



PRESCRIBED FIRE PLAN

ADMINISTRATIVE UNIT(S): Hot Springs National Park

PRESCRIBED FIRE NAME: Crabtree

PREPARED BY /s/ Dwight Newman RXB2 **DATE** 10/26/07
Name & Qualification

REVIEWED BY _____ **DATE** _____
Fire Management Officer (Acting)

 /s/Tony Collins **DATE** 10/30/2007
Prescribed Fire Specialist

_____ **DATE** _____
Resource Management Specialist

REGIONAL REVIEW BY _____ **DATE** _____
Name & Qualification

TECHNICAL REVIEW BY _____ **DATE** _____
Name & Qualification

COMPLEXITY RATING MODERATE

APPROVED BY _____ **DATE** _____
Agency Administrator

Management Summary:

The primary purpose of this project is to encourage the growth of native forest species, control and diminish exotic invasive plant species, and reduce hazardous fuels along the park boundary where public infrastructure and safety is threatened by wildfire. The project will be accomplished in one to two operational periods using hand ignition techniques, depending on the resources available and the weather conditions.

This project is covered under the guidelines of the Hot Springs National Park Fire Management Plan and NPS RM-18, which allows prescribed fire to be utilized for fuel reduction and park maintenance objectives. The park fire staff is required to provide protection to park improvements and resources by reducing fuel loads in identified areas.

The project will treat approximately 102 acres of federal land and 41 acres of private land with management ignited prescribed fire. The NPS recognizes the benefit of cooperating with private landowners for the protection, restoration, and enhancement of fish and wildlife habitat and other resources on public and private lands. By entering into a cooperative agreement with the adjacent landowner, the NPS will be able to utilize existing natural and man-made barriers that are highly defensible and that will require little effort to improve. This in turn will increase operational efficiency and firefighter safety.

The NPS is authorized by 16 U.S.C. Chapter 18, Section 1011 to enter into cooperative agreements with private landowners for the purpose of implementing a prescribed burn on private lands. The written instrument that will meet the requirements of federal code for this project is a Memorandum of Understanding, located in Appendix I.

The project is located in the Bull Bayou drainage. The project will require a Burn Boss (RXB2), Firing Boss (FIRB), Holding Specialist (single resource qualified) and a minimum of 10 other qualified fire personnel to conduct ignitions, holding, weather monitoring, and operate necessary equipment. Burning prescriptions are designed to provide the necessary flexibility to ensure safe, efficient operations while also meeting the stated goals and objectives.

ELEMENT 2: AGENCY ADMINISTRATOR PRE-IGNITION APPROVAL CHECKLIST

Instructions: The Agency Administrator’s Pre-Ignition Approval is the intermediate planning review process (i.e. between the Prescribed Fire Complexity Rating System Guide and Go/No-Go Checklist) that should be completed before a prescribed fire can be implemented. The Agency Administrator’s Pre-Ignition Approval evaluates whether compliance requirements, Prescribed Fire Plan elements, and internal and external notifications have been or will be completed and expresses the Agency Administrator’s intent to implement the Prescribed Fire Plan. If ignition of the prescribed fire is not initiated prior to expiration date determined by the Agency Administrator, a new approval will be required.

YES	NO	KEY ELEMENT QUESTIONS
		Is the Prescribed Fire Plan up to date? <i>Hints: amendments, seasonality.</i>
		Will all compliance requirements be completed? <i>Hints: cultural, threatened and endangered species, smoke management, NEPA.</i>
		Is risk management in place and the residual risk acceptable? <i>Hints: Prescribed Fire Complexity Rating Guide completed with rational and mitigation measures identified and documented?</i>
		Will all elements of the Prescribed Fire Plan be met? <i>Hints: Preparation work, mitigation, weather, organization, prescription, contingency resources</i>
		Will all internal and external notifications and media releases be completed? <i>Hints: Preparedness level restrictions</i>
		Will key agency staff be fully briefed and understand prescribed fire implementation?
		Are there any other extenuating circumstances that would preclude the successful implementation of the plan?
		Have you determined if and when you are to be notified that contingency actions are being taken? Will this be communicated to the Burn Boss?
		Other: Has cooperating landowner (if any) been notified and appropriate agreements been signed and adhered to?

Recommended by: _____ Date: _____
FMO / Prescribed Fire Burn Boss

Approved By: _____ Date: _____
Agency Administrator

Approval Expires (Date): _____

ELEMENT 2: PRESCRIBED FIRE GO/NO-GO CHECKLIST
 (Circle unit being burned)

QUESTIONS	YES	NO
A. Has the burn unit experienced unusual drought conditions or contain above normal fuel loadings which were not considered in the prescription development? If <u>NO</u> proceed with checklist., if <u>YES</u> go to item B.		
B. If <u>YES</u> have appropriate changes been made to the Ignition and Holding plan and the Mop Up and Patrol Plans? If <u>YES</u> proceed with checklist below, if <u>NO</u> STOP.		

YES	NO	QUESTIONS
		Are ALL fire prescription elements met?
		Are ALL smoke management specifications met?
		Has ALL required current and projected fire weather forecast been obtained and are they favorable?
		Are ALL planned operations personnel and equipment on-site, available, and operational?
		Has the availability of ALL contingency resources been checked, and are they available?
		Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?
		Have all the pre-burn considerations identified in the Prescribed Fire Plan been completed or addressed?
		Have ALL the required notifications been made?
		Are ALL permits and clearances obtained?
		In your opinion, can the burn be carried out according to the Prescribed Fire Plan and will it meet the planned objective?

If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results

Burn Boss

Date

ELEMENT 3 COMPLEXITY ANALYSIS SUMMARY

PRESCRIBED FIRE NAME: Crabtree			
ELEMENT	RISK	POTENTIAL CONSEQUENCE	TECHNICAL DIFFICULTY
1. Potential for escape	Low	Moderate	Low
2. The number and dependence of activities	Low	Low	Low
3. Off-site Values	Low	Low	Low
4 On-Site Values	Low	Moderate	Moderate
5. Fire Behavior	Moderate	Moderate	Low
6. Management organization	Moderate	Low	Low
7. Public and political interest	Moderate	Moderate	Moderate
8. Fire Treatment objectives	Low	Low	Low
9 Constraints	Low	Low	Low
10 Safety	Moderate	Moderate	Moderate
11. Ignition procedures/ methods	Moderate	Moderate	Moderate
12. Interagency coordination	Moderate	Low	Moderate
13. Project logistics	Low	Low	Low
14 Smoke management	Moderate	Moderate	Moderate

COMPLEXITY RATING SUMMARY	
	OVERALL RATING
RISK	Moderate
CONSEQUENCES	Moderate
TECHNICAL DIFFICULTY	Moderate
SUMMARY COMPLEXITY DETERMINATION	Moderate
RATIONALE: See summary statement in Complexity Rating Worksheet, Appendix C.	

ELEMENT 4: DESCRIPTION OF PRESCRIBED FIRE AREA

A. Physical Description

Location:	Latitude	W 34° 31' 11''
	Longitude	N 93° 6' 7''
Size:	Federal land	102 Acres
	Private land	41 Acres
Topography:	Elevation:	420 – 560 feet
	Slope Range:	0 – 30%
	Aspect Range:	Various
Project Boundary:	The interior of the project is comprised of mixed hardwood and pine forest (fuel model 9) and grazed agricultural fields (fuel model 1).	
	The project is bounded by a wet drainage (Bull Bayou) to the west, a gravel road (Lillard Lane) to the north, a two-track NPS access road to the east, and a paved road (Blacksnake Road) to the south. A short section of mowed fireline shall be installed to connect Lillard Lane to Bull Bayou.	

B. Vegetation/Fuels Description:

The fuels on NPS lands entirely consist of hardwood leaf litter, pine needles, and scattered dead and down woody debris (fuel model 9). The fuels on private lands consist of 6 acres of agricultural fields (fuel model 1) adjacent to Bull Bayou and 35 acres of hardwood and pine forest (fuel model 9).

The unit is surrounded by fuel model 9 to the north, south and east. Fuels across Bull Bayou to the west are primarily mowed fields and lawn. This is indicated in the Holding forces worksheet.

C. Description of Unique Features:

- A private cemetery (Crabtree Cemetery) is located within the burn unit and inside the NPS boundary at the north end of the unit. Access to the cemetery is via Lillard Lane, through the private gate owned by the cooperating landowner.
- A historic, restored cabin is located on the banks of Bull Bayou on the landowner's property adjacent to, but outside of, the burn unit.
- A wire fence comprised of steel and wood posts follows the NPS boundary within the unit.

ELEMENT 5: GOALS AND OBJECTIVES

A. Goals:

1. Provide for public and firefighter safety.
2. Keep the fire from escaping or damaging public or government property.
3. Reduce dead and down woody debris within the area.
4. Encourage growth of native forest understory species.
5. Control and diminish exotic invasive plant species.
6. Promote public awareness and support for the NPS Fire Management Program.

B. Objectives:

1. Resource objectives:

OBJECTIVE:	PROPOSED <i>CHANGE</i> WITHIN ONE TREATMENT	ACTUAL RESULTS
Reduce dead and down fuels (1,10,100,&1000 hour fuels)	20 – 50 % Decrease	
Encourage growth of native species	5 – 10% Increase	
Control and diminish exotic species	8 – 10% Decrease	

ELEMENT 6: FUNDING:

UNIT	ACRES	TOTAL COST	COST PER ACRE
Crabtree	143	\$20,000	\$140

ELEMENT 7: PRESCRIPTION

A. Environmental Prescription:

Unit		Crabtree
Temperature (Fahrenheit)		35° – 90°
Relative Humidity		18% – 75%
Wind Direction	Preferred	SE, S, SW
	Unacceptable	NE, N, NW, W
Wind Speed (Mid Flame MPH)		0 – 9
Fuel Moisture	1 Hour	5 – 10%
	10 Hour	8 – 15%
	100 Hour	12– 18%
Live Herbaceous Fuel Moisture		50% – 300%
Mixing Height (minimum)		3,500 ft 3,000 ft
Transport Wind (minimum)		9 mph 10 mph

B. Fire Behavior Prescription:

Characteristics	Range (FM2/FM9)	Units
Rate of Spread	4-126 / 1-26	Ch/hr
Flame Length	2.2-11.5 / 1.1-5	Ft
Fire line Intensity	31-1157 / 10-186	Btu/ft/s

ELEMENT 8: SCHEDULING

- A. Ignition Time Frames/Season(s):** This project is to be executed in FY2008 during fall of 2007 or spring of 2008.
- B. Projected Duration:** 1 operational shift for firing operations; 2 operational shifts for holding / mop-up operations.
- C. Constraints:** Prescribed fire operations are to be limited during periods when the National Preparedness Level is at Level 4 or 5.

ELEMENT 9: PRE-BURN CONSIDERATIONS

A. Considerations:

1. On Site:

- a. Trim weeds and mow grass to form a fireline connecting Lillard Lane to Bull Bayou.
- b. Use leaf blowers and hand tools to remove fuels from the two-track access road on the eastern perimeter of the unit.
- c. Use leaf blowers and hand tools to reduce fuels in the vicinity of the landowner's fence line that follows the NPS boundary within the unit.
- d. Identify and fall hazard trees along all perimeters of the fire.
- e. Identify and fall hazard trees on either side of the landowner's fence line that follows the NPS boundary within the unit.
- f. Install appropriate control line and fall hazard trees in the vicinity of Crabtree Cemetery.
- g. Remove items of trash from within 100' of roads that may pose a risk of exposure to hazardous fumes.
- h. Stage a wildland engine and two firefighters at the historic cabin on the landowner's property.
- i. Close and/or assign traffic control on Blacksnake Road from Bull Bayou to the Sunset Trail. Ensure personnel are assigned for traffic control.
- j. Each person in a position deemed as "essential" will have a hand held radio. See Element 11 for the list of essential personnel.
- k. Ensure a minimum of two (2) drip torches and two (2) leaf blowers are on scene.

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1. Coordinate burn schedule with HOSP staff to maximize chance of achieving objectives while minimizing impacts to park visitors and staff.

2. Off Site

- a) Coordinate daily weather and burn conditions monitoring with park staff for at least four days prior to ignition date and obtain a spot weather forecast prior to ignition the day of the burn.
- b) Contact neighbors and local residents at least one day prior to planned ignition date.
- c) Ensure required burn notifications are made (see appendix).
- d) Ensure local media is contacted as appropriate.
- e) Brief assigned personnel and park staff as appropriate.
- f) HOSP will provide the Burn Boss a list of additional resources if available the day of the burn.

B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s): Arkansas Post National Memorial is in the National Weather Service – Little Rock Forecast Office zone. The General Fire Weather and Spot Weather Forecast can be obtained from the internet at:

<http://www.srh.noaa.gov/lzk/html/forest2.htm>

The Fire Weather Program Leader is Joe Goudsward. The phone number for the Forecast office is 501-834-3955.

A Spot weather forecast will be obtained the morning of the project's implementation. The preferred means of obtaining weather data for inclusion on the spot request is 3 weather measurements taken on or adjacent to the project site at 30 minute intervals. If 3 site measurements are not possible, then data from the Poinsett (LPSA4) NFDRS/WIMS station may be included in the request. If the spot weather forecast becomes unrepresentative of the conditions at the project site, the NWS forecast office will be contacted for an update. Unrepresentative conditions include readings that are as follows:

- +/- 5% rH
- +/- 5 °F
- Sustained winds greater than the environmental prescription
- Sustained wind directional change that is not discussed in the forecast
- Cloud buildup that is not discussed in the forecast

C. Notifications: See appendix G for a list of notifications and when they are to be performed.

ELEMENT 10: BRIEFING

- I. Present Handouts**
 - A. Map of Burn**
 - B. Organization Chart**
- II. Describe Area Of Burn**
 - A. Vegetation Type**
 - B. Acreage**
 - C. Slope**
 - D. Roads/Access**
 - E. High Values at risk**
 - F. Water Sources-natural, tanker and hydrants**
 - G. Natural/Manmade barriers**
- III. Weather Forecast- Use National Weather Service “Forestry” and “Smoke Management” Forecasts for applicable Zones. Use “Fire Weather Special Request” Form if updates are deemed necessary.**
 - A. Wind direction and Speed**
 - B. Relative Humidity**
 - C. Temperatures**
 - D. Predicted Changes**
- IV. Organization**
 - A. Organization Chart – Location on Map**
 - B. Equipment - tankers, refueling, etc.**
 - C. Fire Monitoring**
 - D. Any other resources**
- E. Transition Fire Plan**
- V. Firing Sequence**
 - A. Test fire**
 - B. Type and Sequence of Firing**
- VI. Radio Assignments**
 - A. Given Day of Burn**
 - B. Communication Plan**
- VII. Safety**
 - A. Winds**
 - B. Escape Routes and Safe Zones**
 - C. Hazards – crew and equipment (ATVs, wildlife, research plots, trash, etc.)**
 - D. Personal Protective equipment (PPE)**
 - E. Refueling – fuel handling, gloves, spilling, etc.**
 - F. Activation of emergency and headlights on major roads**
 - G. Other public safety considerations**
- VIII. Comments and Questions Period**

ELEMENT 11: ORGANIZATION AND EQUIPMENT

A. Positions:

The following positions are considered essential for the successful implementation of this project. These personnel shall each carry a hand held radio during the implementation of this project.

#	Position	Minimum ICS Qualification
1	Burn Boss/Incident Commander	RXB2
1	Firing Boss	FIRB
1	Holding Specialist	Single Resource Boss
3	Ignitors	FFT2
5	Holders	FFT2
1	Weather/Fire Monitor	FFT2
1	Law Enforcement	none

B. Equipment:

The following pieces of equipment are considered essential for the successful implementation of this project.

#	Type of Equipment	Minimum ICS Standard
2	Type 6 engine	ICS T6 engine, w/ crew of 2 each
1	UTV w/ water tank	2 operators

C. Supplies: Additional personnel and supplies, if needed, will be determined by the Burn Boss, Firing Boss, and Holding Specialist prior to ignition and will be on site until no longer warranted.

ELEMENT 12: COMMUNICATION

A. Radio Frequencies

Channel	Function	Frequency	Band Width	Assignment	Remarks
COMMAND					
	Hot Springs Admin Channel	TX: 166.325 RX: 166.925 CG:	Wide	Command	
TACTICAL					
	Government Common Use	TX: 163.100 RX: 163.100	Wide	Project Frequency	
	Region 8 Fire Net	TX: 169.900 RX: 169.900	Wide	Escape contingency	
		TX: RX:			
AIR OPERATIONS					
		TX: RX:			
		TX: RX:			
OTHER					
		TX: RX:			
		TX: RX:			
REMARKS					
<p>Air Operational Frequencies to be assigned on an as needed basis (i.e. burn escapes and is declared a wildfire).</p> <p>Burn Boss may assign additional tactical frequencies the day of the burn to assure established communications with assisting cooperators.</p>					

ELEMENT 13: PUBLIC AND PERSONNEL SAFETY, MEDICAL

A. Safety Hazards: Have been identified on the attached Job Hazard Analysis in Appendix D, and will be addressed during the pre-burn briefing.

B. Measures Taken to Reduce the Hazards:

1. A safety briefing will be given at the pre-burn briefing, and at the start of each operational period. All personnel will be advised of Lookouts, Communications, Escape Routes, and Safety Zones. Any other potential safety hazards will be pointed out and mitigated as soon as possible upon identification of the hazard.
2. All burn personnel will wear standard firefighting personal protective equipment. They will carry a fire shelter and fire tool at all times.
3. Only red-carded personnel or cooperators who meet their own agency's qualifications will be utilized during the burn.
4. All standard wildland firefighter safety rules will be strictly enforced.
5. Smoke impacts and visibility on roads will be monitored on a regular basis and mitigation measures in the form of road closures, traffic control or limiting ignition will be initiated if conditions warrant. An evening patrol will be conducted if there is any chance that smoke will concentrate on roads or bridges after dark.
6. Road signs may be posted along roads going to the burn unit.
7. LEO Rangers or other assigned employee(s) will provide traffic control if necessary.
8. Night operations will be conducted only for essential fire control efforts, such as mop-up, hazard mitigation and to provide patrols to ensure public safety and monitor fire activity.

C. Emergency Medical Procedures:

1. EMT, Ambulance Service, or First Responder notified on the morning of the burn.
2. First Aid equipment available and location made known to all burn personnel.
3. Burn Boss notified immediately of injury.
4. Burn Boss will coordinate with incoming EMT, Ambulance or First Responder.
5. Burn Boss will notify Park Dispatch of an injury and will follow up with information as soon as the injury has been assessed.
6. EMT, Ambulance, or First Responder will assess injury and begin treatment.
7. Once injury has been assessed, the burn boss or designee will activate the appropriate EMS response for evacuation of injured personnel.

D. Emergency Evacuation Methods:

1. If injury is of a complicated nature requiring specialist care (i.e. Burn Center, Orthopedic surgeon), patient will be transported to the nearest helispot identified by the Burn Boss.
2. If injury is of a less severe nature (i.e. laceration not involving major blood vessel damage), patient will be transported to nearest medical facility using EMS Ground transport.
3. If injury is of a non-urgent nature (i.e. sprains, and strains), patient will be transported to nearest medical facility by government vehicle.

E. Emergency numbers:

EMERGENCY TRANSPORTATION								
NAME	TELEPHONE	LOCATION			PARAMEDICS			
					YES	NO	YES	NO
Baptist Hospital Medical Flight	501-202-1000	Little Rock, AR			X			
National Park Med Center Ambulance	501-620-2400	Hot Springs, AR			X			
HOSPITALS								
NAME	ADDRESS AND LATITUDE AND LONGITUDE	TRAVEL TIME (MIN)		PHONE	HELIPAD		BURN CENTER	
		AIR	GROUND		YES	NO	YES	NO
Nat. Park Med Center	Hot Springs, AR	5	20	501-620-2400	X			X
Arkansas Children's Hospital Burn Treatment	Little Rock, AR	25	50	501-364-1323	X		X	

ELEMENT 14 TEST FIRE

- A. Planned location:** A test ignition on the day of the burn will be conducted in representative fuels inside the unit. The burn boss will decide this location based on the current, on-site wind directions. The purpose of the test ignition is to observe flame length, rate of spread, combustion rates, spotting potential and smoke drift. All holding resources will be present at the site. If the observed burning conditions or fire behavior is unacceptable, the test burn will be suppressed and the primary burn project delayed. If the observed burning conditions are acceptable, firing of the primary unit may continue.
- B. Test Fire Documentation:**
1. Weather conditions on-site will be documented on the Interagency Fire Use Weather Observation form 30 minutes prior to the test fire.
 2. Test fire results will be communicated to Park Dispatch upon completion of the test fire, and will include the decision as to whether to proceed with the project under observed conditions.

ELEMENT 15: IGNITION PLAN

- A. Firing Methods:** Combinations of spot fire, flanking fire and backing fire patterns will be used to ignite the unit. A backing fire will be required along the landowner's fence that follows the NPS boundary within the unit to minimize fire impacts to said fence. A backing fire will also be required around Crabtree Cemetery to minimize impacts to the cemetery. A head fire through the unit may be considered when sufficient black has been established along essential fireline and around values to be protected.
- B. Devices:** Generally, devices for firing include drip torches, flare pistols and fuses.
- C. Techniques:** Ignitions will be conducted primarily by lighting narrow strips adjacent to fireline and allowing the fire to back against the wind into the unit, or away from values to be protected. In some cases multiple strips may be considered along a section of fireline to encourage the creation of good black.
- D. Sequences:** The firing boss will coordinate the sequence and timing of ignitions along the perimeter to be fired and around values to be protected. The firing boss will consult closely with the holding specialist to ensure all ignitions can be successfully held by the holding forces.
- E. Patterns:** The pattern of firing will be determined by the firing boss, depending on weather the day of the burn. The general firing pattern will be communicated at the pre-burn briefing. The pattern may change depending on weather changes, topography, and fuels.

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- F. Ignition Staffing:** 1 Firing Boss at a minimum. The firing boss will organize the ignition team into configurations that will best meet ignition objectives.

ELEMENT 16: HOLDING PLAN

- A. General Procedures for Holding:** Holding forces will immediately conduct patrol and mop-up behind the ignitors to limit the potential for escape. Any slopovers or spots will be immediately reported to the holding specialist and extinguished. The holding specialist will continually communicate with the firing boss to ensure that the intensity of the fire does not exceed the ability of the holding crew. At any time the holding specialist may request that ignitions cease while the holding crew reinforces the fireline or extinguishes problem areas.
- B. Critical Holding Points and Actions:** The residential areas along Lillard Lane require vigorous patrols to quickly detect and extinguish spot fires. The historic cabin on Bull Bayou should be monitored by an engine crew throughout the burn. Crabtree Cemetery requires frequent patrols to prevent fire from creeping into the fenced area.
- C. Minimum Organization or Capabilities Needed:** A single resource qualified (or higher) holding specialist and a Type 6 Engine with crew of 2.

ELEMENT 17: CONTINGENCY PLAN

- A. Trigger Points:** If any spot fire and/or slopover cannot be contained within 20 minutes of discovery, or if there are too many spot fires outside of the unit that each cannot be immediately staffed by on-site resources, all ignitions will cease and operations postponed until more favorable conditions exist.
- B. Actions Needed:** The holding specialist will determine what initial actions are needed to extinguish any slopovers or spot fires. The holding specialist will serve as the primary contact for the containment effort until relieved by the burn boss. The holding specialist may advise the firing boss to cease ignitions and may request that ignitors assist the holding forces in containing the fire. The holding specialist will keep the burn boss informed as to the status of the containment effort, and will request additional resources through the burn boss.
- C. Additional Resources and Maximum Response Time(s):** Piney Volunteer Fire Department personnel, a tender, and a brush truck should be available within 15 minutes of request. A 10 person hand crew should be available through AOICC within 3 hours of request.

ELEMENT 18: WILDFIRE CONVERSION

A. Wildfire Declared By: Burn Boss

B. IC Assignment: Upon declaring the escaped burn a wildfire, the burn boss will assume the role of incident commander until relieved by an Incident Commander Type 3 (ICT3). IF the Burn Boss is not a qualified ICT3 prior to ignition of the prescribed fire, one will be available on-scene, or ordered and confirmed to be available on scene within two hours.

C. Notifications: The Burn Boss will immediately notify Buffalo National River (**870-741-5446 x 282**), AOICC (**501-321-5231**), and the HOSP Park Superintendent of the change in status. Park Dispatch will also notify the park Fire Management Officer if unaware of the situation.

D. Extended Attack Actions and Opportunities to Aid in Fire Suppression:

When safe and appropriate, direct attack will be used to suppress all spot fires and escapes. If required, suppression activities will take advantage of the roads and trails outside of the project area. Primary barriers to fire spread outside the project area are Bull Bayou and Cedar Glades Road to the north, Blacksnake Road to the southeast, Sunset Trail to the east, an unnamed drainage to the east, an unnamed two-track road to the east, an unnamed drainage to the south, and green agricultural fields to the west.

Other actions and opportunities will be addressed in the briefing based on current and predicted fuel and weather conditions the day of the burn.

ELEMENT 19: SMOKE MANAGEMENT AND AIR QUALITY

A. Compliance:

The state of Arkansas has developed Voluntary Smoke Management Guidelines to manage smoke from prescribed fire so that the smoke's impact on people and the environment will be acceptable. Under these guidelines, there are no burn or smoke permits required to ignite a prescribed burn. However, all burn projects are to provide the following information:

1. Determine available fuel loading
2. Identify the closet smoke sensitive target

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3. Determine tons of fuel allocated to an airshed
 4. Determine category day, mixing height, and transport winds to meet minimum smoke plume dispersion.
 5. Notify the Arkansas Forestry Commission (AFC) Dispatch Center (501-332-3000) the day of the burn with the following information:
 - o Person in charge of prescribed fire and how he/she can be contacted.
 - o Location of prescribed fire (Section, Township, Range or GPS reading and county).
 - o Acres to be burned.
 - o Purpose of prescribed fire.
 - o Fuel type and tonnage of fuel to be consumed
 - o Planned ignition time and duration of prescribed fire.

B. Smoke Sensitive Areas:

Smoke Sensitive Areas/Receptor	Distance	Direction	Description
Hot Springs	1 mile	S - SE	Population center, 40,000+
Hot Springs Village	11 miles	NE	Retirement community

C. Mitigation Strategies and Techniques to Reduce Smoke Impacts

1. A forecasted minimum mixing height of 3500 feet AGL and a minimum transport wind of 9 mph; or a forecasted minimum mixing height of 3000 feet AGL and a minimum transport wind of 10 mph is required before ignition operations can begin on the project. Prescribed burning is banned on Category 1 days and no ignition will be initiated. It is desirable to complete ignition operations by 1500 in order to promote smoke dissipation.
2. Residual smoke production will be reduced on the fire perimeter by mopping up fuels within 100 feet of control lines.

ELEMENT 20: MONITORING

- A. Fuels Information (forecast and observed) Required and Procedures:** Three fire effects plots have been established in the unit. Refer to maps in Appendix A for locations. Plots will be monitored according to established monitoring protocols.
- B. Weather Monitoring Required and Procedures:** Spot forecast will be requested prior to the burn. During ignition, an assigned individual will record weather hourly, unless requested more often by the burn boss or significant events occur. This will be part of the post burn report.
- C. Fire Behavior Monitoring Required and Procedures:** The designated weather observer will also monitor fire behavior as requested by the burn boss.
- D. Monitoring Required To Ensure That Prescribed Fire Plan Objectives Are Met:** Fire management staff will assess the project within one week of completion to determine whether hazardous fuels objectives have been achieved. The park Natural Resource Specialist will assess the project within one year to determine whether resource objectives have been achieved.
- E. Smoke Dispersal Monitoring Required and Procedures:** The burn boss will monitor smoke production and smoke drift during the implementation phase of the project. This will be included in the post burn report. The burn boss may request further smoke monitoring or patrols during the subsequent operational periods to ensure public safety.

ELEMENT 21: POST-BURN ACTIVITIES

- A.** The Burn Boss or designee will prepare an Individual Fire Report within seven days after declaring the fire out.
- B.** Project accomplishments will be updated in the National Fire Plan Operational Reporting System (NFPORS) within 5 days of project completion.
- C.** Fire Management staff will maintain a project file that includes the Prescribed Fire Plan, spot weather forecasts, and all required reports.
- D.** MIST guidelines will be used to help minimize rehabilitation needs.
 - 1) Push in, or scatter remnants of project slash piles.
 - 2) Cover firelines with natural debris where appropriate.
 - 3) Fall any hazard trees that result from the fire.
 - 4) Any other rehab as directed by appropriate Resource Management Personnel or burn boss.

APPENDICES

- A. Maps: Vicinity and Project**
- B. Technical Review Checklist**
- C. Complexity Analysis**
- D. Job Hazard Analysis**
- E. Fire Behavior Modeling Documentation or Empirical Documentation**
- F. Adequate Holding Resources Worksheet**
- G. Notification Checklist**
- H. Reviewer's Comments**
- I. Memorandum of Understanding**