

# Wildland Fire Management Plan

Kirtland Air Force Base



2022

# SIGNATURE PAGE

APPROVED BY: \_\_\_\_\_

**Base Civil Engineer**

**377 MSG/CE**

APPROVED BY: \_\_\_\_\_

**Chief, Air Force Wildland Fire Branch**

**AFCEC/CZOF**

This Wildland Fire Management Plan has been prepared in accordance with regulations, standards and procedures in Section 3P of the [Air Force Manual 32-7003, \*Environmental Conservation\*, 20 April 2020](#).

The signature above indicates approval of the Plan for Implementation.

The completion of this plan alone does not satisfy the requirements of a Prescribed Fire Plan.

## Contents

1.0 Introduction.....	7
1.1 Purpose of the WFMP.....	7
1.2 General description of the WFMP area .....	8
Table 1.1 KAFB Land Use Categories .....	9
Figure 1.1 Vicinity Map .....	10
Table 1.2: areas covered within WFMP .....	11
1.2.1 General Description of any Geographically Separated Unit (GSU) owned by the Air Force (AF) and used by the installation.....	11
1.2.2 General Description of any GSU leased by the AF and used by the installation. ....	11
1.3 General Description of the DoD Mission.....	11
1.3.1 General Discussion of Wildland Fire Impacts to the DoD Mission.....	12
1.3.2 General Discussion of DoD Mission Impacts to Wildland Fire Activities.....	12
Figure 1.2: Test Ranges .....	13
1.4 Significant Values to Protect .....	13
1.4.1 Personnel Safety .....	13
1.4.2 Natural Resources.....	13
1.4.3 Cultural Resources .....	14
1.5 Wildland Fire Roles and Responsibilities.....	14
1.5.1 Base Civil Engineer (BCE)/Fire Marshall .....	14
1.5.2 Wildland Fire Program Coordinator (WFPC) .....	14
1.5.3 Environmental Section Chief .....	16
1.5.4 FES Fire Chief (FC) .....	16
1.5.5 KFD Fire Management Officer (KFD-FMO) .....	16
1.5.6 Natural Resources Manager (NRM) .....	17
1.5.7 Incident Commander (IC) .....	17
1.5.8 Wildland Support Modules (WSM) .....	18
Figure 1.3 WSM AOR .....	20
1.5.9 Installation Commander.....	20
1.5.10 Air Force Wildland Fire Branch (AFWFB).....	20
Figure 1.4 Organizational Chart for Kirtland AFB .....	22
1.6 Effects of Climate Change on Biotic Composition and Impacts to Wildland Fire Management.....	22
2. Policy, Land Management Planning and Partnership .....	22

2.1 USAF Wildland Fire Policy. ....	22
2.2 Installation Specific Fire Management Policy.....	23
2.3 Land/Resource Management Planning.....	23
2.3.1 Land Management Plans: The relationship with INRMP.....	23
2.3.2 Applicable Laws .....	24
2.4 Wildland Fire Partnerships.....	24
2.4.1 Internal Partnerships.....	24
2.4.2 External Partnerships:.....	24
Chapter 3. Wildland Fire Management – Fuel Treatment Operations.....	26
3.1 Fuels Treatment History.....	26
3.1.1 Prescribed Fire History .....	26
3.1.2 Mechanical/Chemical History.....	26
Table 3.1: 3 year Mastication History.....	26
Figure 3.1 Location of Prescribed Fire and Mastication Locations.....	27
3.2 Wildland Fire Fuel Management Units (FMU) and their Common Characteristics .....	27
Table 3.2 FMUs.....	28
Figure 3.2 Map of FMUs.....	28
3.2.1 Goals and Objectives .....	29
3.2.1.1 Goals and Objectives as supported by the INRMP .....	29
3.2.1.2 Wildland Fire Program Goals and Objectives .....	29
3.2.2 Plant Communities.....	30
Figure 3.3 Vegetation map.....	31
3.2.3 Landforms.....	32
3.2.4 Geology and Soils.....	32
3.2.5 Hydrology .....	32
Figure 3.4 Watershed map.....	34
3.2.6 Climate .....	35
Table 3.3 Average Monthly Climate .....	36
3.2.7 Fuel Models .....	36
Table 3.4: Description of fire model Components .....	37
Table 3.5: Fuels located on KAFB (Scott and Burgan's (2005)).....	37
3.2.8 Fire Behavior.....	38
3.2.9 Fire Weather.....	38

Table 3.6: Burning Index at the 90 <sup>th</sup> Percentile Values Developed from the Monthly Climate Summary for Albuquerque Intl Ap, New Mexico (290234): .....	39
3.3 Fuel Management Units.....	39
3.3.1 FMU 1 Grassland Communities .....	39
3.3.2 FMU 2 Pinon-Juniper woodlands Community.....	41
3.3.3 FMU 3 Ponderosa Pine Woodland Community.....	43
3.3.4 FMU 4 Urban Zone.....	45
Table 3.7 Projected Fuels Treatment for FY 21-26.....	47
3.4.3 Prescribed Fire Treatments .....	47
Table 3.8 Required Qualifications for the Kirtland WSM.....	48
3.4.3.1 Prescribed Fire Planning.....	48
3.4.3.2 Prescribed Fire Operations.....	48
3.4.3.3 Prescribed Fire Conversion to Wildfire and Required Reviews .....	49
3.4.3.4 Fire and Fuel Break System Maintenance Plan.....	49
Figure 3.5 Fire Break Map.....	50
3.5 Fuels Treatment Reporting Requirements.....	50
3.5.1 Prescribed Fire Reporting.....	50
3.5.2 Mechanical Fuels Treatments Reporting .....	51
3.6 Fuels Funding Process .....	51
3.7 Debris Burning .....	51
3.8 Requesting Additional Resources .....	52
4.0 Wildland Fire Operational Guidance and Wildfire Risk Mitigation.....	53
4.1 Wildfire Prevention.....	53
4.1.1 Wildfire History.....	53
Figure 4.1 Wildfire History .....	53
4.1.2 Wildfire Occurrence .....	54
Figure 4.2 KFD Fire Demand Zones.....	54
Table 4.1: Wildfire (WF) History and Occurrence 2006-2022 .....	55
Table 4.2 5yr average of wildfires .....	55
4.1.3 Prevention Activities .....	56
4.1.4 Mitigation Activities .....	56
4.1.4 Public Information .....	57
4.1.5 Education/Outreach Activities.....	57
4.2 Management of Wildfire (Unplanned Ignitions) .....	58

4.2.1 Preparedness.....	58
4.2.1.1 Personnel.....	58
4.2.1.2 Equipment .....	58
4.2.2 Training and Qualifications.....	58
4.2.2.1 FES Training Guidance.....	59
4.2.3 Readiness.....	59
4.2.4 Wildland Fire Aviation Management .....	60
4.2.4.1 Dip Sites.....	60
4.2.5 Wildfire Detection.....	61
4.2.5.1 Initial Report of Wildfire and Initial attack Dispatching .....	61
Figure 4.3 Dispatching Protocol .....	62
4.2.5.2 Wildland Fire Mutual Aid and/or Cross Boundary Operations.....	62
4.2.6 Wildland Fire Incident Management .....	62
4.2.6.1 Dispatching beyond Initial Attack .....	62
4.2.6.2 Delegation of Authority for the incoming IC .....	63
4.2.6.3 Resource Allocation and Prioritization.....	63
4.2.6.4 Wildfire Reporting Requirements .....	63
4.3 Wildfire Suppression Damage Repair .....	64
4.3.1 Emergency Stabilization (ES) .....	64
4.3.2 Burned Area Rehabilitation (BAER).....	64
5.0 Monitoring and Evaluation.....	65
5.1 Annual WFMP Review.....	65
5.1.1Guidance for WFMP annual review .....	65
5.2 Fire Fuels Monitoring.....	65
5.3 Non-fire Fuels Monitoring.....	66
Chapter 6 References Cited .....	68
Appendix A Delegation of Authority for the Wildland Fire Program Coordinator .....	70
Appendix B Delegation of Authority for incoming Incident Commander.....	71
Appendix C Personnel Roster .....	72
Appendix D Public Land Orders.....	75
Appendix E Cultural Checklist.....	76
Appendix F: Delegation of Authority for WFMP approval .....	80
Appendix G: Annual Signature Page.....	81



## **1.0 Introduction**

The Wildland Fire Management Plan (WFMP) is written as a supporting document for implementation of the Integrated Natural Resources Management Plan (INRMP) as mandated by the [Air Force Manual 32-7003 \(AFMAN32-7003\), Environmental Conservation, 20 April 2020](#), and in accordance with the [Sikes Act, 16 USC § 670 et seq.](#) This WFMP for Kirtland Air Force Base (KAFB) is to be used as a tool in the management of wildland fuels to reduce the risk of wildfire within the unimproved and semi-improved lands of KAFB. The purpose of this plan is to create the preparedness strategy, guidelines, and procedures for the protection of the missions of the installation; identify threats to the safety of its personnel and surrounding communities; minimize damage to adjacent private land and properties from wildfire originating within the installation; and comply to Section 3P of the AFMAN 32-7003 that requires installations with unimproved lands that present a wildfire hazard and that utilize prescribed burns as a land management tool to develop and implement a WFMP. The goals and objectives are tied to and support the installation's natural resource goals and objectives listed in the most recent INRMP. These two documents are meant to complement and work together to achieve a harmonious balance of protecting the environment and the installation's mission. This WFMP describes in detail the structure of a fire management program and the activities and methods that will be utilized by all personnel involved with wildland fire management at KAFB. In addition, the WFMP serves as guidance to achieve habitat and land management objectives by utilizing fire as a management practice. It integrates applicable regulatory requirements with ecosystem management strategies. This WFMP directly supports the installation's missions and is consistent with Air Force goal management directives.

### **1.1 Purpose of the WFMP**

The WFMP was developed to reflect the supporting coordinated approach to wildfire response and risk mitigation that includes Fire and Emergency Services (FES), installation natural resources personnel and the Air Force Wildland Fire Branch (AFWFB). This plan addresses the specific fire-related supporting goals and objectives identified in the INRMP, recommended goals and objectives of the WFMP as well as existing SOPs for wildfire response. Implementation of this WFMP will help to develop a coordinated effort to manage wildland fire that support the INRMP and mission support objectives.

This WFMP establishes policy, procedures, and responsibilities for wildland fire management, as well as outlining procedures, controls, and duties specific to Fire Suppression Operations at KAFB. Applicable federal, state, and local laws and regulations related to KAFB's wildland fire management program are discussed in Section 2 of this document.

Management actions and projects identified in this plan are intended to help the installation commander manage installation natural resources, thereby ensuring installation lands continue to support installation missions while complying with relevant environmental regulations. These actions are consistent with principles of ecosystem management and current United States Air Force (USAF)



policy on sustainable, multiple use of natural resources on USAF property.

## **1.2 General description of the WFMP area**

KAFB is located just southeast of Albuquerque, New Mexico (NM), at the foot of the west side of the Manzanita Mountains. These mountains rise to over 10,000 feet and define the eastern boundary of an area locally known as East Mesa. KAFB encompasses approximately 51,585 acres of the East Mesa with elevations ranging from 5,200 to almost 8,000 feet above mean sea level. Surrounding land adjacent to the installation include the Cibola National Forest (CNF) to the northeast and east, the Pueblo of Isleta to the south, and residential and business areas of the city of Albuquerque to the west and north. The airfield complex serving KAFB is shared with the Albuquerque International Sunport (Sunport), located adjacent to the northwest corner of the installation. Airfield operations and aircraft support facilities are concentrated in the airfield complex area. The intensive development at the installation (e.g., administrative, housing, medical, and commercial services) is located east of the airfield complex, also in the northwest corner of the installation. The installation golf course and landfill are located southeast of the developed area. The remaining areas of the installation (approximately 80 percent of the installation land area) are largely dedicated to training and operational facilities.

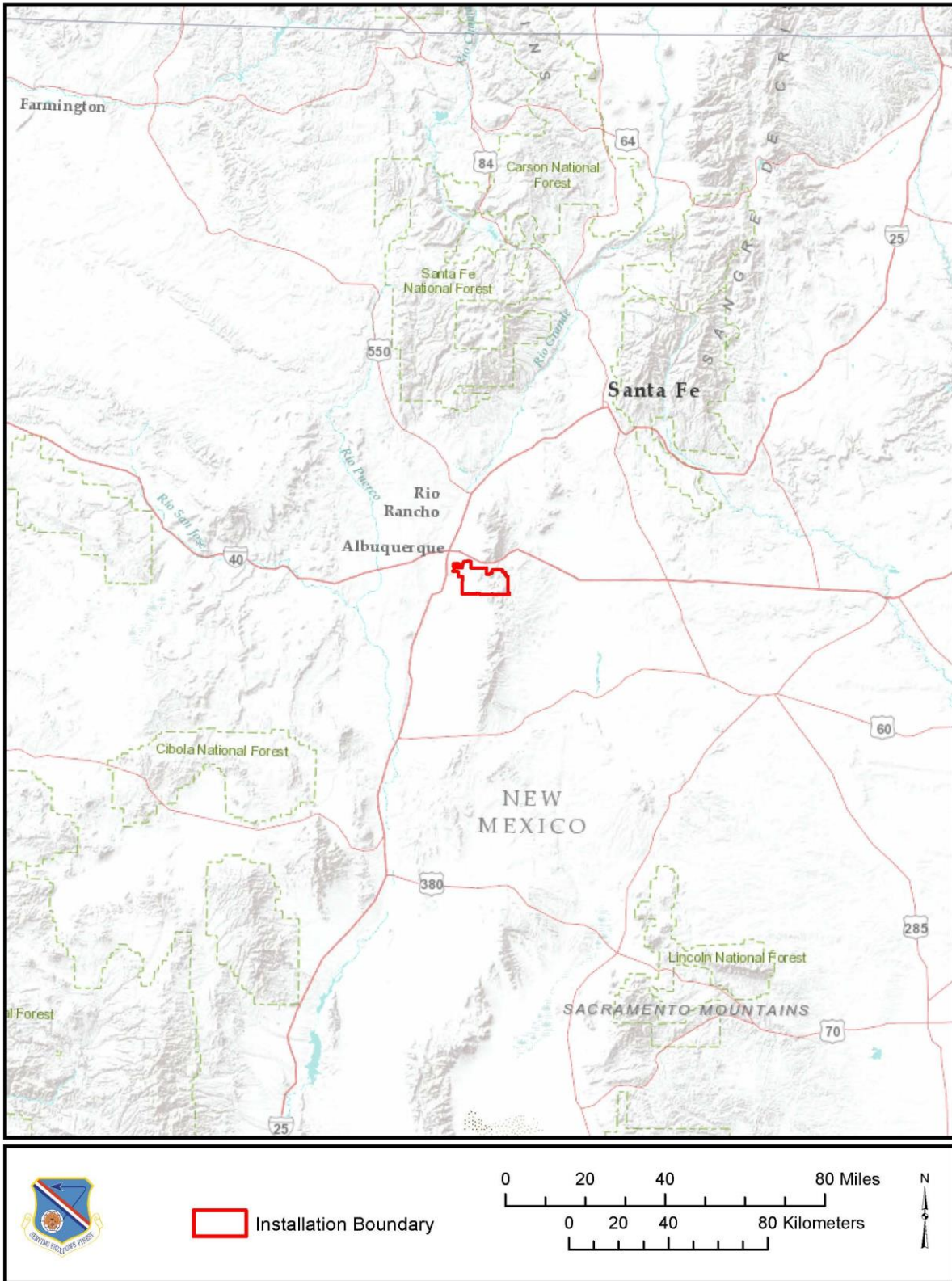
The entire Withdrawn Area has been declared off limits to installation personnel, contractors, visitors, guests, and the public due to safety concerns over UXO, dangerous fuel conditions, and security concerns. Access will be granted on a case-by-case basis for personnel with specific mission requirements in coordination with the appropriate office(s).

All areas south of the intersection of Pennsylvania and Lovelace Roads (excluding the Withdrawn Area described above) have been designated by the Installation Commander as official use only areas. Land use areas with their general description can be found in [Table 1.1](#). The areas covered in this WFMP can be found in [Table 1.2](#). These areas include the grasslands and the withdrawn areas. A vicinity map can be found on [Figure 1.1](#).

**Table 1.1 KAFB Land Use Categories**

Area	Category	Size (Acres)	General Description
KAFB (36,787 acres)	Improved	1,980	Athletic areas, housing areas, commercial and industrial areas; administrative areas, golf course, riding stables, Fam camp, active landfill, storm water catchment basin.
	Semi-improved	2,425	Dirt roads and low maintenance administrative areas, storage areas, heliport, safety zones, training sites and obstacle course, burn pits, road sides, closed landfill cells.
	Unimproved	32,382	Areas containing native or naturalized vegetation with no roads or other structures present.
Withdrawn Area (15,891 acres)	Improved	65	Buildings and paved areas.
	Semi-improved	305	Areas around buildings, and graded areas such as the Small Arms Range East and dirt roads.
	Unimproved	15,521	Areas containing native or naturalized vegetation with no roads or other structures present.

Figure 1.1 Vicinity Map



**Table 1.2: areas covered within WFMP**

Areas Covered within the WFMP	Total Acres (Treatable Acres)
Kirtland AFB	44,052

**1.2.1 General Description of any Geographically Separated Unit (GSU) owned by the Air Force (AF) and used by the installation**

There are no GSU owned by Kirtland AFB.

**1.2.2 General Description of any GSU leased by the AF and used by the installation.**

There are no leased lands. However there are outsourced properties that are used by BLM and USFS. The Kirtland Fire Department (KFD) Fire and Emergency Services (FES) is responsible for wildfire suppression and fuel management.

**Department of Energy (DOE)** owns 7,533 acres at KAFB making the total acreage 51,585. The majority of DOE activities occur on their own fee simple land and public lands specifically withdrawn for DOE activities. DOE is also a tenant on parcels permitted from KAFB.

**The DOE/National Nuclear Security Administration (NNSA)** Albuquerque Complex occupies approximately 27 acres of land on KAFB. The site houses approximately 1,100 DOE/NNSA federal and contractor employees. Employees perform work in support of various programs within DOE and NNSA.

**1.3 General Description of the DoD Mission**

The 377 Air Base Wing (ABW) is the host organization at KAFB and was activated under the Air Force Materiel Command (AFMC) on January 1, 1993. In October 2015, the 377 ABW realigned under Air Force Global StrikeCommand (AFGSC). KAFB is the sixth largest installation in the USAF, and includes 100 critical mission partner organizations. KAFB maintains strategic operational, management, research and development, testing, and training missions as part of the national defense strategy. The 377 ABW mission is to conduct special weapon operations; organize, train, equip and deploy expeditionary forces; and operate, secure, and support KAFB. The air training corridors have been established for the variety of aircraft at KAFB and therefore cover a vast region of New Mexico as well as other neighboring states, including Arizona and Colorado. KAFB is one of the few USAF installations with low-level and tactical night flight training. Based on the surroundings, KAFB offers relatively dark sky conditions for nighttime training maneuvers to be conducted. KAFB property limits encompass 51,585 acres of land, with a majority of the southern regions of the installation currently being used for testing and training missions. The Sunport shares airfield infrastructure with KAFB and daily flying missions generally do not affect one another. The 377 ABW provides operating support for over 100 associate units in over 2,000 buildings. The 377 ABW also provides quality and professional support services to the KAFB community, active duty, retirees, dependents, and civilians with services such as security, medical, housing, fire protection, and transportation support. In accordance with (IAW) AFI 32-2001, Fire Emergency Services (FES) Program, para 2.1.2 Non-Core

Services, “Installation commanders may approve non-core services not included in paragraph 2.1.1 utilizing existing resources. Specifically, wildland firefighting, technical rescue, offensive HazMat operations and other emergency operations to manage uncommon local risks may be assigned to the flight.” The Fire Chief presented a non-core services risk management plan to adopt wildfire fighting a primary FES mission to support the Installation and was approved by the 377 ABW/CC.

### **1.3.1 General Discussion of Wildland Fire Impacts to the DoD Mission**

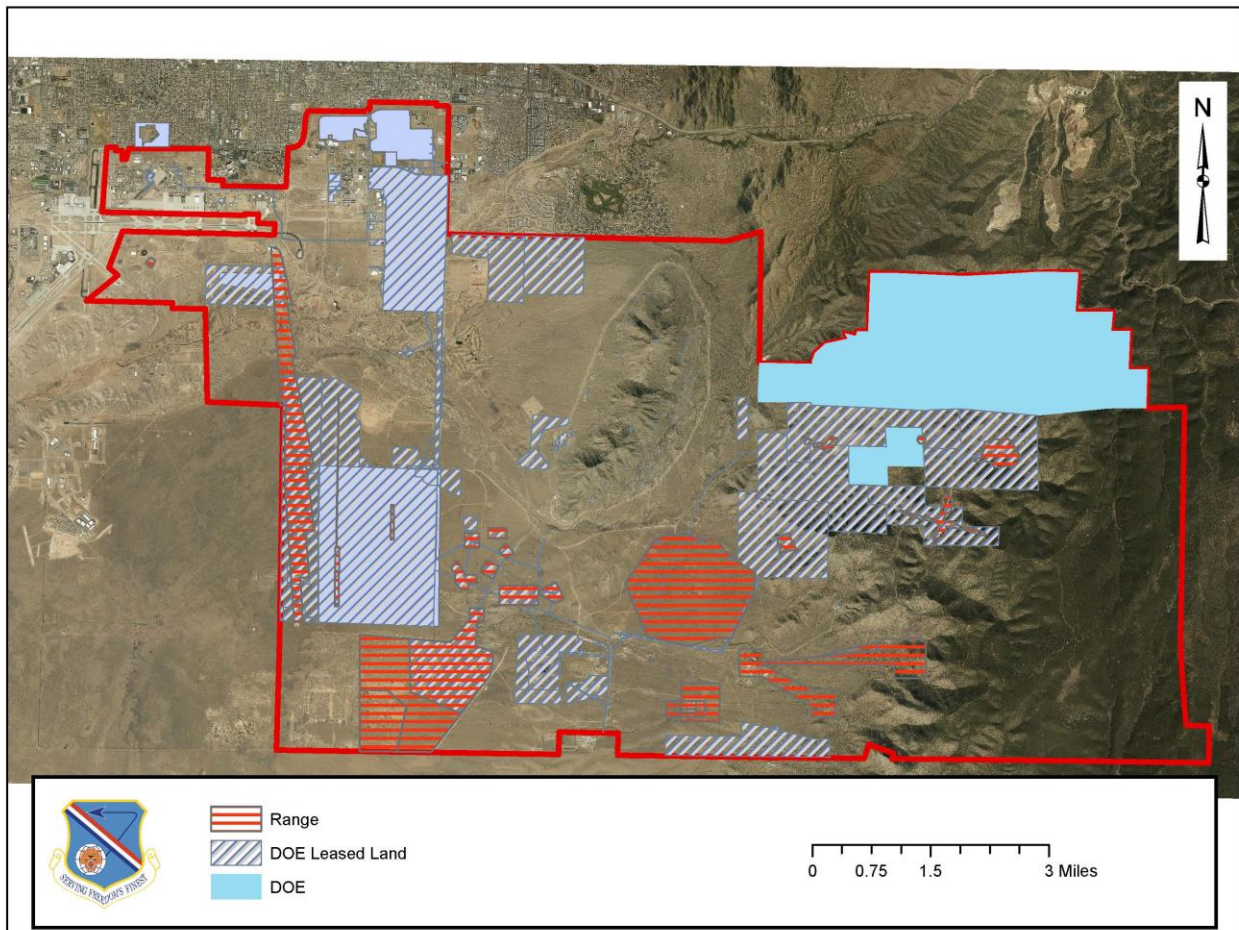
The installation has been divided into four Fuel Management Units (FMUs), which are discussed in more detail in Chapter 3. Operations conducted in the four FMUs vary widely and include officework, outdoor and indoor experimentation, field training exercises, flying operations, and recreation use. Potential short-term impacts include denial of entry/loss of use due to emergency operations smoke impacts on visually sensitive experiments, and the postponement or cancellation of flight operations. Long-term impacts include significant air quality and health issues for sensitive populations in and around the city of Albuquerque and Bernalillo County due to the geography and the potential for economic impacts from delayed/canceled flights at the Sunport. Damage to or loss of habitat for several species of special interest located on the installation is also of concern.

### **1.3.2 General Discussion of DoD Mission Impacts to Wildland Fire Activities**

Mission partners currently engage in cutting edge, high energy weapons development; design and testing of high power lasers; and the development of exotic compounds and fuels. SNL conducts research on the development and disposal of weapons, advanced computer science research, research and development of energy systems, development of arms control and nonproliferation technologies, computer technologies, and other scientific research. Some of the missions at KAFB require munitions firing and explosives testing. All of these operations identified above, involve complex processes and experiments that pose significant risks to firefighters; therefore can create significant delays in suppression operations while those areas are made safe for firefighter entry. Specific areas on KAFB are exclusively designated for conducting explosive operations for mission partners. To varying degrees, unexploded ordnance (UXO) has been found in all four FMUs; with the majority being found in the southeastern portions of FMU 1, throughout FMUs 2 and 3, and in isolated locations in FMU 4. They are usually concentrated around current or historical test ranges and impact areas ([Figure 1.2](#)). However, not all of the historical ranges have been adequately located or mapped and the unexpected discovery of UXOs must always be considered. Firefighters receive annual training in UXO recognition, but the unexpected location of UXOs can force abrupt changes in firefighting tactics and plans and increase the number of acres burned.



**Figure 1.2: Test Ranges**



## **1.4 Significant Values to Protect**

### **1.4.1 Personnel Safety**

The primary concern during any fire is human safety and protection. Firefighters on the line, in the air, and at the command post must all be properly trained, outfitted, and informed of all threats and safety risks. Additional personnel at risk from a wildfire include contractors working on the range, as well as recreationists present at public use areas of the range.

### **1.4.2 Natural Resources**

The installation is also home to several state and federal species of special interest and several that are designated as sensitive by the New Mexico Department of Game and Fish (NMDGF). Natural resources inventories are an ongoing project of the INRMP and this plan supports the restoration of habitat to historical norms to improve the suitability of habitat for all natural resources located on KAFB.

### **1.4.3 Cultural Resources**

Section 110 of the National Historic Preservation Act (NHPA) requires the Air Force to complete an inventory of historic properties located on its land (36 Code of Federal Regulations 60, 63, 78, 79, and 800) and AFMAN 32-7003 requires the development and implementation of an Integrated Cultural Resources Management Plan (ICRMP) to manage these resources. The entire installation has been surveyed via a series of cultural resource studies ranging from the 1990s to the present. There are 661 archaeological sites located on KAFB land, all of which receive some form of consideration. Of the 661 archaeological sites on KAFB, 251 are eligible for the National Register of Historic Places, 237 are not eligible and therefore are not significant resources for KAFB to protect, and 173 are currently being evaluated for eligibility. Prehistoric sites dating from the Paleo-Indian Period to the Pueblo Period have been recorded. It is possible that not all cultural resources have been identified and that subsurface construction or training activities may inadvertently disturb such resources. It is also possible that natural resources management activities such as forest management (e.g., construction and maintenance of brush control and other forms of fire threat reduction) or revegetation of disturbed areas may reveal previously unidentified cultural resources; such activities are covered under an inadvertent discovery clause.

Both Natural and Cultural Resources must be considered during any wildland fire operations. The NR and CR Managers will be notified if disturbance to sensitive natural resources areas and any cultural sites occur. A Cultural Resource checklist can be found in [Appendix E](#).

### **1.5 Wildland Fire Roles and Responsibilities**

A personnel roster can be found in [Appendix C](#). Organizational Chart can be found in [Figure 1.4](#).

#### **1.5.1 Base Civil Engineer (BCE)/Fire Marshall**

- As the chief executive within the installation, the BCE is responsible to the 377 ABW/CC for all fire management activities within the installation.
- Manages all operational and emergency fire management program accounts. Ensures that funds are both allocated and requested to maintain the fire management program described in this plan.
- Approves and terminates local and zone fire management agreements, if so designated.
- If so designated, signs delegation of authority for Incident Management Teams (IMTs) for the Wing Commander.
- Reviews and approves the WFMP. The Delegation of Authority is in [Appendix F](#).
- Serves as the Agency Administrator.

#### **1.5.2 Wildland Fire Program Coordinator (WFPC)**

The WFPC is a shared responsibility at KAFB by the FES Chief and the Environmental Section Chief. The Delegation of Authority (DoA) for the WFPC can be found in [Appendix A](#). This DoA becomes current with the approval of this WFMP by the Base Civil Engineer.

- Coordinates all wildfire prevention/pre-suppression activities and serves as or appoints burn boss/IC for prescribed fires.
- Requests funding to support all wildfire prevention, pre-suppression, suppression, and area rehabilitation activities and equipment.
- Works with the Wildland Support Module to identify priority treatment areas.
- Prepares or participates in the review of all installation prescribed fire plans, wildland fire assessments Wildland Fire decision Support System and individual fire reports.
- Alternate liaison with fire management staffs of regional and neighboring land management agencies in the absence of the KFD-FMO.
- Locates, coordinates, and funds training opportunities for assigned fire personnel to obtain additional certifications and experience necessary to support the execution of this plan.
- Maintains fire weather records collected on the installation and ensures that daily fire weather data is entered into the Wildfire Incident Management System (WIMS) when implemented. Interprets NFDRS outputs, and advises the Fire Chief and Albuquerque Zone of high, very high, or extreme fire danger.
- Provides recommendations to the Range Management Office (RMO) for the implementation of fire restrictions based on NFDRS ratings.
- Reviews mutual aid/mutual response agreements for the Fire Chief's signature.
- When needed, ensures that post-fire reviews are completed on a timely basis for all suppression fires, prescribed fires, and wildland fire for multiple objectives.
- Reviews and updates this fire management plan and its appendices, including installation pre-attack plans, on an annual basis to maintain a professional fire management program that is consistent with current technology, DoD, USAF, and National Wildland Coordinating Group (NWCG) policy.
- Ensures the implementation of the installation's Fire Management Program as detailed in this plan.
- Ensures that required project level interagency consultation is initiated and completed.
- Ensures that sensitive resources are being protected in accordance with current laws, rules, and regulations.
- Assists with the on installation procurement of equipment and personnel for all facets of fire management including pre-suppression, suppression, wildland fire use monitoring, management ignited prescribed fires, traffic control, etc.
- Assists in the coordination of fire restrictions on the installation that may be imposed during prolonged periods of very high or extreme fire danger.
- Oversees and performs all aspects of prescribed and wildland fire monitoring.
- Coordinates all wildland fire and prescribed fire related research with other interagency officials.
- Collects or directs the collection and processing of fuels and fire data for inclusion into GIS.



- Provides fire prevention information and guidance, and works with BCE and Fire Chief to provide interpretation, education, and dissemination to the installation populace using appropriate communication channels.
- In coordination with KFD-FMO determines the need for, scope of and implementation of any Emergency Stabilization (ES) or Burned Area Rehabilitation (BAR) projects.
- As a member of the WFWG, participates in the review of all prescribed fire plans.
- In the absence of the KFD-FMO, attends monthly local East Mountain Interagency Fire Protection Association meetings or other meetings as assigned.
- With the KFD-FMO, attends Albuquerque Zone Board and pre-season aviation coordination meetings.
- Serves as the alternate point of contact for Albuquerque Tanker Base.
- Attends meetings and training sessions of the New Mexico Prescribed Fire Council.
- In the absence of the KFD-FMO, attends meetings with cooperator and mutual aid agencies as needed to plan, coordinate, exercise, and implement joint response plans.
- Attends other meetings, training, or exercises as assigned.

### **1.5.3 Environmental Section Chief**

- Coordinates between the BCE and WFPC to procure funding for all wildfire prevention, pre-suppression, suppression, and area rehabilitation activities and equipment.
- Acts as a member of the multi-disciplinary team for fire planning.
- Reviews all fuels management projects for compliance with applicable laws, rules, and regulations.
- Responsible for ensuring coordination and synchronization between the WFMP and other installation land, cultural, and natural resources management plans.
- Acts as a member of the WFWG, participates in the review of all prescribed fire plans

### **1.5.4 FES Fire Chief (FC)**

- The FC is responsible for ensuring wildfire readiness and response for the installation
- Ensures that the WFMP accurately reflects FES's SOPs, roles and responsibilities.
- For FES personnel - will assist with requests for Incident Qualification Cards for installation assets as specified in the WFMP. Initiate Position Task Books for installation personnel conducting NWCG training.

### **1.5.5 KFD Fire Management Officer (KFD-FMO)**

- Oversees all wildland fire suppression activities on the installation.
- Assumes incident command of wildfire incidents, if so requested, up to level of certification.
- Provides recommendations to the Fire Chief on incident complexity and the ordering of IMTs for larger fires.
- Installation liaison to all IMTs for installation or unified command incidents.
- As soon as practical informs the WFPC of the activation of an IMT.

- Provides liaison with fire management staffs of regional and neighboring land management agencies.
- Maintains records of all wildland fires and ensures transmission of these records to approved DoD fire/incident management computer record keeping systems.
- Maintains inventories of all installation wildland fire-related resources and ensures that all firefighters are fully qualified for duties assigned.
- Provides annual recertification training and work capacity test administration.
- Coordinates with and provides information to the Air Force Wildland Fire Branch (AFWFB) for USAF level “red cards” and work capacity test (WCT) tracking when implemented.
- Recommends and reviews mutual aid/ mutual response agreements for the Fire Chief’s signature.
- Coordinates with WFPC on all pre-suppression and prescribed fire activities.
- Reviews and coordinates with WFPC on all ES or BAR projects.
- Acts as team member of the WFWG in coordination with the interagency cooperators on the multidisciplinary team for the purpose of fire planning.
- Reviews all prescribed fire plans.
- Recommends additions or updates for this plan.
- Attends meetings and trainings of the East Mountain Interagency Fire Protection Association (EMIFPA), Albuquerque Zone Board, Albuquerque Zone FMO meetings, pre-season aviation coordination meetings, and the New Mexico Prescribed Fire Council.
- Maintains collaboration and serves as point of contact for Albuquerque Tanker Base.
- Attends meetings with cooperator and mutual aid agencies as needed to plan, coordinate, exercise, and implement joint response plans.
- Attends other meetings, training, or exercises as assigned.

### **1.5.6 Natural Resources Manager (NRM)**

The NRM should be involved with development of the WFMP to ensure that all planned actions in the WFMP that could affect natural resources are in line with, and directly supportive of the Installations INRMP. Related to this, the NRM should coordinate to ensure that the planned actions in the WFMP are covered under the NEPA process for the INRMP.

### **1.5.7 Incident Commander (IC)**

- All wildfires occurring on an Air Force installation and staffed with Air Force employees will be supervised by a qualified Incident Commander (IC). If a qualified IC is not available, one will be ordered through the local dispatch center.
- The IC is a single individual responsible to the installation for all incident activities, including the development of incident management strategies and tactics, and the ordering, deployment, and release of resources. IC responsibilities include:
  - Provide a size-up to dispatch as soon as possible upon arrival on scene. A size-up checklist is

in the [Interagency Incident Response Pocket Guide \(IRPG\)](#).

- Complete and file an incident report with the installation dispatch center.
- Use guidance in this WFMP. If from a cooperating agency, secure a Delegation of Authority to implement the selected suppression response and manage an organization to implement effective strategies and tactics. Minimize suppression impacts where possible without reducing the effectiveness of the actions being undertaken.
- Determine resource needs and order as needed through local dispatch.
- Ensure all resources assigned and those incoming receive a briefing. Document these briefings. Refer to the Briefing Checklist in the IRPG.
- Continually re-assess incident complexity using the checklist in the IRPG. When a more qualified IC is needed, inform dispatch and delegated unit administrator and place the order for a higher level IC.
- Depending on incident complexity, additional responsibilities for the IC may apply. Utilize AFI, National Wildfire Coordination Group (NWCG) [Fireline Handbook](#) and Wildland Fire Branch for more detailed description of IC responsibilities.
- All resources, including mutual aid resources, will report to the IC (in person or by radio) to receive an incident briefing prior to tactical assignment deployment.
- All wildfires must be investigated to determine fire cause. Document findings on [ICS-214](#), determine if negligence or criminal intent were factors. If the IC suspects a fire cause is suspicious, a qualified wildland fire investigator can be ordered. The point of origin should be protected for investigation purposes.

### **1.5.8 Wildland Support Modules (WSM)**

The AFWFB will primarily use the Wildland Support Modules (WSM) to execute validated wildland fire requirements. The WSM will plan and implement all prescribed fire on AF property. This will include the development of all required Prescribed Fire Plans. The WSM possesses the qualifications to supplement and support on-installation wildfire suppression activity if requested by the FES Chief and available. The WSM stationed at Kirtland is also responsible for Cannon-Melrose and Holloman AFB. Qualifications for this module can be found in [Table 3.8](#).

Other responsibilities include:

- Reduce wildfire threats to Air Force mission assets and personnel through fuel reduction treatments.
- Provide guidance for execution of wildfire suppression, mitigation, prescribed fire, and hazardous fuel reduction on Air Force installations.
- Provide strategic, logistical, and “boots on the ground” wildland fire support to ensure military preparedness.

- Leverage interagency partnerships and technical expertise for long-term cost savings to the Air Force.
- Train Air Force personnel to nationally recognized NWCG standards to prevent injury and loss of life and build response capability.
- Collect, analyze, and communicate key wildland fire data to demonstrate ecological benefits and risk to mission.

[Figure 1.3](#) shows the location of the AFWFB's WSMs and their Area of Responsibility (AOR).

**Figure 1.3 WSM AOR**



**1.5.9 Installation Commander**

The Installation Commander or their designee is responsible appointing the Wildland Fire Program Coordinator and for reviewing and approving this WFMP. The Commander has assigned a designee to review and approve this WFMP. The DoA can be found in [Appendix F](#).

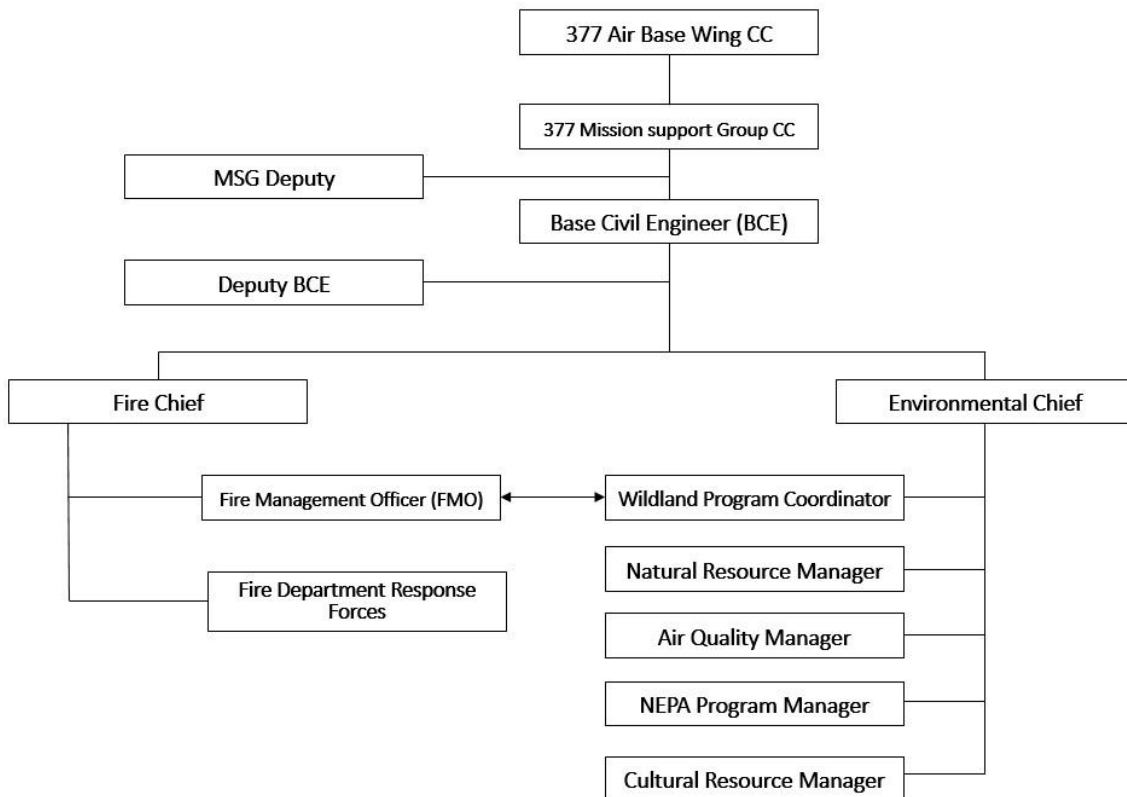
**1.5.10 Air Force Wildland Fire Branch (AFWFB)**

Roles and Responsibilities include:

- Provide oversight, technical direction, and guidance for wildland fire management planning and implementation for the Air Force. Advocate for resources required to implement the Air Force wildland fire program.
- Develop plans and programs to facilitate Air Force wildland fire policy execution.
- Determine the need for an installation Wildland Fire Management Plan (WFMP) as a component plan of the INRMP, provide guidance for WFMP content, and develop WFMP in coordination with the installation.

- Establish, with AFCEC/CXF inputs, Regional Fire Management Officer (RFMO) positions to implement installation WFMPs and support wildland fire operations in their respective regions.
- Establish strategically located Wildland Support Modules (WSMs) at installations and ranges with the highest wildfire risk and most frequent wildfire activity. WSMs shall operate under the installation commander's control. The RFMO and WSM are to support wildland fire operations in their respective regions.
- Manage a system for tracking and reporting of wildfires, prescribed fire, and mechanical/chemical fuel reduction activities that occur on lands under Air Force jurisdiction.
- Administer wildland fire education and training by issuing, certifying, maintaining and tracking NWCG certification and qualifications for all Air Force personnel, including military, contractors, cooperators and volunteers.
- Serve as the Air Force agency representative on the interagency Incident Qualification and Certification System (IQCS) Change Management Board.
- Manage AFCEC/CZOF wildland fire vehicle and equipment assets. Review and advocate for installation-level requirements for wildland vehicles and equipment.
- Provide and manage contracts, interagency agreements, and cooperative agreements with AFCEC/CXF for wildland fire program assistance on behalf of, and for use by, Air Force installations.

**Figure 1.4 Organizational Chart for Kirtland AFB**



**1.6 Effects of Climate Change on Biotic Composition and Impacts to Wildland Fire Management.**

Overall the effects of climate change are not fully understood; therefore it is difficult to predict the exact impacts to KAFB’s natural resources or wildland fire responses. However, annual increases in the size, intensity, and complexity of wildland fires in the west continue to lead to larger and more destructive fires. It can be reasonably concluded that fires on KAFB will also follow this trend and that fires that do occur may have the potential to disrupt the environment and impact natural resources on both a micro and macro level.

**2. Policy, Land Management Planning and Partnership**

**2.1 USAF Wildland Fire Policy.**

The following governing policies establish the accepted professional standards for the Air Force wildland fire program, and are the basis for training and certification by the Air Force Civil Engineer Center Environmental Management Directorate, Operations Division, Wildland Fire Branch (AFCEC/CZOF) and Air Force Civil Engineer Center, Readiness Directorate, Fire Emergency Services (AFCEC/CXF).

[AFMAN 32-7003 Section 3P Environmental Conservation 20 Apr 20](#)

[AFI 32-2001 Chapter 3](#)

### Federal Wildland Fire Management Policy

Is the primary wildland fire policy document for federal agencies, and establishes the guiding principles, policies and implementation actions for wildland fire management on Department of Defense (DoD) lands.

[The National Wildfire Coordinating Group \(NWCG\), Wildland Fire Qualification Subsystem Guide \(Publication Management System \(PMS\) 310-1/ National Fire Equipment System \(NFES\) 1414\)](#)

### Federal Wildland Fire Qualification Supplement

[National Fire Protection Association \(NFPA\) Standard 295, Standard for Wildfire Control](#)

[NFPA Standard 1051, Standard for Wildland Firefighter Professional Qualifications](#)

[NFPA Standard 1143, Standard for Wildland Fire Management](#)

[NFPA Standard 1561, Standard on Emergency Services Incident Management System and Command Safety](#)

[NFPA Standard 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments](#)

[NFPA Standard 1144, Standard for Protection of Life and Property from Wildfire](#)

## **2.2 Installation Specific Fire Management Policy**

Installation specific firefighting policy is located in the Kirtland AFB Fire Emergency Services (KFD) Standard Operating Procedures (SOP), Master Management Plan (MMP), and Standards of Cover.

## **2.3 Land/Resource Management Planning.**

### **2.3.1 Land Management Plans: The relationship with INRMP**

The goals and supporting objectives listed in the KAFB INRMP that pertain to the operation of the wildfire suppression program, or to the application of prescribed fire to KAFB habitat, are supported by the WFMP. The WFMP should be viewed as a companion document to the INRMP. Implementation of the WFMP will contribute to attainment of INRMP goals and objectives and vice versa. The WFMP for KAFB is a detailed program of action to carry out fire management policies and objectives. Broad resource management policies for KAFB can be found in the INRMP. These policies are refined into specific resource management goals and objectives in the INRMP. The INRMP further identifies the specific management objective of using fire as a tool in restoring and maintaining the natural environment of the installation. As a companion document to the INRMP, the WFMP describes specific wildland fire management strategies for KAFB. Fire once played an important role in the functioning of the ecosystems present on KAFB. Naturally occurring fires have



helped shape the landscape over time and maintain the diversity of species. Many plant and wildlife species have evolved under the influence of fire and, in some cases, depend on fire for their continued existence. To remove all fires from an ecosystem deprives that system of a powerful and dynamic natural force.

The ultimate goal of wildland fire management for KAFB is to carry out the USAF mission; ensure the safety of USAF personnel, private citizens, valuable public and private assets; and restore and maintain fire in the ecosystem where possible through prescribed fires.

### **2.3.2 Applicable Laws**

- The National Environmental Policy Act (NEPA) 1969.
- The Endangered Species Act of 1973 (ESA).
- The National Historic Preservation Act of 1966 (NHPA).
- The Archaeological Resources Protection Act of 1979 (ARPA).
- The Clean Water Act of 1963.
- The Clean Air Act of 1972.
- Air Force Form 813 Process.

## **2.4 Wildland Fire Partnerships**

### **2.4.1 Internal Partnerships**

The WFMP was developed as a collaborative effort between KFD as lead and Civil, Environmental and Infrastructure Engineering (CEIEC) providing data. Oversight and coordination of the wildland fire management program on KAFB is coordinated by the Wildland Fire Working Group (WFWG) and is comprised of the following positions:

- Base Civil Engineer (BCE)/Fire Marshall (Chair)
- Installation Fire Chief
- Environmental Chief
- Natural Resources Manager
- Wildland Fire Program Coordinator
- KFD-Fire Management Officer (FMO)

### **2.4.2 External Partnerships:**

DoD installations are encouraged to develop regional partnerships for wildland fire management support by means of reciprocal agreements with federal, state, local, and private entities to share human, logistical, and operational resources. Emergency assistance and mutual aid agreements are governed through applicable guidelines.

- US Forest Service
- AFWFB
- Pueblo of Isleta
- US Fish and Wildlife Services
- Local Fire Departments: KAFB holds MOU with the following departments:

- Albuquerque Fire Department
- Bernalillo County Fire Department,
- SandovalCounty Fire Department
- Valencia County Fire Department
- Village of Tijeras Fire Department
- USFS CNF Sandia Ranger

### Chapter 3. Wildland Fire Management – Fuel Treatment Operations

#### 3.1 Fuels Treatment History

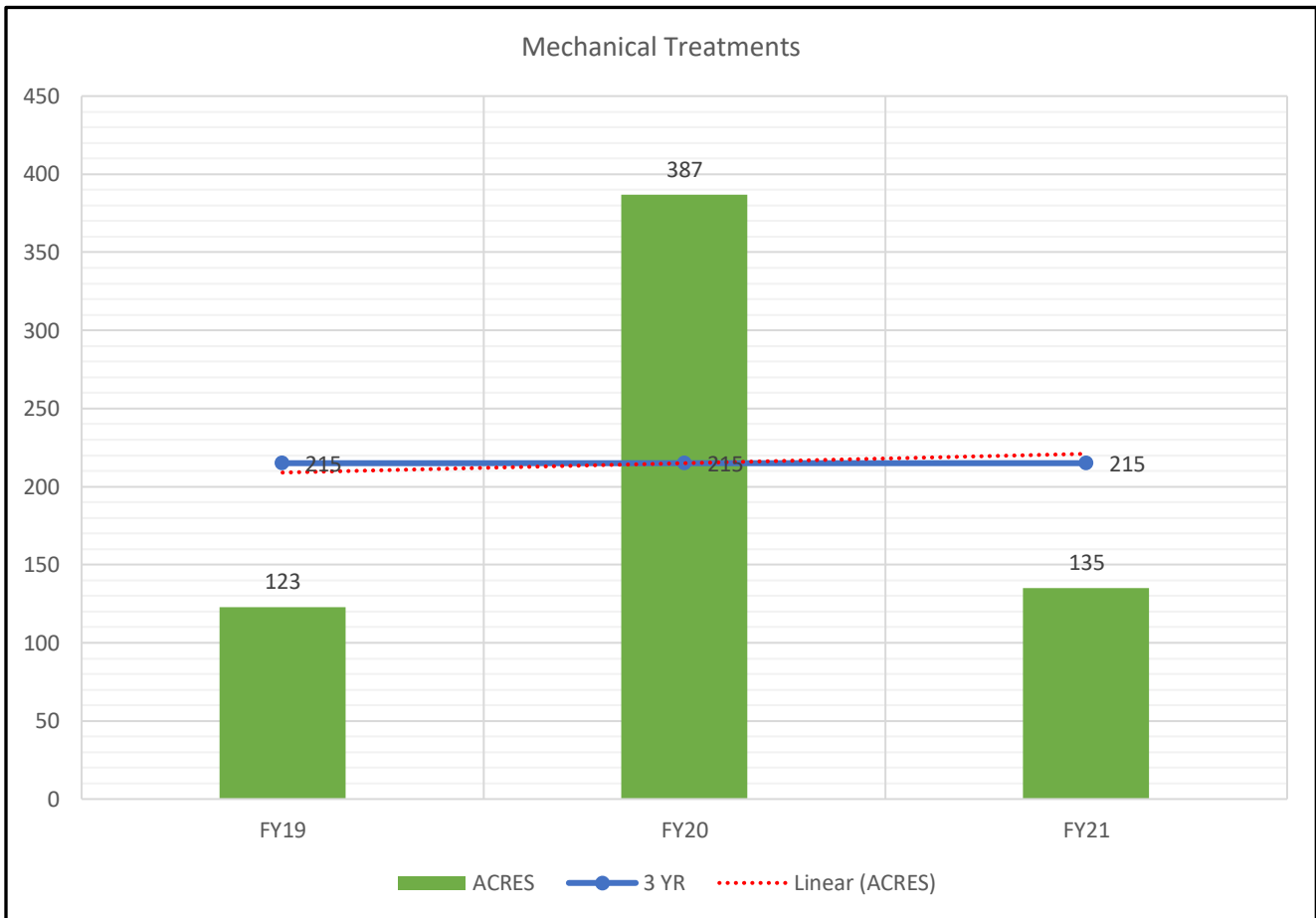
##### 3.1.1 Prescribed Fire History

There has been no prescribed fire activity at Kirtland AFB since the 1970s.

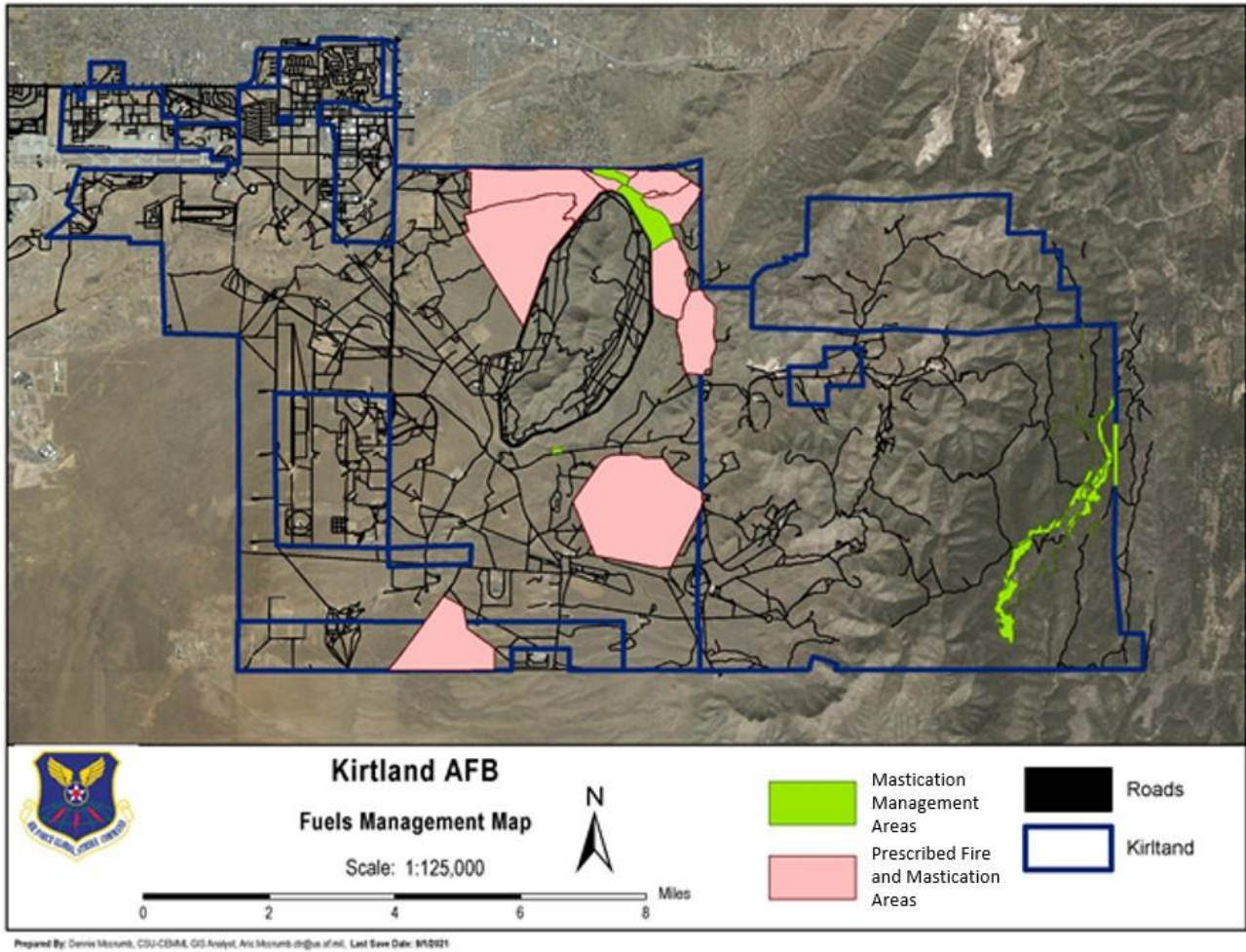
##### 3.1.2 Mechanical/Chemical History

Mechanical fuels treatments are done at Kirtland AFB through mastication efforts. A 3yr history table can be found in Table 3.1. Location of these areas can be found in [Figure 3.1](#).

**Table 3.1: 3 year Mastication History**



**Figure 3.1 Location of Prescribed Fire and Mastication Locations**



### 3.2 Wildland Fire Fuel Management Units (FMU) and their Common Characteristics

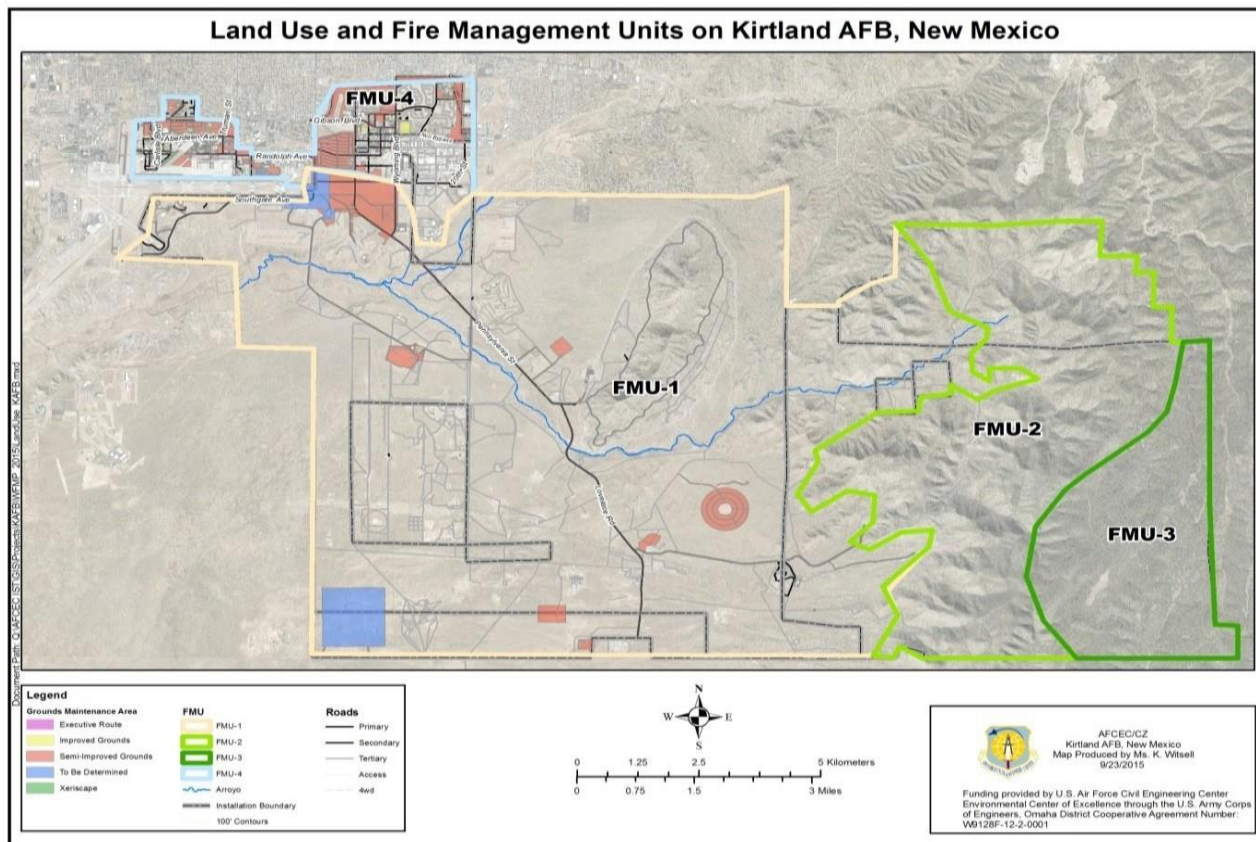
An FMU is a land management area definable by objectives, management constraints, topographic features, access, values to protect, political boundaries, fuel types, major fire regime groups, etc., that set it apart from the characteristics of an adjacent FMU. An FMU may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives. The primary purpose of developing FMUs in wildland fire management planning is to assist in organizing information in complex landscapes. The process of creating FMUs divides the landscape into smaller geographic areas to more easily describe physical, biological, and social characteristics, and depict associated planning guidance based on these characteristics. The information contained in these sections maybe used for incident decision support KAFB has 4 FMUs as depicted in [Figure 3.2](#):

Fuel type is described using Scott and Burgan's (2005) Standard Fire Behavior Fuel Model (FBFM). A table of the fuels found in the FMUs can be found in Table 3.2. A description of these fuels can be found in Table 3.5.

**Table 3.2 FMUs**

FMU Name	Fuel Type	Response to Wildfire	Acres (Burnable)
FMU 1	GR2, GS2, GR1	Structure protections "box and burn" Full suppression	32,392
FMU 2	SH4, SH5, GR2	Structure protections "box and burn" wildfire use	10,129
FMU 3	TL8, TU5, GR2	"box and burn" wildfire use	4,511
FMU 4 – Urban Zone	NB1, GR1, GS2	Structure Protection Full suppression	3,081

**Figure 3.2 Map of FMUs**



### 3.2.1 Goals and Objectives

These are goals and objectives identified within the INRMP as well as recommended goals and objectives stated within this WFMP.

#### 3.2.1.1 Goals and Objectives as supported by the INRMP

- **Goal 1:** Comply with the Sikes Act Improvement Act of 1997, AFMAN 32-7003, *Environmental Conservation*, as revised; Memoranda of Agreement concerning migratory birds and use of United States Geological Survey (USGS) land; and USAF and USFS guidelines for managing natural resources, as well as other environmental rules, regulations, laws and procedures.
- **Goal 2:** Manage and protect natural resources in a manner that results in no net loss of the installation missions and operational capability at KAFB.
- **Goal 3:** Conserve and enhance wildlife habitats to maintain and improve the sustainability and natural diversity of ecosystems on KAFB.
- **Goal 4:** Identify, conserve, and manage, if present, threatened, endangered, and candidate species listed for regulatory protection by federal and state agencies, in addition to critical habitat and wetlands.
- **Goal 5:** Manage wildlife habitat and populations to reduce the potential for bird and wildlife strikes during flying operations.
- **Goal 6:** Increase the awareness, appreciation, and conservation of natural resources on KAFB.
- **Goal 7:** Manage pests in a manner that reduces impacts to natural resources, watersheds, landscapes, and the base mission.
- **Goal 8:** Incorporate existing and future Geographic Information Systems (GIS) information into a database that supports both mission and project planning and Natural Resources Management Program activities.
- **Goal 9:** Support resource conservation through integrated land and ground maintenance programs and plan, when and where possible.
- **Goal 10:** Provide opportunities for enjoyment and appreciation of the natural resources at the installation.

#### 3.2.1.2 Wildland Fire Program Goals and Objectives

- **Goal 1:** Develop and maintain a robust wildland fire response and training/certification program for FES employees and other designated personnel to ensure the necessary skills and equipment to safely and efficiently execute the components of this plan.

- **Objective 1A:** Achieve a program where firefighters and public safety are the highest priorities in every fire management activity (supports AFMAN 32-7003, section 3.80.3.9).
  - **Objective 1B:** Partner with stakeholder agencies and other federal agencies to use the wildland fire program as a tool to upgrade or receive additional wildland certifications for KFD personnel so that they may be better able to execute the plan.
  - **Objective 1C:** Whenever needed, use minimum impact suppression techniques (MIST) strategies that would minimize damage to Kirtland’s natural and cultural resources (supports INRMP goals 1, 2, 3, 6, and 9).
- **Goal 2:** Fund the Installation’s wildland lifecycle vehicle and equipment replacement program to effectively sustain, mitigate, prevent, respond to, and recover from wildland fires.
    - **Objective 2A:** Purchase new personal protective equipment (PPE) as necessary to comply with changes and updates in National Fire Protection Association (NFPA) 1977 *Standard on Protective Clothing and Equipment for Wildland Fire Fighting or National Wildland Coordination Group (NWCG) standards.*
    - **Objective 2B:** Obtain specialized equipment that will allow more efficient use of personnel and enable the use of a wide range of fire/fuels management response options.
    - **Objective 2C:** Identify equipment and processes that will enhance the ability to use GIS to make decisions about existing and future fuels and habitat conditions (supports INRMP goals 1, 2, 3, 4, 5, 8, and 9).
  - **Goal 3:** Develop and then implement a robust collaborative fuels management program that reduces the overall fire risk for the installation and surrounding communities, improves and restores natural habitat, and removes invasive species from the landscape.
    - **Objective 3A:** The WSM will implement the goals/objectives/projects of this plan.
    - **Objective 3B:** Return fire to the environment through the use of prescribed burns to be used wherever appropriate as a tool to meet resource management’s objectives (supports INRMP goals 1, 2, 3, 4, 5, 7, and 9 and AFMAN 32-7003, section 3.81.2).
    - **Objective 3C:** Reduce presence of invasive vegetation (supports 2018 INRMP goals 1, 2, 3, 4, 5, 7, and 9).
    - **Objective 3D:** Promote the return to desirable, sustainable and native habitats (supports INRMP goals 1, 2, 3, 4, 5, 6, 7, 9, and 10).
    - **Objective 3E:** Reduce the fuel load for wildfires through prescribe fire and mechanical treatments.(supports INRMP goals 1, 2, 3, 4, and 5 and AFMAN 32-7003, section 3.79.3.1).
    - **Objective 3F:** Construct and maintain fuel breaks on the eastern and southern boundaries to minimize the chance of fire spread off of the installation.
    - **Objective 3G:** Construct and maintain shaded fuel breaks around the established roads in the Withdrawn Area to approximately 150 feet on either side of the road, wherever possible.
    - **Objective 3H:** Perform and update as required the installations timber inventory.

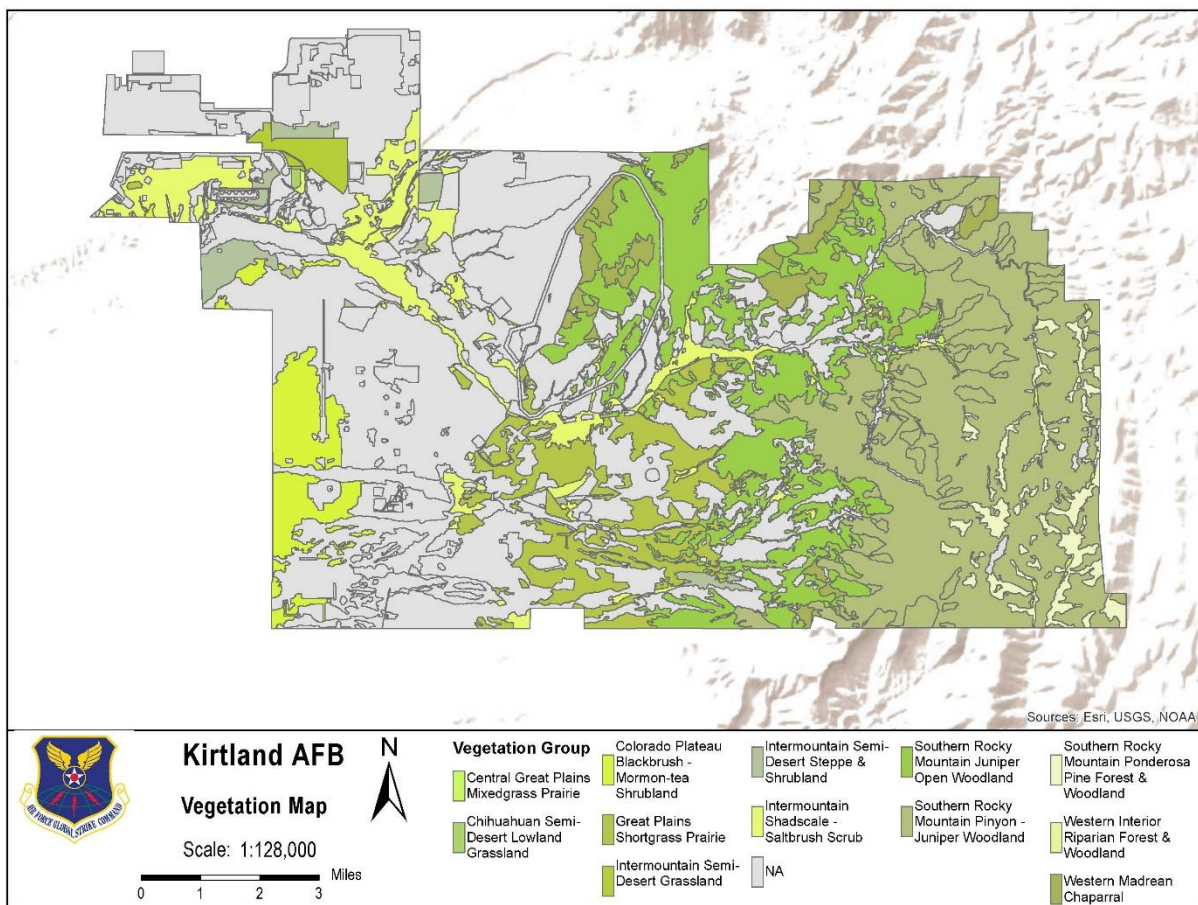
### 3.2.2 Plant Communities

Four main plant communities are found on KAFB and in the Withdrawn Area: Grassland (includes



sagebrush steppe), Juniper and Piñon-Juniper Woodlands, Ponderosa Pine Woodlands, and Riparian/Wetland/Arroyo. **NOTE:** Transitional areas are found between these communities and contain a mixture of representative species from the bordering areas. Grassland and piñon-juniper woodlands are the dominant vegetative communities at KAFB. The riparian/wetland/arroyo community is confined to drainages and isolated areas inundated by surface water during at least some part of the year. The ponderosa pine woodland community is found along the eastern boundary of the Withdrawn Area. A vegetation map can be found in Figure 3.3.

**Figure 3.3 Vegetation map**



**Figure X**



### **3.2.3 Landforms**

Most of KAFB is situated on a relatively flat mesa. This mesa is cut by the east-west trending Tijeras Arroyo, which drains into the Rio Grande. Elevations at KAFB range from 5,200 feet in the west to almost 8,000 feet in the Manzanita Mountains. KAFB is located along the eastern margin of the Albuquerque basin. This basin is a major structural feature of the Rio Grande rift, which is approximately 620 miles long. The Albuquerque basin is one of the largest of a series of north-trending basins and is about 90 miles long and 31 miles wide. The basin extends from the gently sloping area near the Rio Grande to the steep foothills and slopes of the Sandia and Manzanita Mountains. Several canyons (Laurence, Sol se Mete, Bonito, Otero and Madera) are located in the Withdrawn Area; a few smaller canyons occur on Manzano Base.

### **3.2.4 Geology and Soils**

The Albuquerque Basin is demarcated to the south by the Socorro Channel, to the north by the Nacimiento Uplift, to the west by the Puerco Plateau and Lucero Uplift, and to the east by the Sandia and Manzanita Mountains. The Albuquerque Basin is at its widest point in the KAFB area and tapers off at its north and south ends. Three major faults traverse KAFB and converge near Tijeras Arroyo. Large-scale faulting between 11.2 and 5.3 million years ago deepened the Albuquerque Basin and tilted the local mountains. As a result, basin deposits (including those at KAFB) are a mixture of volcanic and sedimentary rocks. Different landforms within the basin include mesas, benches, stream terraces, low hills, ridges, and graded alluvial slopes.

Most of the Albuquerque Basin consists of poorly consolidated sediments that eroded from the surrounding mountains following previous faulting and geologic activity. These sediments, known as the Santa Fe Group, are overlain in places by the 5.3 to 1.6-million year-old Ortiz gravel deposits. In certain places, Rio Grande soil types and volcanic deposits are interspersed. In the eastern half of the installation, bedrock is exposed in a series of northeast trending geologic structures. This area consists primarily of granite, metamorphic rock, and marine carbonate rocks that are approximately 570 million years old. The dominant soils of the Albuquerque Basin, are well drained and loamy, with minor amounts of gravelly and stony soils along the mountains and arroyos. Twenty-six soil types have been identified on KAFB and in the Withdrawn Area.

### **3.2.5 Hydrology**

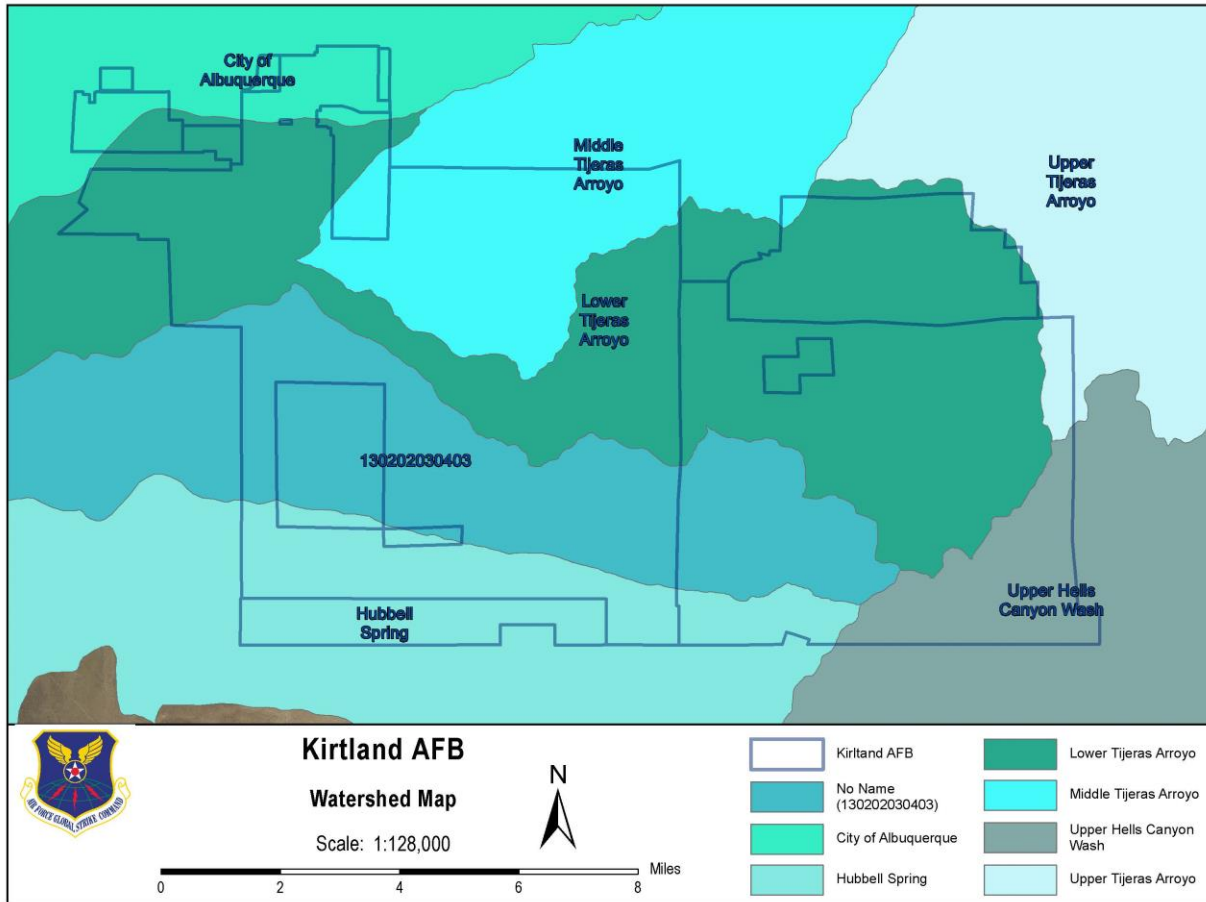
KAFB is located within the Rio Grande watershed. The Rio Grande is the major surface hydrologic feature in central New Mexico. It flows from north to south through Albuquerque, approximately 5 miles west of KAFB. The East Mesa, on which KAFB is located, has a west southwest ground surface slope from about 250 feet per mile near the mountains to 20 feet per mile near the Rio Grande. The mesa's width is variable, ranging from 3 miles across in its northern section to 9 miles across in its southern portion. East Mesa surface water occurs in the form of storm water sheet flow that drains into small gullies during heavy precipitation. Tijeras Arroyo, which is dry for most of the year, is the primary surface channel that drains surface water from KAFB to the Rio Grande. Precipitation reaches Tijeras Arroyo through a series of storm drains, flood canals and small, mostly unnamed arroyos. Tijeras Arroyo flows intermittently during heavy thunderstorms and spring snowmelt draining eventually into the Rio Grande River. However, nearly 95 percent of the precipitation that flows through Tijeras

Arroyo evaporates before it reaches the Rio Grande River. The remaining 5 percent is equally divided between groundwater recharge and runoff. Arroyo del Coyote and numerous other smaller arroyos found in the Withdrawn Area represent other watershed features of the area.

There are no natural lakes or rivers on KAFB or in the Withdrawn Area. Six man-made ponds are located on Tijeras Golf Course. At least 12 naturally occurring springs have been found on the installation, including four in the Withdrawn Area. Seven small wetlands occur on KAFB. Most only occupy a few hundred feet or less of land. The Coyote Springs Complex is the largest wetland, covering several hundred square feet, and is located along Arroyo del Coyote. KAFB is located within the limits of the Rio Grande Underground Water Basin, which is defined as a natural resource area and is designated a “declared underground water basin” by New Mexico.

The Basin is regulated by the state as a sole source of potable water, although the Albuquerque area is supplemented with surface water diverted from the San Juan and Chama Rivers to the Rio Grande. The average depth to groundwater beneath KAFB is 450 to 550 feet. The Rio Grande Underground Water Basin is fed by the Santa Fe Aquifer, which has an estimated 2.3 billion acre-feet of recoverable water. This aquifer is most likely recharged east of the installation in the Manzanita Mountains where the sediment soils materials favor rapid infiltration. A 100-year floodplain encompasses Tijeras Arroyo and Arroyo del Coyote, following their paths. These are the only two arroyos with a floodplain on the installation. Arroyo del Coyote joins Tijeras Arroyo about 1 mile west of Tijeras Golf Course. These arroyos run intermittently after heavy rains. Vegetation can encroach on the Tijeras Arroyo channel and obstruct the flow of water; this obstruction can cause flooding, especially during high intensity thunderstorms between May and October. Tijeras Arroyo and Arroyo del Coyote floods occur infrequently and are characterized by high peak flows, small volumes, and short duration. Kirtland’s watershed map can be found in Figure 3.4.

Figure 3.4 Watershed map



### **3.2.6 Climate**

The climate at KAFB is characterized by low precipitation; wide temperature extremes; frequent drying winds; and short, but heavy, rains. Average temperatures, precipitation, relative humidity, wind speed, and direction by month for Albuquerque are presented in Table 3.3.

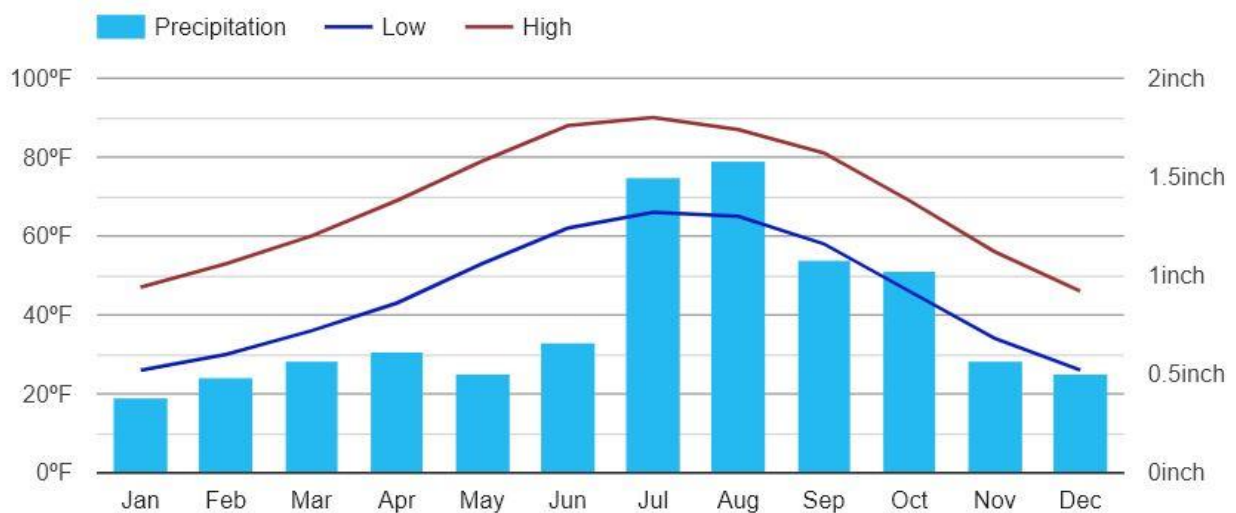
The average annual temperature in Albuquerque is 57 degrees Fahrenheit (°F), with an average daily fluctuation of 28°F. In summer, high temperatures in the vicinity of KAFB average 90°F and low temperatures average 62°F. During the winter, temperature inversions occur when colder, heavier air stagnates beneath warmer air due to the lack of wind and the presence of the Sandia Mountains, a physical barrier to air flow. Because of these inversions, winter months (December to February) are quite cool, with an average daily low of 38°F and an average daily high of 58°F. Sunshine occurs nearly 3,400 hours a year and is evenly distributed in all seasons (U.S. Department of Agriculture [USDA] 1977). Annual precipitation is variable in the area surrounding KAFB. West facing slopes generally receive more precipitation than the plateaus between the mountains and the Rio Grande. The average annual precipitation in Bernalillo County ranges from 8 inches in the county's arid valley and mesa areas to 30 inches in the Sandia Mountains east of Albuquerque.

Precipitation occurs primarily during the summer months, and more precipitation falls at higher elevations. Half of the average annual precipitation events occur from July to October, during heavy thunderstorms. Annual snowfall averages range from approximately 10 inches in the valley to 3 feet in the foothills. In the higher mountain areas, snowfall averages can reach as high as 10 feet. In the valley, which has an elevation similar to much of KAFB, the snow season extends from November to early April, but snow seldom stays on the ground for more than a day (USDA 1977).

Prevailing winds in the area are from the north in the winter and from the south along the river valley in the summer. The average annual wind speed is 9 miles per hour. Gusts up to 50 miles per hour can occur in the vicinity of Tijeras Canyon due to the release of heavy, cold air held back by the Sandia and Manzanita Mountains (USDA 1977). Strong winds occur primarily in late winter and early spring.

Fine fuels, such as the grass, burn rapidly and intensely as their moisture is quickly affected by mid-day decreases in relative humidity. Relative humidity can range from 70 percent (December/January) in the morning to 18 percent (May/June) in the afternoon.

**Table 3.3 Average Monthly Climate**



### 3.2.7 Fuel Models

In an effort to estimate fire behavior, [Scott and Burgan's \(2005\) Standard Fire Behavior Fuel Model \(FBFM\)](#) classification system was developed. This classification system is based on the Rothermel surface fire spread equations (Rothermel 1972), and each vegetation type is categorized into 40 fuel models. Fuel loads are dynamic due to environmental influences and temporal variance. The Scott and Burgan (2005) classification system addresses the dynamic nature of fuel loads and considers the curing of herbaceous vegetation over the growing season. Fuel loading and size class, fuel bed depth, heat content, and moisture of extinction are also factors in fire models (See Table 3.5). These fuel model classifications and parameters serve as inputs to multiple fire behavior and growth modeling software packages, including BehavePlus used for this assessment.

Fuel models are tools useful for predicting fire behavior. Fire managers must be flexible and adaptive when utilizing this aid while considering that fire burns in the stratum best supporting the fire. Therefore, one fuel model may best represent the rate of spread and another may best represent flame length, or two fuel conditions may exist on the site. The fire must be weighted by the fraction of the area occupied by each fuel model.

All combustible material available to burn within a given area of land is considered part of the natural fuel complex. Each type of fuel has distinct burning characteristics based on several inherent factors, including moisture content, volume, live to dead vegetation ratio, size, arrangement, and composition. Fuel arrangement is a critical factor in fire behavior as it is linked to both intensity and rate of spread. Fire intensity is directly related to the amount and distribution of fuels across the landscape (commonly referred to as fuel loading), and fuel loading is typically measured in tons per acre.

Fuel types for each FMU can be found in Table 3.2. A description of the fuel types can be found in [Table 3.5](#).

**Table 3.4: Description of fire model Components**

<b>Component</b>	<b>Description</b>
Fuel loading	The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weight.
Fuel bed Depth	Average height of surface fuels contained in the combustion zone of a spreading fire front.
Heat Content	The net amount of heat that would be given off if fuel burns when it is absolutely dry, noted as British thermal unit (Btu) per pound of fuel.
Moisture of Extinction	The fuel moisture content, weighed over all the fuel classes, at which the fire will not spread. Also called extinction moisture content (EMC).

**Table 3.5: Fuels located on KAFB (Scott and Burgan's (2005))**

<b>Fuel Model</b>	<b>Fuel Description</b>	<b>Condition</b>	<b>KAFB Acres</b>
GR1	Grass is short, patchy, and possibly heavily grazed. Spread rate is moderate; flame length is low.	High level of disturbance/ Mowed	Project2C1
GR2	Moderately coarse continuous grass, average depth about 1 foot. Spread rate high; flame length moderate.	Mowed with re-growth/ Natural state of vegetation/ Most abundant fuel type	Project2C1
GS2	Shrubs are 1 to 3 feet high, moderate grass load. Spread rate high; flame length moderate.	Natural state of vegetation not maintained	Project2C1
SH4	The primary carrier of fire in SH4 is woody shrubs and shrub litter. Low to moderate shrub and litter load, possibly with pine overstory, fuel bed depth about 3 feet. Spread rate is high; flame length moderate.	Natural state of vegetation not maintained	Project2C1
SH5	The primary carrier of fire in SH5 is woody shrubs and shrub litter. Heavy shrub load, depth 4 to 6 feet. Spread rate very high; flame length very high. Moisture of extinction is high.	Natural state of vegetation not maintained	Project2C1
TL8	The primary carrier of fire in TL8 is moderate- load, long-needle pine litter. May include a small amount of herbaceous load. Spread rate is moderate; flame length low.	Natural state of vegetation not maintained	Project2C1
TU1	The primary carrier of fire is low load of grass and/or shrub with litter. Spread rate is low; flame length low.	Natural state of vegetation hot maintained	Project2C1

NB1	Urban or suburban development; insufficient wildland fuel to carry wildland fire.	Urban or suburban development / Airfield	Project2C1
-----	-----------------------------------------------------------------------------------	------------------------------------------	------------

### 3.2.8 Fire Behavior

Fire behavior is the dynamic response of fire to a combination of factors which determine intensity, fire spread, flame length, etc. Wildland fire behavior is strongly influenced by three environmental factors: topography (slope, aspect, elevation); fuels (size, type, moisture content, total loading, arrangement); and weather (climate, air temperature, wind, solar radiation, relative humidity, atmospheric stability). Understanding the wildfire environment (natural and manmade) of an area is critical to managing and responding to the factors that influence fire behavior.

A change in any of these components may result in a change in fire behavior (DeBano 1998). These three factors influence the fire environment, conditions, influences, and modifying forces; and together determine fire behavior (NWCG 1996).

The fire behavior and characteristics chart is a graphical method of presenting expected fire behavior based on:

- U.S. National Fire Danger Rating System (NFDRS) indices (Spread Component [SC]),
- Energy Release Component [ERC], and
- Burn Index [BI]) or
- Primary surface and crown fire behavior characteristics rate of spread (ROS),
- Flame length (FL), and HPUA.

Fire behavior and fire characteristics charts are most useful as a communication aid for displaying the character of a fire based on spread and intensity values that are either calculated or observed. The fire danger chart illustrates the relationship among indices that are often considered separately.

### 3.2.9 Fire Weather

Of the three major components of the wildland fire behavior triangle, weather is the most variable over space and time and can be difficult to predict. Historic weather data spanning 3 years, from 2007 to 2010, was obtained from the weather station at KAFB and utilized for fire behavior modeling. The weather data from KAFB is the most complete dataset and best represent recordings available of actual weather conditions.

The 90th percentile weather was chosen because it is the normally accepted weather parameters used for fire planning and represents an obtainable goal. Modeling at the most extreme end of atmospheric and fuel moisture conditions are not normally used for planning. The weather observation station provides specialized weather observations necessary for fire weather forecasts, wildfire control and suppression efforts, and various other land management operations.

All information requested from and supplied by the KAFB weather observation station for fire management activities should be kept in the permanent installation records. At a minimum, fire weather forecasts on the day of burn for the area to be burned will be maintained with the Prescribed Burn Plan. For wildfires, fire weather information will be kept with all other fire records.

FireFamilyPlus is a computer-based program designed to work with weather data derived from various weather station locations. It can be used to set threshold levels for fire management actions as well as provide input information for various fire modeling programs such as FlamMap, FARSITE, and BehavePlus. FireFamilyPlus was used for the analysis of the fire weather and fire danger indices. Archived weather and fire data derived from the weather station location was imported into the program and used for modeling specific to KAFB.

Table 3.6 displays the weather parameters used for modeling potential fire behavior using weather parameters that represent the “average worst” conditions that can be expected on 90 percent of all the days that fires occur. More severe conditions would likely result in more severe fire behavior and fire effects to the site.

**Table 3.6: Burning Index at the 90<sup>th</sup> Percentile Values Developed from the Monthly Climate Summary for Albuquerque Intl Ap, New Mexico (290234):**

Burning Index Fuel Moisture/ Wind/ Weather	90 <sup>th</sup> Percentile Values
1 Hour Fuel Moisture %	4.49
10 Hour Fuel Moisture %	6.06
100 Hour Fuel Moisture %	12.33
1000 Hour Fuel Moisture %	36.17
Herbaceous Fuel Moisture %	13.37
Woody Fuel Moisture %	112.79
20' Wind Speed miles per hour (mph)	15.64
Mid-Flame Wind speed mph	6.3
Mean Temperature °F	78.5
Max Temperature °F	94
Relative Humidity %	12

### 3.3 Fuel Management Units

#### 3.3.1 FMU 1 Grassland Communities

Primary GR2, Secondary GS2, Tertiary GR1

#### General Description

This community is found between elevations of 5,200 and 5,700 feet at KAFB. In the foothills of the Manzanita Mountains, grasslands are found as high as 6,900 feet. Before the land was acquired by the military, the area was rangeland. Since grazing has been eliminated for the past 80 years, much of these grasslands are in good condition. Primary grass species here include ring muhly, Indian rice grass, blue grama, black grama, six-week grama, and spike dropseed. Shrubs commonly found in the grassland community include sand sagebrush, winter fat, and broom snakeweed. Other species encountered include red three-awn, purple three-awn, six-weeks three-awn, hairy grama, mesa dropseed, four-wing saltbush, Apache plume, plains prickly pear, and great plains yucca. Transitional shrub lands can be found between the grassland and piñon-juniper woodland communities, with many species from both communities inhabiting these areas.

The grassland community at KAFB was further delineated into two more community types during a baseline natural resources survey. Sagebrush steppe is found along the western boundary of the



installation. Sand sagebrush is the dominant cover species, with the understory being similar to that of the adjacent grasslands. However, in the sagebrush steppe, the understory is less dense, with cryptogamic crust covering areas of exposed ground. Juniper woodlands occur along the eastern edge of KAFB proper and the western portion of the withdrawn lands. This community type is similar to the grasslands to the east except for the greater abundance of one-seed juniper. The presence of this shrubby tree creates a savanna like habitat in an otherwise treeless area. Juniper woodlands are found at a slightly higher elevation than the surrounding grassland. This habitat type provides a transition into piñon-juniper woodlands.

“The western two-thirds of KAFB, where most of the Air Force built assets are located, is a relatively low hazard environment, though not necessarily low risk. Firefighting resources are good, with abundant roads, hydrants available within a reasonable distance of most priority assets, and relatively short response times. Though fires are most likely to be ignited here relative to other portions of KAFB, due to moderate human use and the highlyreceptive fuels, containment is straightforward given the flat terrain, abundance of roads, and light fuel loads. Rapid fire spread is the primary threat and though fires are likely to be of low or moderate intensity, spread rates could easily outpace firefighters’ ability to contain the fire, particularly given the high wind speeds common here.” (CSU 2014)

Spread rates in excess of 100 chains per-hour (ch/hr) (equals 66 feet per-chain) can be expected with some regularity, and spread rates in excess of 200 ch/hr are well within reason. “The possibility of direct impingement of wildfire flames on Air Force assets appeared to be minimal during our visit with only a few exceptions. Most buildings, particularly high value ones, were surrounded by security measures and/or improved areas (parking lots, etc.) that minimized or eliminated vegetation near the building. The possibility of embers from a fire in this area igniting a building is low to moderate due to the vegetation and building construction, which is generally cinderblock or concrete with few windows.” (CSU 2014)

### **Values to Protect**

Major values include: SNL Tech Areas 3 and 5, Chestnut Range, Auxiliary Field, Installation Golf Course, KUMMSC, Explosive Ordnance Disposal (EOD) Range, 21<sup>st</sup> Army EOD, Lovelace, 26000 and 700 area igloos, million gallon water tanks, Installation Antenna Farm, the Manzano area, Starfire Optical Range, and other critical infrastructure. In total, there are 670 facilities in this FMU, totaling 2.44 million square feet of building space with an estimated replacement cost of 1.04 billion dollars (2015).

### **Planned Fuels Treatments**

See Table 3.7

### **Safety Considerations**

Most of FMU 1 has good road access, many natural and manmade firebreaks exist, and generally adequate water sources (see Figure 21) are easily accessible. Traffic and area evacuation must be carefully controlled to ensure that the public does not interfere with firefighting operations. Safety

zones are normally in the “black” or by utilizing manmade features such as roads, parking lots, structures, etc. UXO has been found in parts of this FMU and must always be a consideration in evaluating risk and the development of tactics.

## **Risk Management and Suppression Strategies**

### **Direct Suppression/Indirect Suppression**

#### Suppression Objectives

1. Minimize fire size, damage, and risk.
2. Protect KAFB assets at risk, and adjacent residences.
3. Confine fire within FMU-1.
4. Take measures to protect motorists. Such measures include re-routing traffic and/or putting up caution signs on particular roads where needed, installing road blocks, and using security forces personnel to control traffic.

#### Suppression Strategies

1. Use direct attack when suppressing fire in FMU-1 if roads or other man-made or natural breaks are not close by.
2. Use indirect attack when suppressing fire in FMU-1 unless lives or structures are at risk.
3. Monitor for spot fires across roads, firelines, and especially within security fence areas.
4. Utilized mutual aid when fire behavior and forecasted suppression tactics have the capacity to overwhelm KFES resources.

### **3.3.2 FMU 2 Pinon-Juniper woodlands Community**

Fuel type- Primary SH4, Secondary SH5, Tertiary GR2

#### **General Description**

The piñon-juniper woodland community ranges in elevation from 6,300 to 7,500 feet. This plant community is composed of primarily Colorado piñon pine and one-seed juniper, with an understory of shrubs and grasses. At most elevations, this community consists of open woodland with blue grama, and, to a lesser degree, side-oats grama dominating the understory. Other species associated with this plant community are Rocky Mountain juniper, broom snakeweed, rubber rabbit brush, threadleaf groundsel, and alderleaf mountain mahogany.

“The piñon-juniper portion of KAFB poses a significant threat of a major wildfire. The center portion

of the installation has moderate road access, though many of the roads require very slow speeds and are only accessible to four wheel drive vehicles. There are no other firefighting assets here, including water. This area has not burned in a very long time and the density of the piñon-juniper is quite high with few breaks in continuity, providing extensive fuels within which fires can make unimpeded runs. North facing aspects are considerably denser than other aspects. Vehicle access is poor and the topography is not conducive to easy containment. Piñon-juniper is a highly flammable forest type, due in part to the low crown base heights which allow fires to easily transition to crown fires. Our assessment, given the density of the forest, was that in sufficiently dry conditions, as would be the case during a normal to severe fire season, 20 foot wind speeds of as little as 10 to 15 mph could be sufficient to produce a running crown fire. It would not be possible to significantly affect the spread of such a fire.”(CSU 2014)

“There are few military assets in this vegetation type, so few values of any consequence may be affected by a fire here. However, a large fire in this fuel type would have moderate to high potential for leaving the installation with possible public relations and legal ramifications. Additionally, a severe fire could also lead to long-term erosion and associated road maintenance issues and loss of training opportunities. (CSU 2014)

### **Values to Protect**

Major values include: HERTF, USGS, DOE Coyote Test Area (CTA), Cable Site, Burn Site, Small Arms Range East, the Installation radio system communications tower, and other critical infrastructure (See Figure 18 and 19). Numerous cultural sites are scattered throughout this area. In total there are 60 facilities in this FMU, totaling 138,000 square feet of building space with an estimated replacement cost of 41.68 million dollars (2015).

### **Planned Fuels Treatments**

See Table 3.7

### **Safety Considerations**

Outside of the western foothills, most of FMU 2 is characterized by poor road access, steep terrain, and few, if any, water sources (see Figure 21). In most sections, overstock conditions exist with few if any natural firebreaks and there is the possibility of UXO in this area. Interaction with wildlife is another safety concern that firefighters must be aware of. There are no established safety zones and outside of low foothills in the western part of this FMU, there are very limited choices for the construction of any adequate safety zones.

### **Risk Management and Suppression Strategies**

#### **Limited Direct Suppression/ Indirect Suppression Objectives**

##### Suppression Objectives

1. Protect KAFB assets, adjacent residences, and other improvements outside KAFB.

2. Protect all resources within KAFB.
3. Confine fire within FMU-2.
4. Take measures to protect motorists. Such measures include re-routing traffic and/or putting up caution signs on particular roads where needed, installing road blocks, and using security forces personnel to control traffic.

#### Suppression Strategies

1. Use direct attack when life or property is imminently threatened by fire and/or smoke.
2. Use indirect attack if fire weather is extreme or if fire behavior becomes extreme. Use handlines and wetlines where possible.
3. Confine all other fires to existing roads, other man-made and natural breaks using indirect attack and limited mechanical line construction. Use handlines and wetlines where possible.

### **3.3.3 FMU 3 Ponderosa Pine Woodland Community**

Fuel Type- Primary TL8, Secondary TU5, Tertiary GR2

#### **General Description**

The ponderosa pine woodland community is found in the highest elevations of the Withdrawn Area. It is typically found between 7,600 to 7,988 feet. Primary species include ponderosa pine, Colorado piñon pine, Rocky Mountain juniper, and Gambel oak. Intermingled with these species are creeping barberry, New Mexican locust, and snowberry. One-seed juniper is also present, as well as hoptree and alderleaf mountain mahogany.

“The ponderosa pine forest in the easternmost portion of KAFB represents a substantial fire risk. It is heavily overstocked with high fuel loads and consistent ladder fuels throughout. The topography impedes effective firefighting response, and it contains few roads, many of which are in poor condition. There are also no water sources. Several sizable fires have occurred here in the past. If nothing changes, a major fire here is inevitable, so much so that a major fuel break well over 200 feet wide has been constructed just east of the installation boundary, presumably in an effort to both prevent fires from moving east into the residential communities there and fires from the community from moving into the forest.” (CSU 2104)

“A military ignited fire that burns off the installation and into the communities to the east would represent a major liability with the possibility of very high public relations and legal consequences.” (CSU 2014)

#### **Values to Protect**

There are no structures in this area; however, there are numerous cultural sites scattered throughout this area. The major threat in this FMU is fire leaving the installation into the surrounding communities

and to the natural/cultural resources. Smoke impacts to the Albuquerque International Sunport, optically sensitive testing on KAFB, and surrounding communities are also considerations

### **Planned Fuels treatments**

See Table 3.7

### **Safety Considerations**

There are few roads in this area and the roads that are present for the most part are not maintained and are in poor condition. Due to road conditions, during parts of the year, this FMU is not accessible to vehicle traffic and requires personnel to use UTVs or hike in. Dangerously high overstock conditions exist and UXO is a threat, as is wildlife. There are few natural firebreaks, no established safety zones, and few opportunities to place them due to inaccessibility and terrain. Marked and unmarked mine shafts exist in this FMU creating fall hazards. Bark Beetle kill and a lack of management create a medium to high hazard of “widow makers” and other hazard trees.

### **Risk Management and Suppression Strategies**

#### **Limited Direct Suppression/ Indirect Suppression Objectives/ Monitoring**

##### Suppression Objectives

1. Protect natural/ cultural sites, surrounding communities, and other improvements outside KAFB.
2. Confine fires to existing blocks created by roads and other man-made barriers.
3. Protect all resources within KAFB.
4. Confine fire within FMU-3.
5. Take measures to protect motorists. Such measures include re-routing traffic and/or putting up caution signs on particular roads where needed, installing road blocks, and using security forces personnel to control traffic.

##### Suppression Strategies

1. Utilize roads and other man-made barriers as potential control lines
2. Monitor fire behavior and smoke movement to ensure life and property are not threatened.
3. When conditions permit, allow fires to burn into and self-extinguish.
4. Patrol areas adjacent to the FMU perimeter for spot fires across control lines.
5. Use direct attack only if life or property is imminently threatened.

### **3.3.4 FMU 4 Urban Zone**

Primary NB1, Secondary GR1, TertiaryGS2

#### **General Description**

This area contains the majority of the improved and semi-improved lands of KAFB and is where the overwhelming majority of the installation population resides and works. This area consists of mostly ornamental and decorative shrubs and trees with landscaped and maintained grass areas. The area is categorized by a well-developed and maintained road network and has a strong water supply system. Fires in this area are generally limited to individual trees and shrubs, debris pile burning, and small intentional fires usually started by children.

#### **Values to Protect**

Improved areas of the installation. The majority of installation facilities and population reside in this FMU. There are 2,235 facilities in this FMU, totaling 13.59 million square feet of building space with an estimated replacement cost of 3.914 billion dollars (2015).

#### **Planned Fuels treatments**

See Table 3.7

#### **Safety Considerations**

Improved, developed lands. Excellent road access with abundant water supplies. Isolated areas of small quantities of UXO has been found in this area. Caution must be used in congested areas and during the evacuation of the public. Many structures and test areas present varied and unique hazards to firefighters, but are generally known as part of the KFD Prevention program.

#### **Risk Management and Suppression Strategies**

##### **Full Direct Suppression/ Indirect Suppression**

###### Suppression Objectives

1. Minimize fire size, damage, and risk.
2. Protect KAFB values at risk, and adjacent residences.
3. Confine fire within FMU-4.
4. Take measures to protect motorists. Such measures include re-routing traffic and/or putting up caution signs on particular roads where needed, installing road blocks, and using security forces personnel to control traffic.

###### Suppression Strategies

1. Use direct attack when suppressing fire in FMU-4 if roads or other man-made or natural breaks are not close by.
2. Use indirect attack when suppressing fire in FMU-4 unless lives or structures are at risk.
3. Monitor for spot fires across roads, firelines, and especially within security fence areas.
4. Utilized mutual aid when fire behavior and forecasted suppression tactics have the capacity to overwhelm KFES resources.

### **3.4 Management of Planned Fuels Treatments**

#### **3.4.1 Process to identify and Prioritize Fuel Treatments**

The installation WFPC, Fire Chief, KFD-FMO, and Natural Resources Staff will meet annually to develop a list of future projects that meet priorities for both fire and resource management and confer with the WFC Senior Staff to ensure funding requirements are properly prioritized.

#### **3.4.2 Fuels Treatment Performance Information/Targets for Fire and Non-fire Fuel Treatments**

With exception to the last three years and the standup of the WSM, there has been little to no efforts made during the last 60 plus years to manage the fuels on KAFB. As a result, dangerously high overstock conditions exist throughout the entire eastern third of the installation. While the desired goal is to return fire to the landscape, much work must be accomplished to create the conditions where this may be accomplished with a degree of safety and control. Therefore, in the initial years of the implementation of this plan, most fuels treatment work will be through the use of manual or mechanical thinning, limbing and selective removal, or the application of approved herbicides. In the western two-thirds of the installation, the conditions are largely in place to allow fire to be safely reintroduced to the landscape upon the approval of this plan.

Non-fire fuels treatment goals for this plan are to treat an average of approximately 1,000 acres per year over the 5-year lifespan of this plan. Once the conditions have been created to allow fire to be returned to the landscape, the goals for fire-related fuels treatment are to obtain between 500 and 1,000 acres of woodland treatments and 500 to 2,000 acres of grassland treatments.

During the post treatment and annual reviews the WFPC should determine if these goals should be adjusted to allow for more aggressive implementation of the plan.

**Table 3.7 Projected Fuels Treatment for FY 21-26**

Category	Project Name	Acres	Description	Est. Completion	Project Source	Reoccurring Project	Driver
RX Burn	Lower Kirtland	700/year	Reducing fuel load in order to reduce threat of a wildfire	FY23+	WSM	Y	INRMP WFMP
Mech Fuel	All KAFB Mechanical Fuel Reduction	100/year	Mowing vegetation/mastication to reduce wildfire risk during missions on range	FY22+	WSM	Y	INRMP WFMP
RX Burn	Upper Kirtland	300/year	Reducing fuel load in order to reduce threat of a wildfire	FY25+	WSM FES	Y	INRMP WFMP
Monitoring	Fuel Reduction Rx Monitoring	1000/year	Pre-burn and Post-burn monitoring, photos and documentation	FY22+	NR WSM	Y	INRMP WFMP

### 3.4.3 Prescribed Fire Treatments

Prescribed fire implementation will follow the standards set forth in the Interagency Standards for Fire and Aviation Management, and the Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide 2017 (PMS 484 - Prescribed Fire Guide), which are available on the [NWCG Website](#).

All Prescribed Fire treatments will be performed by the Kirtland Wildland Support Module. The Module will hold the following qualifications. These positions can be shared with the FES staff.



**Table 3.8 Required Qualifications for the Kirtland WSM**

NWCG Mnemonic	Wildfire Suppression Position Title	Number Needed per Shift
ICT4	Incident Commander Type 4	1
RXB2	Prescribed Burn Boss, Type 2	1
ENGB	Engine Boss, Single Resource	1
ENOP	Engine Operator	1
FAL3(T)	Basic Faller	1
FFT1	Firefighter, Type 1	2
FFT2	Firefighter, Type 2	1

**3.4.3.1 Prescribed Fire Planning**

All Prescribed Fire Planning will be coordinated through the assigned WSM Lead. Prescribed fire implementation will follow the standards set forth in the Interagency Redbook, Publication Management System (PMS) 484 - Interagency Prescribed Fire Planning and Implementation Procedures Guide (April 2014) (Prescribed Fire Guide), the Smoke Management Guide for Prescribed and Wildland Fire PMS 420-2, and the Prescribed Fire Complexity Rating System Guide PMS-424 all of which are available on the NWCG Website at <http://www.nwcg.gov/pms/RxFire/rx.htm>.

The NWCG 21 Element Prescribed Fire Plan (PFP) will be completed along with the complexity analysis by a qualified NWCG burn boss.

The PFP at Kirtland AFB will be:

- Prepared and signed by a qualified NWCG burn boss within the assigned WSM
- Reviewed and signed by an NWCG qualified technical reviewer
- Reviewed by the installations Natural Resource staff, FES Chief and the KFD-FMO
- Approved and signed by the Agency Administrator. The Agency Administrator at the installation is the BCE.

**3.4.3.2 Prescribed Fire Operations**

*NOTE: At Regional or National Preparedness Levels 4 or 5, consult the AFWFB for instruction on prescribed fire authorizations. Those who supervise Air Force employees or contractors during prescribed fires must meet Air Force standards.*

**Operational Checklist:**

- At least 30 days prior to the planned Burn Day, the WFPC will ensure all local, state, and smoke management permits are in place and current.
- At least 2 weeks prior to planned Burn Day, the Burn Boss will notify staff assigned to the project to ensure adequate planning of work and leave schedules.

- At least a week before Burn Day, all engines, tools, supplies, etc., will be checked.
- Burn Bosses will report to the WFPC/KFD-FMO the day before the Burn Day for final plan review.
- One day prior to the Burn Day, the WFPC shall complete all required notifications as designated in the BurnPlan.
- Warning signs and/or road guards will be used to advise motorists of a prescribed fire in progress, especially if smoke could reduce visibility. This would be coordinated with 377 SFG.
- Air Force roads adjacent to burn units will be closed temporarily, as needed, and coordinated with 377 SFG.
- Test fires will be used to assess holding capability and smoke dispersal. Weather forecasts for the Burn Day and the next two forecast periods will be obtained.
- Prescribed fires will not be ignited until all contingency forces are confirmed as being in the required status specified in the Burn Plan.

#### **3.4.3.3 Prescribed Fire Conversion to Wildfire and Required Reviews**

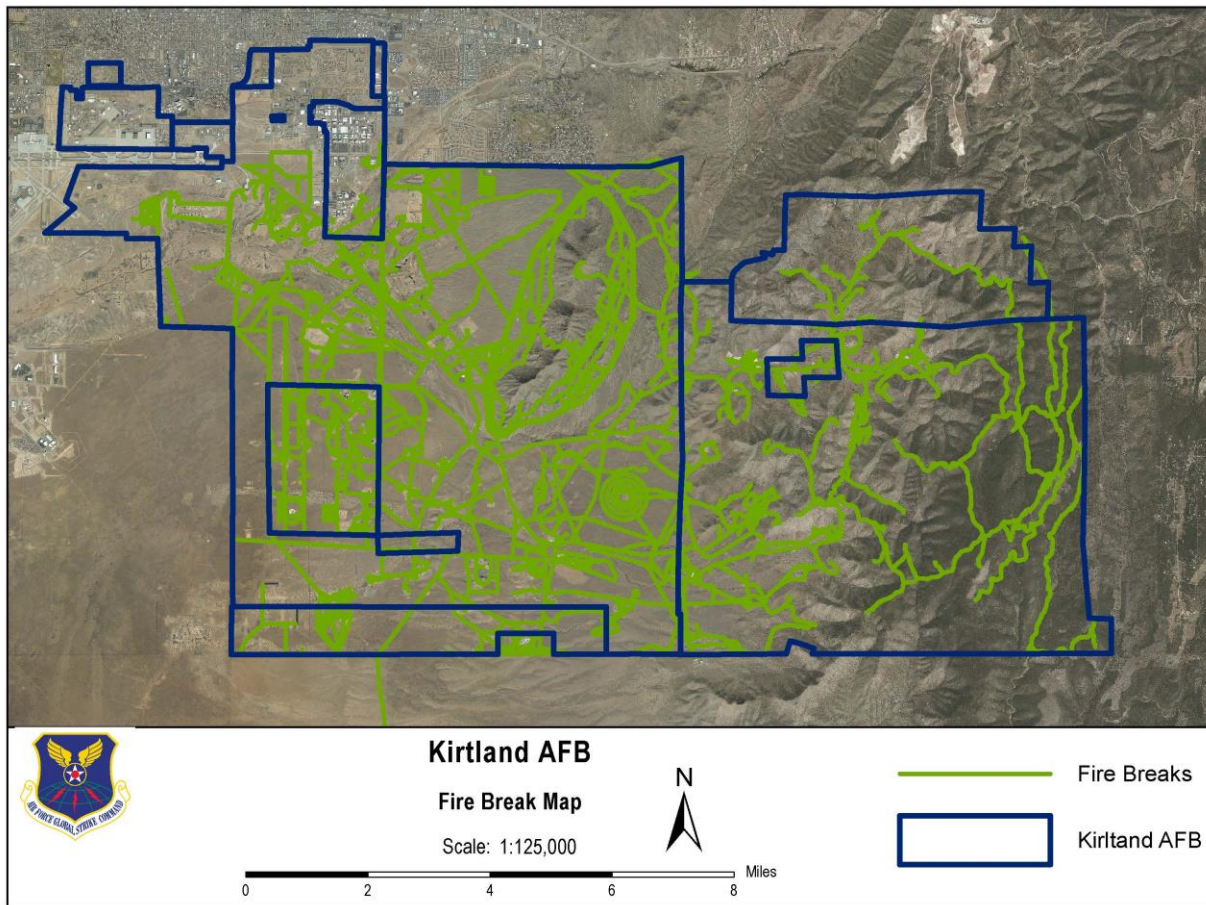
Any prescribed fire that threatens to leave or leaves the preplanned containment area for the project will be declared an escape fire. Immediately upon recognition of the potential for an escape fire to develop, the Burn Boss will immediately halt all ignition operations and ensure 100 percent crew accountability. Holding crews will be dispatched to the area of concern and attempt to either stop or limit the forward spread of the fire depending on fire conditions and terrain. The Burn Boss will also notify the KFD FACC as soon as possible and request a suppression dispatch to assist in controlling the fire. If the fire is along a installation boundary or is in danger of leaving the installation, the Burn Boss will notify the FACC of the direction of travel and the responsible agency. The FACC will notify the responsible agency and request a response to interface with the Burn Boss and the FES IC to form a unified command as required by this plan and HSPD-5. The FACC shall make other notifications as outlined in departmental guidance.

All prescribed fires converted to an escape fire will have an investigative review. The WFWG shall conduct the initial review of the prescribed fire event(s) that lead to an escape fire being declared and determine cause(s), lessons learned, and corrective action(s) to prevent or limit the possibility of future occurrences. The WFWG shall also determine if a more exhaustive or formal review is required and make those recommendations through the chain of command. The WFPC shall, as soon as practical, provide notification to the AFWFB as required and provide updates as the situation warrants.

#### **3.4.3.4 Fire and Fuel Break System Maintenance Plan**

Current roads are used for the Fire Breaks on Kirtland. Future fire breaks are scheduled for development but are waiting on further approval. The Base Maintenance Contract maintains the majority of the roads and the DOE/Sandia also maintain roads that were permitted to them.

**Figure 3.5 Fire Break Map**



### **3.5 Fuels Treatment Reporting Requirements**

#### **3.5.1 Prescribed Fire Reporting**

In accordance with AFMAN 32-7003, Environmental Conservation, installations conducting prescribed fire will report their activities to the AFWFB. Prescribed fire activities will be coordinated, conducted and reported through the assigned Wildland Support Module (WSM).

WSMs will submit the prescribed fire reports to the AFWFB for inclusion in the AF Wildland Fire Database within 10 days of treatment completion. The prescribed fire report will include:

- Installation/Range
- Treatment date
- Acres treated
- Start time
- Control time
- Fire Zone/burn unit

- Anderson fuel model
- Burn objective
- All equipment used on the treatment and the assigned organization
- All personnel used on the treatment and their assigned organization
- NWCG position all personnel held on the treatment
- Geospatial data showing treatment boundaries

### **3.5.2 Mechanical Fuels Treatments Reporting**

Mechanical treatments supported by the WSMs for wildfire mitigation or prescribed fire implementation will be reported to the AFWFB.

WSMs submit the mechanical treatment report to the AFWFB within 10 days of treatment completion. The mechanical treatment report will include:

- Installation/Range
- Treatment date
- Acres/miles treated
- Treatment type
- Treatment objective
- Start time
- End time
- Location of treatment
- All equipment used on the treatment and the assigned organization
- All personnel used on the treatment and their assigned organization

For instructions on reporting contact [AFCEC.CZOF.FIRECENTER@US.AF.MIL](mailto:AFCEC.CZOF.FIRECENTER@US.AF.MIL)

### **3.6 Fuels Funding Process**

Annually, or as necessary, the WFPC shall, in consultation with the WFWG, develop and submit, via approved USAF financial systems, requests for the funding necessary to support wildland fire program operations. The WFPC shall also consult/coordinate with the AFCEC Installation Support Section and AFWFB to ensure that project/equipment needs are properly prioritized and ranked for funding.

### **3.7 Debris Burning**

Small amounts of debris may be burned as long as air quality requirements and permitting have been met. The WFPC and KFD-FMO will process an Air Force Form 813 that covers multiple events for a period one fiscal year at a time, so that an Air Force Form 813 is not required for each event.

Vegetation burning for silvicultural activities, e.g., burning logging debris following timber harvest/prior to replanting, requires a written prescribed fire plan that meets interagency guidelines when being accomplished by federal employees.

### **3.8 Requesting Additional Resources**

If additional resources are needed to fulfill INRMP and WFMP goals and objectives, the WSM Lead will contact their FMO with a detailed request. Resources will be taken from other WSMs if available. If no WSM support is available, then the AFWFB may use reach back assistance from local NWCG qualified agencies to supplement the AFWFB staff following any MAA/MOUs in place. If local agencies do not have enough resources, then partnered interagency such as USFWS may be utilized.



## 4.0 Wildland Fire Operational Guidance and Wildfire Risk Mitigation

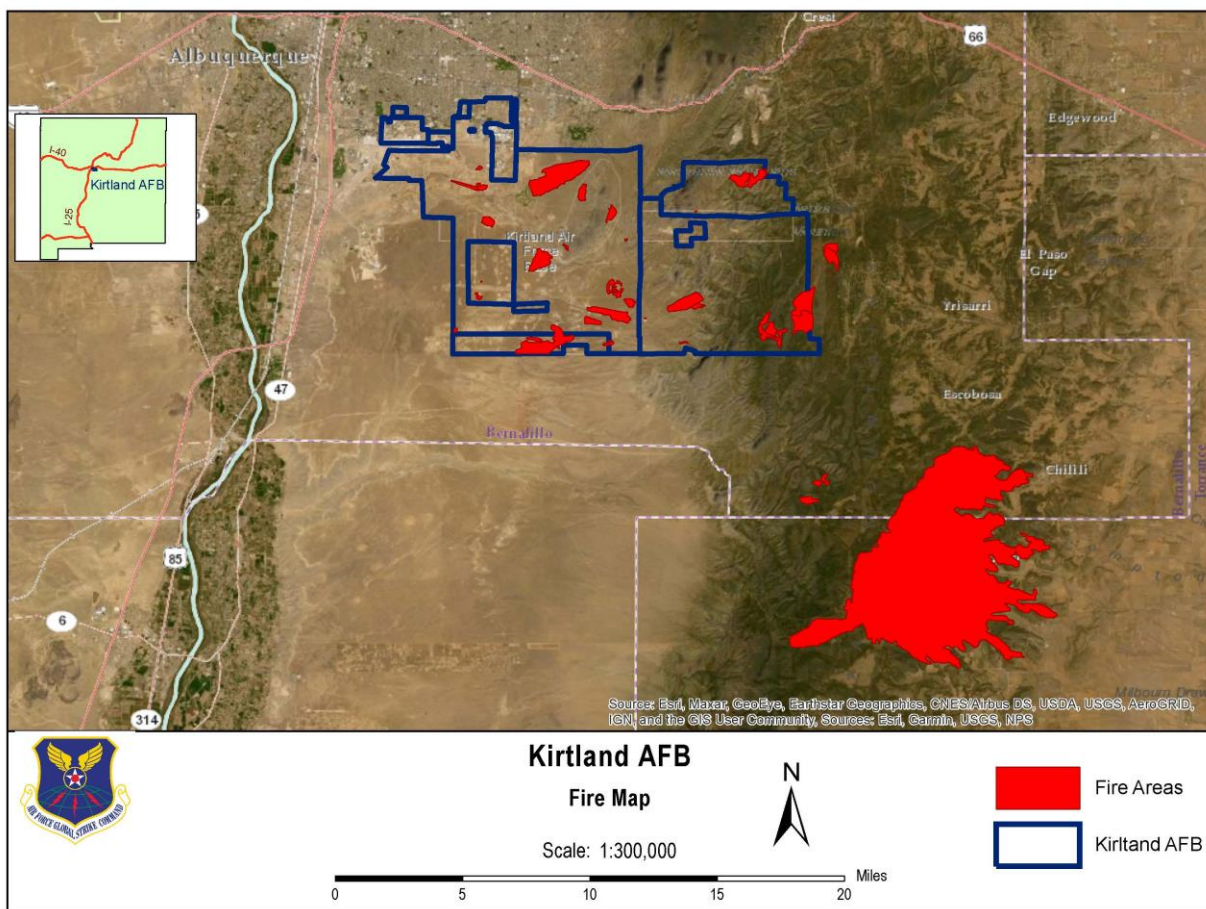
The intent of this chapter is to document the procedures used in the area covered by the WFMP to prepare for, detect, suppress, and manage wildfires. It will also include the training and qualification needed for all wildland fire activities, wildfire prevention, education, and risk mitigation.

### 4.1 Wildfire Prevention

#### 4.1.1 Wildfire History

A summary of wildfire history and occurrence can be found in [Table 4.1](#). A five year wildfire average can be found in table 4.2. A map showing wildfire locations can be seen in Figure 4.1.

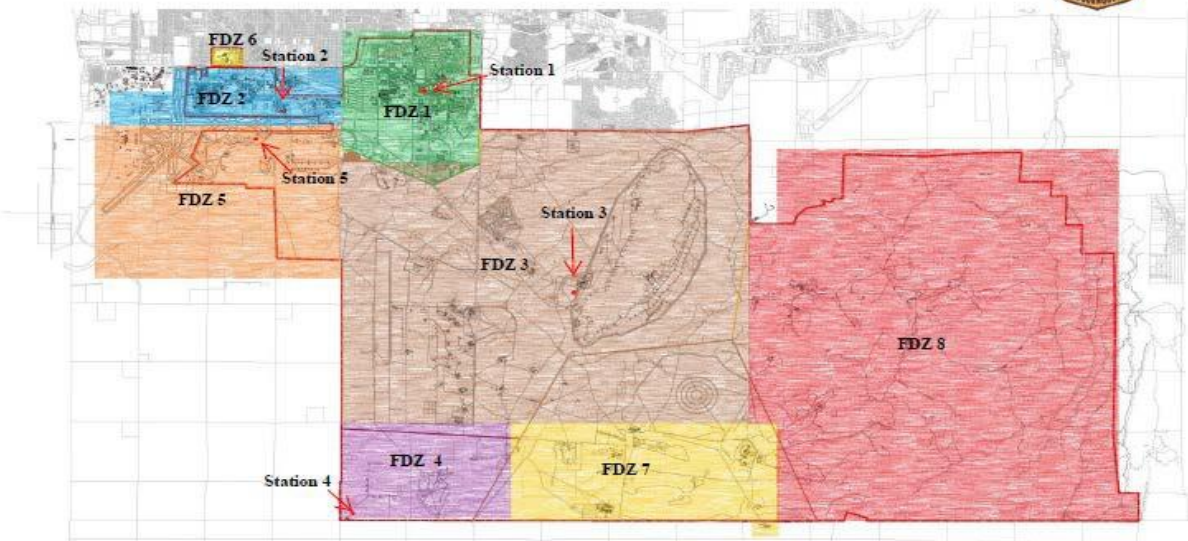
**Figure 4.1 Wildfire History**



#### 4.1.2 Wildfire Occurrence

From 2006 through June 2022 there have been 86 reported wildland fire incidents, averaging 5.4 fires per year (see Table 4.1). Of these, the predominate fuel type was grass or a grass/shrub mixture totaling 78 percent (n=58). Of the remaining fires, 4 percent (n=3) occurred in timber, 12 percent (n=10) were in mulch/litter/other, and in 3 percent the fuel type was undetermined/unreported. Fires were reported in all months, with the majority (67 percent [n=49]) occurring during what is consider New Mexico’s wildland fire season (May through July); the remainder are spread fairly evenly across the other months. The Installation is divided into fire demand zones (FDZ) (See Figure 4.2) for emergency response. The FDZs are established based on pre-planning and historical response data to identify specific requirements and/or demands for emergency incidents. The FDZ are influenced by geography, special hazards, type of construction, and occupancy. All FDZs have experienced wildland fire with the exception of FDZ 6 (Maxwell Housing). FDZs 3, 4, 7, and 8, which encompass the areas south of the Manzano Bridge account for most of the fires.

#### Kirtland Fire Emergency Services Standards of Cover (SOC)



8 Fire Demand Zones (FDZ)

**Figure 4.2 KFD Fire Demand Zones**

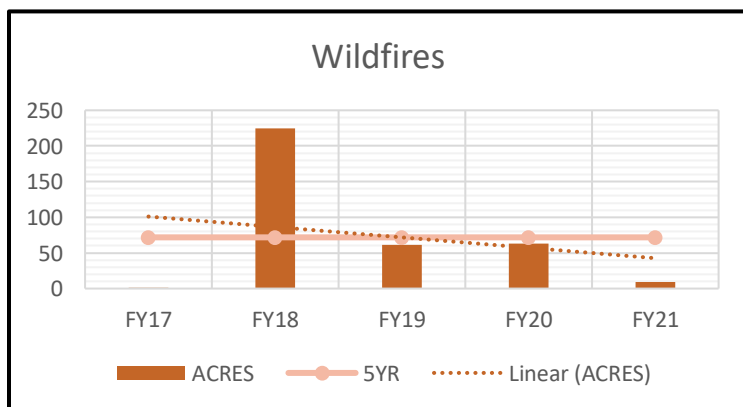
The majority of fires occurred between the hours of 1200 and 2000 hours (68 percent [n=50]). The most common causes of ignition was electrical or powerlines followed by lightning and the disposal operations at EOD range which has not been used since 2010. Man caused fires total 50 of the 86, with 26 of them being directly related to the installation missions. Nine fires were determined to have been caused by improper disposal of smoking materials and the rest were a combination of vehicles or no cause determined. To date, most fires have been kept small, 0.25 acres or less (n=31). Fires in 0.26 to 1 acres, 1.0 to 5.0 acres and 5.1 to 99 acres classes each have 10 recorded fires (n=30), 3 have exceeded 100 acres and for the remainder, a final size was not determined due to inaccessibility.

Figure 4.1 shows fire history gathered from satellite imagery and work is ongoing to correlate imagery fire data with date of fire occurrence for future analysis.

**Table 4.1: Wildfire (WF) History and Occurrence 2006-2022**

10 Year Historical Fires								
Year (CY)	# WF	ACRES (Est.)	MONTH	NO.	FUEL TYPES	NO.	FIRE CAUSES	NO.
2022	3	23.4	JAN	2	Grass	34	Cigarette butt	9
2021	2	9.4	FEB	4	Grass/Shrub	22	Lightning strike	14
2020	2	63.1	MAR	8	Grass/PJ	4	Experiments	7
2019	3	61	APR	6	Grass/Shrub/PJ	1	EOD	12
2018	1	225.3	MAY	19	Timber	3	Small arms ammo/smoke grenades	9
2017	1	1	JUN	19	Mulch/litter/other	10	Electrical/suspected Electrical/powerline	15
2016			JUL	16	<b>Unreported/Unknown</b>	<b>12</b>	Vehicle	1
2015	4	7	AUG	5	<b>TOTAL</b>	<b>86</b>	Man caused other	4
2014	5	1	SEP	2			Rekindle	3
2013	4	1	OCT	1			No cause/unknown	12
2012	6	14	NOV	3			<b>TOTAL</b>	<b>86</b>
			DEC	1				
2011	4	40						
2010	9	48	<b>TOTAL</b>	<b>86</b>				
2009	13	781						
2008	12	136						
2007	5	10						
2006	12	43						
<b>TOTAL</b>	<b>86</b>	<b>1464.2</b>						

**Table 4.2 5yr average of wildfires**





### 4.1.3 Prevention Activities

The objective of fire prevention activities is to prevent human-caused fires and encourage facility managers to implement mitigation measures around their buildings. This objective will be accomplished by:

- Making personnel aware of precautions to prevent an unwanted ignition.
- Informing visitors of fire danger through personal contact and posted signs.
- Implementing area closures, modifications, or limits to test procedures during periods of extreme fire danger.
- Coordinating with partner agencies, including installation fire departments, during periods of extreme fire danger.
- Seeking opportunities for fuels mitigation projects to reduce the risk of fire moving onto and off of units and potentially posing a threat to surrounding communities or unit structures.

Prevention Program Goals are to:

- Reduce the likelihood of both human-caused and unwanted naturally-ignited wildfires which could result in unacceptable loss.
- Decrease the frequency of human-caused fires.
- Reduce emergency suppression costs by accomplishing fuels management and firebreak construction projects.
- Reduce fire size and intensity by developing programs such as fuels reduction/modification.
- Integrate and coordinate prevention programs with local installation fire departments, nearby land management agencies, and wildfire protection organizations.
- Minimize damage from unwanted wildfires.
- Incorporate prevention programs into the wildland fire management outreach programs.

### 4.1.4 Mitigation Activities

The Installation will accomplish the goals and priorities identified above through the following efforts:

- Use the risk management process and Wing Commander-level or higher approval for any waivers.
- Integrate the prevention message into interpretive programs conducted or sponsored by the installation.
- Fire prevention will be discussed at appropriate safety meetings, prior to fire season and during periods of high fire danger.
- When available, KFD employees will assist with local and regional Prevention Campaigns as coordinated by the WFPC through the Fire Chief.
- Articles concerning fire prevention will be made available for installation wide and local community release by the 377 ABW PIO.
- Installation areas may be closed to smoking, open fires, or other restrictions during periods of high or extreme fire danger. Restrictions such as these have been utilized effectively during past periods of high fire danger.

- The Installation WFPC will coordinate with other state and federal land management agencies in periods of extreme fire danger to coordinate publicly released messages and other mitigation/prevention efforts.

#### **4.1.4 Public Information**

Informing the public is an important part of wildfire suppression, wildfire prevention, and the Air Force mission at KAFB. When wildfires occur on installation lands, the IC, or if designated, the WFPC is responsible for providing fire information to the 377ABW PIO for release to the public. The following actions may be used to inform the public as part of the installation fire prevention and suppression program

- Press releases.
- Interviews with local media at the direction of the 377 ABW PIO.
- Signs and interpretive materials.
- Personal contact with installation populace, visitors, and guests.

#### **4.1.5 Education/Outreach Activities**

KFD routinely carries out fire education and prevention program(s) throughout the year with facility managers during annual inspections, and with members of the installation population during routine and emergency responses.

The WFPC is responsible for consulting with the KFD Prevention Section to coordinate and work with the 377ABW PIO to create articles of interest to inform and educate the installation population on the various programs and objectives of the Wildland Fire Program.

The installation maintains a fire danger rating sign, located on Lovelace Road just south of the intersection with Pennsylvania Road. The sign is updated by personnel from the DOE National Training Center when updates are received from the 377 ABW Weapons Safety Office. During periods of prolonged drought or elevated fire danger, the WFPC should consider placing, and updating, fire danger rating signs at all installation entry gates to inform assigned personnel, contractors, and guests of the fire danger. Additional information about restrictions and contact information could also be included.

Prior to the start of the prescribed burning season, an article will be submitted to 377 ABW/PA for inclusion in the base website/social media. The article will address who will conduct the burning, why the burning is being done, when the burning will begin, where the burning will occur, how the burning will be done, and smoke concerns. The WFPC and the KFD-FMO will coordinate with the 377 ABW PIO, as requested, to provide relevant information for inclusion in the base website/social media or organized safety events about the role of wildfire in the environment, its impact on natural resources, wildland fire prevention, reporting, and other topics of interest.

One of the overarching goals of outreach and education activities is to enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education. Information about fire ecology and the differences between planned

and unplanned ignitions will be incorporated into outreach programs and informal contacts. Information and education are critical to increase knowledge and support of prescribed fires.

Whenever applicable, education and outreach programs will include components of the nationally sanctioned Fire Adapted Communities program available at <http://www.fireadapted.org> or the FIREWISE program available at [www.firewise.org](http://www.firewise.org). This information will be targeted to facility managers, especially for buildings that are in the Wildland Urban Interface environment to provide them the information needed to improve the standalone survivability of their facilities.

## **4.2 Management of Wildfire (Unplanned Ignitions)**

### **4.2.1 Preparedness**

Preparedness is defined as activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination. Some examples of preparedness are:

- Pre-season wildfire planning with state and local coordinators,
- Wildland Urban Interface (WUI) assessments - on installations and with adjacent landowners
- Tactical and initial response planning.
- BAR plan in place (where applicable)
- Consider the following:
  - Seasonal readiness activities (consider table in appendix X)
  - Step-up Plan and analysis of historic fire danger indices (tables in appendix)
  - Cache and supply levels (tables or lists in appendix)
  - Communication - (include list of frequencies and uses in appendix)
  - Carrying suppression tools and the appropriate PPE in vehicles during the fire season.

#### **4.2.1.1 Personnel**

The personnel list containing the specific number and types of qualified staff for the installation can be found by contacting the FES Chief.

#### **4.2.1.2 Equipment**

The equipment list containing the appropriate vehicle and equipment requirements can be found by contacting the FES Chief

The equipment list will reflect the needs of the installation as it relates to their wildland fire program. The service of the installations FES wildland firefighting is urban interface. Any commitment to levels above urban interface is an installation responsibility to OT&E.

### **4.2.2 Training and Qualifications**

The Air Force Training, Qualifications and IQCS Management Business Guide, which adheres to National Wildfire Coordinating Group (NWCG PMS 310-1) standards, establishes minimum education, training, skills, knowledge, experience, and physical fitness standards for Air Force

personnel conducting wildland fire operations on Air Force managed lands or mobilizing to fulfill requests supporting the national firefighting effort outside of their home installation. Roles, responsibilities, training and qualifications management processes are also covered in the guide.

This guide represents the most up-to-date information on these topics. Other documents with conflicting information on qualification management and training program should be considered out of date. All prior arrangements conflicting with this guidance or requiring a delegation will require formalizing with the appropriate authority.

All training and certification requirements are contained in the KFD MMP and Master Annual Training Plan. Annual recertification is completed in the March/April timeframe and conducted IAW the guidance set forth from Wildland Fire Safety Training Annual Refresher (WFSTARs), the Work Capacity Test Administrator Handbook, and KFD SOP/MMP. Due to the nature of operations on KAFB, wildland response equipment is maintained in ready status throughout the year. Annual maintenance is conducted prior to the official start of the New Mexico fire season; which generally runs from 15 May to 15 July.

#### **4.2.2.1 FES Training Guidance**

AFWFB promotes training opportunities and ensures quality control over sponsored courses. All certifications are verified in the master Incident Qualification System (IQCS) database managed by the AFWFB Training Manager.

#### **4.2.3 Readiness**

Due to the nature of operations on KAFB, wildland fire response equipment is maintained in a ready condition year round. During winter months, the equipment is stored to provide protection from the elements and causes a slight increase in response times. However, during summer months, generally when nighttime temperatures stay above 40°F, response equipment is forward deployed to reduce response times.

Cache and other supply levels of PPE, response, and pre-suppression equipment will be determined by the KFD-FMO and maintained/stored by the KFD. New or replacement equipment needs will be identified by the KFD-FMO and provided to the WFPC for funding.

KFD maintains two 200-gallon skid mounted firefighting units, one 300-gallon skid mounted firefighting unit, various handtools necessary to equip all department response vehicles, two additional 20-person crews, and a minimum of 10 chainsaws and associated equipment. A minimum of 1,000 feet each of ¾ in., 1 in., 1.5 in. wildland hose with adapters and nozzles are maintained at all times.

All KFD personnel assigned to firefighting duties have been issued, at a minimum, all of the PPE required by NFPA, AFI, and NWCG guidance for wildland firefighters. Additional replacement PPE is stored and ready for immediate issue to replace lost or damaged equipment.

## **Communications**

Emergency communications will depend on the size of the operation and agencies involved. For wildland emergencies involving only KAFB assets, standard USAF radio systems will be utilized. For responses involving outside agencies, the Bendix King VHF radio system will be used.

KFD-FMO shall ensure that the frequency updates are loaded into KFD-owned Bendix Kings as soon as possible after they are released, generally in the March/April timeframe each year.

For operations that involve only the USAF and USFS units, communications will occur on the frequency designated by the USFS IAW the current Memorandum of Understanding between the CNF and KFD.

For operations involving multiple agencies, initial communication will occur on the EMIFPA Talk Group on the Bendix King radios. This Talk Group has been agreed to by all of the surrounding jurisdictions as the initial incident management communications plan and is updated annually at the EMIFPA spring meeting.

### **4.2.4 Wildland Fire Aviation Management**

All aviation operations shall be conducted in accordance with the current edition of the Interagency Helicopter Operations Guide (IHOG), Interagency Standards for Fire and Fire Aviation (commonly known as the “Red Book”), Interagency Aerial Supervision Guide, Interagency Single Engine Air Tanker (SEAT) Operations Guide, or other applicable national aviation standards. Typical seasonally available local aviation resources available to KAFB are:

- USFS contract air tankers and helicopters are coordinated through Albuquerque Zone Dispatch.
- SEATs from Bureau of Indian Affairs (BIA)/Southern Pueblos Agency (SPA) and NM State Forestry or the BIA Type I helicopter, all are coordinated through Albuquerque Zone Dispatch.
- Type III/Type II Helicopters from Bernalillo County Sheriff’s Office coordinated through Bernalillo County EOC.
- Aerial recon and crew shuttle support from the 58 SOW coordinated through the 377 ABW EOC.
- Mapping and recon flights from the Civil Air Patrol coordinated through the 377 ABW EOC.
- Additional aviation assets are available from the New Mexico Air National Guard; requests are coordinated through the 377 ABW EOC and the NM Department of Homeland Security.

#### **4.2.4.1 Dip Sites**

KAFB maintains a USFS-owned 15,000 gallon Heliwell located southeast of the StarFire Optical Range and two water fill stations located off Lovelace Rd. The Heliwell is to support helicopter water

drops in the Withdrawn and surrounding off installation areas upon request. Heliwell operations and safety considerations are described in *KFD SOP #23 Wildland Firefighting Procedures*.

All of KFD Water Tenders carry portable water tanks and therefore have the ability to set up mobile dip sites anywhere the terrain is favorable. Dip site locations should ideally be coordinated with aviation resources but can be established and locations communicated to aircrews via VHF USFS air-to-ground frequencies. When considering a dip site location, ICs should ensure flat or nearly flat surfaces free from obstructions or wires and are easily accessible by ground vehicles or in locations that hose lines can be utilized for filling operations. Additional guidance may be obtained from aircrews or from the CNF Regional Aviation Manager.

ICs should consult with the KFD-FMO to request a qualified Dip Site Manager from Albuquerque Zone Dispatch if the dip site is going to be utilized for more than isolated dips or by multiple aircraft.

If more than one aviation asset is utilized on an incident, the IC shall coordinate with the KFD-FMO to order an Aerial Supervision Module (ASM) from Albuquerque Zone Dispatch to control the airspace and the aviation resources. ICs should also coordinate with the ASM to establish temporary flight restrictions (TFRs) to de-conflict and control entry into the airspace surrounding the incident if determined to be necessary.

#### **4.2.5 Wildfire Detection**

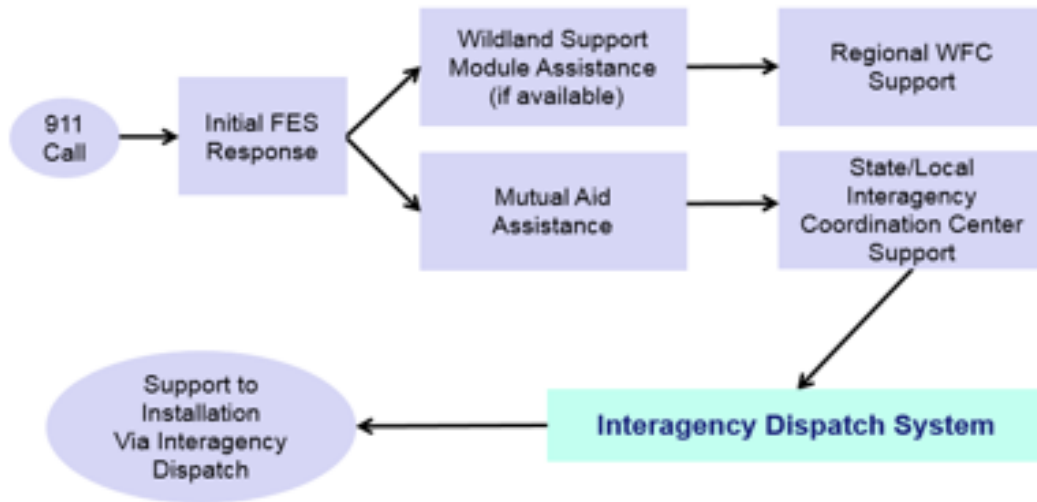
The majority of wildland fires are called in to the Installation 911 system by personnel that notice smoke or fires occurring as a result of testing. Reports are also received by telephone relay from 911 calls placed by East Mountain residents calling into the city of Albuquerque 911 system or by direct call in to the Albuquerque Zone Dispatch Center. On rare occasions, notification of a wildland fire is received by citizens walking up to one of the installation fire stations. Other methods of detection and reporting include commercial or military pilots flying over the Withdrawn Area, observing a fire and reporting it to the Albuquerque International Support control tower or to the 58 SOW Wing Operations Center. The control tower or Wing Operations Center then retransmits the information to the KAFB FACC. Additionally, the USFS Tijeras Lookout Tower is able to see parts of FMU 3 and will report fires to the Albuquerque Zone Dispatch Center, who also retransmits the information to the KAFB FACC.

##### **4.2.5.1 Initial Report of Wildfire and Initial attack Dispatching**

All emergency responses are dispatched through the KFD FACC, IAW *MSOP #5 Incident Communications*.

For fires larger than 10 acres in timber and 50 acres in grass or threatening significant Air Force assets, the KFD FACC will notify the WFPC as soon as practical. The WFPC shall be responsible for notifying the Environmental Chief and other Resource Advisors to assist with ESA compliance and other natural resources areas of concern as requested by the IC.

**Figure 4.3 Dispatching Protocol**



#### 4.2.5.2 Wildland Fire Mutual Aid and/or Cross Boundary Operations

Fires that either leave or have the potential to leave the installation are reported to the responsible agency through the KAFB FACC.

All fires that leave the installation, or are threatening to do so, will be managed IAW current Mutual Aid Agreements and utilize unified command IAW the National Incident Management System (NIMS) and Homeland Security Presidential Directive 5 (HSPD- 5).

KFD has MAA with the following –

- Fires to the East – USFS through Albuquerque Zone Dispatch.
- Fires to the North – Bernalillo County Fire Department/NM State Forestry.
- Fires to the West – Bernalillo County Fire Department/NM State Forestry.
- Fires to the South – BIA/SPA

#### 4.2.6 Wildland Fire Incident Management

##### 4.2.6.1 Dispatching beyond Initial Attack

If initial resources are insufficient to safely perform offensive operations, a firefighter recall shall be initiated IAW KFD MMP and SOPs. Additional resources may be obtained from mutual aid agreements or from the Albuquerque Zone Dispatch Center. A list of cooperative agreements detailing mutual assistance available for initial attack of wildland fires is on file with KFD FACC.

IC will notify FACC to notify the KFD-FMO whenever it appears a fire will escape initial response efforts, leave installation lands, or when fire complexity will exceed the capabilities of command or operational forces. When additional resources are needed, they will be coordinated through FACC or 377 ABW EOC and communicated to Albuquerque Zone Dispatch or mutual aid partners, which will mobilize any additional resources, including higher level ICs and IMTs. If the incident expands or

extends past the initial attack phase, communication and resource ordering responsibilities will be transferred from the KFD FACC to the 377 ABW EOC as soon as possible. The KFD-FMO or FACC will notify the AFWFB and WFPC as soon as possible. The WFPC will coordinate extended attack support with the AFWFB.

#### **4.2.6.2 Delegation of Authority for the incoming IC**

The WFPC shall, in consultation with the KFD-FMO, KFD Senior Fire Official and AFWFB, prepare the Delegation of Authority Letter for approval by the Installation Commander or designee for all Type 3 or higher level Incident Management Teams (IMT) deploying into KAFB. The installation will use the current Federal Interagency Standards for Fire and Aviation Operations (Red Book) for supporting guidelines for the employment of IMTs. A DoA for incoming IC can be found in [Appendix B](#).

#### **4.2.6.3 Resource Allocation and Prioritization**

Resources are allocated as outlined in the KFD Standards of Cover, SOPs, and MMP. Incident priorities are always: (1) life safety of the public and firefighters, (2) protection of facilities and equipment, and (3) protection of the environment. If faced with multiple fires or incidents that exceed the available resources, the Senior Fire Officer (SFO) will prioritize the available response resources to meet the objectives and priorities in KFD SOPs and other departmental guidance while waiting for follow on forces or mutual aid responders to arrive.

#### **4.2.6.4 Wildfire Reporting Requirements**

Initial response reporting for all wildfires is accomplished through Automated Civil Engineering System – Fire Department (ACES-FD) by the responding FES. In the event a WSM is called to assist, the WSM lead will retrieve the ACES-FD fire report, complete an AFWFB Fire Report form, collect spatial data from the fires perimeter and submit it to the AFWFB for inclusion in the Wildland Fire Database.

The AFWFB integrates ACES-FD records not captured by a WSM into the AFWFB database, and uses remote sensed satellite imagery and other GIS data to map and analyze wildland fire perimeters that can be detected.

For significant wildfires affecting AF assets or missions, the AFWFB, in partnership with the installation, provides updates to AFCEC/CZO for dissemination to AF and DoD leadership. As soon as practical, the installation WFPC will report any *significant* wildfire incident that occurs on or threatens property under AF jurisdiction to the AFWFB via the RFMO.

A significant wildfire incident is defined in the AFWFB Playbook as:

- Any wildfire greater than 100 acres.
- Any wildfire, regardless of size, that has met any of the following criteria:
  - Significant threat to installation infrastructure/resources
  - Major or extended impact on AF missions
  - Loss of life



- Negative impact to public health and safety
  - Threat to threatened and endangered species
- At a minimum, reports will include the following:

- Date
- Fire name
- Fire location (latitude and longitude)
- Fire size(acres)
- Number of personnel/resources involved
- Fire injuries
- Infrastructure damage
- Geospatial data on fire boundary

For uncontrolled wildfires lasting more than 24 hours, the installation WFPC will provide the AFWFB, via the Regional Fire Management Officer (RFMO), a daily report on the potential for fire growth, current and expected weather, resource values at risk, and multi-jurisdictional agency involvement. For instructions on reporting contact: [AFCEC.CZOF.FIRECENTER@US.AF.MIL](mailto:AFCEC.CZOF.FIRECENTER@US.AF.MIL)

### **4.3 Wildfire Suppression Damage Repair**

If the incident is under the sole jurisdiction of KAFB, a suppression damage repair assessment shall be completed by the WFPC and the KFD-FMO as soon as the area is safe for reentry. All areas of concern will be noted and reported to the BCE for repair authorization or to secure funding for restoration work, coordinated through the Environmental Chief.

The WFPC will coordinate the statements of work or project scope with the KFD-FMO. Before any project or contract is closed out, the WFPC and the KFD-FMO shall re-inspect the area and determine if the work completed meets the requirements set forth in the statement of work or project scope.

If the incident has been turned over to an external agency, either under unified command or to an IMT, the WFPC and the KFD-FMO will complete a suppression damage repair assessment (if required) prior to the incident being returned to USAF jurisdiction or the release of the IMT. Any work necessary will be identified and addressed in the written rehabilitation plan and when possible be started utilizing resources from the IMT.

#### **4.3.1 Emergency Stabilization (ES)**

During the development of this WFMP, no specific areas on the installation were identified that require an ES Plan. Any future fire activity (wildlandfire and/or prescribed burns) that necessitates ES is the responsibility of the WFPC to develop and oversee the implementation of the ES Plan in coordination with the KFD-FMO and other agencies.

#### **4.3.2 Burned Area Rehabilitation (BAER)**

During the development of this WFMP, no specific areas on the Installation were identified that require a BAER Plan. Any future fire activity (wildland fire and/or prescribed burns) that necessitates area rehabilitation is the responsibility of the WFPC to develop and oversee the implementation of the

BAER Plan in coordination with theKFD-FMO and other agencies.

## **5.0 Monitoring and Evaluation**

### **5.1 Annual WFMP Review**

This WFMP will be reviewed annually and updated as outlined in the AFWFB WFMP review process. The Installation Commander and the installation WFPC, or representative, are responsible for determining WFMP updates needed annually. The Installation Commander formally appoints in writing the WFPC. Revisions of this WFMP will be required during the completion of a new, or significantly revised, INRMP and thus will follow therevision schedule of the INRMP from that point forward.

#### **5.1.1Guidance for WFMP annual review**

- All WFMPs need to be reviewed annually from the effective date.
- Annual review will follow the plans and permit tracker found on eDASH. Internal review due date is 3 months before annual compliance due date.
- The plan will follow the INRMP schedule and will be revised along with the INRMP every 5 years.
- Recommended that the WFMP be revised once the INRMP is approved to incorporate all changes to the goals and objections.
- Annual signature page is found in the back of the WFMP. It should be signed annually by the WFPC once all reviews have been completed.

#### **Roles and Responsibilities for annual review process:**

**Wildland Fire Program Coordinator** - will coordinate the annual review with all involved stakeholders. This should include the NR Manager, the FES Chief and the assigned WSM lead. It may also include the Installation support section, cultural resources and the Range personnel.

**Natural Resource Manager** – will review and request all needed changes.

**Fire Chief** – will review and request all needed changes

**Wildland Support Module Lead** – will review and make suggestions or recommendations to needed changes.

**AFWFB WFMP Manager** – will send out annual reminders to the installation’s WFPC, FES Chief, WSM Lead and the RFMO one month prior to the internal due date.

A review signature page can be found in [Appendix G](#)

### **5.2 Fire Fuels Monitoring**

At a minimum, the WFPC will ensure post-event monitoring of wildfires and all fuel treatment areas. Data collected will include mapping the burned or treated area with either a GPS unit or from aerial

photos and recording the pre- and post-conditions for fuels treatment and the habitat types impacted by the fire/treatment including any impacts to wildlife. A qualitative assessment of habitat conditions should be conducted the spring of the year following the burn or treatment to assess vegetation recovery. If, during the qualitative assessment, negative impacts are recorded, the WFPC shall undertake a more detailed assessment to quantify those impacts. Potential restoration or rehabilitation efforts should be based on the results of the quantitative assessment. Prescribed burns are conducted to achieve specific objectives and will include follow-up monitoring to assess whether the objectives have been met. Unplanned ignitions can be utilized to meet management goals, but should receive the same post-event monitoring to ensure DFCs present for the area were met or if the identified DFCs require updating to reflect new conditions. Specific natural resources management objectives may include: reduce non- native grass cover; reduce fuel loading and fuel density; reduce/remove invasive species; increase native plant species; reduce the risk of wildfire by consuming flashy fuels; and improve or restore natural habitats and return fire to the landscape. The burned area should be monitored the spring following the fire and/or treatment to determine whether these objectives have been met.

### **5.3 Non-fire Fuels Monitoring**

As part of project development, the WFPC shall ensure that a complete inventory of current conditions is conducted prior to any work being started. The establishment of baseline conditions is vital to determining the effectiveness of the project, both in terms of achieving program goals and also in terms of cost per acre treated. Long-term monitoring by the WFPC should include, at a minimum, observation of the project area(s) to determine short- and long-term achievement of the DFCs, calculation of the regeneration rate to help establish the proper treatment return interval, the impacts on wildlife, and the rate of return for invasive species. Measurements of fuel loading and growth, numbers and types of vegetative species and their distribution, and if signs of excessive erosion exist should be obtained, at a minimum, during the spring following the treatment, and annually up to the 5-year post-treatment mark. All fuels data shall be transferred into the appropriate GIS data layer(s) for future reference and decision making. The WFPC will also ensure that all post-treatment monitoring is recorded in the individual project file for historical tracking purposes. Sampling intervals in slower regeneration areas after the 5-year mark can be determined by the WFPC, as needed, to ultimately determine the proper treatment return interval. If projects are completed by a third party or contractors, the WFPC is still responsible for ensuring that the required data is gathered and recorded as above.

Resources that can provide excellent guidance for the development of short- and long-term fire and fuels treatment programs:

- Air Force Fuels Monitoring Protocol – contact the WSM for a copy
- [The USFWS Fuels and Fire Effects Monitoring Guide](#)



## Chapter 6 References Cited

**Protection Act of September 20, 1922** (42 Stat. 857; 16 U.S.C. 594) Authorizes the Secretary of the Interior to protect, from fire, lands under his/her jurisdiction and to cooperate with other federal agencies, states, or owners of timber.

**Economy Act of June 30, 1932** (47 Stat. 417; 31 U.S.C. 1535). Authorizes federal agencies to enter into contracts and agreements for services with each other.

**Reciprocal Fire Protection Act of May 27, 1955, as amended by the Wildfire Suppression Assistance Act of 1989** (69 Stat. 66, 67; 42 U.S.C. 1856a; 102 Stat. 1615). Authorizes reciprocal fire protection agreements with any fire organization for mutual aid with or without reimbursement, and allows for emergency assistance in the vicinity of agency facilities in extinguishing fires when no agreement exists.

**National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 and the Refuge Recreation Act of 1962.** (80 Stat. 927; 16 U.S.C. 668dd-668ee; 16 U.S.C. 460k-460k4). Governs the administration and use of the National Wildlife Refuge System.

**Alaska Native Claims Settlement Act of December 18, 1971.** (88 Stat. 668; 43 U.S.C. 1601). Alaska Natives' lands are to continue to receive forest fire protection from the United States at no cost until they become economically self-sufficient.

**Disaster Relief Act of May 22, 1974.** (88 Stat. 143; 42 U.S.C. 5121). Authorizes federal agencies to assist state and local governments during emergency or major disaster by direction of the President.

**Federal Fire Prevention and Control Act of October 29, 1974 et seq.** (88 Stat. 1535; 15 U.S.C. 2201) as amended. Authorizes reimbursement to state and local fire services for costs incurred in firefighting on federal property.

**Federal Grants and Cooperative Act of 1977.** (Public Law 95-244, as amended by Public Law 97-258, September 13, 1982; 96 Stat. 1003; 31 U.S.C. 6301-6308). Eliminates unnecessary administrative requirements on recipients of Government awards by characterizing the relationship between executive agencies and contractors, states and local governments, and other recipients in acquiring property and services in providing U.S. Government assistance.

**Alaska National Interest Lands Conservation Act of December 2, 1980.** (94 Stat. 2371; 43 U.S.C. 1602-1784). Designates certain public lands in Alaska as units of the National Park, National Wildlife Refuge, Wild and Scenic Rivers, National Wilderness Preservation, and National Forest systems resulting in general expansion of all systems. Any contracts or agreements with the jurisdictions for fire management services listed above that were previously executed will remain valid.

**Supplemental Appropriation Act of September 10, 1982.** (96 Stat. 837). Authorizes the Secretary of the Interior and Secretary of Agriculture to enter into contracts with state and local government entities, including local fire districts, for procurement of services in pre-suppression, detection, and

suppression of fires on any unit within their jurisdiction.

**Wildfire Suppression Assistance Act of 1989.** (Public Law. 100–428, as amended by Public Law 101–11, April 7, 1989). Authorizes reciprocal fire protection agreements with any fire organization for mutual aid with or without reimbursement and allows for emergency assistance in the vicinity of agency facilities in extinguishing fires when no agreement exists. **Sikes Act of 1960.** (16 U.S.C. 670a–670o; 74 Stat. 1052), was enacted into United States law on September 15, 1960. It provides for cooperation by the Department of the Interior and DoD with state agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States.

[Updated Guidance for Implementation of the Sikes Act Improvement Act Sikes Act Reauthorization Act of 2013](#)

Authorizing Cooperative Agreements for Land Management on DoD Lands  
Legislative Language

Section 103a(a) of the Sikes Act states that the Secretary of a military department may enter into cooperative agreements with state and local governments, nongovernmental organizations, and individuals to provide for the maintenance and improvement of natural resources on or to benefit natural and historical research on military installations.

#### **DoD Policy**

This authorization is intended to facilitate the acquisition of ecological services on military installations, to include monitoring and the transfer of funds for services provided.

#### **Other Policy References**

1. AFI 32-2001
2. AFMAN 32-7003
3. DoDI 6055.6
4. USFWS Manual sections 095 FW 3 Emergency
5. [Interagency Standards for Fire and Fire Aviation Operations](#), also known as the “RedBook”.
6. Wildland Fire Incident Management Field Guide, April 2013, PMS 210
7. Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide.
8. The National Strategy, The Final Phase in the Development of the National Cohesive Wildland Fire Management Strategy (April 2014)
9. Healthy Forest Initiative (August 2002)
10. Interagency Fire Management Plan Template Guidance, April 2009
11. Interagency Helicopter Operations Guide
12. Fuels and Fire Effects Monitoring Guide

## **Appendix A Delegation of Authority for the Wildland Fire Program Coordinator**

### **Wildland Fire Program Coordinator Delegation of Authority**

#### **Kirtland Air Force Base**

##### **DELEGATION OF AUTHORITY FOR WILDLAND FIRE MANAGEMENT**

As per AFMAN 32-7003, The Wildland Fire Program Coordinator (WFPC) for the installation **Kirtland AFB**, is hereby delegated authority to act on my behalf for the following duties and actions within the Zone:

1. Serve as the primary point of contact between the installation and AFCEC/CZOF for all matters concerning wildland fire.
2. Initiate and ensure appropriate installation coordination and timely completion of the WFMP annual review.
3. Coordinate with the AFCEC/CZOF WSM lead to identify NWCG training requirements needed to implement the installation WFMP.
4. Submit requests for Incident Qualification Cards to AFCEC/CZOF for installations personnel not employed by Fire Emergency Services as specified in the installation WFMP.
5. Coordinate with the installation natural resources manager to assess the need for an Emergency Stabilization Plan and/or a Burned Area Emergency Response Plan after a wildfire incident.
6. Responsible for acquiring required approvals of Agency Administrator Ignition Authorization and Prescribed Burn Go/No Go Checklist prior to initiation of a prescribed burn.
7. Report significant wildfire incidents on the installation as soon as practicable to the RFMO.
8. The WFPC at Kirtland AFB is a shared responsibility between the Environmental Flight Chief and the FES Chief.

This delegation of authority for wildland fire management program operations will be in effect from date of signature of this WFMP and will follow the INRMP revision process, unless superseded.

## Appendix B Delegation of Authority for incoming Incident Commander

### Sample Delegation for Unit Fire Management Officers

\_\_\_\_\_, Fire Management Officer  
for the \_\_\_\_\_(Unit) is delegated authority  
to act on my behalf for the following duties and actions:

1. Represent the \_\_\_\_\_(Agency) in the Multi-Agency Coordinating Group in setting priorities and allocating resources for fire emergencies.
2. Coordinate all prescribed fire activities in the \_\_\_\_\_(Unit) and suspending all prescribed fire and issuance of burning permits when conditions warrant.
3. Ensure that only fully qualified personnel are used in wildland fire operations.
4. Coordinate, preposition, send, and order fire and aviation resources in response to current and anticipated zone fire conditions.
5. Oversee and coordinate the \_\_\_\_\_Interagency Dispatch Center on behalf of the \_\_\_\_\_(Agency).
6. Request and oversee distribution of severity funding for Unit Fire and Aviation.
7. Approve Fire Program requests of overtime, hazard pay, and other premium pay.
8. Ensure all incidents are managed in a safe and cost-effective manner.
9. Coordinate and provide all fire and prevention information needs to inform internal and external costumers with necessary information.
10. Coordinate all fire funding accounts with the Budget Officer to assure unit fiscal guidelines are adhered to and targets are met.
11. Approve and sign aviation request forms.
12. Approve Red Cards in accordance with agency policy.
13. Authorized to hire Emergency Firefighters in accordance with the Emergency Worker Pay Plan.

FireManagementOfficer

/Date\_\_\_\_\_

AgencyAdministrator

/Date\_\_\_\_\_



## Appendix C Personnel Roster

Kirtland FES			
Contact Name	Position	Phone	Email
Jaime Jimenez	FES Chief/WFPC	505-846-8285	jaime.jimenez.4@us.af.mil
Juan Salas	Deputy FES Chief	505-853-6705	juan.salas.2@us.af.mil
Christian Farrow	FES Dispatch (E-911)	505-853-2099	christian.farrow@us.af.mil
Terence Eaton	OPR Lead	505-853-2571	terence.eaton@us.af.mil
Kirtland AFB Natural Resource			
Contact Name	Position	Phone	Email
Melissa Clark	Installation Management Chief/WFPC	505-853-1588	<a href="mailto:melissa.clark.8@us.af.mil">melissa.clark.8@us.af.mil</a>
David Reynolds	NR Chief	505-846-0226	<a href="mailto:david.reynolds.37@us.af.mil">david.reynolds.37@us.af.mil</a>
Isreal Travarez	Envionmental Chief	505-846-8546	<a href="mailto:Isreal.travarez@us.af.mil">Isreal.travarez@us.af.mil</a>
JBSA Important Contacts			
Contact Name	Position	Phone	Email
Carl Grusnick	Public Affairs Office	505-846-4239	<a href="mailto:377ABW.PA@us.af.mil">377ABW.PA@us.af.mil</a>

	Command Post	505-846-3777	
<b>AFCEC/CZOF</b>			
<b>Contact Name</b>	<b>Position</b>	<b>Phone</b>	<b>Email</b>
Vacant	RFMO		
Blake Stewart	AFMO	719-651-0669	<a href="mailto:Blake_stewart@fws.gov">Blake_stewart@fws.gov</a>
Vacant	WSM Lead		
Clyde Burris	WSM Assistant Lead	505-506-0719	<a href="mailto:Clyde_burris@fws.gov">Clyde_burris@fws.gov</a>
Brad Shoemaker	Branch Chief	406-702-2344	<a href="mailto:Bradley.shoemaker.2@us.af.mil">Bradley.shoemaker.2@us.af.mil</a>
Percy Metivier	Training PM	(210) 652-6815	<a href="mailto:percy.metivier@us.af.mil">percy.metivier@us.af.mil</a>
Kelley Anderson	Fire Ecologist/ WFMP POC	850-333-8274	<a href="mailto:kelley.anderson.3.ctr@us.af.mil">kelley.anderson.3.ctr@us.af.mil</a>
<b>AFCEC/CZOE ISS</b>			
<b>Contact Name</b>	<b>Position</b>	<b>Phone</b>	<b>Email</b>
Christopher Segura	ISS Lead	505-853-5443	<a href="mailto:christopher.segura.2@us.af.mil">christopher.segura.2@us.af.mil</a>
Dale Earl	ISS NR Support	505-846-2796	<a href="mailto:dale.earl@us.af.mil">dale.earl@us.af.mil</a>
<b>AFCEC/CZOM Regional Support Branch (RSB)</b>			
<b>Contact Name</b>	<b>Position</b>	<b>Phone</b>	<b>Email</b>
William Barry	Regional Support Section (RSS)		<a href="mailto:william.barry@us.af.mil">william.barry@us.af.mil</a>

<b>Cooperating Agencies &amp; Other</b>	
<b>Agency or Department</b>	<b>Phone</b>
Albuquerque Zone Dispatch	505-346-2660
Brad Tausan– Forest Service Sandia AFMO	505-362-3613
Joe Kendall – AFD Wildland Coordinator	505-452-7406
Bernalillo County Fire Dispatch	505-788-7000
Robert Brown – NM State Forestry	505-350-3456
Anthony Thompson – Southern Pueblos FMO	505-563-3662
Albuquerque Environmental Health Dept – Air Quality Program	505-768-1972

## Appendix D Public Land Orders



1980-01-28 PLO



1969-01-16 PLO



1963-01-01 Public



1957-06-03 Public



1957-06-03 PLO



1956-10-30 Fed Reg



1955-11-29 Public Land Order 1257



1954-09-30 PLO 995 Correction



1954-08-19 PLO 995



1949-07-18 PLO 595 Withdrawal for Nav



1944-08-23 PLO 242 Withdrawal for War



1943-06-07-PLO 133

## Appendix E Cultural Checklist

The following is a cultural resources checklist adapted from National Park Service guidelines for review of cultural resource concerns prior to implementation of wildland fire projects. During a wildfire, procedures outlined in [PMS 313, Resource Advisor's Guide for Wildland Fire, August 2017](#), will be followed.

### **Strategic Wildland Fire Management Planning**

Installation cultural resource staff:

- Ensure that cultural resources are thoroughly evaluated and discussed in the INRMP.
- Regularly review the ICRMP and ensure that the plan is complete and up to date.
- Regularly coordinate with the wildland fire management program to ensure that cultural resources are considered at all stages of fire planning and good communication is maintained between cultural resource and wildland fire management programs.
- Participate in the development and review of installation WFMPs.
- Prepare funding proposals for cultural resource inventory within the Area of Potential Effect (APE) of fuels reduction projects as soon as fuels reduction project is proposed.
- Ensure that planning activities comply with federal cultural resource laws, executive orders, and policies:
  - Coordinate with installation Section 106 coordinator to ensure that NHPA Section 106 compliance is completed in concordance with NEPA compliance activities.
  - Develop installation-specific NHPA Section 106 programmatic agreement, if appropriate.
- Ensure that appropriate tribal leadership is contacted for consultation if applicable, as per NAGPRA ([25 U.S.C. §3001 et seq.](#)), DOI policy, and Executive Order 13175: Consultation and Coordination with Indian Tribal Governments ([EO 13175](#)).

### **Annual Wildland Fire Management Planning**

Installation cultural resource staff:

- Annually identify, document and update records on cultural resources with potential to be adversely affected by fire (Archeological Sites Management Information System [ASMIS], Cultural Landscaped Inventory [CLI], etc.):
  - Ensure that updated information is reflected in relevant documents (WFMPs, PFPs, etc.).

- Participate in annual review of WFMP and update cultural resource information as indicated:
    - Evaluate past performance of mitigation measures and identify areas of needed improvement for stewardship of cultural resources.
    - Obtain information about upcoming fuels reduction activities that may affect cultural resources.
- Develop or update the installation's READ manual.
- Ensure that notification lists are current and reside in appropriate offices (with the FES IFC, WSM Lead, ECC, CRM, etc.).
- Ensure that planning activities comply with federal cultural resource laws, executive orders, and policies:
  - Coordinate with installation Section 106 coordinator to ensure that NHPA Section 106 compliance is completed in concordance with NEPA compliance activities.
  - Develop installation-specific NHPA Section 106 programmatic agreement, if appropriate.
  - Ensure that appropriate tribal leadership is contacted for consultation, if applicable, as per NAGPRA, DOI policy, and EO 13175.

#### *Fuels Treatment Planning*

- Review fuels treatment plans when project is proposed and when the plan is implemented.
- Ensure cultural resource mitigations are appropriately included in each treatment plan.
- Coordinate cultural resource documentation and assessment activities to support specific fuels projects:
  - Ensure that cultural resource inventory is complete before fuels reduction activities.
  - Determine eligibility of cultural resources for inclusion on National Register of Historic Places.
  - Determine potential for adverse effects on significant cultural resources within APE from fuels reduction activities.
  - Provide assessment analyses and mitigation to wildland fire management program.
- Ensure that planning activities comply with federal cultural resource laws, executive orders, and policies:
  - Coordinate with Section 106 coordinator for NHPA Section 106 compliance.
  - Determine whether planned activity qualifies for NHPA Section 106 programmatic agreements.

## **Project/Event Planning**

### *Planning for Unplanned Ignitions*

- Ensure that issues and concerns about cultural resources are incorporated into planning documents, and that mitigation protocols are included. Locations of critical resources that might be threatened by post-fire events such as flooding, slides, erosion, or debris flows, and the types of treatments to be carried out or excluded are listed.
- Ensure that private and sensitive information regarding location of cultural resources is protected but accessible to wildland fire managers.
- During periods of potential or existing high fire activity, ensure cultural resource advisors are prepared and ready to participate in active fire planning and management activities.
- Ensure that cultural resources will be considered in any post-fire rehabilitation or restoration, including: protection goals and measurable objectives for the BAER program.
- Contact information for cultural resource specialists who can prepare post-fire treatment plans, as well as individuals who can implement the treatments proposed.
- Ensure that planning activities comply with federal cultural resource laws, executive orders, and policies:
  - Coordinate with installation Section 106 coordinator to ensure that NHPA Section 106 compliance is completed in concordance with NEPA compliance activities.
  - Ensure that appropriate tribal leadership is contacted for consultation, if applicable, as per NAGPRA, DOI policy, and EO 13175.

### *Fuels Treatment Planning*

- Review fuels treatment plans when project is proposed and when the plan is implemented.
- Ensure cultural resource mitigations are appropriately included in each treatment plan.
- Coordinate cultural resource documentation and assessment activities to support specific fuels projects:
  - Ensure that cultural resource inventory is complete before fuels reduction activities.
  - Determine eligibility of cultural resources for inclusion on National Register of Historic Places.
  - Determine potential for adverse effects on significant cultural resources within APE from fuels reduction activities.
  - Provide assessment analyses and mitigation to wildland fire management program.

- Ensure that planning activities comply with federal cultural resource laws, executive orders, and policies:
  - Coordinate with Section 106 coordinator for NHPA Section 106 compliance.
  - Determine whether planned activity qualifies for alternative NHPA Section 106 process.
  - Ensure that appropriate tribal leadership is contacted for consultation, if applicable, as per NAGPRA, DOI policy, and E.O. 13175.
- Ensure that monitors will be present during the fuels treatment activity.
- Ensure that monitors will inspect area after fuels treatment to ensure planned actions resulted in the desired protection.
- Ensure that planning activities comply with federal cultural resource laws, EO 13175, and policies.



## Appendix F: Delegation of Authority for WFMP approval



Vattioni\_Delegatio  
n\_Dec2021.pdf

**Appendix G: Annual Signature Page**

<b>Annual Review History</b>		
<b>Review Date</b>	<b>Reviewer Signature</b>	<b>Reviewer Title</b>

List of Annual Changes: