



National Park Service Fire Ecology Annual Report Calendar Year 2014 for the Permian, Southern Plains & Southwest Texas Fire Groups

A. Summary

Fuels work was carried out at Chickasaw and Lake Meredith National Recreational Areas, and Big Bend National Park utilizing manual and mechanical thinning, and broadcast burning. The goals of these treatments were to reduce hazard fuels, extirpating or reducing exotic or invasive vegetation, and ecosystem restoration in riparian and upland plant communities. There was one wildfire of note which began at the outset of the season, the human caused Double Diamond fire at Lake Meredith NRA. The fire began off park in the Double Diamond addition burned onto the park and with a wind shift from southwest to northwest burned back into Double Diamond destroying 250 structures. The fire consumed 2500 acres of which 1455 was on the park burning over a number of Fire Effects plots, several of which had been “missing” since the early 2000s.

The Fire Effects season for 2015 was a tumultuous in regard to staffing for the Southern Plains, Permian and Southwest Texas Fire Groups. The beginning was the departure of the highly competent lead fire effects monitor Tyler Engle for the Carson National Forest in northern New Mexico. Fortunately, Jeremiah Bonilla, a seasoned competent biological tech, was returning who was willing and also highly competent to lead. Jeremiah however faced a disappointing start to the field season as only one of the two seasonals hired showed up for the first day of work. This left only himself and Denise McFather to carry out the bulk of the field work although services of Juan (Kiko) Morlock were obtained for two pay periods thorough the emergency hiring authority to provide some additional help.

A major setback for the program occurred midseason as Jeremiah departed for a position with the Texas Parks and Wildlife. Although he had applied for the Lead Monitor position, the clear choice to replace Tyler, his application failed to place him in the first tier of applicants. At the time he also applied with Texas Parks and Wildlife, which offered him a position, thus not getting the lead position he opted to take. Fortunately, Bruce Fields the FMO, to his credit, suspected that some of the first tier applicants overstated their knowledge of the southern plains due to his familiarity of the applicants and wrote to HR to express his concerns. This bore fruit

and Jeremiah's application was reconsidered and ultimately was offered the position and he accepted, however this was after the field season was over and his EOD date was not until winter of 2015. So for the last two months of the season left only Denis to complete the fieldwork. So she, with the aid of the Fire Ecologist finished the season and meeting our obligation of monitoring FMH plots and the Inventory and Monitoring Long-term monitoring plots. However although the field work was completed the data was not entered and is awaiting the completion of the 2015 field season. Jeremiah did contribute to participating in wildland fire operations both in suppression and prescribed fire operation. He staffed an engine as a Type 2 fire fighter both at the park and on a severity assignment in Northeastern Oklahoma.

Because of the crew and field leadership deficiencies no monitoring was done at either the Permian or Southwest Texas Fire Groups. Although there is a lead monitor, his services have been exclusively used to assist in keeping the Big Bend Fire Management Operations going. This was because of the vacancy of three key positions the Lead and assistant Engine foreman positions and the Fire Program Management Assistant, leaving only the FMO, Ed Waldron and John Zubia, the lead monitor to keep things operation particular the administration of the Diablo Program. John has play a big role in keeping the administrative side of the Diablo Program functioning, especially working with the complexities of Immigration and Customs Enforcement (ICE) and ensuring that all the associated paper work was in order so that the diablo crew would be available for assignments. Additionally he worked with the Diablo Crew members to meet their US Tax obligations. Consequently John spent a significant amount of his time dealing with four federal agencies in regard to the Diablos; the IRS, ICE, the Social Security Administration and the Border Patrol. John carried out the duties that are normally the responsibility of the Engine Captain and assistant. The viability of the Diablo Program is a critical imperative to the park critical and John fills a vital role in making that happen during periods of inadequate staffing which has been the case for the past several years. In addition to working with the Diablo Program, John assisted with implementation of the fuels treatments particularly implementation of the River Cane Rx and the Chisos Basin Thin/haul Defensible Space project and the bee brush herbicide follow-up treatments in the basin.

Table 1. Fire Effects Plot Workload (2014) and Total Plots Installed

Park	Monitoring Unit	Plot Type (FMH Forest/Brush/Grass plot, photo point, Rapid Assessment, CBI, etc.)	Pre-burn 2014	Immed. Post 2014	Postburn (1-20 yrs) 2014	Annual Total (2014)	Total Plots
Southern Plains Fire Group							
Bent's Old Fort NHS	Cottonwood	Long-term/FMH Grassland	3	0	0	3	3
	Restoration	Grassland Restoration/ FMH Grassland	2	0	0	2	3
	Upland	Long-term/FMH Grassland	4	0	0	4	6
Capulin Volcano	Pinyon-Juniper Savanna	Long-term/FMH Grassland	2	0	0	2	3
	Shortgrass Steppe	Long-term Grassland	2	0	0	2	3
Chickasaw NRA	Upland Grassland	Long-Term/Grassland	0	0	4	4	10
	Post Oak Forest	FMH Forest	0	0	4	3	8
	Eastern Red Cedar Woodland	FMH Forest	0	0	2	2	2
Lake Meredith NRA	High Stand Density Mesquite	FMH Brush	6	0	6	12	19
	Low Stand Density Mesquite	FMH Brush	3	5	8	16	18
	River bottom	CBI		3			3
	Mesquite Savanna	Long-term	4	0	0	4	10
	Upland grasslands	Long-term	6	0	0	6	8
	Cottonwood Stands	Long-term	2	0	0	2	4
Sand Creek NHS	Cottonwood Stand	Long-term	2	0	0	2	3
	Upland Grassland	Long-term	3	0	0	3	5
	Upland Sand sage	Long-term	2	0	0	2	2
Washita Battlefield NHS	Restoration		2	0	0	2	4
	Upland grassland	Long-term	3	0	0	3	4
	Disturbed	Long-term	1	0	0	1	1
	Big Bluestem Grassland	FMH-brush	0	0	2	2	6
Southern Plains I&M Parks*							
Fort Larned NHS	Prairie Dog Town	Long-term	1		1	1	1
	Oldfield Restoration	Long-term	10		10	10	14

Park	Monitoring Unit	Plot Type (FMH Forest/Brush/Grass plot, photo point, Rapid Assessment, CBI, etc.)	Pre-burn 2014	Immed. Post 2014	Postburn (1-20 yrs) 2014	Annual Total (2014)	Total Plots
Fort Union NHS	Shortgrass Steppe	Long-term	4	0	0	4	6
Pecos NHS	Blue Grama / Treatment	Long-term	5	0	0	5	20
Total			67	8	37	97	166

* The Southern Plains Inventory and Monitoring Parks are three parks that are in another Fire Group (PECO, FOUN) and one in the Midwest Region (FOLS) the SPFG Fx crew samples as part of our collaboration of ecological monitoring.

Table 2. Fire Ecology Staffing 2014

Ecologist and Monitors	Starting Date	Ending Date	# of Pay Periods	READ Qualified (Yes or No)	Training and Development
Richard Gatewood	1/1/14	12/31/14	26	Yes	None
Jeremiah Bonilla	2/10/14	8/6/14	14	No	None
Denise McFather	5/5/14	9/21/14	11	No	Intro to GIS

Table 3. 2014 Management Objectives and Monitoring Results

No analysis incorporating the 2014 data as it is awaiting completion of entry into FFI and QC/QA. This is due to staffing shortfalls that began last summer and persisted into the fall and winter.

B. Program Information**Table 4. Planning - 2014**

Park	Does Park have written DFCs? (yes or no)	Date Park-level Monitoring Plan completed (or revised)	Total # of Project- or Community-level Monitoring Plans (not just 2014)	Assisted with how many BAER plans in 2014?
Permian Fire Group	No			
Carlsbad Caverns NP	No	No	0	0
Gila Cliff Dwellings NM	No	No	0	0
Guadalupe Mountains NP	No	No	0	0
Whitesands NM	No	No	0	0
Southern Plains Fire Group				
Bent's Old Fort	Yes (draft)	No	0	0
Capulin Volcano NM	No	No	0	0
Chickasaw NRA	No	No	0	0
Lake Meredith NRA	No	No	0	0
Sand Creek Massacre NHS	Yes (draft)	No	0	0
Washita Battlefield NHS	Yes (draft)	No	0	0
				0
Southwest Texas Fire Group				
Big Bend National Park	No	No	0	0
Fort Davis NHS	No	No	0	0
Palo Alto Battlefield NHP	No	No	0	0

Table 5. Monitoring - 2014

Park	% 2014 Data Entered	% 2014 Data Quality Checked	# Prescribed Fires Monitored*	# Non-fire Fuels Treatments Monitored*	# Wildfires Monitored*	# BAER Treatments Monitored*
Permian Fire Group						
Carlsbad Caverns NP	n/a	n/a	0	0	0	0
Gila Cliff Dwellings NM	n/a	n/a	0	0	0	0
Guadalupe Mountains NP	n/a	n/a	0	0	0	0
Whitesands NM	n/a	n/a	0	0	0	0
Southern Plains Fire Group						

Park	% 2014 Data Entered	% 2014 Data Quality Checked	# Prescribed Fires Monitored*	# Non-fire Fuels Treatments Monitored*	# Wildfires Monitored*	# BAER Treatments Monitored*
Bent's Old Fort	0	0	1	0	0	0
Capulin Volcano NM	0	0	0	0	0	0
Chickasaw NRA	0	0	5	5	0	0
Lake Meredith NRA	0	0	6	1	1	0
Sand Creek Massacre NHS	0	0	0	1	0	0
Washita Battlefield NHS	0	0	1	0	0	0
Southwest Texas Fire Group						
Amistad NRA	n/a	n/a	0	0	0	0
Big Bend National Park	n/a	n/a	0	0	0	0
Fort Davis NHS	n/a	n/a	0	0	0	0
Palo Alto Battlefield NHP	n/a	n/a	0	0	0	0

* Number of treatment units with treatment effects monitoring conducted. Include pre-burn and post-burn monitoring but not burn-day monitoring.

Table 6. Communicating Results - 2014

Park	# of Project Monitoring Reports completed in 2014	# of Annual meeting(s) with Park staff	# of Formal presentations of results	Do you use Minitab?*
Permian Fire Group			0	No
Carlsbad Caverns NP	0	0	0	
Gila Cliff Dwellings NM	0	0	0	
Guadalupe Mountains NP	0	0	0	
Whitesands NM	0	0	0	
Southern Plains Fire Group				No
Bent's Old Fort	1	1	0	
Capulin Volcano NM	1	1	0	
Chickasaw NRA	1	1	0	
Lake Meredith NRA	1		0	
Sand Creek Massacre NHS	1	1	0	
Washita Battlefield NHS	1	1	0	
Southwest Texas Fire Group				No
Amistad NRA	0	0	0	
Big Bend National Park	0	1	0	
Fort Davis NHS	0	1	0	
Palo Alto Battlefield NHP	0	0	0	

* This information will help to assess Minitab multi-user license needs.

Table 7. Research - 2014

Park	Are research needs identified in FMP or Monitoring Plan? (yes or no)	# of Proposals Submitted in 2014	# of Proposals Funded in 2014	# of Research Projects Supported in 2014*	Additional Comments
Permian Fire Group					
Carlsbad Caverns NP	Yes	0	0	0	Identified the need to define desired conditions for the parks plant communities, determine fire regime within the context of land use/climate at the landscape level, post fire restoration, and fire response of sensitive species.
Gila Cliff Dwellings NM		0	0	0	Identifies the need for sensitive/rare plant and Mexican spotted owl surveys.
Guadalupe Mountains NP	Yes	0	0	1	Research need partitioned into the Mixed conifer forest and Desert grasslands and Shrublands. Mixed con needs where fuels/restoration treatments. And Desert grassland and shrublands where fire regimes. For both divisions fleshing out desired conditions was identified. A Resource Field Guide in 2014.
Whitesands NM	Yes	0	0	0	Mostly to address the role of fire in this very unique ecological setting.
Southern Plains Fire Group					
Bent's Old Fort		0	0	0	Identified in general that research is to address on water quality, riparian vegetation, soil erosion and avifauna habitat.
Capulin Volcano NM		0	0	0	Research needed to define desired future conditions of the cinder cone Pinyon Juniper woodlands, and fire effects on cultural resources and effects on the geologic structures.

Park	Are research needs identified in FMP or Monitoring Plan? (yes or no)	# of Proposals Submitted in 2014	# of Proposals Funded in 2014	# of Research Projects Supported in 2014*	Additional Comments
Chickasaw NRA		0	0	0	Research needed for fire on prairie restoration, air/ water quality and fire effects on individual plant and animal species (none specified)
Lake Meredith NRA		0	0	0	Fire research needed on air/water quality, individual plant and animal species, cultural resources and exotic plant management.
Sand Creek Massacre NHS	n/a	0	0	0	A new FMP/EA is currently in draft.
Washita Battlefield NHS		0	0	0	Research needed to determine effects of prescribed fire on air and water quality, and individual plant and animal species, however none specified.
Southwest Texas Fire Group					
Amistad NRA	No	0	0	0	
Big Bend National Park	Yes	0	0	0	Fire effects on plant community composition and rare plant & animal species, post fire soil movement, effects on fuel loading, ladder fuels and fuel size classes, prescribed fire effects on tree stand age and size class structure.
Fort Davis NHS	n/a	0	0	0	General statement in regard to research with references to refine prescriptions, improve understanding of fire behavior and effects, refine monitoring protocols, define fire return cycles, describe fuels dynamics, describe the impacts on cultural resources, and other information needed for

Park	Are research needs identified in FMP or Monitoring Plan? (yes or no)	# of Proposals Submitted in 2014	# of Proposals Funded in 2014	# of Research Projects Supported in 2014*	Additional Comments
					operational fire and resource management. A new FMP/EA is currently in draft.
Palo Alto Battlefield NHP	Yes	0	0	0	From 2005 FMP Research to be focused towards future conditions. General Topics to be addressed fire behavior, fire effects, fire return cycles, describe fuels dynamics and impacts on natural and cultural resources and other information needed for fire and resource management. A New FMP is currently being drafted on the newly completed Vegetation Management Plan.

*Number of funded research projects, new or ongoing, supported by the fire ecology program including logistical info or support, staffing, etc.

C. Fire ecologist accomplishments and areas 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 or reviewed (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.

Table 8. Fire Ecologist 2014 Accomplishments/Focus Areas

Category	Percent Time	Accomplishments and/or areas of activities
Planning	20	• Worked on the Fort Davis FMP in late draft stage • Developed work plan and schedule for 2014 Field Season • SAND FMP rewrites and Environmental Assessment • Reviewed Burn Plans for CHIC and LAMR. • Reviewd Vegetation Management Plan for PAAL • Developed POW for BIBE/ FODA/ CAVE/ GUMO/ BOEL/ CAVO/ CHIC/ LAMR/ SAND/ WABA

		• Meet with with resource management to discuss rewriting BIBE FMP primarily reconfiguring FMP and the need to address T&E species. • Meet with CHIC Resource and LAMR Fire staff to discuss second entry Rx post thinning in the Buckhorn Project area. Discussed concerns regarding regeneration of Eastern Red Cedar in treatment area and whether or not objectives could be met.
Presentations	<1	• Presentation at SOPN Technical meeting.
NPS Meetings/ task groups	5%	• Southern Plains I&M Annual Technical Meeting • WABA/CAVO meeting with staff to discuss data management/developing collaborative treatment among Fire/EPMT and park s staff. • With SOPN staff to draft desired conditions for BOEL. • Meet with Resource Management Staff to discuss issues associated with Buckhorn Rx.
Interagency work	0	
Wildfire assignments	5	• Duty Office for GUMO during for Frijole Ridge Fire.
Prescribed fire projects	5	• FEMO for one Rx Project • FF1 for one Rx Project
Non-fire fuels projects	0	
Research	0	• Secured funding for development of Resource Management Field Guide for GUMO
Data collection	20	• Assisted with field work at CHIC/LAMR/WABA/PECO
Data entry	13	• Worked on data entry artifact that adversely impacted data quarries in FFI these issues were primarily associated with LAMR/CHIC entries.
Data analysis	5	• Analysis comparing SOPN vs point-intercept and species occurrence collect since 2009 to enhance field efficiency and improve assessment of species diversity trends and temporal species turn-over.
Supervision/Admin	5	Hiring, supervision, payroll, travel authorization/vouchers, purchasing, etc.
Training	1	• Travel to LAMR to train season crew for the upcoming
Travel out-of-park for plot or project work	20	Travel to CHIC/LAMR/WABA/PECO to assist with field work athose parks including Long-term monitoring with the Southern Plains I&M Network.
Miscellaneous		

D. Fire effects crew accomplishments and areas of focus

This section deals with roles and functions of the fire effects crew. 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).

Table 9. Fire Effects Crew 2014 Accomplishments/Focus Areas

Category	Percent Time	Notes
FMH plots	37	
WUI plots	35	
CBI plots	1	
Other plot work	60	Collaborative monitoring with SOPN Long-term monitoring plots
Wildfire assignments	6	Engine severity assignment to NE Oklahoma for BIA. Significant IA activity.
Prescribed fire projects	2	Crew of 1 (Jeremiah) assisted with Rx at LAME North Canyon
Non-fire fuels projects	0	
Travel out-of-park for plot or project work	47	Travel to all parks in the Southern Plains fire groups and three additional parks in the Southern Plains I&M network (SOPN) (FOLS, FOUN and PECO)
Data entry	0	Lack of staff prevent data entry form being completed for 2014.
Data analysis	0	
Supervision/Admin	1	Lead hired two seasonals, one failed to show at beginning of season, dealt with travel arrangements and logistics to parks in fire group and SOPN.
Training	1	Jeremiah completed annual Fire refresher.
Miscellaneous	0	Things that don't fit in other categories – search and rescue, assisting other work groups, etc.

E. 2015 Direction

What are program plans for the near future? This section can be brief and include changes to focus areas, any approved changes to monitoring protocols as a result of a program review, or plans to address future challenges (e.g. budget and staffing changes, travel caps, etc.).

F. Optional Information

Data summaries from Southern Plains Fire Group and Southern Plains I&M Collaboration.

Bents Old Fort NHS: <https://irma.nps.gov/App/Reference/Profile/2217193>
Capulin Volcano NM: <https://irma.nps.gov/App/Reference/Profile/2217197>
Chickasaw NRA: <https://irma.nps.gov/App/Reference/Profile/2217198>
Fort Union NHS: <https://irma.nps.gov/App/Reference/Profile/2217202>
Lake Meredith NRA: <https://irma.nps.gov/App/Reference/Profile/2217204>

Pecos NHP: <https://irma.nps.gov/App/Reference/Profile/2217207>

Sand Creek Massacre NHS: <https://irma.nps.gov/App/Reference/Profile/2217209>

Washita Battlefield NHS: <https://irma.nps.gov/App/Reference/Profile/2217210>

G. Metadata and FFI Database Update on NPS Data Store

As of this report 2014 data has not been completely entered nor QA/QC and is therefore unavailable for general distribution.

As you know, long-term monitoring data are highly valuable! We are glad to have almost all of the NPS FFI databases centrally located on the NPS Data Store. This central data storage option allows us to have an additional secure data location other than those in the parks' or regional offices. It also allows NPS users and others to view the metadata and contact data stewards for access to monitoring data for research or educational purposes. In addition, Landfire staff will be able to download the needed FFI databases directly from the Data Store for Landfire model validation purposes, eliminating the need for NPS staff to respond to another, separate data call.

Once this season's FFI data entry and quality checking are complete, please follow these instructions to update your park(s) metadata ("references") and upload the updated FFI databases to the NPS Data Store.

- 1) Backup the FFI database(s) in FFI (note backup file date for metadata).
- 2) Zip backup file(s) - **this step is critical to reduce file size**, upload time and server storage space utilized. PLEASE use the following naming convention for your zip files: "**FFI_2014_XXXX**", where XXXX is the 4 letter code for the park, or for the lead park in a network if more than one parks' data are included in the database.
- 3) Access the Data Store at: <https://irma.nps.gov/App/Reference/Welcome>
- 4) Select **Manage**, then **Manage My References** and click on the **Search** button (don't need to enter any search criteria to display all references for which you are an owner).
- 5) Select the reference (metadata record) you wish to update from the list displayed to open the Reference Profile where you can make edits to update the reference.
- 6) Expand "Version History", to view and select the **Manage Versions** option. You will then select **Clone this Reference to Create a New Version** to create a new Reference for this year's update while preserving past metadata and databases as archives.
- 7) Once you **Save** the new, cloned reference, you can make any changes necessary to update the reference with this year's information. Most likely, the edits will be to the "Date of Issue/Release", which is the date of the new FFI backup file, and the "Content End Date",

if you have collected new data this year that was added to the FFI database. Select **Edit Details** from the menu at the top of the profile to make these changes. If anything else has changed (e.g. new protocols established, old protocols abandoned, etc.), you can make these edits to the text fields (e.g. Abstract) as well. Once changes are complete, you must select the “Save and set to” **Active** button at the bottom of the window.

- 8) Finally, upload the new zipped FFI database backup file by selecting **Add Digital File** from the menu at the top of the reference profile (or Add Holding from the Holdings section). Click on **Select Files** and then browse to your zipped FFI database backup file to select it, and then select **Upload**. You must also add additional owners here who have permission to edit the holdings if necessary (we recommend at least one person besides yourself; I (MB) am happy to serve as an additional owner to assist with Data Store if you'd like, but not required!). Remember to Save as **Active** once you have completed any changes.
- 9) Repeat the above steps for each of your FFI databases.

Please feel free to contact MB if you have any questions at all about the process of updating the metadata and FFI databases on the Data Store.

INSTRUCTIONS FOR UPLOADING 2014 ANNUAL REPORT TO DATA STORE

1. Save your report as a PDF file using the following file naming convention “2014 *Park/Network Name* Annual Report.pdf”.
2. **NEW THIS YEAR!!!** We will now be uploading our annual reports to the IRMA Data Store instead of the Fire Ecology Sharepoint site. This change will allow us to have all of our Fire Ecology Program information stored in one reliable, accessible location. We are working with the I&M program to transfer all of our past annual reports from Sharepoint to the Data Store. Once this is done, you will be able to use the versioning feature of Data Store to clone the last annual report reference and update it with the current year's report (just as we are doing with the FFI databases). I will be sending out separate, detailed instructions for uploading the annual reports to the Data Store as soon as they are finalized.
3. Please e-mail your regional ecologist, MaryBeth Keifer, and Nate Benson to let us know when you get your report uploaded.

Call MaryBeth Keifer (603-795-2333) if you have any questions or problems.