

I. BURN AREA DESCRIPTION

Project Name: _____ Legal Description: T32N, R33W, S ½, SE¼ Sec. 17

Acres: _____

State: _____ County: _____

Understory:

Topography:

II. OBJECTIVES

Fire Use Objectives (First Order Effects):

Resource Objectives:

Preferred Burn Frequency

III. FUELS

Slash Production:

A. Type:

B. . Quantity:

C. Location:

Description of Fuels on Site and Adjacent (species, arrangement, continuity, age, etc.):

(Aids to Determining Fuel Models For Estimating Fire Behavior, Hal E. Anderson)

Organic Layer Depth _____ inches Surface Fuel Depth _____ inches Years fuels have rested _____

IV. VICINITY MAP (Less Magnified to view potential risks outside of the unit)

V. PROJECT MAP

VI. WEATHER PARAMETERS, FIRE BEHAVIOR PREDICTIONS AND FUEL MODELS

(These guidelines are intended to guide the burn coordinator in selecting a preferred burn opportunity.)

A. Weather Parameters

Weather	Preferred Range	Optimum	* Spot Forecast
Temperature:			
Relative Humidity:			
Wind Direction:			
Wind Speed (midflame)			
Transport Wind Direction (range)			
Fuel Moisture:			
1 Hour:			
1000 Hour:			
Woody – live:			
KB Drought Index			
Palmer Index			

*At time of ignition

List any combinations of parameters you would exclude from your burn window:

Narrative Information:

**These are strictly guidelines. Some combinations of these parameters can be exceeded with the approval of the Fire Program Coordinator.

B. Fire Behavior Predictions:

(Based on inputs from section A to the BEHAVE fire prediction model)

Fuel Model: 3

Characteristics:	Model Predictions for Preferred Parameters	Model Predictions for Optimum Parameters
Headfire Rate of Spread:		
Backfire Rate of Spread:		
Headfire Flame Length:		
Backfire Flame Length:		
Spotting Distance		
Probability of Ignition		

*Standard Observed Time

Fire Behavior Narrative:

**A backfire is very difficult to predict with the current behave programs available. These backfire predictions were estimated from minimum conditions.

VII. RECOMMENDED STAFFING LEVELS

A. Blacklining and Burn Preparation

ATTACH ORGANIZATION CHART

B. Burning Operation

ATTACH ORGANIZATIONAL CHART

- Burn Coordinator:
- Burn Boss:
- Facility Manager:
- Crew Size:
- Traffic Management:

C. Mop-up and Patrol

Crew Leader:

Crew Size:

D. Equipment Required

VIII. SCHEDULING

A. Projected Burn Duration:

B. Burn Window Constraints:

C. Preferred Burn Season:

IX. PREBURN CONSIDERATIONS

A. Site Preparation Needs:

B. Special Precautions/Regulations (Human, cultural, restrictive burn days, etc.):

See Attached Ignition Map

X. FIRING TECHNIQUES

A. Test Burn Procedures:

B. Firing Operations and Ignition Procedures:

ATTACH IGNITION SEQUENCE MAP FOR THIS SECTION

XI. HOLDING ACTIONS

A. Holding Procedures:

Personnel Assigned:

Equipment Assigned:

Crew:

Narrative of Holding Assignment:

Days prior to burn:

Day of the burn:

B. Water Sources

C. Potential Holding Problems:

D. Countermeasures on Critical Holding Points:

E. Protection of Sensitive Features:

F. Mop-up Procedures:

G. Post-burn Patrol

XII. SAFETY HAZARDS

A. Safety Equipment

1. First Aid Kit
2. Drinking Water
3. Hard Hat
4. Ear Protection – For Blowers
5. Fire Resistant Clothing
6. Leather Gloves
7. Leather Boots
8. water coolers, Gatorade, snacks if temperatures warrant.
9. Recommended Accessories (i.e. Respiration Filter, Goggles etc.)

B. List Hazards

XIII. CONTINGENCY PLAN

(List procedures for handling fire across the designated fireline according to the outlined categories listed below.)

- A. Fire Outside of Designated Burn Unit:
(Spot Fire or Slop Over)**

- B. Fire Outside of the Ecological Stewardship Management (ESM) area of which can be handled with onsite resources:
(This is considered an “escape”. Refer to area map.)
** If the escape spreads outside of the ESM area and exceeds that which can be handled by the onsite resources than it will be declared a “wildfire”.***

- C. Contingency Plan in the Event the Prescribed Fire becomes a “Wildfire”:
(Of which can not be handled with onsite resources.)**

XIV. SMOKE MANAGEMENT PLAN

- A. Distance and direction to smoke sensitive area(s):**

- C. Transport wind speed and direction:**

- D. Visibility hazard(s), roads, airports, etc.:**

- E. Actions to reduce impacts to visibility hazards:**

- F. Traffic Management Plan**

ATTACH SMOKE VECTORING MAP FOR THIS SECTION

XV. WEATHER INFORMATION

(Monitor weather prior to burn, during burn operation, and postburn.)

A. Spot Weather Forecast (phone contact)

- 1.) Spot weather forecast will be requested following weather observation one day prior to the burn between 1300 and 1600 and the morning of the burn and communicate with the fire weather forecaster supplemental information to achieve a more accurate forecast.
- 2.) Burn Boss or designee will take weather readings with belt weather kit every hour during ignition.
- 3.) Notify visitor center staff to contact and relay information to fire weather forecaster during the burn if behavior not consistent with predictions.

B. Internet and Dial up Weather Stations

- 1.) Monitor Fire Weather Forecast on the National Weather Service and other related web sites.

C. Weather Radio

- 1.) If needed monitor weather by weather radio on hand held radio.

XVI. NOTIFICATION AND ACCESS

Agency & Individual Notification

Name	Phone Number	Needed ? Y/N
Fire Weather Forecast		Y
Fire Program Coordinator		Y
District Office		Y
MO Dept. of Conservation		Y
Mindenmines City Hall		Y
Barton County Fire Dept.		Y
Jim McClendon		Y
DEQ Regional Office		Y

Signing Plan, Road & Trail Closures

The following roads will be closed while burning is in progress:

XVII. PUBLIC SAFETY

(For example, are trail parking lots empty, traffic concerns, and use of headlights in smoke)

XVIII. COMMUNICATIONS AND DISPATCH

A. Communication Tree

- 1.) Use channel 1 on hand held and mobile radios.
 - a. Communicate all information through your crew specialist.
 - b. Crew specialists communicate all information to the Burn Boss.
 - c. If any crewmember is unable to reach the Burn Boss relay through the Visitor Center. If that is not possible make arrangements to break off one crewmember on an ATV to notify burn boss.

B. In case of declaration of wildfire

- 1.) Use Mutual Aide Channel on hand held for Fire Dept.
- 2.) If assisting Use MDC channel on hand held for Dept. of Conservation

XIX. BRIEFING GUIDE AND PREBURN CHECKLIST

A. Brief all participants on the burn plan with special emphasis on ignition patterns and schedules. Identify safety zones and escape routes to everyone.

B. Key Briefing Points

1. History of Project Area
2. Objectives & Constraints
3. Maps and Assignment Sheets
4. Introduction of Personnel by Positions and line of authority

- 5. Ignition Plan Objectives & Possible Problems**
- 6. Holding Plan Objectives & Possible Problems**
- 7. Phases of Ignition & Holding Operations**
- 8. General Weather & Spot Weather Forecasts**
- 9. Weather Data Collection Procedures**
- 10. Contingency Plan**
- 11. Safety and Medical Evacuation Plan**
- 12. Any health considerations**
- 13. Mop-up Plan**
- 14. Communications Plan**
- 15. Location of vehicle keys**
- 16. Any questions from crew members**
- 17. Preburn Checklist**

C. PREBURN CHECKLIST

- a. Is burn plan complete and approved?
- b. Have firelines been completed and inspected?
- c. Have utility poles and posts been cleared around?
- d. Have all fire behavior guidelines been reviewed?
- e. Have all smoke management guidelines been reviewed?
- f. Is the current and projected fire weather forecast favorable?
- g. Are all personnel requested in the prescribed burn plan on-site, or have arrangements been made to link them with the fire crews?
- h. Have all personnel been briefed on the prescribed burn plan?
- i. Have all personnel been briefed on safety hazards, escape routes, and safety zones?
- j. Is all of the required equipment in place and in working order?
- k. Are available (including back-up) resources adequate for containment of escapes?
- l. Have the burn leaders reviewed the contingency plan?
- m. Have all notification calls been made?
- n. Do all crew leaders have radios?
- o. Has extra fuel, water packs, and other supplies, been placed at strategic locations?

**VISITOR CENTER DISPATCHER
FACT SHEET**

1. If the Burn Boss contacts the park office for assistance because the fire has escaped and been declared "wildfire".

- 1.) Notify Doug Rusk at Stockton State Park.
- 2.) Request any remaining park staff for assistance.
- 4.) If fire is approaching or on private property then Burn Boss will instruct park office staff to notify the **Liberal Volunteer Fire Dept. (417)843-5245, and Barton County Fire Dept. (417)682-5541.**
- 5.) **If buildings are in danger dial 911** for immediate assistance.

2. Inform Fire Dept. dispatcher of the best access to the area.

- From Hwy. NN - Go West 4 miles on Central Rd. past railroad tracks to 150th Lane and follow 150th lane North to unit on West side of the road.
- From Liberal take K to P then to 150th lane and go south past visitor center to unit.

3. Inform Fire Dept. dispatcher of the proper equipment needed for control.

- Only hand tools, water, and blowers can be used while on the park property unless fire is threatening a structure.
- Burn Boss will request dozers if needed to protect buildings.

Prescribed Burn Procedures

*C. ESA DSP Policy /
prescribed burns*

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Mel Carnahan, Governor • David A. Shorr, Director

DIVISION OF STATE PARKS

P.O. Box 176 Jefferson City, MO 65102-0176 (314)751-2479

FAX (314)751-6656

DATE: March 24, 1995
TO: Parks with prescribed burn programs
FROM: Paul Nelson, Natural History Program *Paul*
SUBJECT: Prescribed burn planning guidelines

From 1975 through the end of last burn season, 525 prescribed burns totalling 54,444 acres have been conducted on a total of nearly 19,000 acres of state park lands. Our safety record has been excellent with very incidents and little involvement of private properties.

This spring, over 400 acres of private woods and pasture (including a close approach on a residence) burned as a result of four different state park originated prescribed burns.

Prescribed burning carries some very significant responsibilities and liabilities; thus I think it is time to review and reinforce our prescribed burning protocols.

* * * * *

To conduct a prescribed burn at any state park facility, you must at a minimum have or do the following things:

A) A burn plan approved by the Natural History Program, is to be on hand for every state park prescribed burn. This plan must emphasize in particular the range of normally acceptable weather parameters for conducting the burn, ignition patterns and fireline locations, escape contingencies, and special safety or control considerations to take into account. These plans may be faxed if necessary, and approval is by signature of the prescribed burn coordinator or Natural History Program director.

B) A fire weather forecast (National Weather Service -- 314/447-1887) is to be obtained at least the morning before the burn, and a record made of burn day temperature, wind speed and direction, relative humidity ranges, cloud cover, atmospheric stability, and smoke dispersal predictions. A record is also to be made (for woodland burns) of next day weather predictions.



C) Trails into burn units are to be posted and closed the morning of the burn, or earlier if necessary to protect the public.

D) All prescribed burn bosses (including those from other agencies) must be at least S-390 certified, unless special authorization is granted by the Natural History Program.

E) The Natural History Program (myself, Ken, or Mike) and Regional Supervisors are to be notified (if available) prior to ignition the day of the burn. For normal mid-range weather conditions, the decision to proceed rests with the designated burn boss.

If relative humidity, wind speed, or fuelbed moisture approach the extreme limit set for it by the burn plan, permission to conduct the burn must be requested of either Ken or myself, or our designee. Permission to conduct the burn may be denied if fire weather forecaster weather predictions are deemed excessive due to risk to private or other park resources, inadequate personnel, local burn bans, numerous recent or ongoing area wildfires, or prolonged dry spells with greatly diminished fuelbed and 100 and 1000 hour fuel moistures.

F) For all woodland burns, or grassland burns where snags or smouldering woody debris may be present, there must be one or more persons assigned to post-burn mop-up and patrol duties through the evening hours. If burning conditions remain volatile through the night, this need may continue through the night at the burn bosses' discretion. There must also be a crew (one person minimum, depending on forecasted conditions) assigned the following day unless it rains. The first line check must take place early in the morning prior to the onset of good burning conditions. The intensity and duration of the mop-up and patrol duties may need to increase according to the severity of the nighttime and subsequent daily weather conditions. Responsibilities for mop-up and at least periodic patrol do not end until all smouldering embers and debris are completely extinguished.

G) A follow-up burn report is to be submitted to the Natural History Program, which at a minimum will provide notations documenting parameters and considerations specified by the burn plan. Brief notes on fire behavior should be included, and all notable incidences (such as escapes) detailed. This may be done as notes on a copy of the burn plan itself. The Natural History Program is to be notified within the same day of any significant escapes from the burn unit, and especially if they involve private land or required extra assistance by other agency or fire department personnel. Contact Paul Nelson (314/897-4550) or Ken McCarty (314-642-8723) at home if an escape occurs on a weekend or holiday.

* * * * *

At the end of this burn season, I will call a meeting of all current or potential burn bosses to review the problems and escape scenarios that have occurred in previous years. This will be conducted as a training exercise for all prescribed burn boss staff. Also, a work group will be established to review and update a set of prescribed burn procedures that will guide us on the use of fire in its very necessary role of managing natural ecosystems, or other uses. This will be attached to the Ecological Stewardship Management Policy which is also undergoing revision. Your input and suggestions on the above procedures will be welcome.

Keep in mind that the continued administrative and public acceptance of our prescribed burn program directly correlates to our safety record. Also, the likelihood of an escape or problem greatly diminishes as burn preparation and planning -- and the degree of training and experience of the burn leaders in technique and fire behavior theory -- increases.

In closing, I wish to emphasize that we are entering the very windy, unstable, and unpredictable weather conditions of spring. Even though we have a number of important burns yet to complete, everyone needs to be especially cautious and cognizant of how their fire is going to behave, and what might happen if it escapes.

Ken McCarty is designated as the Division's Prescribed Burn Coordinator. Please contact Ken if you have any questions.

Thanks

c: Doug Eiken
Regional Supervisors
Ken McCarty
Mike Currier

1. We have been given conditional authority to proceed as usual with prescribed burns, **anywhere not suffering drought conditions.**

According to the National Drought Monitor, that currently means we can proceed with prescribed burns anywhere in Missouri except the bootheel and extreme northwest Missouri. Conditions change, and you will need to keep track of this. You can check out current drought status at:

National Drought Monitor at <http://enso.unl.edu/monitor/monitor.html> This is a product of the USDA, NOAA and other agencies that is updated weekly. It is a good reference to use.

Palmer Drought Index at <http://www.fs.fed.us/land/wfas/> This is best for long-term drought prediction, and uses a formula involving temperature and precipitation. Not as good for short-term forecasting.

Keetch-Byram (Soil Moisture) Drought Index at the same site as above, <http://www.fs.fed.us/land/wfas/>. This is updated daily. It models soil and duff layer moisture, with the index linked to fire behavior attributes. It is routinely used by fire managers for planning purposes.

2. **Any burn occurring in a drought area requires approval by the Division Director** prior to ignition. Route requests through me.

3. All burns must have an approved burn plan. Burn plans from previous years must be updated and newly signed.

4. The appropriate DEQ regional office must be notified that we are planning to burn, preferably the day prior to igniting any unit.

5. The fire program coordinator (me) must be notified of all planned burns, the day of or day prior to ignition.

- 6 Burns that are considered complex {termed "high risk" in the burn policy} require approval of the fire program coordinator or Director, Operations and Resource Management Program prior to ignition.

Examples of complex burns include those: ignited at prescription extremes; when the Keetch-Byram Index is over 500; under "very high" or "extreme" NFDRS rating; "extremely unstable" atmospheric conditions; when 1000 hr fuel moistures are 15% or less; or that pose significant control challenges or risks. All of the ratings/indexes are readily available via the internet. Fuel moisture trends can also readily be tracked (we can provide you with up-to-the-minute graphs from any of several Missouri automated fire weather stations) and work well for planning purposes.