

Burned Area Emergency Response (BAER) Plan Mud Lake Complex

Unit: National Park Service, Big Cypress National Preserve, FL

Date: May - July 2015

Incident Number: Mud Lake Complex: PFFSJP9X0

- Ellison Fire
- Square Fire



BIG CYPRESS MANAGEMENT

Congress passed Public Law 93-440, in 1974, to establish Big Cypress National Preserve. The intent was to protect the ecological integrity and recreational values of the area while allowing certain private land uses to the extent those uses do not interfere with the basic purpose of the Preserve. The act states that the Preserve, as a unit of the National Park system, is to be administered in a manner that will ensure "...the preservation, conservation and protection of the natural, scenic, hydrologic, floral and faunal, and recreational values of the Big Cypress Watershed in the State of Florida and to provide for the enhancement of public enjoyment thereof..."

The Big Cypress National Preserve (729,000 acres) was established to protect the watershed values of the Big Cypress Swamp while integrating multiple uses with conservation and preservation including:

- A dynamic mixture of tropical and temperate plant communities that are home to a diversity of wildlife. There are 33 T&E animal and 120 T&E plant species.
- Serving as home and refuge to many people throughout time including the Miccosukee Tribe of Indians of Florida, the Seminole Tribe of Florida and early settlers.
- Wildland urban interface with over 200 single-family dwellings and backcountry camps, that include over 1500 structures, registered and permitted to remain under the restrictions of the Preserve's enabling legislation.
- 26 American Indian villages and home sites occupied by Miccosukee, Seminole, and Independent Indians in the Preserve.
- The largest single in-holding, the Dade-Collier Training and Transition Airport, whose initial construction was a major impetus for creating the Preserve.

FIRE BACKGROUND

The Mud Lake Fire Complex occurred at Big Cypress National Preserve (BICY) was comprised of several fires caused by lightning in May and June 2015. The first fire was detected on May 9th. Due to concerns with smoke on I-75 the incident transitioned to a Type 1 team on May 14. Big Cypress National Preserve communicated to the Red Team that the whole landscape would be treated as a primitive area using Minimum Impact Strategies and Tactics (MIST) within the planning area of approximately 60,000 acres that was defined by the Preserve. Access to fires was difficult for trucks and engines, and required foot travel, swamp buggies, and all-terrain utility vehicles. The fires required intensive air support for reconnaissance and suppression, and the incident was staffed with more than 350 fire personnel per day at its operational peak. The fires consumed vegetation and duff in Preserve habitats which primarily include: dense, coarse grass; saw palmetto; pine; and cypress domes, all of which are fire-adapted ecosystems that were under stress from prolonged extreme drought. The incident transitioned to the Southern Area Type 2 Gold Team on May 28th and back to a Type 3 structure with an ICT3 and support staff from the Gold Team on June 4th. The fire transitioned to a Type 4 organization on June 11th and was declared contained on July 1st. The fire burned 35,321 acres total.



REASON FOR PLAN

This Burned Area Emergency Response Plan has been prepared in accordance with Department of the Interior and National Park Service policy. This plan provides emergency stabilization recommendations for all lands burned within the Mud Lake Complex Fire perimeter and downstream impact areas including: public lands administered by the National Park Service and other jurisdictions if necessary. The primary objectives of the Mud Lake Complex Fire Burned Area Emergency Response Plan are:

- To prescribe cost effective post-fire stabilization measures necessary to protect human life, property, and critical cultural and natural resources.
- To promptly stabilize and prevent further degradation to affected resources on lands within the fire perimeter or downstream impact areas and mitigate damages caused by fire suppression operations in accordance with approved land management plans and policies, and all relevant federal, state, and local laws and regulations.

This plan addresses emergency stabilization treatments. The burned area response team consisted of Dennis Bartalino (Chief of Facilities Management), Jordan McKnight (Fire Management Officer), and Robert Sobczak (Hydrologist). Jason Williams (Trails and Wilderness Specialist, Prescott National Forest) was ordered as a BAER Team member and spent five days assessing off road vehicle trails with BICY maintenance worker Bill Mason. Resource Advisors, Carrie Sekerek (Supervisory Biologist, Ocala National Forest) and Carol Fields (Lead Fire Effects Monitor, Natchez Trace Parkway) evaluated numerous resources and their report and findings can be found in Appendix A.

RESORUCE IMPACTS AND THREAT TO RESOURCES

Off Road Vehicle Trails Assessment - Completed by Jason Williams, READ, USDA Forest Service, Southwestern Region

Five days were spent in the field with Preserve maintenance worker Bill Mason assessing as many trails as possible in and around the Ellison Fire as it contains many of the preserve's higher use trails. It was not possible to visit all trails impacted by the fires and fire operations activities, as well over 100 miles of trails were used and burned during this incident.

Hazard Trees: Land managers have a responsibility to assess and remove trees that have become hazardous due to fires in areas of public use and in areas where employees will be working. Observation and information from local resources suggests that hazard trees are not a tremendous issue because many of the burned trees harden and stay standing for years providing excellent wildlife habitat. Still an assessment must be completed to determine which trees are an eminent threat to employee and public safety. Burned trees along a trail corridor do not automatically become hazard trees to remove. Trees that clearly and obviously will fall across the trail or are in close proximity and appear unstable should be removed in areas where crews will be working to restore the trail tread or at trail junctions or anywhere else that the public or employees would be inclined to stop along the trail. The amount and type of hazard trees to be removed should be determined through discussions with those qualified employees completing the assessment and trail managers who understand use patterns and maintenance needs. All of the Hazard Tree Assessment work should be completed as soon as possible and before the area is reopened to the public.



5 foot root from
burned tree sticking
into trail 6 inches off
the ground, passing
traffic had been
riding over this.

½ burned at base and
half burned 20 feet up

Hazard tree along the Monument Trail, fire management crews removed this tree

Hazard tree along the Monument Trail, fire management crews removed this tree

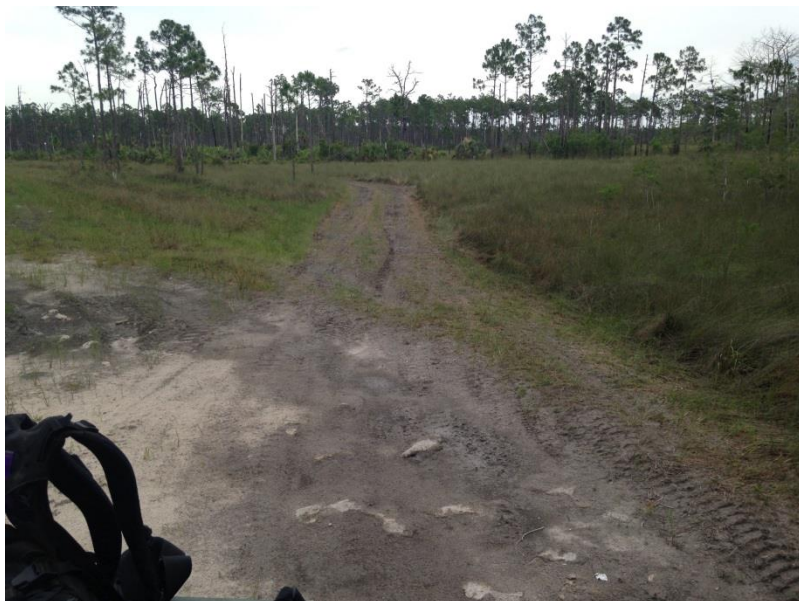


Hazardous Trees along the North end of the Boot Hill West Trail

Signs: In efforts to quickly reopen the area to the public and help mitigate hazard tree risks and other resource issues the preserve should consider using trail signing such as the examples provided here to be placed where trails enter the burned area. Generally these signs can be removed a few years later after conditions stabilize. Of course the NPS logo can replace the USFS one. These signs are provided by RockArt Signs and Markers <http://www.rockartsigns.com/> out of Arizona. It appears that the preserve could adequately sign the Ellison and Square fires with 10-15 signs. These signs should be purchased with emergency stabilization funds.



The preserve has put a tremendous amount of effort into signing non-system and secondary closed trails as well as using signs to reduce route braiding in prairies and other muddy/soft areas where vegetation has been impacted and/or denuded. This work has coincided with the trail maintenance work so that a good option is provided for users after the preserve staff has closed braided routes off. Some of these signs have been burned or removed/run over during fire management operations and should be replaced immediately to protect the reclaiming nature of many of these old tracks. Additionally there are places where fire operations buggies were used to create mash lines that should be signed to prevent new routes from forming. Lastly, many turns along existing trails in prairies were shortcut by fire operations vehicles that will be most easily be mitigated using signs. A tally of needed signs was kept during the assessment of the Buckskin Trail, which indicated at least 25 signs were needed. This work will best be accomplished using existing preserve personnel. The signing needs were generally assessed taking a tally as travel was completed along each route and a qualitative description was assigned to capture the signing needs based on general observations as limited time prevent GPSing and documenting each location where signs are needed. A trail with heavy signing needs like Buckskin was estimated at \$1,000/mile to cover personnel time and supplies. See spreadsheet for more detail.



Shortcutting of turn on Buckskin Trail, system trail continues to left, sign needed to prevent public travel



Melted Sign on Little Deer Trail



Worst brush on Little Deer Trail

Brushing: Brushing activities are being requested for trails that were within the fire areas. The brushy character of some of the lesser used trails resulted in burned vegetation laying over into the trail tread and making travel difficult, unpleasant and in some instances unsafe. The safety aspect is related to burned branches from brushing sticking directly into the trail at a height where they can act as a spear for operators and passengers of off road vehicles. Again conditions were assessed and given a qualitative rating and costs were derived. Heavy brush was costed at \$3,000/mile, moderate at \$1,500/mile, and

light at \$750/mile. This activity is needed separately from tread maintenance because

many of the interior trails will not receive tread maintenance for years to come and in order to keep private holdings safely accessible the trails will need to be brushed.

Tread Repair: The Big Cypress National Preserve has hundreds of miles of Off Road Vehicle (ORV) trails on the preserve and have been working diligently to improve these trails to be in compliance with various permitting requirements, provide private landowner access, and allow general members of the public to enjoy the backcountry of the preserve. This trail assessment paid particular attention to documenting trail impacts related to the vehicles used during fire management activities and the tread repair request is based on those impacts and not general maintenance needs. Dennis Bartalino, Preserve Chief of Maintenance provided general figures for maintenance costs for contracting the work and using preserve staff to complete. To pay a contractor to maintain one mile of ORV trail on the preserve cost about 59k/mile; to use preserve staff the cost is about 32k/mile. Most all of the trails impacted during the fires are remote trails and have significant mobilization costs, just as was experienced by fire management personnel during the incident. 18k/mile was estimated to make repairs to trails impacted by fire management operations as some sections of trail held together well and others got heavily damaged, which will not require the same amount of work as general maintenance. Once again a qualitative assessment based on field inventory was given and cost was derived from this.

The Buckskin Trail:

Trail Tread: 7 miles of this trail was newly improved by preserve crews prior to the fire, they were working on it when the fire started. This segment of trail sustained heavy vehicular traffic during fire operations. Normally this segment of road is only traveled by OHVs, UTVs, and buggys with a speed limit of 15 mph. The fire management traffic consisted of buggies with water tanks, full size trucks and engines, and many UTVs. This heavy and abnormal traffic caused damage to the newly surfaced areas by displacing the filled material outside of the trail prism. Other trails in the preserve used for fire operations access did not sustain this level of damage as they had time to setup and receive normal traffic for a year or more and sit through the wet season 60 day closure, making them significantly more resistant to damage. In many spots the material was displaced into the surrounding cypress and other

vegetation making retrieval unfeasible without severe damage to vegetation. Repairs will consist of additional hauling of material and grading along many segments of this trail; some repairs can be made by grading the existing material and surface. The incident agreed to purchase 1,000 yards of material to assist with these repairs. Discussions with local trails specialist indicate that this repair work will require about 4 weeks of work by 2-3 operators with off road dumps and tractor with box scraper. With the limited time available the necessary repairs will not be able to be completed before the wet season begins.



Buckskin Trail, Fresh material displaced from tread into cypress trees



Buckskin Trail, Some material will be reclaimed from this spot, but much of it has been lost inside the cypress



Buckskin Trail, braiding and fresh material pushed outside of tread



Buckskin Trail, material is bermed up and rutting has occurred



Buckskin Trail, evidence of recent maintenance and heavy traffic cutting turn, material being displaced.

Boot Hill West: This trail was completely burned and was rough before the fire, but passable. No tread repair funds are being requested as fire traffic did not use this trail heavily. The primary concern on this trail is signing and hazard tree assessment and removal.

Concho Billie Trail: This 27 mile long trail was only burned along 1.3 miles of its length and used for access for 10 miles of its length. This trail had been maintained the previous year and held together exceptionally well, but still had areas of impact from fire traffic. One of the largest contributors to material displacement and rutting was what appears to be dually tire tracks left from type 6 engines. Some shortcutting was observed and some displacement of material that appeared to be recent. Repairs will be much easier than those required along the buckskin trail.



Type 6 Engine tracks on Concho Billie



Concho Billie Trail, short cutting



Concho Billie Trail, displaced material

Little Deer Trail: This trail was completely within the Ellison fire. It received little fire traffic during the incident. The tread has no significant impacts. There are brushing needs and hazard tree assessments as well as some burned signs. See photo above for worst brush conditions along trail

Mudd Lake Trail: This trail was not traveled as preserve local knowledge indicated we would not make it through in a UTV and it was extremely rough. It surely will need brushing and hazard tree assessment

Mudd Lake Bypass Trail: This trail is generally in good shape throughout its length, except for the photo shown on the front page of this report which shows a section about 50-75 feet long that has been wallowed out and a bypass was created during the incident through the trees. Fixing this section will require equipment to mobilize in the long distance from Concho Billie.

North Little Deer Trail: This is a lightly used trail in the northern portion of the fire. It has heavily burned brush along its entire length making travel difficult and many areas of timber that the fire burned hot in creating the potential for many snags. We moved and cut a few out just to get through.

Stump Camp Trail: This trail is remote and fully burned. During the assessment we traveled only a portion of it due to time. It will require brushing to make it fully passable.

Monroe North Trail: This trail leaves from Monument Campground and served as the primary access for fire personnel to gain access to the Ellison fire. Its 2.5 miles were similarly impacted as the Buckskin Trail and will require maintenance to restore material onto the road surface to pre-fire conditions

Sandy Road Trail: About 1 mile of this trail is part of the main access that leads into the Buckskin Trail and will require heavy maintenance to bring the trail back to pre-fire conditions. The work will primarily consist of grading and material hauling, some locations will allow displaced material to be saved.

Monument Trail: 4.6 miles of this trail were burned on one side and the other 5.4 miles was not used as a primary access route and so very little damage occurred on the southern segment. The burned segment lost signs and braiding occurred due to fire suppression traffic. Hazard tree assessment and brushing will need to occur along the burned section of this trail.



Worst brush on Monument Trail

Oasis Trail: This trail received heavy traffic to access both the Ellison, Bluebird, and Baxter Fires. The trail is in decent shape, but evidence of fresh material displacement is present.

Monument Bypass Trail: This trail received heavy fire traffic and some braiding and rutting developed during this activity. Where the fire burned to its edge it will need brushing and at its junction with the Buckskin Trail 2 different closed routes were driven on and used to access the fire area that will need to be closed and possibly rehabilitated.



Monument Bypass Trail, widening of the trail tread and displacement of wet soils

Conclusion: During this incident approximately 113 miles of trail were either burned or used to access the fires. These trails constitute critical infrastructure for all functions on the Big Cypress National Preserve and take tremendous effort to maintain in suitable condition for management activities and public enjoyment. This incident will have set the trails program back by a few years if there was not an opportunity to seek the requested funds.

Other Resources Assessed – See READ report Appendix A

Watershed/Hydrology

Cultural Heritage Resources

Invasive species

Wilderness

Wildlife

- Red-cockaded Woodpeckers
- Panther
- Florida Bonneted Bat
- Big Cypress Fox Squirrel
- Woodstork

Emergency Fire Rehabilitation Treatments: THIS REQUEST

Treatments	Fire	Years	Source ¹	Suppression	ES (7/01/15 7/01/16)	Yr 1 BAR (2016)	Yr 2 BAR (2017)	Yr3 BAR (2018)	Total
Remove Hazard Trees	Ellison	2015	ES		\$92,622				\$92,622
Remove debris & hazardous materials from burned area	Ellison	2016	ES		\$71,574				\$71,574
Remove debris & hazardous materials from burned area	Square	2016	ES		\$20,531				\$20,531
Trail tread repair (Heavy)	Square	2015	ES		\$42,973				\$42,973
Sign replacement (Light)	Ellison	2016	ES		\$3,865				\$3,865
Total ES					\$231,565				\$231,565
Trail brushing (Heavy)	Ellison	2016, 2017, 2018	BAR			\$19,450	\$19,450	\$19,450	\$58,350
Trail brushing (Moderate)	Ellison	2016, 2017	BAR			\$15,930	\$15,930		\$31,860
Trail brushing (Light)	Ellison	2016, 2017	BAR			\$5,445	\$5,445		\$10,890
Sign replacement (Moderate)	Ellison	2016	BAR			\$10,132			\$10,132
Total BAR						\$50,957	\$40,825	\$19,450	\$111,232
							Total ES and BAR		\$342,797
Trail tread repair (Heavy)	Ellison	2016, 2017, 2018	Suppression	\$233,240					\$233,240
Trail tread repair (Moderate)	Ellison	2016, 2017, 2018	Suppression	\$55,801					\$55,801
Trail tread repair (Light)	Ellison	2016, 2017, 2018	Suppression	\$13,700					\$13,700
Sign replacement (Heavy)	Ellison	2016	Suppression	\$5,000					\$5,000
					\$307,741				\$307,741
ES = Emergency Stabilization, BAR= Burned Area Rehabilitation, Suppression = Fire Suppression Account									

SUMMARY OF ACTIVITIES AND COSTS

The summary of activities and cost table below identifies emergency stabilization costs proposed for funding.

EMERGENCY STABILIZATION ACTIVITIES COST SUMMARY TABLE ELLISON & SQUARE FIRES

Spec #	Title	Unit	Unit Cost	# of Units	Work Agent	Cost
1	Hazardous tree removal (Ellison Fire)	Linear mile	\$2,094	42.16	FA	\$92,622
2	Trail tread repair (Heavy) – (Ellison)	Linear mile	\$21,798	10.7	FA	\$233,240
3	Trail tread repair (Moderate) – (Ellison Fire)	Linear Mile	\$7,815	7.14	FA	\$55,799
4	Trail tread repair (Light) – (Ellison)	Linear mile	\$1,921	7.13	FA	\$13,700
5	Trail brushing (Heavy) – (Ellison Fire)	Linear mile	\$3,300	17.68	FA	\$58,350
6	Trail brushing (Moderate) – (Ellison Fire)	Linear mile	\$2,093	15.22	FA	\$31,860
7	Trail brushing (Light) – (Ellison Fire)	Linear mile	\$616.00	17.68	FA	\$10,890
8	Sign replacement (Heavy) - (Ellison Fire)	Linear mile	\$1,027	15.1	FA	\$15,510
9	Sign replacement (Moderate) - (Ellison Fire)	Linear mile	546.19	18.55	FA	\$10,132
10	Sign replacement (Light) - (Ellison Fire)	Linear mile	496.86	14.36	FA	\$3,865
11	Remove debris & hazardous materials from burned area (Ellison Fire)	Acre	\$35,787	2.0	FA	\$71,574
12	Trail tread repair (Heavy) – (Square Fire)	Linear mile	\$42,973	1.0	FA	\$42,973
13	Remove debris & hazardous materials from burned area (Square Fire)	Acre	\$10,265	0.2	FA	\$20,531

INDIVIDUAL SPECIFICATION

TREATMENT/ACTIVITY NAME	Remove hazard trees	PART E SPECIFICATION #	1
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2015
NFPORS TREATMENT TYPE *	N/A	WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 42.16 miles of trails were impacted by the fires. Hazardous trees that are in danger of falling into the adjacent off road vehicle/hiking trails will be removed. A track hoe excavator with extended boom length will be used to fell the trees. Mechanical felling in this manner is deemed to be the safest and most expedient approach due to the instability of these trees. Additionally, trees that have fallen on to trail surfaces will be removed. Removal of hazardous trees will protect off road vehicle users and hikers. Protect water quality by maintaining wetland area sheet flows.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-10 Engineer Equipment Operator @ \$32/hr x 960/hrs x 2 people	\$61,440
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
Lease long boom track hoe excavator @ 36.10/hr x 720/hrs	\$25,992
GSA fleet leased pickup truck 1 each @ \$350.00 per month x 3 months	\$1,050
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel fuel for leased excavator 20 gallons per day x 60 days x 3.45 per gallon	\$4,140
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY_15	08/01/15	10/31/15	F	Linear mile	2094.50	42.16	\$ 92,622
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

Mud Lake Complex – BAER Plan

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.			
TREATMENT/ACTIVITY NAME	Trail tread repair (Heavy)	PART E SPECIFICATION #	2
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016 FY 2017 FY 2018
NFPORS TREATMENT TYPE *	N/A	WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 10.7 miles of trail impacted by the Ellison fire is in need of heavy tread surface repair. The repair activities include, pulling displaced limerock materials back on to the trail surface, hauling replacement limerock in via off-road dump trucks, preparing treatment areas and installing geotextile material. Back-filling treatment area and final grading to swamp elevation. The entire 10.7 miles of trail will be finished graded to ensure all trail surfaces are not above swamp elevation. NPS owned box blade tractor will be utilized for all grading operations

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-10 Engineer Equipment Operator @ \$32/hr x 640 x 2 people	\$40,960
WG-8 Equipment Operator @ \$30.50 x 480 x 2 people	\$39,040
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
Lease front end loader @ \$22.00/hr x 960/hrs	\$21,120
Lease off road dump truck @ \$60/hr x 960/hrs x 2 trucks	\$57,600
GSA fleet leased pickup truck 12each @ \$350.00 per month x 3 months	\$2,100
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel fuel for leased equipment 20 gallons per day x 80 days x 3.45 per gallon x 3 pieces of equipment	\$12,420
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
Crushed limerock fill delivered 2,000 cubic yards (c.y.) @ \$30.00 per c.y.	\$60,000
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 - 18	12/ 01/15	09/30/2018	F	Linear mile	\$21,798	10.7	\$ 233,240
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.			
TREATMENT/ACTIVITY NAME	Trail tread repair (Moderate)	PART E SPECIFICATION #	3
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016 FY 2017 FY 2018
NFPORS TREATMENT TYPE *	Mechanical removal	WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 7.14 miles of trail impacted by the Ellison fire is in need of moderate tread surface repair. The repair activities include, pulling displaced limerock materials back on to the trail surface. The entire 7.14 miles of trail will be finished graded to ensure all trail surfaces are not above swamp elevation. NPS owned box blade tractor will be utilized for all grading operations
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LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-10 Engineer Equipment Operator @ \$32/hr x 560 x 2 people WG-8 Equipment Operator @ \$30.50 x 560 x 2 people	\$35,840 \$17,080
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM

GSA fleet leased pick up truck @ \$87.50 per week x 14 weeks	\$1,225
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel fuel for NPS owned equipment 20 gallons per day x 24 days x 3.45 per gallon	\$1,656
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 - 18	12/ 01/15	09/30/2018	F	Linear mile	\$7,815	7.14	\$ \$55,801
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TREATMENT/ACTIVITY NAME	Trail tread repair (Light)	PART E SPECIFICATION #	4
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016 FY 2017 FY 2018
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

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Approximately 7.13 miles of trail impacted by the Ellison fire is in need of light tread surface repair. The entire 18.55 miles of trail will be finished graded to ensure all trail surfaces are not above swamp elevation. NPS owned box blade tractor will be utilized for all grading operations

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-10 Engineer Equipment Operator @ \$32/hr x 320/hrs	\$10,240
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pick up truck @ \$87.50 per week x 8 weeks	\$700.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel fuel for NPS owned equipment 20 gallons per day x 40 days x 3.45 per gallon	\$2,760
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 - 18	12/ 01/15	09/30/2018	F	Linear mile	\$1,921	7.13	\$ \$13,700
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, **E** = Equipment **M** = Materials/Supplies, **T** = Travel, **C** = Contract, **F** = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TREATMENT/ACTIVITY NAME	Trail brushing (Heavy)	PART E SPECIFICATION #	5
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016 FY 2017 FY 2018
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 17.68 miles of trail impacted by the Ellison fire is in need of heavy brushing. Trail brushing will be performed mechanically with NPS owned machete boom tractor mower, and by hand where inaccessible to equipment. NPS day-labor crew will perform all brushing work.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 480/ hrs x 2 people WG-5 Maintenance Worker @ \$22/hr x 480/hrs x 2 people	\$30,240 \$21,120
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pick up truck @ \$87.50 per week x 12 weeks	\$1,050
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel for machete boom tractor/mower 20 gallons/day x 60 days x \$3.45 gallon Unleaded gasoline for NPS swamp buggy 10 gallons/day x 60 days x \$3.00/gallon	\$4,140 \$1,800
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 - 17 - 18	10/ 01/15	09/30/2018	F	Linear mile	\$3,300	17.68	\$ \$58,350

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

TREATMENT/ACTIVITY NAME	Trail brushing (Moderate)	PART E SPECIFICATION #	6
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016 FY 2017
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

Approximately 18.55 miles of trail impacted by the Ellison fire is in need of moderate brushing. Trail brushing will be performed mechanically with NPS owned machete boom tractor mower, and by hand where inaccessible to equipment. NPS day-labor crew will perform all brushing work.

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 320/ hrs x 2 people WG-5 Maintenance Worker @ \$22/hr x 320/hrs x 2 people	\$20,160 \$7,040
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pick up truck @ \$87.50 per week x 8 weeks	\$700.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel for machete boom tractor/mower 20 gallons/day x 40 days x \$3.45 gallon Unleaded gasoline for NPS swamp buggy 10 gallons/day x 40 days x \$3.00/gallon	\$2,760 \$1,200
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 - 17	10/ 01/15	09/30/2017	F	Linear mile	\$2,093	15.22	\$ \$31,860
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
--

TREATMENT/ACTIVITY NAME	Trail brushing (Light)	PART E SPECIFICATION #	7
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016 FY 2017
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 17.68 miles of trail impacted by the Ellison fire is in need of light brushing. Trail brushing will be performed mechanically with NPS owned machete boom tractor mower, and by hand where inaccessible to equipment. NPS day-labor crew will perform all brushing work.
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LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 160/ hrs x 2 people	\$5,040

WG-5 Maintenance Worker @ \$22/hr x 160/hrs x 2 people	\$3,520
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pick up truck @ \$87.50 per week x 4 weeks	\$350.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel for machete boom tractor/mower 20 gallons/day x 20 days x \$3.45 gallon	\$1,380
Unleaded gasoline for NPS swamp buggy 10 gallons/day x 20 days x \$3.00/gallon	\$600.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 – 17	10/ 01/15	09/30/2017	F	Linear mile	\$616.00	17.68	\$10,890
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TREATMENT/ACTIVITY NAME	Sign replacement (Heavy)	PART E SPECIFICATION #	8
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED	N/A	IMPACTED T&E	N/A

COMMUNITIES AT RISK		SPECIES	
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WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 15.1 miles of trail impacted by the Ellison fire is in need of heavy sign replacement and/or repair. Signs have been destroyed due to fire or run over by fire vehicles. Signs fabrication will be contracted out. NPS Day-labor staff will repair/replace signs.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 160 hrs WG-5 Maintenance Worker @ \$22/hr x 160 hrs	\$5,040 \$3,520
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pick up truck @ \$87.50 per week x 4 weeks	\$350.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Signs fabrication, posts.construction materials	\$6,000
Unleaded gasoline for NPS swamp buggy 10 gallons/day x 20/days x \$3.00/gallon	\$600.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 -	12/ 01/15	09/30/2018	F	Linear mile	\$1,027	15.1	\$ \$15,510
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	

5. No cost estimate required - cost charged to Fire Suppression Account	
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P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel,

TREATMENT/ACTIVITY NAME	Sign replacement (Moderate)	PART E SPECIFICATION #	9
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 18.55 miles of trail impacted by the Ellison fire is in need of moderate sign replacement and/or repair. Signs have been destroyed due to fire or run over by fire vehicles. Signs fabrication will be contracted out. NPS Day-labor staff will repair/replace signs.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 120 hrs WG-5 Maintenance Worker @ \$22/hr x 120 hrs	\$3,780 \$2,640
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pickup truck @ \$87.50 per week x 3 weeks	\$262.50
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Signs fabrication, posts.construction materials	\$3,000
Unleaded gasoline for NPS swamp buggy 10 gallons/day x 15/days x \$3.00/gallon	\$450.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
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FY 16 - 17	12/ 01/15	09/30/2017	F	Linear mile	\$546.19	18.55	\$ \$10,132
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TREATMENT/ACTIVITY NAME	Sign replacement (Light)	PART E SPECIFICATION #	10
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 14.36 miles of trail impacted by the Ellison fire is in need of light sign replacement and/or repair. Signs have been destroyed due to fire or run over by fire vehicles. Signs fabrication will be contracted out. NPS Day-labor staff will repair/replace signs.
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LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 40/hrs WG-5 Maintenance Worker @ \$22/hr x 40/ hrs	\$1,260 \$880.0
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
GSA fleet leased pick up truck @ \$87.50 per week x 2 weeks	\$175.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
Signs fabrication, posts.construction materials	\$1,400

Unleaded gasoline for NPS swamp buggy 10 gallons/day x 5/days x \$3.00/gallon	\$150.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16 -	10/ 01/15	11/01/2015	F	Linear mile	\$269.15	14.36	\$ \$3,865
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TREATMENT/ACTIVITY NAME	Hazardous Material/debris removal	PART E SPECIFICATION #	11
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 16
NFPORS TREATMENT TYPE *		WUI? Y / N	
IMPACTED COMMUNITIES AT RISK	Wetland	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

Equipment such as swamp buggy's, generators, air conditioners etc. were burned over. This equipment contains batteries which have been melted down, crankcase oils, a drum containing what appears to be a heavy petroleum type grease and multiple fuel tanks and cans. All potentially hazardous materials and debris will be removed both mechanically and by hand to protect rupturing unstable petroleum containing items. A Chemical Hygienist will be escorted to the site to assess hazardous materials and to recommend safe removal techniques, and to assist with chemical handling i.e. containers that may need to be over-packed

into a stable container for transport. All materials will be transported via off road dump trucks to the front country and disposed of per local, state and federal requirements.

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG -10 Equipment Operator @ \$32/hr x 320/hrs x 2 people WG – 5 Maintenance Worker @ 22/hr x 320/hrs x 2 people	\$20,480 \$14,080
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
Lease off road dump truck @ 23.43/hr x 320/hrs x 2 Lease front end loader @ 21.75/hr x 320/hrs GSA leased pickup @87.50/week x 8 weeks	\$14,994 \$6,960 \$700.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel fuel 20 gallons/day x 40/days x 3.45/gallon	\$2,760
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
Chemical Hygienist @ \$90.00 x 40/hrs Hazardous material disposal fees @ 1 lump sum	\$3,600 \$8,000
TOTAL CONTRACT COST	\$11,600

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16	01/02/2016	03/01/2016	F	Acre	\$35,787	2.0	\$71,574
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

TREATMENT/ACTIVITY NAME	Trail tread repair heavy. (Square Fire)	PART E SPECIFICATION #	12
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2015
NFPORS TREATMENT TYPE *		WUI? Y / N	Y

IMPACTED COMMUNITIES AT RISK	N/A	IMPACTED T&E SPECIES	N/A
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WORK TO BE DONE (describe or attach exact specifications of work to be done):

Approximately 1.0 miles of trail impacted by the Ellison fire is in need of heavy tread surface repair. The repair activities include, pulling displaced limerock materials back on to the trail surface, hauling replacement limerock in via contracted dump trucks, preparing treatment areas and installing geotextile material. Back-filling treatment area and final grading to swamp elevation. The entire 1.0 miles of trail will be finished graded. Bundschu Levee – 0.2 miles Bunschu Grade – 0.2 miles Nobles Grade – 0.6 miles
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LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 40/ hrs WG-5 Maintenance Worker @ \$22/hr x 40/hrs	\$1,260 \$880.00
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
Lease Rubber tire combination backhoe loader @ \$31.25/hr x 40/hrs Lease off road dump truck @ \$75/hr x 40/hrs	\$1,250 \$3,000
GSA fleet leased pickup truck @ \$87.50 per week x 1 week	\$87.50
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel for off road truck and backhoe 20 gallons/day x 5 days x \$3.45 gallon	\$345.00
Unleaded gasoline for NPS swamp buggy 10 gallons/day x 5 days x \$3.00/gallon	\$150.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
Limerock delivered @ \$30.00/cubic yard x 1,200 cubic yards	\$36,000
TOTAL CONTRACT COST	\$36,000

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMEN	PLANNED COST
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TS							
FY 16 —	10/ 01/15	09/30/2016	F	Linear mile	\$42,97 3	1.0	\$42,973
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TREATMENT/ACTIVITY NAME	Hazardous material and debris removal	PART E SPECIFICATION #	13
NFPORS TREATMENT CATEGORY*		FISCAL YEAR(S) (list each year):	FY 2016
NFPORS TREATMENT TYPE *		WUI? Y / N	Y
IMPACTED COMMUNITIES AT RISK	wetland	IMPACTED T&E SPECIES	N/A

WORK TO BE DONE (describe or attach exact specifications of work to be done):

An area approximately 0.2 containing miscellaneous debris was burned over by the Square Fire. This equipment contained batteries and crankcase oil. The debris will be removed by hand and mechanically as condition of material allows. An off road dump truck will be used to transport the material to the front country where it will be classified and designated for recycling and/or hazardous material disposal. A Chemical Hygienist will be escorted to the site to evaluate and recommend disposal procedures. The area will be scraped down to remove possible heavy metal contaminants, and the material manifested and transported by a hazardous waste service.
--

LABOR, MATERIALS AND OTHER COST:

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
WG-8 Equipment Operator @ \$31.50/hr x 80 hrs x 2 people WG-5 Maintenance Worker @ \$22/hr x 80 hrs x 2 people	\$5,040 \$3,520
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	COST / ITEM
Leased front end loader @ \$45.83 x 80/hrs	\$3,666

GSA fleet leased pic up truck @ \$87.50 per week x 2 weeks	\$175.00
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	COST / ITEM
B-5 diesel fuel 20 gallos/day x 10 days x \$3.45/gallon	\$690
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	COST / ITEM
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X #Hours X #Fiscal Years = Cost/Item):	COST / ITEM
Chemical Hygienist @ \$90.00/hr x 16/hrs	\$1,440
Hazardous material disposal 1 lump sum @ \$6,000	\$6,000
TOTAL CONTRACT COST	\$7,440

SPECIFICATION COST SUMMARY

FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNIT S	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
FY 16	12/ 01/15	12/15/2015	F	Acre	\$10,265	0.2	\$ \$20,531
TOTAL							

Work Agent: C=Coop Agreement, F=Force Account, G=Grantee, P=Permittees, S=Service Contract, T=Timber Sales Purchaser, V=Volunteer

SOURCE OF COST ESTIMATE

1.	Estimate obtained from 2-3 independent contractual sources.	
2.	Documented cost figures from similar project work obtained from local agency sources.	C
3.	Estimate supported by cost guides from independent sources or other federal agencies	
4.	Estimates based upon government wage rates and material cost.	
5.	No cost estimate required - cost charged to Fire Suppression Account	

P = Personnel Services, E = Equipment M = Materials/Supplies, T = Travel, C = Contract, F = Suppression

RELEVANT DETAILS, MAPS AND DOCUMENTATION INCLUDED IN THIS REPORT:

List Relevant Documentation and Cross-Reference Location within the Accomplishment Report.
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TOTAL COST BY JURSDICTION

JURISDICTION	UNITS TREATED	COST
Big Cypress National Preserve		\$661,046
	TOTAL COST	\$661,046

APPENDIX A

RESOURCE ADVISOR REPORT

CURRENT FOR OPERATIONAL PERIODS MAY 13-JUNE 10 , 2015

MUD LAKE COMPLEX: PFFSJP9X0

WILSON CYPRESS FIRE: JRL5

BAXTER FIRE: JRG4

WINDMILL TRAM FIRE: JR2

Prepared by Mud Lake Complex Fire Incident Resource Advisor (READ):

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INTRODUCTION AND INCIDENT SUMMARY:

This document was produced by the Mud Lake Fire Complex resource advisors (READs), Carrie Sekerak and Carol Fields. Sekerak collected the initial assessments until May 27th at which time, Carol transitioned in as the incident READ.

The Mud Lake Fire Complex was comprised of several fires caused by lightning in May and June 2015. The first fire was detected on May 9th. Due to concerns with smoke on I-75 the incident transitioned to a Type 1 team on May 14. Big Cypress National Preserve communicated to the Red Team that the whole landscape would be treated as a primitive area using Minimum Impact Strategies and Tactics (MIST) within the planning area of approximately 60,000 acres that was defined by the Preserve. Access to fires was difficult for trucks and engines, and required foot travel, swamp buggies, and all-terrain utility vehicles. The fires required intensive air support for reconnaissance and suppression, and the incident was staffed with more than 350 fire personnel per day at its operational peak. The fires consumed vegetation and duff in Preserve habitats which primarily include: dense, coarse grass; saw palmetto; pine; and cypress domes, all of which are fire-adapted ecosystems that were under stress from prolonged extreme drought. The incident transitioned to the Southern Area Type 2 Gold Team on May 28th and back to a Type 3 structure with an ICT3 and support staff from the Gold Team on June 4th.

BIG CYPRESS NATIONAL PRESERVE (BCNP) WILDFIRE POLICIES:

The framework for resource protection during wildfire management was supported by the Minimum Requirements Analysis for suppression activities in wilderness, Minimum Impact Strategies and Tactics applied to the entire preserve, endangered species recovery plans, and specifications in the Delegation of Authority. Specific resource protection goals and objectives were derived from READ consultations with BCNP and Florida Fish and Wildlife Conservation Commission (FWC) subject matter experts.

INITIAL RESOURCE COORDINATION:

At the onset of the Team transition, May 13, 2015, Carrie Serek:

- Interviewed BCNP resource staff to understand concerns of fire intensity effects and suppression effects
- Prepared and presented a briefing on resource concerns to the initial pre-operations meeting May 14 (appendix 1).
- Reviewed the Incident Action Plan with Operations and had the property-wide MIST direction added.
- Informed fire crews of restrictions in eligible wilderness, MRA, and MIST.

The three greatest concerns were panther den sites, red-cockaded woodpecker (RCW) tree protection, and prevention of fire from igniting old-world climbing fern (*Lygodium microphyllum*). BCNP identified the only known panther den site to be safely east of the fires, and would update the READ if new sites were detected. No further action was required.

The Resource Protection strategy and maps for RCW required updated data from FWC. The data listed Suitable trees, both active and inactive, and ranked threat to clusters based on a fuels index created by FWC's local biologist (Ross Scott, Hana Nardi). The data were used to create overview maps and cluster-level tree maps with tree identification numbers and coordinates (Mindy Wright, Fuels Tech). In consultation with the Agency Representative (AREP), Jordan McKnight, BCNP Fire and Aviation Management Officer, we determined a triage strategy to protect RCW trees ahead of the fire's spread.

Priority clusters were: 1) in fire's path, 2) ranked 8-10 on FWC fuel index, and 3) had Suitable trees. Firefighters were instructed to clear all mid and heavy fuel (e.g., saw palmetto, and cabbage palm) within 5 paces of Suitable RCW trees, but not to rake to mineral soil due to time costs and benefits to tree (lateral roots are in mineral soil since this area burns regularly, root zone extends entire dripline, heat from groundcover burning is not sufficient to injure cambium. South Florida slash pine produces minimal resin and is not in danger of resin serving as ladder fuel.) The effectiveness of these measures were evaluated by Carrie in Clusters 61 and 64 and indicated that the protection methods used were effective at protecting the feeder roots, cambium and exuded resin of RCW trees from lethal effects. Carol Fields who replaced Carrie as resource advisor escorted the FWC crew on May 28 to assess success of the tree pretreatment as well as to collect standard RCW data.

Old-world climbing fern data was provided by the invasive species biologist (Billy Snyder) for mapping, which was displayed with fire perimeters. The original intent was that reconnaissance flights would evaluate whether the fire perimeter was overtaking the fern patches, and helicopter pilots would then be alerted to put bucket drops on the patches to prevent fern from releasing spore into the smoke column when ignited. We learned that the reconnaissance flights are at too high of an elevation for observers to detect the fern. On May 18, Billy decided that the spread of the fires were too great to try to manage the spread of old-world climbing fern. He rescinded the control plan out of feasibility, need for pilot focus on fire control, and concern for pilot safety, and changed his strategy to post-fire invasive control.

RESOURCE PROTECTION IMPLEMENTATION:

ELLISON FIRE:

May 16-17: Clusters 8, 92, and 64 were prepared. Cluster 8 was lit by hand. Byron Hart reported low fire intensity. Hunt camps were cleared for fire protection.

May 19: Clusters 92 and 64, and hunt camps were ignited by hand. Fire intensity was low around trees. Clusters 13, 22, 61, 81 were prepped.

May 20: Clusters 13, 22, 61 were ignited by hand. Mary Owen reported higher fire activity from wind resulting in greater scorch on tree boles than previous burn-outs, but that RCW trees were safe.

May 23: Resource assessment, with BCNP heavy equipment engineer Pete Roth and Carrie Sekerak.

May 28: 5 Clusters within the burned area were visited with FWC biologists. Cluster 61 nest failed. C 13 unconfirmed, but possible nest fail. C 64 one male hatchling present. C 81 eastern bluebird using cavity in nest tree. Another tree in this cluster exhibited signs of RCW use. C 22 begging call heard. At least two adults observed.

June 4: READ Dellinger escorted FWC personnel through the burned area of the Ellison Fire.

Impact assessed: Red-cockaded woodpecker tree protection

Observations:

Fire protection provisions that were prescribed, combined with hand-lighting at base of trees, were effective for tree protection in terms of: resin did not ignite, bole was not severely scorched thus cambium was not damaged, and feeder roots appeared healthy, alive, and moist even at shallowest growth zone. Cluster 64 had adults feeding 3 chicks (photo of cavity) whose behavior indicated they had hatched well before the fire had passed through, and were receiving steady deliveries of insects from the parents Fig.4. *Update from May 28 visit to Cluster 64 . One male hatchling only observed in nest cavity.* Eggs had been confirmed in the cavity of tree 19 in Cluster 61 during the site visit one week prior. The peep camera used on May 28th revealed a clean, empty cavity. The bole of this particular tree was not charred, however, a pine tree well within the recommended 5 pace distance to the nest tree showed signs of moderate intensity heat that *could* have contributed to nest failure (Fig. 5).



Fig. 1



Fig. 2



Fig.3



Fig. 4



Fig. 5

Impact assessed: Trail impacts and off-trail use

Observations:

Trail impacts fell into 3 categories: off-trail use to catch 4 slop-overs, heavy suppression traffic on the designated trail; braided and expanded traffic along the designated trail and adjacent prairie wetlands that were from suppression efforts (based on freshness of tracks).

The buggy tracks to catch slop-overs appeared as a single pass in the grass, which would disappear after the next rainy season.

Increased traffic on trails shows areas that would require maintenance in order for it to be the safe and preferred path for public use rather than creating a situation where the public would prefer the natural area than the trail. Photos only show tracks that were made in the previous two operational periods, since the rain of May 22nd.





In several areas, short cuts previously made by the public were followed by fire traffic rather than taking longer route on the improved trail. Braided routes created by the public were used similarly by fire traffic, rather than focusing vehicles on only the one designated route. In certain locations, no markers were in place to indicate which of several routes was the preferred trail.





****See report submitted by Burned Area Rehabilitation (BAR) Trails Specialist Jason Williams for more information****

ELLIPSE FIRE:

The Ellipse fire was partially in Eligible Wilderness, and falls under prohibitions and provisions of the Wilderness Act [Public Law 88-577 (16 U.S. C. 1131-1136)]. BCNP has a Minimum Requirements Analysis prepared for wildfire suppression (Appendix).

Carrie assessed the Ellipse fire suppression impacts May 17 by evaluating points where suppression tactics had been applied, as well as 100% survey of the fire perimeter and the interior road.

The west fire perimeter had an administrative-use-only swamp buggy route for prescribed fire, which is not in the wilderness. The east fire perimeter was only suppressed using chainsaws and hand tools. The interior road is gated, and provides legal access to a private land inholding.

FINDINGS:

Impact assessed: Swamp buggy tracks, west perimeter of Ellipse fire.

Observations:

The west line buggy tracks were concentrated mostly on the perimeter of the ephemeral prairie.



Multiple passes cross-country was evident near the ignition point from initial attack activities (e.g., chasing spots and flare-ups).



Tracks were initially highly apparent due to contrast with ash. This was not from compaction, but from clearing of the ash layer by the tires.



Compaction did not exceed 2-inches, and was within normal surface variation of basin topography.



Buggy ruts did not result in compaction that would impede re-establishment of wetland vegetation. Soils gave easily to pressure.



Vegetation persists on tracked areas as source for recolonization during rainy season.



The Wilderness portion east of the land owner access road has a deep set of tracks that were not a result of suppression activities in the 2015 . Trees growing in the center line are of sufficient size to suggest that the tracks predate the analysis to qualify as wilderness. Photo was taken facing west, at 26 9.33.9, 81 4.0.



Impact assessed: Chainsaw use

Observations:

Chainsaw use was discriminate based on risk of spread of fire. I observed no more than 20 points where saws were used in the eligible wilderness. Small trees were scattered when cut.



Only one large cypress stump was left high. It is in the interior of a swamp at 26;9;33.9 81;4;0



Impact assessed: Hand line construction

Observations:

Hand lines blended with natural features of wetland, and were only to surface of mineral soil. No trenching or rutting was observed.



SQUARE FIRE:

The Square Fire occurred in the Addition ("ADD") Lands that had no history of prescribed fire.

Carrie assessed the impacts of suppression actions on May 18 accompanied by Steve Schulze of BCNP for a joint review, and again on May 24 for further actions taken. Additional assessments by Fields and Pete Roth, occurred on May 30 and 31st.

Impact assessed: Burned abandoned vehicles

Observations:

Firefighters showed Carrie where the fire had revealed and burned 3 abandoned vehicles (models circa 1970's). The Addition Lands had not been previously burned by prescription or wildfire, so the fire impacts on these vehicles are results from the Square Fire. The vehicles create firefighter safety concerns due to the acutely dangerous level of toxins that have been documented in smoke from burning vehicles, and their continued presence is a health hazard for personnel during future fire operations. The burning of these vehicles also creates environmental health concerns due to the heavy metals and petroleum that could be released from heat and damage to vehicle parts and battery housing. Photo taken at 26;12;43.0,



Impact assessed: trail vegetation mastication

Observations:

Excavators were ordered by the incident management team to clear existing ORV trails in order to hold the fire within the established planning area. The excavators were utilized on Bundschu Grade, Nobles Grade and Bear Island Grade.

Impacts to Bundschu Grade vegetation were minimal. Flush cut any high stumps and scatter debris out of sight.

Nobles Grade was masticated along the road crown above the root crown of vegetation, and along overhanging lateral limbs and branches. Nobles-Grade had no subsurficial disturbance. Cogongrass was flagged and avoided. BCNP used peanut oil in the hydraulic system of the excavator mounted with a mastication head to insure that any hose or connection leaks would emit only a biodegradable substance.





Cabbage palms were topped to remove fire hazard. Some palms may recover, however some may not. Using an excavator with a tree cutter will mitigate some of the visual impacts of the mastication project.

Nobles Grade mastication revealed a gas pipe that could hold hazardous materials. It did not appear maintained and managed. This pipe is not related to the incident suppression actions, but could be an additional resource concern for the Preserve. Cogongrass was on west side of Nobles Grade road at pipe location. Photo take at 26;12;59.0 81;5;49.0



The excavator struck and damaged a concrete monument. The location of the monument is flagged and Pete Roth knows the location.

ADD 9 trail was masticated along the road crown above the root crown of vegetation, and along overhanging lateral limbs and branches. ADD 9 had no subsurficial disturbance.



ADD 9 trail had a patch of cogongrass masticated. There was no displacement of rhizomes, no soil disturbance, and no plants in seed production, which could have increased spread. Monitor area in the future for additional invasive plant infestations.

Photos taken at: 26;12;50.96 81;6;30.76



As the Square Fire made a run to the northwest, the Red Team and BICY management made the decision to prep contingency lines in the Bear Island Unit 4 with two pieces of heavy machinery. These excavators cleared vegetation along Bear Island Grade, Hard Rock Grade and Perrocchi Grade with the intent to hold the fire to these trails with burn-outs. The excavator with the mulch head was the best piece of equipment for the job as it was quite effective at grinding up cabbage palms and stumps. As a result of successful suppression efforts, this finger of the Square Fire did not reach Bear Island Grade. The immediate repair on these trails could be mitigated fairly quickly by flush cutting tree stumps, bucking larger rounds into firewood size pieces (the trail is used by campers) and stacking along the trail edge. Employ the excavator with tree cutting attachment for cabbage palms. Chainsaws would be sufficient for flush cutting tree stumps and bucking larger logs.



Excavator impacts along the Florida Trail north of DP 6 on Nobles Grade could be mitigated in a short period of time. Debris needs to be cleared off of trail to avoid hiker hazards and a few stumps and stobs need to be flush cut.



Impacts Assessed: Chainsaw Use

Observations:



There are 3 large diameter trees like this located on the ADD 9 trail off of Nobles Grade heading west toward DP 4. Disguise ends of logs with blackening, angle cut and hide with brush.

Abandoned vehicles and other refuse are documented by photo and location coordinates at Z:\Preserve Wide Information\Mud Lake Complex Photos_ Maint-RM

Impact assessed: Hand line construction

Observations:

The DP4 handline had negligible soil impacts. At the west end, the vegetation was not cut flush to ground, leaving mid-calf sharp stobs. Brush work was not placed with tops towards trails. This condition extends about 50 yards east on the line.



Where DP4 handline turns south to ADD 8/9, the vegetation was more sparse and smaller diameter in a swamp. High stobs were less apparent and looked like natural burned sapling stumps.



The machete handline located on the northern edge of the Square fire was assessed by Carrie and Pete Roth and was determined to be low impact needing no additional repair/rehab.

Impact assessed: High frequency vehicle travel on trails and roads



Bundschu Levee

Observations:

The elevated road system on the Square Fire was not engineered for frequent travel, making the road structure sensitive to the amount of vehicle use for suppression activities especially after water levels in canals were elevated by the release of Okeechobee water and two days of heavy rains. Bundschu Grade and Nobles Grade require stabilization. The driveway of the Baker Camp may require some maintenance due to structure protection efforts.



Bundschu Grade



Baker Camp Driveway



Nobles Grade

BICY Engineering/Heavy Equipment Operator Pete Roth's material estimates for Square Fire repair:
--

Bundschu Levee- 200 cubic yards base rock to repair .1 mile of levee
--

Bundschu Grade- 600 cubic yards base rock

Baker Camp= 100 cubic yards of base rock
--

Nobles Grade= 300 cubic yards of base rock
--

BAXTER FIRE:

This lightning caused fire was detected by Air Attack on June 1, 2015 near the Baxter Cabin. Suppression efforts consisted of water drops and aerial monitoring, thus requiring no repair work on the fire itself. The Baxter Cabin was not assessed.



June 3: READ Fields, Black Hills Module members and FWC biologists prepped around red-cockaded woodpecker cavity trees #3, 4, 7, 8 & 9 in cluster 100. A brief survey of the fire along northeast, northwest and interior portions of the Baxter Fire indicated mixed severity fire effects. The fire burned into the Bluebird Fire and final acreage estimated at 106 acres.

Mixed pine and cypress had moderate- moderate + severity with litter and duff burning to white ash and 80-100% scorch



Pine overstory with saw palmetto understory.

WILSON CYPRESS FIRE:

This fire was detected by Air Attack on June 1, 2015 just north of Interstate 75 in eligible wilderness. Initially, only water drops were utilized to control the fire but winds from the north pushed it into a snag patch and cattails lining the canal next to the interstate. Access to this fire was difficult,



so a helispot (26°10.59 81°00.11) was approved by READ Dellinger and Anderson to shuttle a crew into the fire. The crew conducted burnout operations on June 7 in order to tie the fire into a meadow and mitigate smoke impacts on the interstate. Final acreage was estimated at 46 acres.

Wilson Cypress Helispot. Fire in background.
(Photo Credit: Lorena Williams, Durango Helitack)



Smoke over I-75 from Wilson Cypress Fire

WINDMILL TRAM FIRE:

This fire was detected by Air Attack on June 8. The initial size-up from field crews was 10-15 acres in pine, palmetto and cypress. The fire was creeping and making runs with 6-8 ft flame lengths when pushed by outflow winds from nearby thunderstorms. Crews were able to conduct a low intensity burnout operation on the north end of the fire, tying into black from a prescribed fire from spring 2015. Weather prevented a burnout on the southern portion of the fire prior to the end of Fields assignment. Final acreage was estimated at 207 acres.



North burnout

Impact Assessed: Impacts to RCW Trees

Observations:

Fire effects were mixed with higher intensities in pine stands probably when strong wind gusts were occurring. Due to incoming weather, I was unable to assess RCW cluster # 47 within the burned area. However, I do have concerns for the live cavity trees due to observed buildup of litter and duff in an adjoining pine stand. The fire intensity overall was such that char and scorch most likely would not seriously impact the trees. The sustained duration of heat creeping at the base of the trees could be sufficient to cause mortality.



Impact Assessed: Trail Condition and Access

Observations:

The Windmill Tram and Burns Lake Trails were utilized to access this fire. Buggies and UTV's utilized paths cut by previous trail users to avoid deep holes. These paths predated the fire but were possibly made worse by increased traffic.



A culvert (N26°00.299 W 081° 15.781) on the Windmill Tram Trail requires repair.



The gate lock at the Windmill Tram Trail was broken prior to fire staff accessing the fire.



SMALL INITIAL ATTACK FIRES:

At the time of the initial report, prepared by Carrie, 7 fires less than 10 acres had been suppressed. These were not initially assessed due to prioritization of resource concerns that did not allow sufficient time for low impact fires. The Division Supervisors for Initial Attack reported the following with:

Pekel Fire: Fields was able to assess the Pekel Fire on June 5. IA was by buggy from Panther NWR in a pine stringer. It made 2 passes around a wet prairie to mash grass fuels low.

Impacts Assessed: Buggy Mashline

Observations:



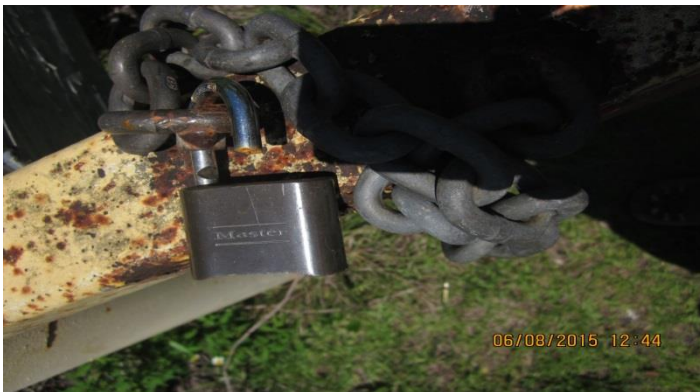
West edge of

mashline

4-5 trees felled. Short, minimal handline constructed along southern end of fire.



Handline already recovering



Lock cut by firefighting crew

68 MM Fire: Only required water from SEATS.

Bluebird Fire: Buggy access along Bluebird Trail, then through 0.5 miles of a user-created “Closed” trail, followed by 0.5 miles cross-country hiking. No more than 150-feet of hand line was constructed, using same crew and treatment as documented for wilderness portion of Ellipse Fire.

Sanctuary Fire: Fields was able to survey on June 7. Buggy access on designated trail to Tin Camp. Fire required felling about 3 trees. Some cabbage palms along the west and south fire edge were cut @ knee level. Flush cut palm stobs.



The Sanctuary Fire was small, but moderately high intensity with 90+% scorch and ~15 meter char observed.



Buggy Fire: Accessed only from trail. Some felling.

Nobles Fire: Hiked in and suppressed with bladder bags and some felling. Assessed by Dellinger and Anderson. No repair work necessary.

Hobo Fire: Fields surveyed the Hobo Fire on June 6th. Buggy access to Hobo Camp by trail. Private lands already had buggy lines established from one camp to the other, in excess of 3-4 feet deep. Fell about 3 trees. Minimal suppression impacts. No repair work necessary.



READ CONSULTATIONS WITH NPS STAFF:

Jordan McKnight – Agency Representative for Superintendent
Ron Clark – Cultural Heritage Resources
Deb Jansen – Florida panther, RCW, firefighter awareness of plant and animal species
Annette Johnson – Florida panther
Billy Snyder – Non-native invasive species
John Kellam – Florida bonneted bat, Big Cypress fox squirrel
Steve Schulze – RCW, trails, GIS
Damon Doumele – Wilderness
Bob Sobczak – Hydrology, soils, wetlands
Dennis Bartalino – Facilities
Hana Nardi (FWC) – RCW
Ross Scott (FWC) – RCW
Mindy Wright – GIS
Dennis Bartalino – facilities, roads, trails
Pete Roth – roads and trails, mastication, equipment impacts
Bill Mason- roads and trails, mastication, equipment impacts