



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

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Summary

The fire ecologist position was filled, having been vacant since January 2004. During these tight fiscal times, filling the fire ecologist position meant not hiring any temporaries, so the fire ecology staff for 2006 consisted of James Leckie, Lead Fire Effects Monitor, and Perry Grissom.

Some FMH plots were read, and rapid assessment methodology was tried, adapted from Yosemite National Park protocols.

It was a slow fire season, with only two wildfires for about 8 acres on Saguaro NP and a large wildfire burned a small part of Coronado National Memorial early in the fire season. The area has been in a drought for over 5 years, and it was dry early in the year. There was the potential for a very active fire season, but when the monsoon came, it was very wet. Flooding was more common than wildfire. Due to drought early in the season, and green, wet conditions later, the Saddle prescribed burn was postponed to 2007. The lower elevations of the burn unit now have a major grass crop, where there had been little the previous year.

SAGU's Fire Management Plan was completed and should have a Record of Decision signed by next fire season, allowing Wildland Fire Use again. Currently only consultation with the SHPO is pending.

Plot Work

James Leckie led hybrid crews up the mountain for two sampling sessions. The first crew consisted of Perry, volunteer Ann Johnson, and Jay Lininger of Grand Canyon NP. Two FMH plots were read, and four experimental rapid assessment plots were installed. The FMH plots were two-year postburn plots from the Devil's Bathtub prescribed fire. Unsuccessful searches were also conducted for two lost plots. The rapid assessment plots were based on methodology from Yosemite NP, and three were placed in parts of the Saddle Burn unit without FMH plots. A point-quarter-center transect was also run while traveling between two rapid assessment plots to compare density estimates. This trip was also an orientation for the new fire ecologist.

The second crew consisted of Josh Aranda (seasonal) and Kyle Elfrink (SCA) from Bandelier NM, and four FMH plots were read. Vigorous lightning storms limited work time on both trips.

James and Perry took another trip part way up the mountain, and two additional rapid assessment plots were installed at the lower elevations of the Saddle Burn unit. Changes were made to the rapid assessment protocols, which will be finalized soon.

Thanks to Mary Rasmussen, Li Branfors, and Laura Trader for providing personnel to help with the sampling, and to Jen Hooke, for the rapid assessment protocols.

In 2006, ten Douglas fir plots did not receive their 2-year read.

In 2007, the theoretical workload would include 34 FMH plots: six post-burn Chihuahua pine, 10 post-burn Arizona oak, and 18 ponderosa pine 5-year reads. There would also be three post-burn rapid assessment plots. Some of the preburn reads are also a little old and should be redone beforehand. Preburn plots will also need to be installed in the next prescribed burn unit, which depends on burn accomplishments in 2007.

Table 1. Fire Effects Plot Workload, 2006

Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plots
Saguaro National Park 70 plots	Ponderosa Pine Forest	28 FMH Forest Plots			4	4
	Ponderosa Pine Forest	4 Rapid Assessment Pilot Plots	4			4
	Madrean Evergreen Woodland- Encinal Woodland (Arizona oak)	10 FMH Forest Plots				
	Madrean Evergreen Woodland- Encinal Woodland (mixed oak-PJ)	2 Rapid Assessment Pilot Plots	2			2
	Pine-Oak Forest (Arizona oak)	12 FMH Forest Plots				
	Douglas Fir-Mixed Conifer Forest	10 FMH Forest Plots				
	Silverleaf oak	3 FMH Forest Plots			2	2
	Pine Oak Forest	7 FMH Forest Plots				

	(Chihuahuan pine)					
Sunset Crater N.M. 15 Plots	Montane Meadow	10 FMH Grassland Plots				
	Pine Encroachment Area of Montane Meadow	5 FMH Brush Plots				
Wupatki N.M. 16 Plots	Plains/Great Basin Grassland-short grass community	16 FMH Grassland Plots				
Walnut Canyon N.M. 12 Plots	Ponderosa pine Forest	11 FMH Forest Plots				
	Pinyon-Juniper Forest	2 FMH Forest Plots				
Total	10 monitoring types	82 Forest, 5 Brush, 26 Grassland Plots, 6 Rapid Assessment Plots				

Table 3. Fire Ecology Staffing, 2006

	Starting Date	Ending Date	# of Pay Periods	Training and Development
Perry Grissom Fire Ecologist	6/11/06	12/31/06	15	Fireline refresher, PEPC
James Leckie Lead Monitor	4/30/06	9/1/06	9*	Fireline refresher
	*For the fiscal year, James also worked 10/1/05-11/11/05			

Management Objectives and Monitoring Results, 2006

No prescribed burns were accomplished in 2005 or 2006, and Wildland Fire Use was not allowed under the existing Fire Management Plan. Analyses on the few plots sampled in 2006 from previous burns were not conducted, since new information would not have been available.

Staff of Walnut Canyon NM requested a summary of their plot data. A field trip to the plots in the spring will be required to interpret the data and results.

Table 4. Fire Ecologist Accomplishments/Focus Area

Category	Percent Time	Accomplishments/Focus Areas
Planning	15%	Huachuca Area Fire Partners FMP and NEPA, includes Coronado NM; consultation with FWS
Presentations	1%	Presentation about fire management at SAGU at Coronado Planning Partnership Symposium
NPS meetings/ task groups	5%	NPS Stats Conference, FEAT online workshops
Interagency work	10%	Fuels treatments, non-native invasive plants, Coronado NF, USGS
Fire Assignments & Fuels Projects	10%	Fuels: visit site, review burn plan for pile burning on Tumacacori NHP; scout potential projects on Coronado NM; Wildfire: two small wildfires on SAGU
Research	2%	Reviewed study proposals and research synthesis paper
Data collection	15%	FMH and rapid assessment plots; buffelgrass control; grazing study; work on rapid assessment protocols
Data entry	1%	Data entry
Data conversion	1%	FEAT conversion
Data analysis	10%	Examining data, plant ID, GIS
Supervision/Admin	5%	Hiring, supervision, travel, payroll, develop performance plan, etc.
Training	5%	Fire Hydrology Workshop, NPS Fundamentals 1, PEPC
Outreach	10%	Spoke about fire ecology of oak/PJ types for a statewide FIREWISE CD, met with local academics, scientists; buffelgrass removal with Girl Scouts
Miscellaneous	10%	Attended Fire Ecology Congress in San Diego; reviewed plans and reports

While still employed by his previous workplace, the fire ecologist was allowed to attend the Southwestern Desert Symposium to learn about current issues and meet people. To become more familiar with the area and plants, the fire ecologist assisted with field sampling in studies about grazing removal and buffelgrass control.

Table 5. Fire Effects Crew Accomplishments

Category	Percent Time	Notes
Data collection	20%	FMH plots and rapid assessment plots
Fire Assignments & Fuels Projects	10%	
Data entry	15%	
Data conversion	20%	Continued to convert FMH data to FEAT
Data analysis	15%	Photos; Flagstaff area parks
Supervision/Admin	10%	Travel, etc.
Training	<1%	
Miscellaneous	10%	Public presentation: Fire ecology in the Sky Islands, at Tucson Mountain District, SAGU; GIS

Other:

Possibly the biggest issue currently affecting the area parks is the threat posed by non-native plants. Coronado NM has a large infestation of Lehmann's lovegrass (Eragrostis lehmaniana), and Saguaro NP has the beginnings of a major problem with Buffelgrass (Pennisetum ciliare). Both grasses are from Africa and well-adapted to fire. Buffelgrass has the potential to disrupt the area's fire regimes. It can outcompete native desert-dwelling species and creates heavy and continuous fuel loads. It could convert the Sonoran desert to a scrub grassland, eliminating fire sensitive species such as the saguaro, many other cacti, and palo verde. Currently the sparsely vegetated desert largely buffers urban areas from wildfires burning at higher elevations, but if buffelgrass fills in the desert, lightning fires will be able to march downhill to the houses, and human-caused fires will run uphill into the wilderness. The fire ecologist apparently found a new weed in the Park, Kleberg bluestem (Dichanthium annulatum, formerly Andropogon annulatus), growing in Rincon Creek.

Errata:

The 2001 annual report listed buffelgrass, the invasive exotic, as present in some FMH plots. In 2004, the plant was identified as the native, bristly wolftail (Lycurus setosus).