMP	May-Sept.	2810	$7,000
Firefighter	0 TEMP	1 TEMP	May-Sept.	2810	$6,000
SEAT Manager	1 CSLT	1 CSLT	April-Sept.	2810	$25,000
SEAT Manager	1 CSLT	1 CSLT	April-Sept.	2810	$25,000
Water Tender Operator	1 TEMP	1 CSLT	April-Sept.	2810	$22,000
Lookout	1 TEMP	1 TEMP	May-Sept.	2810	$7,000
Fuels Specialist	1 PFT	1 PFT	Yearly	2823/2824	$81,000
Fire Mitigation Specialist	1 PFT	1 PFT	Yearly	2810/2824	$77,000
Archaeologist	0 PFT	1 PFT	Yearly	2823/2824	$78,000
Fire Ecologist	1 PFT	1 PFT	Yearly	2823/2824	$78,000
Fuels Tech (RAMS)	0 PFT	1 PFT	Yearly	2823/2824	$65,000
Fire Prevention Tech (RAMS)	0 CSLT	1 CSLT	April-Sept.	2810/2824	$30,000
Fuels Crew/Fire Use Module Leader	1 PFT	1 PFT	Yearly	2823/2824	$55,000
Fuels Crew/Fire Use Module Assistant	1 CSLT	1 CSLT	Feb.-Dec.	2823/2824	$43,000
Fuels Crew/Fire Use Module Lead	1 CSLT	1 CSLT	Feb.-Dec.	2823/2824	$28,000
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS

Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Fuels Crew/Fire Use Crew	1 TEMP	1 TEMP	April-Sept.	2823/2824	See RAMS
Contract/Services[2]				2810	$5,000
Equipment[2]				2810	$10,000
Other[2]				2810	$13,000
Rent[2]				2810	$4,000
Supplies/Materials[2]				2810	$66,000
Telecomm[2]				2810	$3,000
Travel[2]				2810	$45,000
Vehicles[2]				2810	$75,000

[1]Zeros indicate positions vacant or unfilled during the peak of the fire season.
[2]For 2823 and 2824 operational and implementation dollars, see RAMS report.

B. Assistance Agreements and Intra/Interagency Agreements

Interagency cooperation is vital in attaining fire management program objectives, coordination, and cooperation with other federal and state fire agencies. The ASFMZ is a cooperative party and participates in the following local agreements.

<u>Joint Powers Agreement</u>

The Joint Powers Agreement between the state of Arizona and various federal agencies. This agreement provides mutual wildland fire suppression assistance and cooperation between the State Forester, as the agent of all cooperating state agencies, and federal fire agencies.

<u>Joint Powers Operating Agreement</u>

This plan, updated yearly, establishes SLD fiscal operational procedures, including suppression billings, methods and contracts.

<u>Interagency Agreement between USDI, Bureau of Land Management, Arizona Strip Field Office and Cedar City Field Office; USDI, National Park Service, Zion National Park; and USDA, Forest Service, Dixie National Forest R4 Region for Joint Occupancy of Owned Office and Related Space</u>

This interagency agreement establishes the policy framework for coordinating occupancy by the Forest Service, BLM, and NPS into dispatch office, shop/warehouse, and related space located in Cedar City, Utah.

2003-2008 Parashant National Monument Interagency Fire Operations Plan

This plan establishes interagency fire management guidelines, roles, and responsibilities for the BLM and NPS interagency fire program within the Grand Canyon-Parashant National Monument to comply with the intent of the Federal wildland fire management policy and program review.

Colorado Plateau Fire Management Area Annual Operating Plan: Cedar City and Arizona Strip BLM field offices, Bryce Canyon and Zion national parks, Glen Canyon National Recreation Area, Southern Paiute BIA Field Office, Dixie and Kaibab National Forests, 2004

This operating plan includes guidance for detecting and reporting fires, wildland fire management (policy, large fire coordination, contacts between units, radio communication, fire use, and public use restrictions), obligations, and mobilization plan and unit aviation plan distribution.

MOU between USDI Arizona Strip and Cedar City BLM filed offices, Bryce Canyon and Zion national parks, Glen Canyon National Recreation Area, Southern Paiute BIA Field Office and USDA Forest Service Dixie National Forest, Intermountain Region and Kaibab National Forest, Southwest Region, 2004

This memorandum of understanding (MOU) states that the participating units may use the "closest forces" concept regardless of administrative boundaries; request or provide initial action, extended attack, detection, and prescribed fire resources to participating units; cooperate in compiling a Type III Incident Management Team with available qualified personnel for use on fires within their protection areas; cooperate in achieving training objectives; coordinate fire prevention operations, including the implementation of public use restrictions; coordinate any boundary air operations between the units; and agree to follow any limitations or requirements on ordering resources established within the Great Basin and Southwest Area Mobilization Guides.

Color Country Interagency Fire Management Annual Operating Plan, 2004

The purpose of this Annual Operating Plan is to document agreement and commitment to fire protection assistance and cooperation. This plan is also designed to set forth a framework for building and assessing an interagency organization and approach to all aspects of fire management within the Color Country Interagency Fire Management Area. This Operating Plan covers the lands administered by the following agencies: Dixie National Forest, Cedar City Field Office BLM, Grand Staircase Escalante National Monument BLM, Arizona Strip Field Office including Grand Canyon-Parashant and Vermilion Cliffs national monuments BLM, Zion National Park, Bryce Canyon National Park, Cedar Breaks National Monument, Pipe Spring National Monument, Glen Canyon National Recreation Area, Southern Paiute Field Office of

Bureau of Indian Affairs, and State of Utah, Division of Forestry, Fire and State Lands acting for Kane, Beaver, Garfield, Iron, Wayne, Piute and Washington Counties.

Color Country Interagency Fire Management Area Interagency Fire Managers Charter, October 29, 2003

The purpose of this charter is to enhance and coordinate integration of wildland fire management activities and plans on an interagency regional basis in southwest Utah and northwest Arizona.

Color Country Interagency Fire Center Mobilization Guide

This guide describes how the Color Country Interagency Fire Center will position and use established resources to meet anticipated and existing fire protection needs within Color Country to best serve the public.

MOU between Arizona and The Nature Conservancy

This MOU establishes the frame work of cooperation and coordination between the BLM and NTC in Arizona concerning (a) management of public lands of mutual interest to both parties, including conservation and protection of resource values and maintenance and restoration of biological diversity, and (b) identifying, evaluating and protecting private lands that have exceptional natural resource values by placing in public ownership or other appropriate status.

C. Equipment Rental Agreements

See the South Zone Interagency Logistics Center Incident Service and Supply Plan. A copy is available in the South Zone Interagency Logistics Center.

D. Contract Suppression and Prescribed Fire Resources

The Coconino County (CREC) crew based in Flagstaff, Arizona is used as a fuels management resource.

VI. Monitoring and Evaluation

FMPs describe fire management forces, equipment, and support and administrative personnel and associated budgets needed to manage the fire program. FMPs do not make new decisions or Land Use Allocations and do not qualify as documents constituting discretionary Federal actions.

The ASFMZ-FMP is a working reference for wildland fire management and hazardous fuels treatments within the Arizona Strip Field Office. The plan will be reviewed annually and revised as needed to ensure that the strategic guidance provided in the plan is assisting the field office in meeting its resource management and fire management goals and objectives. The review will also ensure that the fire program is being implemented in a safe, cost effective manner. As national wildland fire performance measures are issued, monitoring and evaluation protocols will be developed to meet those requirements and follow Department of Interior and BLM guidelines.

When implementation level plans (e.g., Fuels Management Plans, Fire Use Plans) are prepared, additional environmental analysis and documentation will be required. This will include Endangered Species Act Section 7 consultation (see Appendix I) and Section 106 cultural consultation according to IB 2004-112.

Monitoring and evaluation of the fire program will occur to determine if the program and associated projects are meeting resource plan direction and to determine if the costs of implementing the fire program are occurring as predicted.

Monitoring related to wildland fire or fire related projects falls under the general monitoring and evaluation guidelines outlined in the RMP. Site specific monitoring needs are identified in analysis for individual fire related projects. Project level plans will be evaluated to ensure that the treatments/actions meet the resource objectives for the project.

VII. Appendices

APPENDIX A – RAMS SUMMARY REPORTS

RAMS Compartment Assessment Ranking

Rating	Compartment
High	1001: Mojave
High	901: Parashant-Nixon Ponderosa Pine
High	1101: Mt. Trumbull Mt. Logan Wilderness
High	801: Tortoise Habitat Wilderness
High	2701: Pinyon Juniper
High	1801: Virgin River
High	101: Tortoise Habitat
High	501: Great Basin Wilderness
High	401: Black Rock Ponderosa Pine Wilderness
High	2101: Buckskin Mountain
High	301: Interior Chaparral Wilderness
Mod	601: Black Rock Ponderosa Pine
Mod	2001: Paria Plateau
Mod	1301: Grassland
Mod	1601: Kanab Creek Wilderness
Mod	1701: Paria Canyon- Vermillion Cliffs Wilderness
Mod	1201: Cheatgrass
Mod	2401: Sagebrush
Mod	2501: Sullivan Sagebrush
Mod	2601: Wolf Hole PJ
Mod	201: Mojave Wilderness
Mod	2301: Shivwits
Mod	2403: Mt. Trumbull Community (WUI)
Mod	1501: Cottonwood Point Wilderness
Mod	1401: House Rock Valley
Mod	1202: Mt. Trumbull Community (WUI)
Mod	2704: Mt. Trumbull Community (WUI)
Mod	701: Interior Chaparral
Mod	1901: Kanab Creek Riparian
Mod	1802: Virgin River WUI (Scenic)
Mod	103: Beaver Dam/Littlefield (WUI)
Mod	2201: Colorado Plateau Transition
Low	102: Scenic (WUI)
Low	1803: Virgin River WUI (Littlefield)
Low	2703: White Sage (WIU)
Low	2402: White Sage (WUI)
Low	2702: Kane Beds (WUI)
Low	1302: Colorado City (WUI)
Low	1303: Fredonia (WUI)

RAMS Compartment Assessment (MOD indicates a moderate rating.)

Comp	Name	Total	Hazard	Ign Risk	Values	Protectn	Cat Potnl	Fire Hist
1001	Mojave	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
901	Parashant-Nixon Ponderosa Pine	HIGH	HIGH	HIGH	HIGH	HIGH	MOD.	HIGH
1101	Mt. Trumbull Mt. Logan	HIGH	HIGH	MOD.	HIGH	MOD.	HIGH	HIGH
801	Tortoise Habitat Wilderness	HIGH	MOD.	MOD.	MOD.	HIGH	HIGH	HIGH
2701	Pinyon Juniper	HIGH	MOD.	MOD.	HIGH	HIGH	MOD.	HIGH
1801	Virgin River	HIGH	MOD.	HIGH	HIGH	MOD.	HIGH	MOD.
101	Tortoise Habitat	HIGH	LOW	HIGH	HIGH	MOD.	HIGH	HIGH
501	Great Basin Wilderness	HIGH	HIGH	MOD.	LOW	HIGH	MOD.	HIGH
401	Black Rock Ponderosa Pine Wilderness	HIGH	HIGH	MOD.	MOD.	HIGH	MOD.	MOD.
2101	Buckskin Mountain	HIGH	HIGH	HIGH	MOD.	MOD.	MOD.	MOD.
301	Interior Chaparral Wilderness	HIGH	HIGH	MOD.	LOW	HIGH	MOD.	HIGH
601	Black Rock Ponderosa Pine	MOD.	HIGH	MOD.	HIGH	LOW	MOD.	MOD.
2001	Paria Plateau	MOD.	MOD.	MOD.	HIGH	HIGH	LOW	MOD.
1301	Grassland	MOD.	LOW	HIGH	MOD.	MOD.	MOD.	HIGH
1601	Kanab Creek Wilderness	MOD.	MOD.	MOD.	MOD.	HIGH	MOD.	MOD.
1701	Paria Canyon-Vermilion Cliffs Wilderness	MOD.	MOD.	MOD.	HIGH	HIGH	LOW	MOD.
1201	Cheatgrass	MOD.	LOW	MOD.	MOD.	MOD.	HIGH	HIGH
2401	Sagebrush	MOD.	MOD.	MOD.	MOD.	MOD.	MOD.	HIGH
2501	Sullivan Sagebrush	MOD.	MOD.	MOD.	MOD.	MOD.	MOD.	HIGH
2601	Wolf Hole PJ	MOD.	MOD.	MOD.	MOD.	MOD.	MOD.	HIGH
201	Mojave Wilderness	MOD.	HIGH	MOD.	LOW	LOW	HIGH	MOD.
2301	Shivwits	MOD.	MOD.	MOD.	LOW	HIGH	MOD.	MOD.
2403	Mt. Trumbull Community (WUI)	MOD.	MOD.	HIGH	MOD.	MOD.	MOD.	LOW
1501	Cottonwood Point Wilderness	MOD.	HIGH	MOD.	MOD.	MOD.	LOW	MOD.
1401	House Rock Valley	MOD.	LOW	HIGH	HIGH	HIGH	LOW	LOW
1202	Mt. Trumbull Community (WUI)	MOD.	MOD.	MOD.	MOD.	MOD.	MOD.	LOW
2704	Mt. Trumbull Community (WUI)	MOD.	MOD.	HIGH	LOW	MOD.	MOD.	LOW
701	Interior Chaparral	MOD.	HIGH	MOD.	LOW	LOW	MOD.	MOD.
1901	Kanab Creek Riparian	MOD.	LOW	MOD.	HIGH	MOD.	MOD.	LOW
1802	Virgin River WUI (Scenic)	MOD.	MOD.	MOD.	MOD.	LOW	MOD.	MOD.
103	Beaverdam/Littlefield (WUI)	MOD.	MOD.	HIGH	MOD.	LOW	MOD.	LOW
2201	Colorado Plateau Transition	MOD.	LOW	MOD.	MOD.	HIGH	MOD.	LOW
102	Scenic (WUI)	LOW	LOW	HIGH	LOW	LOW	MOD.	MOD.
1803	Virgin River WUI (Littlefield)	LOW	MOD.	MOD.	MOD.	LOW	MOD.	LOW
2703	White Sage (WUI)	LOW	MOD.	MOD.	LOW	LOW	MOD.	LOW
2402	White Sage (WUI)	LOW	MOD.	MOD.	LOW	LOW	MOD.	LOW
2702	Kane Beds (WUI)	LOW	LOW	HIGH	LOW	LOW	MOD.	LOW
1302	Colorado City (WUI)	LOW	LOW	MOD.	LOW	LOW	MOD.	LOW
1303	Fredonia (WUI)	LOW	LOW	MOD.	LOW	LOW	LOW	LOW

RAMS Community Listing

Comp	Name	Total	Hazard	Ign Risk	Values	Protection	Cat Potnl	Fire Hist
1	Littlefield	HIGH	HIGH	HIGH	HIGH	HIGH	MOD.	HIGH
6	FMU 27 PJ WUI (Mt. Trumbull Community)	HIGH	HIGH	LOW	MOD.	LOW	MOD.	HIGH
5	Fredonia	MOD.	MOD.	HIGH	MOD.	MOD.	LOW	LOW
4	White Sage	MOD.	MOD.	LOW	LOW	HIGH	MOD.	MOD.
3	Colorado City/Kane Beds	LOW	MOD.	MOD.	LOW	LOW	MOD.	MOD.
2	Scenic	LOW	LOW	MOD.	HIGH	MOD.	LOW	LOW

RAMS Category Summary (Hours)

Category	Historic	Plan	Difference
Patrol	348	708	-360
Signs	6	276	-270
Law Enforcement	124	276	-152
Hazards			
Public Contact	41	136	-95
Inspections	11	84	-73
Administration		29	-29
General Actions	828	1,685	-857
Totals	1,358	3,194	-1,836

RAMS Non-Personnel Expenses (Dollars)

Expense Item	Historic	Plan	Difference
Vehicle Acquisition	$40,000	$0	$40,000
Vehicle Operating	$0	$600	-$600
Smokey Costume Maint.	$0	$400	-$400
Signs & Sign Material	$500	$3,000	-$2,500
Prevention travel	$4,000	$6,000	-$2,000
Computer	$0	$3,000	-$3,000
Fire Prevention Materials	$3,500	$5,000	-$1,500
Office Supplies/comp	$1,000	$1,500	-$500
Totals	$49,000	$19,500	$29,500

RAMS Compartment Listing

Code	Description	Acres	Sub Unit	FMU
101	Tortoise Habitat	228,397	01	01
201	Mojave Wilderness	25,120	01	02
301	Interior Chaparral Wilderness	27,692	01	03
401	Black Rock Ponderosa Pine Wilderness	3,112	01	04
501	Great Basin Wilderness	37,171	01	05
601	Black Rock Ponderosa Pine	2,124	01	06
701	Interior Chaparral	6,149	01	07
801	Tortoise Habitat Wilderness	47,113	01	08
901	Parashant-Nixon Ponderosa Pine	21,199	01	09
1001	Mojave	284,313	01	10
1101	Mt. Trumbull Mt. Logan Wilderness	22,652	01	11
1201	Cheatgrass	91,102	01	12
1301	Grassland	715,011	01	13
1401	House Rock Valley	123,192	01	14
1501	Cottonwood Point Wilderness	6,633	01	15
1601	Kanab Creek Wilderness	6,717	01	16
1701	Paria Canyon-Vermilion Cliffs Wilderness	89,809	01	17
1801	Virgin River	2,759	01	18
1901	Kanab Creek Riparian	1,439	01	19
2001	Paria Plateau	205,904	01	20
2101	Buckskin Mountain	45,574	01	21
2201	Colorado Plateau Transition	30,522	01	22
2301	Shivwits	36,173	01	23
2401	Sagebrush	399,643	01	24
2501	Sullivan Sagebrush	265,398	01	25
2601	Wolf Hole PJ	45,652	01	26
2701	Pinyon Juniper	329,263	01	27
102	Scenic (WUI)	20,531	01	01
103	Beaver Dam/Littlefield (WUI)	22,314	01	01
1302	Colorado City (WUI)	33,277	01	13
2702	Kane Beds (WUI)	2,918	01	27
1303	Fredonia (WUI)	13,487	01	13
2703	White Sage (WUI)	7,236	01	27
2402	White Sage (WUI)	6,506	01	24
2704	Mt. Trumbull Community (WUI)	2,921	01	27
2403	Mt. Trumbull Community (WUI)	5,338	01	24
1202	Mt. Trumbull Community (WUI)	17,533	01	12
1802	Virgin River WUI (Scenic)	1,382	01	18
1803	Virgin River WUI (Littlefield)	2,318	01	18

RAMS Community Actions

Community Action (Unit of Measure)		FY 2005	FY 2006
1: Littlefield			
Volunteers-Plan For Volunteers (plans @ 20 hrs)		2	2
Volunteer Fire Departments-Mitigation Training (each @ 4 hrs)		2	2
Community Education-Mitigation Programs (event @ 8 hrs)		1	1
School Program-Presentation (event @ 8 hrs)		0	2
Fire Education Materials-Fire Education Materials (order @ 2 hrs)		0	1
Rural Fire Assistance-Assist Fire Department (dept @ 16 hrs)		0	1
Community Protection Plan-Risk Assessment (asmt @ 16 hrs)		1	0
Prevention Program-Program In Place (prev @ 16 hrs)		0	1
	Hours:	72	106
2: Scenic			
Volunteers-Plan For Volunteers (plans @ 20 hrs)		1	1
Volunteer Fire Departments-Mitigation Training (each @ 4 hrs)		0	1
Community Education-Mitigation Programs (event @ 8 hrs)		0	1
Fire Education Materials-Fire Education Materials (order @ 2 hrs)		0	1
Community Contact-Key Person (each @ 2 hrs)		1	1
Community Protection Plan-Risk Assessment (asmt @ 16 hrs)		1	0
	Hours:	38	36
3: Colorado City/Kane Beds			
Media Contacts-WUI-Media Contacts (each @ 1 hr)		1	1
Volunteers-Plan For Volunteers (plans @ 20 hrs)		1	1
Community Education-Mitigation Programs (event @ 8 hrs)		0	1
Community Mitigation Campaigns-Prepare Plan (plan @ 24 hrs)		1	0
Fire Education Materials-Fire Education Materials (order @ 2 hrs)		0	1
Community Contact-Key Person (each @ 2 hrs)		1	1
Community Stakeholder Meeting (meeting @ 4 hrs)		2	1
Community Protection Plan-Mitigation Plan (plan @ 16 hrs)		1	0
Community Protection Plan-Risk Assessment (asmt @ 16 hrs)		1	0
	Hours:	87	37
4: White Sage			
Volunteer Fire Departments-Mitigation Training (each @ 4 hrs)		1	2
Community Mitigation Campaigns-Prepare Plan (plan @ 24 hrs)		0	1
Community Contact-Key Person (each @ 2 hrs)		1	2
Community Protection Plan-Risk Assessment (asmt @ 16 hrs)		0	1
	Hours:	6	52
5: Fredonia			
Media Contacts-WUI-Media Contacts (each @ 1 hr)		1	1
Volunteers-Plan For Volunteers (plans @ 20 hrs)		1	1

Volunteer Fire Departments-Mitigation Training (each @ 4 hrs)		1	2
School Program-Presentation (event @ 8 hrs)		0	1
Community Contact-Key Person (each @ 2 hrs)		2	2
Community Protection Plan-Risk Assessment (asmt @ 16 hrs)		0	1
	Hours:	29	57
6: FMU 27 PJ WUI			
Community Contact-Key Person (each @ 2 hrs)		2	2
Community Protection Plan- Involvement (involve @ 16 hrs)		0	1
Community Protection Plan-Risk Assessment (asmt @ 16 hrs)		1	2
	Hours:	20	52
	Total Community Action Hours:	252	340
	Annual Community Action Cost:	$8,723	$11,769

RAMS Fuels Treatment Summary

FY	Planning	Implement	Monitor	Total	Acres
2005	$130,490	$578,690	$0	$709,180	18,028
2006	$36,950	$326,166	$0	$363,116	9,648
2007	$22,500	$286,000	$0	$308,500	8,100

RAMS Fuels Treatment List

Strategy - Treatment	FY	Acres	$Plan	$Imp	$Monitor	Activity
East Slope Thin	2005	100	$0	$22,500		2823
East Trumbull Thin	2005	140	$0	$17,500		2823
Feral Pig Thin	2005	140	$0	$14,700		2823
Fuller Rd Chemical	2005	1000	$5,000	$34,000		2823
Gunsight Rx	2005	1500	$7,500	$67,500		2823
High Meadow Handline	2005	15	$0	$1,500		2823
High Meadow Rx	2005	220	$0	$29,920		2823
Honeymoon Rx	2005	80	$0	$3,200		2823
Mustang Knolls Chem Plan	2005	1000	$10,000	$0		2823
Nixon RX Handline	2005	15	$0	$1,800		2823
Nixon Wildfire Rx Planning	2005	122	$2,440	$0		2823
Old Folks Road	2005	7	$0	$1,050		2823
Parashant PP Handline	2005	10	$0	$400		2823
Parashant PP Rx	2005	10	$50	$1,000		2823
Pratt Tank Chemical	2005	2000	$20,000	$64,000		2823
Trumbull Arch Clean-up Thin	2005	50	$0	$12,000		2823
Trumbull Meadow Restoration Ch	2005	200	$2,000	$20,000		2823
Trumbull Wilderness Aspen Rx	2005	16	$800	$4,800		2823
Yellowjohn Handline	2005	6	$0	$720		2823
Yellowjohn RX	2005	120	$600	$4,800		2823
East Slope Handline	2006	10	$0	$1,000		2823
East Trumbull Rx	2006	140	$0	$21,000		2823
Fuller Rd Chemical II	2006	1000	$5,000	$34,000		2823
Logan Wilderness Re-burn Rx	2006	300	$4,500	$60,000		2823
Mustang Knolls Chem	2006	1000	$0	$34,000		2823
Nixon RX Burn	2006	295	$0	$29,500		2823
Nixon Wildfire Rx	2006	122	$0	$12,200		2823
Trumble Arch Clean-up pile bur	2006	100	$0	$10,000		2823
Trumbull Wilderness Rx Plan	2006	6000	$24,000	$0		2823
Buckskin Mech Plan	2007	500	$12,500	$0		2823
East Slope Rx	2007	100	$0	$24,000		2823
Trumbull Wilderness Rx	2007	6000	$0	$210,000		2823
Bundy1 Rx	2005	100	$0	$22,000		2824
Dead Man Chemical	2005	350	$3,500	$11,900		2824
Death Valley Mech	2005	230	$0	$69,000		2824
Death Valley Plan & Arch	2005	500	$50,000	$0		2824
EB 5 Rx	2005	66	$0	$13,200		2824
Lost Spring Chemical	2005	700	$0	$16,800		2824
Lost Spring Plan	2005	700	$5,600	$0		2824
Middle Bench Handline	2005	5	$0	$600		2824
Middle Bench Thin	2005	90	$0	$21,600		2824
North Sawmill Mech	2005	136	$0	$27,200		2824
Red Pond Chemical	2005	1100	$0	$19,800		2824
Red Pond Plan	2005	1100	$11,000	$0		2824
Sevy Draw Chemical	2005	3000	$0	$48,000		2824
Sevy Draw Plan	2005	3000	$9,000	$0		2824
Trumbull Meadow Restoration Rx	2005	200	$3,000	$27,200		2824

Corner Rx	2006	130	$0	$18,850	2824
Death Valley Rx	2006	230	$3,450	$46,000	2824
Feral Pig Rx	2006	140	$0	$35,000	2824
Middle Bench Rx	2006	181	$0	$24,616	2824
Poverty Chem	2007	500	$5,000	$17,000	2824
Poverty Knoll Chem	2007	1000	$5,000	$35,000	2824

APPENDIX B - GLOSSARY

AIR QUALITY The composition of air with respect to quantities of pollution therein; used most frequently in connection with "standards" of maximum acceptable pollutant concentrations. Used instead of "air pollution" when referring to programs.

CANOPY The stratum containing the crowns of the tallest vegetation present, (living or dead) usually above 20 feet.

APPROPRIATE MANAGEMENT RESPONSE Represents a range of available management responses to wildland fires from full fire suppression to managing fires for resource benefits (fire use).

CATASTROPHIC (Severe wildland fire) Fire that burns more intensely than the natural or historical range of variability, thereby fundamentally changing the ecosystem, destroying communities and/or rare or threatened species/habitat, or causing unacceptable erosion.

CLEAN AIR ACT A federal law enacted to ensure that air quality standards are attained and maintained. Initially passed by Congress in 1963, it has been amended several times.

COVER The area on the ground covered by the combined aerial parts of plants expressed as a percent of the total area.

CRITICAL HABITAT (1) Specific areas within the habitat a species occupies at the time it is listed under the Endangered Species Act that have physical or biological features (a) that are essential to the conservation of the species and (b) that may require special management considerations or protection, and (2) specific areas outside the habitat a species occupies at the time it is listed that the Secretary of the Interior determines are essential for the species conservation.

CULTURAL RESOURCES Remains of human activity, occupation, or endeavor, reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were important in past human events. Cultural resources consist of (1) physical remains, (2) areas where significant human events occurred, even though evidence of the events no longer remains, and (3) the environment immediately surrounding the actual resource.

ECOSYSTEM An interacting system of organisms considered together with their environment.

ENDANGERED SPECIES Plant or animal species that are in danger of extinction throughout all or a significant part of their range.

ENDANGERED SPECIES ACT of 1973 (as amended) Federal law to ensure that no federal action will jeopardize federally listed or proposed threatened and endangered species of plants and animals.

ENVIRONMENTAL ASSESSMENT (EA) A systematic environmental analysis of a site-

specific BLM activity used to determine whether the activity would have a significant effect on the quality of the environment and whether an environmental impact statement is required.

ENVIRONMENT The complex surroundings of an item or area of interest, such as air, water, natural resources, and their physical conditions (temperature, humidity).

EXTENDED ATTACK When a wildland fire has not been contained or controlled by initial attack forces and more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander. Extended attack implies that the complexity level of the incident will increase beyond the capabilities of initial attack incident command.

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA) Federal Land Policy and Management Act of 1976 (Public Law 94-570, 90 Stat. 2743, 43 USC 1701).

FIRE BEHAVIOR The manner in which a fire reacts to the influences of fuel, weather, and topography.

FIRE MANAGEMENT Activities required for the protection of burnable wildland values from fire and the use of prescribed fire to meet land management objectives.

FIRE MANAGEMENT OBJECTIVE Planned, measurable result desired from fire protection and use based on land management goals and objectives.

FIRE MANAGEMENT PLAN Strategic plans that define a program to manage wildland fires based on an approved land management plan. The plan must address a full range of fire management activities that support ecosystem sustainability, values to be protected, protection of firefighter and public safety, public health, and environmental issues. The plan must be consistent with resource management objectives and the activities of the area.

FIRE REGIME Periodicity and pattern of naturally-occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and area extent.

FIRE REGIME CONDITION CLASS Classification of the amount of departure from the historic fire regime.

> Condition Class 1. For the most part, fire regimes in this Fire Condition Class are within historical ranges. Vegetation composition and structures are intact. Thus, the risk of losing key ecosystem components from the occurrence of fire remains relatively low.
>
> Condition Class 2. Fire regimes on these lands have been moderately altered from their historical range by either increased or decreased fire frequency.
>
> Condition Class 3. Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure and diversity have been significantly altered.

Consequently, these lands verge on the greatest risk of ecological collapse. (Cohesive Strategy, 2002, in draft)

FIRE RETURN INTERVAL Time between consecutive wildland fires in a given area; fire frequency. Often described as the typical range of years between fires in a healthy, functioning ecosystem.

FUEL All the dead and living material that will burn. This includes grasses, dead branches and pine needles on the ground, as well as standing live and dead trees. Also included are minerals near the surface, such as coal that will burn during a fire, and human-built structures.

FUEL BREAK A wide strip with a low amount of fuel, usually grass, in a brush or wooded area to provide soil cover and serve as a line of fire defense.

FUEL TYPE An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of spread or resistance to control under specified weather conditions.

HAZARDOUS FUELS REDUCTION Prioritize hazardous fuels reduction where the negative impacts of wildland fire are greatest.

IGNITION METHOD The means by which a fire is ignited, such as hand-held drip torch, helitorch, and backpack propane tanks.

LAND USE PLAN A plan that provides management direction on future land uses.

LONG-TERM Ten years or more.

MINIMUM IMPACT SUPPRESSION TACTICS Intent of MIST is to suppress a wildfire with the least impact to the landscape. Fire conditions and good judgment dictate the actions taken. Actions taken are those that are necessary to halt the fire spread and contain it within the fireline or designated perimeter boundary.

MONITORING The orderly collection, analysis, and interpretation or resource data to evaluate progress toward meeting management objectives.

MOSAIC The intermingling of plant communities and their successional stages in such a manner as to give the impression of an interwoven design.

NON-ATTAINMENT AREA Area where Environmental Protection Agency National Ambient Air Quality Standards (NAAQS) are not met for at least one of six pollutants: particulate matter with diameter of ten microns or less (PM_{10}), carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO_2), Ozone (O_3), or volatile organic compounds (VOC).

NOXIOUS WEED A plant that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States

and public health. Noxious weeds are designated and regulated by various State and Federal laws. In most cases, noxious weeds are also nonnative species.

PRESCRIBED FIRE A management ignited wildland fire that burns under specified conditions where the fire is confined to a predetermined area and produces the fire behavior and fire characteristics required to attain planned fire treatment and resource management objectives.

PRESCRIPTION Measurable criteria that define the conditions under which a prescribed fire will be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

REHABILITATION Short term actions taken following fire to stabilize soils and encourage rapid establishment of vegetative cover.

RESOURCE MANAGEMENT PLAN A multiple-use plan that provides management direction for all Federal resources. It is often supplemented by more detailed, site-specific management plans for a particular land use activity, such as livestock grazing.

RESTORATION A long-term landscape-based approach to changing the ecological health of the rangelands which requires implementation of a set of actions that promotes plant community diversity and structure to encourage communities to be more resilient to future disturbance and invasive species.

RIPARIAN An area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and stream banks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil. (From BLM's 1987 policy statement on riparian area management)

SENSITIVE SPECIES A list of animal and plant species that were designated by the AGFD.

SHORT-TERM Five years or less.

SHRUB A woody perennial plant differing from a perennial herb by its persistent and woody stem; and from a tree by its low stature and habit of branching from the base.

SPECIES COMPOSITION A term relating the relative abundance of one plant species to another using a common measurement; the proportion (percentage) of various species in relation to the total on a given area.

SUPPRESSION All the work of extinguishing or confining a fire beginning with its discovery.

THREATENED SPECIES Plant or animal species that are not in danger of extinction but are likely to become so within the foreseeable future throughout all or a significant portion of their range.

TREATMENT A procedure whose effect is to be measured and compared with the effect of other procedures. Examples include a fall burned prescribed fire, an unburned "control", or an area burned with a specific ignition method or pattern.

UNDERSTORY The layer of plants growing under another higher layer of plants, e.g., grasses, forbs, and brush under forest trees

VEGETATION COMMUNITY A kind of existing plant community with distinguishable characteristics described in terms of the present vegetation that dominates the aspect or physiognomy of the area.

VISUAL RESOURCES The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures and other features).

WILDERNESS An area established by the Federal Government and administered by the USFS, NPS, USFWS, or BLM to conserve its primeval character and influence for public enjoyment, under primitive conditions, in perpetuity.

WILDFIRE A fire occurring on wildland that is not meeting management objectives and thus requires a suppression response.

WILDLAND An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

WILDLAND FIRE Any fire occurring on the wildlands, regardless of ignition source, damages, or benefits.

WILDLAND FIRE USE Wildland fire used to protect, maintain, and enhance resources and, when possible, allowed to function in its natural ecological role. Use of fire will be based on approved FMPs and Fire Use Plans and will follow specific prescriptions contained in operational plans.

WILDAND FIRE SITUATION ANALYSIS The WFSA is a decision making decision process in which the agency administrator or representative describes the situation, compares multiple strategies wildand fire management alternatives, establish objectives and constraints for the management of the fire, selects the preferred alternative, and documents the decision. The format and level of detail required depends on the specific incident and its complexity. The key is to document the decision made. A WFSA will be completed whenever a fire escapes initial attack.

WILDLAND-URBAN INTERFACE (WUI) The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels

APPENDIX C – LIST OF ACRONYMS

ACEC	Areas of Critical Environmental Concern
ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
AMR	Appropriate Management Response
ASFMZ	Arizona Strip Fire Management Zone
ASLD	Arizona State Lands Department
BLM	Bureau of Land Management
CAA	Clean Air Act
CCIFC	Color Country Interagency Fire Center
CFR	Code of Federal Regulations
CWPP	Community Wildfire Protection Plan
EA	Environmental Assessment
ESA	Endangered Species Act
FIL	Fire Intensity Level
FLPMA	Federal Land Policy and Management Act of 1976
FMP	Fire Management Plan
FMU	Fire Management Unit
FRCC	Fire Regime Condition Class
IC	Incident Commander
LUP	Land Use Plans
LUPA	Land Use Plan Amendment
MIST	Minimum Impact Suppression Tactics
MOU	Memorandum of Understanding
NAU/ERI	Northern Arizona University's Ecological Restoration Institute
NEPA	National Environmental Policy Act
NFDRS	National Fire Danger Rating System
NFPORS	National Fire Plan Operations and Reporting System
NHPA	National Historic Preservation Act
NPS	National Park Service
OHV	Off Highway Vehicles
PJ	Pinyon-Juniper
PSA	Public Service Announcement
RAWS	Remote Automated Weather Station
RMP	Resource Management Plan
RAMS	Risk Assessment and Mitigation Strategies
SEAT	Single Engine Air Tanker
SHPO	State Historic Preservation Officer
SRMA	Special Recreation Management Area
T&E	Threatened and Endangered (species)
TNC	The Nature Conservancy
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WFSA	Wildland Fire Situation Analysis
WIMS	Weather Information Management System
WMP	Wilderness Management Plan
WUI	Wildland-Urban Interface

APPENDIX D – CONSERVATION MEASURES FROM THE ARIZONA STATEWIDE LAND USE PLAN AMENDMENT FOR FIRE, FUELS, AND AIR QUALITY MANAGEMENT

The following section is an excerpt from the BLM Arizona State Office Biological Evaluation for the Proposed Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management, Finding of No Significant Impact and Environmental Assessment, March 2004, pages 205 to 224, as modified during this consultation.

7.0 CONSERVATION MEASURES

For all fire management activities (wildfire suppression, wildland fire use, prescribed fire, and mechanical, chemical, and biological vegetation treatments), the following Conservation Measures will be implemented as part of the proposed action. These Conservation Measures are intended to provide Statewide consistency in reducing the effects of fire management actions on Federally threatened, endangered, proposed, and candidate ("Federally protected") species. Conservation Measures noted as "Recommended" are discretionary for implementation, but are recommended to help minimize effects to Federally protected species. Procedures within the Interagency Standards for Fire and Fire Aviation Operations 2003, including future updates, relevant to fire operations that may affect Federally protected species or their habitat are incorporated here by reference.[1]

Firefighter and public safety is the first priority in every fire management activity. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources must be based on the values to be protected, human health and safety, and costs of protection (2001 Federal Wildland Fire Management Policy). However, implementing the following Conservation Measures during fire suppression to the extent possible, and during the proposed fire management activities as required, would minimize or eliminate the effects to Federally protected species and habitats.

During fire suppression actions, Resource Advisors will be designated to coordinate concerns regarding Federally protected species, and to serve as a liaison between the Field Office Manager and the Incident Commander/Incident Management Team. They will also serve as a field contact representative (FCR) responsible for coordination with the USFWS. The Resource Advisors will have the necessary information on Federally protected species and habitats in the area and the available Conservation Measures for the species. They will be briefed on the intended suppression actions for the fire, and will provide input on which Conservation Measures are appropriate, within the standard constraints of safety and operational procedures. The Incident Commander has the final decision-making authority on implementation of Conservation Measures during fire suppression operations.

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[1] BLM, NPS, USFWS, USFS. 2003. *Interagency Standards for Fire and Fire Aviation Operations 2003*. Department of the Interior, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service; Department of Agriculture, U.S. Forest Service. These standards can be found at: http://www.fire.blm.gov/Standards/redbook.htm (*Note:* This document is updated annually. For BLM, this document is Handbook 9213-1).

Because of the number of species located within the action area for the proposed Statewide LUP Amendment, combined with a variety of fire suppression and proposed fire management activities, conflicts may occur in attempting to implement all Conservation Measures for every species potentially affected by a particular activity. Implementing these Conservation Measures effectively would depend on the number of Federally protected species and their individual life history or habitat requirements within a particular location that is being affected by either fire suppression or a proposed fire management activity. This would be particularly true for timing restrictions on fuels treatment activities, if the ranges of several species with differing restrictions overlap, making effective implementation of the activity unachievable. Resource Advisors (in coordination with the USFWS), Fire Management Officers or Incident Commanders, and other resource specialists would need to coordinate to determine which Conservation Measures would be implemented during a particular activity. If Conservation Measures for a species cannot be implemented, BLM would be required to initiate Section 7 consultation with the USFWS for that particular activity.

BLM will update their local Fire Management Plans and prepare implementation level plans to include site-specific actions for managing wildfire and fuels in accordance with the new Federal fire policies, based on guidance provided in the Decision Records for this Statewide LUP Amendment. These plans will be coordinated with the USFWS and the Arizona Game and Fish Department (AGFD) to address site-specific concerns for Federally protected species. The Fire Management Plans and implementation level plans will incorporate the Conservation Measures included in this Statewide LUP Amendment for Federally protected species occurring within each Fire Management Zone. Consultation with the USFWS will occur on implementationlevel plans, as necessary.

7.1 Conservation Measures for Fire Management Activities

7.1.1 Wildland Fire Suppression (FS)

The following Conservation Measures will be implemented during fire suppression operations, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Each Conservation Measure has been given an alphanumerical designation for organizational purposes (*e.g.*, FS-1). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

FS-1 Protect known locations of habitat occupied by Federally listed species. Minimum Impact Suppression Tactics (M.I.S.T.) will be followed in all areas with known Federally protected species or habitat [Appendix U, *Interagency Standards for Fire and Aviation Operations 2003*, or updates].

FS-2 Resource Advisors will be designated to coordinate natural resource concerns, including Federally protected species. They will also serve as a field contact representative (FCR) responsible for coordination with the USFWS. Duties will include identifying protective measures endorsed by the Field Office Manager, and delivering these measures to the Incident Commander; surveying prospective campsites, aircraft landing and fueling sites;

and performing other duties necessary to ensure adverse effects to Federally protected species and their habitats are minimized. On-the-ground monitors will be designated and used when fire suppression activities occur within identified occupied or suitable habitat for Federally protected species.

FS-3 All personnel on the fire (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the conservation measures designed to minimize or eliminate take of the species present. This information is best identified in the incident objectives.

FS-4 Permanent road construction will not be permitted during fire suppression activities in habitat occupied by Federally protected species. Construction of temporary roads is approved only if necessary for safety or the protection of property or resources, including Federally protected species habitat. Temporary road construction should be coordinated with the USFWS, through the Resource Advisor.

FS-5 Crew camps, equipment staging areas, and aircraft landing and fueling areas should be located outside of listed species habitats, and preferably in locations that are disturbed. If camps must be located in listed species habitat, the Resource Advisor will be consulted to ensure habitat damage and other effects to listed species are minimized and documented. The Resource Advisor should also consider the potential for indirect effects to listed species or their habitat from the siting of camps and staging areas (*e.g.,* if an area is within the water flow pattern, there may be indirect effects to aquatic habitat or species located off-site).

FS-6 All fire management protocols to protect Federally protected species will be coordinated with local fire suppression agencies that conduct fire suppression on BLM-administered lands to ensure that the agency knows how to minimize impacts to Federally protected species in the area.

FS-7 The effectiveness of fire suppression activities and Conservation Measures for Federally protected species should be evaluated after a fire, when practical, and the results shared with the USFWS and AGFD. Revise future fire suppression plans and tactical applications as needed and as practical.

7.1.2 Fuels Treatments (prescribed burning and other fuels management) (FT)

The following Conservation Measures **are mandatory** when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological):

FT-1 Biologists will be involved in the development of prescribed burn plans and vegetation treatment plans to minimize effects to Federally protected species and their habitats within, adjacent to, and downstream from proposed project sites. Biologists will consider the protection of seasonal and spatial needs of Federally protected species (*e.g.*, avoiding

or protecting important use areas or structures and maintaining adequate patches of key habitat components) during project planning and implementation.

FT-2 M.I.S.T. will be followed in all areas with known Federally protected species or habitats.

FT-3 Pre-project surveys and clearances (biological evaluations/assessments) for Federally protected species will be required for each project site before implementation. All applicable Conservation Measures will be applied to areas with unsurveyed suitable habitat for Federally protected species, until a survey has been conducted by qualified personnel to clear the area for the treatment activity.

FT-4 Use of motorized vehicles during prescribed burns or other fuels treatment activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, washes, and temporary fuelbreaks or site-access routes. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after the prescribed burn or fuels treatment project is completed.

FT-5 As part of the mandatory fire briefing held prior to prescribed burning, all personnel (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the Conservation Measures designed to minimize or eliminate take of the species present.

7.1.3 Rehabilitation and Restoration (RR)

RR-1 When rehabilitating important areas for Federally listed species that have been damaged by fire or other fuels treatments, the biologist will give careful consideration to minimizing short-term and long-term impacts. Someone who is familiar with fire impacts and the needs of the affected species will contribute to rehabilitation plan development. Appropriate timing of rehabilitation and spatial needs of Federally listed species will be addressed in rehabilitation plans.

RR-2 Seed from regionally native or sterile alien (non-native) species of grasses and herbaceous vegetation will be used in areas where reseeding is necessary following ground disturbance to stabilize soils and prevent erosion by both wind and water.

RR-3 Sediment traps or other erosion control methods will be used to reduce or eliminate influx of ash and sediment into aquatic systems.

RR-4 Use of motorized vehicles during rehabilitation or restoration activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, or washes, and to temporary access roads or fuelbreaks created to enable the fire suppression, prescribed burn, or fuels treatment activities to occur. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after rehabilitation or restoration activities are completed.

RR-5 All temporary roads, vehicle tracks, skid trails, and off-road vehicle (ORV) trails resulting from fire suppression and the proposed fire management activities will be rehabilitated (water bars, etc.), and will be closed or made impassible for future use.

RR-6 Burned area emergency rehabilitation (BAER) activities and long-term restoration activities should be monitored, and the results provided to the USFWS and AGFD. Section 7 consultation for BAER activities will be conducted independently, if necessary.

7.2 Conservation Measures For Fire Management Activities In Riparian and Aquatic Habitats (RA)

7.2.1 Wildland Fire Suppression and Rehabilitation

The following Conservation Measures will be implemented during fire suppression operations in riparian, wetland, or aquatic habitats, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS. The BLM's 1987 policy Statement on riparian area management defines a riparian area as "an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil."

RA-1 During wildfire suppression, apply M.I.S.T. within riparian areas. Fire suppression actions in riparian areas should be prioritized to minimize damage to stands of native vegetation from wildfire or suppression operations. To the extent possible, retain large, downed woody materials and snags that are not a hazard to firefighters.

RA-2 Fire suppression and rehabilitation in riparian corridors will be coordinated with the Resource Advisor or qualified biologist approved by BLM.

RA-3 Site-specific implementation plans that include project areas with Federally protected aquatic or riparian-obligate species will specify fire management objectives and wildland fire suppression guidance, taking into account the special concerns related to these species.

RA-4 In riparian areas, use natural barriers or openings in riparian vegetation where possible as the easiest, safest method to manage a riparian wildfire. Where possible and practical, use wet firebreaks in sandy overflow channels rather than constructing firelines by hand or with heavy equipment.

RA-5 Construction or development of a crossing for motorized vehicles across a perennial stream will not be permitted, unless an established road already exists or where dry, intermittent sections occur.

RA-6 Avoid the use of fire retardants or chemical foams in riparian habitats or within 300 feet of aquatic habitats, particularly sites occupied by Federally protected species. Apply operational guidelines as Stated in the *Interagency Standards for Fire and Fire Aviation Operations 2003 (or updates),* "Environmental Guidelines for Delivery of Retardant or Foam Near Waterways," Chapter 8 (pp. 8-13 through 8-15).

RA-7 Priority for placement of fire camps, fire staging areas, and aircraft landing or refueling sites will be outside riparian areas or river/stream corridors.

RA-8 When using water from sources supporting Federally protected species, care must be taken to ensure adverse impacts to these species are minimized or prevented. Unused water from fire abatement activities will not be dumped in sites occupied by Federally protected aquatic species to avoid introducing non-native species, diseases, or parasites.

RA-9 If water is drafted from a stock tank or other body of water for fire suppression, it will not be refilled with water from another tank, lakes, or other water sources that may support non-native fishes, bullfrogs, crayfish, or salamanders.

RA-10 Use of containment systems for portable pumps to avoid fuel spills in riparian or aquatic systems will be required.

7.2.2 Fuels Treatments (prescribed fire; mechanical, chemical, and biological treatments)

The following Conservation Measures **are mandatory** when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological) within riparian, wetland, or aquatic habitats.

RA-12 All Conservation Measures for wildland fire suppression (**RA-1 to RA-11, Section 2.1**) also apply to fuels treatment activities (prescribed fire; mechanical, chemical, and biological treatments) in riparian, wetland, and aquatic habitats.

RA-13 Fire management treatments within or adjacent to riparian and aquatic habitats will be designed to provide long-term benefits to aquatic and riparian resources by reducing threats associated with dewatering and surface disturbance, or by improving the condition of the watershed and enhancing watershed function.

RA-14 For priority fire/fuels management areas (*e.g.*, WUIs) with Federally protected species or designated critical habitat downstream, BLM biologists and other resource specialists, as appropriate, in coordination with USFWS and AGFD, will determine:

A) The number of acres and the number of projects or phases of projects to occur within one watershed per year.

B) An appropriately-sized buffer adjacent to perennial streams in order to minimize soil and ash from entering the stream.

C) Where livestock grazing occurs in areas that have been burned, specialists will determine when grazing can be resumed. Such deferments from grazing will only occur when necessary to protect streams from increased ash or sediment flow into streams.[2]

If agreement cannot be reached or treatment will not meet fuel reduction objectives, BLM will re-initiate consultation. Our authority to make these types of changes is in the regulations at 43 CFR 4110.3-3(b).

7.3 Species Specific Conservation Measures

In addition to the general Conservation Measures listed in **Sections 1.0** and **2.0**, the following species-specific Conservation Measures will be applied during wildfire suppression to the extent possible, and will be required during fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

7.3.1 Amphibians [Chiricahua leopard frog (FT); Relict leopard frog (FC)]

AM-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

AM-2 For fire management sites with habitat for the Chiricahua leopard frog, unsurveyed sites will be considered occupied unless surveyed prior to project implementation.

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[2] The Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, Exhibit 4-2 ,BLM supplemental guidance, page 5 of 9 (http://fire.r9.fws.gov/ifcc/ESR/handbook/4PolicyGuidance.htm) establishes the following policy for livestock exclusion following burns:

> Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedings and use of these areas should not be permitted until the vegetation recovers or is established. Both re-vegetated and, burned but not re-vegetated areas, will be closed to livestock grazing for at least two growing seasons following the season in which the wildfire occurred to promote recovery of burned perennial plants and/or facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures will be made a condition or term on the grazing license or permit through the issuance of grazing decision (see 43 CFR 4160). Livestock closures for less than two growing seasons may be justified on a case-by-case basis based on sound resource data and experience. Livestock management following seedling establishment and/ or burned area recovery should maintain both non-native and/or native species to meet land use (including Standards for Rangeland Health and Guidelines for Grazing Management) or activity plan objectives.

AM-3 Install sediment traps, as determined by a Resource Advisor or qualified biologist approved by BLM, upstream of tanks and ponds occupied by Chiricahua leopard frogs in order to minimize the amount of ash and sediment entering the water. Consultation with a qualified biologist during the planning phase will aid in determining sediment trap installation requirements (see Conservation Measures FT-1 and FT-3).

AM-4 All personnel performing fire management activities at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, their status, and the need to perform their duties to avoid impacts to the frog and its habitat.

AM-5 Except as needed in emergency situations to abate immediate fire threat or loss of life or property, no water will be drafted for fire suppression from bodies of water known to be occupied by the Chiricahua leopard frog.

7.3.2 Birds

7.3.2.1 Cactus ferruginous pygmy-owl (FE, Proposed CH)

FP-1 Treatment of riparian habitat, Sonoran desert/desertscrub, or mesquite-invaded grasslands under 4,000 feet in elevation that may support nesting cactus ferruginous pygmy owls will only occur during the non-nesting season of August 1 to January 31, unless pre-project surveys indicate the area does not support pygmy-owls or mitigation plans approved by the USFWS have alleviated negative consequences.

FP-2 Develop mitigation plans in coordination with the USFWS for fuels treatment projects (prescribed fire; vegetation treatments) that may adversely affect cactus ferruginous pygmy-owls or their habitat. Mitigation plans for prescribed fire shall limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.

FP-3 To the extent possible, maintain habitat features necessary to support breeding populations of the pygmy-owl within their historical range and review ongoing fire management activities for effects on essential habitat features needed by cactus ferruginous pygmy-owls. Modify activities, where necessary, to sustain the overall suitability of the habitat for the owls. Priority will be given to activities in or near occupied or recently (w/in the last 10 years) occupied habitat.

7.3.2.2 California brown pelican (FE)

BP-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

7.3.2.3 California Condor (FE; 10(j) species)

The following Conservation Measures apply to BLM-administered lands within the designated 10(j) area for California condors and outside of the 10(j) area if BLM observes a condor or is informed of a condor in the vicinity of a fire suppression activity.

CC-1 All helicopter dip tanks containing water will be covered when not in use or personnel will be stationed nearby until a cover is in place.

CC-2 Any presence of condors in the project area will be recorded and reported immediately to the Resource Advisor.

CC-3 If condors arrive at any area of human activity associated with fire suppression or fuels treatment projects (wildland fire use, prescribed fire, vegetation treatments), the birds will be avoided. The assigned Resource Advisor or a qualified wildlife biologist approved by BLM will be notified, and only permitted personnel will haze the birds from the area.

CC-4 All camp areas will be kept free from trash.

CC-5 Aircraft use along the Vermilion Cliffs or sites where condors are attempting to breed or roost will be minimized

CC-6 The Resource Advisor will contact the Peregrine Fund daily (at 520-606-5155 or 520-380-4667) to check on locations of condors during fire suppression or fuels treatment activities involving aviation. This information will be communicated to the Incident Commander and aviation personnel.

CC-7 If any fire retardant chemicals must be used in areas where condors are in the vicinity (see **CC-6**), the application area will be surveyed and any contaminated carcasses will be removed as soon as practical to prevent them from becoming condor food sources.

CC-8 Aircraft will remain 400 meters from condors in the air or on the ground unless safety concerns override this restriction. If airborne condors approach aircraft, aircraft will give up airspace to the extent possible, as long as this action does not jeopardize safety.

CC-9 Smoke from wildland fire use and prescribed fire projects will be managed to minimize negative effects to condor breeding. A potential wildland fire use event will not be initiated, or an existing event will be modified or terminated, to prevent or stop significant amounts of smoke, or smoke that will remain in place for an extended period of time, or chronic smoke events, from occurring in area(s) where condors are attempting to breed.

CC-10 BLM will adhere to the air quality standards set by the Arizona Department of Environmental Quality.

7.3.2.4 Northern aplomado falcon (FE)

AF-1 If aplomado falcons are reestablished or are discovered on public lands, and they nest in a fuels management project area, BLM will implement temporary closures to human access and project implementation (wildland fire use, prescribed burning, vegetation treatments) within ½ mile of nest sites during the breeding season. Wildland fire use and prescribed burning will be conducted in a manner to ensure nest sites are more than ½ mile from downwind smoke effects.

7.3.2.5 Southwestern willow flycatcher (FE)

WF-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

WF-2 Except where fires are active in occupied habitat, minimize unnecessary low-level helicopter flights during the breeding season (April 1 – September 30). Approach bucket dip sites at a 90-degree direction to rivers to minimize flight time over the river corridor and occupied riparian habitats. Locate landing sites for helicopters at least ¼ mile from occupied sites to avoid impacts to willow flycatchers and their habitat.

WF-3 Minimize use of chainsaws or bulldozers to construct firelines through occupied or suitable habitat except where necessary to reduce the overall acreage of occupied habitat or other important habitat areas that would otherwise be burned.

WF-4 Implement activities to reduce hazardous fuels or improve riparian habitats (prescribed burning or vegetation treatments) within occupied or unsurveyed suitable habitat for southwestern willow flycatchers only during the non-breeding season (October 1 to March 31).

WF-5 Avoid developing access roads that would result in fragmentation or a reduction in habitat quality. Close and rehabilitate all roads that were necessary for project implementation (see **RR-5**).

WF-6 Prescribed burning will only be allowed within ½ mile of occupied or unsurveyed suitable habitat when weather conditions allow smoke to disperse away from the habitat when birds may be present (breeding season of April 1 – September 30).

WF-7 Vegetation treatment projects adjacent to occupied or unsurveyed suitable habitat will only be conducted when willow flycatchers are not present (October 1 – March 31).

7.3.2.6 Yuma clapper rail (FE)

CR-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

CR-2 Any prescribed fire or vegetation treatment project in occupied or suitable marsh habitat would only occur between September 1 and March 15 to avoid the Yuma clapper rail breeding and molting seasons.

CR-3 Mechanical removal of overstory habitat (*Tamarisk*) could occur as early as August 15, after the breeding season for Yuma clapper rails.

CR-4 Herbicide application would not occur in Yuma clapper rail habitat and drift-inhibiting agents would be used to assure that the herbicide does not enter adjacent marsh areas.

7.3.2.7 Bald eagle (FT)

BE-1 No human activity within ½ mile of known bald eagle nest sites between December 1 and June 30.

BE-2 No tree cutting within ¼ mile of known nest trees.

BE-3 No human activity within ¼ mile of known bald eagle winter roost areas between October 15 and April 15.

BE-4 No tree cutting within the area immediately around winter roost sites as determined by BLM biologists.

BE-5 No helicopter or aircraft activity or aerial retardant application within ½ mile of bald eagle nest sites between December 1 and June 30 or winter roost sites between October 15 and April 15.

BE-6 Conduct prescribed burn activities outside of nesting season in a manner to ensure nest and winter roost sites are more than ½ mile from downwind smoke effects.

BE-7 Provide reasonable protective measures so fire prescription or fuels treatment will not consume dominant, large trees as identified by the Resource Advisor or qualified biologist approved by BLM within ½ mile of known nests and roosts of bald eagles Pre-treatment efforets should provide reasonable protection of identified nesting and roosting trees (see Conservation Measure FT-4).

7.3.2.8 Mexican spotted owl (FT, CH)

SO-1 BLM wildlife biologists will be involved early in the decision-making process for fuels management treatments (wildland fire use, prescribed fires, vegetation treatments) that are planned within suitable habitat or designated critical habitat for Mexican spotted owls (MSO).

SO-2 Suitable habitat and designated critical habitat for MSO will be surveyed prior to implementing prescribed fire or vegetation treatment activities on BLM-administered lands to determine MSO presence and breeding status. These fire management activities will only be implemented within suitable or critical habitat if birds are not present. If a spotted owl is discovered during these surveys, BLM will notify the USFWS to reinitiate consultation and will determine any additional Conservation Measures necessary to minimize or eliminate impacts to the owl.

SO-3 If a MSO is discovered during fire suppression or fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments), the Resource Advisor or a qualified wildlife biologist will document the find and assess potential harm to the owl and advise the Incident Commander or project crew boss of methods to prevent harm. The information will include for each owl the location, date, and time of observation and the general condition of the owl. The Resource Advisor or biologist will contact the appropriate USFWS office, and BLM will reinitiate consultation for the fire suppression or project activities.

SO-4 Within MSO critical habitat designated on BLM-administered lands:

A) To minimize negative effects on the primary constituent elements of critical habitat, wildland fire use and prescribed fires will be managed primarily as low-intensity fires, with only scattered high-intensity patches. The BLM's objective will be to limit mortality of trees greater than 18 inches dbh to less than 5 percent, occasionally up to 10 percent, within critical habitat.

B) If fireline construction is necessary during fire suppression, wildland fire use, or prescribed fires, BLM will minimize the cutting of trees and snags larger than 18 inches dbh, and no trees or snags larger than 24 inches dbh will be cut unless absolutely necessary for safety reasons.

C) For mechanical vegetation treatments within critical habitat, BLM will minimize the cutting of trees and snags larger than 18 inches dbh, and no trees or snags larger than 24 inches dbh will be cut unless absolutely necessary for safety reasons.

D) Critical habitat disturbed during fire suppression or fuels treatment activities, such as fire lines, crew camps, and staging areas, will be rehabilitated to prevent their use by vehicles or hikers. Fire line rehabilitation will include pulling soil, duff, litter, woody debris, and rocks back onto the line to bring it up to grade and to make it blend in with the surrounding area. Such rehabilitation will be inspected one year after the event to ensure effectiveness.

SO-5 The following measures will be followed in suitable habitat (occupied or unoccupied) whenever consistent with objectives to reduce hazardous fuels:

A) Manage mixed-conifer and pine-oak forest types to provide continuous replacement nest habitat over space and time (Table III.B.1 of the Recovery Plan for Mexican Spotted Owl).

B) Incorporate natural variation, such as irregular tree spacing and various stand/patch sizes, into management prescriptions and attempt to mimic natural disturbance patterns.

C) Maintain all species of native vegetation in the landscape, including early seral species. To allow for variation in existing stand structures and provide species diversity, both uneven-aged and even-aged systems may be used as appropriate.

D) Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.

E) Within pine-oak types, fuels treatment activities should emphasize retaining existing large oaks and promoting the growth of additional large oaks.

F) Retain all trees >24 inches dbh.

G) Retain hardwoods, large down logs, large trees, and snags. Emphasize a mix of size and age classes of trees. The mix should include large mature trees, vertical diversity, and other structural and floristic characteristics that typify natural forest conditions.

SO-6 The effects of fire suppression and fuels treatment activities on MSO and their habitat, and the effectiveness of these Conservation Measures, will be assessed after each fire event or fuels treatment project by the Resource Advisor or local biologist to allow evaluation of these guidelines and to allow the USFWS to track the species environmental baseline. Prescriptions for wildland fire use, prescribed fires, and vegetation treatments will be adjusted, if necessary.

7.3.2.9 Yellow-billed cuckoo (FC)

YC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

7.3.3 Fish

The following Conservation Measure will be implemented for all Federally protected fish species that may be affected by the Proposed Action during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

FI-1 BLM will cooperate with other agencies to develop emergency protocols to decrease the impacts of fire suppression and fuels treatment activities on Federally listed fish species. Emergency protocols will include appropriate agency contacts, a list of facilities that can hold fish, sources of equipment needed (e.g., sampling gear, trucks) and how to address human health and safety issues.

In addition to implementing **FI-1**, the following species-specific Conservation Measures will also apply:

7.3.3.1 Bonytail chub (FE,CH)

BC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats to eliminate adverse effects from fire management activities to available spawning habitat along shorelines *(i.e.*, occupied reaches and critical habitat).

7.3.3.2 Desert pupfish (FE,CH)

DP-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and critical habitat.

DP-2 Conduct prescribed burns such that no more than one-half of the watershed of each desert pupfish site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

DP-3 Monitor, where practical, for fish kill immediately following the first runoff event after prescribed fires in watersheds containing desert pupfish.

DP-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by desert pupfish.

7.3.3.3 Gila topminnow (FE)

GT-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

GT-2 Conduct prescribed burns such that no more than one-half of the watershed of each gila topminnow natural or reintroduction site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

GT-3 Monitor for fish kill, where practical, immediately following the first runoff event after prescribed fires in the watersheds containing gila topminnows.

GT-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila topminnow, when possible.

GT-5 Develop mitigation plans in coordination with the USFWS for each fuels management project (prescribed fire; vegetation treatments) that may adversely affect the gila topminnow. Mitigation plans for prescribed fire will limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.

GT-6 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of gila topminnow from other resource program impacts.

7.3.3.4 Razorback sucker (FE, CH)

RS-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats to minimize adverse effects from fire management activities to available spawning habitat along shorelines (*i.e.,* occupied sites and critical habitat).

RS-2 Project boundaries for fire management activities will avoid or protect sensitive habitats of the razorback sucker.

7.3.3.5 Virgin River chub (FE, CH)

VC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for the stretch of the Virgin River within Arizona.

7.3.3.6 Woundfin (FE, CH; Future 10(j) populations)

WM-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for the stretch of the Virgin River within Arizona.

7.3.3.7 Little Colorado spinedace (FT, CH)

LS-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats to minimize adverse effects from fire management activities on BLM-lands to occupied reaches and critical habitat on adjacent lands.

7.3.3.8 Loach minnow (FT, CH); Spikedace (FT, CH)

LM-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and critical habitat.

LM-2 All reasonable efforts shall be made to minimize disturbance within the wetted areas of Aravaipa Creek or tributary channels.

LM-3 No heavy equipment will be used off-road during wildfire suppression and fuels treatment projects within the wetted areas of Aravaipa Creek.

LM-4 All reasonable efforts will be made to ensure that no pollutants, retardants, or chemicals associated with wildfire suppression and fuels treatment projects or activities enter surface waters of reaches occupied by these two fish species.

LM-5 Develop mitigation plans in coordination with the USFWS for each fuels management project (prescribed fire; vegetation treatments) that may adversely affect the loach minnow and spikedace. Mitigation plans for prescribed fire will limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.

LM-6 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Aravaipa Creek watershed), to protect populations of loach minnow and spikedace from other resource program impacts.

7.3.3.9 Gila chub (PE, Proposed CH)

GC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and proposed critical habitat.

GC-2 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila chub, when possible.

GC-3 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of gila chub from other resource program impacts.

7.3.4 Flowering Plants

The following Conservation Measures for known locations and unsurveyed habitat of all Federally protected plant species within the planning area will be implemented during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

PL-1 Known locations and potential habitat for plant populations will be mapped to facilitate planning for wildland fire use, prescribed fires, and vegetation treatments, and to ensure protection of these populations during fire suppression.

PL-2 BLM will coordinate with FWS to delineate buffer areas around plant populations prior to prescribed fire and vegetation treatment activities. BLM will coordinate with USFWS during any emergency response and wildland fire use activities to ensure protection of plant populations from fire and fire suppression activities.

PL-3 During fire suppression, wildland fire use, and prescribed fire in habitat occupied by Federally protected plant species, no staging of equipment or personnel will be permitted within 100 meters of identified individuals or populations, nor will off-road vehicles be allowed within the 100-meter buffer area, unless necessary for firefighter or public safety or the protection of property, improvements, or other resources (see **FS-7**). One of the primary threats to many of these plant species is trampling/crushing from personnel and vehicles.

PL-4 No prescribed burning will be implemented within 100 meters of identified locations or unsurveyed suitable habitat for Federally protected and sensitive plant populations unless specifically designed to maintain or improve the existing population.

Holmgren milk-vetch (*Astragalus holmgreniorum*), Jones Cycladenia (*Cycladenia humilis* var. *jonesii*), Brady pincushion cactus (*Pediocactus bradyi*), Arizona cliffrose (*Purshia subintegra*), Nichol turk's head (*Echinocactus horizonthalonius* var. *nicholii*), and Peeble's Navajo cactus (*Pediocactus peeblesianus* var. *peeblesianus*) are six (6) native, vegetative T&E species that are comprised of distinct populations inhabiting specific ecological areas within BLM managed lands in Arizona, with historically low fire frequencies, and a lack of fine fuel (fine herbaceous vegetation) continuity. No known structures exist within the confines of or immediately adjacent to the habitat locations for each species. The primary reasons for decline/vulnerability for these plant species include off-road vehicle traffic, road construction, urban development, mining activities, and overuse by livestock.

PL-5 The BLM is reasonably certain that in the areas where these six species occur, it is extremely unlikely that fire suppression activity will be necessary for the reasons provided above. Consequently, the specific areas where populations of Holmgren milk-vetch, Jones Cycladenia, Brady pincushion cactus, Arizona cliffrose, Nichol turk's head, and Peeble's Navajo cactus occur on BLM managed land, will be identified, delineated, and avoided by BLM fire suppression crews in the unlikely event that fire suppression activities are required in the immediate region.

There are no additional species-specific conservation measures for the following Federally-protected plant species: **Pima Pineapple Cactus** (*Coryphantha scheeri* var. *robustispina*), **Siler Pincushion Cactus** (*Pediocactus sileri*), **Acuña Cactus** (*Echinomastus erectocentrus* var. *acunensis*), **Fickeisen Plains Cactus** (*Pediocactus peeblesianus* var. *fickeiseniae*).

Huachuca Water Umbel (*Lilaeopsis schaffneriana* var. *recurva*) [FE, CH]
In addition to implementing **PL-1** through **PL-4**, the following species-specific Conservation Measures will also apply:

WU-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

7.3.4.2 Kearney's Blue Star (*Amsonia kearneyana*) [FE]

In addition to implementing **PL-1** through **PL-4**, the following species-specific Conservation Measures will also apply:

KB-1 No mechanical or chemical vegetation manipulation will be authorized by BLM, and no planting or seeding of nonnative plants will occur in the Brown Canyon watershed within the Baboquivari allotment.

KB-2 Planning and management for wildfire suppression in the watershed of Brown Canyon will be coordinated with the USFWS.

7.3.5 Mammals

7.3.5.1 Black-footed ferret (FE, 10(j) species)

If black-footed ferrets are discovered or re-established on public lands, then the following Conservation Measures will apply:

BF-1 No heavy equipment operation off of existing roads within ¼ mile of prairie dog towns having documented occurrence of black-footed ferrets.

BF-2 No aerial retardant application within 300 feet of prairie dog towns having documented occurrence of black-footed ferrets.

BF-3 No surface disturbance of prairie dog towns having documented occurrence of black-footed ferrets.

BF-4 In Apache and Navajo counties, prairie dog complexes suitable for black-footed ferrets within ¼ mile of proposed project sites will either be surveyed prior to project implementation or will be protected using measures **BF-1** through **BF-3**, as if ferrets were present.

7.3.5.2 Hualapai Mexican vole (FE)

HV-1 All treatment areas will be surveyed for Hualapai Mexican vole occupancy prior to fuels management treatments (prescribed fire, vegetation treatments) in order to determine project modifications and/or avoidance and protection of occupied areas. Until surveyed, all potential vole habitat is considered occupied. Areas not considered suitable (e.g., areas dominated by thick pine needles and duff) will also be surveyed prior to treatment to protect existing snag habitat for potential future use by Mexican spotted owls.

HV-2 Fuels management treatments (prescribed fire or vegetation treatments), construction of fire breaks, and/or staging areas for fire suppression or fuels management treatments will not be located within a vole use area. Occupied vole sites within proposed burn areas will be protected by firebreaks, precision ignition of fire around such sites, or total avoidance of the area. Fire plans will incorporate site-specific features (*e.g.,* rock outcroppings, game trails, etc.), fire behavior, and professional judgment to determine the most appropriate method to protect occupied vole habitat. Additionally, monitoring of fuel moisture and use of the appropriate minimum impact suppression tactics will be used to reach the desired objective at each site.

HV-3 To minimize impacts to Hualapai Mexican voles during the breeding season, prescribed burns and vegetation treatments in occupied or potential vole habitat will be implemented only between September 1 and March 15. Treatment in chaparral habitat will occur during the latter part of this time frame, in winter and/or early spring. These prescribed fires will follow the summer monsoon period to encourage additional herbaceous growth. Post-monsoon burns would help avoid the dry conditions that could result in extremely hot fires that reduce the recruitment of grasses and forbs. Areas not considered suitable for Hualapai Mexican voles (*e.g.,* dominated by thick pine needles and duff) may be burned prior to September 1, if surveyed prior to treatment.

HV-4 Provide a 75- to 100-foot, minimum, unburned vegetation buffer between fuels treatment sites and riparian and dry wash areas to decrease erosion into and sedimentation of the occupied or potentially occupied vole habitat. Within ponderosa pine treatment sites, use of dry washes as a fire line may be appropriate and result in less disturbance than construction of a cup trench above the wash. Under such circumstances, BLM will prepare the wash as a fire line by raking duff and removing by hand dead branches and other debris.

HV-5 The terms and conditions from the Pine Lake Wildland/Urban Interface Biological Opinion (BLM Kingman Field Office; Consultation No. 02-21-01-F-241) continue to apply to the Pine Lake project.

7.3.5.3 Jaguar (FE)

JA-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats to eliminate adverse effects to jaguars that may occur in dense riparian habitats on BLM-administered lands.

JA-2 Maintain dense, low vegetation in major riparian or xero-riparian corridors on BLM-administered lands in identified locations south of InterState 10 and Highway 86. Locations will be identified in site-specific fire management plans.

7.3.5.4 Lesser long-nosed bat (FE)

LB-1 Instruct all crew bosses (wildfire suppression, managed wildfire, prescribed fire, and vegetation treatments) in the identification of agave and columnar cacti and the importance of their protection.

LB-2 Prior to implementing any fuels treatment activities (prescribed fire, vegetation treatments), pre-project surveys will be conducted for paniculate agaves and saguaros that may be directly affected by fuels management activities.

LB-3 Protect long-nosed bat forage plants -- saguaros and high concentrations of agaves -- from wildfire and fire suppression activities, and from modification by fuels treatment activities (prescribed fire, vegetation treatments), to the greatest extent possible. "Agave concentrations" are contiguous stands or concentrations of more than 20 plants per acre. Avoid driving over plants, piling slash on top of plants, and burning on or near plants. Staging areas for fire crews or helicopters will be located in disturbed sites, if possible.

LB-4 No seeding/planting of nonnative plants will occur in any wildfire rehabilitation site or fuels treatment site with paniculate agaves or saguaros.

LB-5 A mitigation plan will be developed by the Bureau in coordination with the USFWS for prescribed fires or fuels management projects (mechanical, chemical, biological treatments) within 0.5 mi of bat roosts or in areas that support paniculate agaves or

saguaros. The mitigation plan will ensure that effects to bat roosts and forage plants are minimized and will include monitoring of effects to forage plants. The plan will be approved by the USFWS.

LB-6 BLM personnel would examine concentrations of agaves (including shindagger – *A. schottii*) within each proposed fuels treatment area, and blackline or otherwise protect from treatments any significant concentrations of agaves that appear to be amidst fuel loads that could result in mortality greater than 20 percent (>50% for *A. schottii).* BLM personnel would determine which significant agave stands are prone to mortality greater than 20 percent (>50% for *A. schottii*) (see Conservation Measures FT-1 and FT-3).

7.3.5.5 Mexican gray wolf (FE; 10(j) species)

If Mexican gray wolves are re-established on public lands, then the following Conservation Measures will apply:

GW-1 No human disturbance associated with fire management activities will be within one mile of a den site from April1 to June 30.

GW-2 No human disturbance associated with fire management activities will be within one mile of known rendezvous sites from April 1 to June 30.

7.3.5.6 Ocelot (FE)

No species-specific Conservation Measures developed.

7.3.5.7 Sonoran pronghorn (FE)

No species-specific Conservation Measures developed.

7.3.5.8 Black-tailed prairie dog (FC)

If black-tailed prairie dogs are re-established on public lands, then the following Conservation Measures will apply:

PD-1 No heavy equipment operation off of existing roads within ¼ mile of black-tailed prairie dog colonies

PD-2 No aerial retardant application within ¼ mile of black-tailed prairie dog colonies.

PD-3 No surface disturbance of black-tailed prairie dog colonies.

7.3.6 Reptiles

7.3.6.1 Desert tortoise, Mojave population (FT)

DT-1 Take appropriate action to suppress all wildfires in desert tortoise habitat, based on preplanned analysis and consistent with land management objectives, including threats to life and property. Full suppression activities will be initiated within key desert tortoise habitat areas identified in site-specific Fire Management Plans.

DT-2 Suppress all wildfires in desert tortoise habitat with minimum surface disturbance, in accordance with the guidelines in Duck *et al.* (1995) and the 1995 programmatic biological opinion on fire suppression on the Arizona Strip (02-21-95-F-379).

DT-3 Pre-position suppression forces in critical areas during periods of high fire dangers.

DT-4 As soon as practical, all personnel involved in wildfire suppression (firefighters and support personnel) will be briefed and educated about desert tortoises and the importance of protecting habitat and minimizing take, particularly due to vehicle use. Fire crews will be briefed on the desert tortoise in accordance with Appendix II of Duck *et al.* (1995).

DT-5 If wildfire or suppression activities cannot avoid disturbing a tortoise, the Resource Advisor or monitor will relocate the tortoise, if safety permits. The tortoise will be moved into the closest suitable habitat within two miles of the collection site that will ensure the animal is reasonably safe from death, injury, or collection associated with the wildfire or suppression activities. The qualified biologist will be allowed some discretion to ensure that survival of each relocated tortoise is likely. If the extent or direction of movement of a fire makes sites within two miles of the collection site unsuitable or hazardous to the tortoise or biologists attempting to access the area, the tortoise may be held until a suitable site can be found or habitat is safe to access and not in immediate danger of burning. The Resource Advisor will contact the USFWS Arizona Ecological Services Field Office (AESFO) as soon as possible concerning disposition of any animals held for future release. Desert tortoises will not be placed on lands outside the administration of the Federal government without the written permission of the landowner. Handling procedures for tortoises, including temporary holding facilities and procedures, will adhere to protocols outlined in Desert Tortoise Council (1994).

DT-6 Upon locating a dead, injured, or sick desert tortoise, initial notification must be made to the appropriate USFWS Law Enforcement Office within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph, and any other pertinent information. The notification will be sent to the Law Enforcement Office with a copy to the AESFO

DT-7 Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible State. If possible, the remains of intact desert tortoises will be placed with educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above will be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens will be made with the institution prior to implementing the action. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should any treated

desert tortoise survive, the USFWS should be contacted regarding final disposition of the animal.

DT-8 The Resource Advisor or monitor(s) will maintain a record of all desert tortoises encountered during fire suppression activities. This information will include for each desert tortoise: 1) locations and dates of observation; 2) general condition and health, including injuries and State of healing, and whether animals voided their bladders; 3) location moved from and to; and 4) diagnostic markings (i.e., identification numbers of marked lateral scutes). No notching of scutes or replacement of fluids with a syringe is authorized.

DT-9 Prior to moving a vehicle, personnel will inspect under the vehicle for tortoises. If a tortoise is found under the vehicle, the tortoise will be allowed to move away from the vehicle on its own accord, if possible. Otherwise an individual will move the tortoise to a safe locality in accordance with **FS-2** and **DT-5**.

DT-10 Off-road vehicle activity will be restricted to the minimum necessary to suppress wildfires. Vehicles will be parked as close to roads as possible, and vehicles will use wide spots in roads or disturbed areas to turn around. Whenever possible, a biologist or crewperson trained to recognize tortoises and their shelter sites will precede any vehicle traveling off-road to direct the driver around tortoises and tortoise burrows. Whenever possible, local fire-fighting units should provide direction and leadership during off-road travel because of their expertise and knowledge of area sensitivities.

DT-11 Fire-related vehicles will drive slow enough to ensure that tortoises on roads can be identified and avoided.

DT-12 Fire crews or rehabilitation crews will, to the extent possible, obliterate off-road vehicle tracks made during fire suppression in tortoise habitat, especially those of tracked vehicles, to reduce future use.

DT-13 To the maximum extent practical, campsites, aircraft landing/fueling sites, and equipment staging areas will be located outside of desert tortoise habitat or in previously disturbed areas. If such facilities are located in desert tortoise habitat, 100 percent of the site will be surveyed for desert tortoises by a qualified biologist approved by BLM, whenever feasible. Any tortoises found will be moved to a safe location in accordance with **FS-2** and **DT-5**. All personnel located at these facilities will avoid disturbing active tortoise shelter sites.

DT-14 Elevated predation by common ravens or other predators attributable to fire suppression activities will be reduced to the maximum extent possible. Work areas, including campsites, landing/fueling sites, staging areas, etc. will be maintained in a sanitary condition at all times. Waste materials at those sites will be contained in a manner that will avoid attracting predators of desert tortoises. Waste materials will be disposed of at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

DT-15 Backfiring operations are permitted where necessary in desert tortoise habitat. Burning out patches of identified habitat within or adjacent to burned areas is not permitted as a standard fire suppression measure unless necessary for firefighter or public safety or to protect property, improvements, or natural resources.

DT-16 Use of foam or retardant is authorized within desert tortoise habitat.

DT-17 Rehabilitation of vegetation in tortoise habitat will be considered, including seeding, planting of perennial species, etc.

DT-18 Recovery of vegetation will be monitored, including establishing and monitoring paired plots, inside and outside burned areas in tortoise habitat. Recovery plans will be coordinated with the USFWS and AGFD.

DT-19 The effectiveness of wildfire suppression activities and desert tortoise Conservation Measures will be evaluated after a wildfire. Procedures will be revised as needed.

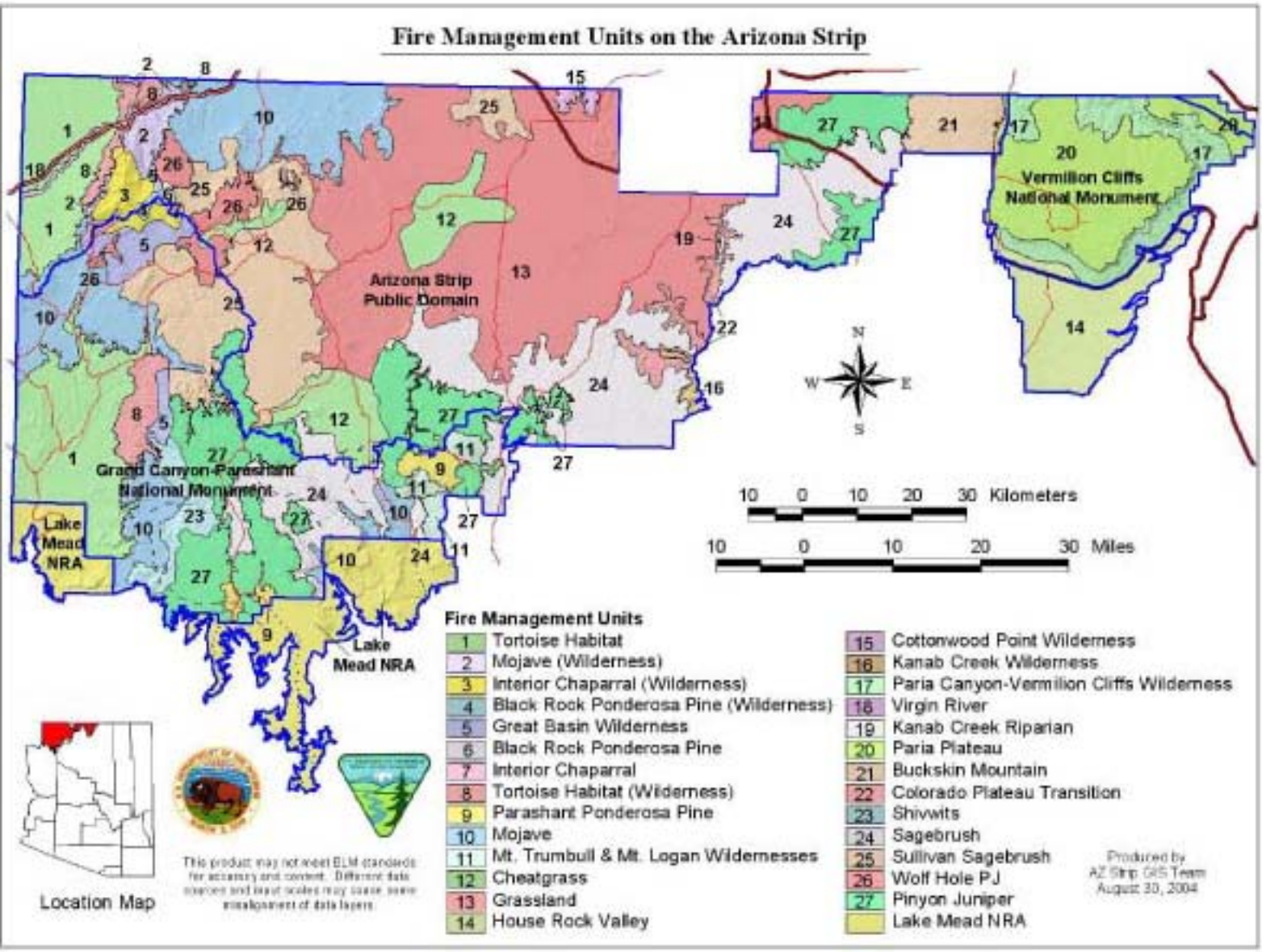
7.3.6.2 New Mexico ridge-nosed rattlesnake (FT)

RN-1 To the extent possible, minimize surface disturbing activities from fire suppression and fuels treatment activities within New Mexico ridge-nosed rattlesnake habitat on BLM-administered lands in the southern Peloncillo Mountains, particularly during active periods for snakes (July through October).

RN-2 Prior to using wildland fire for resource benefit, cool season (November – March) prescribed fire or other fuel treatments should be used to reduce unnatural fuel loads within suitable habitat to avoid catastrophic fires and loss of canopy cover.

RN-3 All fires that occur outside of prescriptions that will not result in low intensity, low severity burns will be fully suppressed within or near suitable New Mexico ridge-nosed rattlesnake habitat.

Fire Management Units on the Arizona Strip



Fire Management Units

1	Tortoise Habitat
2	Mojave (Wilderness)
3	Interior Chaparral (Wilderness)
4	Black Rock Ponderosa Pine (Wilderness)
5	Great Basin Wilderness
6	Black Rock Ponderosa Pine
7	Interior Chaparral
8	Tortoise Habitat (Wilderness)
9	Parashant Ponderosa Pine
10	Mojave
11	Mt. Trumbull & Mt. Logan Wildernesses
12	Cheatgrass
13	Grassland
14	House Rock Valley
15	Cottonwood Point Wilderness
16	Kanab Creek Wilderness
17	Paria Canyon-Vermilion Cliffs Wilderness
18	Virgin River
19	Kanab Creek Riparian
20	Paria Plateau
21	Buckskin Mountain
22	Colorado Plateau Transition
23	Shivwits
24	Sagebrush
25	Sullivan Sagebrush
26	Wolf Hole PJ
27	Pinyon Juniper
	Lake Mead NRA

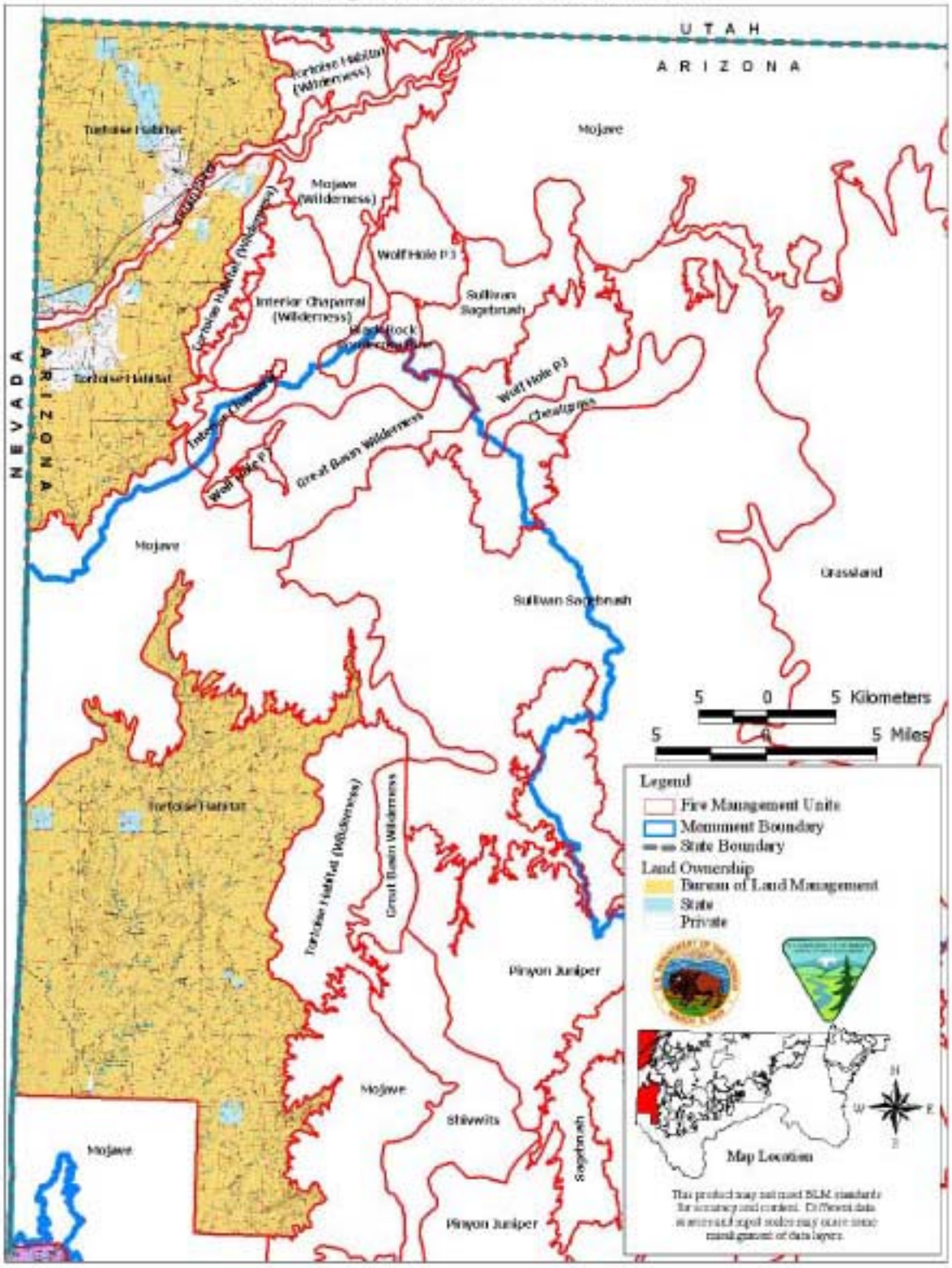
Location Map

This product may not meet BLM standards for accuracy and content. Different data sources and least scales may cause some misalignment of data layers.

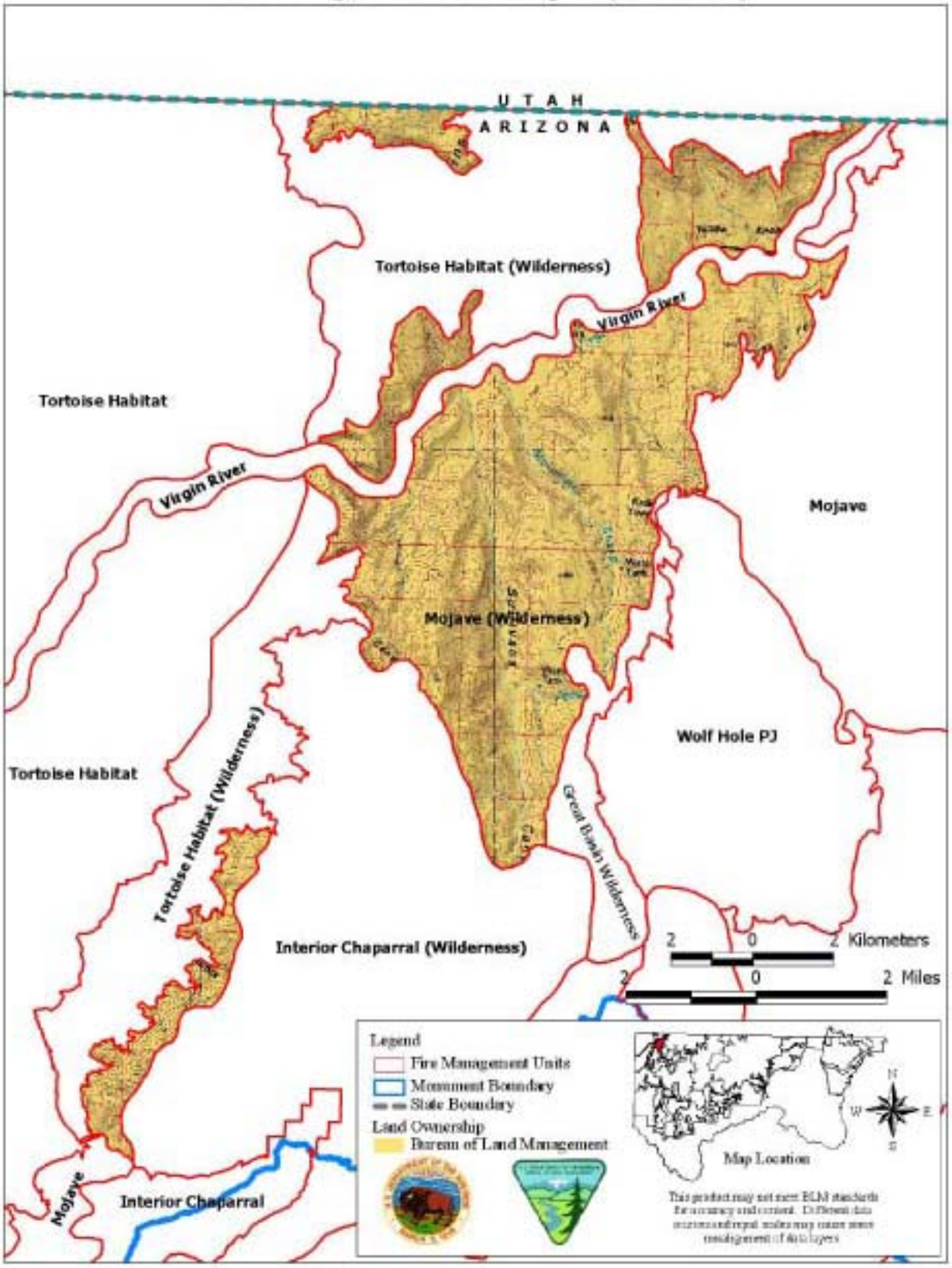
Produced by
AZ Strip GIS Team
August 30, 2004

APPENDIX F – FMU MAPS

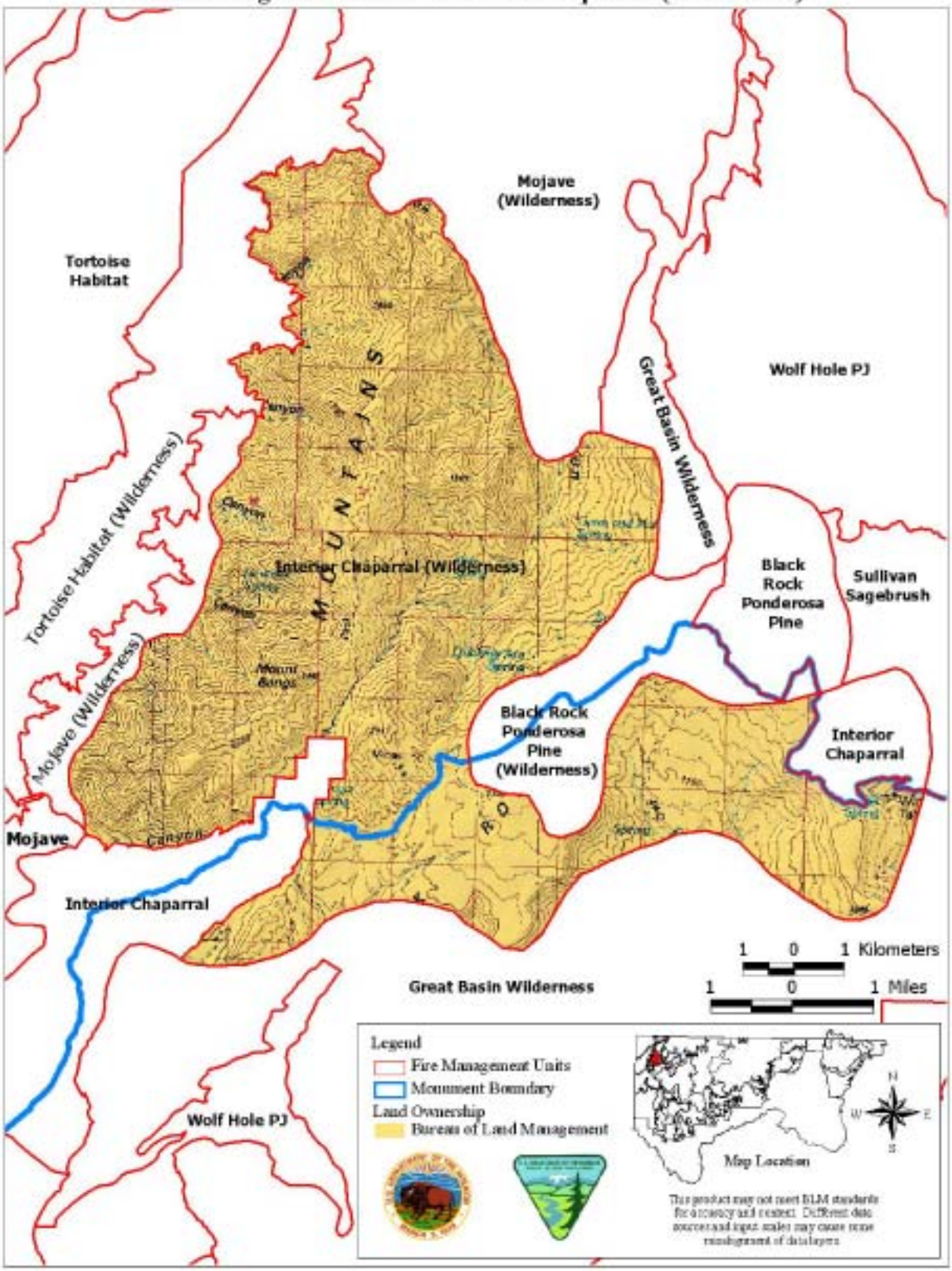
Fire Management Unit 1 - Tortoise Habitat



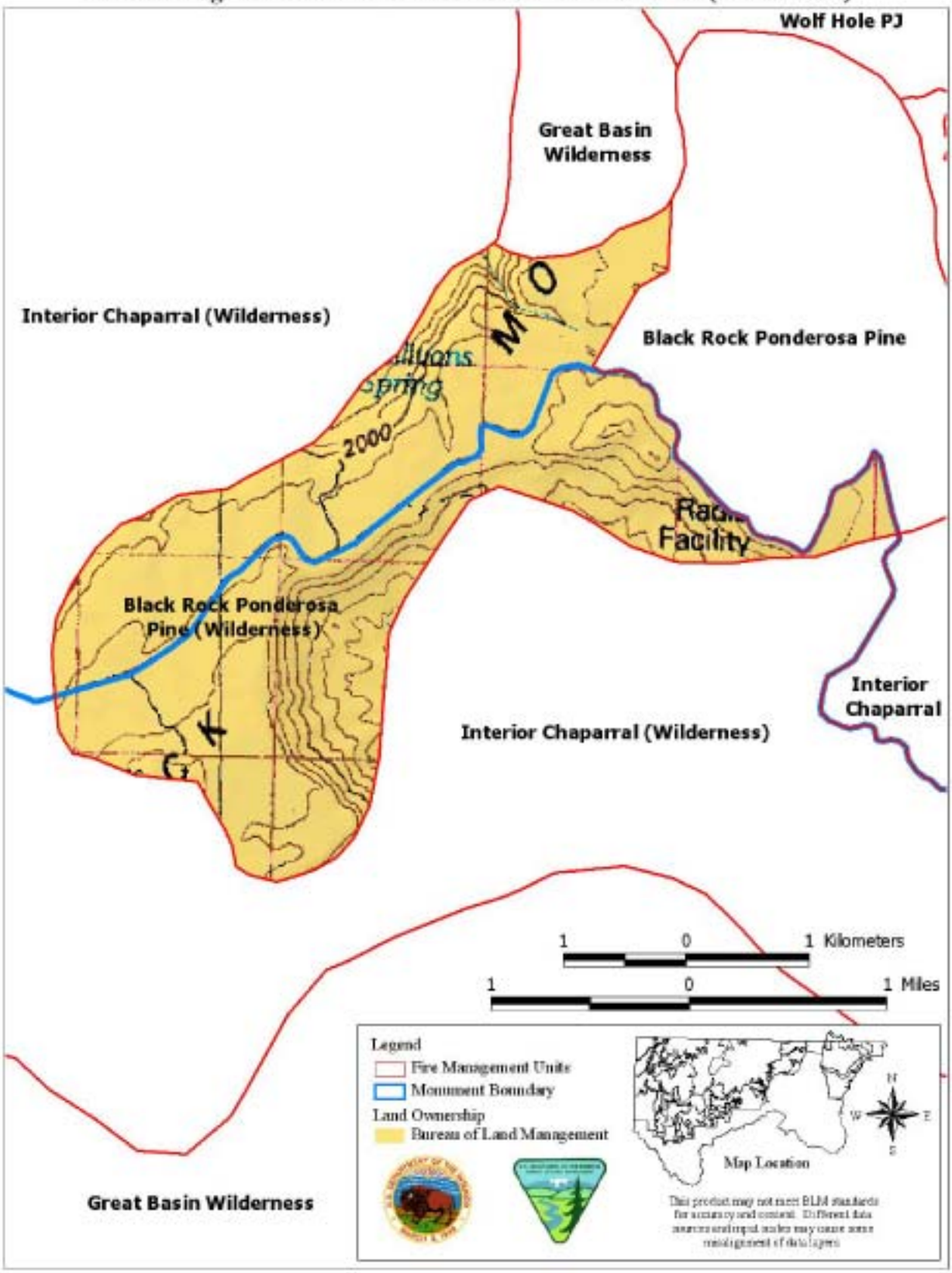
Fire Management Unit 2 - Mojave (Wilderness)



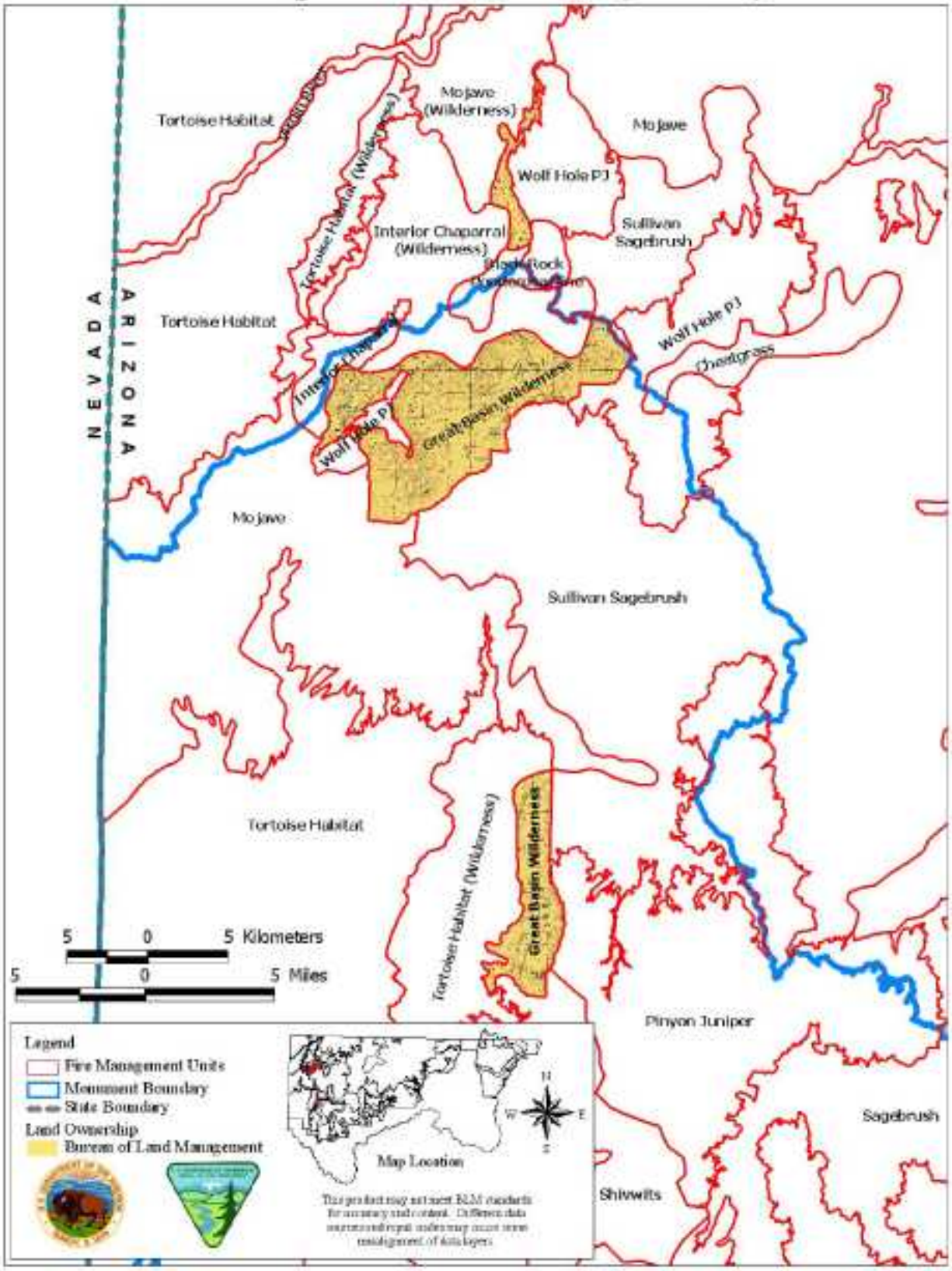
Fire Management Unit 3 - Interior Chaparral (Wilderness)



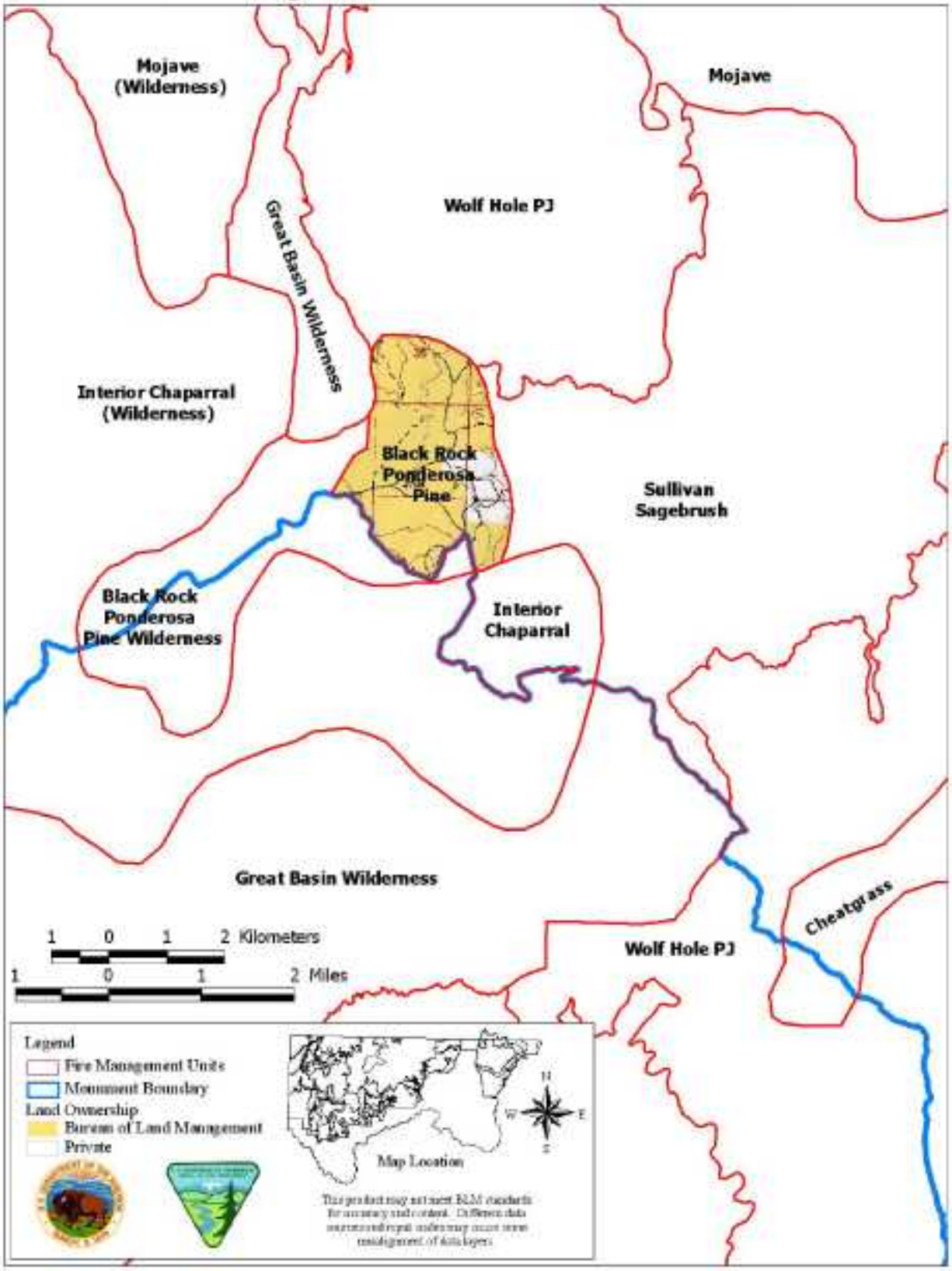
Fire Management Unit 4 - Black Rock Ponderosa Pine (Wilderness)



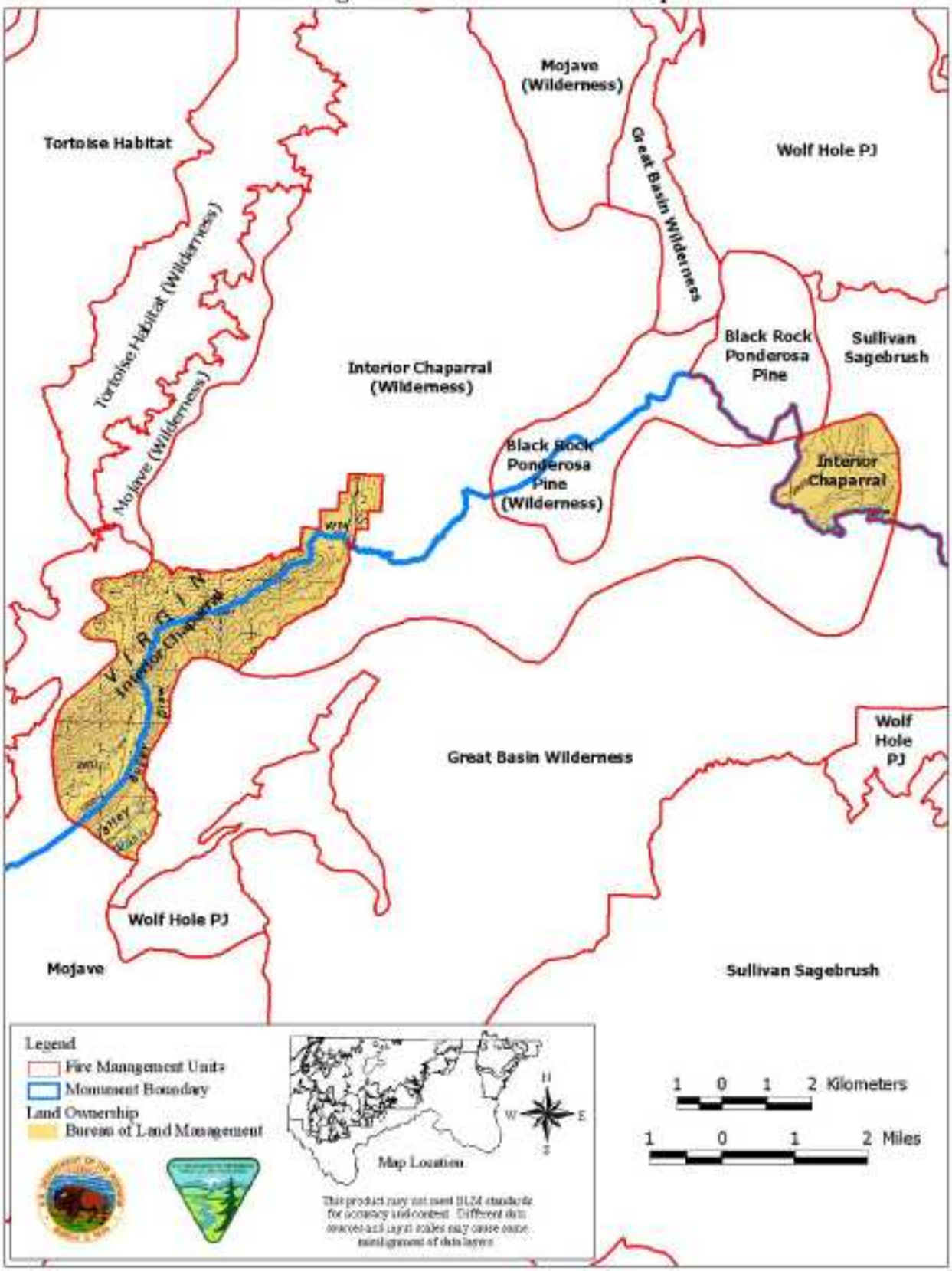
Fire Management Unit 5 - Great Basin (Wilderness)



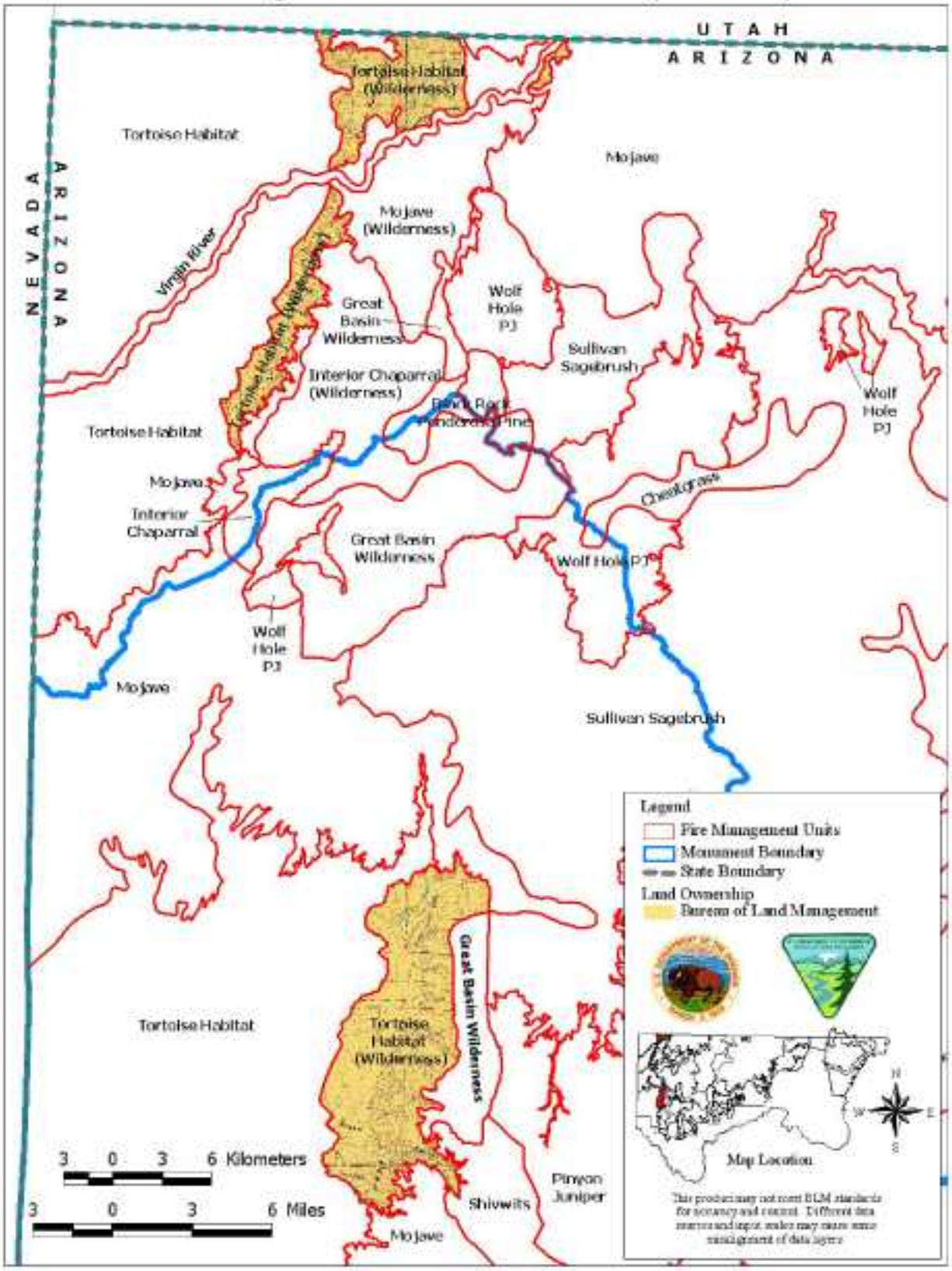
Fire Management Unit 6 - Black Rock Ponderosa Pine



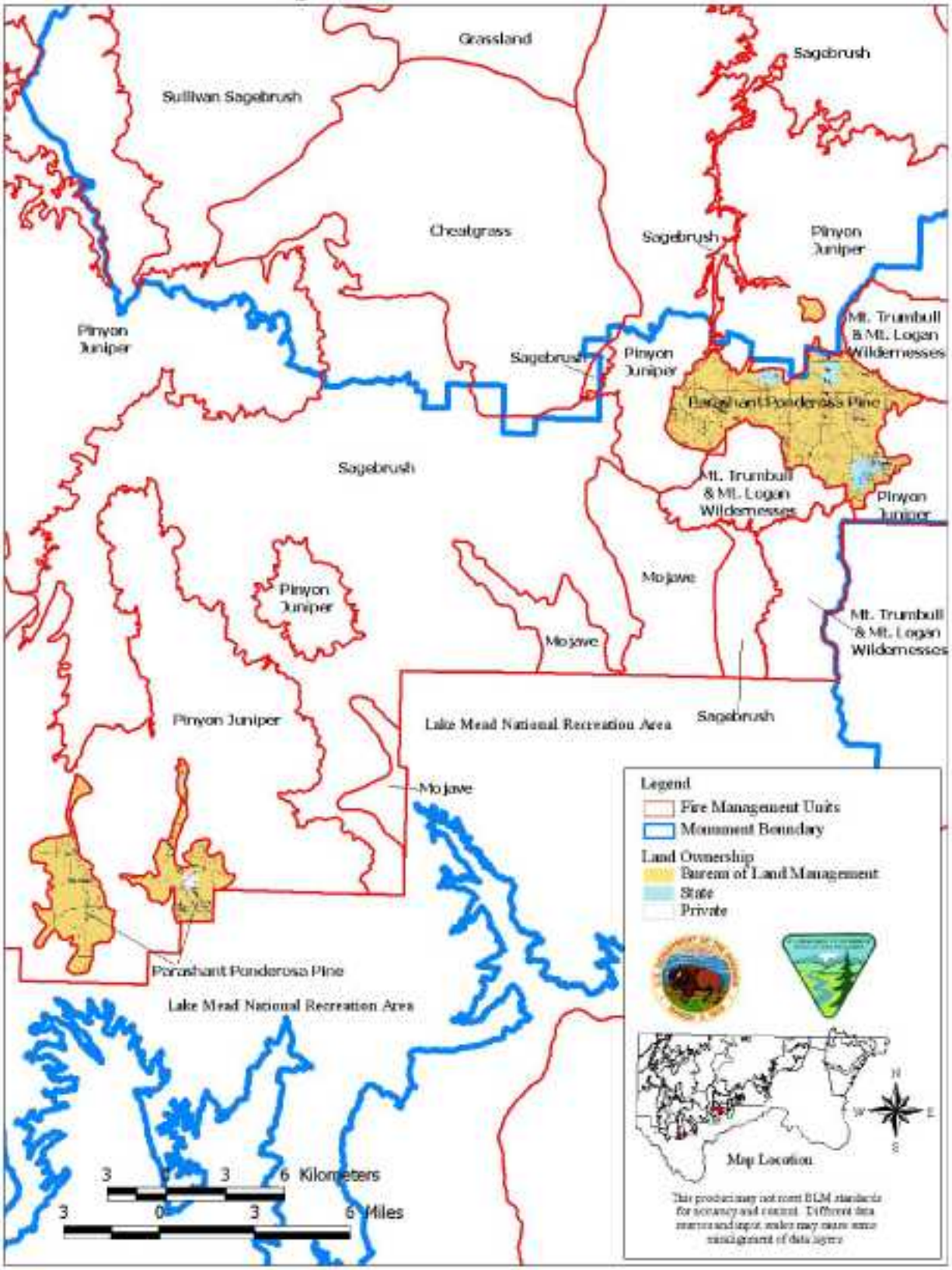
Fire Management Unit 7 - Interior Chaparral



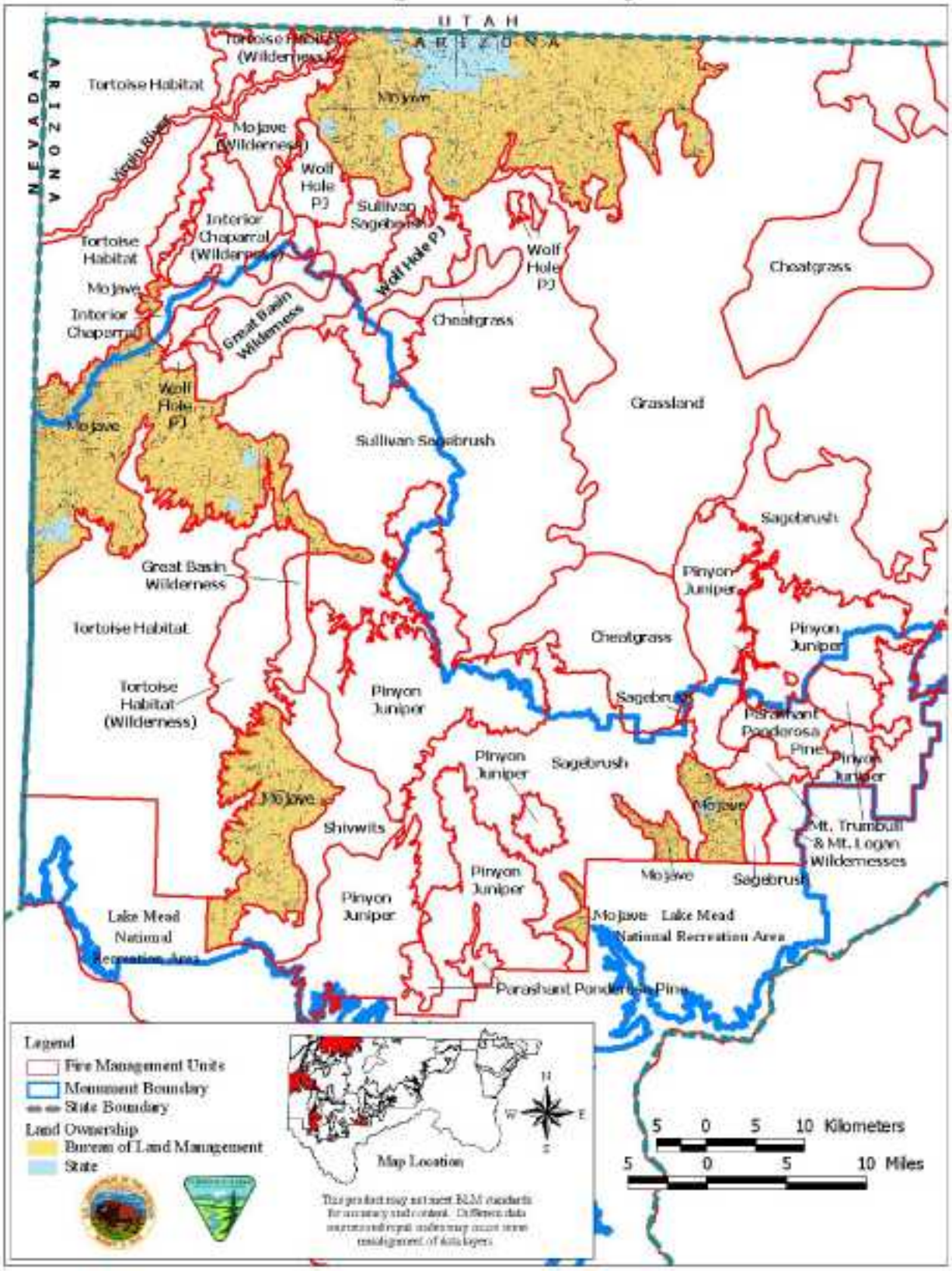
Fire Management Unit 8 - Tortoise Habitat (Wilderness)



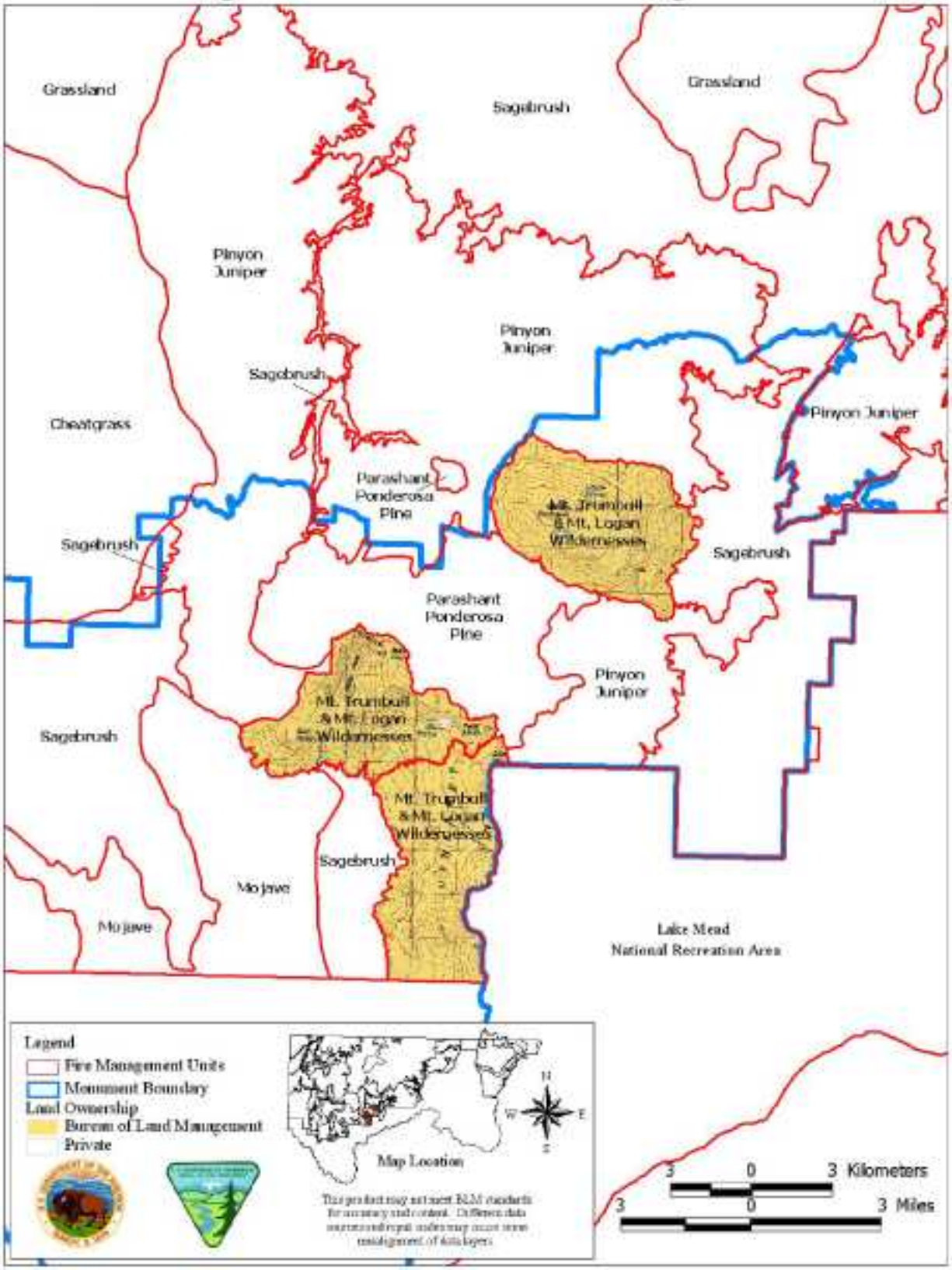
Fire Management Unit 9 - Parashont Ponderosa Pine



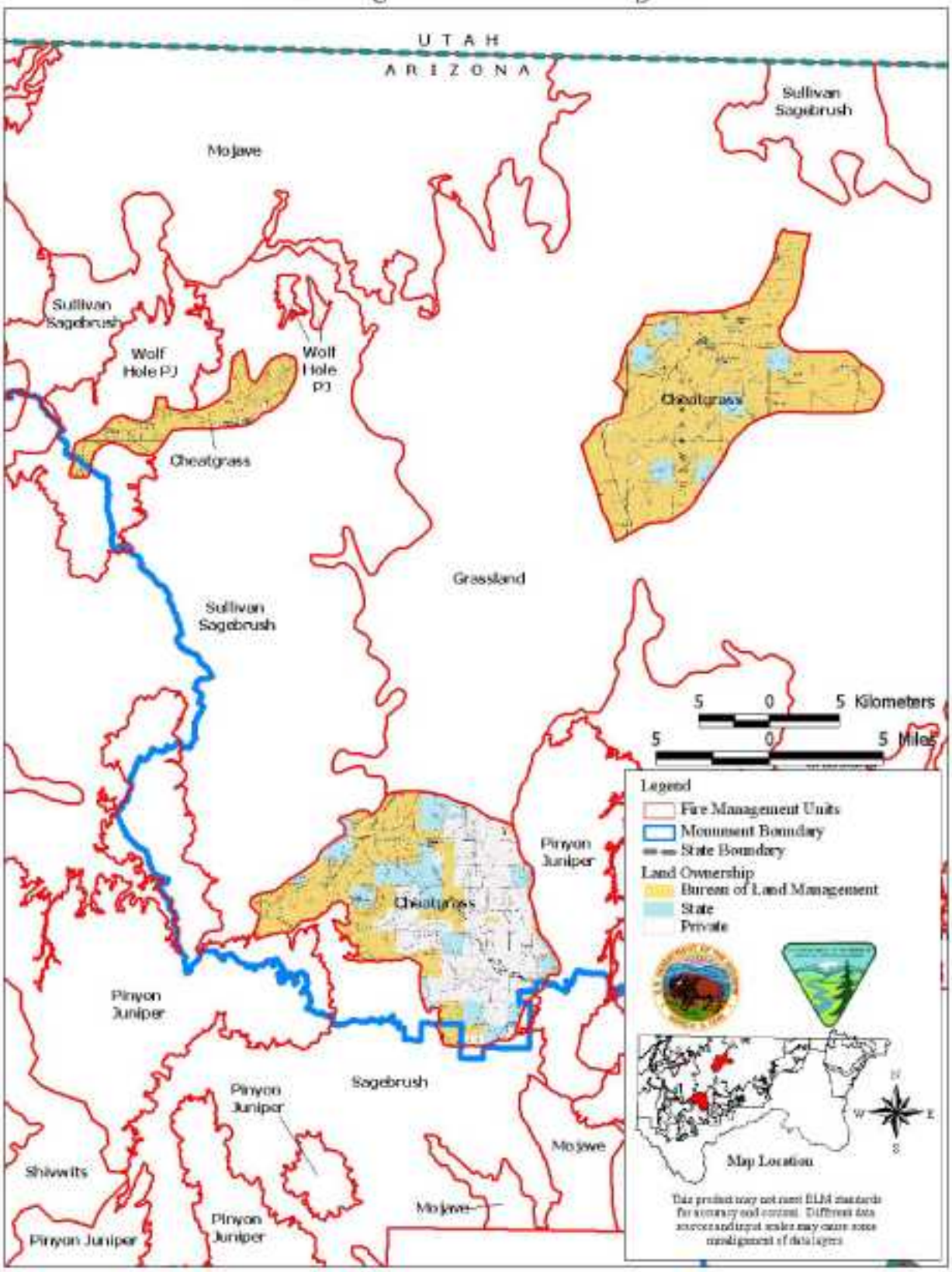
Fire Management Unit 10 - Mojave



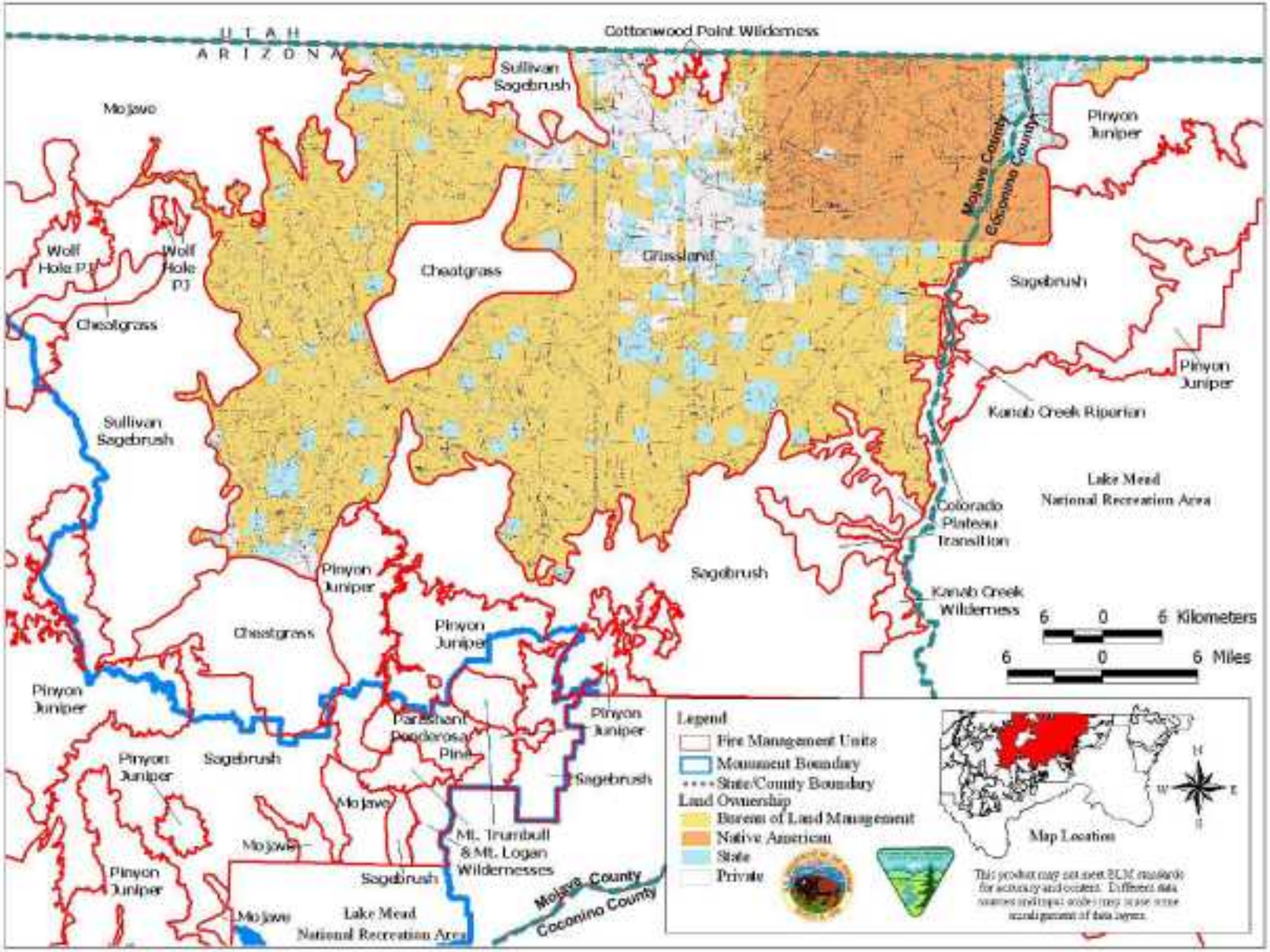
Fire Management Unit 11 - Mt Trumbull & Mt Logan Wilderness



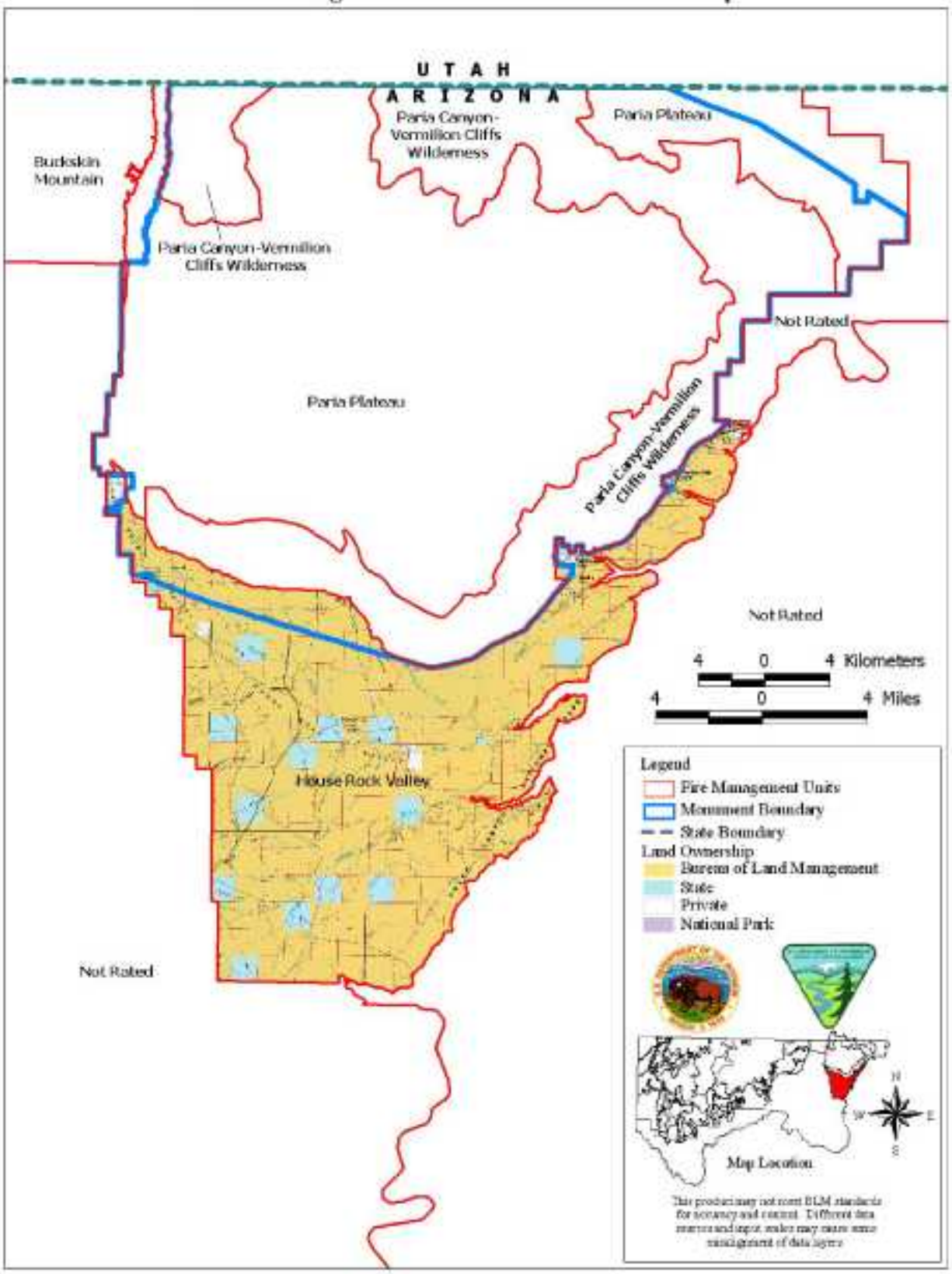
Fire Management Unit 12 - Cheatgrass



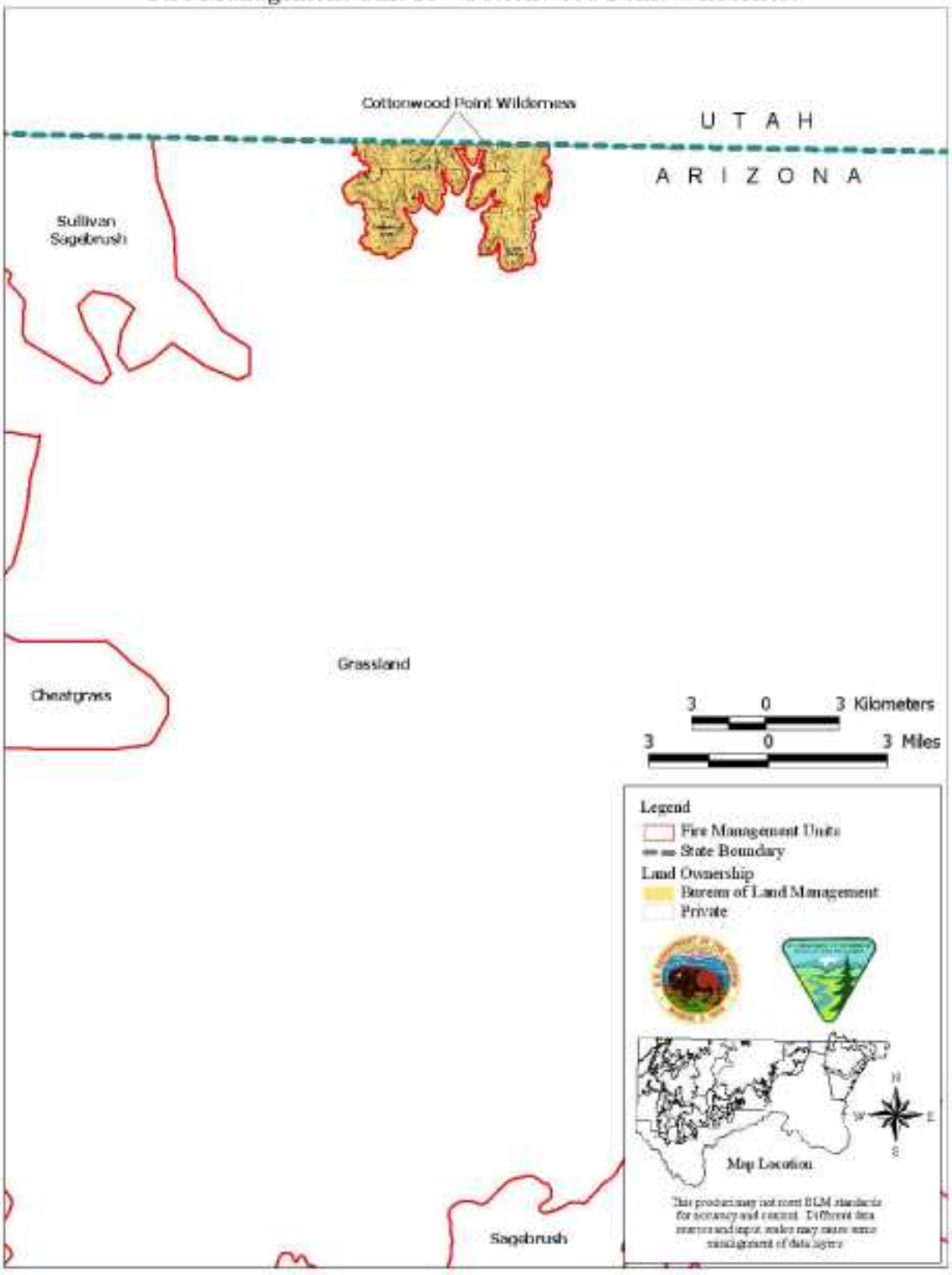
Fire Management Unit 13 - Grassland



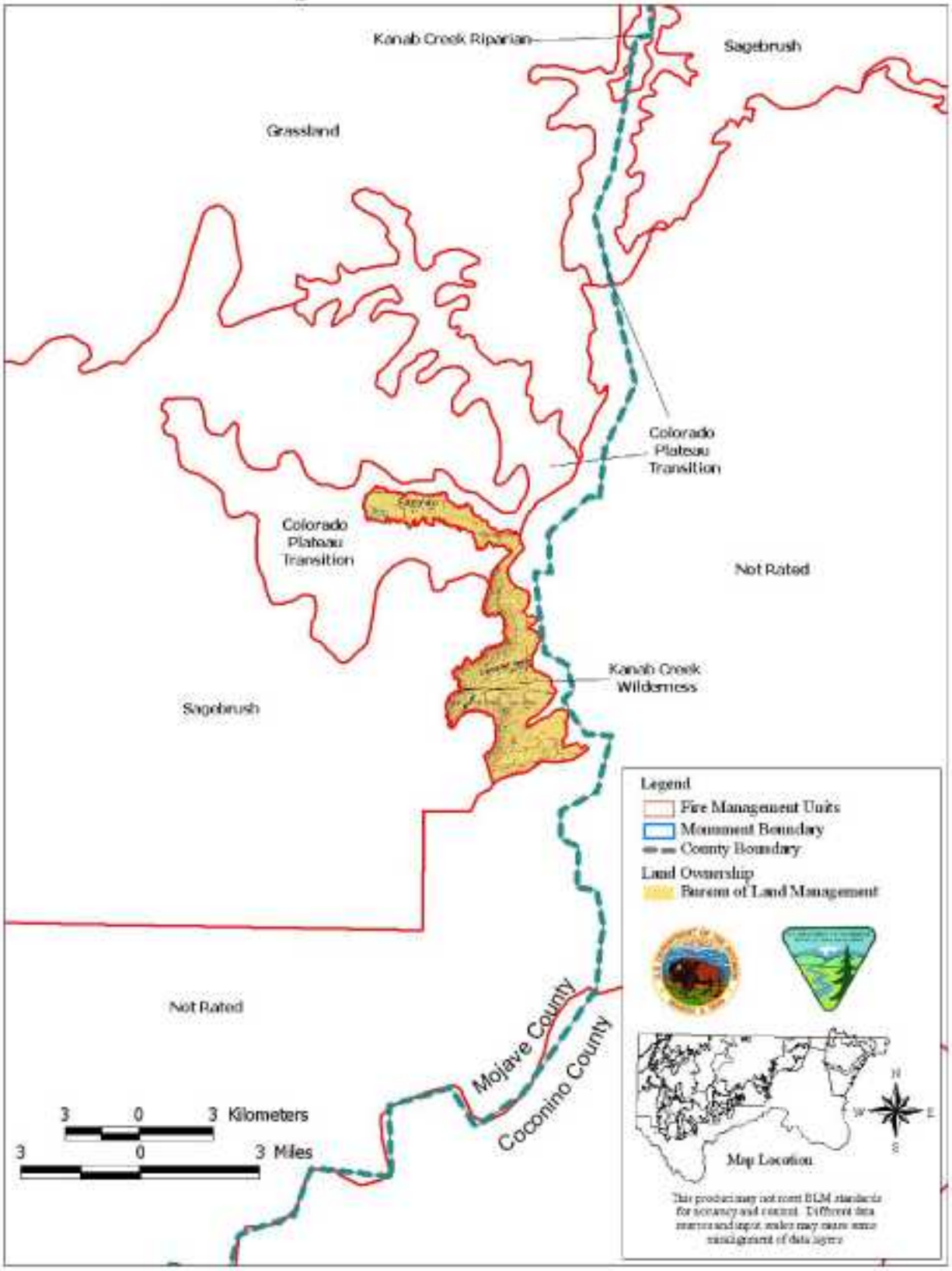
Fire Management Unit 14 - House Rock Valley



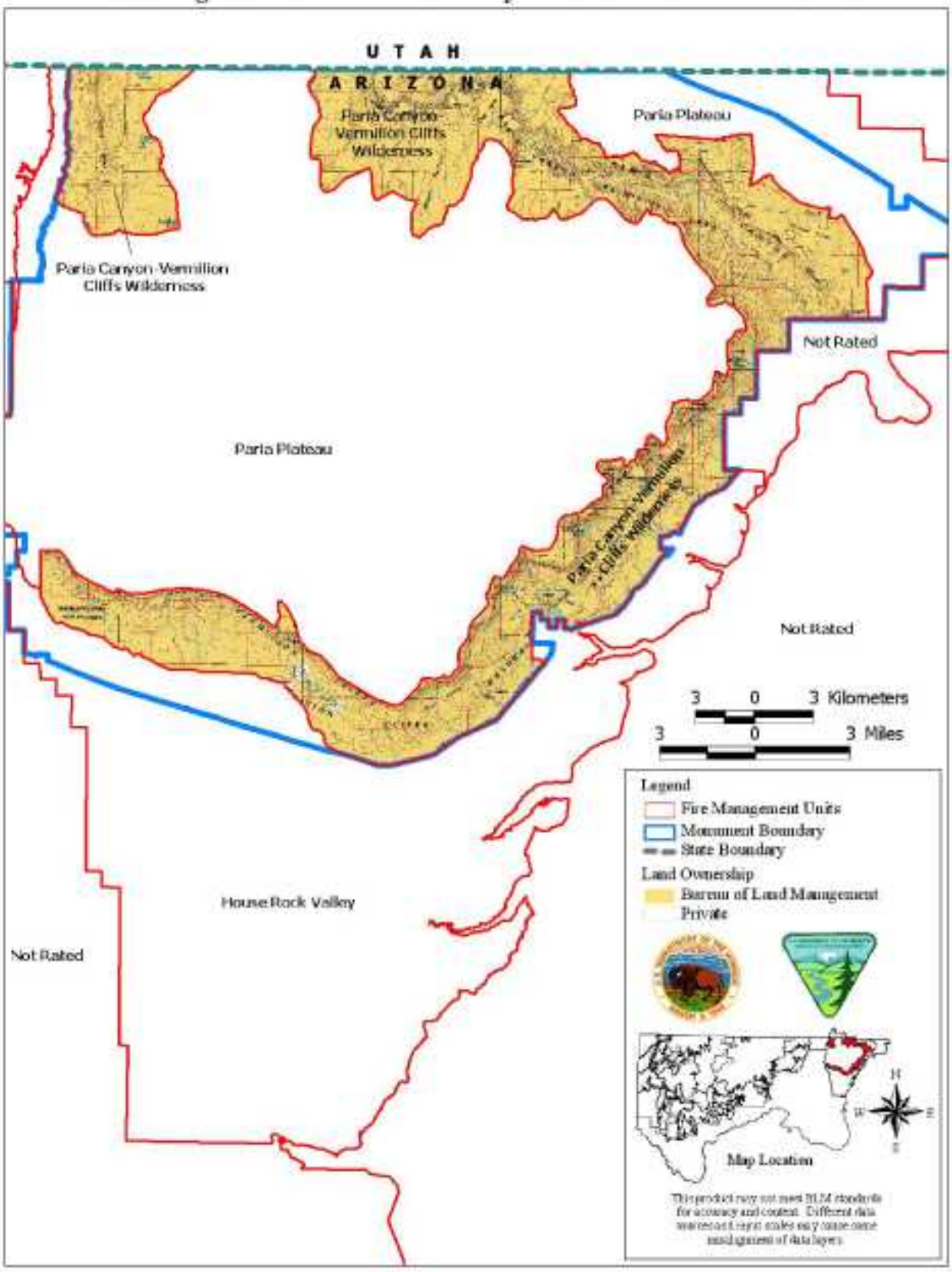
Fire Management Unit 15 - Cottonwood Point Wilderness



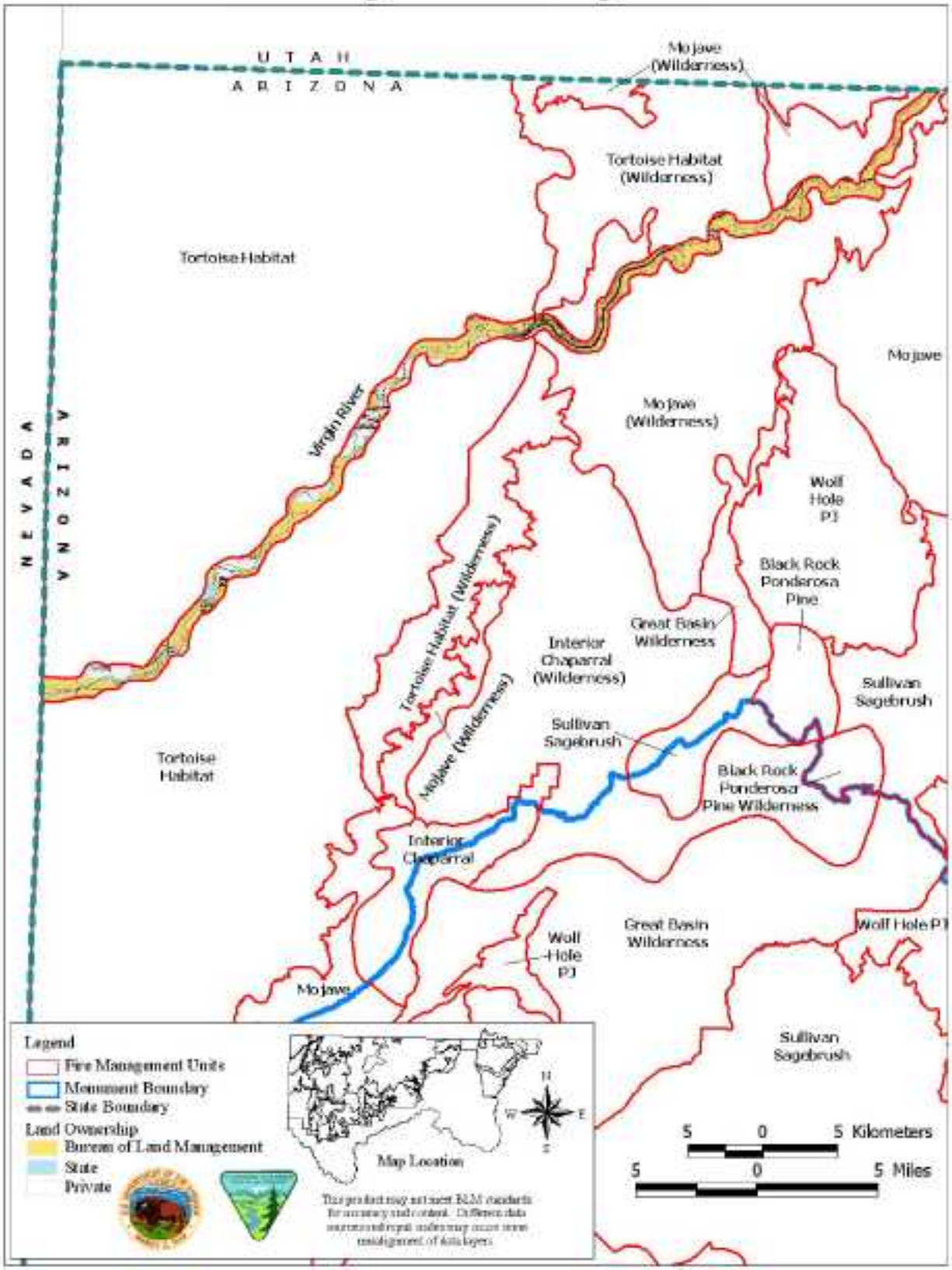
Fire Management Unit 16 - Kanab Creek Wilderness



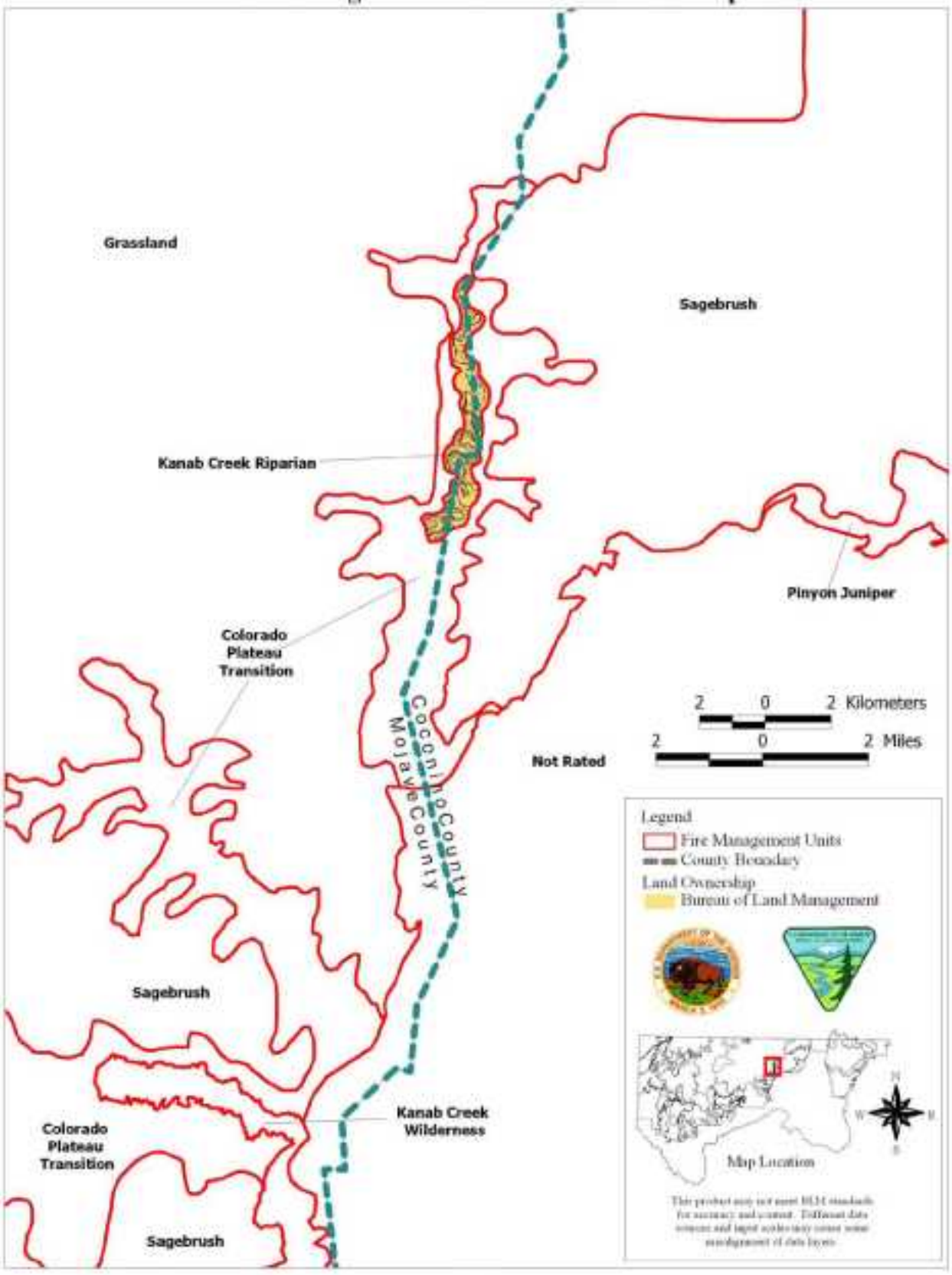
Fire Management Unit 17 - Paria Canyon-Vermilion Cliffs Wilderness



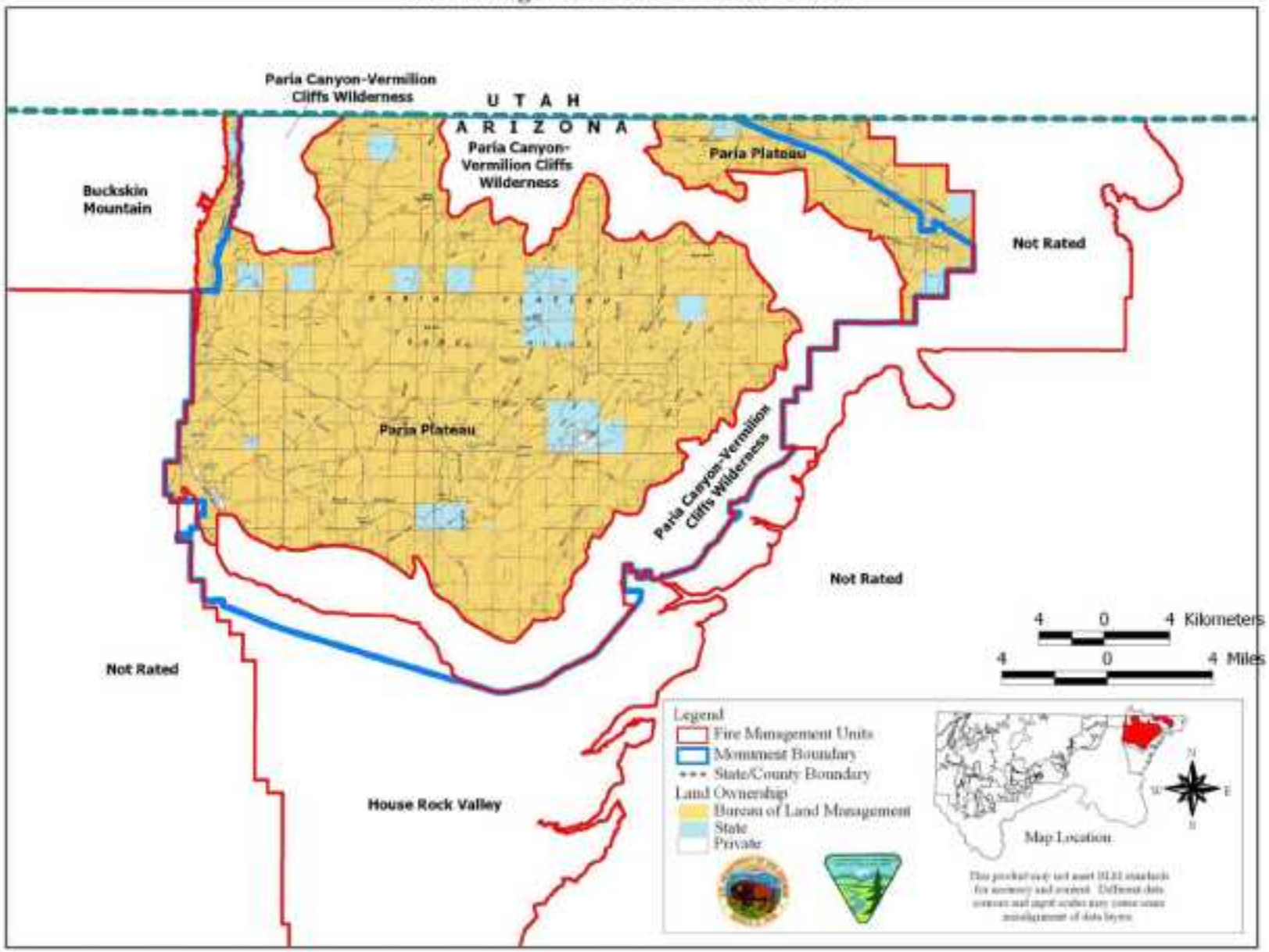
Fire Management Unit 18 - Virgin River



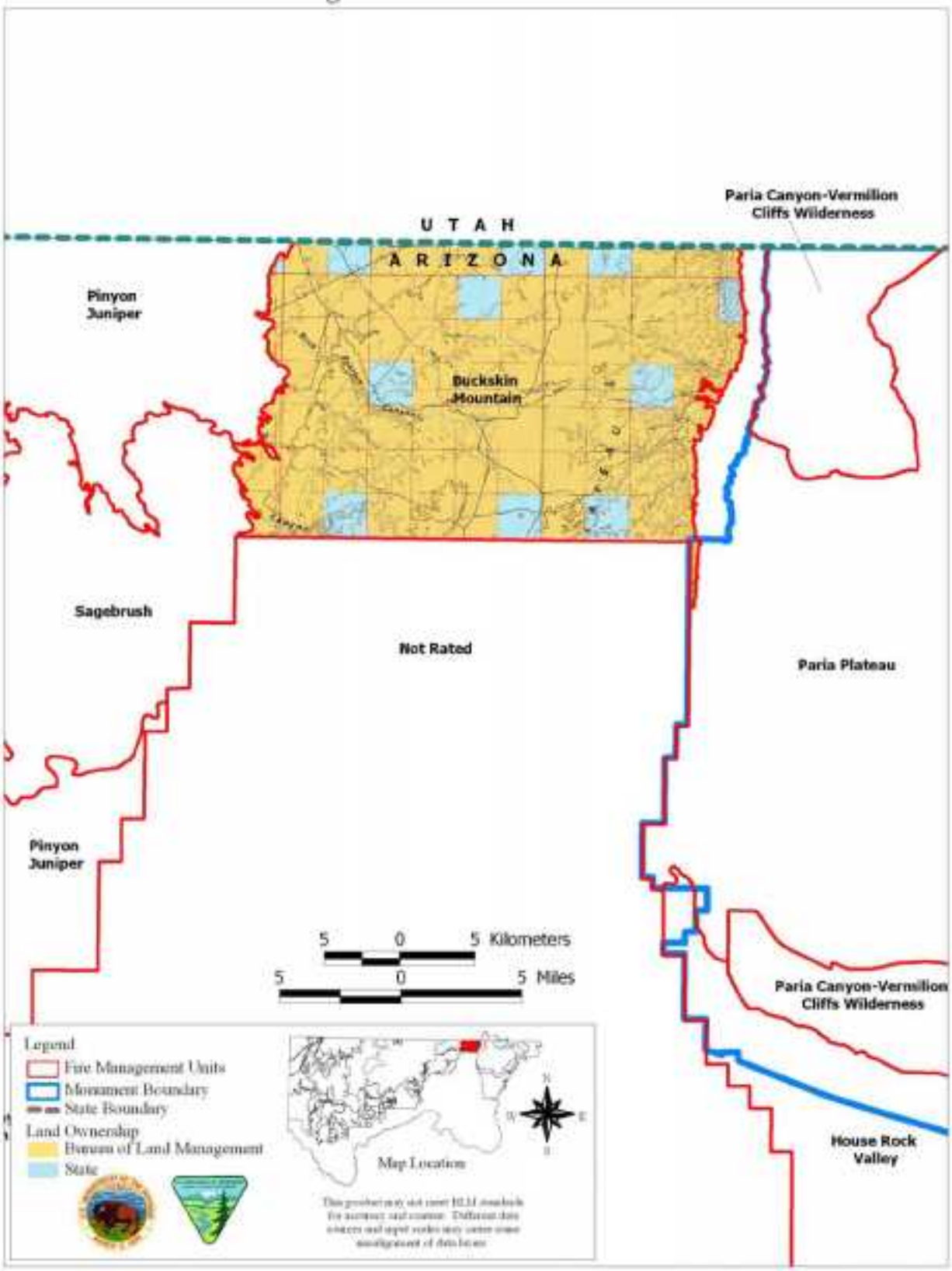
Fire Management Unit 19 - Kanab Creek Riparian



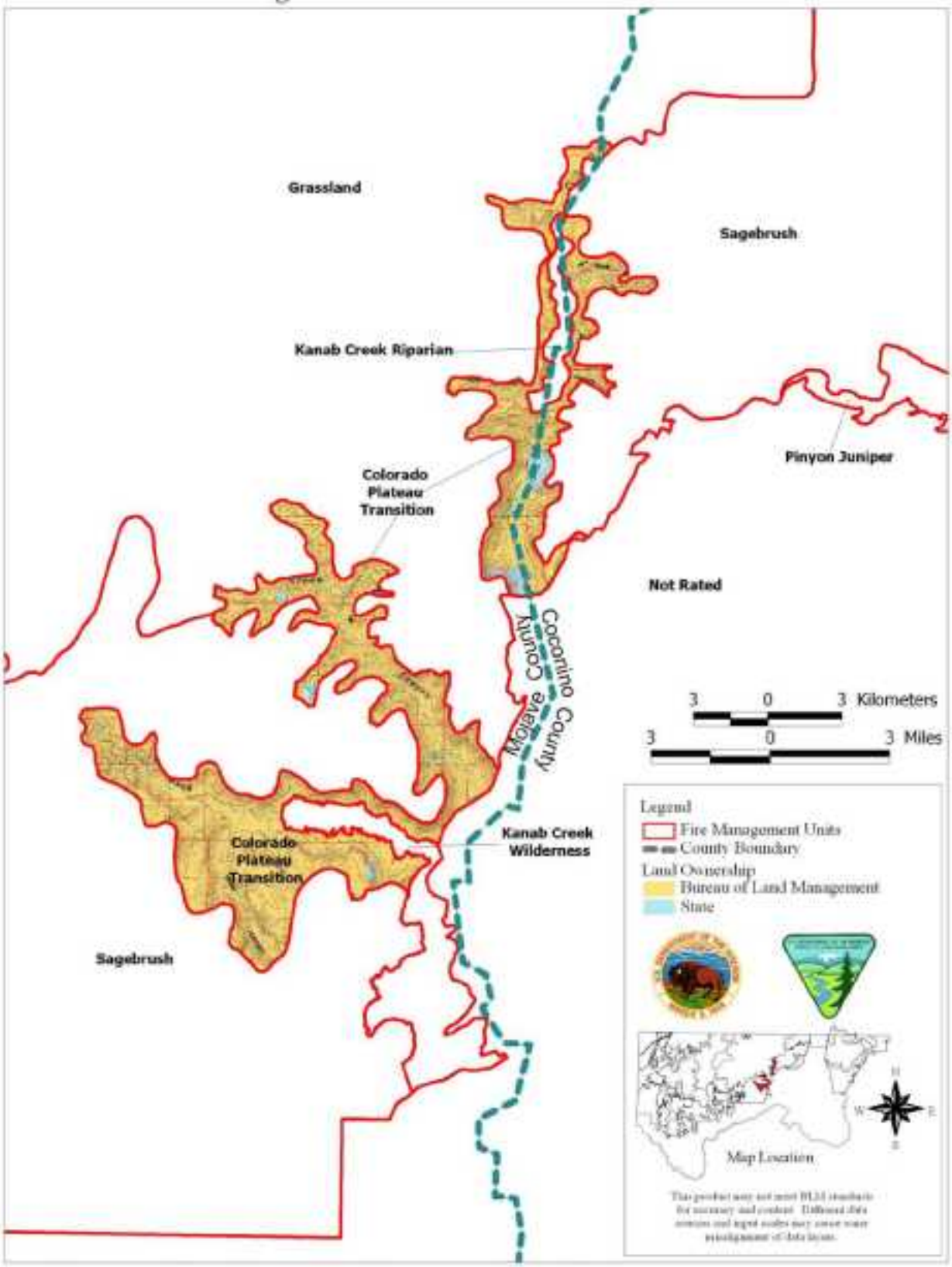
Fire Management Unit 20 - Paria Plateau



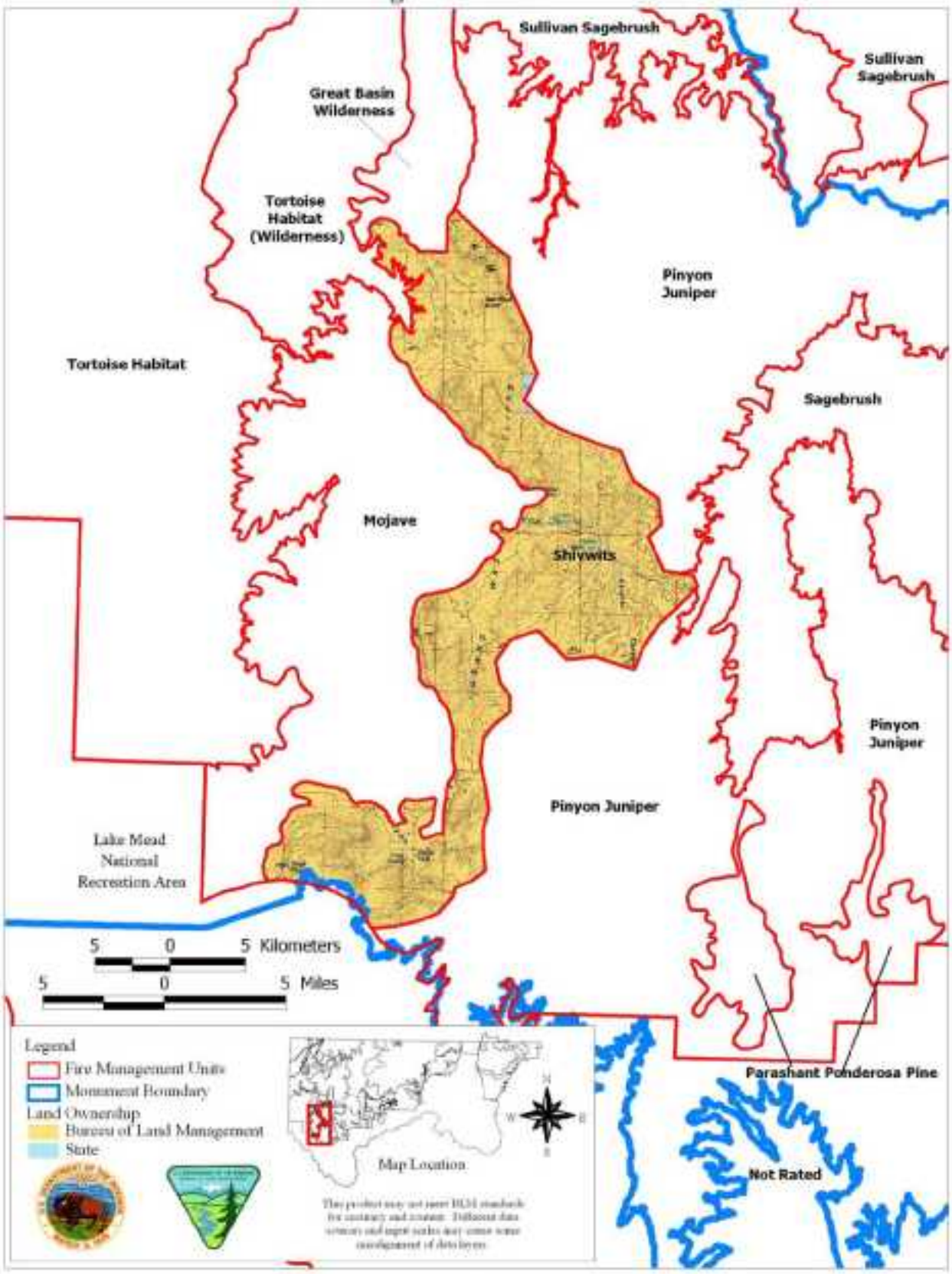
Fire Management Unit 21 - Buckskin Mountain



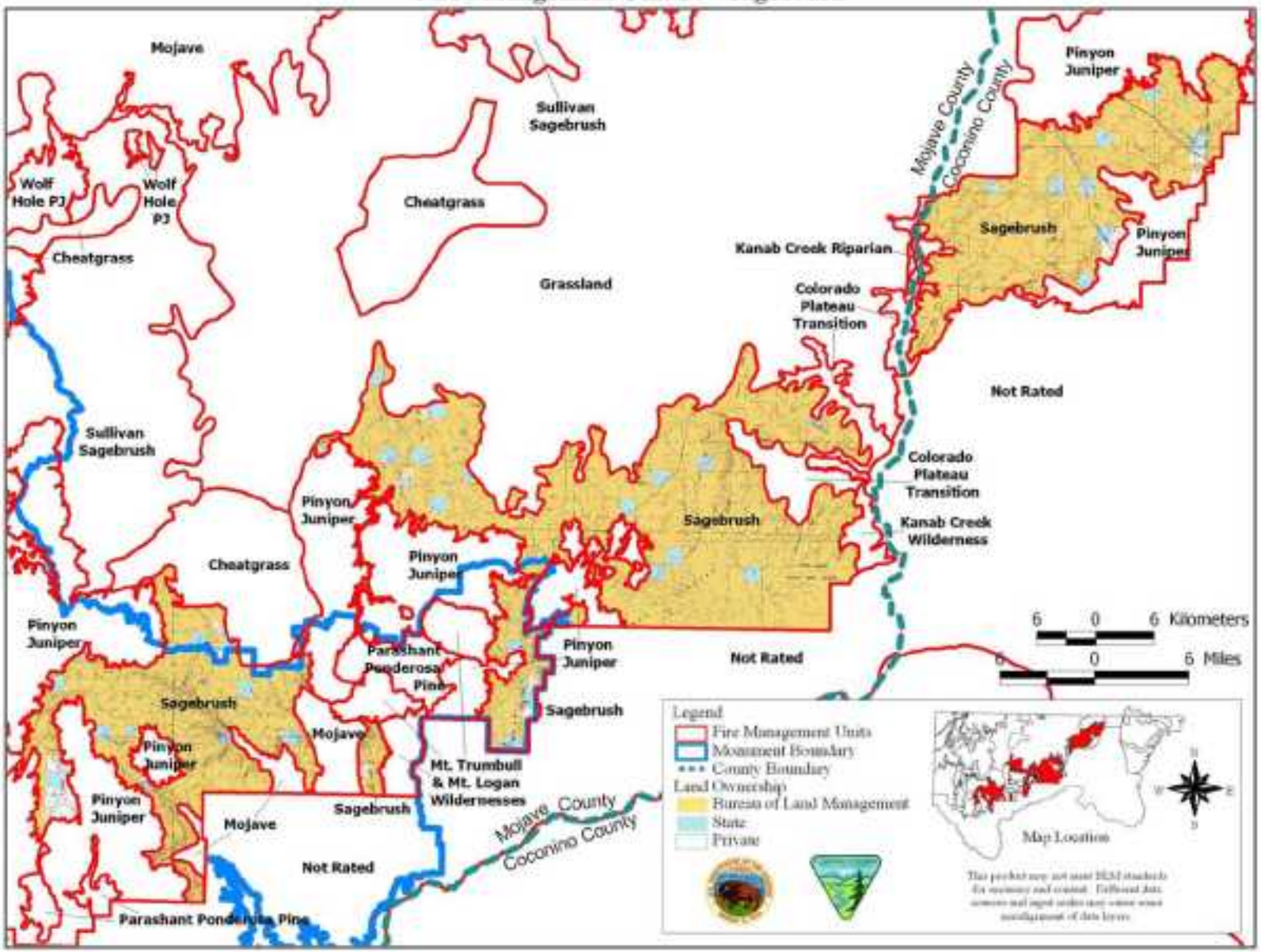
Fire Management Unit 22 - Colorado Plateau Transition



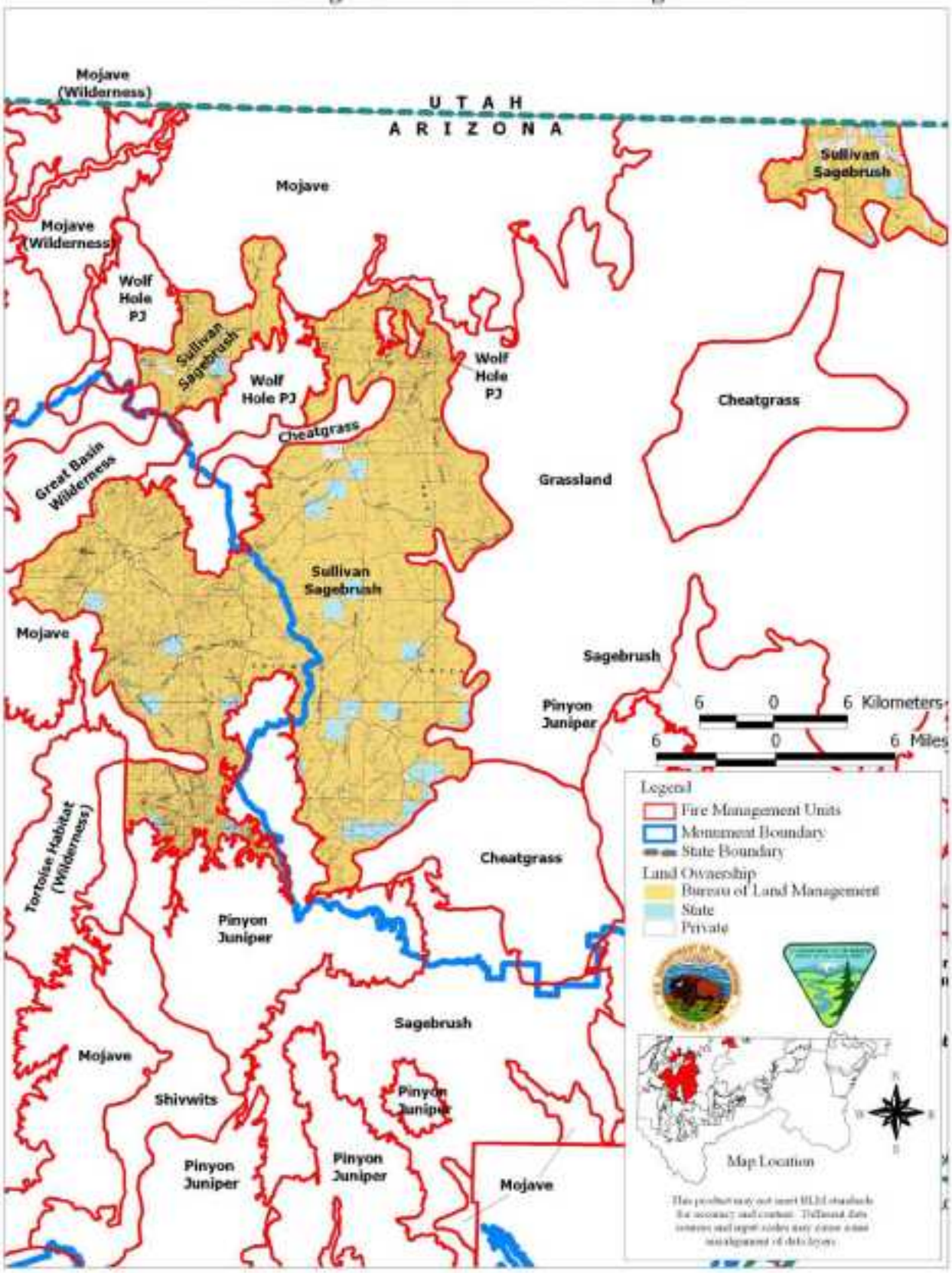
Fire Management Unit 23 - Shivwits



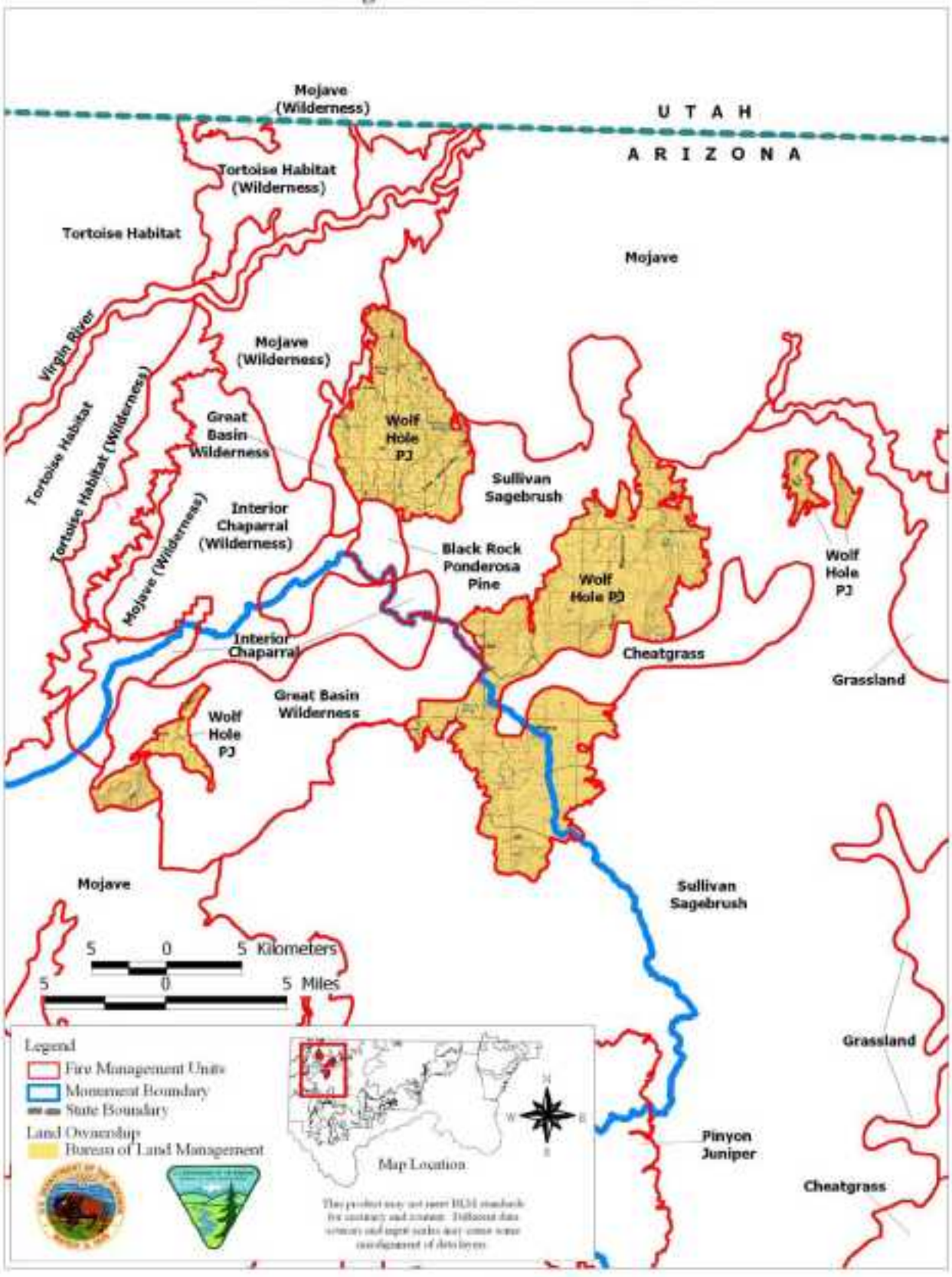
Fire Management Unit 24 - Sagebrush



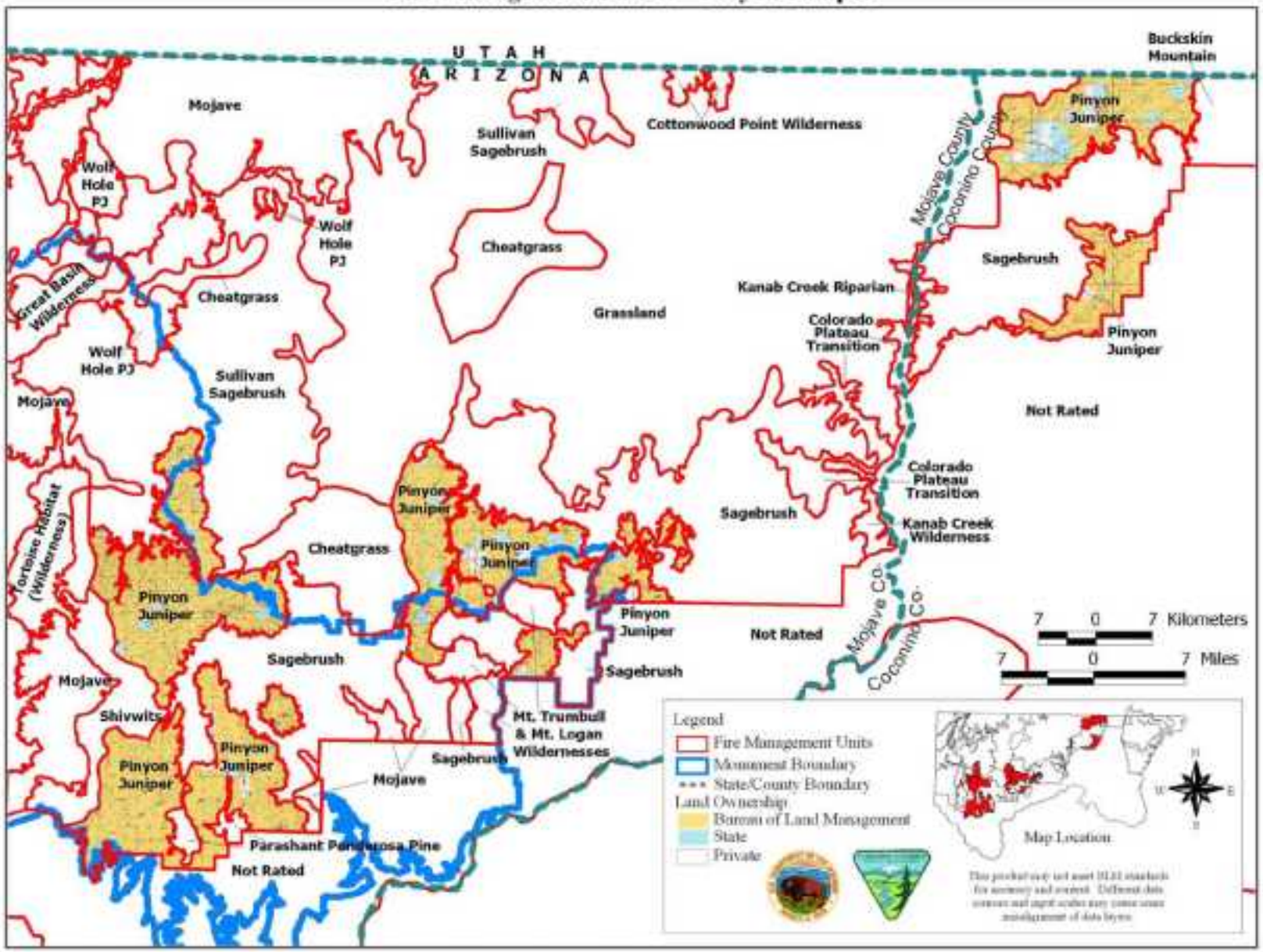
Fire Management Unit 25 - Sullivan Sagebrush



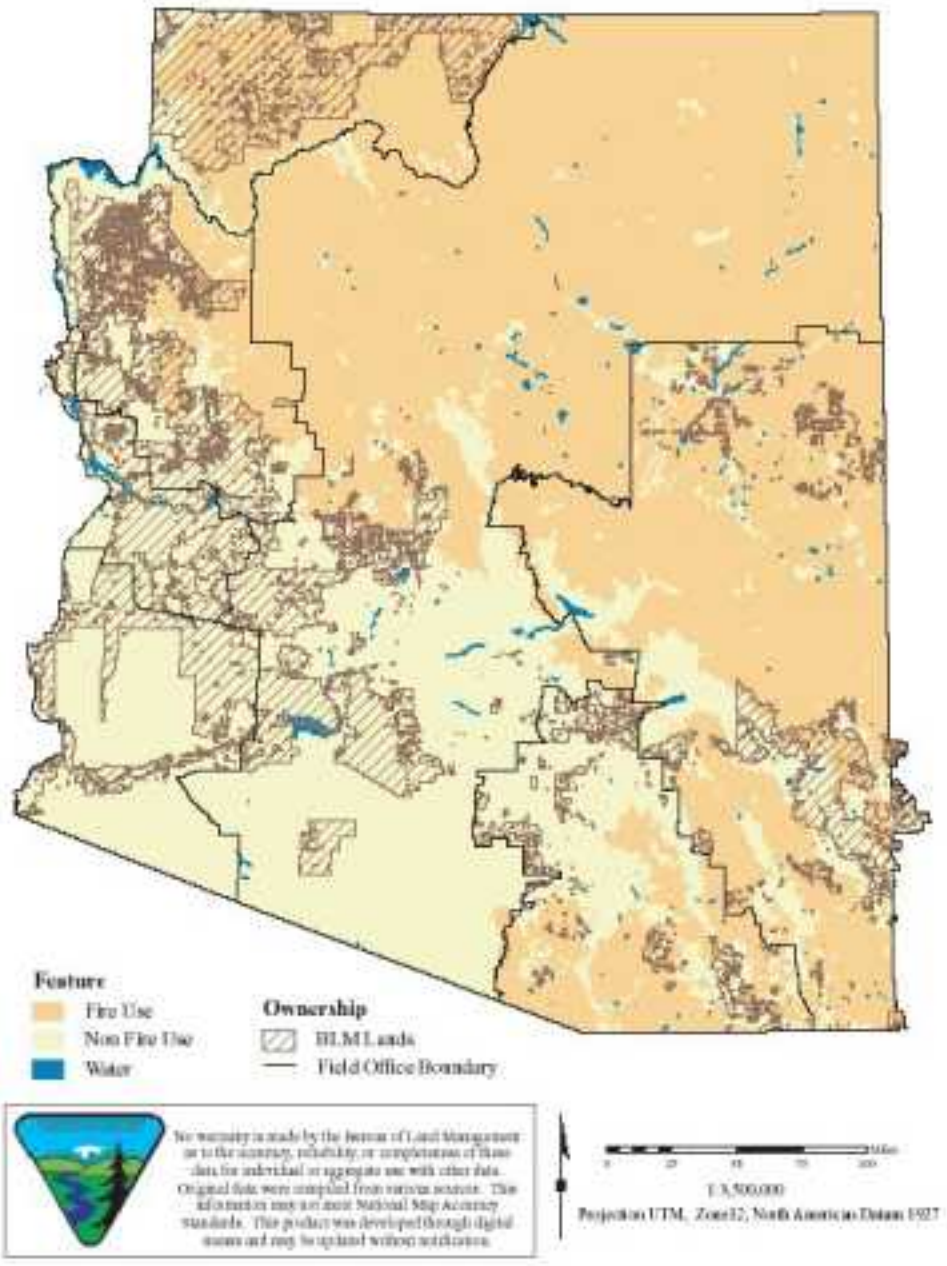
Fire Management Unit 26 - Wolf Hole PJ



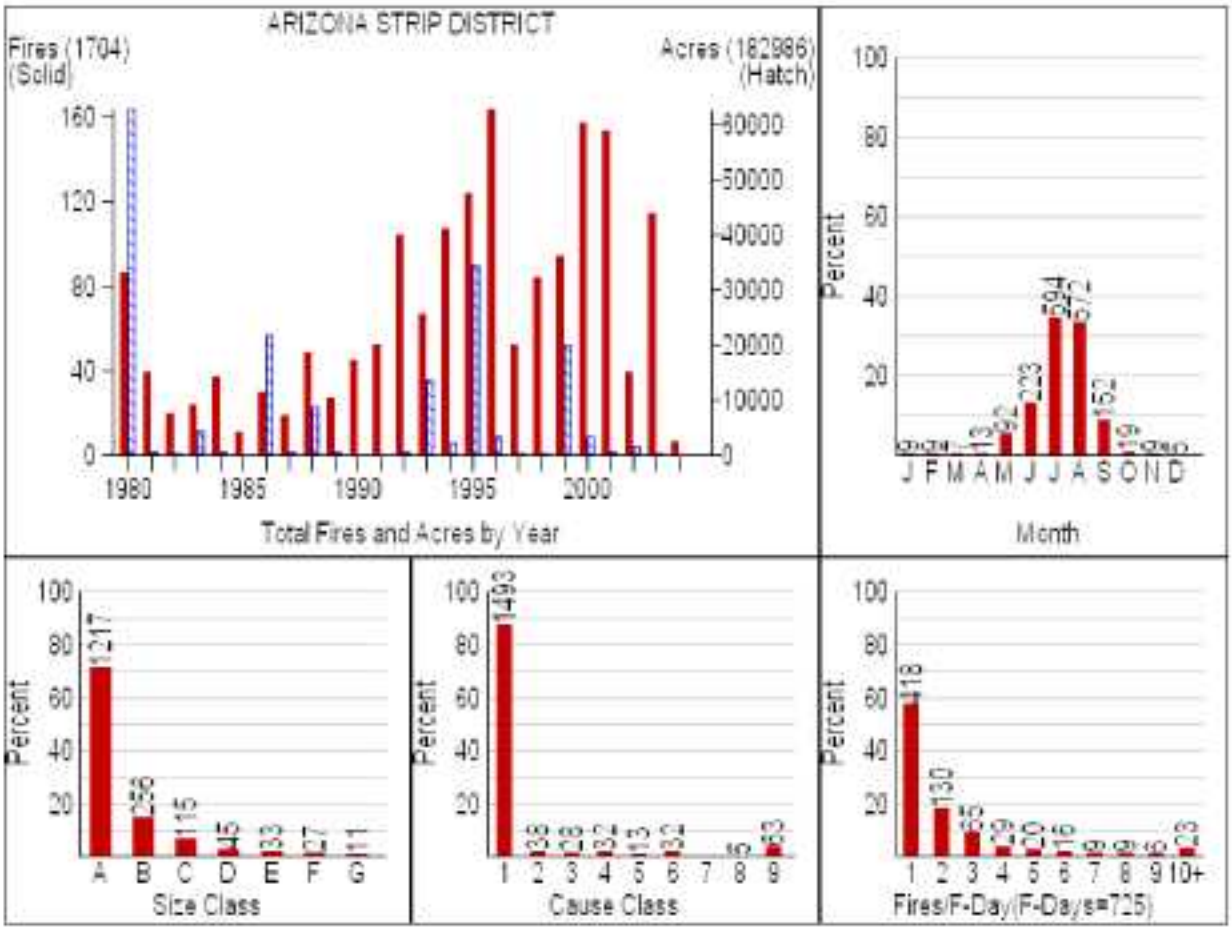
Fire Management Unit 27 - Pinyon Juniper



APPENDIX G – LAND USE ALLOCATION MAP FROM ARIZONA STATEWIDE LAND USE PLAN AMENDMENT FOR FIRE, FUELS, AND AIR QUALITY MANAGEMENT.



APPENDIX H – ARIZONA STRIP FIRE MANAGEMENT ZONE FIRE HISTORY GRAPHS



APPENDIX E - OVERVIEW MAP OF FIRE MANAGEMENT UNITS

APPENDIX I – CONDUCTING FUTURE CONSULTATIONS FOR SITE-SPECIFIC ACTIONS AND IMPLEMENTATION LEVEL PLANS UNDER THE BIOLOGICAL OPINION FOR THE ARIZONA STATEWIDE LAND USE PLAN AMENDMENT FOR FIRE, FUELS, AND AIR QUALITY MANAGEMENT

This biological opinion analyzes the potential effects of implementing BLM's fire and fuels management program in Arizona. We have anticipated that take of some species from fire suppression activities and/or fire and fuels management treatments could occur. For these species, the maximum extent of incidental take that could occur was developed given the description of the proposed actions, including full implementation of the relevant general and species-specific conservation measures included in Appendix B of this document.

Fire Suppression

If your fire suppression actions are conducted in accordance with the description of the proposed actions, all relevant conservation measures, and the reasonable and prudent measures and terms and conditions identified for each species in this consultation, incidental take is exempted in this biological opinion and emergency consultation following the wildfire event will not be required. Emergency rehabilitation actions following wildfires have not been specifically analyzed in this biological and conference opinion and will be subject to separate, site-specific consultation, if these actions may affect a listed species or critical habitat.

Documentation of any incidental take during wildfire events is an important part of the reporting requirements of this biological opinion. If fire suppression actions resulting in incidental take account for all of the incidental take anticipated by this program-level consultation, you should reinitiate consultation because any future events may result in exceeding the authorized amount or extent of take.

If conservation measures addressing fire suppression actions are not followed during a wildfire event and you determine that a listed species and/or critical habitat may have been affected, you must request emergency consultation. A separate biological evaluation and biological opinion (as appropriate) will be developed during the consultation. Please note that the items listed in this biological opinion under "Reporting Requirements, Fire Suppression", should be included in the biological evaluation that you submit to us.

In addition, if new information reveals effects of fire suppression activities that were not considered in this opinion, reinitiation of consultation is required. New information may also include the discovery of new locations of species and/or habitat.

Fire and Fuels Management Treatments

We have anticipated that take of some species from fire and fuels management treatments could occur as a result of these proposed actions. For these species, we have anticipated the maximum amount or extent of incidental take that could occur, but because we have no specific project details, we do not know with certainty the specific effects that will result or the exact amount or extent of take that could occur. Therefore, we cannot exempt take for these actions in this

consultation. The incidental take exemption will be provided in project-level biological opinions when you provide the specifics of your proposed actions. However, the extent of take that is anticipated in this consultation will be included at this time in the species' baselines for future consultations.

You will need to enter into additional consultation once site-specific projects are planned. These include programmatic wildland fire use plans and programmatic, batched, or individual prescribed fire and fuels treatment projects that include site-specific information, prescriptions, and treatment methods. The maximum extent of incidental take identified in this consultation functions as an indicator to let you know when the additive effects resulting from individual actions approaches the limits of our effects analysis. As this level of take is approached, you may need to reinitiate consultation on this statewide program to ensure that projects are not disrupted because of unanticipated levels of impacts.

The applicable program-level reasonable and prudent measures and terms and conditions included in this biological and conference opinion will also be included in project-level incidental take statements and should be considered during project planning. These program-level conditions are not mandatory until the incidental take is actually exempted in site-specific project consultations. During these future consultations, we may identify circumstances under which these conditions are unnecessary. We may also identify additional conditions that are required to minimize take resulting from these projects. Final reasonable and prudent measures and terms and conditions will be included in biological opinions for the future site-specific projects.

APPENDIX J: IMPLEMENTED YEAR FIRE ORGANIZATION FOR FY 2004

Bureau of Land Management Implemented Fire Resources - Attachment 1
Office: Arizona Strip FMZ

Resources	Quantity	Number of Personnel	Total Work Months
Number of Engines:	4	15	78.31
Number of Water tenders:	1	1	5
Number of Dozers:			
Number of Tractors / plows:			
Number of Fire Boats:			
Number of Type 1 Crews:			
Number of Helitack Crews:	1	9	49
Number of Fuels Crews:	1	13	72
Number of Type 2 Crews sponsored:			
Number of Smokejumpers (AK & NIFC only):			
Number of Fire Management Officers:	1		12
Number of Assistant FMOs / FCOs:	1		12
Number of Fire Operations Specialists:	1		8
Number of Dispatchers:	4		32
Number of Other Aviation Staff (Aviation Mgr., Seat Mgr, etc.): SEAT Mgrs	2		9
Number of Mitigation/Education/Prevention Specialists / Techs:	1		12
Number of Resource Specialists:	1		12
Number of Fuels Specialists:	1		12
Number of Other Fire Staff: Lookout	1		4.5
Number of PFT funded by Preparedness:	4		
Number of Career Seasonals funded by Preparedness:	11		
Number of Temporaries funded by Preparedness:	19		
Number of PFT funded by Fuels:	4		
Number of Career Seasonals funded by Fuels:	2		
Number of Temporaries funded by Fuels:	10		

* In completing this table, only include Preparedness resource numbers funded by Fire Preparedness (2810) and reflect the peak fire organization resources for the year. Do not include resources funded under severity. The fuels related resources numbers are to include the resource funded by the non-WUI (2823) and WUI (2824) programs.

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