



## **Northern Great Plains Fire Ecology Annual Report 2006**

### **Summary**

2006 can be noted as the year that the fire ecology program data finally made the transition to Access. The data is now easy to view, query, summarize, and has been used to create several reports and posters presented to national groups. In the field, the fire effects crew visited 101 plots in 9 parks. The Northern Great Plains (NGP) fire ecology plot network now has 287 permanent plots across 10 parks.

We continued to work with the NGP Inventory and Monitoring (I&M) Network installing and remeasuring plots including several 2005 plots which were remeasured in 2006 to assess annual variability.

Three prescribed fires were conducted in the area in 2006; one at Fort Union in April, several small blocks at Badlands were burned as part of a research project, and one at Wind Cave in November. Six fire effects monitoring plots were burned in these fires.

Cody and Andy traveled to San Diego for the 3<sup>rd</sup> International Fire Ecology & Management Congress. Andy gave an oral presentation titled 'Using upland sedges for predicting success of prescribed fire treatments in reducing non-native cool-season grasses' and Cody presented a poster titled 'Ten years of monitoring fire effects in national parks of the northern Great Plains.' Cody also presented two posters at the NPS Fire Management Workshop in Phoenix. One was the poster presented at San Diego and the second was titled 'Combining mechanical fuel reduction and prescribed fire at Devils Tower National Monument and Mount Rushmore National Memorial.'

**Table 1. Fire Effects Plot Workload 2006**

Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Installation	Imm. Post	Postburn (1-20 yrs)
Agate Fossil Beds	Riparian herbaceous	I&M pilot plot	3		
	Non-native grassland	FMH grass			1
Badlands	Native grassland	NGP I&M plot	5		
	Native grassland	FMH grass			8
	Native shrubland	FMH shrub			4
	Ponderosa Pine	NGP Forest plot	2		
Devils Tower	Ponderosa Pine	FMH Forest plot			7
	Prairie dog town	I&M pilot plot	1		
	Grassland	FMH grass			1
	Restoration grassland	FMH grass		2	2
Fort Union	Cottonwood riparian	FMH forest			1
	Native grassland	FMH grass			4
Knife River	Green Ash woodland	FMH Forest plot			3
	Grassland restoration	Modified frequency			1
	Ponderosa Pine	Forest and fuels plot			15
Mount Rushmore	Ponderosa Pine	FMH Forest plot			1
	Juniper Woodland	Forest and fuels plot	4		
Scotts Bluff	Non-native grassland	FMH grass			2
	Native shrubland	FMH shrub			1
	Silver sage shrubland	FMH shrub			2
Theodore Roosevelt	Native grassland	FMH grass			3
	Cottonwood riparian	FMH forest			2
	Badlands	NGP I&M plot	5		
	Ponderosa Pine	FMH forest			1
Wind Cave	Prairie dog town	I&M pilot plot	2		
	Ponderosa Pine	NGP Forest plot	3		
	Ponderosa Pine	Forest and fuels plot	11	4	
	<b>Total</b>			<b>36</b>	<b>6</b>

**Table 2. Fire Ecology Staffing 2006**

Monitor	Starting Date	Ending Date	# of Pay Periods	Training and Development
Cody Wienk			26	S-211, S-230, S-231, Statistics workshop, worked on CRWB and ENGB taskbook
andy thorstenson	1/1/06	12/31/06	22	S-336, continued RXI2/FIRB taskbook, statistics workshop
Tyler Schmitt	4/10/06	11/23/06	18	S-230, S-231, S-211, ArcGIS 9.x
Bob Kobza	5/15/06	8/4/06	6	Botany training
Martha Jakobek	5/15/06	8/4/06	6	Botany training
Michael Bynum	5/1/06	10/27/06	13	Botrychium workshop
Daniel Dyer	5/15/06	9/29/06	10	S-211, completed FFT1 taskbook

## Fire ecologist accomplishments and area of focus

I wish I could say the year was a typical year, but I'm not quite sure what that would mean. Looking back at 2006, the bulk of my time was spent preparing for and giving presentations, prescribed and wildland fire assignments, assisting with a couple of JFSP funded research projects, training, and data management and analysis. This was the first year that I did not make it to the field with the Fire Effects Crew. The highlights of the year revolved around prescribed and wildland fire, which included 1 local and three out-of-area assignments. In one case, a project at MORU went from pile burning, to all-out suppression, and back to pile burning all in the span of 4 weeks. The season was topped off by a crew boss trainee assignment on the Derby fire. It was an amazing experience to arrive on a fire at 20,000 acres and leave after the fire had grown to nearly 200,000 acres.

Category	Percent Time	Accomplishments/Focus Areas
General Planning	2	
Monitoring Plans	0	
Presentations	10	Interviewed by local NBC station about prescribed fire at WICA; Gave a general fire ecology lecture to Fire Meteorology class at SD School of Mines; Talked to elementary groups at Lake Preston, SD about wildland fire; 2 Oral presentations at Black Hills Ecologist & Botanist Workshop; Poster presentation at Fire Ecology Conference in San Diego, CA; 2 Posters presented at the NPS Fire Management Workshop in Phoenix, AZ
NPS Meetings/ Task Groups	8	FEAT working group; NGP Fire Ecology/I&M Pilot Project; I&M meeting in Ft. Collins, CO; Lead FEAT trainings using SameTime
Interagency Work	5	Attended the Landfire Workshop in Billings, MT; Coordinated Black Hills Ecologist & Botanist Workshop; Member of South Dakota Project Learning Tree Board of Directors
Fire Assignments and Fuels Projects	15	Pile burning at MORU – 3 days; Mount Rushmore 1 fire – 5 days; Isabelle fire – 13 days; Missoula Severity Detail – 14 days; Derby Fire – 14 days; Rankin Ridge Centennial Rx – WICA, 2 days
Research	10	JFSP funded the project: 'Experimental study of local fire conditions and effects on surface or nearsurface archeological resources at National Park Service units – Midwest Region' by Jay Sturdevant, Rod Skalsky, and Cody Wienk, will begin data collection spring 2007; I spent a week in Ft. Collins working with Pete Brown on JFSP funded project at MORU. Helped with dating cores collected fall 2005.
Monitoring Field Work	2	<i>Estimated amount of time spent collecting field data/working in the field.</i>
Data Entry	0	<i>Estimated amount of time spent entering data from paper to PC</i>
Data Management and Conversion	15	Conversion process is complete; so most of this time was spent on data management
Data Analysis	10	<i>Estimated amount of time spent analyzing monitoring data.</i>
Supervision/Admin	7	<i>Hiring, supervision, travel, payroll, etc.</i>
Training & Professional Development	6	NPS Fire Ecology Statistics Workshop; S-211 Portable Pumps; S-230 Single Resource Boss; S-231 Engine Boss
Miscellaneous	10	Reviewed manuscript for the Association for Fire Ecology's journal <i>Fire Ecology</i> ; Maintained NGP server (basics); Continued to maintain the NGP Fire library; Continued to build and maintain NGP Fire Management website

### Fire effects crew accomplishments and area of focus.

The field season was comprised of existing fire effects plots in postburn status or installations of rapid return fire effects plots to answer specific short-term management questions. We returned to a few of the 2005 Inventory and Monitoring (I&M) pilot plots to compare interannual variation in cover. Several member of the fire effects crew received wildland and prescribed fire assignments in July, August, and September.

Most of the FEAT data entry was completed by 3 members of the fire effects crew in 2 weeks in the middle of August. No field data was collected on PDA so there is a paper record of all plot visits.

Category	Percent Time	Notes
Fire effects plots	40	Estimated amount of time spent collecting plot data; includes preparation time.
Other plot work	5	Inventory and Monitoring plots
Fire Assignments	10	2 crew, 4 fire use module, 1 logistics assignments
Travel	10	Includes travel to plotwork in and between parks
Data entry	8	Estimated amount of time spent entering data from paper to PC
Data conversion	5	converted 3 parks' FMH data to FEAT; continued clean-up and database organization for FEAT database
Data analysis	10	Lead and Assistant analyzed data from many parks for park presentations and conference presentations and posters
Supervision/Admin	5	Travel, payroll, performance reviews
Training	5	Estimate for all staff
Miscellaneous	2	Presentations to parks, presentation at Fire Ecology Congress



Wind Cave National Park Centennial Prescribed Fire, November 5, 2006