



**National Park Service
Fire Ecology Annual Report
Calendar Year 2006**

Summary

2006 was a light fire effects monitoring year, with only one plot read at Chiricahua NM. With no budget for fire monitoring in either park in addition to losing the term Biological Science Technician in May (she got a permanent job with FWS), the plot was read by Ecologist Carrie Dennett. It is questionable as to whether Chiricahua NM will be able to rehire the BioTech position due to funding issues. However, we were able to complete half of the Mexican spotted owl surveys in two burn units as well as continue the lesser long-nosed bat surveys with a biologist from the Arizona-Sonoran Desert Museum.

At Fort Bowie, the Apache Spring Watershed Restoration project continued, with the rereading of 16 non-FMH plots installed in the riparian corridor last year to determine effects of treatment activities on vegetation structure and composition as well as spring water flow. With an approved Fire Management Plan, we hope to start plot installation on the Ruins Rx burn in Spring 2007.

Endeavors for FY2007 include conversion of data from FMH to FEAT, an project intended for 2006, but the time just flew by. Additional research/monitoring for FY2007 include the continuation of the Chiricahua fox squirrel study and it's adaptation/preference for burned landscapes, the continuation of a carnivore study to determine connectivity of large carnivore populations between sky islands, and the continuation of the USFS long-term forest inventory project.

Table 1. Fire Effects Plot Workload 2006

Park	Monitoring Unit	Type of Plot (FMH, photo point, other – describe)	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plots
Chiricahua N.M. 2006	BOGR – native grass	FMH	0	0	1	10
	QUEM – forest	FMH	0	0	3	
	ARPU – shrub	FMH	0	0	4	

	PIPO - forest	FMH	0	0	2	
Total			0	0	10	

Table 2. Fire Ecology Staffing 2006

Complete or devise a staffing and personnel development table for fire ecologist and monitors. Include fire training (e.g. S-290, RX-310), distance learning or on-campus college credit, technology training, NWCG taskbooks initiated or completed, conferences attended, etc.

Monitor	Starting Date	Ending Date	# of Pay Periods	Training and Development
Carrie Dennett	11/13/06	11/17/06	.5	Fire Ecology Conference

Table 3. Management Objectives and Monitoring Results 2006

Note: Only one PIPO plot was read this year. Data was not entered due to computer containing fire effects data crashing in May 2006. Data is backed up but has not been reinstalled on new computer. Therefore, objectives numbers are the same as reported in last year's report.

Monitoring Unit	Management Objective	Monitoring Results (80% confidence interval)	Objective Achieved?
Forest - PIPO	1) Increase cover of native grasses and forbs by 10-30%, two years postburn.	Preburn cover = 5.5% Postburn cover = 10.6% (n=3)	Yes—increase of 92.7% (overachieved)
	2) Reduce manzanita cover by more than 40%, five years postburn	Preburn cover = 6.6% Postburn cover = 3.7% (n=3)	Yes—increase of 44.0%
	3) Reduce live pole-sized tree density by 30-60%, one year postburn.	Preburn stems/acre = 283.3 Postburn stems/acre = 141.6 (n=4)	Yes—decrease of 50.0%
	4) Reduce live overstory tree density by 5-20%, five years postburn.	Preburn stems/acre = 130.9 Postburn stems/acre = 110.6 (n=3)	Yes—decrease of 15.5%
Monitoring Unit	Management Objective	Monitoring Results (80% confidence interval)	Objective Achieved?
Mixed Oak--QUEM	1) Increase percent cover of native grasses and forbs by 10-30%, two years postburn.	Preburn cover = 13.8%; Postburn cover = 17.1% (n=5)	Yes—Increase of 23.9%
	2) Reduce manzanita cover by more than 40%, five years postburn	Preburn cover = 12.8%; Postburn cover = 5.6% (n=5)	Yes—Decrease of 56.3%
	3) Reduce live pole-sized tree density by 30-50%, five years postburn.	Preburn stems/acre = 142.5; Postburn stems/acre = 119.8 (n=5)	No—Decrease of 15.9%

Monitoring Unit	Management Objective	Monitoring Results (80% confidence interval)	Objective Achieved?
	4) Reduce live overstory tree density by 5-30%, five years postburn.	Preburn stems/acre = 223.4; Postburn stems/acre = 212.9 (n=5)	No— Decrease of 4.7%
	5) Maintain non-native plant species to less than 10% of cover composition, five years postburn.	Preburn cover = 0%; Postburn cover = 0.3% (n=5)	Yes
Monitoring Unit	Management Objective	Monitoring Results (80% confidence interval)	Objective Achieved?
Mixed Grass—BOGR	1) Increase cover of native grasses and forbs by 10-30%, two years postburn.	Preburn cover = 69.9%; postburn cover = 77.4%. (n=7)	Yes— Increase of 10.7%
	2) Reduce cover of woody invasive species by 10-30%, five years postburn.	Preburn cover = 5.5%; postburn cover = 0.4% (n=7)	Yes— Decrease of 94.4%
	3) Maintain non-native plant species to less than 10% of cover composition, five years postburn.	Preburn = 1.0%; postburn = 15.8% (n=7)	No— Increase of 93.7%
Monitoring Unit	Management Objective	Monitoring Results (80% confidence interval)	Objective Achieved?
Manzanita Shrub—ARPU	1) Increase cover of native grasses and forbs by 10-30% where they occur, five years postburn.	Preburn cover = 63.9% Postburn cover = 59.4% (n=3)	No—decrease of 7.0%
	2) Reduce shrub cover 30-50%, immediate postburn.	Preburn cover = 54.7% Postburn cover = 27.7% (n=3)	Yes—decrease of 49.4%
	3) Maintain shrub cover at less than 50%, five years postburn.	Preburn cover = 54.7% Postburn cover = 27.7% (n=3)	Yes—27.7% cover

Fire ecologist accomplishments and area of focus

This section deals with roles and functions of the ecologist. Identify accomplishments and/or focus areas along with a rough estimate of the amount of time spent in these areas (see table format and example below). This includes planning documents produced, reviewed, or collaborated (e.g. fire management plans, monitoring plans, prescribed fire or mechanical treatment plans, etc.), presentations given and audience, meetings and task groups attended, contracts reviewed, interagency collaboration efforts, volunteer hours managed, and scientific or research publications produced.

Fire Ecologist Accomplishments/Focus Areas

Category	Percent Time	Accomplishments/Focus Areas
Planning	50%	• Annual review for CHIR and FOBO FMPs • Wrote prescribed burn plans for CHIR and FOBO • Administered research program • Committee member for SE Arizona FPU (FPA)
NPS Meetings/ task groups	1%	• Annual FMO conference • International Fire Ecology Conference
Interagency work	10%	• Committee member for SE Arizona FPU • SEZ Board Meetings (Board Member)
Assignments	20%	SITL on Type 1 team dispatched to California
Research	1%	• Lesser long-nosed bat surveys • Mexican spotted owl surveys
Data Entry	0%	Computer crashed. Haven't reinstalled data to new computer.
Data Conversion	0%	Data not converted yet
Data analysis	1%	Just for this report
Supervision/Admin	10%	• Supervised Biological Science Technicians, Forestry Technicians, volunteer lookout • Travel and time paperwork
Training	5%	• Taught firefighter refresher • Taught S130/190, S216 • PT
Miscellaneous	2%	Other miscellaneous fire effects plots

Fire effects crew accomplishments and area of focus.

No crew.