

APPENDIX C  
NELLIS NEVADA TEST AND TRAINING RANGE  
WILDLAND FIRE MANAGEMENT PLAN

Final Report  
September 5, 2012

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## ATTACHMENTS

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- ATTACHMENT 1: Memorandum of Agreement between BLM and DOD Concerning Wildland Fire Management Activities at NTTR
- ATTACHMENT 2: 2008 Letter of Agreement between BLM and Nellis AFB
- ATTACHMENT 3: Example Delegation of Authority Letter
- ATTACHMENT 4: Interagency Agreement for the Provision of Temporary Support during Wildland Firefighting Operations

## List of Acronyms and Abbreviations

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AAR	After Action Review
ABW	Air Base Wing
ACEC	Areas of Critical Environmental Concern
AF	Air Force
AFI	Air Force Instruction
AGL	Above Ground Level
ALDS	Automated Lightning Detection System
BAER	Burned Area Emergency Rehabilitation
BLM	Bureau of Land Management
CAFB	Creech Air Force Base
CES	Civil Engineer Squadron
DAQEM	Department of Air Quality and Environmental Management
DOA	Delegation of Authority
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
ESOHC	Environmental Safety & Occupation Health Leadership Council
EOC	Emergency Operations Centers
FEMA	Federal Emergency Management Agency
FFCP	Fire Fighter Certification Program
FMO	Fire Management Officer
FMU	Fire Management Unit
FSH	Forest Service Handbook
GACC	Geographic Area Coordination Center
IA	Initial Attack
IC	Incident Commander
ICS	Incident Command System
IHOG	Interagency Helicopter Operations Guide
IMT	Incident Management Team
INRMP	Integrated Natural Resources Management Plan
LVICC	Las Vegas Interagency Communication Center
MIST	Minimum Impact Suppression Tactics
MOA	Military Operating Area
NAFB	Nellis Air Force Base
NAM	North American Monsoon
NEPA	National Environmental Policy Act
NFDRS	Fire Weather Planning and National Fire Danger Rating System
NFIRS	National Fire Incident Reporting System
NFPA	National Fire Protection Association
NIFC	National Interagency Fire Center
NIIMS	National Interagency Incident Management System
NNSA/NSO	National Nuclear Security Administration/Nevada Site Office
NNSS	Nevada National Security Site, formerly the Nevada Test Site
NTTR	Nevada Test and Training Range; now also the new name for the Range Wing
NWCG	National Wildland Fire Coordinating Group
NWS	National Weather Service
OHV	Off-Highway Vehicle
PPE	Personal Protective Equipment
PM10	Particulate Matter 10 microns or less in diameter

POC	Point of Contact
RAWS	Remote Automated Weather Stations
ROA	Range Operations Agency
ROO	Range Operations Office
ROW	Right-of-Way
SEAT	Single Engine Air Tanker
TECR	Tonopah Electronic Combat Range
TPECR	Tolicha Peak Electronic Combat Range
USAFWC	U.S. Air Force Warfare Center
USFWS	U.S. Fish and Wildlife Service
WFMP	Wildland Fire Management Plan
WFDSS	Wildland Fire Decision Support System
WFPM	Wildland Fire Program Manager
WRCC	Western Regional Climate Center

# 1. INTRODUCTION

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## 1.1 PURPOSE OF THE PLAN

99 Civil Engineer Squadron (99 CES) prepared this Wildland Fire Management Plan (WFMP) for the Nevada Test and Training Range (NTTR) to comply with Air Force Instruction (AFI) 32-7064, 17 September 2004. AFI 32-7064 (Integrated Natural Resources Management) requires Air Force installations to develop and implement a WFMP for unimproved lands that present a wildfire hazard. Nellis Air Force Base (NAFB), the Small Arms Range (SAR), and Creech Air Force Base (CAFB) are not included as part of this management plan because no potential for wildland fires exist at any of these areas. All potential fires on these facilities have been defined as brush fires and fall under local fire control laws. Additionally, NAFB and SAR have established agreements with the City of North Las Vegas for coordination of resources for control of any brush fires that might occur on that facility. CAFB has a mutual aid agreement with the Clark County Fire Department and an agreement with the National Nuclear Security Site (NNSS) Fire & Rescue in the Department of Energy (DOE).

Wildland fires pose a significant threat to training missions, weapons testing, structures, infrastructure, and natural and cultural resources on U.S. Air Force Warfare Center (USAFWC) lands on NTTR. In addition, wildfires that start on NTTR could spread to neighboring private and public lands, threatening homes in the wildland urban interface/intermix and causing damage to natural and cultural resources. Flares used during aerial training activities within the Military Operating Areas (MOAs) have the potential for unintentionally igniting a wildland fire on lands within and outside of NTTR.

This WFMP guides the full range of fire management-related activities for NTTR. As a component of the NTTR Integrated Natural Resources Management Plan (INRMP), the WFMP provides the framework for fire management, wildland fire suppression, burned area emergency rehabilitation (BAER), emergency stabilization, and fuel treatment activities to support the military mission and to safely accomplish the resource protection and ecosystem management objectives of the INRMP.

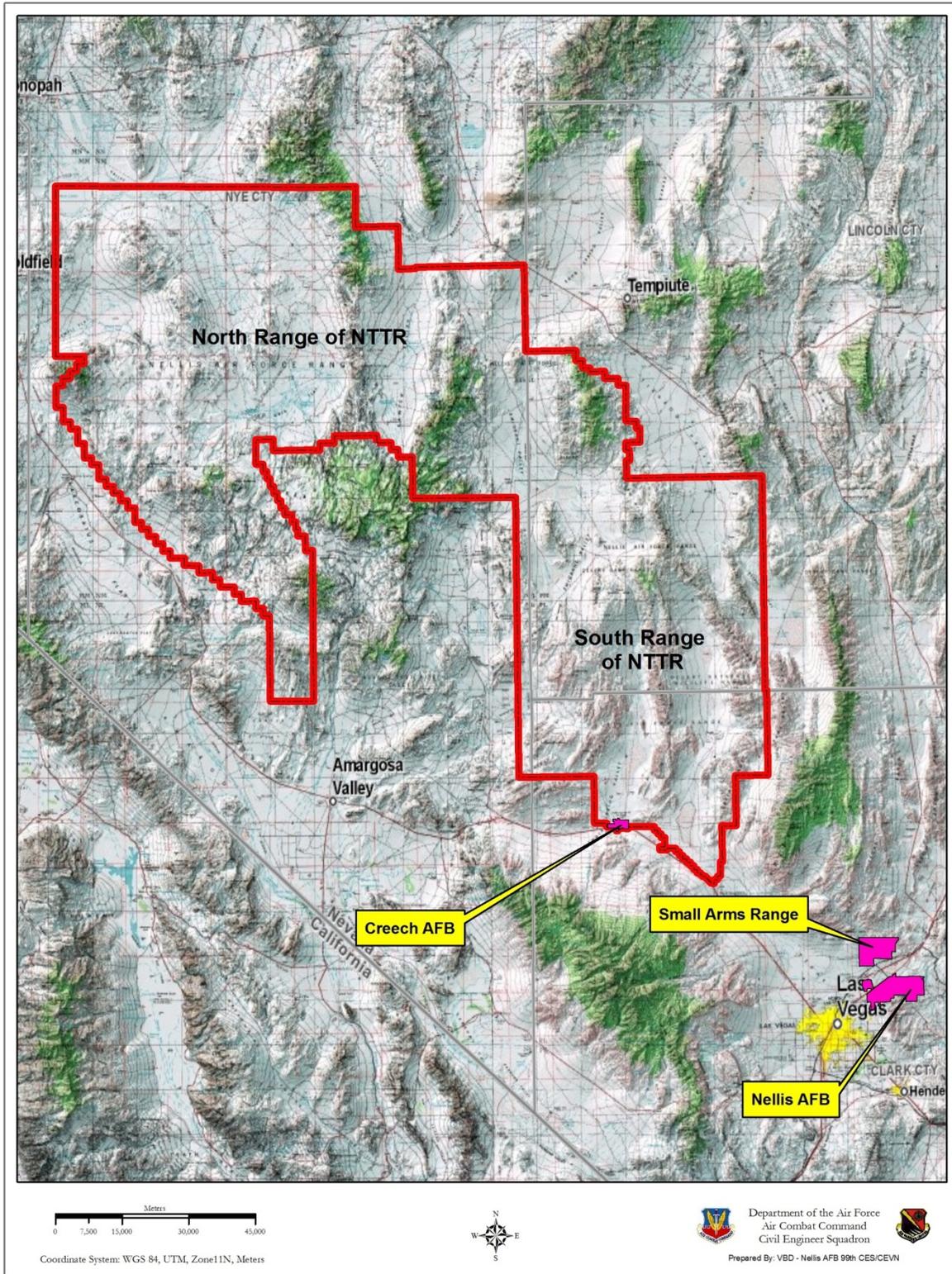
NTTR is an expansive area, covering approximately 2.9 million acres of federally-owned lands that were withdrawn from Department of Interior (DOI)-managed lands for military use under Public Law 106-65 (Figure 1). It lies in portions of Clark, Lincoln, and Nye counties, Nevada, northwest of Las Vegas. NTTR, often collectively referred to as the "Range," is divided into two parts. The South Range occupies approximately one-third of the total NTTR lands, and the North Range accounts for the remaining two-thirds. Tonopah Electronic Combat Range (TECR), Tolicha Peak Electronic Combat Range (TPECR), bombing targets and electronic ranges are found in the North Range. Between the South Range and the North Range lies the NNSS administered by the Department of Energy (DOE). Most of the South Range lies within Desert National Wildlife Range (DNWR) lands and are co-managed by the Air Force and the U.S. Fish and Wildlife Service (USFWS) under a Memorandum of Understanding. The North Range includes the 1,330,540-acre Nevada Wild Horse Range (NWHR). Management of wild horses on the NWHR is the responsibility of the Bureau of Land Management's (BLM) Las Vegas District.

Responsibility for the withdrawn lands is jointly shared with the BLM, USFWS, and USAFWC. The Military Lands Withdrawal Act of 1999 (P.L. 106-65) delineates the responsibility of each

federal agency for control and management of brush and range fires on withdrawn lands. The law mandates that the Air Force will take necessary precautions to prevent and suppress brush and range fires occurring within and outside the withdrawn lands as a result of military activities. The Air Force may seek assistance from the BLM in suppressing a fire. The Air Force will compensate the BLM for suppression of military activity caused fires. BLM and USFWS have responsibility for all nonmilitary caused fires.

Management of the NTTR is the responsibility of the 99 ABW and NTTR working through the USAFWS, which do not have trained or qualified personnel to protect NTTR from damage or loss by wildland fires. The USAFWS has established an agreement with the DOE which allows each agency to share personnel and assets in fighting brush and range fires. While this agreement is a positive step forward, it must be understood that both agencies have severe limitations on the type and level of support that each can offer at any given time.

NAFB and BLM have signed a Memorandum of Agreement to address each agencies roles and responsibilities for brush and range fires on NTTR.



**Figure 1. Major properties managed by USAFWC.**

## 1.2 ENVIRONMENTAL IMPACT ANALYSIS PROCESS (EIAP) COMPLIANCE

The goals and objectives for the WFMP, as defined in the INRMP, were developed collaboratively between military personnel specializing in natural resource management, state and federal wildlife agencies, and the public. Tiered to the Integrated Natural Resources Management Plan (INRMP), the WFMP fully meets the requirements of the National Environmental Policy Act (NEPA), as well as other state and federal regulatory requirements.

This WFMP is a detailed program of action designed to assist personnel of USAFWC to accomplish the following:

- Implement existing fire management policies,
- Support and enhance military mission activities,
- Achieve resource management and fire protection objectives defined in the current INRMP.

Specific non-emergency fire management-related projects and other planned activities, such as fuel management activities, would require full compliance with NEPA, beginning with preparation of AF Form 813 and compliance with all recommendations resulting from the review of that form.

## 1.3 MISSION IMPACT CONSIDERATIONS

Wildland fire and wildland fire management activities can significantly affect the ability of USAFWC to meet its mission. Impacts to the military mission potentially caused by wildland fires and their management include, but are not limited to:

- Safety of personnel or contractors working and/or training in wildland areas.
- Destruction or substantial damage to unprotected mobile and permanent structures and infrastructure.
- Potential financial consequences:
  - Cost of temporarily shutting down or rescheduling mission activities;
  - Cost of suppression and fire rehabilitation on NTTR and neighboring lands;
  - Repair or replacement costs for structures, infrastructure, and other equipment on NTTR;
  - Cost recovery to the public for damage to personal assets and values.
- Health of personnel or contractors exposed to large amounts of smoke from wildfires.
- Closing of Ranges to ground training activities due to dangerous wildfires burning in the area.
- Adjustment of the altitude of training flights that require dropping of flares due to high fire danger.
- Damage to vegetation and soils that can create conditions which would adversely affect training operations due to poor visibility from blowing dust and ash.
- Erosional damage to road systems that often occurs after high intensity wildfires and heavy rains.
- Limited access to training ranges due to burned areas requiring post-fire rehabilitation.

- Disruption or postponement of aerial training due to poor visibility caused by dense smoke from wildfires.
- Poor visibility for drivers using installation road systems caused by dense smoke from wildfires.
- Flight restrictions placed within military operations airspace over fires potentially limiting aerial fire suppression activities access.

## 2. GOALS AND OBJECTIVES

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### 2.1 SAFETY IS THE TOP OBJECTIVE DURING ALL FIRE MANAGEMENT ACTIVITIES

- Ensure that all military, civilian, and emergency services personnel involved in wildland fire management possess certifications appropriate for their expected level of involvement in wildland fire operations. All AF personnel must meet the applicable National Wildland Fire Coordinating Group (NWCG) Standards for wildland fire activities prior to engagement.
- Ensure that non-essential personnel will be evacuated or relocated to a designated safe location when threatened by wildland fire.
- Ensure that all personnel entering a wildland fire area will comply with the NWCG fitness requirements, training and qualifications, and will have required NWCG personal protective equipment (PPE) appropriate to their job or assignment.
- Ensure that responding personnel are provided hazard information specific to the incident area. Hazards, such as hazardous materials, radioactive material, and unexploded ordnances, will be identified and reported to firefighting resources. This will ensure a relatively safe environment for firefighting resources before they engage in any firefighting activities.

### 2.2 MITIGATE WILDLAND HAZARDS TO ASSETS AT RISK

- Identify and map range assets at risk, including, but not limited to structures, infrastructure, natural resources, threatened and endangered species, cultural resources, and wildland/urban interface or intermix.
- Identify high wildland fire hazard areas that surround assets at risk.
- Use viable fuel treatment methods and techniques to mitigate the threat of wildfires to structures, infrastructure, natural resources, cultural resources, and nearby wildland/urban interface or intermix.
- Enhance and improve habitat by utilizing natural fire and fuel treatments.
- Use fire management activities that are designed to minimize potential encroachment of invasive species into the natural environment.
- Provide fire rehabilitation and burned area emergency recovery for areas damaged by high intensity wildfire and fire suppression efforts.
- Where possible, implement Minimum Impact Suppression Tactics (MIST) during wildfire suppression efforts.
- Monitor and evaluate fire effects.
- Prioritize, fund, and implement hazardous fuel treatments for assets at risk.

### 2.3 Protect the USAFWC Mission through Proactive Wildland Fire Management

- Ensure that fuel treatments and other non-emergency fire management activities do not significantly impact military training.

- Mitigate the smoke from wildfires and/or fuel treatments potentially disrupting mission-related flights and work.
- Utilize appropriate and acceptable interagency management strategies and tactics for incidents.
- In consultation with the BLM, develop, prioritize and implement a 10-year fuel treatment plan for NTTR based on hazard and risk.
- Reduce the potential for wildfire ignitions by utilizing a variety of fuel treatment methods in areas where ground-training activities occur.

## **2.4 PROVIDE STRATEGIC WILDFIRE PROTECTION**

- Currently, the USAFWC has no internal personnel certified to fight wildland fires. All wildfire suppression would require the assistance of other federal and state agencies.
- If a wildland fire occurs on NTTR, fire suppression activities will be requested from BLM in accordance with the Military Lands Withdrawal Act of 1999 and the MOU between Nellis AFB and BLM. Currently, fire suppression capabilities are not available on NTTR for first response activities.
- BLM will respond to fires near AF ROW/Leased lands off of the NTTR to protect high value assets.

## **2.5 BUILD AND STRENGTHEN INTERAGENCY COOPERATION**

- Coordinate and cooperate with other federal, state, and local fire suppression agencies.
- Initiate and update interagency agreements with local agencies.
- Use accepted National Interagency Incident Management System (NIIMS) and Incident Command System (ICS) processes.
- A Designated Senior Fire Official (SFO) or Emergency Management Officer (EMO) will be the Point of Contact (POC) for all interagency interactions/wildfire incidence responses. The wildland fire program manager will act as the natural and cultural resources advisor during wildland fire incidences. The Range Liaison will work with the SFO/EMO and the BLM, during wildland fire incidences.
- Emphasize integration and coordination with partners in fire management and other public safety agencies. Interagency preplanning of incidents will be used to promote integration.
- Develop and provide an in-briefing package containing all essential information on each wildland fire incident to familiarize the Incident Management Teams (IMT) with the specifics of the fire and proper operating procedures to be used on USAFWC lands.
- Work closely with landowners/managers (BLM) for the development of FMP for AF ROW/Leased lands.
- Coordinate radio frequencies with cooperators to improve radio communications for incidents requiring mutual aid.
- Participate in annual interagency meetings, which include a post-season After Action Review (AAR).
- Establish interagency wildland fire training opportunities with all local agencies.
- Provide mutual support across jurisdictional boundaries to the best and most effective extent possible.

## 3. LAWS, POLICY, AND REGULATORY REQUIREMENTS

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### 3.1 PUBLIC LAWS

The policies, strategies, and direction in this WFMP follow all applicable Department of Defense (DOD), Air Force (AF), Federal, State of Nevada, Clark County, and applicable federal environmental and wildland fire management laws, regulations, and policies.

- Protection Act of September 20, 1922 (42 Stat. 857; U.S.C. 594)
- Endangered Species Act of 1973
- Migratory Bird Treaty Act of 1918
- National Wildlife Refuge Administration Act of 1966 Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; U.S.C. 315)
- Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 42 U.S.C. 1856, 1856a)
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 686)
- Wild Free-Roaming Horse and Burro Act of 1971, as amended (PL 92-195)
- Public Rangeland Improvement Act of 1978 (PL 95-514)
- Disaster Relief Act, Section 417 (Public Law 93-288)
- Annual Appropriations Acts for the Department of the Interior (DOI)
- United States Department of the Interior Manual (910 DM 1.3)
- 1995 Federal Wildland Fire Management Policy
- 2001 Updated Federal Wildland Fire Management Policy (1995 Federal Wildland Fire Management Policy Update)
- 1998 Departmental Manual 620 Chapter 1, Wildland Fire Management General Policy and Procedures. The Multiple-Use Sustained-Yield Act of June 12, 1960
- The Forest and Rangeland Renewable Resources Planning Act of August 17, 1974
- CFR Title 43 (1610) (BLM's planning guidance and regulations); BLM Manual 1601
- National Environmental Policy Act of 1969 and Title 40 CFR Part 1500
- Wilderness Act of 1964
- Clean Water Act and Clean Air Act 1-8
- National Historic Preservation Act 1966
- Native American Consultation per Executive Orders 12866, 13084 et al.
- Protocol Agreement (1998) with State Historic Preservation Office, Nevada
- The President's National Energy Policy (Executive Order 13212)
- Healthy Forests Restoration Act, December 2003 (PL 108-148)
- Other applicable laws, regulations, and policies as appropriate.

## **3.2 DEPARTMENT OF DEFENSE AND AIR FORCE POLICY**

### **3.2.1 Department of Defense (DOD) Policy/Instruction/Regulation**

- DOD Instruction (DODI), 6055.6, Enclosure 2, Section E2.5.9. Wildland Fire Preparation and Response

### **3.2.2 Air Force (AF) Policy/Instruction/Regulation**

- AFI 32-7064. 17 September 2004. Integrated Natural Resource Management
- AFI 32-7001. 9 May 1994. Environmental Quality Programming and Budgeting
- AFI 32-7080. 12 May 1994. Environmental Quality
- AFI 32-2001. 1 April 1999. The Fire Protection Operations and Fire Prevention Program
- AFI 32-7062. 1 October 1997. Air Force Comprehensive Planning
- AFI-13-212. 10 July 2008. Range Planning and Operations (Attachment 3)
- Sikes Act

### **3.2.3 State/County Regulations**

- State of Nevada, Department of Conservation & Natural Resources
- Clark County Department of Air Quality and Environmental Management, Clark County Air Quality Regulations

## **3.3 RESOURCE PLANS**

- Nellis Integrated Natural Resources Management Plan (Final)
- Desert National Refuge Complex Comprehensive Conservation Plan (Final)
- Bureau of Land Management, Las Vegas Field Office Resource Management Plan
- Bureau of Land Management, Ely Field Office Resource Management Plan
- Bureau of Land Management, Tonopah Field Office Resource Management Plan

## **3.4 FEDERAL WILDLAND FIRE MANAGEMENT POLICY**

The following establishes accepted wildland fire management policies and professional standards for wildland fire management on NTTR:

- National Fire Protection Association (NFPA) Standards
  - Standard 295 – Standard for Wildfire Control
  - Standard 1051 – Standard for Wildland Firefighter Professional Qualifications
  - Standard 1143 – Standard for Wildland Fire Management
  - Standard 1144 – Standard for Protection of Life and Property from Wildfire
- Federal Wildland Fire Management Policy and Program Review of 1995
- Review and Update of the 1995 Federal Wildland Fire Management Policy, 2001

- The Interagency Fire Management Plan Template
- National Mobilization Guide
- National Wildland Fire Coordinating Group (NWCG) Wildland Fire Qualifications (PMS 310-1/NFES 1414)
- Thirty-mile Hazard Abatement and Accident Prevention Plan
- 10-Year Comprehensive Strategy Implementation Plan
- NWCG Interagency Incident Business Management Handbook
- Wildland and Prescribed Fire Management Policy and Implementation Procedures Reference Guide
- Interagency Standards for Fire and Fire Aviation Operations

## 4. ORGANIZATIONAL STRUCTURE

### 4.1 USAFWC ORGANIZATION AND RESPONSIBILITIES

The 99 Air Base Wing Commander, or Appropriate Designee, defines the roles and responsibilities for wildland fire management on NTTR in the event of a military caused fire, plans and programs resources, designates the NTTR Wildland Fire Program Manager (WFPM), and approves the WFMP.

### 4.2 FIRE REPORTING

The following flow chart depicts the wildland fire reporting procedure and notification process when a fire is reported on the NTTR.

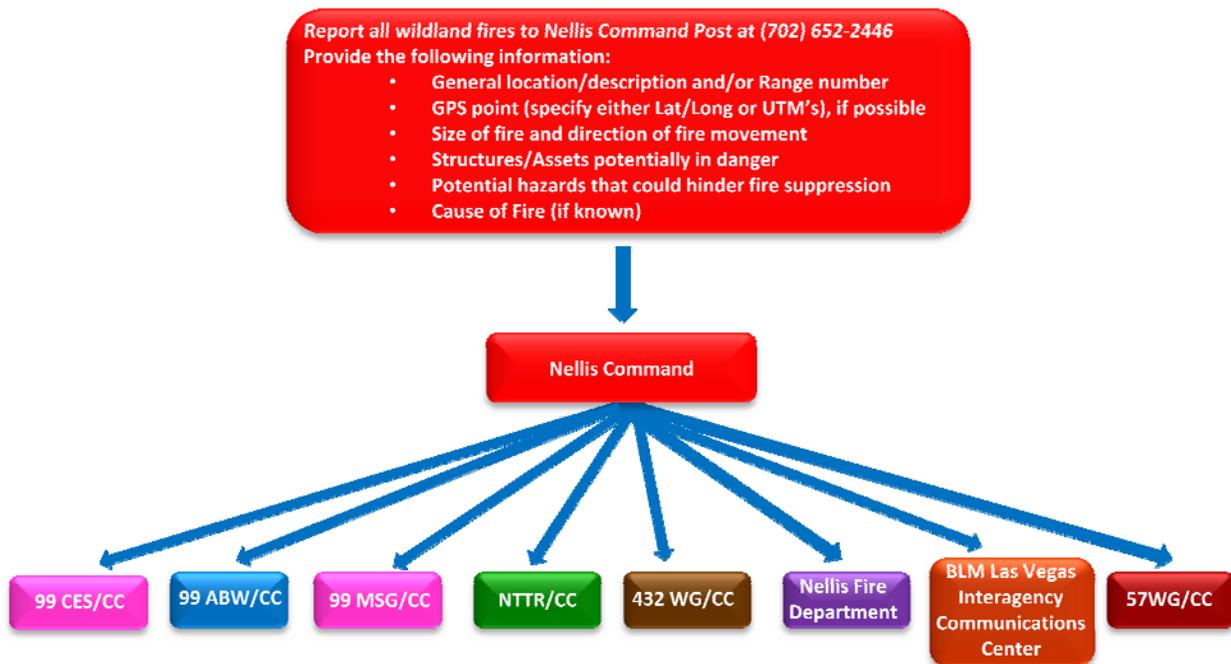


Figure 2. Fire Reporting Flow Chart

**Table 1. Fire Reporting Contact Information**

<b>Organization</b>	<b>Phone Number</b>
Nellis Command Post	2-2446 / 2-0732
99 ABW/CC	2-9900
99 MSG/CC	2-6550
99 CES/CC	2-4833
NTTR/CC	3-4600
432 WG/CC	4-3574
57 WG/CC	2-5700
Nellis Fire Department	2-9630
BLM LVICC	631-2350

### **4.3 RESPONSIBILITIES**

- **Fire Reported to Nellis Command Post**
  - Notifies BLM LVICC for fire notification
  - Notifies 99 ABW/CC
  - Notifies NTTR/CC
  - Notifies 57 WG/CC
  - Notifies 99 MSG/CC
  - Notifies 99CES/CC
  - Notifies Nellis Fire Department
  
- **Decision for BLM Assistance**
  - NTTR/CC:
    - Provides information to 99 ABW/CC regarding the fire's impact to NTTR facilities/mission
    - Makes recommendation to 99 ABW/CC to allow BLM access on withdrawn land to fight fires
  - 99 ABW/CC:
    - Approves BLM access to fight fires on withdrawn land.
    - Makes decision to request/allow BLM to fight the fire
    - Installation Command Authority (ICA): Assigns Incident Command (IC) when BLM assistance for fire suppression is not required, otherwise delegates IC to BLM
    - Signs delegation of authority to BLM when required for fire suppression on larger incidents
  - Command Post:
    - Notifies BLM with decision

- **Active Wildland Firefighting Activities**
  - NTTR/CC:
    - Manages access to NTTR
    - Appoints the NTTR Range Liaison
  - NTTR Liaison:
    - Coordinates access, security, and site specific safety constraints for BLM fire crews
    - Coordinates information regarding range configuration, water sources, and potential hazards on the NTTR
      - Identifies high value assets in fire path to protect them from damage or destruction
      - Coordinates with the Weather Squadron to provide local weather conditions and updates on fire status
      - Coordinates BLM emergency fire rehabilitation and fuel treatment activities within the NTTR
  - BLM:
    - Leads agency for non-military caused fires on NTTR
    - Manages all wildland fire fighting activities
      - Provides all necessary personnel and equipment for fire suppression
      - Provides BLM IC or delegated rep to EOC for coordination with AF Sr. Fire Officer
      - Provides base camp and resources for fire fighters and support staff personnel off of NTTR
      - Maintains log of all activities during fire suppression actions to include, but not limited to: tactics used, risk mitigation, weather, fire behavior, personnel/resources on scene, resources ordered, radio frequencies used, and resource values at risk.
  - 99 CES/CEF:
    - AF representative in Unified Command Structure when necessary
    - USAF Fire Liaison to BLM (if requested)
    - Primary AF POC to BLM IC during fire suppression by BLM on withdrawn lands
  - 99 CES/CEX:
    - Provides mobile command post for prolonged operations (if required)
    - Secondary AF POC to BLM during fire suppression by BLM on withdrawn lands
    - Provides an EM officer on-site to relay current information to 99 ABW leadership
  - 99 CES/CEANC:
    - Provides inputs to BLM regarding natural and cultural resources on NTTR that could be impacted by wildland firefighting operations
    - Acts as the Natural and Cultural Resources advisor to the Incident Command during wildland fires
  - 99 MSG/CC:
    - Director of the EOC
    - Initiates notification chain to inform appropriate organizations of wildland fire
  - Nellis Public Affairs Office:

- Provides ALL communications/announcements to the Media during and after the fire incident
- **Post Fire Action**
  - 99 CES/CEANC:
    - Coordinates with BLM on burned area emergency recovery efforts
    - Environmental rehabilitation
    - Responsible for coordinating and facilitating the fire damage claim settlement process
  - 99 CES/CEF:
    - Fire investigation
  - 99 CES/CC:
    - Addresses property loss after a fire incident that causes damage to NTTR assets
  - NTTR Liaison:
    - Coordinates 99 CES/CEANC WFPM proposed emergency fire rehabilitation and fuel treatment activities
  - BLM:
    - Conducts post-fire investigation in cooperation with NAFB to determine fire source
- **General Wildland Fire Management Responsibilities**
  - 99 ABW/CC:
    - Approves INRMP and WFMP
  - 99 CES/CEANC:
    - Responsible for development and implementation of WFMP
    - Develops planning, budgeting, and funding requirements for WFMP
    - Evaluates, monitors and updates the WFMP
    - Plans and implements joint fuel treatment projects with BLM
    - Manages and controls invasive plant encroachment on burned areas after fires have been suppressed
  - 99 CES/CEF:
    - Responsible for mutual aid agreements for individual base fire support
  - Nellis Public Affairs Office:
    - Conducts required NEPA public notifications and public meetings
  - BLM:
    - Provides fire management responsibility on DNWR lands
    - Coordinates with WFPM on fuels management program on NTTR
    - Coordinates wildland fire awareness/training for appropriate NTTR personnel as necessary
    - Reviews the WFMP
  - USFWS:
    - Reviews and concurs with WFMP for action related to DNWR lands within the withdrawn lands of NTTR

## 5. INTERAGENCY COOPERATION

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### 5.1 DELEGATION OF AUTHORITY

The transfer of authority for suppression actions on a wildland fire is accomplished through the execution of a written delegation of authority from the agency with responsibility for the land area involved to the Incident Commander (IC) who will be assigned responsibility for implementing the agency's strategic direction for management of the incident. In conjunction with the Wildland Fire Decision Support System (WFDSS), the delegation of authority is the most important procedural responsibility.

“A written delegation of authority to be given to incident commanders prior to their assuming command on larger incidents. This statement is provided to the incident commander by the agency executive delegating authority and assigning responsibility. The delegation of authority will include objectives, priorities, expectations, environmental constraints, public information directions, safety considerations and other considerations or guidelines as needed”(BLM MOA, 2010, See Attachment 1). A sample written delegation of authority is provided in Attachment 3.

#### 5.1.1 Purpose of the Delegation of Authority

A letter delegating authority and assigning responsibilities should be issued whenever an IC and his/her team are assigned to manage larger wildland fire incidents within the NTTR. A delegation of authority should be specific enough to convey to the IC expectations, yet broad enough to allow the team to be responsive to contingencies which develop during the incident. Any constraints that are necessary for USAFWC to protect military assets and values, meet resource management objectives, prevent unacceptable environmental impacts, or jeopardize firefighter or public safety should be included in sufficient detail for clear understanding. Where the team can be given the latitude to carry out USAFWC direction within the WFDSS preferred alternative, further constraints only inhibit and reduce the team's management effectiveness and should be considered carefully.

#### 5.1.2 Components to Include in the Delegation of Authority

The Delegation of Authority should identify objectives and important issues identified by the Range Liaison Officer, placing performance expectations on the IMT, and should identify and explain:

- Jurisdictional and protection responsibility for the lands involved in the wildland fire, including responsibility for structural protection where relevant
- Areas off limits due to unexploded ordnance or other contamination
- Access requirements/locations
- Security/safety briefings requirements for all personnel entering the Range
- Communication requirements
- High value assets
- Suppression objectives and their priority
- Initial attack responsibilities and areas that may be assumed by the team
- Identify SFO/EMO who will represent 99ABW specific direction to the team

- Basic documents that guide incident management on the agency/unit
- Cost constraints and guidelines
- Incident business advisor and required coordination with the team
- Guidelines for media relations and incident information management
- Procedures dealing with threats to other jurisdictions and private property
- Any local logistical considerations, including procurement and supply procedures
- Any other constraints or issues, such as current activities by U.S. Fish and Wildlife Service or other agencies, legal requirements, training opportunities, etc.
- Any specified direction, use clear, measurable descriptions to the extent possible.

## 5.2 COOPERATIVE AGREEMENTS AND INTERAGENCY CONTACTS.

**Table 2. Status of wildland fire cooperative agreements.**

Agency	Type	Local/ National	Agreement #	Status
BLM	Fire Protection	Local	NV913-1002	Final – Nov 2010
BLM	Airspace	National	N/A	Effective Date: 4 Jan 2008
Clark County Fire Department	Mutual Aid Fire Protection	Local	N/A	Current
City of North Las Vegas	Mutual Aid Fire Protection	Local	N/A	Current

## 6. SMOKE MANAGEMENT AND AIR QUALITY

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### 6.1 WILDFIRE SMOKE MANAGEMENT

As an emergency action, wildfire suppression is not regulated under the Clean Air Act or Nevada and Clark County air quality rules. Smoke will be managed to the extent that the NTTR/CC or delegated IC deems feasible and necessary. Smoke management decisions will be recommended by the WFPM or Range Liaison to NTTR/CC based on public and IMT safety, fire containment priorities, mission needs, and the overall objectives of the WFMP. Safety issues potentially driving smoke management decisions include:

- Dense smoke from wildfires could disrupt or postpone aerial and ground training activities.
- Smoke and associated particulates can cause damage to aircraft engines.
- Dense smoke from wildfires can produce poor visibility for drivers using roads on NTTR and highways adjacent to NTTR.

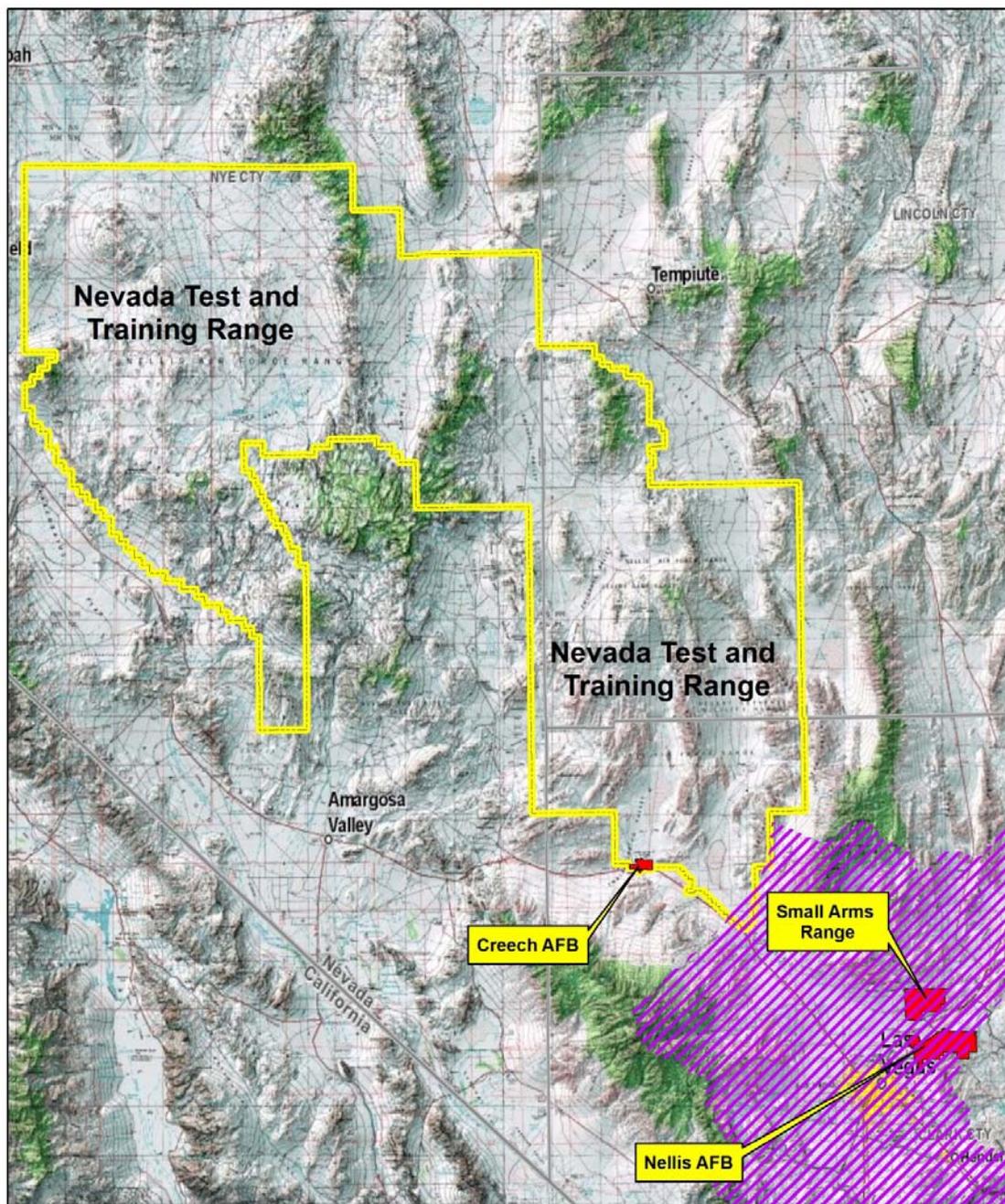
### 6.2 AIR QUALITY

The authority for the management of air quality was transferred from the USEPA to the State of Nevada and local counties by the Clean Air Act of 1970 as amended in 1990. As a result of Title I of the Clean Air Act, the Environmental Protection Agency (EPA) established national ambient air quality standards to limit levels of “criteria pollutants”, such as carbon monoxide, particulate matter, and other pollutants.

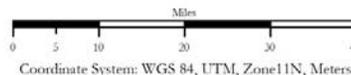
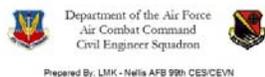
The Las Vegas Valley area of Clark County has been identified as an area in serious non-attainment for particulate matter less than 10 microns (PM10) and carbon monoxide. Both of these pollutants are released during wildland fires and prescribed burning. The southern portions of NTTR lie in the Las Vegas Valley and are, therefore, subject to air regulations of non-attainment areas. However, most of NTTR is located in an area that is in attainment for air quality and is not subject to those rules. Figure 3 shows the non-attainment areas with respect to NTTR.

Prescribed burning is not practiced on NTTR. Any fire management activities including wildland fire suppression, that potentially generate smoke or increase smoke density should be reviewed by the following agencies before implementation.

- The regulatory agency with authority for protecting air quality for areas of NTTR in Nye and Lincoln Counties is the Nevada State Division of Environmental Protection, Bureau of Air Pollution Control. Additional information can be found at: <http://ndep.nv.gov/bapc/index.htm>.
- The regulatory agency with authority for protecting air quality for the portions of NTTR in Clark County, is the Clark County Department of Air Quality and Environmental Management (DAQEM). Additional information can be found at: [www.co.clark.nv.us/daqem/aq/aq\\_index.html](http://www.co.clark.nv.us/daqem/aq/aq_index.html).



**Nevada Test and Training Range, Nevada**



**Figure 3. Air quality non-attainment areas impacting NTTR.**

## 7. RISK ASSESSMENT/DECISION ANALYSIS PROCESSES

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The primary purpose of the WFMP is to protect the wide range of assets found on NTTR from damage and/or loss as a result of wildland fires. These assets include structures, infrastructure, communication equipment, other military investments, and natural, archaeological, and cultural resources.

### 7.1 ASSETS

Currently at NTTR, most assets are not protected from wildland fires by any fire suppression resources because of the following issues:

- Most military assets on NTTR are located substantial distances from fire suppression resources, making an expedient response difficult, if not impossible based on the predicted and observed behavior of wildfires in the area.
- Access is extremely limited to many assets.
- Local fire suppression resources are not always available during times when the volume of fire activity is high.

Thus, the potential for damage and loss of assets on NTTR by wildland fires is very high. The priority areas containing high value assets include Cedar Peak, Tolicha Peak Electronic Combat Range (TPECR), Tonopah Electronic Combat Range (TECR), Tonopah Test Range Airfield, Mancamp, and miscellaneous communications sites (Mt. Irish, Mt. Ella, Highland Peak, etc.) as specified in the MOA. Communication, radar, and target complexes are depicted on the maps in Figures 4-7. Depending on the fire location and direction, the prioritization for the protection of military assets will be determined by the Range Liaison. Note that Cedar Peak and TPECR are designated as automatic response zones in Figure 4. These two areas were designated as automatic response zones by the BLM because they contain high value assets and have a high potential for wildland fire.

The WFMP will explore the possibility of installing automatic, remotely operated fire suppression systems to protect high-value assets in wooded areas, especially on the Kawich Range, Belted Range, Stonewall Mountain, and Tolicha Peak. For example, the communication/radar facility at Cedar Peak would probably be totally destroyed by a wildland fire. This could be prevented by installation of fire suppression systems and properly placed fire breaks and buffers.

#### 7.1.1 Wildland/Urban Interface/Intermix

Although NTTR is mostly remote and isolated from urban areas, several small communities are located near NTTR or underlie the NTTR airspace. Communities near NTTR include: Moapa 20 miles east, Beatty 18 southwest, Goldfield 20 miles west, Tonopah 20 miles northwest, and Corn Creek 20 miles southwest. Communities under the NTTR MOA include Alamo, Crystal Springs, Hiko, Panaca, Caliente, Pioche, and Rachel.

Within NTTR, several facilities would be considered wildland/human development interfaces. Many of these facilities are relatively expensive communication infrastructures such as the antenna sites at Cedar Peak, Black Mountain, Mt. Irish, Mt. Ella, Angel Peak, and Stonewall Mountain. Other more complex developments include infrastructure, buildings, equipment storage, and other manmade features that are found at TECR, TPECR, Man Camp, O&M Complex, and

target areas. These sites house expensive equipment and may also support human activities. Like any developed area, fire protection is needed, but these areas are remote from potential fire protection resources and preventative measures, such as fire buffers and barriers, are more realistic methods of fire protection.

## 7.2 NATURAL AND CULTURAL RESOURCES CONSIDERATIONS

Protecting natural resources is a priority for the operation and maintenance of NTTR as dictated by the Sikes Act and INRMP. However, fire suppression efforts in natural resources high hazard areas will be limited to aerial suppression methods due to limited access and potential for much more significant impacts from fire suppression than from the fire itself.

### 7.2.1 Wildlife Species

#### 7.2.1.1 Federally Listed Species - Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is a federally listed threatened species found on the South Range of NTTR (Figure 8). The Desert Recovery Plan of 1994 identifies unwanted wild-fire as a significant factor in “habitat destruction, degradation, and fragmentation” for the desert tortoise (USDI-BLM 2004). Many native desert grasses and shrubs are poorly adapted to fire and cannot survive frequent fires or high intensity fires. The increasing incidence and severity of fires in the Mojave region have converted desert shrublands into ephemeral grasslands, often dominated by non-native species (Brooks and Esque 2003). These vegetation changes can be detrimental to desert tortoises for the following reasons:

- Desert tortoises require perennial shrubs for cover from the intense desert solar radiation.
- Perennial grasses are important secondary food sources in many areas.
- Recurrent fires and competition from exotic ephemerals may reduce the abundance and diversity of native forbs, which are the major food source for the desert tortoise.
- Large-scale fires fragment desert tortoise habitat.
- Fires can also directly injure and kill desert tortoises (USDI-BLM 2004; Brooks and Esque 2003).

#### 7.2.1.2 Sensitive Species

Five animal species on NTTR are considered sensitive by the state and are managed by the INRMP. These include: desert tortoise, chuckwalla (*Sauromalus ater*), western burrowing owl (*Athene cunicularia hypugea*), banded Gila monster (*Heloderma suspectum cinctum*), and phainopepla (*Phainopepla nitens*). The reduction of wildland fire fuels and suppression of wildland fires could affect these species. These activities should consider the following:

- **Wildland fire fuels management projects:** Natural resources management guidelines as established by the INRMP will be followed to protect and minimize impacts to these species.
- **Protection of habitats that could be diminished by large wildland fires:** Uncharacteristic, severe wildland fires are capable of causing large scale loss of key sage brush habitats found on many of the foothills and slopes of mountain ranges on NTTR, especially the Kawich and Belted Ranges. These areas may warrant the implementation of active or more aggressive fire suppression techniques by fire managers.

- **Suppression tactics:** Suppression tactics which cause soil disturbance, such as bulldozers or other heavy equipment used to construct fire barriers or buffers, may negatively impact species such as the desert tortoise and western burrowing owl.

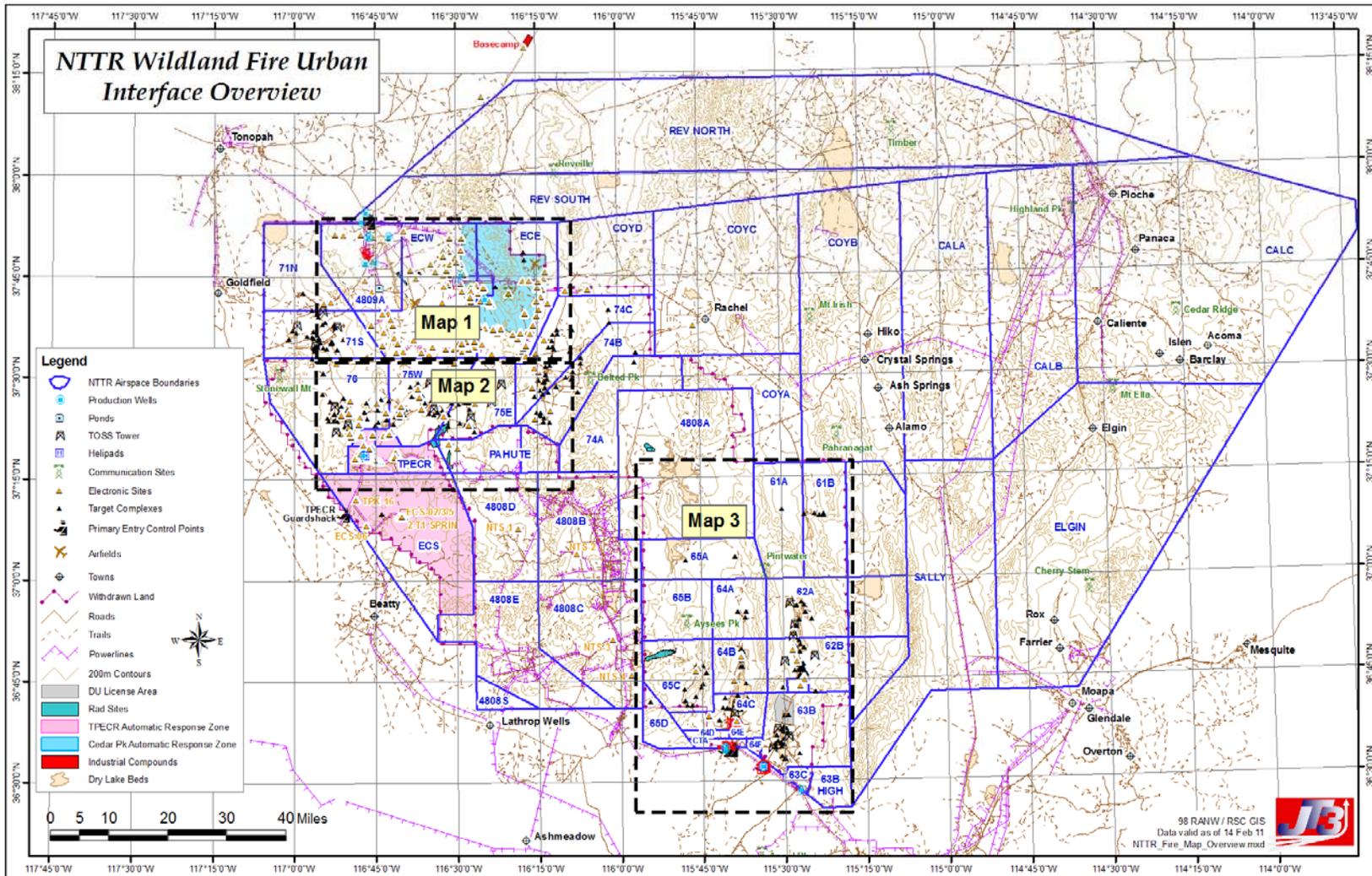


Figure 4. General overview of the communication, radar, and target complexes located on NTR.

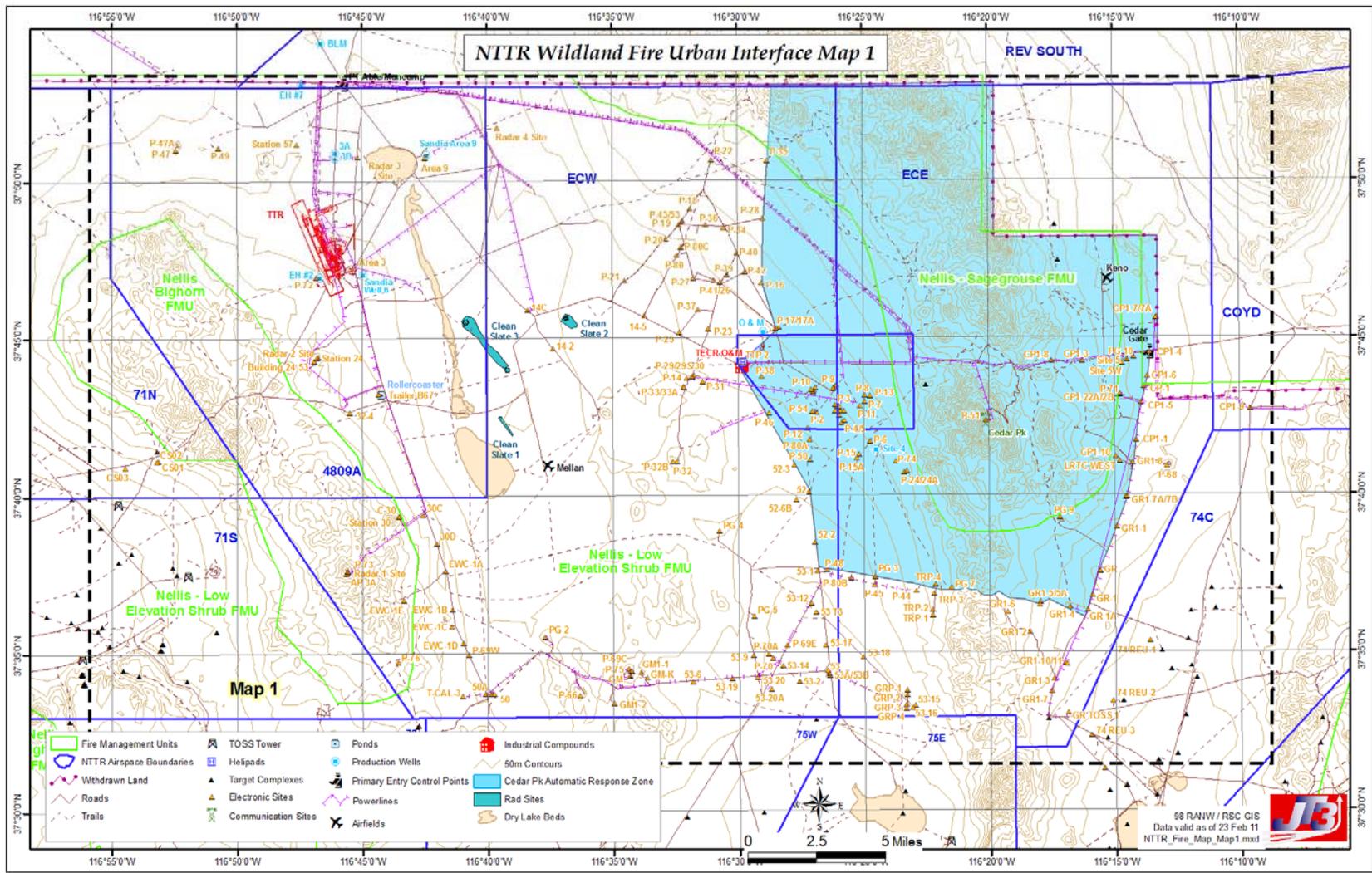


Figure 5. Communication, radar, and target complexes located on the northern third of NTR.

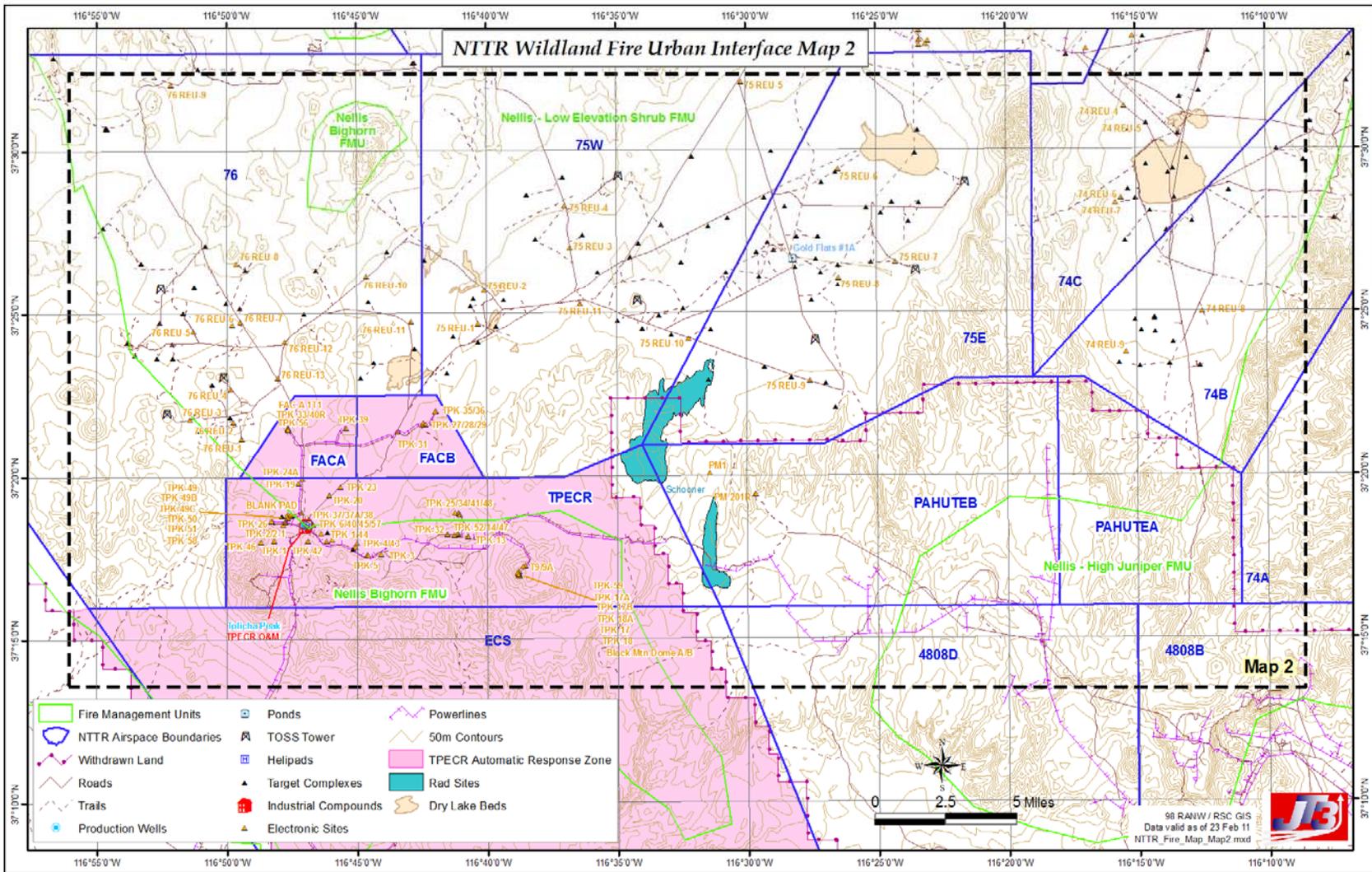


Figure 6. Communication, radar, and target complexes located on the central third of NTTR.

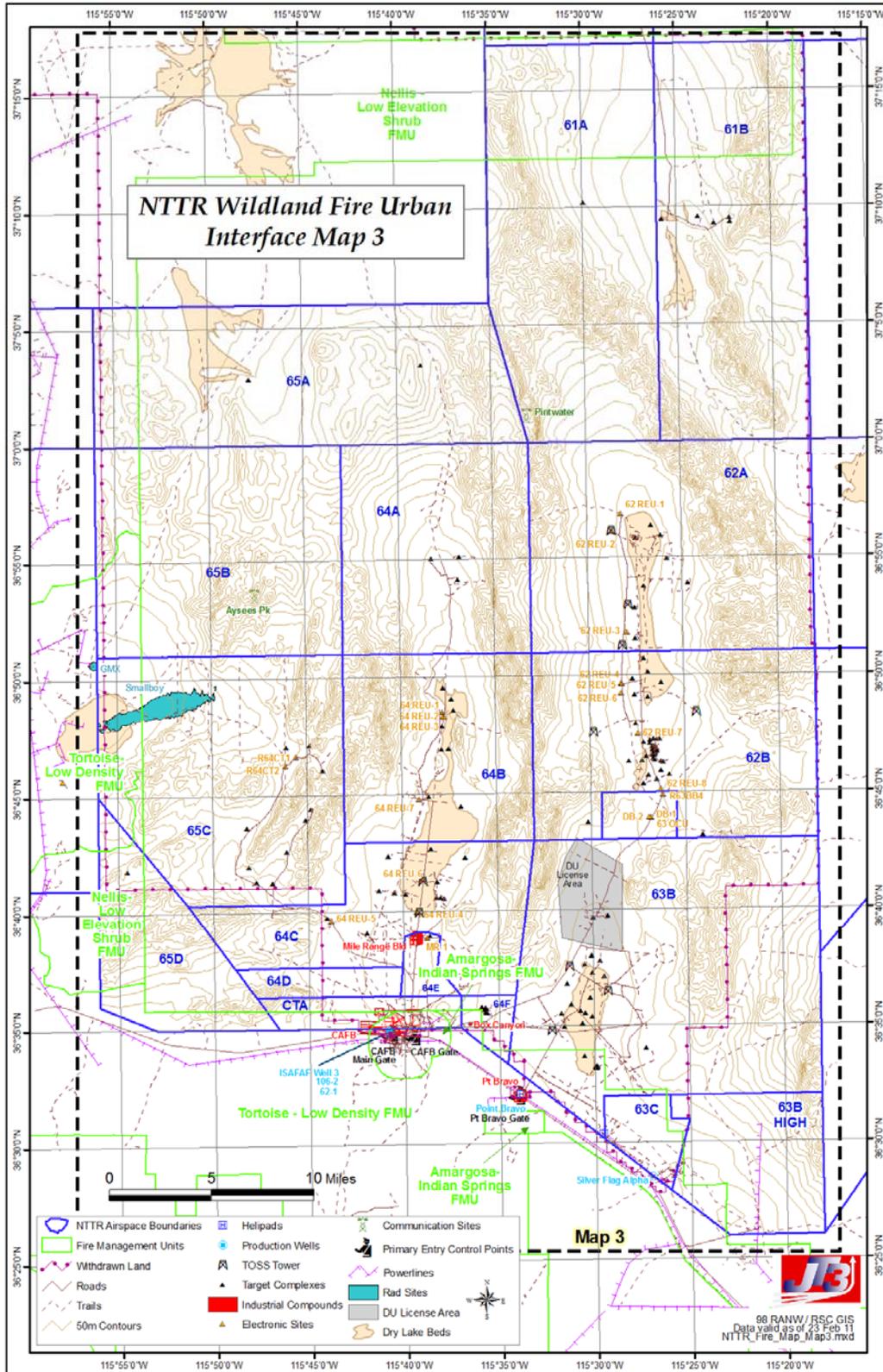
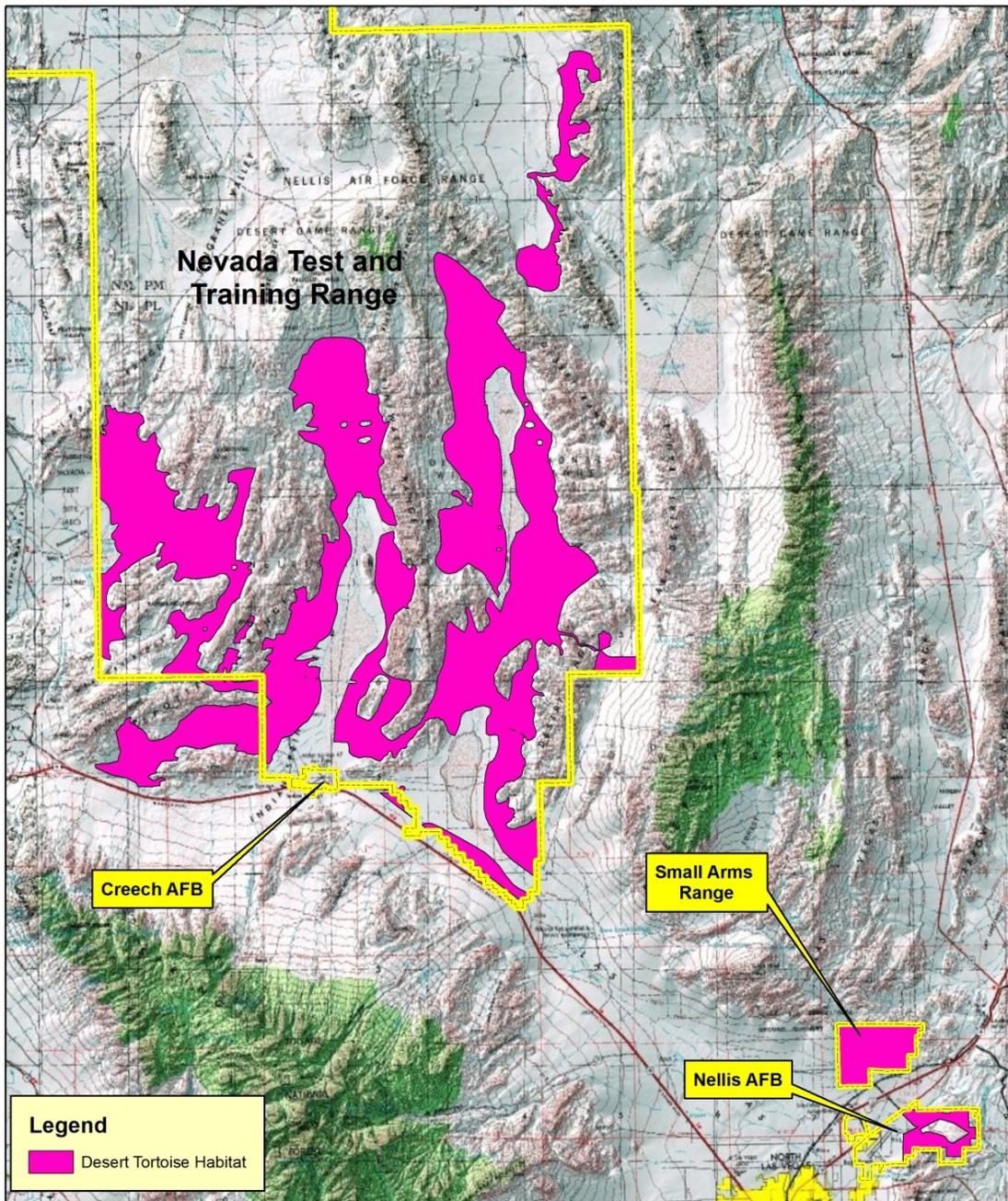
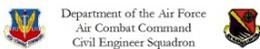


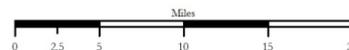
Figure 7. Communication, radar, and target complexes located on the central third of NTR.



**Nevada Test and Training Range, Nevada**



Prepared By: LMK - Nellis AFB 99th CES/CEVN



Coordinate System: WGS 84, UTM, Zone11N, Meters

**Figure 8. Desert tortoise habitat on NTR.**

## 7.2.2 Archaeological/Cultural Resource Considerations

Fire and fuels management activities must be consistent and comply with the NAFB Integrated Cultural Resources Management Plan (ICRMP). All military bases are required to prepare an ICRMP according to Department of Defense Instruction 4715.6, Environmental Conservation Program, and Air Force Instruction 62-7065, Cultural Resources Management. The ICRMP is the primary document governing installation actions regarding compliance with various Federal laws and regulations specifically instituted for the protection of cultural and archaeological resources. Protecting cultural and archeological resources is important; however fire suppression efforts in high hazard areas will be limited to aerial efforts only.

The areas covered by this WFMP contain significant pre-historic and historic cultural resources. In addition, seventeen Native American tribes have ancestral ties to USAFWC-managed lands and have a continued stake in the management and protection of many of these resources. Approximately six percent of NTTR has been inventoried for cultural resources. These surveys have classified 35 eligible sites, 285 non-eligible sites, and more than 2500 other sites. Three primary considerations for fire and fuels management with respect to cultural resources include:

- ***Protect and mitigate impacts to cultural sites during hazardous fuels reduction or protection activities.*** These are non-emergency type actions (projects) that will follow the guidelines as established in the ICRMP Chapter 4 Section 106 Project Review and Consultation.
- ***Protect significant cultural resources from the effects of potential wildfire.***
  - ***Pre-Suppression Considerations.*** Significant cultural resources, such as historic structures, can be lost or damaged due to wildfires. These should be identified and fuels reduction activities (clearing of brush, trees etc.) should be proposed around the site to reduce the risk of destruction by wildfire to that site (see section 7-2).
  - ***Wildfire Suppression Considerations.*** Wildland fire suppression strategies may incorporate protection of cultural resources sites as a protection objective.
    - Protection of cultural resources sites should be considered by ICs as a value at risk when suppressing active wildfires.
    - The Cultural Resource Manager should prepare location maps of potential sites that should be protected from wildland fire. These maps should be available to ICs as hard copies or electronic copies, through GeoBase or other internet databases.
    - The AF should work with BLM to identify sites that should be protected. It is the responsibility of the AF to reach a common agreement on what cultural resources should be protected and how protection will be accomplished.
- ***Protect significant cultural resources from impacts by wildland fire suppression tactics.*** Wildland fire suppression tactics often involve earth-disturbing activities that may damage or destroy significant cultural resources. Areas especially susceptible to use of equipment such bulldozers or other large earth moving machines should be mapped and located. The map below depicts cultural resources sites that should be protected during all wildland fire management activities.



Figure 9. General location of known sensitive cultural resources at NTR.

## 8. FIRE WEATHER, BEHAVIOR, AND DANGER

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### 8.1 FIRE WEATHER

Fire weather includes any weather conditions that potentially increase the risks of forest fires and large-scale brush fires. A lack of recent precipitation, low humidity, and high winds can create conditions which increase the potential for wildland fires.

#### 8.1.1 Precipitation

Fire season characteristics and timing depend on precipitation levels (as they affect vegetative fuel accumulation) and the extent and severity of the southwest monsoon.

- If winter precipitation is well above average, the herbaceous fuel load increases fire behavior potential by creating a continuous fuel bed of annual grasses and forbs that cure in late spring to early summer.
- If the southwest monsoon develops late or with reduced extent and intensity, NTTR may not receive sufficient wetting rain with the annual summer thunderstorms, resulting in drier fuel and a higher potential for ignitions associated with “dry” lightning.
- If the southwest monsoon develops with increased extent and intensity, a mid-summer green-up event may occur, resulting in a lower potential for fires during mid-summer. However, the green-up will create new fine fuels which dry and cure at the conclusion of the monsoon in late summer to early fall. Thus, the potential for fires is highest before and after the monsoon creating a bi-modal fire season.

Fire weather on NTTR can occur at any time of the year at any elevation, although the predominant season is during the spring and early summer in the lower elevations, and the late spring through summer at higher elevations.

#### 8.1.1.1 Temperature and Humidity

Typically, fire seasons on the all USAFWC lands are characterized by high temperatures and low humidity on both a daily and annual scale, and vary considerably due to changes in elevation and latitude. At lower elevations daytime highs exceed 100° F during the fire season. At higher elevations (such as ridges and mesas), the daytime high in summer has regularly surpassed 80° F.

Relative humidity is typically below 40 percent most of the year, except during and after rainfall when it often exceeds 50 percent (Kolden 2008). The months of May, June, and September commonly have average temperatures in the 90s, with temperatures exceeding 100° F most days in July and August, especially at low elevations. During these months, the humidity is generally less than 10 percent during the day (Kolden 2008).

#### 8.1.1.2 Winds

During the winter, west winds dominate as a function of the polar jet stream and frontal movement. During the summer, the annual development of the southwest monsoon introduces a dominant south to southeast wind. During the spring and fall, the transition between these two primary stages creates an ideal environment for the production of very strong winds.

An 80th percentile wind speed for this region ranges 15 to 18 mph, while a 95th percentile wind speed ranges 22 to 25 mph. These winds are normally from the south during the summer, but

occasional wind events from the northwest produce 20 to 30 percent of the high winds recorded (exceeding 20 mph), particularly in the northern part of NTTR. The strongest winds recorded for the region are from the northwest in April, which is the transition month for much of southern Nevada.

Another source of winds is produced by thunderstorm activity. These winds are often strong and erratic, caused by a combination of updrafts, downdrafts, and cold air outflow—sometimes occurring at the same time. Updrafts can reach 30 miles per hour or more if a thunderstorm develops. Downdraft wind speeds are commonly between 20 to 30 mph, but speeds of 60 to 75 mph can occur.

### 8.1.2 Sources for Local Weather

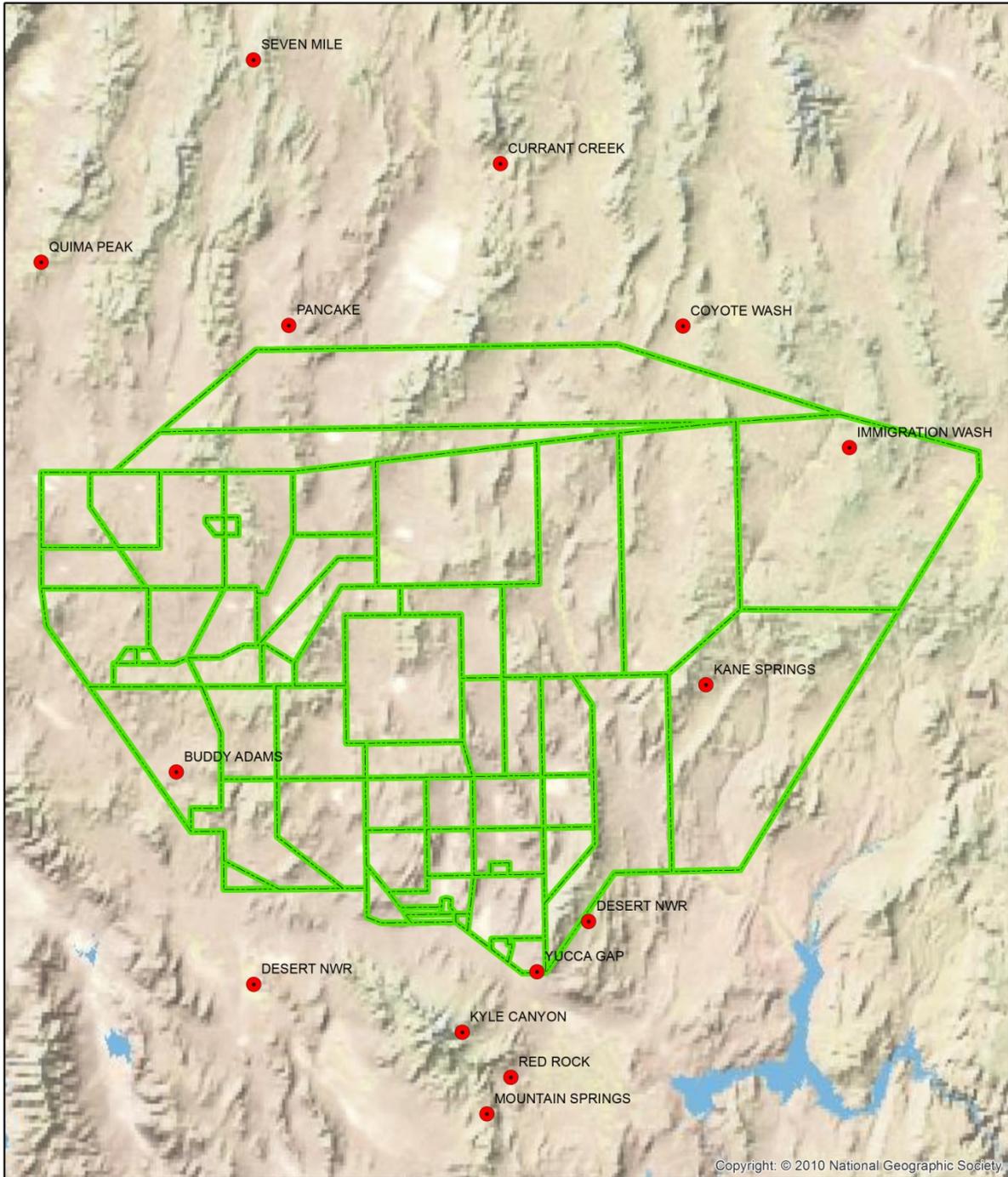
Available fire weather data for NTTR can be collected through NNSS weather stations or Department of Interior (DOI) Remote Automated Weather Stations (RAWS) in the MOAs. The NNSS has maintained an extensive and thorough weather station network since the late 1940s across NNSS lands, and they maintain three stations outside of the NNSS on DOD lands.

There are seven DOI RAWS with more than 10 years of data (Figure 10) and four weather stations that have been online since 2000 that capture fire weather conditions across the MOAs. Both unprocessed data and quality controlled RAWS data are available at [www.raws.dri.edu](http://www.raws.dri.edu). These station's data are available through the Western Regional Climate Center (WRCC) online at: [www.wrcc.dri.edu](http://www.wrcc.dri.edu). Climatological analysis performed by DOE can be found at: [www.sord.nv.doe.gov](http://www.sord.nv.doe.gov).

#### 8.1.2.1.1 National Weather Service (NWS)

The NWS Forecast Office in Las Vegas provides weather predictions and forecasts for USAFWC lands. Website Address: [www.weather.gov/lasvegas](http://www.weather.gov/lasvegas) and the fire weather address is: [www.wrh.noaa.gov/vef/fire.php](http://www.wrh.noaa.gov/vef/fire.php)

- **Las Vegas Office Products.** Staff meteorologists are on duty 24 hours a day throughout the year. Scheduled dates and times for the Fire Weather Planning and National Fire Danger Rating System (NFDRS) forecasts are:
  - 5/1 through 10/31: Planning forecasts issued twice daily at 0700 and 1500 PDT. NFDRS forecast issued by 1530 PDT.
  - Off season: Planning Forecast issued once daily at 0700 PDT.
  - Event driven: Fire Weather Watch/Red Flag Warnings
  - Upon request: Spot forecasts
- **Spot Forecasts.** Requests for spot forecasts can be submitted via the Las Vegas Fire Weather homepage found at: <http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=vef>
- **Fire Weather Events.** Las Vegas NWS office will issue two classifications for indicating critical fire weather patterns that contribute to extreme fire danger and/or fire behavior. Fire Weather Watches and Fire Weather Red Flag Warnings indicate critical fire weather patterns that contribute to extreme fire danger and/or fire behavior.



**Nevada Test and Training Range, Nevada**


 Department of the Air Force  
 Air Combat Command  
 Civil Engineer Squadron
 

Prepared By: LMK - Nellis AFB 90th CES/CEVN




  
 Coordinate System: WGS 84, UTM, Zone11N, Meters

**Figure 10. Locations of RAWs and NNSS weather stations data available for analysis and pertinent to the region.**

- **Fire Weather Watch.** A Fire Weather Watch alerts agencies to the high potential for development of a Red Flag event in the 12 to 72 hour timeframe. The Watch may be issued for all or selected portions of a fire weather zone or zones. A watch may be issued in the first 12 hour time period only for an expected dry thunderstorm event.
- **Fire Weather Red Flag Events.** A Fire Weather Red Flag Warning alerts agencies when the Fire Weather Red Flag weather criteria (defined below) are forecasted to occur within the next 24 hours or are already occurring, and are coupled with critical fuels conditions.
- **Criteria for Fire Weather Red Flag Warning.** The criteria for a Fire Weather Red Flag Warning include:
  - Fuel moistures are critically low
  - Sustained winds greater than or equal to 20 mph or gusts greater than or equal to 35 mph for 3+ hours –AND– Relative humidity is less than or equal to 15 percent
  - Dry thunderstorms are predicted with area coverage designated as widely scattered, or coverage area designated as greater than 15 percent of a fire weather zone.
- **Dissemination of Watches and Warnings.** Each issuance, update, or cancellation of a Fire Weather Watch or Red Flag Warning falling between normal narrative forecast issuance times will be relayed to BLM dispatch offices and Western Great Basin Geographic Area Coordination Center (GACC) affected by the watch/warning. These are located on the websites of the NWS Las Vegas Office and the Western Great Basin GACC at: <http://gacc.nifc.gov/wgbc/predictive/weather/weather.htm>
- **Nevada Fire Weather Zones.** Fire weather forecast zones are boundaries that are established and/or modified jointly by the NWS and land management agencies. NTTR falls into multiple fire weather zones including: 462, 463, and 465 (see Figure 11).

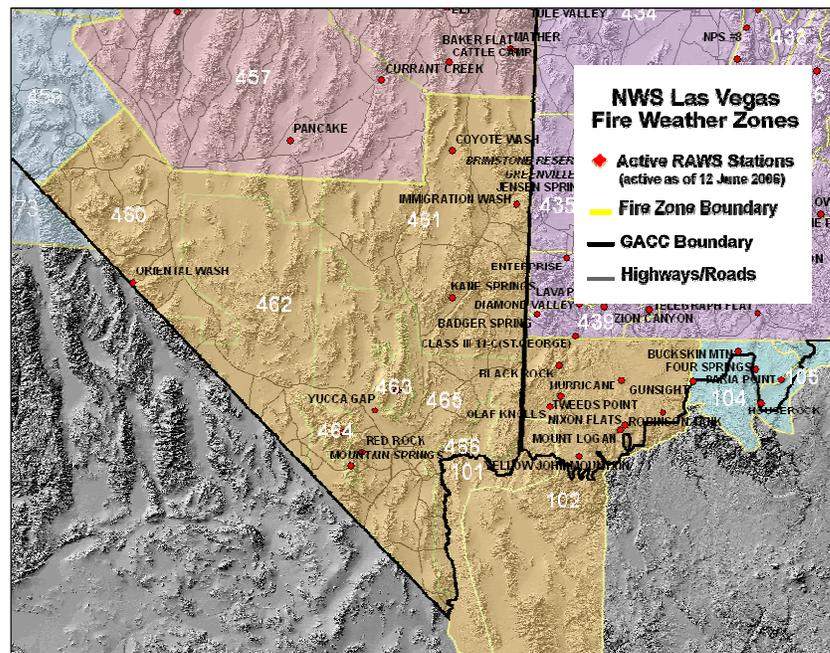


Figure 11. Location of fire weather zones.

## **8.2 FIRE BEHAVIOR AND FIRE DANGER**

### **8.2.1 Fire Behavior**

The fire environment on NTTR during fire season is often characterized by high temperatures, low humidity, high winds, diversity of fuels, and topography, which combine to create extreme fire behavior. Rapid rates of spread and high or extreme fireline intensities, which exceed the capability of ground and aerial fire suppression resources, can and do occur on USAFWS lands.

The USFS used FlamMap to determine areas on NTTR where crown fires could occur. In FlamMap, crown fire potential is not affected by rainfall, but by the amount of biomass in the canopy of the trees, spacing of the canopy, and the height of the base of the canopy from the ground. According to FlamMap, less than one percent of the area has the potential for passive or active crown fire (see Figure 12) and is limited to areas with stands of pinyon-juniper at the higher elevations on the Kawich Range, Belted Range, Stonewall Mountain, Sheep Range, and Pahute Mesa.

### **8.2.2 Fire Danger**

The National Fire Danger Rating System (NFDRS) is used by wildland fire management agencies to assess current fire danger at local levels. This system is the keystone of interagency fire danger predictions which quantifies risk elements that are critical to make intelligent daily decisions regarding firefighter resource placement, staffing levels, appropriate suppression responses, and strategic decisions at local, geographical area, and national levels (National Fire Danger Rating System, NWS 2008).

All Nevada interagency dispatch centers have developed Fire Danger Operating and Preparedness Plans. The Las Vegas Interagency Coordination Center covers NTTR, and Central Nevada Interagency Dispatch Center and Ely Interagency Communication Center covers the MOAs.

## **8.3 IGNITION POTENTIAL**

The potential for wildland fire ignitions on NTTR, either through the occurrence of lightning, military operations, and/or base populace, is extremely high, based on current fire hazard models.

### **8.3.1 Natural Ignition Sources - Lightning**

Since fire records have not been maintained and wildfires have not been historically investigated on NTTR, the total number and annual distribution of lightning ignited wildfires occurring on USAFWS lands is not known. Several informal helicopter surveys conducted in February 2008 observed evidence of a number of unreported wildfires occurring on NTTR. These fires apparently ignited in remote, inaccessible areas. A significant number of these fires were likely caused by lightning.

Lightning in the U.S. is recorded by the Automated Lightning Detection System (ALDS). ALDS consists of a network of sensors, satellite links, and computers that can pinpoint the exact time and location of every lightning strike within 500-foot accuracy. ALDS can also determine the type of lightning strike and plot the information on a map. Access to the ALDS data is limited to those that purchase access through a private vendor. NNSS has a website where lightning strikes can be monitored online at: [http://www.sord.nv.doe.gov/Lightning/sord\\_lightning.htm](http://www.sord.nv.doe.gov/Lightning/sord_lightning.htm).

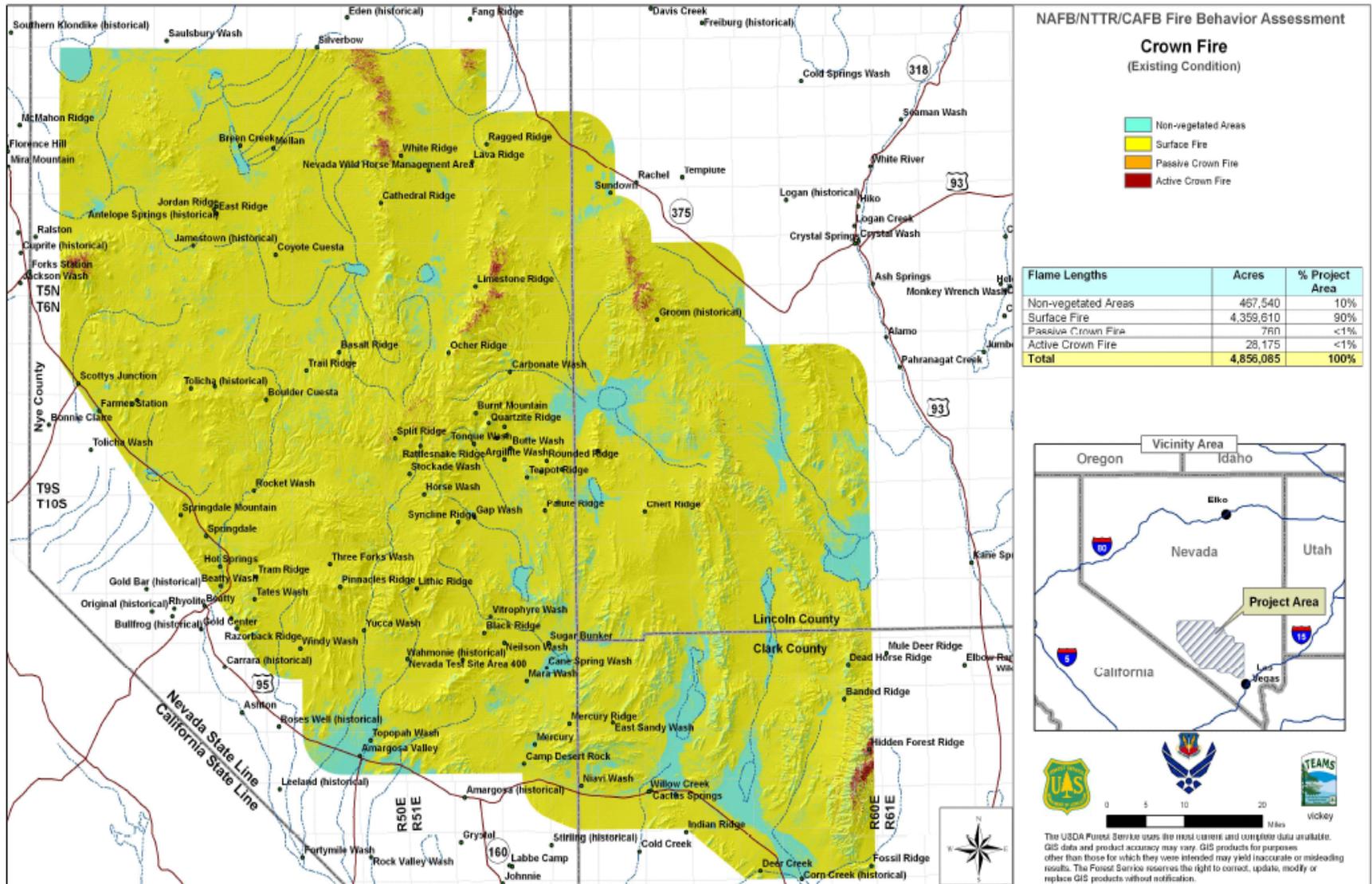


Figure 12. Current potential for crown fires according to FlamMap model results.

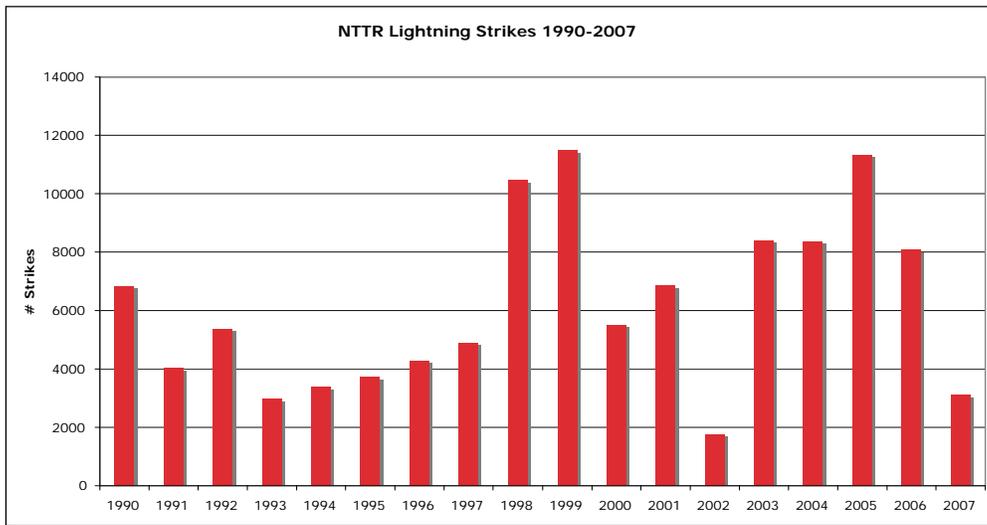


Figure 13. Total lightning strikes by year on NTR (1990-2007).

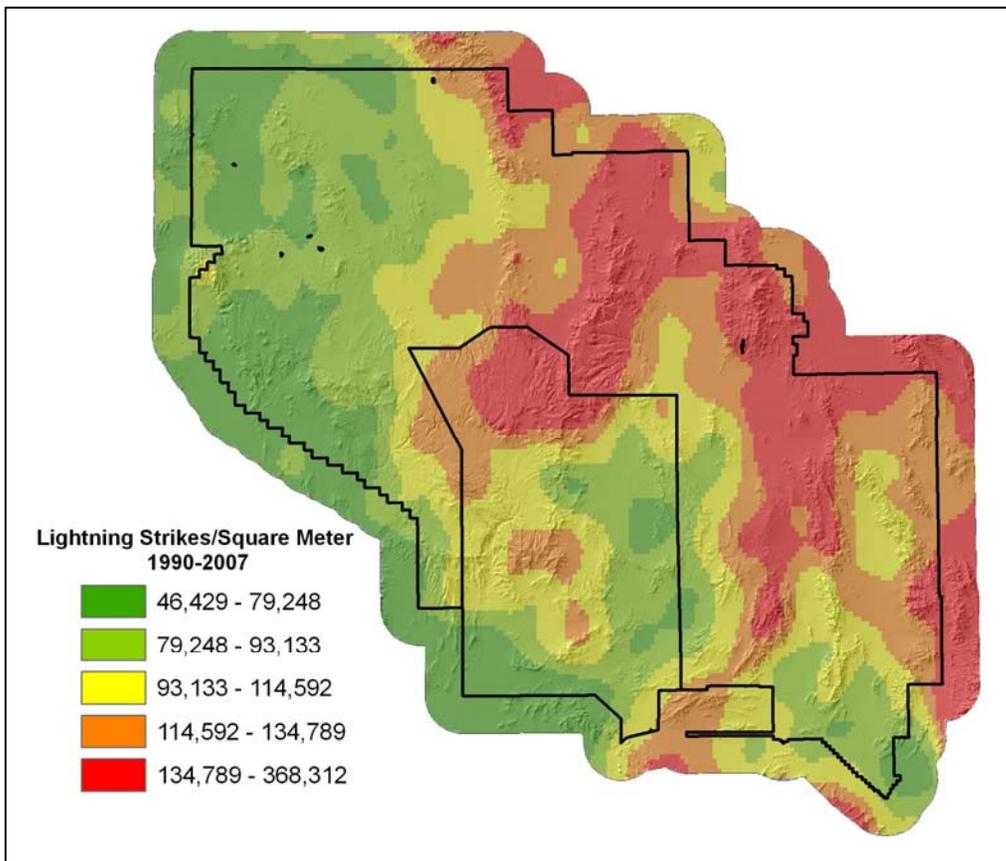


Figure 14. Density of lightning strikes on NTR and the surrounding areas.

BLM Boise provided historical ALDS data for use in the WFMP. Almost 18 years of lightning data were available for analysis. Figure 13 shows total lightning strikes on NTTR by year.

### **8.3.2 Areas with High Lightning Potential**

BLM lightning data was used to determine areas on NTTR where lightning is more prone to strike. Based on the analysis, the highest occurrences of lightning strikes on NTTR are in the Belted Range, Pintwater Range, Kawich Range, Groom Range, Jumbled Hills, Black Mountain, Tolicha Peak, and Sheep Range (see Figure 14). Due to the non-comprehensive recording of past wildfire fire events, it is unknown how many wildfire ignitions occurred because of lightning, but we can assume that these areas have the highest potential for wildfires caused by lightning. Evidence of past wildfires along the Kawich, Belted, and Sheep Range was identified during aerial surveys conducted in February 2008 by the Nellis Natural Resources Program.

#### **8.3.2.1 Public Caused Fires**

Public access is highly controlled and extremely limited on NTTR, thus, the potential for the public to start a fire is very low. Public caused fires can occur from any number of non-military activities on NTTR including cigarettes, catalytic converters on vehicles, burning of trash and construction debris, etc. The cause of many past wildfires was not always determined or recorded by NTTR and the contribution of human-caused fires to the total number of wildfires is unknown. However, human activities commonly occur on USAFWC lands and, thus, present an additional potential source for wildfire ignitions.

Public activities outside the withdrawn lands could ignite a fire, which could spread to high value military and civilian assets. The greatest public fire threat would be an ignition outside of NTTR and spreading onto NTTR. Areas around Indian Springs, Beatty, Goldfield, and other populated areas on the west and south boundaries of NTTR probably have the greatest potential for public impacts.

Contractors or federal employees are contracted or assigned to work on a variety of projects in a number of areas on NTTR. These projects occasionally involve methodology or equipment with potential to ignite a fire within NTTR.

#### **8.3.2.2 Military Operations Caused Fires**

The very nature of military testing and training include activities which have a high potential to ignite wildland fires. These activities include aerial bombing, aerial flares employment, ground forces training, and target maintenance. In most cases, these activities are accomplished on/over playas where the potential for wildland fire ignition is low. However, flares may be released anywhere over NTTR during military operations and present potential ignition sources if they land on the ground while still burning. Operational instructions defined in AFI 13-212 limit flare employment to reduce this concern. Weapons testing and target practice could ignite fires if bombs or other weaponry are off-target outside of the playas.

## 9. WILDLAND FUEL FACTORS

### 9.1 FUELS

Fuels include living and dead vegetation, and man-made structures that will ignite and burn. Characteristics of fuels that affect fire behavior include type, moisture, load, horizontal continuity and vertical arrangement. Fuel is the only element in the fire environment that fire managers can influence with an active fuels management program.

#### 9.1.1 Fuel Types

Fuel types include grass, shrubs/brush, timber litter and understory, and slash. Fuel types change slowly over time mostly by natural processes associated with plant community succession. However, fire behavior can change drastically when the fire moves from one fuel type to another. All fuel types, except for slash, are found in various locations on NTTR.

#### 9.1.2 Fuel Moisture

The moisture of living and dead fuels is a critical component for influencing wildland fire behavior. Vegetation is more flammable when fuel moisture levels are low and less flammable when fuel moisture levels are high.

**Dead Fuels.** Dead fuel moisture is the moisture content of non-living fuel material. The amount of fuel moisture in the dead fuels is directly impacted by the moisture content of the air and fluctuates slightly behind the changes in ambient humidity. Timelag is the time it takes for the moisture content of fuels and the surrounding air to equalize. Timelag is expressed as a rate usually in hours (see Table 3).

Table 3. Dead fuel moisture; timelag relationships to fuel size.

Timelag	Diameter of Fuel (inches)	Examples
1-hour	Less than ¼	Annual dead grass (i.e., cheatgrass)
10-hour	¼ to 1	Dead and down small branches and twigs
100-hour	1 to 3	Dead and down branches, logging slash
1,000-hour	3 to 8	Dead and down branches, logs, standing dead timber

1-hour timelag fuels are “fine fuels”, which are the most sensitive to fluctuations in relative humidity and rainfall. These fuels react dramatically to changes in temperature and relative humidity in a short time period. Given the large presence of fine fuels such as cheatgrass in Nevada, the 1-hour timelag fuel moisture is important because it has the greatest influence on ignition and the speed in which a fire will spread, especially in windy conditions.

**Live Fuels.** Live fuel moisture is the moisture in living, growing vegetation. Live moisture is mostly controlled by internal physiological mechanisms, rather than by external influences. Internal physiological processes of plants are influenced by the external environment and cause changes in live fuel moisture especially when external influences occur over long time periods such as normal seasonal drying and drought. Typically, live fuel moistures in southern Nevada

are at their highest mid to late April and their lowest in October. Thus, live fuels contribute to greater fire behavior in the fall when moisture is lower.

**Fuel Moisture Sampling.** Fuel sampling provides data for:

- monitoring seasonal trends for vegetation,
- formulating fire danger ratings,
- input for fire behavior modeling (fire behavior models require up to three dead fuel moisture values and may call for live fuel moisture values),
- determining drought indices,
- determining prescription parameters for prescribed burns, and
- determining the effects of fire in an ecosystem.

The BLM began sampling fuel moistures in the 1980s. Materials sampled included sagebrush foliage and pinyon-juniper (live fuels) and 1,000-hour<sup>1</sup> fuels (dead fuels). Live fuel moisture samples of sagebrush foliage are collected every two weeks throughout fire season on sites throughout Nevada. Fuel moisture sites near NTTR are found on the Las Vegas and Ely Districts (see Table 4).

**Table 4. Fuel moisture collection sites near NTTR.**

BLM District	Sites		
Las Vegas	N5C Kyle Canyon	N5D Lovell Canyon	N5E Red Rock
Ely	N5A Pioche	N5B Rainbow Canyon	

The BLM Las Vegas and Ely Districts have not collected pinion-juniper fuel moisture samples, and the pinion-juniper sample sites used by the BLM Battle Mountain District are too far north to be of benefit to NTTR. However, the sagebrush foliage live fuel moisture samples that are collected near NTTR should be sufficient for the wildland fire management program.

Sites that sample 1,000-hour timelag<sup>2</sup> fuel samples are found only on the BLM Las Vegas District in Kyle Canyon and Lovell Canyon, which are west and southwest of NTTR. Additional information related to fuel moisture sampling and the actual fuel moisture values for the sample sites can be found at BLM's fuel moisture sample websites: [www.blm.gov/nv/st/en/prog/fire/hazardous\\_fuels\\_management.html](http://www.blm.gov/nv/st/en/prog/fire/hazardous_fuels_management.html) and [www.nv.blm.gov/fuels/LFM-NV/1HOURNV.HTML](http://www.nv.blm.gov/fuels/LFM-NV/1HOURNV.HTML)

**Guidelines for Fire Behavior and Tactics Based on Live Fuel Moisture Values.** BLM developed the following live fuel moisture guidelines. The break points, which correspond to live fuel moisture values, were developed after assessing years of past fire and fuels observations (See Table 5). These break points should be used as guidelines on USAFVC lands.

<sup>1</sup> 1,000-hour timelag fuels consist of 3 to 8 inch diameter dead and down fuels, such as large branches and small trees. They provide an estimate of slowly changing seasonal moisture trends.

<sup>2</sup> Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after four timelag periods.

**Table 5. Guidelines for fire behavior and tactics based on live fuel moisture values.**

Live Fuel Moisture	Fire Behavior and Tactics
181% & Above	Fires will exhibit <b>VERY LOW BEHAVIOR</b> with difficulty burning. Residual fine fuels from the previous year may carry the fire. Foliage will remain on the stems following the burn. Persons using hand tools can generally attack fires at the head or flanks. Hand line should hold fire without any problems. Fires will normally go out as soon as wind dies down.
151–180%	Fires will exhibit <b>LOW FIRE BEHAVIOR</b> with fire beginning to be carried in the live fuels. Foliage and stem material up to 1/4 inch in diameter will be consumed by the fire. Burns will be generally patchy with many unburned islands. Engines may be necessary to catch fires at the head and handling will be more difficult to construct, but should hold at the head and the flanks.
126–150%	Fires will exhibit <b>MODERATE FIRE BEHAVIOR</b> with a fast continuous rate of spread that will consume stem material up to 2 inches in diameter. These fires may be attacked at the head with engines, but may require support of dozers and retardant aircraft. Hand line will become ineffective at the fire head, but should still hold at the flanks. Under high winds and low humidity, indirect line should be given considerations.
101–125%	Fires will exhibit <b>HIGH FIRE BEHAVIOR</b> leaving no material unburned. Head attack with fire engines and dozers will be nearly impossible on large fires, but may still be possible on smaller, developing fires. Retardant aircraft will be necessary on all these fires. Flanking attack by engines and indirect attack ahead of the fire must be used. Spotting should be anticipated. Fires will begin to burn through the night, calming down several hours before sunrise.
75–100%	Fires will exhibit <b>EXTREME FIRE BEHAVIOR</b> . Extreme rates of spread and moderate- to long-range spotting will occur. Engines and dozers may be best used to back-up firing operations, and to protect structures. Indirect attack must be used to control these fires. Fires will burn actively through the night. Air turbulence caused by the fire will cause problems for air operations.
74% & Below	Fires will have <b>ADVANCED FIRE BEHAVIOR</b> with high potential to control their environment. Large acreage will be consumed in a very short time period. Backfiring from indirect line, roads, etc., must be considered. Aircraft will need to be cautious of hazardous turbulence around the fire.

### 9.1.3 Horizontal Continuity and Arrangement

The horizontal continuity of fuels describes the uniformity or patchiness of fuels across the landscape, which affects the ability of a fire to spread. At lower elevations, the fuels on NTTR are typically sparse or patchy, except in years affected by the North American Monsoon (NAM) when the increase in rainfall leads to an increase in fine fuels, which create uniformity in the fuels. Under conditions not affected by the NAM, the sparse and patchy landscape inhibits fire spread under normal wind conditions. But as elevation increases, the fuels become more uniform, increasing the likelihood of fire spread. Dry lakebeds and some of the mountain ranges on NTTR have little or no vegetation, which act as a barrier to wildfires.

Fuels are arranged vertically. Fire burning in grasses or low shrubs can transition up into the canopies of taller shrubs and trees by a “ladder” such as lower shrubs and branches. This is a primary concern in timbered areas such as the Kawich Range, Belted Range, and Stonewall Mountain which support significant stands of juniper and pinyon pine.

## 10. WILDLAND FIRE HISTORY AND MANAGEMENT

### 10.1 WILDFIRE HISTORY

NTTR is not immune to large, damaging wildfires. Historically it is unknown to what extent wildland fire played a role on the landscape on NTTR. Table 6 lists recorded fires that have burned on NTTR.

**Table 6. Recorded known fires on the NTTR.**

Fire Name	Date	Acres	BLM Number	Location	Coordinates
USAF2	29-Apr-84	1,500.0	K345		
USAF3	31-May-84	Unk	K369		
USAF4	13-Jun-84	4000 - 4500	K378	TPECR	TP-14
USAF5	21-Jun-84	500.0	K390	TPECR	N. side of TP-14
USAF6	21-Jun-84	3.0	K391	TPECR	Between A-96 and A-97
USAF1	13-Jun-85	2.0	K611	Pahute Mesa	
USAF2	28-Jun-85	200.0	K653	Pahute Mesa	
	7-Jul-85	Unk	K689	Toiyabe	
	22-Jun-88	100.0		R4808W	36° 54'N 116° 28"W
	15-Jul-88	Unk		Coyote North	37° 34' 13" N 115° 25' 11"W
USAF2	24-Jul-88	8,320.0	K590	Blk Mtn	37.21.00N, 116.49.00W
USAF3	25-Jul-88	2.0	K591		37.15.00N, 116.42.00W
FA 23	9-Aug-88	0.0	K641		36.13.00N, 114.59.00W
USAF1	25-Aug-88	1,000.0	K526		37.02.00N, 116.32.00W
USAF1	14-Mar-89	750.0	Y313		37.18.00N, 116.42.00W
USAF2	6-Jun-89	200.0	Y339		37.17.00N, 116.36.00W
	29-Jul-89	10.0		Near Ragged Ridge	2 mi S of Gate near farm-house
	13-Mar-89	Unk		TPECR	North of A32
USAF1	25-Jul-90	5.0	K411		37.21.00N, 116.47.00W
USAF2	28-Jul-90	4.0	K415		37.50.00N, 116.22.00W
USAF1	9-Jul-91	0.0	Y382		37.53.00N, 116.25.00W
USAF2	18-Jul-91	2.5	Y390		37.17.00N, 116.45.00W
USAF3	19-Oct-91	0.1	Y498		
Condor	31-May-92	0.1	K330	Panaca	37.50.00N, 114.22.00W
USAF3	10-Aug-92	1.0	K401	Meadows Valley	37.14.00N, 114.30.00W
Alien	9-Jul-93	0.3	Y386	Drop Zone	37.43.25N, 116.17.90W
Meadow Fire	31-Jul-93	21,600.0	Y416	NW of Carp	37.09.10N, 114.33.30W
Sheep Mtns	27-Jun-94	50.0	K379	Sheep Mtns	36.32.00N, 115.06.00W
USAF1	1-Oct-95	5.0	Y434	Indian Springs Bombing Range	T14S R55E S25

Fire Name	Date	Acres	BLM Number	Location	Coordinates
None	29-Sep-98	Unk	K423	NTTR	36.55.05N, 115.51.00W
None	16-Jun-99	Unk		TPECR	Digital Mtn
None	2-Aug-00	Unk		TPECR	
None	12-Aug-04	Unk		Sawmill Canyon	
None	3-Jun-05	20,434.0		Air Force Fire	Near Muddy Wash on BLM land
None	6-Aug-05	Unk		Thirsty Canyon	EC South
None	13-Oct-05	Unk		Range 76	Unknown
None	4-Jun-06	3.0		Bill's Hill	TTR
None	22-Jun-06	Unk		Range 64/65	Unknown
None	25-Jun-06	5.0		Bill's Hill	TTR
None	6-Jul-06	Unk		Beatty Fire	EC South
None	24-Jul-06	Unk		EC East	
None	17-Sep-06	0.1		Hero Hill	NE of Hero Hill
None	29-Mar-07	0.5		Range 76	NE of FAC A
None	9-Apr-07	0.1		TPECR	FAC Bravo
None	9 Aug 10	Unk		Range 63B	36.58.225, 115.41.159
None	26 Aug 10	Unk		TPECR	Black Mountain
None	16 Sep 10	< 1 acre		Range 65C	Target 65-06
None	14 Oct 10	< 1 acre		Range 62B	Target 62-91
None	15 Oct 10	< 1 acre		Range 64	Target 64-17

During helicopter surveys by the NNRP on NTTR in February 2008, evidence of several undocumented wildfires that apparently burned on NTTR and self-extinguished was observed. Although much of the data on these wildfires (date, time of ignition, date of containment, fire cause, and other related data) are not available, mapping fire perimeter scars would assist the WFPM in developing a better understanding of the location and extent of fires. Information may also assist NTTR in obtaining fire management funding through the BLM.

Any wildland fire occurring on NTTR should be documented by a fire report immediately after the fire. The IC or WFPM is responsible for assisting BLM in completing a fire report. The BLM will complete the report using the Wildland Fire Module (NFIRS-8) of the National Fire Incident Reporting System (NFIRS). The form would be filled out according to the instructions in Chapter 10 of the NFIRS 5.0 Complete Reference Guide, January 2004. Additional information is available at: <http://nfirs.fema.gov/system/>.

### 10.1.1 Prescribed Fire History

Prescribed burning has never been implemented on USAFWS lands.

## 10.2 FIRE MANAGEMENT CONSIDERATIONS

### 10.2.1 General Fire Management Considerations for all FMUs

Where reciprocal fire protection agreements permit, a combination of federal, state, and local fire suppression resources will be utilized. All wildland fires on all FMUs will be managed with the following considerations:

- NTTR includes lands and the associated airspace withdrawn from the DOI for military use. BLM has overall responsibility to protect and manage unique habitats for endangered and threatened species, to protect the desert tortoise, and to control wildland fires on NTTR. However, all BLM actions, including wildland fire response activities, within the boundaries of the withdrawn land, must be closely coordinated with the Range Liaison Officer to prevent injury to personnel and to minimize or avoid impacts to the military mission.
- Aggressive suppression actions should be used when a wildland fire outside of the boundary of NTTR has the potential to spread to the NTTR and impact high value military asset within NTTR.
- Aggressive suppression actions should be used when a wildland fire inside the boundary of NTTR is within the automatic response zone of any high value public or private asset outside the boundary of NTTR.
- Aggressive suppression action should be implemented when wildfires are within the automatic response zone of any area containing high value assets as shown on the NTTR high value asset map included in this fire plan.
- Safety and the protection of human life are the highest priorities for all wildland fire management activities, including fire suppression, fuel treatments, and emergency stabilization and rehabilitation.
- The USAF mission, including the protection of all military assets, is second only to safety and protection of human life.
- A full range of fire suppression options may be used to maximize safety while providing an appropriate suppression response based upon assets at risk and cost efficiency of suppression strategies.
- Appropriate priorities will be given to protect all known sensitive species and all identified archaeological and cultural sites.
- USAF principles for ecosystems management will be used (INRMP, 1.2, page 1-5–1-6).
- Protection for assets on neighboring private and public lands from wildland fires originating on NTTR will be provided.
- Fuels management options include the development and maintenance of appropriate defensible space around all high value military assets, permanent and mobile structures, infrastructures, along road systems, and in areas identified for ground training activities.
- The USAF will collaborate with the BLM and other fire suppression resources to:
  - Develop cross boundary strategies
  - Prioritize cross boundary fire management actions
  - Develop viable fire suppression strategies.

## **10.3 WILDLAND FIRE MANAGEMENT OPTIONS**

BLM is the responsible agency for all wildland fires resulting from non-military activities on NTTR and will coordinate fire monitoring/suppression activities/needs with 99 ABW/CC. USAFWC is the responsible agency for all wildland fires resulting from military activities and may request assistance from the BLM in suppression of these fires. If the fire cause is not known, the BLM and 99 ABW will integrate fire suppression operations and incident management using NIMS and a Unified Incident Command System.

### **10.3.1 Wildland Fire Suppression**

Wildland fire is defined as any non-structure fire, other than prescribed burns, that occurs in the wildland. Wildland fire suppression can be defined as an appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the direct and indirect effects of the fire and/or fire management actions. All wildland fire suppression activities will promote human life as the highest priority, while minimizing loss of assets, impacts to natural and cultural resource values, and cost of fire suppression actions. BLM will use WFDSS with the assistance of the WFPM.

The intensity of response to a wildland fire may range from aggressive suppression action where the highest priorities occur to limited action where the cost of suppression exceeds the value of the resources to be protected.

Control activities will follow the Incidence Command System (ICS) process and use standard suppression methods practiced by BLM. Fire suppression methods should be those that cause the minimum resource damage while accomplishing effective control. Suppression activities should minimize disturbance of sensitive species and their habitats, as well as archaeological and cultural sites, whenever reasonably possible. The WFPM will advise on all suppression activities on NTTR to ensure appropriate protection of NTTR's natural, archaeological, and cultural assets.

Incoming wildland firefighting resources will minimize the potential spread of noxious weed and invasive species by using standard cleaning and control procedures when entering or leaving NTTR. All equipment used off pavement will be cleaned of weed and grass seed stems, stalks, etc., prior to release from an incident. All equipment will be subjected to a wash-down concentrating on the undercarriage and front bumpers/brush guard assemblies. Vehicle cabs will be swept and all refuse will be disposed of in waste receptacles.

#### **10.3.1.1 Fire Suppression Response**

It is BLM's responsibility to ensure that the response to wildland fires are actions (suppression or otherwise) that are appropriate given the laws, policy, socio-political situation, and environmental conditions that are in effect at a given point of time.

The response to wildland fires allows BLM the ability to choose from a full range of fire suppression actions. During the initial response to any wildland fire, decisions will be based on FMU strategies and objectives, and reflect the goal of using available resources to manage the fire for the most effective, most efficient, and safest means available. There are four response levels on NTTR:

**Level 1 – Full Perimeter Control:** This strategy consists of intense suppression action. Control lines are constructed around the entire perimeter of the fire. Roads, riverbeds and other barriers can be used in conjunction with constructed lines. This strategy would probably come into play when large developed areas are in jeopardy. Developed areas of NTTR include TPECR, TTR, O&M, and Man Camp.

**Level 2 – Point Protection:** This strategy involves protecting specific points from the fire while not actively trying to suppress the entire fire edge. Points needing protection can include military assets, critical habitat and cultural sites. The specific tactics used to protect the point can vary from firelines to burnout to structure protection with engines, etc.

**Level 3 – Large Scale Burnout:** This strategy involves selecting line locations or barriers that offer the best likelihood of successfully holding a fire, and then burning out the fuels between the original fire and the planned control line. There are no limitations on the size of a burnout. If the ignition will be done aurally by helitorch or plastic sphere machine, a local aerial ignition plan will be required. This method will only be used in areas where known UXOs are not present.

**Level 4 – Monitoring:** No action is required for the fire except for observing the fire spread on a regular basis. The projected conditions will determine how often and what method (ground, air satellite photos, etc.) is used to monitor the spread of the fire. Normally when a fire is placed in a monitoring status, trigger points are established by the FMO to initiate additional evaluation or suppression action. In all cases, suppression actions will not be implemented in target sites, radioactive sites, or areas containing UXOs.

### 10.3.2 Wildland Fire Use

Wildland fire use is the management of naturally ignited wildland fire to accomplish resource management objectives for specific areas (National Interagency Fuels Coordination Group, 2010). There are three primary objectives for allowing wildland fire use:

- Provide for the health and safety of firefighters and the public.
- Maintain the natural ecosystems of a given area and allow fire to play its natural role in those ecosystems.
- Reduce the risks and consequences of unwanted fire.

Wildland fire use is not a fire management strategy on NTTR. Due to the rapid rates of spread associated with the fuels that dominate NTTR, the ability to manage wildland fire use principles could unduly place USAFWC's mission, values, and assets at risk.

### 10.3.3 Fuels Management

#### 10.3.3.1 Prescribed Fire

For purposes of this plan, and as defined by federal policy, *prescribed fire* is any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist prior to ignition. Currently there are no plans to develop large scale prescribed burn programs on NTTR. Small pile burns, a small scale level of prescribed burning, may be used to minimize fire potential around high value assets.

### **10.3.3.2 Non-fire Applications**

Non-fire applications include mechanical treatments, non-mechanical treatments, and herbicide applications designed to remove or rearrange fuels to mitigate the negative consequences of wildland fire, and allow for efficient and safe management responses to wildland fire ignitions (U.S. Forest Service, 2008). Non-fire treatments can also be used to protect assets from future wildland fires by removing excessive ladder and surface fuels. In the event of a wildland fire, benefits of these treatments include enhancement of safety, protection of military assets and natural and cultural resources, and significant reduction of potential suppression costs and property damage. Non-fire application projects should be planned collaboratively and jointly implemented with BLM following all environmental requirements. Mechanical and chemical fuel reduction projects may be repeated annually where wildlands adjoin military assets to create and maintain fire buffers around military assets, to buffer the vegetation and reduce the threat of ignition in ground training areas, and to create defensible space in areas adjacent to archaeological and cultural sites.

### **10.3.4 Post Fire Rehabilitation and Restoration**

The BLM has responsibility for emergency stabilization and rehabilitation efforts that will be designed and implemented to achieve vegetation, habitat, soil stability, and watershed objectives stated in the INRMP.

## **10.4 GENERAL FIRE PROTECTION CHARACTERISTICS**

- Currently, USAFWC has no wildland fire suppression resources for use at NTTR.
- NAFB and Clark County Fire Department have an agreement for “all risk” emergencies for areas in Clark County, which can include wildland fire suppression, but this excludes much of the NTTR area.
- The BLM is the lead agency for all wildland fires resulting from non-military activities on the NTTR and will coordinate fire monitoring/suppression activities/needs with USAFWC.
- USAFWC is the lead agency for all wildland fires resulting from military activities and may request assistance from the BLM in suppression of these fires.
- If fire cause is not known, the BLM and USAFWC will integrate fire suppression operations and incident management using NIMS and a Unified Incident Command System.
- A full range of fire management strategies is available for incoming fire suppression resources.
- Long response times for the initial attack by fire suppression ground forces can occur across most areas of NTTR due to the fact that most of NTTR is remote and difficult to access.

## 11. WILDLAND FIRE MANAGEMENT PROGRAM COMPONENTS

The primary goal of the INRMP is to sustain military readiness while maintaining ecosystem integrity and dynamics on NTTR. Any fire management strategy, including suppression, fuels management, and emergency stabilization and rehabilitation should integrate enhancement of the military mission with protection of natural and cultural resources, with safety being the highest priority of any activity. The wildland fire management program on NTTR works closely with BLM on a full range of activities and functions necessary for integrated fire management to reduce risks to life, to protect the military mission including assets, and to restore and sustain ecosystem health. Integrated fire management includes planning, preparedness, emergency suppression operations, fuels management, and emergency stabilization, and emergency rehabilitation of wildland fires.

### 11.1 WILDLAND FIRE MANAGEMENT ORGANIZATIONAL STRUCTURE

The wildland fire program is a component of the 99 CES/CEANC Natural Resources Program. The organizational structure below depicts the groups that are involved during a wildland fire incident on the NTTR.



Figure 15. NAFB Organizational Structure.

## 11.2 BLM ORGANIZATIONAL STRUCTURE FOR WILDLAND FIRE INCIDENTS

BLM uses the National Interagency Incident Management System (NIIMS) as the standardized response management system for incoming wildland fire suppression resources in the event of wildland fires at NTTR. Figures 16 and 17 display an example of the Incident Command System (ICS) and the basic structures for an initial attack and extended attack incident. Additional information for NIIMS can be found at: <http://www.nimsonline.com/>.

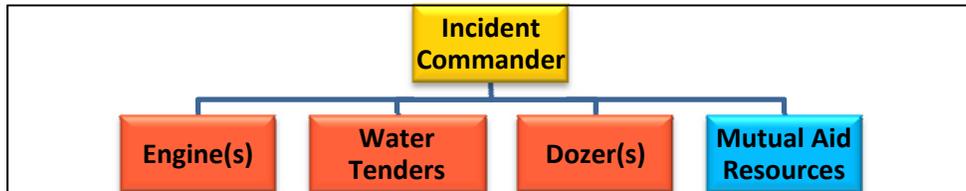


Figure 17. BLM initial attack organizational structure.

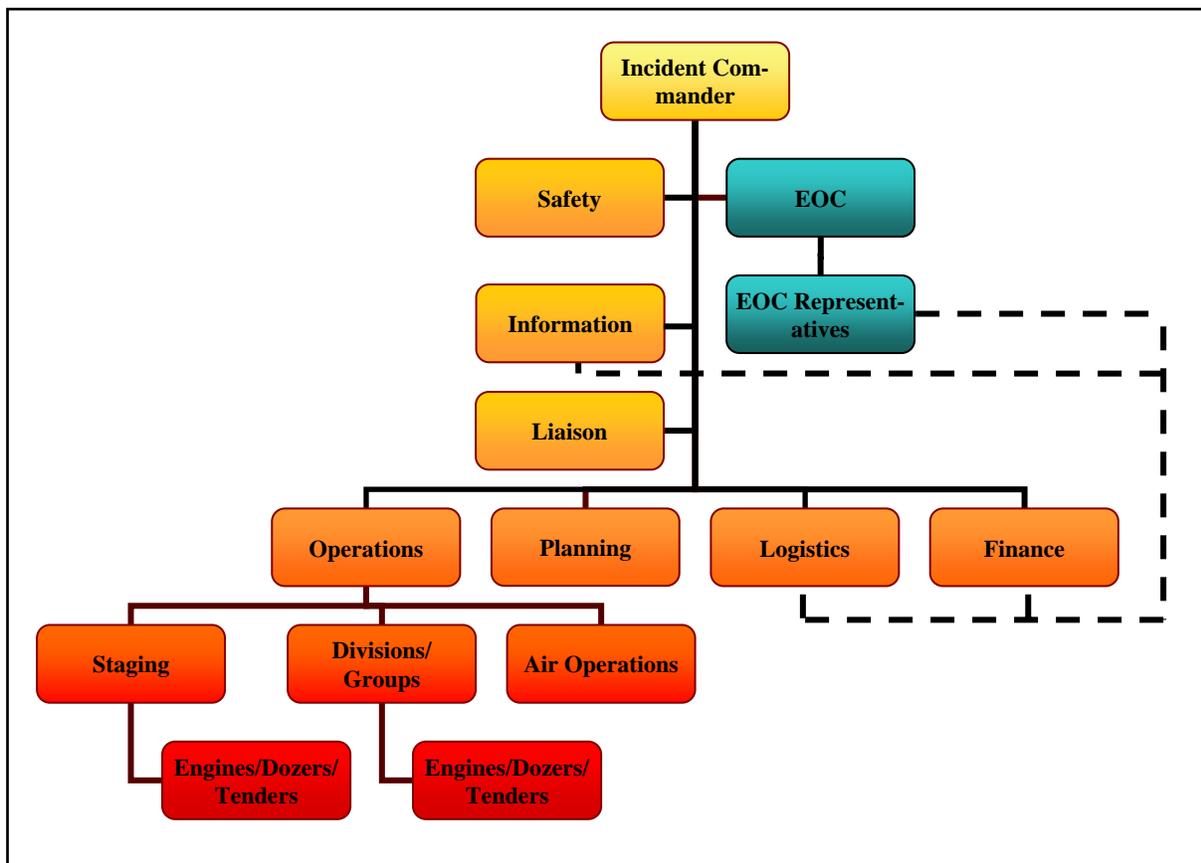


Figure 16. BLM extended attack organizational structure.

## 11.3 GENERAL IMPLEMENTATION GUIDANCE AND CONSTRAINTS

This section describes operational guidelines whereby USAFWC implements a wildland fire program that applies fire management strategies to protect assets at risk while accomplishing resource management objectives of the INRMP in partnership with BLM.

### 11.3.1 Wildland Fire Suppression

Appropriate fire suppression activities will be used on all wildland fires on NTTR. The objective of wildland fire suppression on NTTR is to manage wildland fire safely and efficiently to accomplish protection objectives. Wildland fire suppression should be integrated into resource management activities on a landscape scale, across administrative boundaries, and will be based on best available science. Protecting resources is important; however fire suppression efforts in high hazard areas will be limited to aerial efforts only. Protection priorities are (1) human life; (2) mission assets; and (3) natural, archaeological, and cultural resources.

#### 11.3.1.1 Range of Potential Fire Behavior

The range of potential fire behavior is addressed in section 8.2 Fire Behavior and Fire Danger.

#### 11.3.1.2 Wildland Fire Suppression Personnel

No formally trained or qualified personnel are available to protect assets from damage or loss by wildfires on NTTR. The designated USAF Fire Liaison (99 CES/CEF) will work directly with BLM IC to coordinate appropriate suppression measures for each incident.

#### 11.3.1.3 Vehicles and Equipment

No wildland fire vehicles or equipment have been purchased or assigned for use at the NTTR.

#### 11.3.1.4 Fire Cache

No wildland fire suppression supplies, gear, or cache are available at any facilities located on NTTR.

#### 11.3.1.5 Fire Season Preparedness

**Fire Prevention Activities.** Several activities can be implemented to improve fire prevention on NTTR. These activities include the following:

- Jointly work with BLM on fuels management. NEPA will be required and may go through BLM if appropriate and efficient.
- Monitor fuel loads around military assets and maintain or clear those areas when necessary. Note that management of fuel loads may require NEPA clearance in the form of an environmental assessment, AF Form 813, or categorical exclusions.
- Ensure that flares are released at proper altitudes during military operations.
- Educate military and civilian personnel and proper procedures to be used to prevent ignition of fires during day activities.
  - Catalytic converters
  - Cigarette disposal
  - Use of flammable liquids

**Fire Reports.** All wildland fires that require suppression activities occurring on NTTR will be documented with a fire report. The IC or WFPM will assist BLM with information required to complete a fire report using the National Fire Incident Reporting System (NFIRS) monthly. The form will be completed according to the instructions in Chapter 10 of the NFIRS 5.0 Complete Reference Guide. Additional information is available at: [www.nfirs.fema.gov/index.shtm](http://www.nfirs.fema.gov/index.shtm).

**Fire Restrictions.** To reduce the potential for wildland fire ignitions caused by mission activities, ROA will implement Fire Restrictions utilizing the Fire Weather Red Flag Watches/Warnings, NFDRS Adjective Fire Danger Ratings (see Table 7 for NFDRS adjective descriptions), and 24-hour fire weather forecasts.

Blackjack will contact the Las Vegas Interagency Communication Center (LVICC) daily to determine if a Fire Weather Red Flag Watch or Warning has been issued by the NWS and to collect the NFDRS Adjective Fire Ratings and 24-hour fire weather forecasts for 261705-Red Rock and 261711-Yucca Gap Stations.

Contact information for the LVICC is 702-515-5300. Additional fire danger indices are computed by the Western Great Basin GACC and posted daily at [http://gacc.nifc.gov/wgbc/predictive/fuels\\_fire-danger/fuels\\_fire-danger.htm](http://gacc.nifc.gov/wgbc/predictive/fuels_fire-danger/fuels_fire-danger.htm).

Blackjack will notify and enforce restrictions to pilots based on the Fire Weather Red Flag Watch or Warning and NFDRS Adjective Fire Danger Rating.

**Table 7. Adjective fire danger rating description.**

Fire Danger Class	Description
Low (L)	Fuels do not ignite readily from small firebrands, although a more intense heat source such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but wood fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (M)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H)	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are hit hard and fast while small.
Very High (VH)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long distance spotting and fire whirlwinds when they burn in heavier fuels.
Extreme (E)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

**Aerial Flare Restrictions.** AFI13-212VI Nellis AFB Addendum-A1 provides the following guidance on the use of flares on NTTR and MOAs:

- Minimum flare release altitude for self-protection flares is that altitude which allows the flare to burnout prior to 100 ft AGL.
- Minimum release altitude for illumination flares, such as photo-flash and parachute flares is that altitude which allows the flare to burn out prior to 500 ft AGL.
- Flare release altitude over manned sites, ground parties, or within 3 NM of forested areas is 5,000 ft AGL, provided minimum flare release altitude (2.2.5.2. and 2.2.5.3. above) has been achieved.
- Flare release altitude in the MOAs and Pahute Alpha/Bravo is 5,000 ft AGL and above, provided minimum flare release altitude (2.2.5.2. and 2.2.5.3. above) has been achieved.
- During days with Fire Weather Red Flag Watches or Warnings and/or NFDRS Adjective Fire Danger Levels of “Very High” or “Extreme”, no flares of any type will be permitted on the NTTR below 5,000 ft AGL.
- Reference NTTR target website for approved flares. NTTR OG/CC or delegate will determine if additional restrictions or modifications are needed based on prevailing conditions and/or test requirements. Waivers must be submitted to NTTR OSS/OSO or delegate no later than 48 hours prior to requested usage.
- The dry months of June through September pose the greatest fire hazard. Aircrews will report all fires on NTTR to Blackjack as soon as possible.

**Ground-based Training Restrictions.** No restrictions for ground-based mission activities have been issued for NTTR during days with high fire danger. However, ground based flares, such as slap flares, and other ground-based incendiary devices should not be used during days with high fire danger.

**Fire Prevention Education.** No formal classes on fire prevention are currently being provided for personnel at NTTR. However, fire safety is discussed during range safety briefs and by supervisors on a weekly to monthly basis depending on the level of wildland fire potential.

**Detection.** Two detection methods occur on NTTR. Most often aerial detection of wildland fires occurs due to the number of military aircraft flying over NTTR at any given time. Detection by ground personnel is limited due to lack of access, but can occur. All aircraft or ground personnel should notify Blackjack immediately after observing a fire. Blackjack will immediately contact the CP who will immediately contact the WFPM, Range Liaison, and base leadership to inform them of the fire and location.

**Fire Season Readiness.** No fire season readiness standards have been established for NTTR.

**Fire Season Start and Stop.** Typically, fire seasons run from May 1 through October 31, although wildfires can occur year round. Determination of each fire season’s start and stop date is dependent on fuel moisture. Contact LVICC for annual fire season start and stop dates by April 30 of each year.

### 11.3.1.6 Initial Attack

Wildland fires should receive appropriate initial attack (IA) by the nearest available suppression resources. USAFWC has no initial attack capability nor any wildland fire qualified personnel to respond to a reported wildfire. Blackjack will notify CP immediately of any wildland fire. CP will contact base leadership, WFPM, and Range Liaison (within guidelines of the agreement) to request assistance immediately. Response times are long and the Range Liaison Officer should meet with responding fire suppression resources to provide security passes for access to wildfires on NTTR as early as possible.

To clarify, Blackjack can make initial notification to CP. The IC could use Blackjack workspace, equipment, radios, etc to assist in ongoing fire-fighting efforts provided there would be no impact to Blackjack's ability to continue their mission. In the event of a long-term, large fire, consideration could be given to cancelling USAFWC missions to free-up extra Blackjack radios and workspace if required. In all cases, it must be very clear that Blackjack is not responsible to conduct coordination.

All suppression actions will be consistent with safety priorities outlined in Section 13 Safety Considerations.

Following the initial size-up of the fire, the WFPM and Range Liaison will assist the Incident Commander in determining the initial appropriate management response and resources needed. Suppression response will be determined by risk to high value assets and human life. Generally the safest and least cost strategy will be to control all wildland fires rapidly while they are small.

**Confinement as an Initial Action Strategy.** Confinement and indirect suppression strategies (containing to natural barriers, etc.) are appropriate for initial actions only if they are the safest or least cost option. When fire danger trends are rising, the selection of these strategies must be carefully scrutinized because escape potentials are greater. Consideration of a confinement strategy is appropriate when critical suppression and management resources are being used for other incidents having a higher safety priority, or when potential incidents occur during periods of high fire danger or high fire suppression resource drawdown. This strategy is similar to Level 3 Fire Suppression Response where fire lines or natural barriers that offer the greatest likelihood of successfully holding a fire are selected and then the fuel between the barrier and the original fire are burned out.

Confinement can also be a strategic selection through the Wildland Fire Decision Support System (WFDSS) process (see Section 11.3.2.1 for additional information on WFDSS) when the fire is expected to exceed initial attack capability.

**Minimum Impact Suppression Tactics (MIST).** Employ MIST whenever feasible and practicable. Adjust fire suppression strategies to avoid sensitive natural resources and cultural resources where tactically feasible. Minimize the construction of firelines using mechanical equipment when possible. Only use MIST when it will not compromise safety or overtly impact overall strategic plans and tactical operations. The WFPM will provide input concerning sensitive habitats through the IC. This information will be incorporated into the operational decision-making process to ensure use of appropriate tactics on the incident.

**Response Times.** Response times vary widely depending on fire location, availability and location of suppression resources, time of year (out of fire season), access, helicopter availability, security approval process, and other delays. During periods of extreme suppression resource draw down, local and national response times can be several days.

### 11.3.1.7 Constraints

**Constraints—Military Mission.** In all suppression efforts, the protection of life and safety is the highest priority, followed by sustaining the military mission. Because of this, a high level of coordination between Blackjack, Range Liaison Officer, WFPM, and IC is required.

**Constraints—Desert Tortoise.** Desert Tortoise Management Recommendations (USDI-BLM, 2004). While safety is paramount, the following guidelines for desert tortoise conservation should be considered for all fire suppression activities:

- Utilize the Current Mojave Desert Initiative (MDI) guidelines.
- Minimize acres burned through rapid fire suppression.
- Avoid spreading non-native organisms by following the Operational Guidelines for Aquatic Invasive Species Prevention and Equipment Cleaning.
- When conducting activities in desert tortoise habitat, conduct all activities in accordance with the BLM's Reclamation Plan for Critical Tortoise Habitat (USDI-BLM, 1998).
- A desert tortoise habitat map has been prepared by the NNRP and approved by the USFWS for NTTR. However, the NNRP should continue to conduct field surveys to further refine and prioritize land areas having characteristics that would qualify as desert tortoise habitat. Some area may have habitat qualities similar as the BLM's areas of critical environmental concern (ACEC), a special protection designation and one used to designate a tortoise recovery area as well.
- All areas in NTTR that are considered potential desert tortoise habitat as designated by the USFWS (Figure 8) have been mapped by the NNRP and will be used to determine where special consideration suppression tactics are conducted.
- Fight wildland fires aggressively in order to minimize burned acreage in critical desert tortoise habitat (and ACECs). Actions should be compatible with appropriate suppression options.
- Limit impacts to tortoise habitat and the spread of non-native plants during fire suppression by:
  - Minimizing soil surface disturbances,
  - Limiting the use of mechanized equipment, and
  - Restricting use of vehicles to existing roads and trails when possible.
- The use of aerial retardant is authorized in the BLM fire management plan and is the preferred method of fire suppression. Foam or fugitive retardant is preferable to iron oxide retardant in all potential tortoise habitat areas.
- Do not burn out unburned fingers or islands of vegetation that serve as refuges for wildlife during and after fires, except when the removal of the fuel is required for safety concerns.
- Establish fire camps, staging areas, and helispots in previously disturbed areas outside of ACECs and other designated critical habitat areas. If possible, this should be accomplished in consultation with a qualified resource advisor from BLM or NNRP.

- Provide all firefighters and support personnel with a briefing on desert tortoises and their habitat to minimize tortoise injuries and destruction, particularly those associated with vehicle use.

**Archaeological and Cultural Constraints.** Protection of archaeological and cultural sites is important. Complete surveys of NTTR have not been completed, thus, all sites have not been identified. Whenever possible, use fire suppression techniques, such as MIST, that minimize disturbance to soil and vegetation. Minimize use of mechanized equipment and, where possible, restrict vehicle use to existing roads and trails. It is a priority to minimize fire movement into these areas. The WFPM will provide information related to archaeological and cultural sites on NTTR.

#### **11.3.1.8 Communication and Radio Frequencies**

Communication between firefighting resources on a fire incident is critical to the safe and effective suppression of wildfires. All fire suppression resources must communicate with each other at all times. Military and civilian aircraft must communicate with each other and with ground fire suppression resources. Personnel will not engage in any wildland fire activity or enter a fire area without having direct communication with the IC and other resources. Communication and radio frequencies with responding suppression resources will be coordinated with WFPM, Blackjack, and incoming resources.

#### **11.3.1.9 Access for Suppression Resources**

Much of NTTR is inaccessible by vehicle due to the fact that few improved and unimproved roads have been constructed. Existing road access consists of mostly gravel or dirt roads and only a few paved roads. Only five official entry points into NTTR are available:

1. Abel Gate south of Highway 6 at Man Camp,
2. Cedar Gate on Cedar Pass Road off Highway 375 on the northeast boundary of NTTR,
3. Creech AFB off of Highway 95 adjacent to Indian Springs.
4. Tolicha Peak Road Gate off Highway 95 about 20 miles north of Beatty
5. Point Bravo Gate (Blockhouse Road) on Highway 95 about 6 miles south of Indian Springs.

Several other access points are available, but must be coordinated through the Range Liaison Officer.

Access to NTTR is restricted due to the hazardous nature of the weapons testing and training activities. Response to any wildland fire or wildland fire management activity must be coordinated with the Range Liaison Officer and the WFPM. Access will not be granted onto NTTR without approval and coordination with Blackjack.

#### **11.3.1.10 Use of USAFWC Personnel**

Military personnel not trained or qualified in wildland fire suppression will not implement any suppression action and will not be allowed to enter a wildland fire area unless the area is deemed safe by a qualified IC. However, they may be used in a support function in areas designated as safe by the IC.

### 11.3.1.11 Use of USAFWC Equipment

USAFWC has limited equipment that may be available to support fire suppression activities. Table 8 lists potentially available equipment and its location on NTTR.

**Table 8. Suppression Resources near NTTR that may be available for use.**

Description	Location	Org	Assigned
Truck, Water, 6x4, 4500 Gallon	TPECR	CM	Range Maintenance
Truck, Water, 6x4, 4500 Gallon	TTR-VM	CM	Range Maintenance
Truck, Water, 6x4, 4500 Gallon	CAFB	CM	Range Maintenance
Truck, Ford F650, 2000 Gallon	CAFB-VM	CM	Roads & Grounds
Semi-trailer, Water Dist	TTR-VM	CM	Roads & Grounds
Truck, 5000 Gallon Water Tanker	CAFB-VM	CM	Range Maintenance
Trailer, M149A2 Potable Water	TTR-VM	CM	U-Drive-It
Trailer, M149A2 Potable Water	CAFB-VM	CM	Range Maintenance
Trailer, M149A2 Potable Water	CAFB-VM	VS	EOD Support
Truck, 5000 Gallon Water Pull	CAFB-VM	CM	Range Maintenance
Truck, 5000 Gallon Water Pull	TPECR-VM	CM	Roads & Grounds
Semi-trailer, 5500 Gallon Water	TTR-VM-RNG	CM	Range Maintenance
Truck, 5000 Gallon Water Pull	TPECR	CM	Roads & Grounds

### 11.3.1.12 Water Sources

**Permanent water sources.** There are very few permanent water sources available on NTTR. Water sources include a construction pond at Tonopah Training Range (TTR) and hydrants located at Man Camp and CAFB. Springs do not produce sufficient water for wildland fire suppression equipment. Water sources have been mapped and included on the NTTR Wildland Fire Urban Interface Maps (See Figures 4-7). Coordination of the use of water sources on NTTR must be reviewed and approved by WFPM and Range Liaison.

**Portable water sources.** Equipment may be available for transporting water to support wildland fire operations (Table 7). Construction and excavation equipment may also be available at various locations on NTTR. However, availability and use of this equipment must be coordinated with the Range Liaison Officer or WFPM.

### 11.3.1.13 Noxious Weed Mitigation Due to Fire Suppression Activities

Currently, no mitigation procedures are being implemented for controlling cheatgrass after a wildland fire.

## 11.3.2 Extended Attack and Large Fire Organization

Extended attack is defined as suppression activity for a wildfire that has not been contained or controlled by the initial attack or contingency forces and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander (National Wildfire Coordinating Group, 2010). Extended attack usually continues burning into the next operational period. An operational period is the period of time scheduled for execution of a giv-

en set of tactical actions as specified in the Incident Action Plan. Operational Periods can be of various lengths, although usually not over 24 hours (National Wildfire Coordinating Group, 2010). Operational periods rather than acres will be used to define extended attacks, because rapidly burning fires in lower elevations with fine fuels can exceed 500 acres and still be successfully suppressed by initial attack resources. Complexity as logistical support requirements and planning needs continue to become more complex and escalate when the number of required multiple operational periods increase. A delegation of authority would be developed and signed in the event of an extended attack of a larger fire.

### **11.3.2.1 Implementation Plan Requirements**

The Wildland Fire Decision Support System (WFDSS) must be prepared to determine the appropriate management response for all wildland fires that escape initial action or are expected to exceed initial action. For NTTR, the WFDSS should be developed by BLM in coordination with WFPM and Range Liaison. The WFDSS is a decision making process in which an agency administrator or designated representative:

- Describes the wildland fire situation;
- Compares multiple strategic wildland fire management alternatives, including least cost;
- Evaluates the expected effects of the alternatives;
- Establishes objectives and constraints for the management of the fire;
- Selects the preferred alternative; and
- Documents the final decision.

The level of detail required for preparation of the WFDSS depends on the complexity of the incident. Information on WFDSS is available online at:

[http://wfdss.usgs.gov/wfdss/WFDSS\\_Home.shtml](http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml).

### **11.3.2.2 Complexity Decision Process for Incident Management Transition**

ICs are required to assess complexity and request the appropriate level of management for a wildland fire as required. The Range Liaison and WFPM will work together to determine the need for transition to a higher level of incident management. BLM should complete the WFDSS with the assistance of the WFPM as a method of documenting the decisions to implement a higher level of incident management or request an incident management team.

### **11.3.2.3 Aviation Management/Aerial Suppression Activities**

The USAFWC currently has no fire suppression capable aircraft in their inventory of aircraft. All aviation activities requiring NTTR access will be coordinated through Blackjack.

## **11.4 FUELS MANAGEMENT**

In order to protect military equipment and operations and reduce the potential for a wild land fire on the NTTR, the AF and BLM have entered into an agreement to jointly develop and fund a fuels management program. The fuels management program is designed to reduce the fuel loading in critical areas that will reduce the likelihood of a major fire and is necessary to protect unique military assets.

BLM staff will be the lead for the execution of the fuels projects on the NTTR. Nellis AFB will work with BLM to identify military areas of critical concern, assist with the development of fuel

reduction projects, coordinate range access, and secure the shared portion of funding. All joint projects will comply with NEPA.

Survey and evaluation of the fuels that may impact important military assets have been initiated in a joint effort by the WFPM and BLM. Priority fuels treatment sites have been identified based on asset value and potential fire risk. Cedar peak is the first priority for fuels reduction activities due to its high value to the mission and replacement cost as well as the extreme fire potential and heavy fuel loads due to the mature pinyon and juniper woodland habitat. Tolicha Peak Complex and Black Mountain area is the second priority site for fuels reduction activities. Assets within this area are also a high value to the mission and the area has a history of lightning caused fires resulting in increased invasive grasses and thus increased fire potential. Assets located in ECE and ECW are the third priority for fuels reduction activities. This area does not have as high of a fire potential as the previous two areas because of the flat topography and desert scrub habitat surrounding each site. However, fuels treatments around each system will protect those assets from fire and minimize the need for fire suppression support in the valleys.

Fuels reduction at the priority sites on the NTTR will include clear cutting of trees, thinning of the tree canopy, cutting of fire breaks, grading and herbicide treatments. The following are area specific recommendations for fuels reduction activities. These activities will be pursued as joint funding becomes available.

Projects: FY13-18

- Cedar Peak will be clear cut of the pinyon juniper woodland habitat surrounding the peak. Approximately a 300yd radius (60 acres) around the peak will be clear cut for the protection of systems. An additional 100yd radius (45 acres) around the clear cut area will be thinned to minimize the fire intensity as it nears the peak. All slash resulting from the clear cutting and thinning will be pile burned on site once cured. Existing roads and utility lines make effective fire breaks. These roads/lines will be annually maintained clear of vegetation thru grading, tree thinning, and herbicide application. The WFPM and BLM will identify additional fire break routes. See Figure 18.
- Tolicha Peak Complex fuels reduction will be via point protection of systems by grading and herbicide applications. A 50ft buffer (0.2 acres) will be cleared around each site and will be maintained annually by grading and herbicide application. An additional 100ft buffer (1.5 acres) treated with pre-emergent herbicide will minimize annual grass growth around each site. Existing roads and utility lines make effective fire breaks. These roads/lines will be annually maintained clear of vegetation through grading and herbicide application. The WFPM and BLM will identify additional fire break routes. Black Mountain will be clear cut of the pinyon juniper woodland habitat surrounding the peak. Approximately a 300yd radius around (60 acres) the peak will be clear cut for the protection of systems. An additional 100yd radius (45 acres) around the clear cut area will be thinned to minimize the fire intensity as it nears the peak. All slash resulting from the clear cutting and thinning will be pile burned on site once cured. See Figure 19.
- ECE/ECW Asset fuel reduction will be via point protection of electronic system by grading and herbicide applications. A 50ft buffer (0.2 acres) will be cleared around sites located in the valley floor. Sites on hilltops will be graded out to a 100ft buffer (0.75 acres). An additional 100ft buffer (1.5 acres) treated with pre-emergent herbicide will minimize annual grass growth around selected priority sites. The WFPM and NTTR will select sites to receive the herbicide treatment.





## 11.5 DEFENSIBLE SPACE GUIDELINES

Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards valuable assets (Dennis, 2006). Defensible space created by fuel treatments can provide firefighters safe operational space for protecting assets from encroaching wildfires. Additionally, defensible space can minimize the potential for damage to and/or loss of assets in the event that they cannot be protected by firefighters. Defensible space can be created by mechanical removal, herbicide treatments, or a combination of both.

Table 8 provides general guidelines based on wildland firefighter safety zones. The safety zone guidelines provide for a minimum of four times the height of a flame. These guidelines were developed for radiant heat only. Convective heat transfer from wind and/or terrain influences may increase the distance needed.

**Table 9. Defensible Space Guidelines.**

Fuels	Slope (%)	Recommended Clearance
	0-40	50-feet
	>40	75-feet
	0-40	100-feet
	>40	150-feet
	0-40	150-feet
	>40	200-feet
	0-40	150+-feet
	>40	200+-feet

In addition, flammable debris that gathers on or adjacent to assets should be removed annually prior to fire season.

Clearances recommended for above ground utility lines include intensive tree and brush removal directly below and 100-150 feet on either side of the utility line. Grasses should be left to reduce the potential for erosion.

Road systems should have buffers of 50-feet on either side of the roadbed in all fuel types, except in pinyon-juniper stands where 100-foot buffers on either side of road systems are recommended. These buffers are maintained by removing sage, brush, and timber but leaving grasses and other herbaceous plants to prevent erosion.

## **11.6 EMERGENCY STABILIZATION AND RESTORATION**

Damages relating to wildland fire take two forms: suppression damages and resource damages. Suppression damage is caused by any operation or strategy used to suppress fires. Resource damage is destruction or injury of natural resources caused by high severity fire. The WFPM will provide assistance to BLM in emergency stabilization and restoration efforts on NTTR.

## 12. SAFETY AND EMERGENCY OPERATIONS

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Safety is the highest priority during all fire management activities on NTTR. All safety standards and guidelines identified within the Interagency Standards for Fire and Fire Aviation Operations Handbook will be followed. All aviation policies and practices will be followed during fire management activities as described in the FSH 5700, the Interagency Helicopter Operations Guide (IHOG), the Interagency Air Tanker Base Guide, Interagency Aerial Supervision Guide, Interagency Aerial Ignition Guide, Interagency Single Engine Air Tanker Operations Guide, and the Interagency Standards for Fire and Fire Aviation Operations Handbook.

Hazards such as hazardous materials, radioactive material and unexploded ordnances, will be identified to firefighting resources. All hazards will be mitigated to protect firefighting resources prior to engaging in any firefighting activities.

### 12.1 WILDLAND FIRE SAFETY POLICY

All accepted National Fire Protection Association (NFPA) and National Wildland Fire Coordinating Group (NWCG) wildland fire safety policies utilized by federal wildland fire agencies are required for all wildland fires burning on NTTR, including the Interagency Standards for Fire & Aviation Operations 2009, 10 Standard Fire Orders, 18 Watchout Situations, LCES, PMS 410-1 Fireline Handbook, and PMS 461 Incident Response Pocket Guide.

Non-essential personnel will be evacuated or relocated to a designated safe location when threatened by wildland fire according to the following decision matrix for personnel evacuation:

- IC makes recommendation to the Range Operations Agency (ROA) or the Range Operations Office (ROO) to evacuate portions of the NTTR
- The NTTR/CC as the ROA will make the final decision for evacuation and will direct the evacuation
- Once the evacuation order is given, all available means of communication will be used notifying personnel of the evacuation.

#### 12.1.1 Fire Operational Safety

The principal of safety maintains that ensuring the safety of firefighters and other persons affected by fire operations is fundamental to successful suppression action. Adherence to safety protocols is critical before participation in any wildland fire management activity. An accurate size-up and risk analysis of a wildfire incident is critical for a positive outcome and successful mitigation strategies. All personnel being deployed into an area immediately dangerous to life and health will be initially briefed regarding appropriate personal protective equipment, hazards, lookouts, escape routes, and safety zones. Communication links between firefighters and overhead personnel will be established and tested prior to fire suppression engagement.

## **12.2 PROCEDURE FOR MITIGATING HAZARDS TO PERSONNEL SAFETY DURING WILDFIRES**

### **12.2.1 Evacuation**

As a large portion of NTTR is inaccessible, there are few areas where personnel will be located. The need for evacuation of personnel will depend on the location and behavior of a wildland fire and the location of personnel and vehicles. Once ROA/ROO determine that an evacuation is prudent, all available means of communication will be used to inform personnel of a wildland fire in their respective work areas and inform personnel to evacuate immediately to a safe location. If evacuation is not possible, personnel should contact Blackjack and keep apprised of any changes.

### **12.2.2 Shelter-in-Place**

In some cases it may be safer for personnel and visitors to find or remain in a safe fire resistant structure rather than evacuating. During a wildfire, sheltering in place means to stay inside a structure that is fire-resistive and air tight, and remain in place until the emergency is over.

The following are recommendations for shelter-in-place:

- Remain calm.
- If visitors are in the building, ensure their safety by requesting them to stay—not leave. When authorities implement shelter-in-place, all personnel follow the directions immediately, where they are, and not drive or walk outdoors.
- Unless there is an imminent threat, all personnel should contact their emergency contact to let them know their safety status and location.
- Close all windows, exterior doors, and any other openings to the outside.
- Close the window shades, blinds, or curtains.
- Have personnel familiar with the building's mechanical systems turn off all fans, heating and air conditioning systems. Some systems automatically provide for exchange of inside air with outside air—these systems, in particular, need to be turned off, sealed, or disabled.
- Gather essential disaster supplies, such as nonperishable food, bottled water, first aid supplies, flashlights, and batteries.
- Select interior room(s) above the ground floor, with the fewest windows or vents. The room(s) should have adequate space for everyone to sit. Avoid overcrowding by selecting several rooms if necessary. Large storage closets, utility rooms, pantries, copy and conference rooms without exterior windows will work well. Avoid selecting a room with mechanical equipment like ventilation blowers or pipes, because this equipment may not be air-tight from smoke and gases outdoors.
- After the danger has passed, immediately inspect the exterior and roof and extinguish any sparks and embers. Use caution if you must climb on the roof.

Due to lighter vegetation near most structures at NTTR, fires should rapidly burn through most areas and personnel should be safe to remain in the structure.

### 12.2.3 Survival Away From Structures

Wildfires on NTTR can rapidly spread, creating situations where personnel may be unable to evacuate or move to shelter-in-place. The following guidelines are based on Federal Emergency Management Agency (FEMA) guidelines. Personnel should review these guidelines prior to entering NTTR, especially before fire season. CAUTION: These procedures are dangerous and should be implemented in an emergency.

### 12.2.4 Survival in a Vehicle

- Move your vehicle to bare ground or areas where ground fuels are sparse. Roll up windows and close air vents. Drive slowly with headlights on. Watch for other vehicles and pedestrians. Do not drive through heavy smoke.
- If you have to stop, park away from the heaviest trees and brush. Turn headlights on and ignition off. Roll up windows and close air vents.
- Lie on the floor and cover yourself with a jacket or blanket. The fuel tank of the car will normally not explode unless the car is fully enveloped in flames; more often the fuel tank does not explode at all. Try to stay calm and let the fire pass.
- Stay in the vehicle until the main fire passes. Do not run! The engine may stall and not restart. Air currents may rock the car. Some smoke and sparks may enter the vehicle. Temperature inside the car will likely increase. You can survive the firestorm if you stay in your car. It is much less dangerous than trying to run from a fire on foot.

### 12.2.5 If Caught in the Open

- If you are caught in the open, it is best to seek temporary shelter where ground fuels (brush, grasses) are sparse.
- Seek a depression with sparse fuel.
- If you're on a steep mountainside, the side of the mountain away from the fire is safer. Avoid canyons, natural "chimneys" and saddles.
- If a road is nearby, lie face down along the road cut or in the ditch on the uphill side.
- Clear fuel away from the area while the fire is approaching and then lie face down in the depression and cover yourself with anything wet or non-flammable that can shield you from the fire's heat. Stay down until the fire passes.

## 12.3 HAZARDOUS MATERIALS

Several areas of NTTR are radioactively contaminated, and, if ignited, could result in airborne contamination in the smoke plume or the dust from a fire. In addition, unexploded ordnance are found on NTTR. Wildland fires in areas with radioactive, chemical, HAZMAT, and unexploded ordnance pose an unacceptable threat to firefighters and equipment. It is imperative that fire fighters follow the guidance provided by the Range Liaison Officer and avoid known hazardous sites.

The IC must consider the location of hazards in relation to a wildland fire and the anticipated direction of fire spread. Responding suppression personnel will not be deployed to a fire without having received an incident area-specific safety briefing. This briefing includes:

- Areas of known radiological or chemical contamination (HAZMAT).
- Areas of known unexploded ordnance.
- Areas of known vertical mine shafts or open bore holes.

- Proper use of NTTR radio and communications protocols if the BLM will be using the NTTR communications equipment. Otherwise, BLM radio and communications protocols will be used.

## **13. PERSONNEL TRAINING AND CERTIFICATION STANDARDS AND RECORDS**

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### **13.1 TRAINING NEEDS AND CERTIFICATION**

The WFPM and the Range Liaison Officer should have a basic understanding of wildland fire and WFDSS based on their expected level of support to BLM. Specific certifications are not required, but they are recommended. Basic firefighter training includes:

- S-110 Basic Fire Suppression Orientation
- S-130 Firefighter Training
- S-190 Introduction to Fire Behavior
- I-100 Introduction to ICS
- L-180 Human Factors on the Fireline
- Use of Fire Shelters
- Standard Fire Orders
- 18 Watchout Situations
- Standards for Survival
- Common Denominators of Tragedy Fires

*NOTE: These usually are combined into one 40 hour class.*

WFDSS training can be accessed on-line at: [http://wfdss.usgs.gov/wfdss/WFDSS\\_Home.shtml](http://wfdss.usgs.gov/wfdss/WFDSS_Home.shtml).

### **13.2 FITNESS STANDARDS**

All incoming wildland fire suppression resources will meet their respective agency fitness standards such as NFPA and NWCG.

### **13.3 PERSONAL PROTECTIVE EQUIPMENT**

Firefighters and qualified personnel responding to or near a fire are required to wear their respective agency wildland fire specified PPE (such as NFPA and NWCG standards) on all wildland fire incidents.

## **14. MONITORING REQUIREMENTS**

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### **14.1 WILDLAND FIRE MANAGEMENT PLAN**

The WFPM will review the WFMP annually to ensure that it is being properly implemented and that fire-related goals and objectives (Chapter 2) are being met. The plan will be updated and revised as additional information from the annual review or fire and fuel assessments is obtained. Additionally, any changes in DOD, AF, federal, state, and local land management or wildland fire management policies should be incorporated into updates.

### **14.2 WILDLAND FIRE MONITORING**

The IC or WFPM will ensure that all wildland fires are mapped and GIS data collected (i.e. fire perimeter and data from Form ICS 209). Post-fire assessments for damage of natural and cultural resources should be conducted by BLM as soon after a fire as possible.

### **14.3 FUEL TREATMENT MONITORING**

BLM will conduct assessments per their Range Management Plan (RMP). A baseline inventory should be conducted prior to any vegetation treatments associated with fuel treatments. Any treatments are subject to NEPA and should be cleared through the NAFB Natural Resources Manager. Effectiveness monitoring following treatment assesses whether objectives have been met, and allows comparison of pre-treatment and post-treatment conditions. Objectives of fuel treatments are substantially compromised if the effects of these management actions are ecologically undesirable. A comprehensive monitoring program should include photo points and vegetation sampling prior to implementation of fuels or vegetation treatments.

## 15. PUBLIC RELATIONS

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The 99 ABW Public Affairs Office (PA) will be responsible for all communications related to military activities and will work with BLM to provide any communications with the public.

Public Affairs	<ul style="list-style-type: none"><li>▪ Reviews EAs associated with fuel treatment projects</li><li>▪ Conducts required NEPA public notifications and public meetings</li><li>▪ Provides information about the fire management issues to news media, elected officials, environmental groups, and interested members of the public</li></ul>
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**Social and Political Concerns.** Since most of NTTR is not open to the public, a small to moderate size fire burning in the interior of NTTR would raise no concern if the fire is not located near a radioactive contaminated or munitions contaminated site. If any size fire occurs in or near radioactive contaminated or munitions contaminated sites, re-suspension of radioactive particles has long been a critical topic with the public and should be carefully addressed by PA. Also, fires burning near public road systems and large interior wildfires that produce large columns of smoke will likely cause some public concern. Suppression activities are normally conducted in an interagency cooperative environment and close attention to jurisdictional responsibilities is needed to ensure proper attention to public concerns.

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# ATTACHMENTS

## **ATTACHMENT 1**

# **Memorandum of Agreement between BLM and DoD concerning Wildland Fire Management Activities at NTTR**

**MEMORANDUM OF AGREEMENT****BETWEEN****DEPARTMENT OF INTERIOR -BUREAU OF LAND MANAGEMENT****NEVADA STATE OFFICE****AND****DEPARTMENT OF DEFENSE - UNITED STATES AIR FORCE****99TH AIR BASE WING  
NELLIS AIR FORCE BASE  
NEVADA****Concerning:****Wildland Fire Management Activities at Nevada Test and Training Range****I. PURPOSE:**

This Memorandum of Agreement (MOA) is to provide a basic framework for mutual cooperation between the Bureau of Land Management, Nevada State Office (BLM) and the United States Air Force, Nellis Air Force Base (NAFB) for the purpose of supporting and management of wildland fire activities.

This MOA provides the procedures for NAFB to use in order to coordinate with the BLM's fire management program, as well as, information on requesting the BLM to support in responding to and suppressing wildland fires. This MOA also defines each agency's responsibilities in performing Planning, Incident Response Procedures, Rehabilitation, and Fuels Management activities.

**II. OBJECTIVE:**

The Nevada Test and Training Range (NTTR) lands were withdrawn from public use for national defense objectives when Public Law 106-65 was enacted in October 1999. Access to the NTTR is strictly controlled by NAFB to protect the public from injury due to ordnance hazards; ensure national security is not compromised; and to ensure military programs can be conducted without interruption. However, the BLM maintains the statutory authority and responsibility for managing natural and cultural resources on public lands under their jurisdiction. Wildland fires, occurring within or adjacent to NAFB and the NTTR, on these approximately 2.9 million acres of range land regardless of cause, pose a severe risk to military operations. It is mutually advantageous, and in the public interest, for both BLM and NAFB to coordinate their efforts in the prevention, detection, and suppression of wildland fires at the NTTR.

**III. AUTHORITY:**

- Military Lands Withdrawal Act of 1999 (MLWA of 1999), P.L. 106-65, Title XXX
- Federal Land Policy and Management Act of 1977 (48Stat.1269; 43U.S.C.315)

- Reciprocal Fire Protection Act; 42 USC Chapters 15A and 1856
- BLM Manual 910DM
- DoDI 4000.19R
- DoDI 6055.6
- AFI 32-7064
- AFD 32-20
- AFI 32-2001
- AFI 13-212, Nellis Addendum

#### IV. PROCEDURE:

This MOA provides the mechanism for requesting timely support and provides a means for direct communication and coordination between NAFB and the BLM.

- A. **Public Information Coordination:** All requests for information will be jointly coordinated upon by both BLM and NAFB prior to public disclosure.
- B. **Environmental Compliance:** NAFB will be responsible for coordinating all applicable environmental requirements for the rehabilitation of burned lands from all military caused fires. BLM will be responsible for coordinating all applicable environmental requirements for all non-military caused fire rehabilitation of burned lands on NTTR. NAFB and BLM will jointly coordinate all applicable environmental requirements for actions pertaining to fire prevention for the protection of military assets. BLM will be responsible for actions pertaining to fire prevention that are not directly associated with the protection of military assets on NTTR.
- C. **Request for Assistance:** All requests for BLM support will be initiated by the Nellis Command Post. All wildland fires will be reported to Las Vegas Interagency Communication Center (LVICC) regardless of size, location or cause. LVICC will coordinate with the adjacent BLM dispatch centers on initial attack response or assistance to utilize the closest resources. LVICC will be designated the jurisdictional dispatch center for all large fires.
- D. **Communication Systems:** Frequency management is vital to the safety of personnel involved in wildland fire fighting activities. The BLM will annually coordinate frequency requirements with 98 RANW and 99 CES/CEANC no later than March 15 each year.
- E. **Incident Command System:** The National Incident Management System (NIMS) will be utilized enabling both agencies to integrate operations and provide for seamless support and transition of fire fighting activities. A Unified Command Structure will be practiced on incidents as applicable to ensure safety, efficiency and that resource management objectives are met.
- F. **Security:** Access to withdrawn lands will be in accordance with 98 Range Wing Operating Instruction 13-212. Access must be coordinated through the designated Range liaison POC no later than March 15 each year to expedite access onto the range.

- G.** Incident Investigation: All efforts should be extended to protect the origin of fire for post fire investigation. The BLM and NAFB will jointly evaluate each wildland fire to determine the source of the fire. A final determination of fire cause will be documented in a written report by a qualified wildland fire investigator. Upon completion of the evaluation, the parties will issue a joint statement through their respective PIO/PA officer as to the cause of the fire.
- H.** Aircraft Accidents: In the event of a crash of a military aircraft within the area for which the BLM normally provides fire protection, the chief of the NAFB fire department or his representative may assume full command of the accident site.
- I.** Military Caused Fires not on NTTR Withdrawn Lands: Fires believed as a result from NAFB military activities on lands not withdrawn under PL 106-65 will be jointly evaluated by NAFB and BLM. See G. Incident Investigation (above).
- J.** Pre-Attack Planning
1. Bureau of Land Management will:
    - a. Assist the NAFB Wildland Fire Program Manager (WFPM) with the development of a fire management plan for lands within and adjacent to the NTTR complex.
    - b. Assist and coordinate with the NAFB WFPM with the development of strategies to address military caused fires on lands adjacent to and within the NTTR MOA.
    - c. Assist and coordinate with the NAFB WFPM with the development of strategies to address military asset protection from all wildland fires.
    - d. Request NAFB resources protection needs in their planning efforts.
    - e. Coordinate the plans for lands in the NTTR complex with NAFB.
    - f. Coordinate and assist identified NTTR personnel/contractors in obtaining appropriate BLM wildland fire prevention, suppression, and restoration training.
  2. Nellis Air Force Base will:
    - a. Develop WFMP for lands within NTTR complex.
    - b. Assist and coordinate with the BLM in the development of strategies to address military caused fires on lands adjacent to and within the NTTR MOA
    - c. Assist and coordinate with the BLM in the development of strategies to address military assets protection from all wildland fire.
    - d. Provide information required for BLM to assist in WFMP planning and development.
    - e. Provide BLM access to the NTTR for assistance in planning purposes.

- f. Provide appropriate and requested assistance to BLM in wildland fire suppression, planning and management on lands adjacent to the NTTR.

**K. Incident Response**

1. Delegation of Authority: A written delegation of authority to be given to incident commanders prior to their assuming command on larger incidents. This statement is provided to the incident commander by the agency executive delegating authority and assigning responsibility. The delegation of authority will include objectives, priorities, expectations, environmental constraints, public information direction, safety considerations and other considerations or guidelines as needed.

2. Initial Attack

- a. The BLM is the lead agency for all wildland fires resulting from non-military activities on the NTTR and will coordinate fire monitoring/suppression activities/needs with NAFB.
- b. NAFB is the lead agency for all wildland fires resulting from military activities and may request assistance from the BLM in suppression of these fires.
- c. If fire cause is not known the BLM and NAFB will integrate fire suppression operations and incident management using NIMS and a Unified Incident Command System.
- d. NAFB will provide access and designate a range liaison officer and appoint the WFPM as resource advisor for the NTTR.

3. Extended Attack

- a. If a wildland fire escapes initial attack, the BLM will coordinate with NAFB to complete a complexity analysis and place an order for the appropriate level Incident Management Team. A Unified Command between BLM and NAFB will coordinate incident management activities.
- b. NAFB will provide access and a liaison officer and resource advisor for the NTTR.

**L. Reimbursement**

1. Upon determination that a wildland fire is a result of military activities, NAFB shall through Standard Form 1080 titled "Voucher for Transfers between Appropriations and/or Funds", transfer funds for the cost of any assistance provided by the BLM to include all suppression and rehabilitation costs as appropriate and agreed upon.

**M. Rehabilitation**

Bureau of Land Management will: Follow established procedures as outlined in Washington Instruction Memorandum 2008-172, Subject, Annual Operating Procedures for Post-Fire Emergency Stabilization and Burned Area Rehabilitation Activities.

- a. Coordinate required actions in the NTTR complex with NAFB WFPM.

2. Nellis Air Force Base will:

- a. Provide access for the BLM personnel and equipment.
- b. Designate the WFPM as the NAFB representative for rehabilitation activities. .
- c. Provide/pay all restoration associated costs incurred by confirmed military caused fires.

**N. Fire Fuels Management**

1. Bureau of Land Management will:

- a. Develop, propose, request funding for, and execute hazardous fuels treatment projects, upon request.
- b. Coordinate/cooperate with NAFB WFPM on fuels management activities planned in the NTTR complex.

2. Nellis Air Force Base will:

- a. Coordinate/cooperate with the BLM for hazardous fuels project development and establish cost share agreements where mutual benefits and responsibilities are identified.
- b. Provide access for BLM and designate the WFPM as NAFB representative for fuels management activities.
- c. Provide a Priority Area list.

**V. ADMINISTRATION:**

- A. Nothing in this MOA will be construed as affecting the authorities of the participants or as binding beyond their respective authorities or to require any of the participants to obligate or expend funds in excess of available appropriations.
- B. Conflicts between the participants concerning procedures under this MOA which cannot be resolved at the operational level will be referred to successively higher levels as necessary for resolution.

- C. Upon request by any of the parties, all parties shall review this agreement to assure that it continues to reflect the appropriate understandings and procedures to provide for current needs and capabilities and adherence to the Public Laws.
- D. The terms of this MOA may be renegotiated at any time at the initiative of either party after providing a 30 day notice to the other party.
- E. Either party may propose changes to this MOA during its term by providing written notification to the other party. Such changes will be in the form of an amendment and will become effective upon signature by the MOA participants.
- F. Any agency may terminate their involvement under this MOA upon providing a 30 day written notice of such termination to the other parties.
- G. This MOA will become effective upon the latest signature date and will be in effect for 5 years from that date.
- H. The BLM designates the Southern Nevada District Office, Office of Fire and Aviation as primary contact for all fire coordination and communication on NTTR withdrawn lands. For Military Caused Fires related to NAFB military activities, not on NTTR withdrawn lands, the appropriate BLM District Office, Office of Fire and Aviation will be the primary contact.



STEVEN D. GARLAND  
Colonel, USAF  
Commander, 99th Air Base Wing  
4430 Grissom Avenue, Suite 101  
Nellis AFB, NV 89191-6520

NOV 16 2010

Date



Mr. RON WENKER  
State Director, Nevada  
Bureau of Land Management  
P.O. Box 12000  
Reno, NV 89520-0006

November 22, 2010

Date

## **ATTACHMENT 2**

# **2008 Letter of Agreement between BLM and Nellis AFB**

**Nellis Air Force Base  
57TH OPERATIONS GROUP (ACC),  
98TH OPERATIONS GROUP (ACC), and**



**Bureau of Land Management  
- Nevada State Office  
- Utah State Office**



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**LETTER OF AGREEMENT (LOA) IS EFFECTIVE: January 04, 2008 (04 JAN 08)**

**SUBJECT: Interagency Airspace Coordination**

**1. PURPOSE:** To provide procedures and guidance for coordination between 57th Operations Group (57 OG), 98th Operations Group (98 OG), and the Bureau of Land Management Nevada and Utah State Offices (BLM) for air operations within the Nellis Flying Area (NFA) which includes the Nevada Test and Training Range (NTTR), Nellis Terminal ATC Airspace, and Nellis Low Altitude Tactical Navigation (LATN) areas. Recognizing the need to manage the risk involved, 57 OG, 98 OG, and BLM have combined efforts to jointly issue these procedures. This agreement is in accordance with FAAO 7610.4, FAAO 7110.65, and Title 14 Code of Federal Regulations (CFR) Sections 91 and 73, and with due consideration to BLM concerns and BLM's requirement to comply with the USDA-Forest Service/USDI Interagency Airspace Coordination Guide .

**2. CANCELLATION:** Letter of Agreement (LOA), Interagency Airspace Coordination, dated 27 Jun 2005.

**3. SCOPE:** This agreement applies to Department of Defense (DoD) NTTR users, airspace schedulers, and service providers. The following BLM field offices are involved and subject to this agreement: Las Vegas BLM, Ely BLM, Battle Mountain BLM, Cedar City BLM, Arizona Strip BLM, and any associated aircraft/aircrews, dispatchers and other BLM authorities responsible for conducting aviation operations within the NFA. All BLM aircrew or aircrew under BLM contract shall adhere to Title 14 CFR Section 91 prescribing see and avoid techniques and maintain a high degree of awareness at all times. BLM and FS Agency aircraft shall also comply with applicable sections of 14 CFR Parts 133 and 137.

**4. RESPONSIBILITIES:**

a. The BLM shall:

(1) Be the single point of contact for FAA coordination concerning issuance and cancellation of temporary flight restrictions (TFRs), IAW Title 14 CFR Section 91.137.

(2) Ensure all BLM aircraft on a fire response mission squawk 1255 or an ATC assigned discrete mode 3/A beacon code while conducting operations in the NFA.

(3) Initiate the notification process for events affecting NFA and Military Training Routes (MTRs) scheduled by Nellis AFB as noted in Flight Information Publications (FLIP), AP/1B.

(4) Initiate notification process to Nellis Air Traffic Control Facility (NATCF), Nellis/NTTR Airspace Manager, and Nellis Flight Safety for all safety of flight issues and follow BLM in-house standard policies and procedures.

b. NATCF shall provide VFR flight following services for scheduled BLM air operations within the NTTR.

c. Nellis Base Operations shall ensure TFR NOTAM information is distributed via the NOTAM system and as a local advisory to all Nellis flying units conducting operations within the NFA.

d. 98 OSS/OSO (Current Operations) shall:

(1) Provide long term and real-time scheduling of BLM air operations affecting the NTTR.

(2) Provide range-monitoring services for scheduled BLM air operations within the NTTR.

e. All signatories shall ensure personnel involved are briefed on the purpose and procedures of this agreement.

**5. COORDINATION PROCEDURES, NON-FIRE, FIRE RECON, OR INITIAL ATTACK  
(NO TFR):**

a. When BLM agency dispatchers or aviation managers become aware of non-TFR operation(s) that may necessitate flight within the NTTR, they shall:

(1) Schedule BLM air operations affecting the NTTR on a non-interference basis with 98 OSS/OSO (Current Operations), in a timely manner and provide known recurring mission planning information as far in advance as possible. (Use of certain restricted areas may require special security considerations).

(2) Schedule the operation and subsequent changes to proposed flight with 98 OSS/OSO (Current Operations) and coordinate same day changes/additions including unanticipated Fire Recon with the Blackjack scheduler and NATCF.

(3) For non-fire fighting operations, verify (verification does not guarantee the schedule won't change) proposed flight operations with NTTR Range Scheduling office three days prior to planned flight and FAX a map showing area of operation.

(4) Pre-brief all BLM aircrews to establish radio contact with NATCF prior to entering or exiting NTTR airspace.

(5) Notify Blackjack and NATCF upon completion of flight activity.

b. Upon BLM notification of a proposed flight operation in the NTTR, 98 OSS/OSO (Current Operations shall):

(1) Advise BLM of any security considerations relevant to proposed flight operations.

(2) Advise BLM coordinating unit/dispatch of projected or known activity within times and areas in which BLM will conduct aviation operations.

(3) Coordinate BLM activities with all DoD scheduled units.

(4) Make every attempt to accommodate BLM mission requests within safety of flight considerations and contingent upon DoD requirements.

c. Blackjack shall:

- (1) Notify all flying units of BLM air operations scheduled within the NTTR.
- (2) Coordinate Fire Recon requests with NATCF, i.e. route of flight, ranges affected, status of range, (hot, cold, scheduled, open for joint use, etc).
- (3) Advise BLM to remain clear of NTTR during DoD hazardous operations or significant flight operations in the scheduled BLM operating area and provide an estimate when BLM operations can resume.

d. NATCF shall:

- (1) Assign a discrete Mode 3/A beacon code for all BLM aircraft as requested, and notify Blackjack of code assignment.
- (2) Issue current Nellis Range altimeter setting.
- (3) Provide VFR flight following/deconfliction to the maximum extent possible, on a workload permitting basis.
- (4) Coordinate Fire Recon requests with Blackjack, i.e. proposed route of flight, ranges affected, status of range, (hot, cold, scheduled, open for joint use, etc).

**6. COORDINATION PROCEDURES, FIRE RESPONSE (TFR):**

a. BLM shall:

- (1) Request status of Nellis AFB scheduled military training routes (MTRs) from 57 WG Scheduling.
- (2) Immediately advise NATCF of the location of the reported fire/requested TFR or reconnaissance route, to include latitude and longitude information if available (i.e. global positioning system [GPS] derived coordinates).
- (3) Request a TFR with the appropriate FAA Air Route Traffic Control Center (ARTCC) and request that latitude and longitude information be included in the NOTAM.

(4) In addition to telephone and NOTAM information, FAX a hard copy of the approved TFR map to NATCF and Blackjack.

(5) Establish a BLM liaison representative, if deemed appropriate.

(6) Advise NATCF directly of any modification, changes or cancellation of the TFR.

(7) Ensure that aircrews contact NATCF prior to entering the NFA airspace and advise NATCF of type aircraft and proposed route to area of operations.

(8) Ensure all BLM incident support aircraft obtain an ATC approval to operate within the NTTR restricted areas.

b. NATCF shall:

(1) Notify Blackjack of any TFRs established that may affect the NTTR.

(2) Notify Base Operations and Nellis Tower supervisor upon receipt of information indicating establishment of a TFR within the NFA (excluding the LATN Areas).

(3) Issue applicable TFR restrictions to aircraft flying in the vicinity of a TFR area and assist Blackjack with deconfliction of DoD and BLM mission aircraft.

(4) Notify Blackjack of any reported and/or suspected fires within the NFA.

(5) Assign Mode 3/A discrete beacon codes for BLM TFR response aircraft conducting operations within the NFA and advise BLM aircraft of range status, (hot, cold, scheduled, open for joint use, etc). Relay code assignments to Blackjack for NTTR operations.

c. Base Operations shall disseminate the information via NOTAM system and as a local advisory to all Nellis flying units.

d. Blackjack shall:

(1) Ensure compliance with NTTR security requirements.

(2) Comply with TFRs as issued by the Federal Aviation Administration (FAA) and relay TFR establishment, cancellation, or changes to all aircraft monitoring Blackjack frequency.

(3) Relay TFR restrictions to all aircrews scheduled in the NTTR.

(4) Be the approval authority for all BLM mission aircraft to enter and exit NTTR Restricted areas.

**7. CANCELLATION OF TFR.** TFRs will be canceled by BLM through established procedures at the appropriate ARTCC. BLM will notify NATCF and Blackjack when air operations for the TFR are complete and all aircraft have exited the area. NATCF will coordinate with Blackjack to ensure removal of all TFR exclusions within the NTTR.

**8. LAND MANAGEMENT AUTHORITY AND RESPONSIBILITY.**

a. The BLM State Aviation Manager or Assigned BLM Airspace Coordination Specialist shall:

(1) Be the focal point for BLM field offices in resolving any procedural difficulties in scheduling airspace with Nellis AFB through coordination with Nellis Airspace Management Office.

(2) Function as the focal point for BLM field offices recommending changes to this LOA.

(3) Be the point of contact for Nellis Airspace Management in making changes to this LOA.

(4) Coordinate with Nellis Airspace Management and/or Flight Safety on all airspace conflicts or incidents conclusions/findings regarding airspace conflicts within the NFA or Nellis scheduled MTRs.

b. Nellis AFB/NTTR Airspace Manager shall:

(1) Serve as primary action office on Special Use Airspace (SUA) and/or Airspace for Special Use (ASU) matters and be the primary point of contact to BLM for matters pertaining to this LOA.

(2) Investigate, in concert with Flight Safety, 57 OG, 98 OG, and BLM, all alleged airspace deviations, incidents or violations when SUA/ASU is involved.

**9. INCIDENT/ACCIDENT.** In the event of an incident or accident involving BLM assigned aircraft within the NFA or a Nellis scheduled MTR; BLM shall notify NATCF Supervisor and Nellis AFB/NTTR Airspace Manager immediately. BLM will follow standard incident/accident or hazard reporting procedures and prepare a coordinated report to be forwarded to BLM National Office and the DOI Aviation Management Directorate. Incidents shall be reviewed during coordination meetings between BLM and Nellis AFB agencies.

**10. EDUCATION AND AWARENESS.** Joint education and awareness is essential to the mutual efforts to enhance safety of flight. Exchange visits between BLM Nevada/Utah & Nellis AFB are encouraged to foster open communication between all personnel who use this Agreement. Periodic briefings on NTTR airspace are appropriate. Coordination meetings should occur in spring and fall to assess implementation of this agreement. All signatories shall ensure personnel involved are briefed on the purpose and procedures of this agreement

**11. MODIFICATION/CANCELLATION OF THIS AGREEMENT.** Modification or cancellation of this letter is authorized with written mutual consent of all signatories and will require 30 days prior notice.

**12. FOUR ATTACHMENTS:** (attachments may be individually administratively updated)

1. TERMS OF REFERENCE.
2. POINTS OF CONTACT AND RADIO FREQUENCIES.
3. NTTR/NFA and LATN AREA MAP
4. STANDARD FIRE TRAFFICE AREA (FTA)

57 OG,  
98 OG,  
BLM-NV, LOA

Page 8 of 8  
Effective Date: 04 JAN 08

Signatures



3 Jan 08

STEVEN G. SEROKA, Colonel, USAF  
Commander, 98th Operations Group (ACC)  
Nellis Air Force Base, Nevada

Date



7 Jan 08

THOMAS M. WEBSTER JR., Colonel, USAF  
Commander, 57th Operations Group (ACC)  
Nellis Air Force Base, Nevada

Date



/s/ Amy L. Lueders

11/30/07

**Fo** Ron Wenker  
Nevada State Director  
Bureau of Land Management  
Nevada State Office  
Reno, Nevada

Date



12/12/07

**Fo** Selma Sierra  
Utah State Director  
Bureau of Land Management  
Utah State Office  
Salt Lake City, UT

Date

## TERMS OF REFERENCE

**SHALL** – Mandatory action, not permissive or optional.

**WILL** – Futurity, permissive for future application.

**MAY** – Optional action, not mandatory.

**AIRSPACE CONFLICT** – For purposes of this LOA, an airspace conflict is an aviation related occurrence which meets BLM definitions of incident or hazard while using the National Airspace System.

**AIRSPACE FOR SPECIAL USE (ASU)** – Airspace of defined dimensions wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not part of those activities. Examples of ASU in the Nellis flying area are air traffic controlled assigned airspace above the Desert and Reveille MOAs, aerial refueling anchors, MTRs, and LATN areas.

**BLACKJACK (NTTR Operations Center)** – Command and Control Facility that provides real time range scheduling, ground party access, range safety and special test assistance. Operational during NTTR DoD operations.

**BLM** – Refers to all personnel and aircraft under operational control of BLM Nevada and/or Utah State and district offices. It may also include aircraft or other equipment owned, contracted, or rented by other government agencies participating in joint operations.

**BLM FLIGHT ACTIVITY AREA** - An area where BLM aircraft conduct flight operations. A TFR coordinates, or a geographical location may define this area. There may be no standard dimension to this area especially for non-fire aviation operations. There may be only one or several aircraft operating within it. Also see term - Fire Traffic Area (FTA).

**DECONFLICTION OF AIRSPACE** – Processes and procedures taken by land management agency dispatchers in coordination with Special Use Airspace/Airspace for Special Use (SUA/ASU) scheduling facilities, NACC, and Blackjack by which the potential for airspace conflicts are minimized for known traffic. When a BLM intended flight mission might conflict with DoD aircraft in their training or operating areas, the agency should request assistance in avoiding the conflict. The deconfliction request must be submitted immediately upon identification of need and will be contingent upon DoD operations capability to accommodate. TFRs require accommodation and priority for BLM flight operations.

**FIRE FLIGHT OPERATIONS** - Aviation operations taken in response to wild land fires. Response may be in the form of any combination of air tankers, smoke jumper aircraft, helicopters, lead planes, and air tactical aircraft. Areas should be avoided even when smoke or flame is not apparent, since numerous aircraft may still be operating in the vicinity during the “mop-up” stages of a fire.

**FIRE TRAFFIC AREA** - The FTA (See Attachment #4) was developed by aerial firefighting personnel to provide a standardized initial attack airspace structure to enhance air traffic separation for all aircraft over wildland fire (or other) incidents. Although the FTA was designed for wildland firefighting incidents, the structure and communications requirements are patterned after Class D airspace with some specific differences.

**END-PRODUCT CONTRACTS/SERVICES** – BLM contracts awarded that use aircraft as a means of delivering a service or product. Aircraft used are not “Public Aircraft” and are not under the operational control of the BLM, and as such are not subject to the scheduling and airspace coordination procedures specified in this LOA. These aircraft are general aviation aircraft operating IAW 14 CFR Parts 91, 133, and/or 137 while flying in the NFA.

**LOW ALTITUDE TACTICAL NAVIGATION (LATN) AREA** – Airspace east, south, and west of the NTTR between 50 and 1,500 feet AGL to allow random selection of navigation points and low altitude formation practice. Ground tracks must remain well clear of Class B & D airspace, airports, and residential, populated and noise sensitive areas. Airspeeds are below 250 knots.

**MILITARY OPERATIONS AREA (MOA)** – Airspace established outside Class A airspace to separate/segregate certain military activities from Instrument Flight Rules (IFR) traffic and to identify to VFR traffic where these activities are conducted. When a MOA is active, non-participating IFR traffic may be cleared through the area provided ATC can provide standard IFR separation; otherwise, IFR traffic will be rerouted around the MOA.

**MILITARY TRAINING ROUTES (MTRs)** – Routes established to accommodate low-altitude training operations that permit speeds in excess of 250 KIAS below 10,000 feet MSL (some segments may extend above 10,000 feet MSL due to terrain or other requirements). Only the route centerline is depicted on Aeronautical Sectional Charts. There are two types of MTRs:

**IFR MTRs (IRs)** -These routes are used in accordance with Instrument Flight Rules (IFR) regardless of weather conditions. Current information concerning these routes is available from any ARTCC within which the route is located. However, the most reliable source of information is always the scheduling activity listed in the AP/1B (FLIP) handbook.

**VFR MTRs (VRs)** - Operations on these are conducted in accordance with Visual Flight Rules (VFR) requiring visual meteorological conditions (VMC) for use. Current information concerning these routes is available from the scheduling activity listed in the AP/1B (FLIP) handbook.

**NELLIS AIR TRAFFIC CONTROL FACILITY (NATCF), callsign “NELLIS CONTROL”** - Provides air traffic control services within the NTTR and NFA. Approval authority for aircraft entering/exiting the NTTR and 24 hour point of contact for BLM operations.

**NELLIS FLYING AREA (NFA)** - For the purposes of this LOA, the NFA is that airspace that includes the NTTR, Nellis Terminal/Enroute Airspace, and Low Altitude Tactical Navigation (LATN) Areas. (See Attachment #3)

**NEVADA TEST AND TRAINING RANGE (NTTR) COMPLEX** - Airspace composed of the Desert MOA, with overlying Air Traffic Control Assigned Airspace (ATCAA), Reveille North and South MOA and ATCAA, Restricted Areas R-4806 East/West, R-4809, and R-4807A/B. The Desert MOA is subdivided into Sally Corridor, Elgin, Caliente, and Coyote training areas. Restricted Areas R-4806 East/West, R-4809 and R-4807 A/B are joint use airspace and subdivided as follows: Alamo A, B, & C, Areas 61A & 61B, 62A& 62B & C, 63A & 63B, 64A, B, C, D & E, 65A,B,C &D, 71N, 71S, 74A, 74B, 74C, 75E, 75W, 76, 76A, Tolicha Peak, Pahute A & B, ECE, ECW and ECS. R-4808N and portions of R-4808S are non-joint use restricted areas under control of DOE.

**NEAR MID-AIR COLLISION (NMAC)** - A near mid-air collision is defined as “an incident associated with the operation of an aircraft in which a possibility of collision occurs as a result of proximity of less than 500 feet to another aircraft, or a report is received from a pilot or qualified aircrew member stating that a collision hazard existed between two or more aircraft.”

**\*\*NON-TFR FLIGHT OPERATIONS**-Generally fall into two categories:

**PLANNED** - Those non-TFR aviation operations that can be anticipated planned and scheduled in advance by BLM. These would include aerial surveillance/photography, animal counting and/or round up, wilderness study area survey, etc.

**EMERGENCY** - Non-TFR aviation operations that cannot be anticipated and/or planned in advance. These would fall into the category of fire recon missions and medical evacuations or other emergencies related to human life or limb endangerment.

**RESTRICTED AREA** -Established to denote the existence of unusual, often invisible hazards to aircraft such as artillery firing, aerial gunnery, missiles, or ground target attacks. Penetration of restricted areas may be extremely hazardous for non-authorized aircraft entrance and is legally prohibited. Authorization to transit restricted areas designated joint use when the area is not in military use may be obtained from the using or controlling agencies.

**\*\*TEMPORARY FLIGHT RESTRICTION (TFR)** – A flight restriction implemented under Title 14 CFR Section 91.137 that identifies an area of airspace, both laterally and vertically, for which entry by non-participating aircraft is restricted for specified period of time. Flight restrictions may be requested in response to the aviation safety needs for separation of participating and non-participating aircraft during disaster type occurrences. It is requested from the FAA ARTCC within whose jurisdiction the location lies and is forwarded by the ARTCC to the National Flight Data Center (NFDC) for processing and dissemination to Flight Service Stations. All pilots are required to be aware of TFRs. Entry into the airspace by non-participating aircraft is prohibited or severely restricted.

**\*\* IMPORTANT NOTE:** Due to the possibility of misunderstanding the term TFR, the words “Temporary Flight Restriction” shall be used during all landline coordination and radio transmissions.

**UNMANNED AERIAL SYSTEM (UAS)** - The FAA/DOD term for a pilotless aircraft including drones which is remotely controlled by an external source either airborne or on the surface.

**POINTS OF CONTACT:**

**Nellis Air Traffic Control Facility**  
(NATCF) 57 OSS/OSAR  
3770 Duffer Drive  
Nellis AFB NV 89191-7001

**Chief Controller  
Watch Supervisor  
FAX  
e-mail**

702-653-4644/4540  
702-652-4222/653-5638  
702-653-4656  
*ward.hanning@nellis.af.mil*

**Blackjack**  
Range Operations Center  
3770 Duffer Drive  
Nellis AFB NV 89191-7001

**Supervisor  
Real-Time Scheduler  
FAX  
e-mail**

702-653-4537  
702-653-4707  
702-653-4603  
*ranwbj@nellis.af.mil*

**57th Wing Scheduling**  
57OSS/OSOS  
4450 Tyndall Ave  
Nellis AFB NV 89191-6067

**Scheduler  
FAX  
e-mail**

702-652-2040  
702-653-4220  
*57oss.osos@nellis.af.mil*

**Range Scheduling**  
98 OSS/OSO  
3770 Duffer Drive  
Nellis AFB NV 89191-7001

**Scheduler  
FAX  
e-mail**

702-653-4710  
702-653-4887  
*osssched@nellis.af.mil*

**Nellis Airspace Manager**  
57 OSS/OSM  
4430 Grissom Ave. Suite 206C  
Nellis AFB NV 89191-6067

**Phone  
FAX  
e-mail  
e-mail**

702-652-6490 or 3309  
702-652-8532  
*James.Callahan@nellis.af.mil*  
*Thomas.Miller2@nellis.af.mil*

**66th Rescue Squadron**  
66 RQS/DO  
5151 Ellsworth Ave  
Nellis AFB NV 89191-6801

**Operations Officer  
FAX**

702-652-6692  
702-652-6686

**FAA Representative**  
4430 Grissom Ave. Suite 206  
Nellis AFB NV 89191-6067

**Phone  
FAX  
e-mail**

702-652-5530  
702-652-8532  
*Dennis.Bee@faa.gov*

**AFREP (Air Force Representative-FAA WP)**  
Los Angeles CA

**Phone  
FAX  
e-mail**

310-725-3900  
310-725-3999  
*David.Sampson@faa.gov*

**Flight For Life (Valley Hospital)**  
620 Shadow Lane  
Las Vegas, NV

**Emergency Helicopter  
Mercy Dispatch**

702-383-1000  
702-384-3400

**Nevada Test Site**  
Operations Coordination Center (OCC)  
P.O. Box 98521 MS NTS 778  
Las Vegas, NV

**Site Operations  
Schedulers  
  
FAX  
e-mail**

702-295-4015  
702-295-2441  
702-295-2442  
702-295-1968  
*occsiteoperations@nv.doe.gov*

**POINTS OF CONTACT:**

**BUREAU OF LAND MANAGEMENT DISPATCH OFFICES:**

**Las Vegas**

Las Vegas Field Office: 1401 N. Torrey Pines, Las Vegas, NV 89130

Las Vegas Interagency Communication Center: 2980 North Rancho Drive, Las Vegas, NV 89130

<i>Dispatch-Emergency</i>		702-631-2350
<i>Administration</i>		702-515-5300
<i>Dispatch-Emergency – After Hours</i>		702-631-2350
<i>FAX</i>		702-646-1996
<i>Duty Coordinator</i>	<i>Dennis Sheridan</i>	702-515-5305
	<i>E-Mail</i>	<i>dsherida@nv.blm.gov</i>
<i>Aviation Dispatcher</i>	<i>Vacant</i>	702-515-5300
	<i>E-Mail</i>	<i>name@nv.blm.gov</i>
<i>Aviation Manager</i>	<i>Randy Johnson</i>	775-726-8101
	<i>Cell Phone</i>	775-296-0814
	<i>E-Mail</i>	<i>Randy_Johnson@nv.blm.gov</i>

**Ely**

Ely Field Office: 702 North Industrial Way, HC33 Box 33500, Ely, NV 89301-9408

Ely Interagency Communication Center: *Address Same as Above*

<i>Dispatch-Emergency (Cell Phone)</i>		775-289-9395
<i>Dispatch-Normal Hours</i>		775-289-1925
<i>FAX</i>		775-289-1930
<i>Duty Coordinator</i>	<i>Karla Luttrell</i>	775-289-1922
	<i>E-Mail</i>	<i>kluttrell@nv.blm.gov</i>
<i>Aviation Dispatcher</i>	<i>Mary Anderson</i>	775-289-1925
	<i>E-Mail</i>	<i>m4anders@nv.blm.gov</i>
<i>Aviation Manager</i>	<i>Randy Johnson</i>	775-726-8101
	<i>Cell Phone</i>	775-296-0814
	<i>E-Mail</i>	<i>Randy_Johnson@nv.blm.gov</i>

**Battle Mountain**

Battle Mountain Field Office: 50 Bastian Road, Battle Mountain, NV 89820-2332

*All Fire & Non-Fire Aviation Dispatch Operations conducted on the BLM Battle Mountain District will be normally be coordinated through BLM Central Nevada Dispatch @ Winnemucca: See Address & Phone Numbers for Winnemucca Below.*

<i>Dispatch-Emergency</i>		775-623-3444
<i>Dispatch-Normal Hours</i>		775-623-1555
<i>FAX</i>		775-635-4119
<i>Fire Mgmt. Officer</i>	<i>Dave Davis</i>	775-635-4114
	<i>E-Mail</i>	<i>ddavis@nv.blm.gov</i>
<i>Aviation Manager</i>	<i>Cameron Dingman</i>	775-748-4023
	<i>Cell Phone</i>	775-934-7933
	<i>E-Mail</i>	<i>cdingman@nv.blm.gov</i>

**POINTS OF CONTACT**

**Winnemucca**

Winnemucca Field Office: 5100 East Winnemucca Blvd., Winnemucca, NV 89445  
Central Nevada Interagency Dispatch Center: 5330 Jays Road, Winnemucca, NV 89445

<i>Dispatch-Emergency</i>		775-623-3444
<i>Dispatch-Normal Hours</i>		775-623-1555
<i>FAX</i>		775-623-1754
<i>Duty Coordinator</i>	<i>Kai Olsen</i>	775-623-1750
	<i>E-Mail</i>	<i>k40olsen@nv.blm.gov</i>
<i>Aviation Dispatcher</i>	<i>Bryan Granath</i>	775-623-1558
	<i>E-Mail</i>	<i>bgranath@nv.blm.gov</i>
<i>Aviation Manager</i>	<i>Paul Borcharding</i>	775-623-2397
	<i>Cell Phone</i>	775-304-1021
	<i>E-Mail</i>	<i>pborcharding@nv.blm.gov</i>

**Nevada State Office**

Office of Fire & Aviation: 1340 Financial Blvd., Reno, NV 89502  
Western Great Basin Coordination Center: *Address Same as Above*

<i>Dispatch-Emergency</i>		775-861-6455
<i>Dispatch-Normal Hours</i>		775-861-6455
<i>FAX</i>		775-861-6459
<i>BLM State Aviation Manager</i>	<i>Greg Gall</i>	775-861-6535
	<i>Cell Phone</i>	775-722-4594
	<i>FAX</i>	775-861-6668
	<i>E-Mail</i>	<i>ggall@nv.blm.gov</i>

**Utah State Office**

Office of Fire & Aviation: PO Box 45155, Salt Lake City, UT 84145  
Eastern Great Basin Coordination Center: 5500 W. Amelia Earhart Drive, Ste 270, Salt Lake City, UT 84116

<i>Dispatch-Emergency</i>		801- 531-5320
<i>Dispatch-Normal Hours</i>		801- 531-5320
<i>FAX</i>		801- 531-5321
<i>BLM State Aviation Manager</i>	<i>Vacant</i>	801-539-4296
	<i>Cell Phone</i>	801-673-6057
	<i>FAX</i>	801-539-4198
	<i>E-Mail</i>	<i>name@ut.blm.gov</i>

**POINTS OF CONTACT**

**Tonopah Field Station** (Detached office of BLM Battle Mountain Field Office)  
Tonopah Field Station: P.O. Box 911, Tonopah, Nevada 89049

<i>Field Station-Normal Hours</i>		775-482-7000
<i>FAX</i>		775-482-7810
<i>Wild Horse Specialist</i>	<i>Andrea Felton</i>	775-482-7847
	<i>E-Mail</i>	<i>afelton@nv.blm.gov</i>

**Cedar City, Utah (Color Country Interagency Dispatch Center)**  
Cedar City Field Office: 176 East DL Sargent Drive, Cedar City, Utah 84720  
Cedar City Interagency Dispatch Center: 1770 West Kittyhawk Drive, Cedar City, Utah 84720

<i>Dispatch-Emergency</i>		435-865-4611
<i>Dispatch-Normal Hours</i>		435-865-4600
<i>FAX</i>		435-865-4691
<i>Center Manager</i>	<i>Ricky Smith</i>	435-865-4601
	<i>Cell Phone</i>	435-590-8358
	<i>E-Mail</i>	<i>r40smith@ut.blm.gov</i>
<i>BLM Aviation Manager</i>	<i>John Burke</i>	435-865-4621
	<i>Cell Phone</i>	801-550-9857
	<i>E-Mail</i>	<i>jburke@ut.blm.gov</i>
<i>FS Aviation Manager</i>	<i>Blake Ford</i>	435-896-1608
	<i>Cell Phone</i>	435-979-0452
	<i>E-Mail</i>	<i>blakford@fs.fed.us</i>
<i>Aviation Dispatcher</i>	<i>Tina Greenhalgh</i>	435-865-4604
	<i>Cell Phone</i>	435-559-3157
	<i>E-Mail</i>	<i>tgreenhalgh@ut.blm.gov</i>

**South Zone Logistic Center**  
Arizona Strip Field Office  
345 E. Riverside Dr.  
St. George, Utah 84790

<i>Switchboard</i>		435-688-3200
<i>Logistics Center</i>		435-688-3360
<i>FAX</i>		435-688-3363
<i>BLM Aviation Manager</i>	<i>Bryan Bracken</i>	435-688-3350
	<i>Cell Phone</i>	435-632-4710
	<i>E-Mail</i>	<i>bbracken@blm.gov</i>
<i>Logistics Coordinator</i>	<i>Kristine Evenson</i>	435-688-3361
	<i>Cell Phone</i>	435-772-3925
	<i>E-Mail</i>	<i>kevenson@blm.gov</i>

**NATCF (CALL SIGN: "NELLIS CONTROL") FREQUENCIES:**

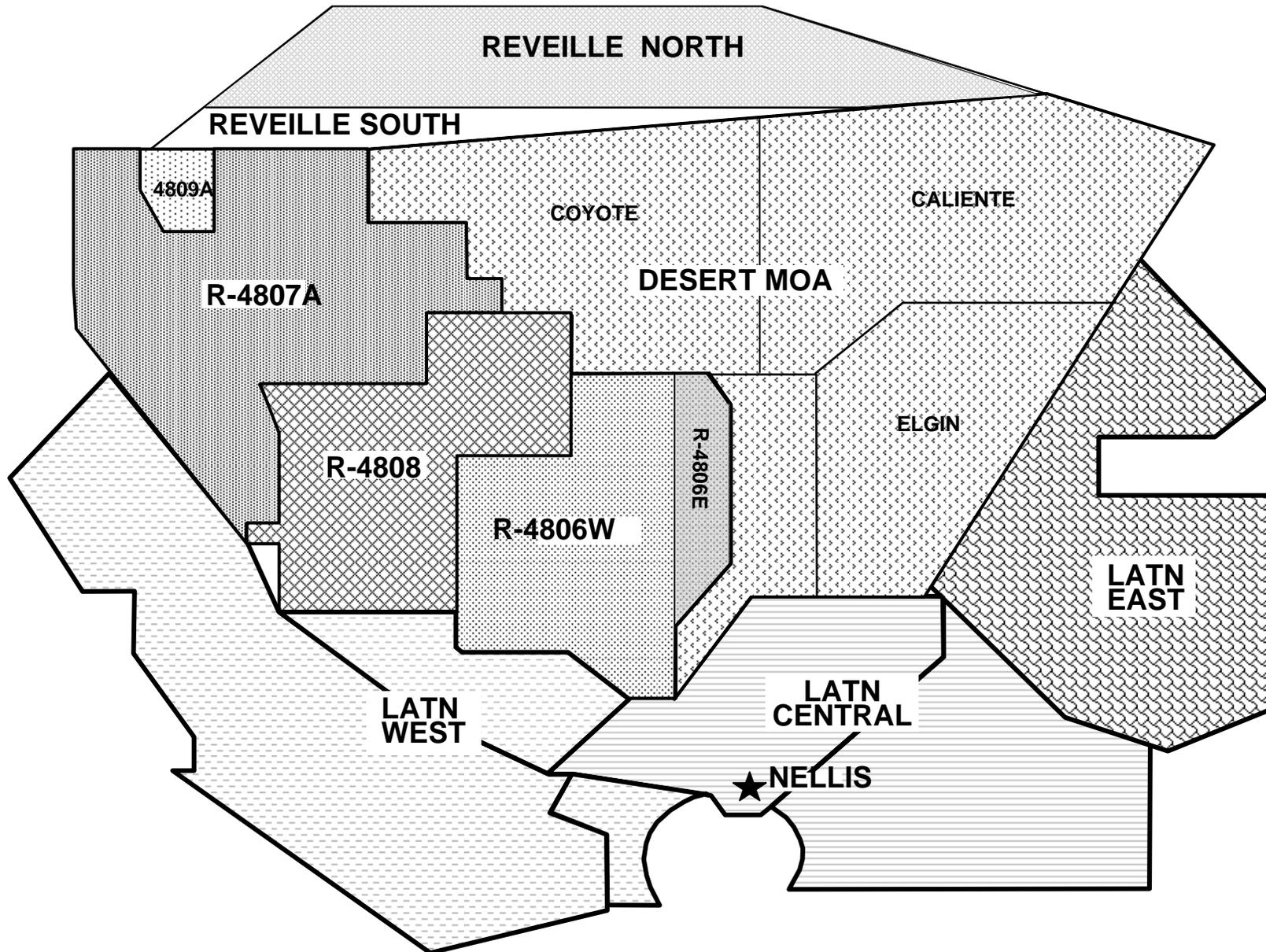
<b>Nellis Control West (LEE) Sector:</b> (Restricted Areas, Beatty, Goldfield, Tonopah, Warm Springs, etc.)	<b>VHF</b>	<b>119.35</b>
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<b>Nellis Control East (SALLY) Sector:</b> (Desert MOA, Rachel, Pioche, Caliente, Ash Springs, Elgin, Mesquite, etc.)	<b>VHF</b>	<b>126.65</b>
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**BLACKJACK (RANGE OPERATIONS CENTER) FREQUENCY**

<b>Blackjack: (Real-Time Scheduling and Information)</b>	<b>VHF</b>	<b>139.75</b>
	<b>FM Transmit</b>	<b>150.175</b>
	<b>FM Receive</b>	<b>148.500</b>

# NEVADA TEST & TRAINING RANGE



# FIRE TRAFFIC AREA

FIRE TRAFFIC AREA (FTA) 31 MAR 06

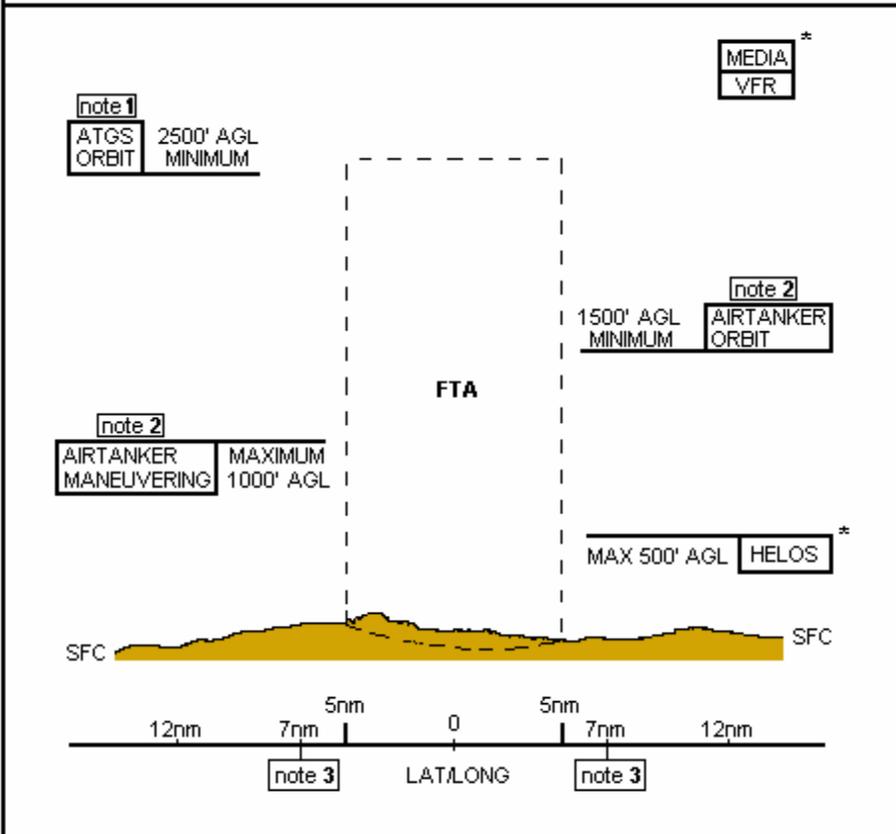
FTA

**INITIAL RADIO CONTACT:** 12nm on Assigned Air Tactical Frequency.

**CLEARANCE IS REQUIRED TO ENTER FTA**

**NO RADIO CONTACT:** Hold a minimum of 7nm from the incident.

**NOTE:** Airtanker Maneuvering altitude determines minimum Airtanker and ATGS Orbit altitudes. Assigned altitudes may be higher and will be stated as **MSL**.



- note 1 | 1000' min. separation between ATGS orbit and Airtanker orbit altitude.
- note 2 | 500' min. separation between Airtanker Orbit and Maneuvering altitude.
- note 3 | On arrival reduce speed to cross 7nm at assigned altitude and 150 KIAS or less.

\* **HELOS** – Fly assigned altitudes and routes.

\* **MEDIA** – Maintain VFR separation above highest incident aircraft or position and altitude as assigned by controlling aircraft.

AIR BASE 123.975	AIR GUARD 168.625 TxTone 110.9	AIR to AIR 122.925	NATIONAL FLIGHT FOLLOW 168.650
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### **Fire Traffic Area (FTA).**

- The FTA was developed by aerial firefighting personnel to provide a standardized initial attack airspace structure to enhance air traffic separation for all aircraft over wildland fire (or other) incidents.
- Although the FTA was designed for wildland firefighting incidents, the structure and communications requirements are patterned after Class D airspace with some specific differences.
- **Communications**

Initial radio contact should be initiated by 12nm from the fire in order to receive a clearance into the FTA prior to 7nm. Monitoring the air tactical frequency while enroute will allow you to determine the appropriate time to establish radio contact with the controlling aircraft. Establishing communications earlier rather than later will often improve efficiency over the fire. Remember a clearance is required to enter the FTA.

Initial radio contact information should include your call sign, distance, direction and time from the fire. After receiving a clearance into the FTA, Pilots should plan to arrive at 7nm from the fire at their assigned altitude and at 150 KIAS\* (Or Less When Applicable).

Large air tankers may need to operate at higher airspeeds. Captains of such aircraft shall advise the controlling aircraft of entry speeds exceeding 150 KIAS.

If radio contact can not be established, Pilots should maintain VFR, hold on the 7nm ARC from the fire, with left turn orbits around the fire.

- **Profile:** Air tanker maneuvering altitude is the highest altitude required by the working air tankers to initiate low-level retardant drops safely. This altitude is established by the current working air tanker Captain. This is also the highest altitude at which a participating lead plane or ASM will orbit the fire when providing low-level supervision.

Air tankers will establish a left hand orbit around the fire at 500 FT above the air tanker maneuvering altitude. Orbiting air tankers should establish an orbit that allows them to view the working tankers below them while maintaining VFR separation from other participating aircraft.

The ATGS (Air Tactical Group Supervisor) platform will maintain 1000 FT. vertical separation above the air tanker orbit altitude. The normal ATGS direction of orbit is right turns around the fire.

When terrain and or air tanker maneuvering altitude may be required, air tanker flight conditions dictate, a higher and ATGS orbiting altitudes must be adjusted upward to maintain standard vertical separation.

- **Media:** Maintain VFR separation above highest incident aircraft or position and altitude as assigned by controlling aircraft.

- **3 C's:**

Communications Established

Clearance- Received & Understood

Comply – Comply WITH The Clearance. If You Can Not, Remain Clear Of The FTA Until You Receive An Amended Clearance That You Can Comply With.

If communications are not established, hold on a 7NM ARC from the fire, left hand orbit around the fire.

**IF IN DOUBT, STAY OUT!**

## **ATTACHMENT 3**

### **Example Delegation of Authority Letter**



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 99TH AIR BASE WING (ACC)  
NELLIS AIR FORCE BASE NEVADA**

DD Month YYYY

MEMORANDUM FOR (insert name), BLM Fire Incident Commander

FROM: 99 ABW/CC

SUBJECT: Delegation of Authority for the Management of the (insert fire name) incident

Effective upon signature, the Incident Command Authority of the (insert fire name) incident is delegated to the BLM fire Incident Commander within the constraints of the following instructions and conditions.

1. Objectives/Priorities/Expectations: (overall direction and goal for managing the fire incident)
  - a. Maintain firefighter safety at all times.
  - b. Primary Priority – Prevent fire from threatening the following assets: \_\_\_\_\_.  
[NTTR Liaison]
  - c. Utilize aggressive suppression tactics including dozers, hand crews and aircraft to construct direct and indirect fire line.
  - d. Prevent fire from impacting the following natural and cultural resources: \_\_\_\_\_.  
[WFPM]
  - e. Any additional Objectives/Priorities/Expectations.

2. The following offices are my designated points of contact and areas of responsibility:
  - a. 99 CES/CEF Senior Fire officer - Primary POC during fire suppression – (insert name and contact information)
  - b. 99 CES/CEX Emergency Management Officer – Secondary POC during fire suppression (insert name and contact information)

3. All land and resource damage caused by suppression will be rehabilitated prior to Nellis re-assuming control of the incident area. This rehabilitation will include water bar construction, berm removal, and dispersal of berm piles on all fire lines and safety zones. It will also include repair of cut fences, cleanup of trash for entire fire area, and rehabilitation of camp and staging area. Required rehabilitation will be mutually agreed to by BLM and Nellis. 99CES/CEANC WFPM (insert name and contact information) will be the POC for all post fire rehabilitation efforts on the NTTR.

4. Due to high probability of noxious weed infestation, the Incident Management Team (IMT) will ensure that all equipment arriving at and leaving the incident site shall be washed to curb the spread of noxious weed seed and other matter. The IMT shall mark these wash sites on a map, and provide the locations of these sites to the WFPM for possible rehabilitation.

*Honor the Warfighter*

5. Natural and Cultural resource data may be provided as necessary, to the IMT by the WFPM. The IMT is responsible for limiting the use of this data to personnel and resources with critical need for the information, and is responsible for enforcement of Federal and other cultural resource protection laws.
6. All federal, state and local laws, regulations and ordinances will be adhered to. These laws include but are not limited to: state motor vehicle operations regulations, cultural and archeological protection laws, health and welfare regulations and environmental protection and hazardous materials laws.
7. Public Information Direction: Information/news releases are not authorized without the approval 99 ABW/PA.
8. Known Safety Considerations: The known safety issues (UXO's, radiation, etc.) in the vicinity of the fire incident are: \_\_\_\_\_ . [NTTR Liaison]
9. Other Guidelines: (any additional instruction, limitations, requirements, etc.)

BARRY R. CORNISH  
Colonel, USAF  
Commander

(INSERT NAME)  
BLM Fire Incident Commander

*Honor the Warfighter*

## **ATTACHMENT 4**

# **Interagency Agreement for the Provision of Temporary Support during Wildland Firefighting Operations**

INTERAGENCY AGREEMENT  
for the  
**PROVISION OF TEMPORARY SUPPORT DURING  
WILDLAND FIREFIGHTING OPERATIONS**

among the  
UNITED STATES DEPARTMENT OF THE INTERIOR,  
the  
UNITED STATES DEPARTMENT OF AGRICULTURE,  
and the  
UNITED STATES DEPARTMENT OF DEFENSE

DOI (BLM-FAD) Agreement No. L10PG00548  
USDA (USFS-NIFC) Agreement No. 10-IA-11130206-008

**I. INTRODUCTION.**

Wildland fire management, suppression, and safety are of national importance and are an ongoing concern of the American public. Considerable cooperation and coordination already exists among the Department of the Interior (DOI), the Department of Agriculture (USDA), and the Department of Defense (DoD) for discharging these responsibilities.

The National Interagency Fire Center (NIFC) is jointly managed by the Departments of Agriculture and the Interior. It is staffed by personnel from several Federal agencies whose facilities are combined to carry out their respective Department's wildland fire management responsibilities. NIFC is responsible to provide national coordination and logistic support for the activities related to the control of forest and range fires within the United States, which includes all 50 States and the District of Columbia, and fires on State and private lands, as well as all U.S. Territories and Possessions.

The Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs (ASD(HD-ASA)), as assigned in DoD Directive 5111.13, "Assistant Secretary of Defense for Homeland Defense and America's Security Affairs (ASD(HD&ASA)), "January 16, 2009, serves as the principal civilian advisor to the Secretary of Defense and the Under Secretary of Defense for Policy on Defense Support of Civil Authorities (DSCA). The Secretary of Defense has delegated to the ASD (HD&ASA) the authority to approve certain requests for assistance from civilian authorities such as those relating to DoD Components (including the Military Departments and DoD agencies), providing wildland fire emergency assistance to Federal agencies through the NIFC. The Bureau of Land Management (BLM) acts as the administrator of this Agreement and acts on behalf of the other DOI, Wildland Fire Management Agencies, Bureau of Indian Affairs (BIA), National Park Service (NPS) and Fish and Wildlife Service (FWS) for transactions under this agreement.

**II. PURPOSE.**

The purpose of this Interagency Agreement is to establish the general guidelines, terms and conditions under which NIFC will request and DoD will provide temporary support to NIFC in wildland fire emergencies occurring within any State, U.S. Territory or Possession, or the District of Columbia, including fires on State and private lands. It is also intended to provide the basis for reimbursement of DoD expenditures under the Economy Act (31 U.S.C. §§ 1535-36) for goods and services provided through the NIFC to the various firefighting agencies for response to wildland fire emergencies.

### **III. AUTHORITY.**

- A. The Economy Act of June 30, 1932, as amended (31 U.S.C. § 1535, 1536)
- B. Department of the Interior and Related Agencies Appropriations Act for FY 2010 (P.L. 111-88), and Appropriations Act(s) for subsequent fiscal years
- C. Federal Land Policy and Management Act of 1976 (43 U.S.C. § 1701 et seq.)
- D. National Park Service Organic Act of August 1916 (16 U.S.C. § 1)
- E. National Wildlife Refuge System Administration Act of June 27, 1998, as amended (16 U.S.C. § 668dd)
- F. National Indian Forest Resources Management Act of 1990 (25 U.S.C. § 3101 et seq.)
- G. Cooperative Forestry Assistance Act of 1978 (P.L. 95-313, 92 Stat. 365 as amended; 16 U.S.C. § 2101 (note), 2101-2103, 2103a, 2103b, 2104-2105)
- H. National Forest Management Act of 1976 (16 U.S.C. 1600)
- I. DoD Directive 3025.1, Military Support to Civil Authorities (MSCA), January 15, 1993
- J. DoD Directive 3025.15, Military Assistance to Civil Authorities (MACA), February 18, 1997
- K. DOD Directive 5111.13, "Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs (ASD(HD&HD&ASA)), "January 16, 2009
- L. DoD Instruction 6055.6, DoD Fire and Emergency Services Program, December 21, 2006
- M. DoD Financial Management Regulation (FMR), DoD 7000.14-R, Volume 11A, Reimbursable Operations, Policy and Procedures, August 2009.
- N. DoD Financial Management Regulation (FMR), DoD 7000.14-R, Volume 11B Reimbursable Operations, Policy, and Procedures – Defense Working Capital Fund, May 2009

### **IV. RESPONSIBILITIES.**

#### **A. The NIFC agrees to:**

1. Submit initial requests for DoD support through the DoD Executive Secretariat. All subsequent requests will be submitted through the Defense Coordinating Officer (DCO), once assigned to the NIFC.
2. Provide an appropriate funding agreement or ordering document referencing this Agreement. The document will describe the DoD capabilities requested, when and where the resources are needed, an estimate of the length of time the resources are required, agency fund code(s), billing instructions, and acquisition authority. The NIFC will ensure that funds are available to reimburse DoD for goods and services provided, and that the request is in the best interest of the government.
3. Ensure that requests for utilization of DoD aviation or other assets will be reviewed and compliant with the Economy Act of June 30, 1932, as amended (31 U.S.C. §§ 1535, 1536), the

Federal Acquisition Regulations (FAR), and any other applicable laws and regulations, as appropriate.

4. Provide appropriate personnel, training, equipment, supplies and other resources as required to prepare DoD personnel for the following wildland fire suppression duties:
  - a. Modular Airborne Fire Fighting System (MAFFS) annual certification.
  - b. Ground fire fighting and overhead support personnel training prior to assignment to a fire.
  - c. Rotary-wing aircrews and support personnel training for external load water bucket operations prior to utilization on a fire.
  - d. Communications training in the use of the NIFC radios, if installed and certified for the designated DoD aircraft.
  - e. Aircrew training with civilian fire managers on-board aircraft during flight operations.
5. Reimburse DoD for the actual costs of the goods and services (e.g. personnel, equipment, aircraft, supplies and fire protection services) provided in wildland fire management operations.
  - a. Actual costs include all direct costs attributable to providing such goods or services. Actual costs also include indirect costs (overhead) if the personnel, equipment, aircraft, supplies and fire protection services are provided for the benefit of the DOI or USDA.
  - b. Reimbursement will be in accordance with DoD Financial Management Regulation (FMR) DoD 7000.14-R, as amended. A summarization of the rules for determining the reimbursable amounts to be collected by DoD Components are found in the FMR in Volume 11A, Chapter 1, addendum 1, addendum 2 and any subsequent related addenda.
  - c. Transfer of funds will be made directly to the appropriate DoD Component via the Intra-governmental Paying and Collection (IPAC) System.
6. Provide a summary by agreement number of the cumulative DoD approved billings, DoD reimbursements, and an estimate of the outstanding billings based on DoD obligation estimates by DoD Components for the prior calendar year by February 15 of each calendar year.

**B. DoD agrees to:**

1. Provide assistance in the form of personnel (military or National Wildfire Coordinating Group (NWCG)-certified DoD civilian fire fighters), equipment, aircraft, supplies, and/or fire protection services on a reimbursable basis when a request for assistance complies with the requirements of this Agreement and DoD is able to provide the requested resources.
2. Provide Modular Airborne Firefighting System (MAFFS)-capable aircraft, MAFFS-trained aircrews and appropriate support personnel to conduct aerial dispersal of fire retardant for fire suppression on a reimbursable basis when requests for this type of assistance comply with the requirements of this Agreement and DoD is able to provide the requested support. The USDA, Forest Service (USDA, FS) owns and will provide MAFFS units for deployment on DoD MAFFS-capable aircraft.
3. Provide rotary –wing aircraft, NIFC-Trained aircrews, and support personnel capable of

conducting external load, water bucket operations on a reimbursable basis when requests for this type of assistance comply with the requirements of this Agreement and DoD is able to provide the requested support.

4. Ensure servicing DoD Components provide the NIFC with an obligation estimate for DoD resources at the time of request, including updates as needed. DoD will coordinate closely with the NIFC and the Defense Finance and Accounting Service (DFAS) (as prescribed by DoD FMR, Volume 11A, Chapter 3) to ensure appropriate billing procedures are followed. DoD will also provide a single point of contact within each DoD Component.
5. Provide the NIFC invoices from each DoD Component for goods and services using a Standard Form (SF) 1080 billing document.
  - a. Submit invoices to: USDA Forest Service, Financial Manager, 3833 South Development Avenue, Boise, Idaho, 83705.
  - b. Invoicing for actual expenditures reimbursements (performance of work or services, payments to contractors, or delivery from inventory) will begin within sixty- (60) calendar days after the month in which performance occurred. Final billing invoices will be submitted within ninety- (90) calendar days of the termination of the supported event.
  - c. Supporting documentation is required for each billing invoice (SF-1080) and should include: Agreement number, DoD point of contact (POC), POC commercial phone number, financial data, copies of actual invoices to back up expenditures, , and whether the invoice is a partial or final billing.
  - d. DoD Components will cite the obligation document number upon the NIFC approval of the SF-1080 billing document and submit it to the appropriate Defense Finance and Accounting Services (DFAS) paying station.
  - e. Acceptable methods of transmitting the SF-1080 billing document and back-up documentation to the NIFC include a printed copy via standard U. S. mail or overnight service, fax, or e-mail.
6. Retain the right to disapprove or modify any request that interferes with the Department's operational readiness, or that DoD is otherwise unable to approve.

C. The DOI, USDA, and DoD mutually agree to:

1. The USDA, FS – NIFC will be the agency responsible for the payment and reconciliation of DoD expenditures under this Agreement. The DOI will make transfers of funds to the USDA, FS by arrangements separate from this Agreement, as warranted and appropriate.
2. Conduct an annual coordination meeting or conference call not later than May 1, as well as a post-season meeting or conference call not later than December 20, to share plans and to review lessons learned, current procedures, and Department policies, and to make any revisions, as necessary.
3. Conduct a post-fire season reimbursement workshop not later than December 20 with appropriate DoD Components and the NIFC, as needed. The individuals involved will select the date,

location and agenda for the workshop. The purpose of this workshop will be to ensure all DoD support to the NIFC has been fully reimbursed for the previous fire season, to complete outstanding reimbursement transactions, to update points of contact, and to train new personnel on the reimbursement process (if necessary). Reimbursement procedures will also be reviewed for the upcoming fire season.

## **V. TERMS OF AGREEMENT.**

- A. This Interagency Agreement will become effective and will remain in effect for a period of five (5) years commencing on the date of the final signature on this Agreement, unless otherwise agreed, modified or terminated by mutual agreement. This Agreement will be reviewed by all participants to determine suitability for renewal, revision, or termination. Extensions will be in writing and signed by all signatories, or authorized representatives, to this Agreement.
- B. Any party may terminate its participation in this Agreement by providing thirty- (30) calendar days written notice prior of such termination to the other parties. The parties understand that reimbursement for any expenses properly incurred before the cancellation date will be made in accordance with the terms of this Agreement. The remaining parties may continue participation under the provisions of this Agreement as long as DoD remains a party.
- C. This Agreement does not supersede or modify existing mutual aid agreements, assistance agreements, Memoranda of Understanding, or other contract procedures between individual DoD installations and local communities.
- D. This Agreement, upon becoming effective, supersedes the Interagency Agreement between the Departments of Agriculture (No. 05-IA-11130206-053), Interior (No. 1422RAI050018), and Defense for the *Provision of Temporary Support During Wildland Fire Fighting Operations* effective July 27, 2005 and as modified on April 3, 2006.

## **VI. GENERAL PROVISIONS.**

- A. All obligations of the parties to this Agreement shall be subject to the availability of funds for such purposes. All parties agree to undertake obligations in good faith reliance on the other parties' good faith representations that funds are, in fact, available to satisfy obligations.
- B. Any signatory agency may initiate a modification to this Agreement to incorporate any changes that are mutually agreed to by the participants. Such modifications shall be in writing and shall identify the specific activities as appropriate and any other pertinent details of the modification. The DOI, Bureau of Land Management (BLM) is designated as the agency responsible for all administrative oversight and preparation of modifications to this Agreement. The modification(s) shall not take effect until documented and signed by authorized signatories for the agencies.

## **VII. RESOLUTION OF DISAGREEMENTS.**

In the event of a disagreement in the interpretation of the provisions of this Agreement, or amendments and/or modifications thereto, that cannot be resolved at the operating level, the area(s) of disagreement will be stated in writing by each party and presented to the other parties for consideration. If agreement on interpretation is not reached within thirty (30) days, the parties will forward the written presentation of the disagreement to their respective more senior officials within their respective organizations for appropriate

resolution, and/or dispute resolution resources available to the Departments such as the U.S. Department of Justice Legal Offices.

Nothing herein is intended to conflict with current DoD, USDA and DOI directives. If the terms of this Agreement are inconsistent with existing directives of the agencies entering into this Agreement, then those portions of the Agreement that are determined to be inconsistent will be invalid but the remaining terms and conditions not affected by the inconsistency will remain in effect. At the first opportunity for review of the Agreement, all necessary changes will be accomplished either by an amendment to this Agreement or by entering into a new agreement, whichever is deemed expedient to the interest of all Parties.

## VIII. PRINCIPAL CONTACTS.

### A. For the National Interagency Fire Center:

#### TECHNICAL CONTACT

NICC Manager  
National Interagency Fire Center  
3833 South Development Avenue  
Boise ID 83705-5354  
208/387-5400 - office  
208/387-5414 - fax

#### AGREEMENTS CONTACT

Grants and Agreements Specialist  
National Interagency Fire Center  
Bureau of Land Management  
3833 South Development Avenue  
Boise ID 83705-5354  
208/387-5544 - office  
208/387-5574 - fax

#### ADMINISTRATIVE CONTACT

Administrative Manager  
National Interagency Fire Center  
U.S. Forest Service  
3833 South Development Avenue  
Boise ID 83705-5354  
208/387-5608 - office  
208/387-5394 - fax

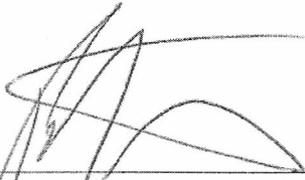
### B. For the Department of Defense:

#### ADMINISTRATIVE CONTACT

Director, Defense Support of Civil Authorities  
Office of the Assistant Secretary of Defense  
(Homeland Defense & Americas' Security Affairs)  
2600 Defense Pentagon, Room 5D337  
Washington, DC 20301-2600  
703-697-5822 – Office  
703-697-5991 – Fax

**IX. SIGNATORIES.**

By signature below, the Departments certify that the representatives listed in this document are authorized to act for matters related to this agreement.



\_\_\_\_\_  
Paul N. Stockton  
Assistant Secretary of Defense for Homeland Defense  
& Americas' Security Affairs  
U.S. Department of Defense

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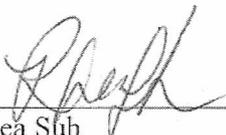
\_\_\_\_\_  
Date



\_\_\_\_\_  
Harris Sherman  
Under Secretary for Natural Resources and Environment  
U.S. Department of Agriculture

5/13/10

\_\_\_\_\_  
Date



\_\_\_\_\_  
Rhea Suh  
Assistant Secretary, Policy, Management and Budget  
U.S. Department of the Interior

6/2/10

\_\_\_\_\_  
Date