

Fredericksburg-Spotsylvania National Military Park
Spotsy Rx 2010 #2 Monitoring Report
by Tyler Schmitt



Burn Unit Summary

The project area encompasses approximately 130 acres across seven fields in the Spotsylvania Courthouse unit of Fredericksburg and Spotsylvania National Military Park. Each field is bounded by a combination of trails, mowed firebreaks, gravel roads, and blacktop roads. Continuous, grassy fuels (models 1 and 3) are characteristic mixtures of warm-season native grasses (*Andropogon gerardii*, *Schizachyrium scoparium*, *Andropogon virginicus*, *Sorghastrum nutans*, etc.) and cool season exotic grasses (*Schedonorus pratensis*, *Anthoxanthum odoratum*) with sporadic patches of shrub/scrub (*Quercus* and *Rhus* species).

On April 1, 2010, approximately 71 acres in Upton, McCoull, and Landram fields were treated with prescribed fire. The remaining 55 acres were burned the previous week. Historically, these fields were bush-hogged by park maintenance staff once a year. In the summer of 2007, bush-hogging was increased in Landram and Middle fields (once per growing season) to increase shrub mortality. This technique was repeated 2008 and 2009. In 2008, fields were bushhogged beginning in August, in 2009, fields were cut the 3rd / 4th weeks in July. The primary objectives of the burn included: 1) reduce woody species 50%, 1 year post-burn, 2) increase native herbaceous cover, 1 year post-burn, and 3) open up and maintain vistas.

Fire Organization

Equipment and personnel (see Table 1) were assembled at the Bloody Angle parking area. At 0930, Burn Boss Gregg Kneipp conducted a briefing. The assembled resources were divided into 3 divisions (A, B, & D) and assigned sub-units in Upton, McCoull, and Landram fields, respectively. After the main briefing, divisions split to conduct their own briefings and discussions.

Table 1. Burn Day Personnel & Equipment

Name	Position Qualification	Home Unit
Gregg Kneipp	Burn Boss / RXB2	FRSP
Charlie Rudacille	Div A Holding /CRWB	SHEN
Rocky Schroeder	Div A Ignition/CRWB	PRWI
Joe Jarrells	Div B Holding/CRWB	SHEN
StevenHubner	Div B Ignition/CRWB	FWS-GDR
Jeff Koenig	Div D Holding/CRWB	SHEN
Robert Howard	Div D Ignition/CRWB	FRSP
Ira Luck	ENGB	PRWI
Fred Adams	ENGB	FWS-GDR
Daniel Winings	FFT1	ROCR
William Kirk	FFT2	SHEN
Jason Strickler	FFT2	SHEN
Marie Soper	FFT2	FRSP
Luke Anderson	FFT2	FWS-GDR
Joe Temple	FFT2	RICH
Michael Prowatzke	FFT2	RICH
Steven Sykes	FFT2	COLO
Katherine Moulton	FFT2	AmeriCorps-FWS
Carla Meier	FFT2	AmeriCorps-FWS
Sean Kesluk	FFT2	AmeriCorps-FWS
Evelyn Stynes	FFT2	AmeriCorps-FWS
Nick Hagers	FFT2	AmeriCorps-FWS
Jake Williams	FFT2	AmeriCorps-FWS
Mark Westermeier	FFT2	AmeriCorps-FWS
David Pieknik	FFT2	AmeriCorps-FWS
A Ramirez	FFT2	AmeriCorps-FWS
Praham Wallerich	FFT2	AmeriCorps-FWS
Evan Marie Allison	FFT2	AmeriCorps-FWS
Leigh Larkins	FFT2	AmeriCorps-FWS
Tyler Schmitt	FEMO	SHEN
Engines & UTVs	Type	Home Unit
E-41	Type 6	SHEN
FSP-11	Type 6	FRSP
PWP	Type 6	PRWI
GDR	Type 6	FWS-GDR
UTV		SHEN
ATV		FRSP

Fire Progression

Div A: Upton Field (southern half)

1045- Test fire in northwest corner of sub-unit, near point A.
1050- Ignition proceeded south and east from point A. Wet-line was applied along the west line.
1100- BF flame lengths .5-1 feet, ROS <1 c/h; HF flame lengths 1-3 feet, ROS 10 c/h.
1200- Div A sub-unit was completed near southeast corner.

Div B: McCoull House Field (multiple field openings)

1035- Test fire near point E along road. Ignition proceeded south and east through field D.
1200- Div B started sub-unit G; secured by 1300.
1300- Personnel from Div A conducted test fire near point M; completed sub-unit by 1415 between points K and L.
1340- HF/FF flame lengths 4-6 feet, ROS 15 c/h.
1345- Div B personnel started at point J and fired main opening of McCoull field.
1600- Unit secured at point A.

Div D: Landram Field (eastern and western segments)

1030- Test fire near point E.
1040- Ignition proceeded south and west.
1300- The eastern segment of Landram field was secured at mid-point between points J and D.
1400- The western segment was started at point D and completed near point J.
1440- HF/FF flame lengths 4-8 feet, ROS 20 c/h, brush and grass fuels generate firewhirls.
1505- End ignition.

Prescription & Weather Observations

The spot weather forecast predicted sunny skies with no chance of precipitation. Other forecasted parameters included: maximum temperature of 76°F, minimum RH of 27%, 20' winds north at 2 mph becoming southwest by midday, mixing heights at 100-1500 feet increasing to 2200-3500 feet, and southwest transport winds at 3-5 mph.

Table 2. Prescription Elements: April 1, 2010

Weather	Acceptable Range	Optimum	Observed*
Temperature	30-70 F	50-60 F	66-81 F
Relative humidity	20-70 %	20-30 %	21-40 %
Wind direction	Any	N	N turning SW
Mid-flame winds	1-6 mph	1-4 mph	1 – 6 mph
Transport wind (dir.)	Any	N	SW
FDFM	4-15%	6-8%	4-8%

10 Hour

5-25%

5-12%

10-18%

Table 3. Weather Observations: April 1, 2010

Time	Dry Bulb ° F	RH %	Wind Speed mph	Wind Direction	Skies
1000	66	40	2-4	N	Sunny
1100	68	38	2-3 g 5	SW	Sunny
1200	72	35	2-3 g 5	NE	Sunny
1300	77	24	2-3	SW	Sunny
1400	78	24	2-4	SW	Sunny
1500	81	21	3-4 g 6	SW	Sunny

Fire Behavior

Fire behavior observations were recorded periodically as fire progressed through the burn unit. Rate of spread (ROS) and flame lengths (FL) were documented at numerous random locations and at 2 long-term FMH plots. Observations were made in native and non-native, mixed grass fuels (fuel models 1 and 3) as well as native shrub fuels (fuel model 5). Fire activity increased through the afternoon as prevailing winds shifted from north to southwest. Backing fire and flanking/head fire FLs were typically 6-18 inches and 3-8 feet, respectively. Occasional firewhirls were noted where dense brush was underlain by continuous warm-season grass fuels.

Table 4. Fire Behavior Observations: April 1, 2010

Time	Location	Fire Type	ROS	FL	Comments
1100	Div A, west	B	<1	6-12"	Fuel models 1, 3
1120	Div A, north	H	10	1-3'	Winds variable
1140	Div B point D	H	15	3-5'	Fuel model 3
1210	Div B point G	B	1.5	8-18"	Bluestem fuels
1230	FMH plot area	H, F	10-20	3-6'	Bluestem fuels
1340	Div B point M	H, F	15	4-6'	Fuel model 3
1400	Div B	H	20-30	3-5'	Fuel model 3
1440	Div D	H, F	20	5-8'	Brush w/ grass

Fire & Smoke Monitoring

Fourteen long-term monitoring plots are located within FRSP prescribed fire project areas. All but one plot burned March 25 or April 1, 2010 (Plot 13 did not burn). Post-burn observations indicated low to moderate severity across burn areas. Long-term monitoring plots will be visited 1, 2, 5, and 10 years post-burn to evaluate vegetation change. Smoke production and related impacts were observed to be minimal. Though smoke dispersion was fair, holding/ignition operations were unimpeded by smoke. National Weather Service forecasted mixing heights of 1500-3500 feet above ground level, increasing throughout the day.

Conclusions

Approximately 71 acres were treated April 1, 2010. An estimated 80-90% of the treatment area was burned. In isolated areas, saturated soils inhibited fire spread. Burn coverage was nearly complete throughout the rest of the unit due to sufficient litter accumulation and continuity. Future monitoring will gauge project success by evaluating whether or not project-specific objectives were achieved.

Fredericksburg and Spotsylvania National Military Park Spotsylvania Courthouse RX Burn, 2005

