NRCS Natural Resources Conservation Service

Post-Burn Evaluation (Day of Burn):

Landowner/Operator: _____ Field(s): _____

1. Firing Method Used? _____

2. Timing of Burn: Start: _____ (AM) _____ (PM)
   Completed: _____ (AM) _____ (PM)

3. Observed Weather Changes During Burn:

4. Fire Behavior:

Escapes		None		Few	Many
Difficult to Control		Yes		No	
Convection column		Yes		No	
Fire Swirls		Yes		No	

5. Objectives of Burn Met?

6. Additional Treatment Needed? | | Yes | | No |
   If yes, explain:

7. Timing (mm/yy) and Objective of Next Burn?

8. Additional Comments:

Checked by: _____ Date: _____

NRCS Natural Resources Conservation Service

Follow -Up Evaluation (60-90 Days after the burn):

Landowner/Operator: _____ Field(s): _____

1. Objectives of Burn Met? Yes No
   If no, explain:

2. Additional Treatment Needed? Yes No
   If yes, explain:

3. Timing (mm/yy) and Objective of Next Burn?

4. Additional Comments:

Checked by: _____ Date: _____

4.10 The Nature Conservancy Burn Plan

The Nature Conservancy

SAVING THE LAST GREAT PLACES ON EARTH

PRESCRIBED BURN PLAN

State: Missouri
Preserve/Site: Chilton Creek Preserve
Burn Unit: Slusher Hollow

Fire Planner(s):
Name: Justin Hills /Blane Heumann — Signature — 28 Feb 04 — Date
Title: TNC Preserves Manager

Fire Leader:
Name: Justin Hills /Blane Heumann — Signature — 28 Feb 04 — Date
Title: TNC Preserves Manager

Fire Manager:
Name: Doug Ladd — Signature — 9 MARCH 04 — Date
Title: TNC Dir. of Conservation Science

1. **LOCATION:**

Preserve/Site:	Chilton Creek Preserve
Burn Unit:	Slusher Hollow
Map Location:	T28N R1W Sec.18
Unit Area:	438 acres
County/State:	Carter/ Shannon County, Missouri
Ownership:	TNC- 438 acres

2. **SOURCES OF EMERGENCY ASSISTANCE:**

Fire: Eminence MDC Forestry 573-226-3616,
and (Van Buren) 573-323-8515

Law Enforcement: Shannon County Sheriff, Eminence 573-226-3615;
Carter County Sheriff, Van Buren 573-323-4510

Medical: Ambulance- 573-323-8323, nearest hospital in Poplar Bluff, MO

Nearest Phone to Unit: TNC Mobile Phone
MDC Peck Ranch Office 573-323-4249
TNC Ozarks Office 573-323-8790

3. **PERMITS AND OFFICIAL NOTIFICATIONS:**

Burn Permit/Notification Required? Yes / No
Source(s):

Air Quality Permit/Notification Required? Yes / No
Source(s):

Other Notifications Required? Yes / No
Source(s):

Eminence MDC Forestry	**573-226-3616**
Van Buren MDC Forestry	**573-323-8515**
MDC Wildlife (Peck Ranch)	**573-323-4249**
Shannon County Sheriff	**573-226-3615**
Carter County Sheriff	**573-323-4510**
National Park Service	**573-323-4236**
US Forest Service- Winona District	**573-325-4233**

4. **NEIGHBOR NOTIFICATIONS:**

Preserve neighbors, including numerous absentee landowners, will be notified in writing at least one week prior to burning. All neighbors living within a mile of the fire units will be contacted the morning of the burn. See attached list of names and addresses.

5. UNIT DESCRIPTION:

Vegetation Types	Fuel Models	% of Unit Area	% Slope	Aspect
Leaf litter woods	8	13	0-10	45-180°
Savanna-Woods-uplands	9	85	0-50*	0-360°
Glade-Savanna	2	2	5-20	120-280°

*Slope percent greater than 35 is a very small percentage of the unit.

Fire Unit Narrative Description:

The site consists of dry and dry-mesic oak and oak-pine woodlands on the highly dissected river hills adjacent to the Current River with grassy and rocky dolomite glades scattered over some of the south and west facing slopes. Glade vegetation is dominated by Little Bluestem (Andropogon scoparius) and frequent expanses of exposed bedrock. Upland woods in the unit are degraded savanna and open woodland with sparse fine grassy fuels and leaf litter. South facing steep slopes are covered with open cherty oak and pine woods, often with discontinuous fuels. North and east facing uplands are closed forest with thicker leaf litter accumulations. Upland waterways have more sparse leaf litter and an abundance of grasses and sedges that are often green through the winter.

Maps Attached:

Preserve location map:	Yes / No
Preserve burn unit map:	Yes / No
Preserve fuels map:	Yes / No
Burn unit map with ignition pattern, hazards, etc:	Yes / No
Aerial photograph:	Yes / No
Smoke Screening Map	Yes / No
Other:	

6. PRESCRIBED BURN JUSTIFICATION:

Type of Burn (ecological management, hazard reduction, training, or research):
Ecological Management

Burn Unit Management Goal(s):

Implementation of a physical process (fire) known to be pervasive during the genesis and perpetuation of these woodland systems. TNC fire management goals are congruent with MDC and NPS management and strategies.

Specific Burn Objectives:

Increase vigor and abundance of conservative native species; Increase fine fuel species; Reduce leaf litter accumulations; Reduce oak sapling densities and increase light penetration to groundcover layer; Stimulate Shortleaf Pine reproduction.

7. FUEL AND WEATHER PRESCRIPTION

Guidance Parameters:

Wind Direction(s)	**225°-45° (excludes 45°-225°)**
Air Temperature (°F)	**30-75**
Relative Humidity (%)	**25-70**
20 ft wind speed (mph)	**3-15**
Days since rain	**<7 (some moisture present in soil)**

Required Parameters:	**MAX**	**MIN**	**PREFERRED (if applicable)**
Wind Direction(s)			**any**
Effective Windspeed (mph)	**6.5**	**2.5**	
1-Hour Fuel Moisture (%)	**4.6**	**14**	
10-Hour Fuel Moisture (%)	**5.6**	**15**	
100-Hour Fuel Moisture (%)	**6.6**	**16**	
Live Fuel Moisture (%)			**>30%**
Atmospheric Mixing Height (ft)			**>500 m.**

8. PREDICTED FIRE BEHAVIOR

	Fuel Model		
	#9	**#8**	**#2**
Max. Headfire Flame Length (ft)	3.9	1.5	9.3
Min. Headfire Flame Length (ft)	1.6	0.6	3.8
Max. HF Rate of Spread (ch/hr)	15	3	76
Min. HF Rate of Spread (ch/hr)	3	1	12
Max. Backfire Flame Length (ft)	0.9	0.3	2.1
Min. Backfire Flame Length (ft)	0.6	0.2	1.4
Max BF Rate of Spread (ch/hr)	1	0	3
Min. BF Rate of Spread (ch/hr)	0	0	1
Max. Scorch Height			

9. FIRE BEHAVIOR NARRATIVE:

Fire coverage should be at least 60% with fire behavior of low to moderate intensity. Interior ignition along the bases of slopes may be needed to ensure rapid burn out and achieve moderate intensity fire behavior.

10. SMOKE MANAGEMENT PLAN

Smoke screening procedures completed? Yes / No

List downwind/downdrainage smoke sensitive areas:

List other smoke sensitive areas:

- Highway D and residences east approximately 4-5 miles.
- Current River Logyard Access and Hwy HH 2 miles northwest of unit.
- Hwy M and residences 1.5 miles southeast of unit.

Map of smoke sensitive areas attached? Yes / No

Describe desirable smoke behavior and smoke management actions:

No critical smoke sensitive areas exist for this burn unit. However, because of the size of the unit, surface fire should be nearly complete at sunset if transport winds are predicted to fall below 9 mph after sunset. If evening winds are from the north or west and low mixing heights occur, smoke will be monitored on M and D highways. If smoke accumulates in these areas, stumps and snags producing heavy smoke should be extinguished. Communications with other natural resource management agencies prior to burning will ensure that multiple large unit burns within the smoke screening area will not be attempted during marginal smoke dispersion conditions. Holding crews on the down wind side of the unit will be occasionally rotated with other holding crews if necessary to minimize extended continuous exposure to thick smoke.

11. CREW ORGANIZATION

Qualified fire leader(s):

One TNC approved fire leader.

Crew Number:

One 7 person TNC crew meeting TNC fitness, training, and experience requirements, augmented by two volunteer spotters, all equipped with required safety clothing and equipment: Nomex coveralls, hard hats, goggles, and leather gloves and boots.

Organization chart attached? Yes / No

12. EQUIPMENT

Required items:	**Available**
Pumper on site	Yes / No
Six radios	Yes / No
Protective clothing	Yes / No
Two first aid kits	Yes / No
Two weather kits	Yes / No
Fire shelters*	Yes / No

* Fire Shelters are available, but not required to be carried by all crew members as per Fire Manager's memo of Justification. Crew are required to carry matches at all times.

Equipment Item	Number	Source
Water Pack	6	TNC
Fire Rakes	6	TNC
Blowers	2	TNC
Drip Torch (plus extra fuel)	4	TNC
Mop-Up Tool set	4	TNC
Water Jug (5 gal.)	5	TNC
ATV	2	TNC

13. BURN DURATION

Note: This burn includes nighttime burning hours.

Time (indicate minutes or hours) for:

Baseline Preparation:	4 hours
Spreading Fire:	2hours
Interior fire burnout:	3hour
Mop-up:	3+ Hours
Total Duration:	**12+ Hours**

14. MANAGING THE BURN:

Firebreak preparations:

Firelines will use existing ridge roads from point O north to AA and west to AK. Hand line will be constructed from AK south to AM. Existing road again used from AM to AN. Hand lines will be constructed along the south from AN to O. Roads will be blown free of litter and raked free of continuous grassy fuels. Hand lines will be cut free of brush and raked or blown free of litter 4'-5' wide. Hand lines from AK to bottom of the south slope below AL, the line will be constructed 8'-10' wide. Dead standing trees, snags, within 30' of firelines will be raked around to prevent spotting hazards. Large piles of heavy wood within 30' of the line from point AA counterclockwise to O will be cut and dispersed. Within 50', east and west of line from point AK to AO, all standing dead trees and or snags are to be felled. All map reference points will be clearly marked at the appropriate on the ground locations.

Firing techniques and ignition pattern:

Ideally, the perimeter of the unit will be ignited using two ignition crews, starting at a common point on the south, north, or east ridgetop, and proceeding in opposite directions around the perimeter. After a safe burn in has been achieved around the west and southeast ridgetop perimeter, perimeter ignition will ignite along the steep slopes of the south line, AN-AQ. Ignition crews on the upwind side of the unit will proceed more slowly than the other crews, communicating with the burn boss to prevent fire from overlapping other perimeter lines. Perimeter ignition may be hastened by firing

crews using two torches, firing interior of the perimeter at the same time the perimeter is ignited. Interior ignition will be necessary along the interior creek to speed up burnout.

Crew communication:

Via two-way hand held radios. A mobile phone will be available in pumper truck on site.

Note: Radio communication is not always possible due to size and topographic variation of unit. Crews should be aware of possible problems and be prepared to relay messages.

Fire behavior and weather monitoring:

A fire weather forecast will be obtained from the National Weather Service on the morning of the burn. A forecast for burn day weather, evening and nighttime weather and smoke dispersion and second day extended weather will be obtained. On-site weather will be measured within one hour of ignition, and during and after the burn as needed.

Holding:

Holding will be accomplished with crew members using water pack, and fire rake or flapper as appropriate, following igniters

Fire sensitive areas:

Hunting cabin ca. 0.5 mile north of point AK. Fuels between the cabin and fire unit are woodland fuels.

MDC MOFEP site 9 borders along the west boundary of the fire unit.

Contingencies:

Minor spots will be immediately extinguished by line crews. In the event of an escape, 4 crew members will be designated to contain and patrol the burn unit fire. All other crew will engage in direct or indirect suppression efforts as directed by the burn boss. Any escape threatening adjacent property will require the immediate contact of MDC Forestry suppression crews to help contain the escape.

Potential hazards to crew:

-Steep slopes and large topographic relief has the potential to create up drafts of wind that could result in locally severe fire behavior such as fire whirls and candling of cedar or shortleaf pine.

- South wind direction in this hollow is highly modified by the topography, and winds can potentially funnel in the side hollows that is significantly different than prevailing winds.

- Numerous snags along the perimeter may ignite and pose spotting threats. The prevalence of this tree type and its ecological importance makes complete removal prior to ignition untenable. Any near the perimeter will be raked or blown around.

- Rugged terrain and large unit size will potentially confound suppression of any escapes due to disorientation. All crew persons will have unit maps and compass and be familiar with the unit. Fire lines will be marked onsite with reference points that correspond with maps.

-Fuel loading outside of unit and adjacent to TNC ownership is greater than within the fire unit. Suppression crews should be prepared for more intense fire behavior if spotting occurs outside of the fire unit.

Mop-up:

Perimeter threats will be mopped up immediately following the burn. At least two crew members will remain on site until all surface fire is extinguished. Periodic checks of the unit will be done by crew or designates for at least two days following the burn to ensure that all fire is extinguished.

Public relations:

MDC Forestry will be contacted 24 hours prior to burn day and coordination will be made on the location of the MDC dozer for contingency planning.

MDC, NPS, and USFS offices will be notified the day of the burn.

Follow-up assignments:

Post-burn data will be collected and fire assessment and summary report will be prepared by the burn boss.

15. DOCUMENTATION

Does the site have a Site Conservation Plan?	Yes / <u>No</u>
Review of Laws and Regulations complete?	<u>Yes</u> / No
Site Fire Management Plan complete?	Yes / <u>No</u>
Site Wildfire Response Plan complete?	Yes / <u>No</u>
Site/ element Monitoring Plan complete?	<u>Yes</u> / No

Exemptions or modifications of TNC burn requirements and guidelines:
Fire management and site wildfire planning included in Site Conservation Plan, in progress.

16. LEGAL CONSIDERATIONS

Describe the ownership/management responsibility of this site:

TNC owned and managed preserve.