



Big Cypress National Preserve National Park Service Fire Ecology Annual Report Calendar Year 2014

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A. Summary

The fuels/Fire Effects crew at Big Cypress National Preserve (BICY) completed a wide variety of fuels and non-fuels related projects in 2014 calendar year. Projects ranged from prescribed fire treatments and wildfire response to hydrological restoration and operating in lead roles for Preserve Events.

BICY fire personnel implemented 24 prescribed fire treatments for 28,848 acres (ac), participated in 30 wildfires 8,439 ac, and completed one mechanical treatment encompassing 26ac. The total treated acreage in Big Cypress NP was 37,313 ac.

While conducting landscape level treatments fire crews succeeded in clearing around 200 red cockaded woodpecker (RCW) trees, 1 bald eagle nest and over 40 structures. In addition to the landscape treatment areas, many smaller acreage areas of high priority were also completed in 2014. These high priority areas include:

- 3 units within the Raccoon Point long-term study area (824 ac).
- The interpretive swamp walk trail (200 ac). This area educates the youth of Collier County about the importance of fire on our ecosystems.
- 2 high Resource Management focus areas. One high priority area was previously excluded from treatments due to close proximity of Interstate 75 and unfavorable weather conditions (3198ac) and the other high priority area was inaccessible (323 ac).
- 2 treatments around the Sanctuary housing community (281 ac).

Throughout the year, the prescribed fire crew worked extensively with Resource Management staff, cooperators, and university researchers on over ten separate research, restoration and grant funded projects throughout BICY. Rx staff provided everything from ground support and logistical coordination to geospatial data and mapping. 2014 projects include coordinating efforts with:

- The University of Florida on the Bonneted bat study.
- Dr. Jim Snyder of the USGS to study the long-term effects of fire in pinelands at Raccoon Point.
- Resource Management staff for the Birdon Road hydrological restoration project.
- The University of Florida to study the effects of fire on cypress dome mortality.
- Resource management staff to target high priority burn areas for the benefit of the endangered Florida panther, threatened Big Cypress fox squirrel.

- Dr. Jim Burch of Resource Management to maximize fire treatments in exotic treatment areas.
- The US Fish and Wildlife Service to treat Red cockaded woodpecker (RCW) trees prior to fire treatments.
- The National Wild Turkey Federation (NWTF) to acquire a \$30,000 grant for prescribed fire.
- Interpretation staff to conduct the Big Cypress Swamp Heritage Festival. Many fire personnel assumed lead roles for this event.
- The Preserve Management Team and function in lead roles for the BICY Hurricane Preparedness Team.

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

Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plot Visits in 2014	Total Plots Installed
			2014	2014	2014		
Big Cypress	Pine	Photo point	7	3	99*	14	130
Big Cypress	Pine	FMH	0	0	0	0	3
Big Cypress	Prairie	Photo point	5	2	12	12	26
Big Cypress	Prairie	FMH	0	0	0	0	5
Big Cypress	Cypress Savannah	Photo point	0	0	4	4	8
Big Cypress	Cypress Savannah	FMH	0	0	0	1	1
Total			12	5	115*	31	74

*Includes vegetation plots at Raccoon Point Research Area.

Table 2. Fire Ecology Staffing 2013

Every firefighter at BICY, regardless of their position, contributed to monitoring, data collection and entry, suppression, and prescribed fire preparations. The people listed below work in Fuels or Fire Effects

TABLE 2. Fire Ecology Staffing 2014

Ecologist and Monitors	Starting Date	Ending Date	# of Pay Periods	READ Qualified (Yes or No)	Training and Development
Jay Thatcher	01/01/14	12/31/14	26	No	Completed – N/A Continuing – DIVS (t), ICTS3(t), HELB (t), SITL (t), S-300
Justin Turnbo	01/01/14	08/23/14	18	No	Completed – L-380, ICT3, S-300, FLA, and SAI Continuing -
Jill Waisley	01/01/14	12/31/14	26	No	Completed - ICT4, FIRB, SEMG Continuing -
Mindy Wright	01/01/14	12/31/14	26	No	Completed – L-380, ICT4, GISS Continuing – RxB2
Adam Kunce	01/01/14	4/30/2014	8	No	Completed – L-380, RxB2

TABLE 3. 2014 Management Objectives and Monitoring Results

Monitoring Unit	Management Objective	Monitoring Results	Objective Achieved?	Year Analysis Completed (Range of Data [Yrs] Included in Analysis)
Pine	Treat >70% of pinelands in BICY at least once within 7 years.	Fuel reduction treatments for the last 7 years impacted ~81% of pinelands in BICY at least once - 77,347 acres of pinelands treated (312 fires) within last 7 years, (95,964 total acres of pinelands throughout BICY)*	Yes	2014 (2007-2014)
	Reduce existing shrub height in pinelands >50% 1 year post burn (when compared to pre-burn)	Ocular Estimation at photopoint site determined that >50% reduction in shrub height occur 1 year post at 80% of the plots (n=4 plots visited one-year post treatment, 2 fires in pine plots)	Yes (larger sample size is needed)	2014 (2014)
Prairie	Treat >70% of prairies in BICY at least once within 7 years.	Fuel reduction treatments for the last 7 years impacted ~68% of prairies in BICY at least once - 45,954 acres of prairies treated (312 fires) within last 7 years, (66,757 total acres of prairies throughout BICY)*	No	2014 (2007-2014)
	Reduce existing shrub height in prairies >50% 1 year post burn	Ocular Estimation at photopoint site determined that >50% reduction in shrub height occur 1 year post at 50% of the plots (n=4 plots visited, 4 fires in prairie plots)**	Uncertain (larger sample size is needed to determine if objectives are being met)	2014 (2014)

Monitoring Unit	Management Objective	Monitoring Results	Objective Achieved?	Year Analysis Completed (Range of Data [Yrs] Included in Analysis)
All Units	Top-kill at least >75% of fine fuels and woody shrubs during each treatment	>75% total fuel reduction occurred at 100% of permanent monitoring plots. <i>(n=15 plots visited, 100% of plots had an average fuel reduction of 92% immediate post burn) ***</i>	Yes	2014 (2014)

* Total Acres were calculated using the Rx 2010 feature class values of the BICY Vegetation Layer in ArcGIS 10.1. This feature class includes the most recent vegetation layer updates.

**7 plots were actually visited, however, analysis was only conducted on 4 plots because the 3 remaining plots did not have woody shrub encroachment pre- or post-treatment.

*** Ocular estimates were used to explore pre- versus post burn fuel load reductions. A photoseries project to accurately display fuel loading is currently a work in progress at BICY.

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?
Big Cypress National Preserve	Yes	Officially signed 1/2014	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*
Big Cypress National Preserve	100%	100%	24	0	6	0

*Rx fires monitored for fire weather/behavior.

TABLE 6. Communicating Results

Park	# of Project Monitoring Reports completed in 2014	# of Annual meeting(s) with Park staff	# of Formal presentations of results	Do you use Minitab?*
Big Cypress National Preserve	1	4	4	Yes

* 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
Big Cypress National Preserve	yes	1	1	6	Raccoon Point Long-term pineland study, Cypress Dome Burn Severity Study, RCW monitoring, Big Cypress fox squirrel, Florida panther research, Bonneted bat research project

*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

BICY does not have an ecologist and currently does not have a Prescribed Fire Specialist. This workload is picked up by three prescribed fire staff members.

TABLE 8. Fire Ecologist 2014 Accomplishments/Focus Areas

Category	Percent Time	Accomplishments and/or areas of activities
Planning	8%	- EA - Monitoring plan - Hurricane planning team - Swamp Heritage Festival planning team
Meetings	8%	- Landowners - Inter-division - Preserve-wide
Interagency work	8%	- LANDFIRE - Coordinating with Bonneted bat research - Acquiring updated data from USGS for RCW and coordinating tree prep - Participation in reports for FWC
Wildfire assignments	12%	37 wildfires on BICY in 2014, 2 off unit assignments Positions held during wildfires by Rx staff members include: - HEGB, ICT4, ICT3, FIRB, ENGB, DIVS, HECM, PLDO and Duty Officer
Prescribed fire projects	14%	Planning for 26 Rx treatments totalling 30,581 ac - Scouting areas, examining fuel loads and on ground obs for expected fire behavior. - Completing Preserve visitors/hunters/interagency email and signage notifications - Incident Action Plans - Coordinating personnel and equipment - Requesting additional resources for neighboring agencies - Acquiring agency approval - Prepping lines and RCW trees - Treating RCW trees and structures - Completing large scale Rx treatments
Non-fire fuels projects	5%	- Coordinating with Resource management for upcoming exotic treatments - Treating around Fire Division structures - Mechanical treatment in Sanctuary
Data collection	10%	Travel to and from - Photopoints - Fuel samples - RAWs station maintenance
Data entry	11%	- Entering field data into database for photopoints and fuel samples - Digitizing fire data from GPS, uploading GPS data to IPADs for upcoming Rx and regularly updating resource management data - Maintenance NFPORS, WFMI, WFDSS, national requests for GIS data, and WIMS
Data analysis	5%	- Current water level and severity analysis - Fuel moisture samples - Severity

		- Fire history
Supervision/Admin	3%	- Lead monitor hired two seasonal monitors for 2015, payroll, travel authorization/vouchers, purchasing, etc.
Training	4%	- Preserve, Fire Division and NWCG required annual refreshers
Miscellaneous	5%	- Reviewed one burn plan - Daily physical training
Writing Grants	7%	National Wild Turkey Federation Grant and AmeriCorps

E. 2015 Direction

We will continue to revamp the way we prioritize our burn treatments and enhance our monitoring program.

Weighted values are used to determine burn treatment prioritization areas. Weighted values include:

- Vegetation type.
- Departure from desired fire return interval.
- Distance to roads and structures.
- Departure for desired condition class.

Then inter-park and inter-agency meetings are held to identify additional high priority areas that may not be captured in the original weighted criteria. This method also enables “buy in” power from outside entities. In the future, we anticipate a continuation of this sort of prioritization in order maximize our Prescribed fire treatments.

The monitoring program will undergo many changes in 2015. We plan to begin development of the BICY photoseries/fuel loading project and conversion of all existing data into a FFI database. This will allow us to better communicate our results to other entities and improve analysis of our monitoring objectives.