

Monitoring Report
Fredricksburg and Spotsylvania County Battlefields Memorial National Military
Park
Spotsy CH RX Fire 2009 Burn
March 11,12 & 20, 2008

Introduction: The area consists of a field complex (i.e. Upton, McCoull, Harrison, Landram, Middle and Crescent fields) in Spotsylvania totaling 93 acres. These areas are sporadically bush-hogged by park maintenance. The purposes of the burn are to reduce brushy fuels to open up the historic scene, open up and maintain vistas, and promote the growth of native tall grasses, to minimize the need to use time, equipment, and fuel to maintain these open fields, and so that park visitors can get a feeling for the battlefield as it was during the Civil War. The burns were conducted over three days, March 11, 12 & 20.

Description: The area to be burned is located in the Spotsylvania Courthouse Unit of Fredricksburg and Spotsylvania County Battlefields Memorial National Military Park, Spotsylvania County, Virginia. Several fields are partially bounded by blacktop road and all are fuel model 1 and 3. The area consists of warm season native grasses, patchy cool season exotic grasses, and patchy shrub/scrub species to a height of 3-4 feet. Red maples *Acer rubrum* and Forsythia (partially shady area) were beginning to bloom as of March 9&10. As of March 18th, bradford pear *Pyrus calleryana* was approximately 15-20% in bloom and lilacs in a partially shady area) had just begun leafing out. The saplings coming up in the fields had swollen buds, and cool season grasses (mainly the Fescue *Festuca rubra* were green). Red bud *Cercis Canadensis* were in full bloom on April 3rd, April 6th, dogwood *Cornus florida* flowers were just starting to open (about 15-25%), and spring beauties *Claytonia virginica* were completely open.

Briefing: Between 11-15 personnel (see Table 1 for personnel and days they were present) were assembled each day at the Bloody Angle parking area at 0900. At 0950 am Burn Boss Gregg Kneipp (Tim Blumenschine (T) on Day 1) went through introductions and gave a briefing. Topics covered included an overview of the burn unit, safety, assignments, medical and weather. The spot weather forecasts predicted the following:

Day 1

Warm front expected to move into the area early in the morning with a cold front following in the afternoon; Mostly cloudy; Max Temperature – 71; West winds 7-11 mph with gusts up to 20 mph; mixing height 700-2600'; RH dropping to 44 by 4pm.

Day 2

High pressure will build Wednesday night and Thursday. North-Northwesterly winds in the morning will be around 10 mph with gusts of 15 mph, but will diminish in the afternoon. Partly sunny; Max temp of 50; 20 ft winds 5-7 mph

until late afternoon; mixing height – 2900-4600’; RH dropping to 25 by 5PM; A series of short-wave disturbances Wednesday night that may spread light accumulating snow across the area.

Day 3

A cold front has pushed through the area and dry conditions are expected this afternoon; Mostly sunny; Max Temp 55; North winds 5-10mph with gusts of 15mph; Mixing height 300-2100’; RH dropping to 27 by 4pm; high pressure expected to build over the region Friday night bringing more dry conditions;

Table 1. Burn Day Personnel.

Name	Position Qualification	Home Unit	Days
Gregg Kneipp	Burn Boss/RXB2	FRSP	1,2,3
Tim Blumenschine	Burn Boss/RXB3 (T)	PETE	2
	Ignition		3
Frank Malatak		AD	3
Jeremy Stoddard	Holding	AD	1,2
Allan Barker	Holding	RICH	1,2,3
Nick Martinez	Holding	RICH	1,2,3
Robert Howard	Holding/CRWB	FRSP	1,2,3
Regina Carrcio	Ignition	FRSP	3
Katie Sargent	Ignition		1,2,3
AJ Lochart	Ignition		1,2
John Reifenberg	Engine	FRSP	1,2,3
Rocky Schroeder	Engine	PRWI	2,3
Chuck Huston	Engine	PRWI	2
John Stoddard	Documentation Unit	FRSP	2
Keith Kelly	CRWB, Ignition		2
Chuck Lochart	Engine B		2
Matt Roland	Engine 2		1
D Stevens	FFT2	Local VFD	1
Doug D	ENOP	PRWI	3
Andrew Trivizas	FFT1	RICH	3
Kristen Allen	FEMO (T)	RICH	1,2,3

Burn Day Chronology March 11, 2009

0915- Briefing

1030- Began Landram field; Ignition at point C, black-lining in 2 directions, then strips into wind. Flame length 6” to 2’. Vegetation consisted of Broomsedge, sparse oak trees, switchgrass, purple top, short natives, sumac. 100% cloud cover. Smoke blowing NE into woods, fire seems to be slow moving.

1050- Rate of Spread - 0.09ft/sec; increase to 4-6’ flame length

- 1120- Smoke appears to be rising 20-30' and blowing into wind. Flame length up to 15' in good fuel and wind; ignition tied in at J
- 1140- good consumption, overall short residence time
- 1200- stop ignitions
- 1255- briefing on Upton field
- 1305- Ignition at C, large spot between line and road in short grass. Flame length 6" to 2'.
- 1310- Ignitions stop until the line is wet down.
- 1315- Ignitions continue down wooded flank
- 1320- 10-15' flame in good fuel and wind gust; ROS 0.14ft/sec; Vegetation primarily broomsedge, sweet gum, deer tongue. Smoke rising 20' and blowing
- 1400- Stop ignitions for filling FRSP engine; Stop over portions of Earthworks to road; hosed out
- 1425- Continue ignition to trail; wetting earthwork; cross trail and continue
- 1445- Flame length 3"-3' in heavy fuel; smoke rising above trees and blowing; wind picked up briefly and 2 spots; leaves blowing/burning; spot
- 1500- Stop ignitions, field complete.

Burn Day Chronology March 12, 2009

- 0950- Briefing
- 1020- North side of McCoull field; ignition at C; flame height 1-5', increase to 10' with fire whorls; field fairly dense broomsedge, oaks, little bluestem, solidago
- 1040- Wind shift toward woods; slightly erratic, gusty, shifty; smoke rising and dispersing or carried by wind; ROS 0.04ft/sec (backing)
- 1045- Flanking strips into wind
- 1055- spot along woodline
- 1120- Monument; wet down along earthwork
- 1140- put black around earthwork in small strips (N end)
- 1145- One spot on earthwork due to wind changed direction; put out & break for lunch
- 1250- Wet down earthwork; begin ignition from earthwork (N side) and woods, heading strip from earthwork & strips along earthwork and woods; 3"-1' flame height, flaring to 4'
- 1310- Howard reached road; strips into wind; 12-15' flame
- 1320- McCoull field Complete
- 1400- Wet small southern alcove D; Ignited on S corner, flame height 6"-5'; fire backed through field; Out at 1410;
- 1415- Smaller N field ignited at S corner; Complete at 1420
- 1445- Harrison field ignited along the creek at creek/trail corner; 20 ft strip then no additional ignitions; flame height 6"-5' when wind blew; crossed creek and moved toward woodline to the W
- 1545- Fire stopped at woodline; fire complete and declared out.

Burn Day Chronology March 20, 2009

- 1015- Began igniting small patches starting with Upton; numbered on map patchy, wet, chirping frogs/eggs

- 1030- patch 2
 1100- patch 3; flame length 6''-6'; strips into wind; smoke rising 100', good consumption
 1120- reach trail; 1 hr fuels 100% consumption above 1'', many voles running from fire
 1230- Ignited other half of Harrison field at E
 1245- Began strips into wind, smoke rose 100' and dispersed
 1300- Stop ignitions
 1310- Finish at trail and break for lunch
 1420- Ignite Harrison at D; flame height 3''-3'; smoke rising 75' and dispersing or blowing into woods
 1435- small spot along woodline; flame 10'' in thick tall grass; field fescue, poverty grass; broom briers, sweet gum, sumac, locust.
 1445- ROS 10m/8min (fescue dominated backing fire)
 1520- Stop ignitions
 1525- Harrison field complete
 1540- Crescent field ignited at C
 1550- Stop ignition; fire crossed line; vegetation consisted of oaks, short warm-season grasses, pines, holly, fescue, deer tongue
 1555- Begin ignitions again; Flame height: 6''-2'
 1605- wind rising and blowing
 1615- very slow backing fire, 2''-1' flame height, squirrely wind
 1635- strips into wind
- 1800 – Middle field complete; Bushhogged portion went slowly - lots of fuel to keep it going, other part burned fine
 1829- Ignited Native Grass field at corner near Burnside and Anderson; flame length 2-4 backing, head fire 15-25, winds gusty, back and forth from backing to head, fire whirls visible, top flame lengths about 35' tall; two minor spots on road side of field
 1845 – Native Grass field complete

Table 2. Burn Prescription – Signed

Weather	Fuel Model: 1 (perennial grasses, western grasses)			Fuel Model: NFFL 9 (hardwood litter)		
	Acceptable Range	Optimum	Observed	Acceptable Range	Optimum	Observed*
1. Temperature:	40-95	70	52-67	40-95	70	52-67
2. Relative Humidity:	25 - 60%	40%	34-47	25 - 60%	40%	34-47
3. Wind Direction:	All directions	SE	Var.	All directions	SE	Var.
4. Wind Speed (mid-flame):	1-8	3	1-6	1-8	3	1-6
5. Wind mixing height	≥2,000'	N/A	**	≥2,000'	N/A	**
6. Transport Wind Speed	≥9 mph	N/A	**	≥9 mph	N/A	**
7. 1 Hour	6-11	8	6-9	6-11	8	6-9

Table 3. Weather Observations - March 11, 2009 at Bloody Angle

Time	Dry Bulb Temp F	RH %	Wind Speed MPH	Wind Direction	Skies
1000	56	88	4-7	Southwest	Full cloud cover
1100	62	74	4-5, gusts 10	Southwest	Full cloud cover
1200	66	75	4-7	West	Clear sky
1300	71	60	5-6, gusts 10	West/Southwest	Clear sky
1400	78	49	3-5, gusts 10	West	Clear sky
1500	83	40	3-7	West	Clear sky

Mixing height as reported in spot weather forecast: 700-2600 ft increasing to 6500-7200 ft above ground level (AGL), mixing winds W 12-18 MPH in am, increasing to 22-24 MPH late

Table 4. Weather Observations - March 12, 2009

Time	Dry Bulb Temp F	RH %	Wind Speed MPH	Wind Direction	Skies
1015	44	43	2-3, gusts 5	North/Northeast	Partly cloudy
1100	47	40	3-5	North	Partly cloudy
1230	48	35	2-3, gusts 6	North	Full cloud cover
1300	49	31	2-3	North	Full cloud cover
1400	49	31	2-3	North	Full cloud cover
1500	47	34	1-2	Northeast	Full cloud cover

Mixing height as reported in spot weather forecast: 2900-4600 ft AGL, mixing winds N 15-24 MPH in am, decreasing to 7-13 MPH in the afternoon

Table 5. Weather Observations - March 20, 2009

Time	Dry Bulb Temp F	RH %	Wind Speed MPH	Wind Direction	Skies
1000	45	44	1-3, gusts 7	Norht	Sunny/clear
1100	47	46	3-4, gusts 7	North/Northeast	Sunny/clear
1200	50	38	1-2	North/Northeast	Sunny/clear
1315	51	39	4-6, gusts 10	North	Some clouds
1415	53	41	4-6, gusts 10	North	Some clouds
1540	53	36	4-6, gusts 9	Northwest	Some clouds
1630	52	35	4-6, gusts 8	North	Some clouds

Mixing height as reported in spot weather forecast: 300-2100 ft increasing to 6900-8700 ft AGL, mixing winds N 12-16 MPH

Preparer: Kristen Allen, FEMO (T), April 14, 2009





