Northern Great Plains Fire Ecology
Annual Report Calendar Year 2005

Summary

A full staff, a multi-park pilot study project, several prescribed and wildfires, and the continuation of work in the FEAT database made 2005 a busy and productive year for the Northern Great Plains Fire Ecology program.

Tower Prescribed Fire, Wind Cave National Park

The primary project for the NGP Fire Ecology program was a pilot study conducted in cooperation with the NGP Inventory and Monitoring Network. Dr. Amy Symstad acted as Principal Investigator for a study to compare 2 different methods for sampling vegetation. The methods compared were point-intercept, which has been the primary method used by the Fire Ecology program and the Ocular Cover Estimation method. Preliminary results of the study are exhibited in the poster (PDF document) attached to this report.

Fire management conducted 6 prescribed fires in 4 parks in 2005 resulting in 21 long-term fire effects plots burned.

Fire Ecologist Cody Wienk and Lead Fire Monitor andy thorstenson presented 2 posters at the Tall Timbers Fire Ecology Conference in October in Bartlesville, Oklahoma. The conference focused on fire in grassland and shrubland systems. These posters are attached to this annual report.

Management Objectives and Monitoring Results 2005

See the attached Adobe PDF documents for an analysis of fire ecology data including long-term fire effects plots and Pilot Study data.

Table 1. Fire Effects Plot Workload 2005

The majority of time in the 2005 field season focused on the installation and measurement of the Pilot Study plots in 5 National Park units. Forty-one long-term fire effects plots were measured in 7 National Parks. Six prescribed fires occurred in the Northern Great Plains burning 21 fire effects plots. A preliminary look at the 2006 field season estimates 54 FMH measurements, 32 non-FMH style sampling plots, and 8 prescribed fires.

Fire Effects Plots

Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Immed. Post	Postburn (1-20 yrs)	Total Plots*
Badlands	Western wheatgrass prairie	FMH grass plot	6	5	25
	Non-native grassland	FMH grass plot	1	3	5
	Prunus shrubland	FMH shrub plot	2	0	4
Devils Tower	Ponderosa Pine	FMH Forest plot	5	0	12
	Non-native grassland	FMH grass plot	1	1	5
Jewel Cave	Ponderosa Pine	FMH Forest plot	0	4	5
Knife River	Native grassland	FMH grass plot	4	4	6
	Restoration treatment grassland	Modified nested sample	0	10	10
Scotts Bluff	Native grassland	FMH grass plot	0	2	8
Theodore Roosevelt	Native grassland	FMH grass plot	0	3	10
Wind Cave	Native grassland	FMH grass plot	0	5	13
	Non-native grassland	FMH grass plot	0	3	5
	Ponderosa Pine	FMH Forest plot	2	1	12
Total			**21**	**41**	

* total number of plots installed in the Monitoring Unit to date

I&M/ Fire Ecology Pilot Study Plots

Park	Monitoring Unit	Type of Plot	Plots
Agate Fossil Beds	Grassland	Pilot Study	6
	Riparian	"	5
Devils Tower	Ponderosa Pine	"	3
	Prairie Dog Town	"	1
	Riparian	"	1
Fort Laramie	Grassland	"	6
	Riparian	"	2
Theodore Roosevelt	Badlands Sparse	"	5
	Riparian Woodland	"	1
	Shrubland	"	4
Wind Cave	Native grass	"	4
	Ponderosa Pine	"	4
	Shrubland	"	2
	Prairie Dog Town	"	2
Total			**46**

Table 2. Fire Ecology Staffing 2005

The fire Ecology program was at full staffing for the year and had the temporary addition of 2 seasonal biological science technicians from the Inventory and Monitoring program to work on the pilot study. Phil Graeve was the only new addition to the staff this year.

Monitor	Starting Date	Ending Date	# of Pay Periods	Training and Development
Cody Wienk	1/1/05	12/31/05	26	L-280, Measuring and Monitoring Plant Populations, completed Squad Boss taskbook
andy thorstenson	2/21/05	12/31/05	22	Measuring and Monitoring Plant Populations, completed Field Observer taskbook
Tyler Schmitt	4/11/05	12//05	18	L-280, RX-310, S-260, S-133, S-234, GIS training, completed Squad Boss taskbook
Bob Kobza	5/16/05	8/11/05	6.5	Botany training
Martha Jakobek	5/16/05	8/11/05	6.5	Botany training
Katie Johnson	4/18/05	10/28/05	14	S-271, S-260, S-212, L-280, GIST assignment
Phil Graeve	5/16/05	9/2/05	8	L-280, completed Squad Boss taskbook

Table 3. Fire Ecologist Accomplishments/Focus Area

It was another busy year, highlighted by the funding of a JFSP research project at Mount Rushmore, the initiation of a pilot project between the NGP Fire Ecology and I&M programs, three months spent as acting fire management officer for the NGP, and a truly enjoyable WFU assignment to Idaho with the Black Hills Fire Use Module.

Category	Percent Time	Accomplishments/Focus Areas
General Planning	2	Reviewed WICA FMP; Reviewed KNRI FMP
Monitoring Plans	2	Finished basic monitoring plan for WICA
Presentations	5	Oral presentation (FEAT) at Black Hills Ecologist & Botanist Workshop; Poster presentation (pilot project) at Tall Timbers/Association of Fire Ecology Conference in Bartlesville, OK
NPS Meetings/ Task Groups	8	FEAT working group; NGP Fire Ecology/I&M Pilot Project
Interagency Work	5	Attended the FRCC/Landfire Rapid Assessment Workshop for the Great Plains, Omaha, NE; Coordinated Black Hills Ecologist & Botanist Workshop; Member of South Dakota Project Learning Tree Board of Directors
Fire Assignments and Fuels Projects	6	Pile burning at WICA and MORU – 3 days; Elk Creek Complex WFU – 14 days; Prairie Wind Rx – BADL, 1 day; Rankin Ridge Rx – WICA, 1 day
Research	8	Submitted research proposal to JFSP titled 'Fire and Forest History at Mount Rushmore National Memorial: Application and Demonstration of Fire Science' with Peter Brown and Amy Symstad – PROJECT FUNDED!!!; Member of review panel for JFSP proposals, Boise, ID; Assisted Jay Sturdevant and Rod Skalsky with archaeology/fire effects proposal for JFSP
Monitoring Field Work	10	*Estimated amount of time spent collecting field data/working in the field.*
Data Entry	2	*Estimated amount of time spent entering data from paper to PC*
Data Management and Conversion	15	*Estimated amount of time spent converting FMH data to FEAT and to manage monitoring data; includes preparing species lists, error checking, learning conversion program, etc.*
Data Analysis	5	*Estimated amount of time spent analyzing monitoring data.*
Supervision/Admin	7	*Hiring, supervision, travel, payroll, etc.*
Training & Professional Development	10	SAF meeting, Rapid City; MWR Fire Ecology Meeting, Omaha, NE; Vegetation Monitoring in a Management Context; NPS Fire Ecology Statistics Workshop
Miscellaneous	15	Area Command, Hurricane Katrina FEMA Region 4 – 16 days; Maintain NGP server (basics); Organized and cataloged the NGP library (Kathy Hammel assisted 1 pay period); Continued to build and maintain NGP Fire Management website

Table 4. Northern Great Plains Fire Effects Crew Accomplishments

The fire effects crew was at full staffing from the middle of May until the middle of August. The primary time commitment was the Inventory and Monitoring Pilot Study. Traditional FMH plots represented a smaller time commitment due to low prescribed fire activity in 2003 and 2004.

Category	Percent Time	Notes
FMH plots	15	Less time spent on FMH plots this year due to low Rx fire activity in the past 2 years.
Mechanical Treatment plots	2	2 days spent sampling at Knife River in a burn, spray, seed area formerly dominated by *Bromus inermis*.
CBI plots	0	No CBI work in 2005
Other plot work Pilot Study w/ I&M	33	20x50 m veg plots with 2 types of sampling, point intercept and ocular frames. This represents most of our field time.
Fire Assignments and Fuels Projects	5	Crewmembers served as FEMO for 6 local rx fires (32 shifts) Various duties on local rx operations (12 shifts) Lead monitor served as CRWB on wildfire assignment (18 shifts) 2 crewmembers served as FEMO on 1 out of area rx fire (24 shifts) Crewmember served as GIST on WFU (10 shifts)
Data Entry	15	Estimate includes data entry for FMH and Pilot Study plots in the months of August through November
Data Management and Conversion	15	FMH data fully converted to FEAT in November 2005, managing monitoring data in FEAT is ongoing.
Data Analysis	5	Includes summaries and analysis for Pilot Study project, analysis in FEAT for Conference poster presentation
Supervision/Admin	5	Travel, payroll, hiring,
Training & Professional Development	3	Training for crewmembers included 6 different NWCG trainings, On-the-Job FEAT training, FEAT/Stats workshop in Ft. Collins, attended Assn. for Fire Ecology conference, Lead Monitor assisted with the development of the pilot study protocols.
Miscellaneous	2	Lead monitor served as member of Fire Ecology Steering Committee and FEAT Working Group

Optional question for the fire ecologist. Over the next 6 to 12 months what do you anticipate to be your primary areas of focus? Provide a rough break out of how much time you anticipate to spend in these areas and a short description of what you will be doing.

Over the next several months, I will work hard to finish cleaning up the FEAT database and start to do some data analysis. One goal for the year is to complete a comprehensive analysis/review of the NGP Fire Ecology program since its inception. I am making a presentation of our work the past two seasons at the annual NGP I&M, EPMT and Fire Ecology meeting in mid-February. I will continue to work on the Mount Rushmore JFSP project with Peter Brown, and work with Amy Symstad on finalizing the pilot project as well as continue to discuss ways that the Fire Ecology program can collaborate with the I&M program. I would like to get out on 1 or 2 crew boss trainee assignments this year.