

Big Thicket National Preserve
Fire Ecology Annual Report
Calendar Year 2004



Rx Burn in the Big Sandy Unit August 2004 – clearing the invasive brush
“The Big Thicket, we’re not as thick as we used to be”. Dave McHugh – BITH FMO 1989 – 1/3/05

Prepared By: Deanna Fusco – BITH Lead Fire Effects Monitor

Fulton Jeansonne – BITH Fire Ecologist

Summary

Lead Fire Effects Monitor: Deanna Fusco

With little fire activity in the Western states, 2004 was the year of the control plots for Big Thicket's Fire Effects Monitors. The greatest accomplishment of the season was collecting data from 15 control plots (each with 5 10x10m subplots), most of which had not been read in over 10 years. A majority of the trees did not have permanent tags, therefore we spent a lot of time as forensic botanists trying to identify John Doe trees. We were also very busy supporting the prescribed burns on the preserve, following up with post-burn reads and fire effects monitoring reports. We spent a week in Padre Island to conduct the park's first prescribed burn. Padre Island's original FMH grassland plots were not established with a management objective, therefore the decision was made to eliminate the original plots and reestablish a more efficient program.

In BITH, the majority of the season was spent in the Big Sandy, Hickory Creek, and Lance Rosier units burning and reading plots. We were also able to send two seasonals and myself out on western fire assignments. In July, I spent several weeks supervising an additional crew of three seasonals to conduct monitoring of the endangered Texas Trailing Phlox. Throughout the year, there were many fire training opportunities with the spring and fall Texas fire academy, and I was sent to a vegetation monitoring course and the statistical/FEAT workshop. Hopefully with the creation of the magical protocol builder, we will be able to play with FEAT too. I have also started researching several different options to complete analysis of our data, including enrolling myself into graduate school. This next year our main focus will be data analysis and restructuring the plot protocol. All in all, it was a very productive year for the fire effects monitors with a nice blend of plot work, prescribed burns, wildfires, and training.

Fire Ecologist: Fulton Jeansonne

Longleaf pine restoration, new land acquisition prioritization, prescribed burn planning / implementation, and the Preserve's FMP were the main focus for the fire ecologist during calendar year 2004.

The planting of longleaf pine seedlings in late winter and chemically treating the invasive brush in the spring on the NTC Longleaf Restoration Project were a success. I worked closely with Temple Inland (a private forest industry company) developing management objectives for lands they currently own that the Preserve is preparing to acquire. This will allow the Preserve to inherit lands in a condition that would help facilitate longleaf restoration in the future. The NEPA documents, writing, editing, and reviewing of the BITH FMP was completed and was signed in November of 2004. BITH fire management conducted 7 prescribed burns (including the first ever at PAIS) for approximately 3647 acres. I wrote one burn plan, reviewed 4 burn plans, and assisted in writing 2 amendments to burn plans. I also filled the positions of RXB2, RXI1, and FEMO for these burns. 2004 was a very busy and successful year for the fire ecology program at Big Thicket National Preserve.



Fire Effects Monitors frolicking through the 3mo Post Burn regrowth in the Hickory Creek WUI fuel reduction project.



Fire behavior in the Lance Rosier Unit Rx Burn.

Table 1. Fire Effects Plot Workload 2004

Park	Monitoring Unit	Plot Type	Pre-burn	Immed Post-Burn	Post Burn (1yr&2yr)	Control	Total Plots
Big Thicket National Preserve	Upland Pine	RICE	-	2	1	2	5
	Upper Pine/Oak	RICE	3	4	1	5	13
	Midslope Pine/Oak	RICE	1	2	-	5	8
	Lower Oak/Pine	RICE	-	1	-	2	3
	Wetland Pine Savanna	RICE	-	2	3	2	7
	Sandhill	RICE	1	1	2	-	4
	Wildland/Urban Interface	RICE	-	2	1	-	3
	Total Plots		5	14	8	16	43

Note: BITH FEM Plots were established by Rice University. Each plot consists of five 10m by 10m subplots.

Table 2. Fire Ecology Staffing

MONITOR	Starting Date	Ending Date	# of Pay Periods	Training and Development
Deanna Fusco Lead Monitor	1/1/04	12/31/04	26	Veg Monitoring Course, S260/261, Stats/FEAT Workshop, S270/270 & HCRM taskbook initiated, S211
Lorree George FEMO Seasonal	4/5/04	9/30/04	13	S130/190
Travis Stevens FEMO Seasonal	4/19/04	9/3/04	10	B-Faller, S244, & completed FEMO taskbook
Andy Jones Seasonal Firefighter	6/28/04	9/21/04	7	Trained in fire effects monitoring after the departure of Chuck Graziadei
Chuck Graziadei FEMO Seasonal	4/5/04	6/4/04	5	Hired on as Permanent with USFS
Fulton Jeansonne Ecologist	1/1/04	12/31/04	26	I-Suite Training, RESL trainee on Eastern Great Basin Type 1 IMT, RXB2 taskbook completed

Table 3. Operation Shifts for Prescribed Burns and Wildfires

Position	Line Preparation	BITH Prescribed Burns	Out of Park Wildfire
Lead Monitor	6	13	18
Seasonal Monitors	13	45	34
Fire Ecologist	4	24	2
Total	23	82	72

Note: BITH Fire Ecology staff - positions held during prescribed burns in 2004 : RXB2, RXI2, FEMO, FFT1, and FFT2.

Additional Accomplishments

- In addition to supervising the BITH FEM crew, the lead monitor supervised a three person resource management crew. This crew worked for several weeks monitoring reintroduced Texas Trailing Phlox over the summer of 2004.
- The Wildwood WUI fuels reduction project (chemical and mechanical brush treatment) contract was completed during the summer of 2004. The fire ecologist provided technical oversight to the contractor as well as preformed as one of the park contract representatives.
- The fire ecologist oversaw the planting of longleaf pine seedlings in the North Turkey Creek Longleaf Restoration Project in the winter of 2004. The ecologist also oversaw the chemical treatment of the invasive brush in the unit. Both projects were done by the Nature Conservancy of Texas.
- The fire ecologist worked with Temple Inland foresters to help develop management strategies for lands being acquired in the future by the preserve. This will help insure that lands acquired by the preserve from Temple Inland are in a condition that will help facilitate future longleaf pine restoration.
- The fire ecologist took Park Service Director Fran Mainella and local media on a field tour of longleaf restoration area during her visit to the preserve this summer.

Project Data Analysis

Wildwood WUI Fuels Reduction Project:

This projects primary objective was to reduce the wildfire threat to the 600+ homes in the Wildwood community which shares a boundary with the preserve. Prescribed burning along the boundary of Wildwood had stopped in the mid 1990's due to the risk of escaped fire. An increase in homes and buildup of fuels had made the consequence of escaped fire too great. This project was designed to restore the low fire intensity park-like structure of a natural longleaf pine stand by eliminating the invasive brush species.

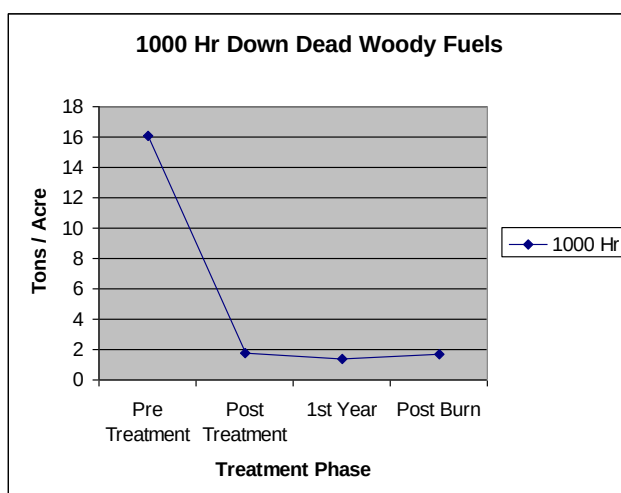
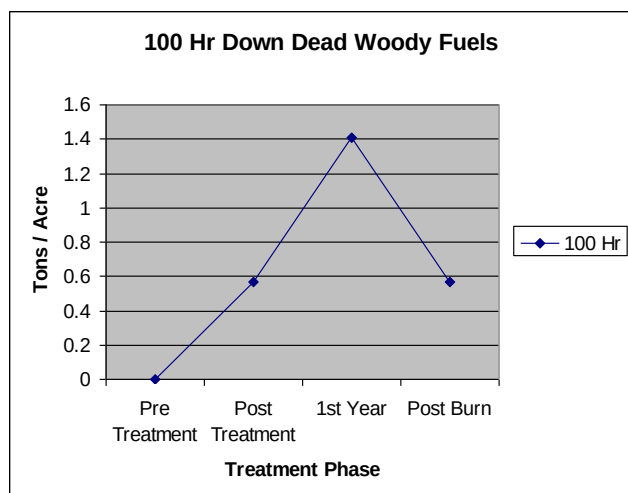
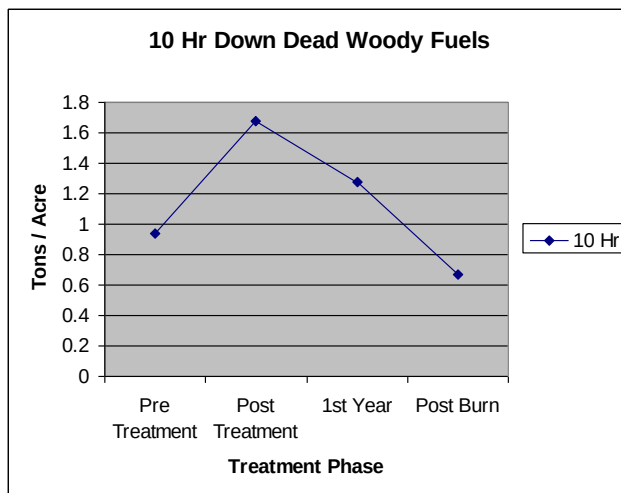
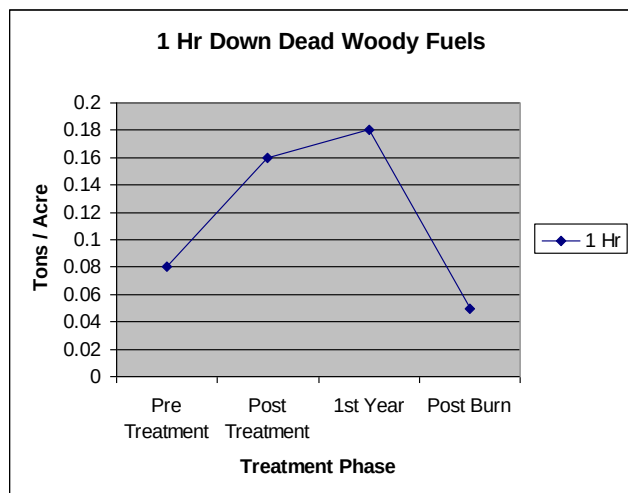
The project consisted of three phases. The first was to kill the invasive brush species with herbicide to eliminate the common problem of re-sprouting. The second was to mechanically grind the dead brush turning the vertical fuel bed (which was the greatest risk for spotting) into a horizontal fuel bed. Last was to return fire to the unit and remove the down dead fuel loading created by the treatment. This would expose the soil promoting the natural grass layer.

Initial Plot Data Analysis

Analysis of the primary objective (brush mortality) will not be finished until 1st year post burn measurements are completed in the summer of 2005. Initial analysis of the post treatment / pre burn

data shows a complete elimination of the larger brush size classes but re-sprouting of the brush species is occurring.

The secondary objective (reduction of down dead woody fuels created by the treatment) has been analyzed for the plots that have been burned. The data shows an immediate increase in tons/acre following the mechanical fuels treatment for the 1 hr and 10 hr fuels classes, but dropped to below pre treatment measurements following the burn. This was expected in the pre treatment analysis. The 1000 hr fuels class reduction was due to the grinding of the larger fuels present before the treatment into the 100 hr fuel size class. This accounted for the increase in 100 hr fuels after the treatment. The 100 hr fuels created by the treatment were then consumed by the burn. The 1000 hr fuels did not change significantly after the burn due to the high fuel moisture content common in this fuel type.





These findings are currently being compiled into a report for the fire and resource management staff of the preserve. This document will be used to help plan other fuels reduction and longleaf pine restoration projects being proposed.