

**Knife River Indian Villages National Historic Site  
Lower Hidatsa Prescribed Fire**

April 25, 2007

Prepared by andy thorstenson

**Burn Unit Summary**

The Lower Hidatsa Prescribed Fire was completed during one operational period on April 25, 2007. It consisted of 250 acres of grass and hardwood fuel at the south end of Knife River Indian Villages in primarily flat terrain. The vegetation type is predominantly non-native smooth brome (*Bromus inermis*) with stringers of green ash, cottonwood, and chokecherry.



**Personnel**

Burn Boss: Rod Skalsky  
 Ignition Specialist: Scott Beacham  
 Holding Specialist: Eric Allen  
 Fire Monitor: Keith Mitchell  
 4 Type 6 Engines  
 4 ATV's

**Objectives**

1. Reduce 1-hr dead and down fuels in prairie by at least 75-85% immediate post-burn.
2. Increase percent cover of native, warm season grasses and forbs by 20%, two years post-burn.
3. Decrease percent cover of non-native, cool season grasses by 20%, two years post-burn.
4. Restore the role of fire to the ecosystem.
5. Study the effects of fire on non-native plant species.



Fire backing off north perimeter

**Weather Observations**

Time	Temp.	RH	Wind Speed	Wind Direction	Comments
1000	64	48	4-5, G-9	W	10% cloud cover
1100	71	28	8-10, G-12	S,W	10% cloud cover
1201	74	27	7-10, G-15	SW	10% cloud cover
1300	76	20	8-9, G-13	SW	10% cloud cover
1400	74	24	7-8, G-10	SW	10% cloud cover
1500	73	23	5-6, G-9	W	20% cloud cover

### Fire Behavior Observations

Time	Location	Fire Type	ROS	FL	Comments
1110	Test fire	B	3 c/h	1'-2'	
1142	Point A	H	60 c/h	3'-4'	Continuous fuel
1245	Point O	B	2 c/h	1'-2'	Cody's observation
1343	Point B	B	2.5 c/h	2'-3'	

B=backing fire; F=flanking fire; H=head fire

ROS = rate of spread measured in chains per hour (1 chain = 66 feet or ≈ 20 meters)

### Fire Progression

With winds forecasted from the southwest, a test fire was ignited in the northeast corner of the unit at map point 'B' at 1100 hours. During the ignition sequence, 4 separate ignition teams were used to ignite the unit. Initially, an ignition team moved south along the Knife River toward points 'C' and 'D' while a second ignition and holding team moved west along a mowline toward point 'A'. Fire backed away from the east and north perimeters primarily through continuous grass fuel. At point 'A', the ignition team split with one group continuing west to points 'P', 'O', and 'N' while the other moved south toward point

'K'. This team split at 'K' to go around an excluded area with one team on the east side moving to 'J', and 'I' while another moved between 'L' and 'M'. The West Unit was secured at point 'N' at approximately 1400 hours.

When ignition teams secured the perimeter of the 'KJM' exclusion, one ignition team moved to the corner at point 'H' and ignited from the corner west toward point 'I'. Shortly afterward, ignition continued from 'H' south toward 'G' eventually meeting the east ignition team at point 'G' at 1440 hours and completing ignition. See attached fire progression map.

### Smoke Monitoring

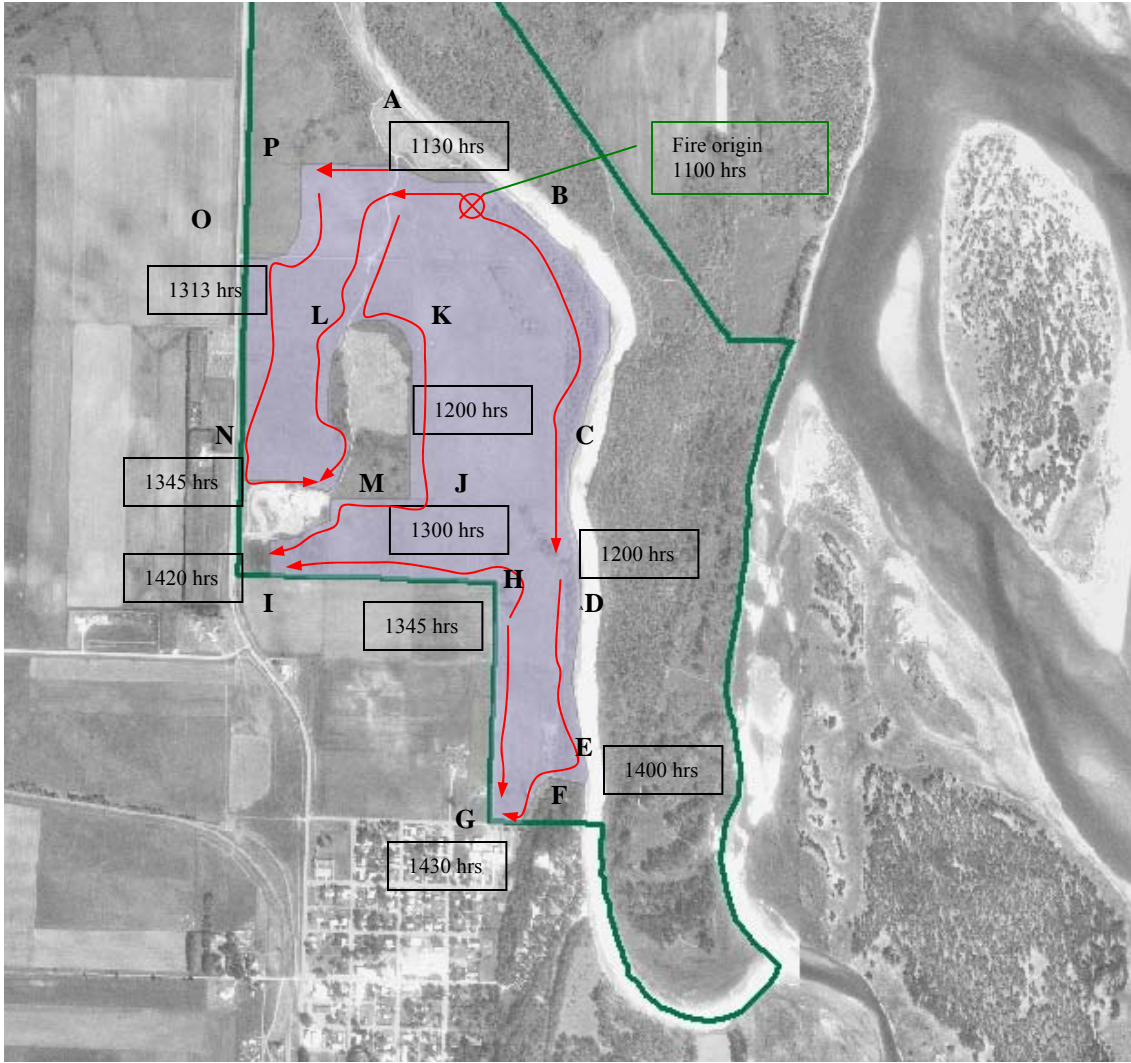
With wind direction primarily southwest during ignition, smoke moved exclusively to the northeast. Initially, smoke did not rise significantly, but eventually dispersed to a height of greater than 1000' above ground level.

### Fire Effects Monitoring

There were no fire monitoring plots located within the boundaries of the Lower Hidatsa prescribed fire. The grassland areas are primarily non-native, cool-season perennial grass dominated by smooth brome and crested wheatgrass. Plots may be installed if other restoration activities are planned for this area.



Backing fire and smoke column 11:30 a.m.



Fire Progression Map