



# Appendices M-P

**EVERGLADES NATIONAL PARK**

**2015 FIRE MANAGEMENT PLAN**



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**Appendix M**  
**Multi-Year Fuels Plan**

Multi-Year Fuels Plan Acres

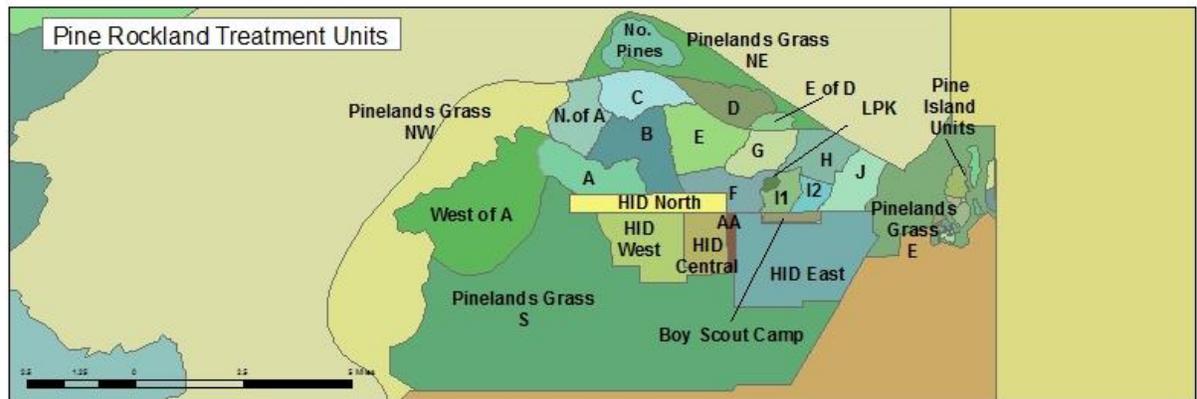
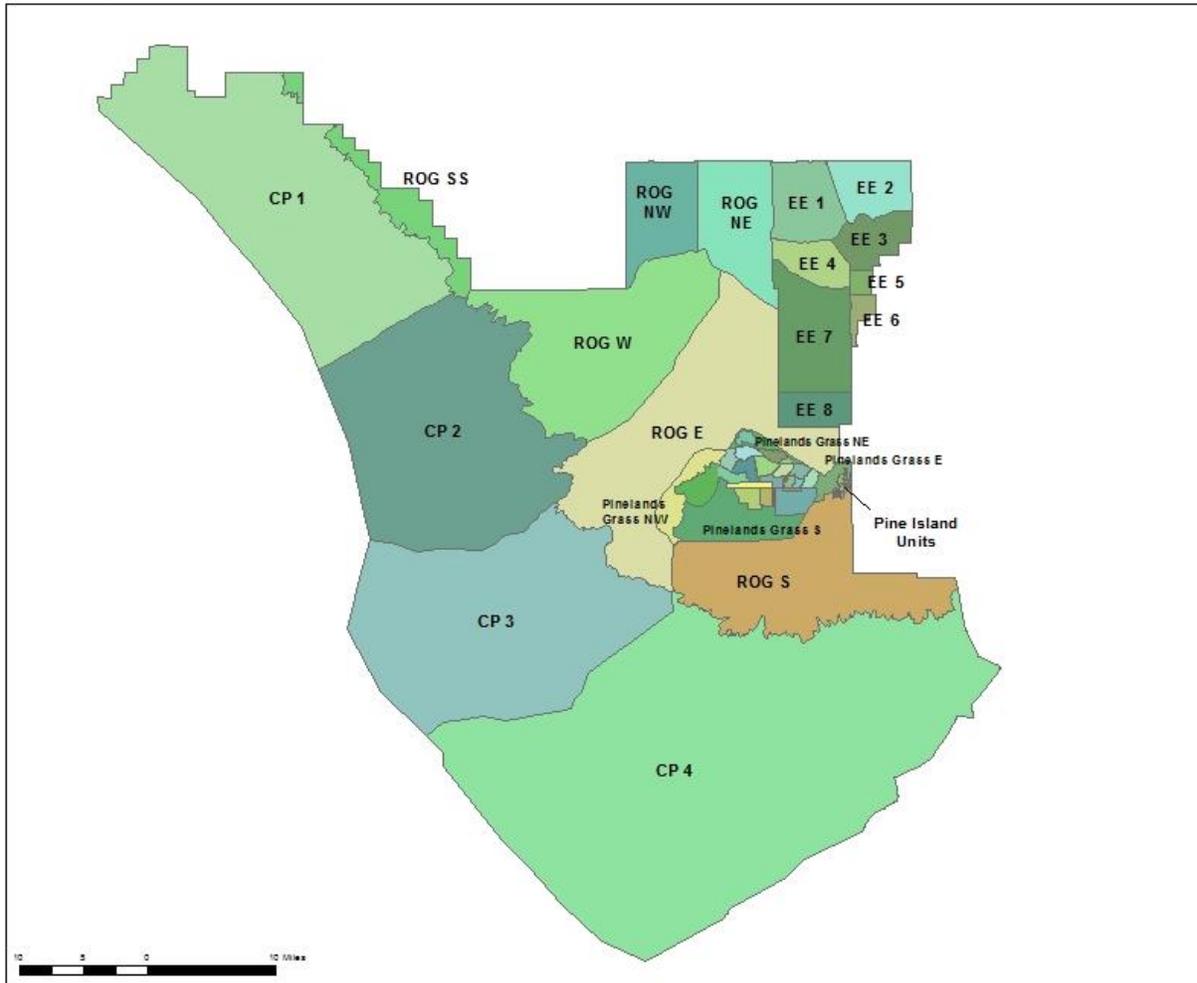
Year	FMU	Unit	WUI/HF/Exotics	Total Acres
Year 1	Pinelands	Block B	HF	1,562
		Block J	HF	867
		Block AA	HF	162
	Pinelands WUI	Block D	WUI	967
		Block G	WUI	791
		Block I1	WUI	424
		Block K	WUI	193
		Block L	WUI	113
		Block M	WUI	82
		HID C	WUI/Exotics	894
		Pinelands Grass E	WUI	3,147
	River of Grass	ROG SS	HF	19,909
		ROG E	HF	608
		ROG W	HF	9,898
		ROG S	WUI	49,043
	East Everglades	EE 3	WUI	11,660
		EE4	WUI	9,673
		EE8	WUI	10,004
	Coastal Prairies	CP 1	HF	42,737
		CP 2 Exotics	Exotics	73,989
	<b>Total Year 1</b>			
Year 2	Pinelands	Block A	HF	1,250
		Block C	HF	1,073
		Block F	HF	848
		Pinelands Grass S	HF	17,319
	Pinelands WUI	Block H	WUI	910
		Block R	WUI	20
		Block S	WUI	11
		Block T	WUI	40
		Block U	WUI	12
		Block V	WUI	103
		Block W	WUI	8
		Block X	WUI	30
		Block Y	WUI	63
		Boyscout Camp	WUI	205
	River of Grass	ROG E	HF	30,418
		ROG NE	WUI	35,026
		ROG S	WUI	14,017
	East Everglades	EE 6	WUI	2,721
		EE 7	WUI	35,531
	Coastal Prairies	CP 3	HF	42,737
		CP 1 Exotics	Exotics	13,433
CP 2 Exotics		Exotics	12,608	
		CP 3 Exotics	Exotics	47,948
<b>Total Year 2</b>				<b>256,331</b>
<b>Year</b>	<b>FMU</b>	<b>Unit</b>	<b>WUI/HF/Exotics</b>	<b>Total Acres</b>
Year 3	Pinelands	Block I2	HF	325
		Block WofA	HF	4,182
		Block NofA	HF	1,052
		E of D	HF	224
		HID W	HF/Exotics	1,710
		HID E	HF/Exotics	2,086
		Block NP	HF	916
		Pinelands Grass NW	HF	7,528
		Pinelands Grass NE	HF	1,710
		Block E	WUI	1,391
		Block N	WUI	47
	Pinelands WUI	Block O	WUI	33
		Block P	WUI	11
		Block Q	WUI	7
		LPK Campground	WUI	61
	River of Grass	ROG W	HF	30,418
		ROG S	WUI	21,039
		ROG NW	WUI	28,004
	East Everglades	EE 1	WUI	20,933
		EE 2	WUI	17,319
		EE5	WUI	2,169
Coastal Prairies	CP 4	HF	42,737	
	CP2 Exotics	Exotics	73,989	
<b>Total Year 3</b>				<b>257,891</b>

Year	FMU	Unit	WUI/HF/Exotics	Total Acres	
Year 4	Pinelands	Block B	HF	1,562	
		Block J	HF	867	
		Block AA	HF	162	
	Pinelands WUI	Block D	WUI	967	
		Block G	WUI	791	
		Block I1	WUI	424	
		Block K	WUI	193	
		Block L	WUI	113	
		Block M	WUI	82	
		HID C	WUI/Exotics	894	
		Pinelands Grass E	WUI	3,147	
	River of Grass	ROG E	HF	30,418	
		ROG S	WUI	49,043	
		EE 3	WUI	11,660	
	East Everglades	EE 4	WUI	9,673	
		EE 8	WUI	10,004	
	Coastal Prairies	CP 2	HF	42,737	
		CP1 Exotics	Exotics	13,433	
		CP 2 Exotics	Exotics	12,608	
			CP 3 Exotics	Exotics	47,948
	<b>Total Year 4</b>				<b>236,726</b>
Year 5	Pinelands	Block A	HF	1,250	
		Block C	HF	1,073	
		Block F	HF	848	
		Pinelands WUI		910	
	Pinelands WUI	Block H	WUI	910	
		Block R	WUI	20	
		Block S	WUI	11	
		Block T	WUI	40	
		Block U	WUI	12	
		Block V	WUI	103	
		Block W	WUI	8	
		Block X	WUI	30	
		Block Y	WUI	63	
		Boyscout Camp	WUI	205	
	River of Grass	HID N	WUI/Exotics	1,001	
		ROG W	HF	30,418	
		ROG S	WUI	14,017	
	East Everglades	ROG NE	WUI	35,026	
		EE 6	WUI	2,721	
	Coastal Prairies	EE 7	WUI	35,531	
		CP 2 Exotics	Exotics	73,989	
		CP1	HF	42,737	
<b>Total Year 5</b>				<b>240,013</b>	

\* Total Units may be larger than proposed treatment area.



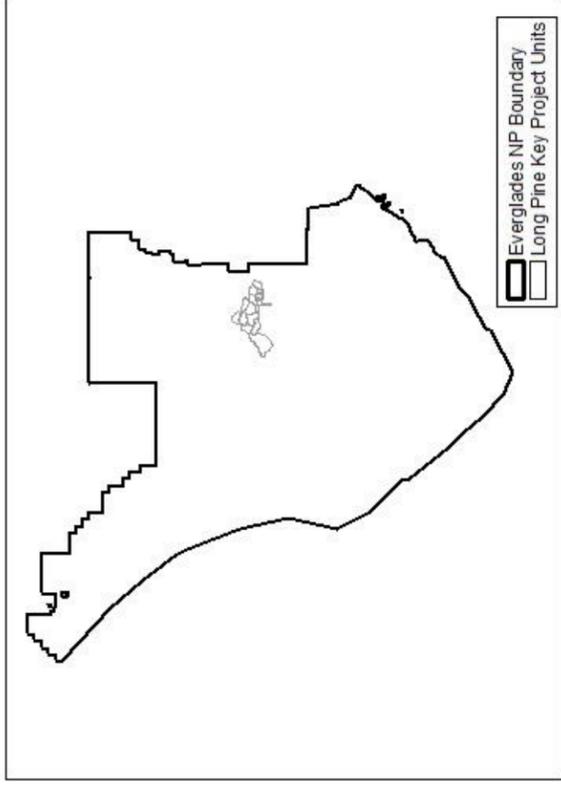
## Multi-year Treatment Units



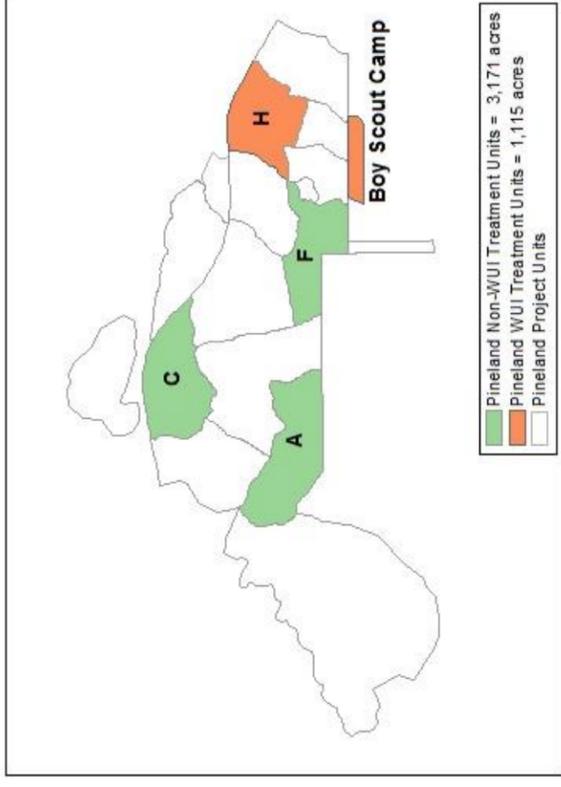
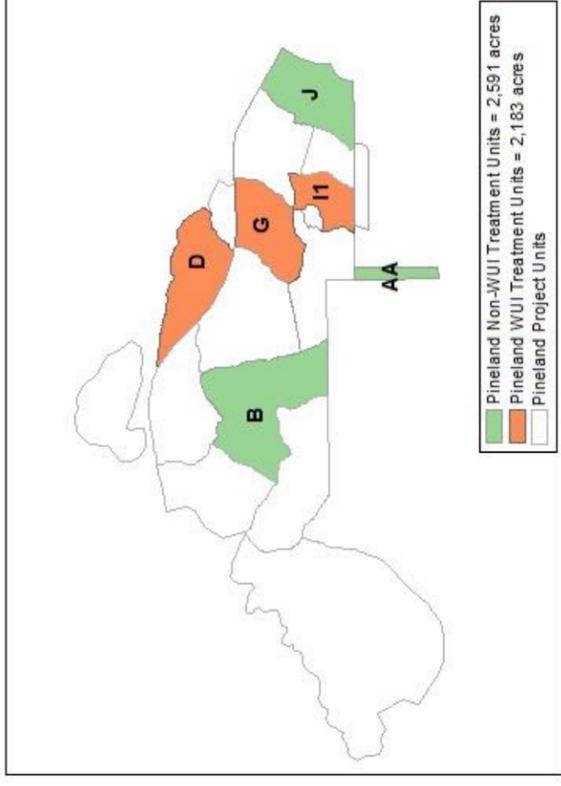
Everglades Fire and Aviation Management  
2014

# Pineland-Long Pine Key (LPK) Project Units

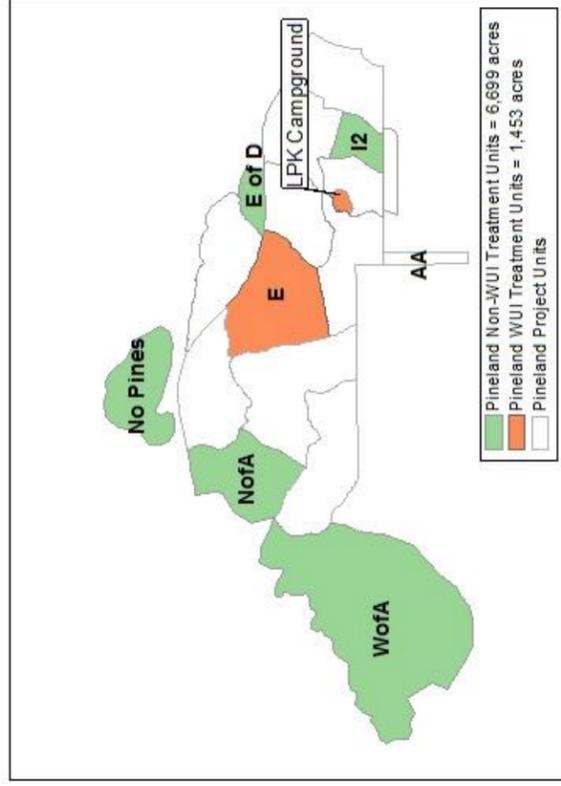
Year 2



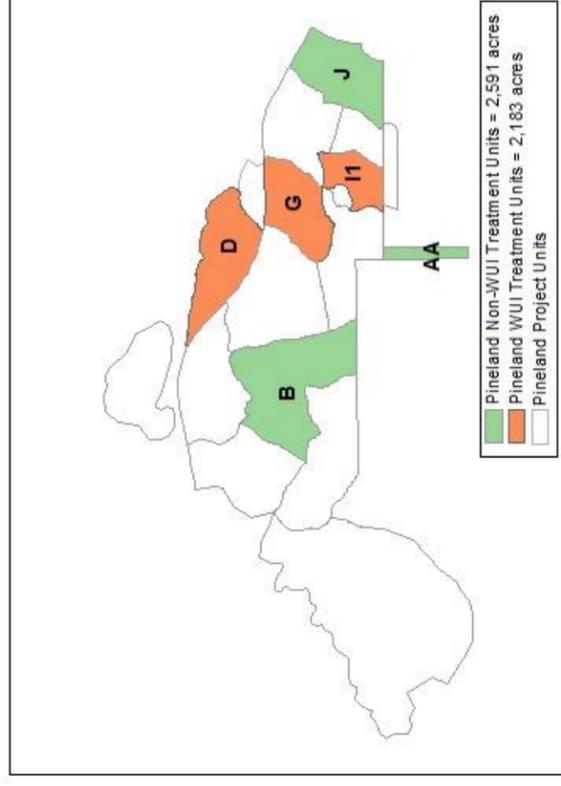
Year 1



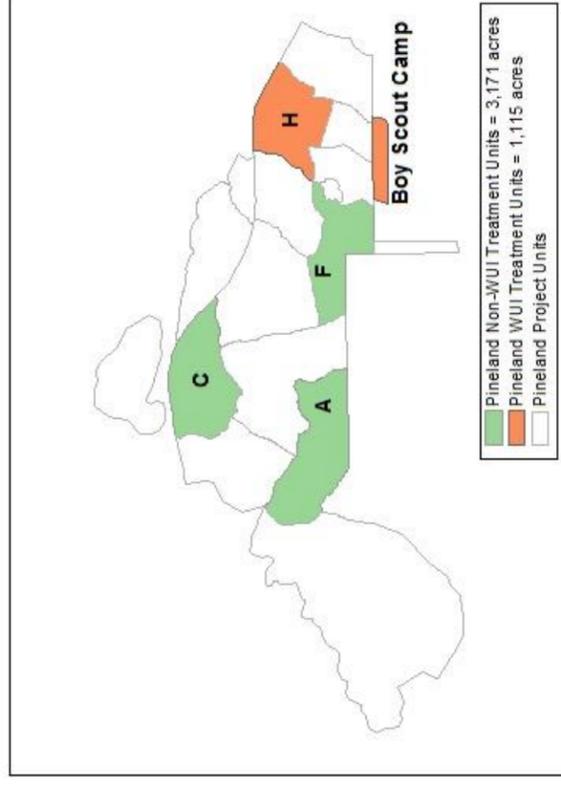
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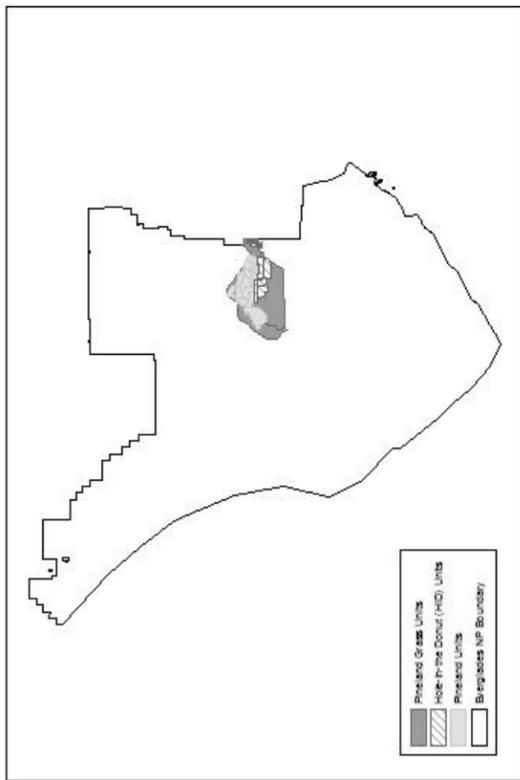
Year 4



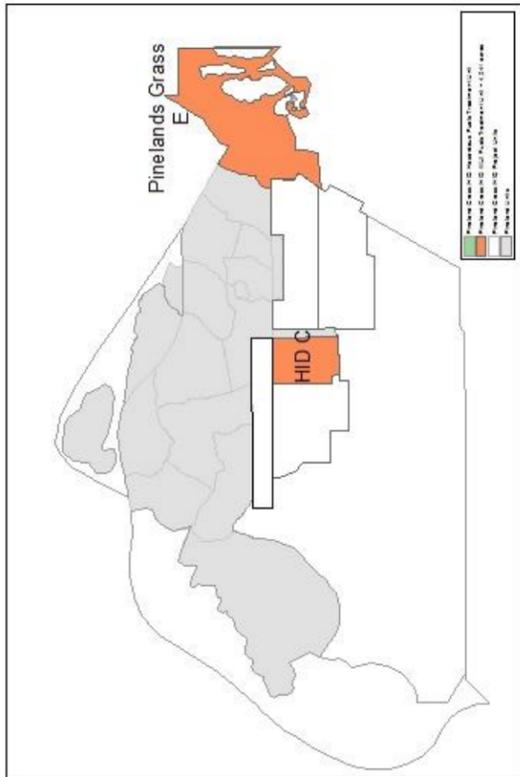
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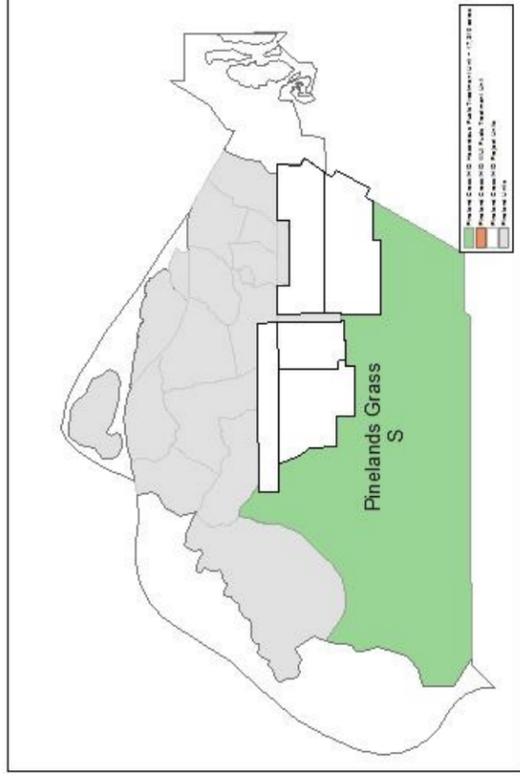
Pineland Grass /  
Hole-in-the-Donut (HID)  
Project Units



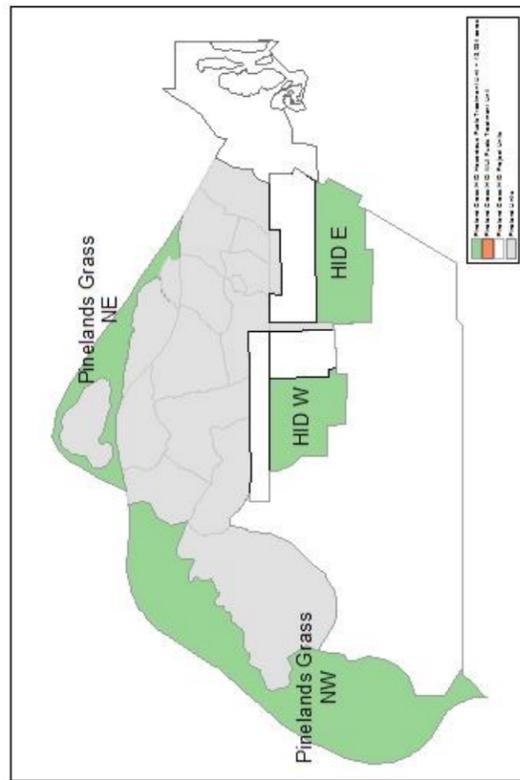
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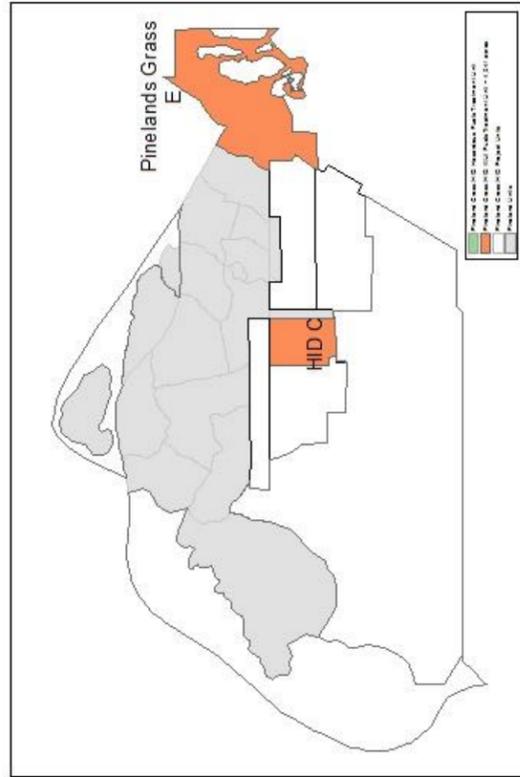
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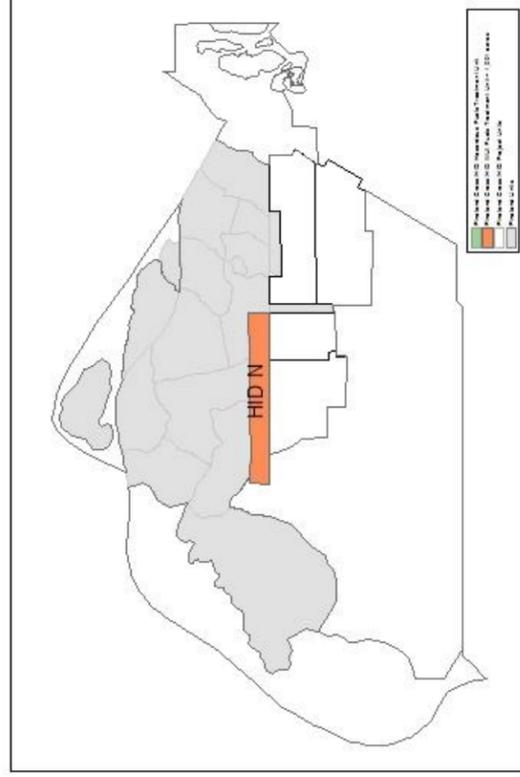
Year 3



Year 4



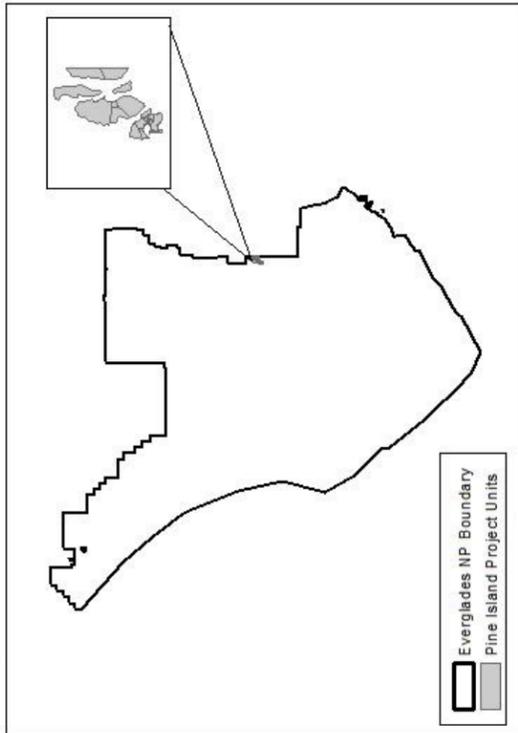
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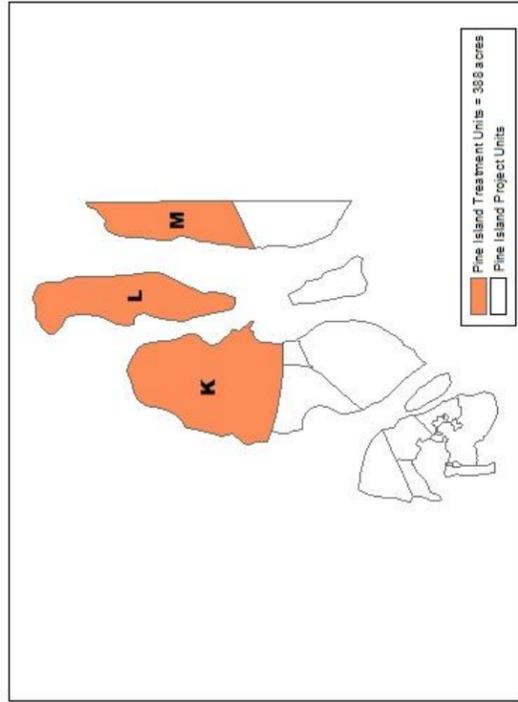
Everglades Fire Management  
2014



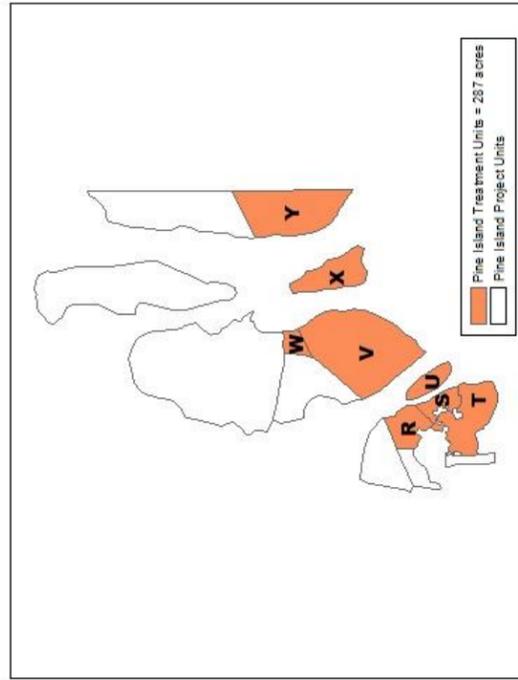
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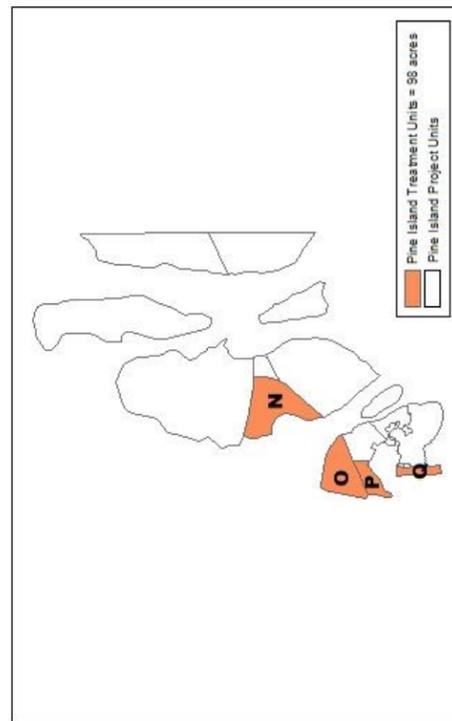
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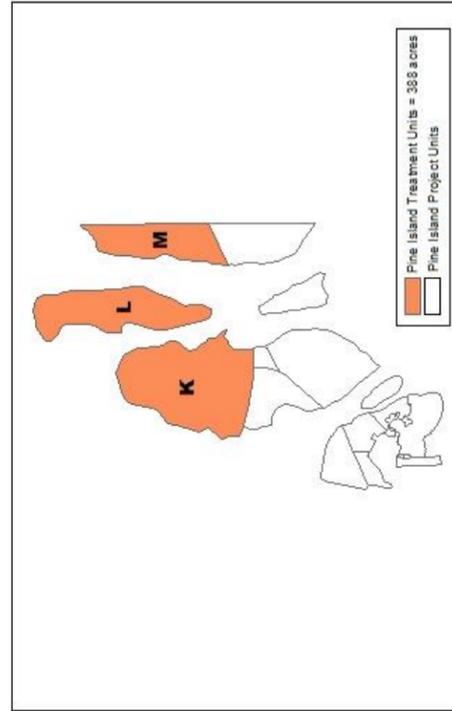
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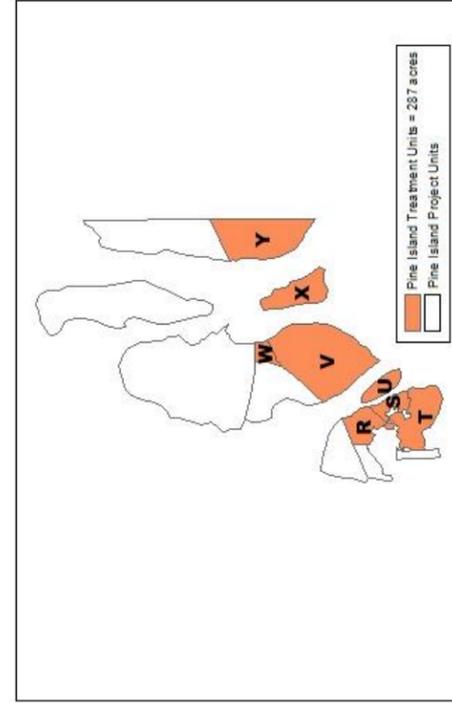
### Year 3



### Year 4



### Year 5

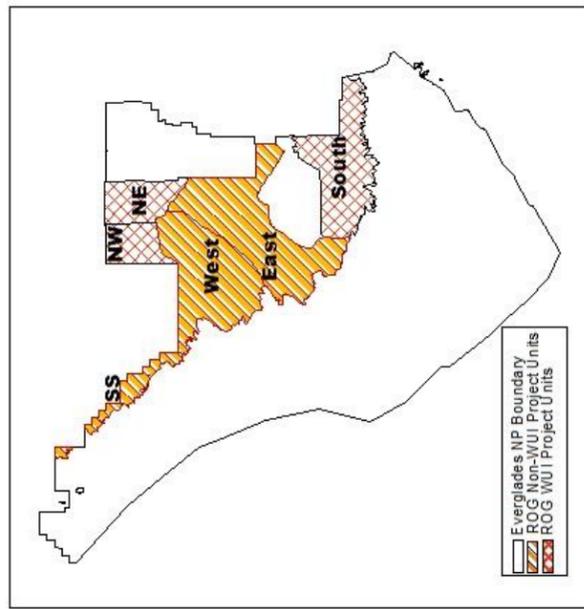


Everglades Fire Management  
2014

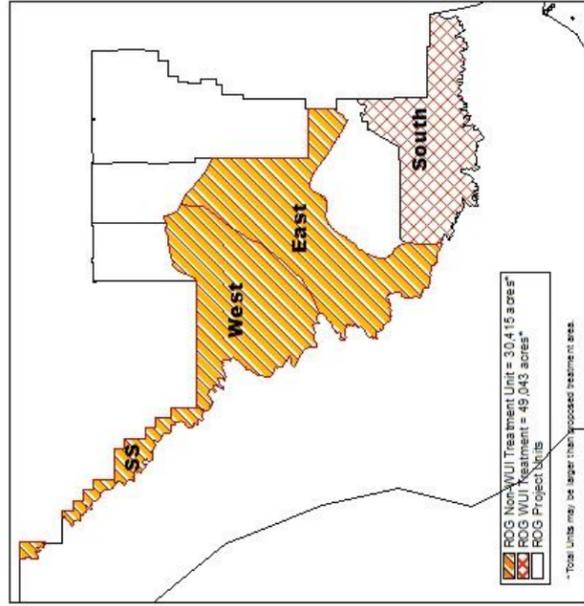
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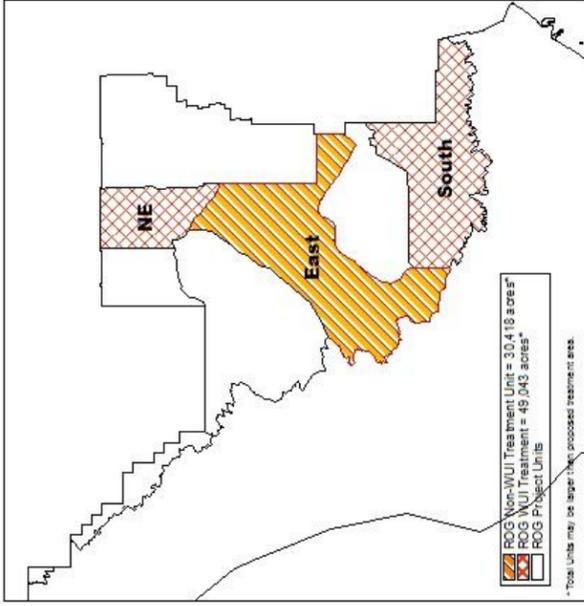
# River of Grass (ROG) Project Units



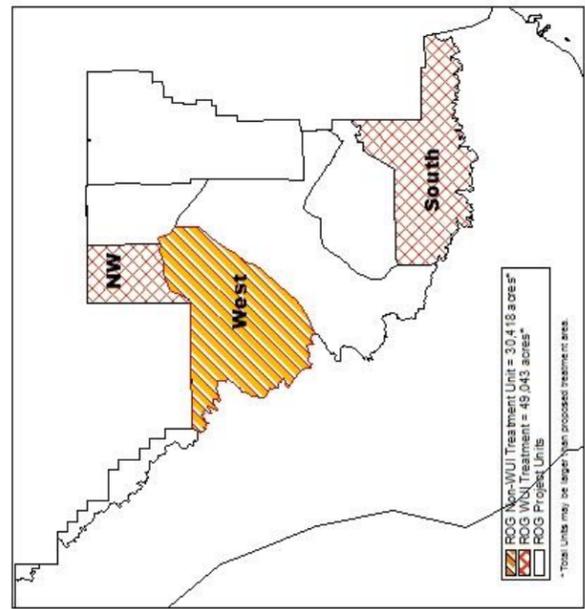
Year 1



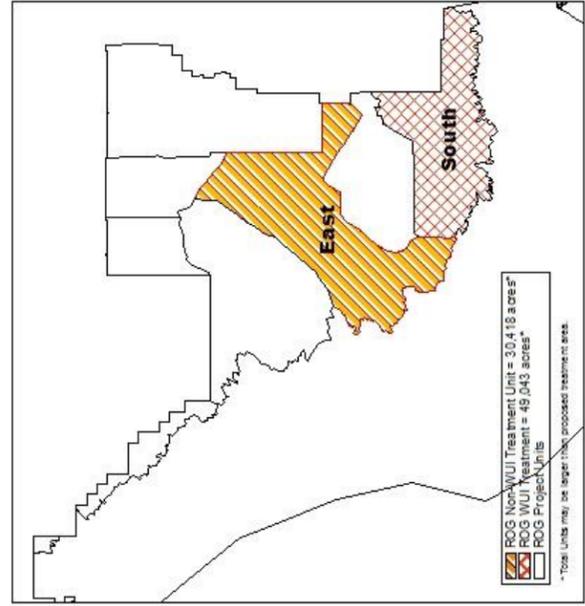
Year 2



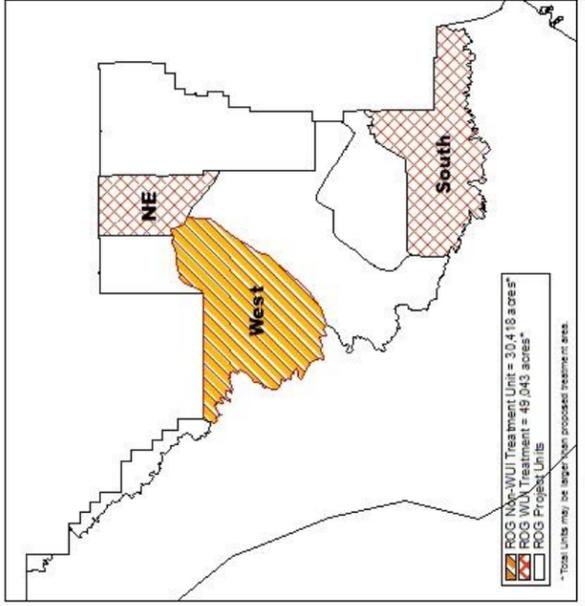
Year 3



Year 4



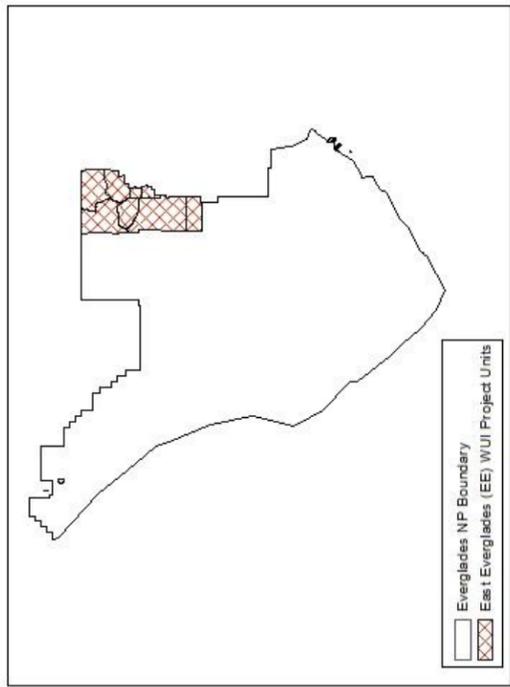
Year 5



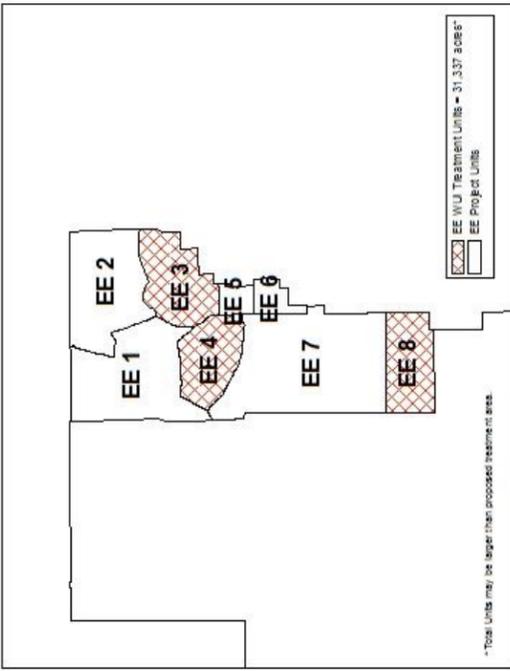
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Everglades Fire Management  
2014

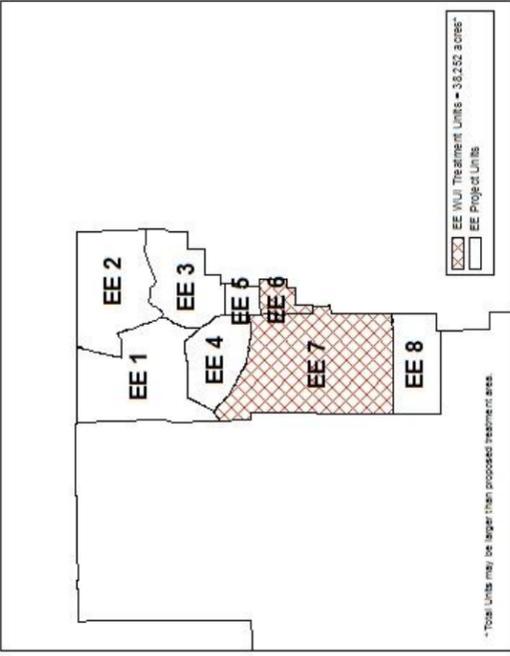
### East Everglades Project Units



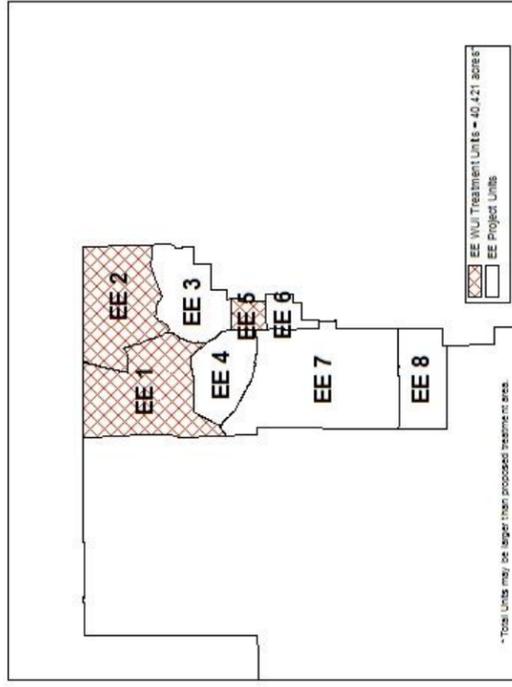
### Year 1



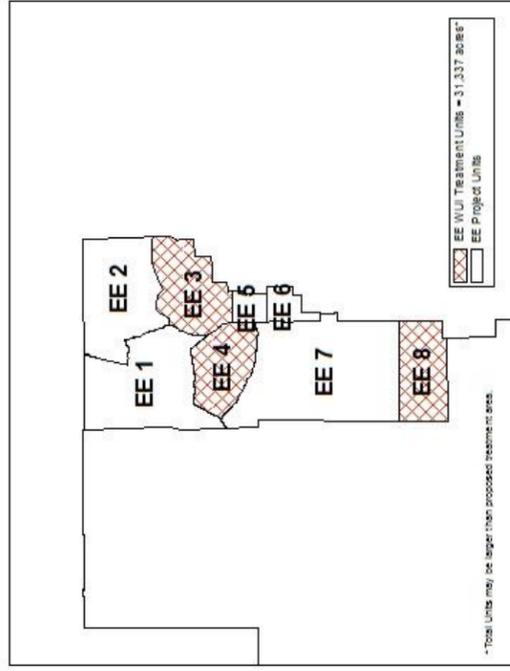
### Year 2



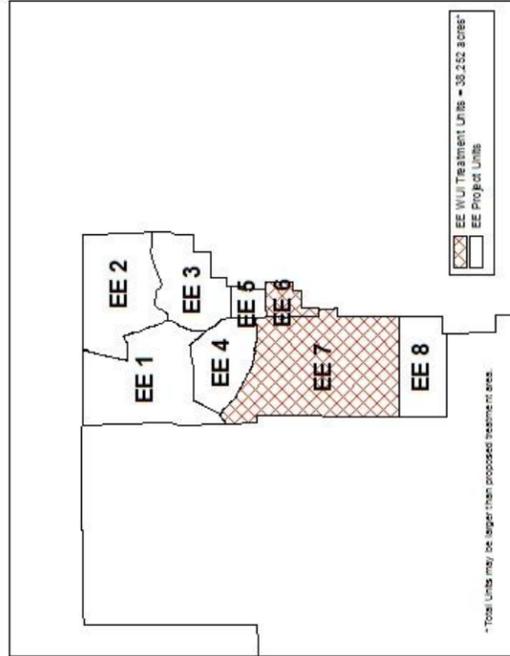
### Year 3



### Year 4



### Year 5

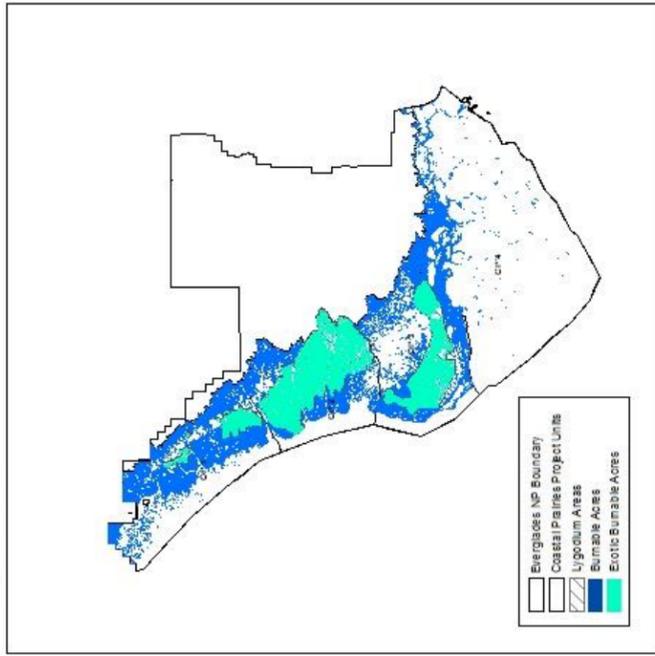


### Everglades Fire Management 2014

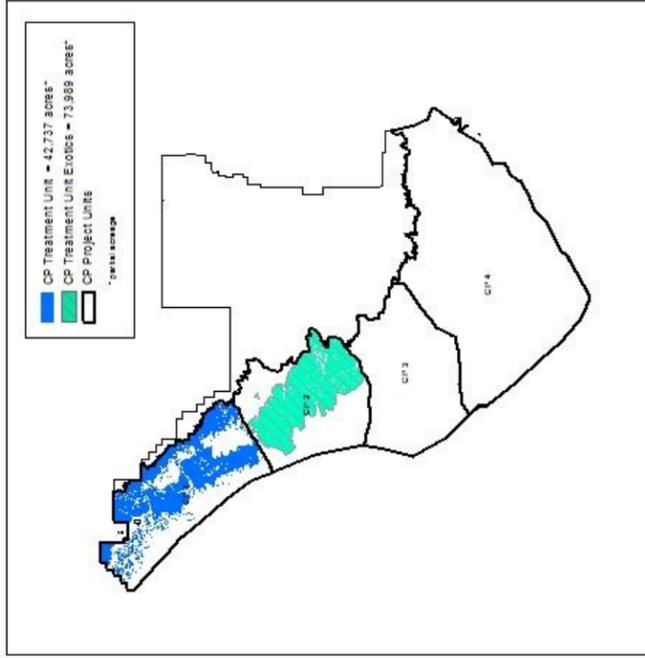


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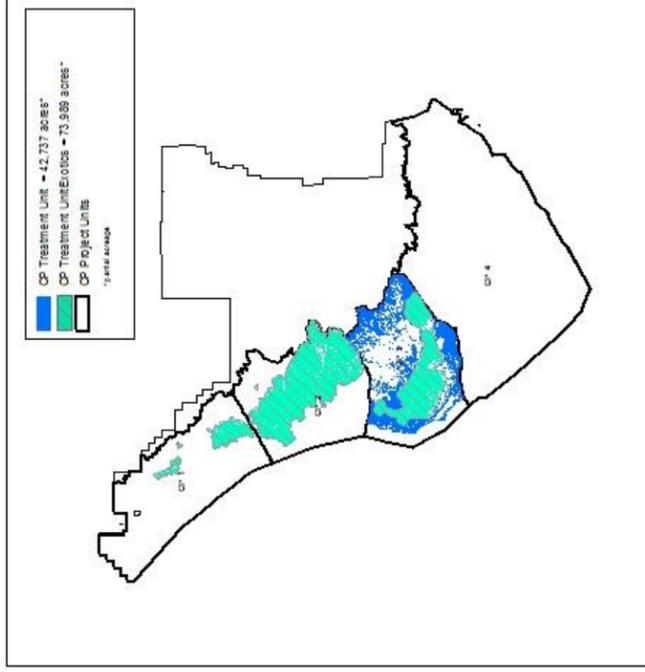
# Coastal Prairies (CP) Project Units



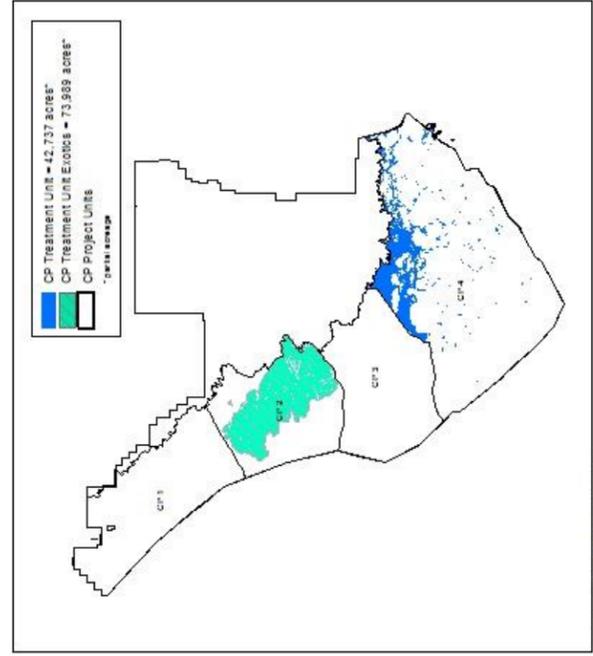
Year 1



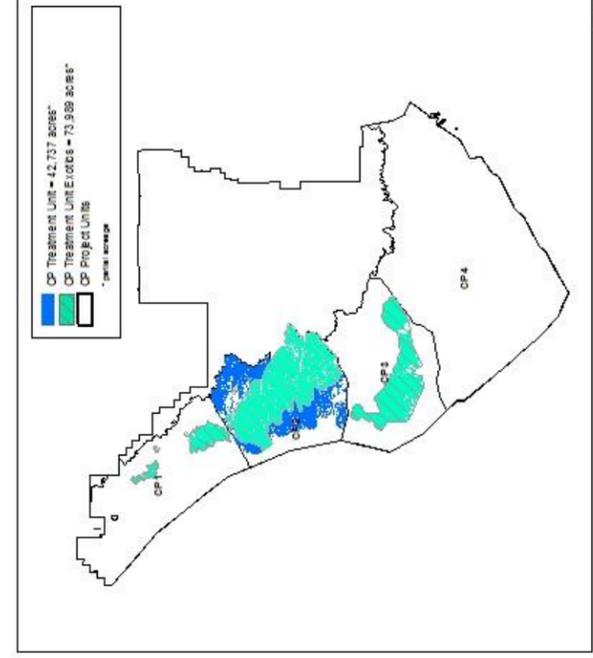
Year 2



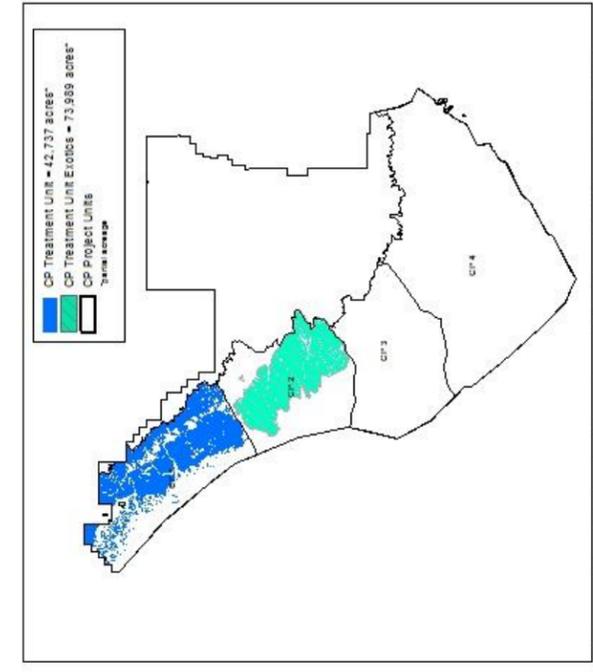
Year 3



Year 4



Year 5



## **Appendix N Preparedness Plan**

The Preparedness Plan was written in accordance with Everglades Fire Management Plan to provide management direction for wildland fire operations. This direction is based on objectives stated in the Everglades Fire Management Plan and local level procedures for operations. Decision support processes and analysis that help determine and document decisions regarding the management of individual ignitions will follow current national direction. Currently, the Wildland Fire Decision Support System (WFDSS) will be used to aid in the management decisions for fires that exceed initial attack. Wildland fire resulting from unplanned ignitions will be evaluated to determine the appropriate response based on the criteria designed to meet the park management goals and objectives. Unplanned ignitions will be managed to protect life and property and whenever possible achieve resource benefits. The Preparedness Plan will be reviewed and updated annually.

### **1. Initial Response, Dispatch, and Notification Plan**

When a fire is reported a qualified Incident Commander (IC) will be dispatched to the fire to provide a thorough size-up. The size-up will include the following:

- Fire size and character
- Spread potential
- Values at risk
- Fuels and fire behavior
- Additional resources needed for containment
- Potential tactics and strategies

The IC will provide dispatch with the size-up information. It will be the responsibility of the IC to determine the type and number of additional resources that are required to take the appropriate action. Dispatch will provide radio communication, logistical support and weather updates. Incident Commanders (IC's) have the authority to respond to wildfires with a full range of fire management strategies:

- Full Suppression: Strategy developed to achieve control of a fire and prevent it from exceeding a defined perimeter.

- Point/Zone protection: A variety of suppression actions taken to protect a specific point or areas from fire usually by tactics which constrain progressive fire encroachment away from identified values at risk
- Monitor/Confine/Contain: Management actions conforming to a strategy that periodically checks the fire to ensure it continues to meet established objectives.

When evaluating the initial response, the IC and fire management staff will consider risks to public and firefighter safety, values at risk, and the cost of various strategies and tactics. The National Wildfire Coordinating Group (NWCG) has adopted the Organizational Needs Assessment to assist the fire managers and firefighters with determining the type of organization necessary to manage an incident. The Incident Complexity analysis should be used in addition to the Organization Needs Assessment by the IC and Duty officer for Types 1, 2, or 3 incidents. Type 4 & 5 incidents can be evaluated by using the Incident Complexity Analysis located in the *Interagency Standards for Fire and Fire Aviation Operations* guide (Red Book). The Organizational Needs Assessment is integrated into the Wildland Fire Decision Support System (WFDSS).

#### Information/Variables Used to Determine Initial Action Responses

- Public and firefighter safety
- Cape Sable seaside sparrow habitat
- Urban interface/ communities at risk
- Sensitive tree islands and hammocks
- Transportation corridors
- Park Infrastructure
- Archeological and cultural sites
- Untreated stands of Melaleuca (*Melaleuca quinquenervia*) and Australian Pine (*Casuarina equisetifolia*)
- Rookeries and significant nesting and denning sites
- Park boundary

Typical response times by NPS equipment and personnel will vary depending on the location of both Initial Attack (IA) resources and fire location. Based upon the needs identified in the initial attack priority list, the following are the response times (FMU map – Figure XX):

- FMU-1: Helitack - Due to remoteness and logistics, response times may exceed an hour
- FMU-2: Engines and helitack – 30 - 40 minutes
- FMU-3: Engines and helitack - 20 minutes
- FMU-4: Engines and helitack – 20 minutes

#### Fire Notifications

Agencies will notify protecting agency of any fires detected on such agency's lands as quickly as possible. This includes false alarm and natural out fires as well as fires responded to. The reporting agency will provide adequate information to meet the protecting agency's standards for fire reporting.

## 2. Training and Readiness

### Annual Training

All personnel participating in wildland fire activities must meet the basic requirements for a firefighter type two (FFT2). Annual Fireline Safety Refresher Training and Work Capacity Tests are required for all personnel participating in unplanned or planned ignition treatments that are subject to assignments on the fireline. This training will include National Park Service requirements and meet NWCG standards. The Fire Management Officer (FMO) will assure that an annual training program is established that meets Interagency Fire Program Management (IFPM) qualification standards for fire program personnel. The AFMO is the Training Officer and is responsible for facilitating training oversight as well the management of the Incident Qualification and Certification System (IQCS). Annually, training is achieved through a combination of courses held locally or attended non-locally. Training will be obtained in the most cost-effective manner.

### Readiness

Wildland fire and aviation preparedness reviews are conducted following the Annual Fireline Refresher training in late January. This review will identify operational, procedural, personnel or equipment deficiencies and recommend corrective actions. Standards for preparedness reviews are based on the *Interagency Standards for Fire and Fire Aviation Operations* guide (Red Book) and conducted according to the *Interagency Preparedness Review Guide* (2010).

A list of personnel available to assist with wildland fires, including their fire qualifications can be obtained through Everglades Fire Dispatch office.

### Delegation of Authority

The Fire Management Officer (FMO) is responsible and accountable for providing leadership for fire and fire aviation management programs in the park. The FMO determines program requirements to

implement decisions through the FMP to meet resource objectives. The FMO negotiates interagency agreements and represents the Agency Administrator on local interagency fire and fire aviation groups.

The Superintendent annually shall provide and update the expectations of the FMO duties by means of a limited delegation of authority that encompasses the scope of duties outlined above. The FMO and IC are assumed to be working within the scope of their job descriptions and as such will not require specific signed delegations of authority for the performance of their assigned duties. Should an incident require management by off park resources (Incident Command Teams or ICs from another park/agency, specific Delegations of authority for that incident will be prepared and signed by the Superintendent and IC.

The delegation of authority contains specific, measurable objectives, as well as limitations to that authority. This delegation of authority will be updated annually and can be found on the server at the Robertson Building: M:\Preparedness\Delegation of Authority

### **3. Job Hazard Analyses for fire and fire aviation activities**

Employee and public safety is the first priority in every fire management activity. Employees are responsible for knowing, understanding, and practicing safe fire management practices. Everglades NP reviews and updates all job hazard analyses on an annual basis. The individual JHA's can be found on the server at the Robertson Building: M:\SAFETY\JSA-JHA\JHA\2011

### **4. Agency Administrator's Guide to Critical Incident Management (NFES 1356)**

The current Agency Administrator's Guide to Critical Incident Management provides a detailed overview of Agency Administrators' responsibilities before critical incidents occur, during the actual management of the incident, and after the incident has taken place. This guide will be updated annually and can be found on the server at the Robertson Building: M:\Critical Incident Management.

### **5. Fire cache inventory**

Everglades NP has two caches, one located to the Robertson Building and one located at Homestead General. The fire cache is managed by the Captain of Engine 301. The airport cache is managed by the Aviation Manager. Cache inventory are stored on the server at the Robertson Building: M:\Fire Cache\Current Cache Inventory

### **6. Structure protection inventory and needs**

Everglades NP contains a number of WUI structures within the park and several surrounding communities, including a nationally designated community at risk. Residential houses are located within the park in Pine Island, Chekika, and Flamingo. Residential communities, including the

Miccosukee Indian Reserved Area which is a nationally designated WUI community at risk, concessioners and businesses (airboat tours, nurseries, Shark Valley, Flamingo store and tours), and the Everglades correctional institute are located within or adjacent to the Park boundary. In addition to residential communities, several visitor and education facilities and offices are located throughout the Park. Transportation corridors within and adjacent to the Park include park roads, US Hwy 41, US Highway 1, and Krome Avenue.

A number of monitoring/research stations, access boardwalks, and campsites are scattered throughout the park (located in prairies, mangroves, and other habitats). These stations record valuable data for Everglades's restoration and contain expensive high tech sensitive equipment.

## **7. Identify location of procedures for park evacuation and closure**

The decision to close off any portion of the park or to restrict activities will be made by the Park Superintendent and implemented by the Chief Ranger.

## **9. Minimum impact tactics guidelines & Wilderness (Minimum Tool) considerations**

### Restrictions and Special Concerns

Minimum Tool Analysis comprehensively addresses prohibited activities and restrictions associated with wilderness and potential wilderness. The Minimum Tool Analysis is found in Appendix C. Fire retardant, class A foam, and specialized equipment, such as rolligons, will be used only when an operation cannot be safely completed and/or impacts to values cannot be mitigated. Permission will be granted by the Park Superintendent.

### Minimum Impact Suppression Tactics (MIST)

Director's Order #18 states that: "Methods used to suppress wildland fires should minimize impacts of the suppression action and the fire, commensurate with effective control and resource values to be protected." Everglades NP adopts the MIST guidelines in RM 18. Reference material may be found in the Incident Response Pocket Guide (IRPG).

### **Resource Advisors**

#### Cultural Resources

In consultation with the Cultural Resources Branch, Fire and Aviation Management will assure that appropriate actions are taken to protect cultural resource sites. Fire management will request resource advisor or technical specialist assistance as required for planning and implementing fire management activities related to cultural resource sites.

#### Natural Resource

- Fire retardant will be used only when an operation cannot be safely completed and/or impacts to values cannot be mitigated without the use of retardant.
- Specialized equipment, such as rolligons, will be used only when an operation cannot be safely completed and/or impacts to values cannot be mitigated without the use of this equipment. Additional approval from the superintendent will be required prior to the use of retardant or specialized equipment, such as rolligons.
- Class A foam (surfactant) will only be used to protect life and property. Everglades fire management engines will be flushed to eliminate residual foam in pump equipment that will be used in Park fire operations.
- The water tanks of air tankers will be rinsed prior to use in the Park to eliminate residual substances being transferred through the water being dropped.
- Solution holes will not be used as helicopter dip sites.
- During fire management operations, funnels and spouts will be used when dispensing fuel and/or oil, spill containment berms will be used during portable pump operations, and containers will be filled to the appropriate level to prevent overflow and spills.
- Fire Management will work with the South Florida Natural Resources Center (SFNRC) to obtain and use the best available science to plan, review and adjust fire management practices as needed to mitigate impacts to water resources.

## **10. Cooperative Agreement and Annual Operating Plan**

The National Park Service, US Fish and Wildlife Service (USFWS), and Florida Forest Service (formerly Florida Division of Forestry) have a state-wide Cooperative Agreement (Appendix D) specific to the management of wildland fire. Florida Division of Forestry also maintains state-wide agreements with structural fire suppression organizations. Under the umbrella of these agreements, annual operating plans are established at the local level. Such an annual operating plan coordinates wildland fire management between Everglades NP, the Everglades District of the Florida Division of Forestry, and Miami-Dade Fire Rescue.

The annual operating plan establishes a Mutual Response Zone along the eastern boundary of the park that enables all agencies involved to take initial attack actions (Map). The annual operating plan also establishes procedures for agencies to provide assistance anywhere in Miami-Dade County outside of the Mutual Response Zone.

Everglades NP coordinates with the Miccosukee Tribe of Indians of Florida to minimize threats of wildland fire to the Miccosukee community, a nationally recognized Wildland Urban Interface Community at Risk. The cooperative agreement and annual operating plan can be found on the server at the Robertson Building: M:\Fire Management Plan 2010\Appendices

## 11. Fire weather and fire behavior

Everglades National Park (NP) has a year round fire season, meaning that there is potential for wildland fire any month of the year.

### Weather Stations

The Park maintains 2 Remote Automated Weather Stations (RAWS) which are compliant with National Fire Danger Rating System (NFDRS) standards (Map). These stations collect year round data that includes; air temperature, relative humidity, wind speed and direction, rainfall, and solar radiation. This data is transmitted on an hourly basis via the Geostationary Operational Environmental Satellite (GOES). Table 1 contains the basic information for each station.

Surface water level readings are monitored daily at hydrology station NP-44 and as needed basis at other multiple hydrology stations. Current and recent weather activities are monitored on a custom Doppler radar website and other public websites. Lightning strike data is accessed through national NPS contract with the Bureau of Land Management.

Station ID	Station Name	Location	Type	Period of Record
086702	Cache	Fire Cache in Pine Island District	RAWS	1975 - present
086704	Chekika	East Everglades Ranger Station	RAWS	1993 - present

*Table1: Everglades Fire Weather Stations*

### Fire Behavior

Fuels in the park can be divided into three broad categories: Grasses, shrubs, and timber (Table 2). The dominant fuel type is grass which encompasses approximately 80% of the landscape and the remaining 20% consists of timber and shrub fuel types which include the pine rocklands (Figures 1 & 2).

<b>Vegetation</b>	<b>Fuel Type</b>	<b>FMU</b>
Sawgrass	GR8 & GR9	1,2,3,4
Marl Prairie	GR5 & GR6	2,3,4
Coastal Prairie	GR5, GR6, GR8 & GR9	1
Pine rocklands	TU3 & SH6	3
Hammocks/Tree Islands	TL2	2,3,4

*Table 2. Vegetation and Fuel Types*



# Everglades National Park Vegetation Map

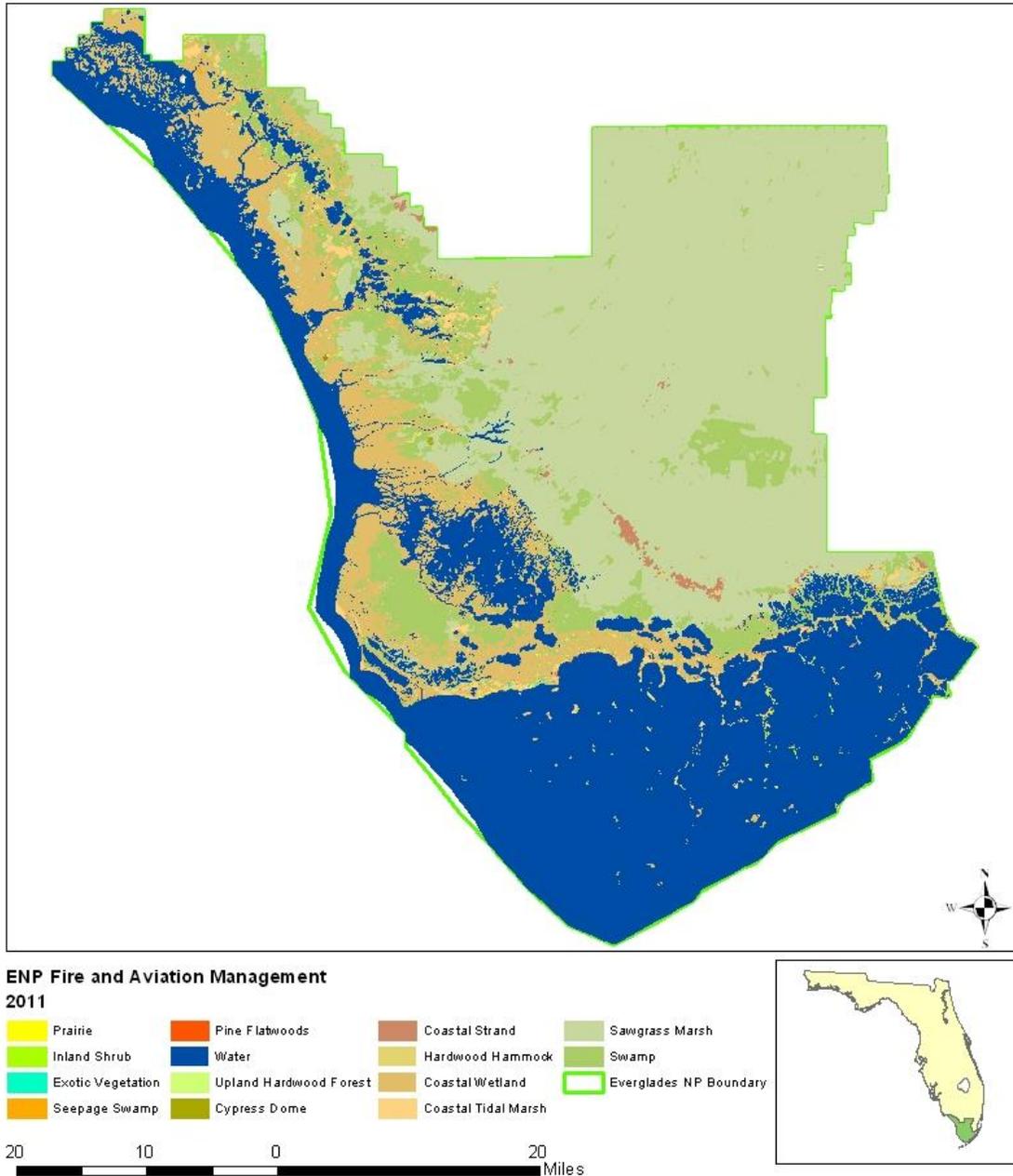


Figure 1: Vegetation map



# Everglades National Park Fuels Map

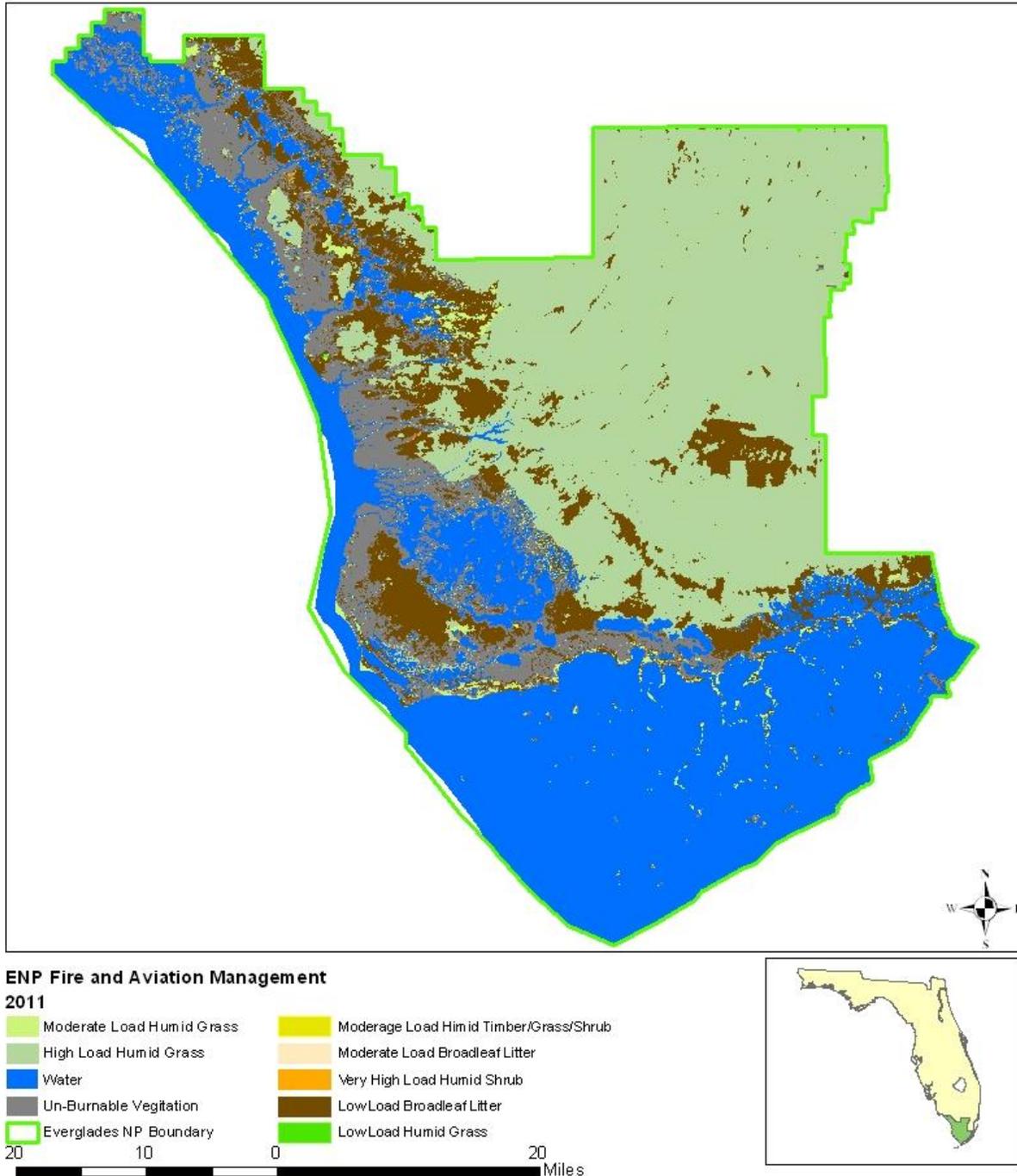


Figure 2: Everglades NP Fuels Map

## Grass

The standard fire behavior fuel model guide (Scott and Burgan 2005) classifies wildland fuels into fuel model categories and describes the expected fire behavior associated with the specific fuel model. Fire behavior fuel models GR5, GR6, GR8, and GR9 represent fire behavior associated with grass fuels in the Park. These fuel models demonstrate high to very high rates of spread and high flame lengths, under the influence of wind (Figures 3 & 4).

The primary carrier of fuel model GR5 is humid-climate grass, which is characterized by short and long hydroperiod prairies in the Coastal Prairies, River of Grass, and East Everglades FMU's. The primary carrier of fuel model GR6 is continuous humid-climate grass, which is characterized by black needle-rush (*Juncus roemerianus*), and short hydroperiod prairies, found in the Coastal Prairies and River of Grass FMU's. These fuel models average 1-2 foot tall grasses, with an average depth of 1-2 feet.

The taller grasses are classified in GR8 and GR9. The primary carrier of fuel model GR8 is continuous, very coarse, humid-climate grass, which consists of long hydroperiod prairies found mostly in the River of Grass and East Everglades FMU's. The primary carrier of fuel model GR9 is dense, tall, humid-climate grass, consisting of cordgrass prairies and long hydroperiod prairies found throughout the park. These grass models consist of a heavier, more continuous grass ranging from 3-8 feet tall. Spread rates and flame lengths are usually extreme (Figures 3 & 4).

## Shrubs and Timber

Fire behavior fuel models TL2, TU3, and SH6 make up the remaining 20% of the Park's landscape. These fuel models demonstrate low to high rates of spread, accompanied with low to high flame lengths (Figures 5 & 6).

The primary carrier of fire in fuel model TL2 is hardwood litter and is represented by hardwood hammocks and tree islands. These areas are not targeted for fuel treatments; however unplanned ignitions may occur and ignite these areas. Hardwood hammocks and tree islands experience infrequent fire. Hammock and tree island fires are creeping, smoldering, low intensity, high severity ground fires. The Pine rocklands are classified in the fuel models TU3 and SH6. The primary carrier of fire in fuel model TU3 is moderate forest litter with grass and shrub components. This fuel type is commonly found in the Pine rocklands that are within the lower range of the fire return interval, usually less than 3 years or areas that consist of a less dense understory, characterized with light to moderate fuel loads. Spread rates are high, with low to medium flame lengths (Figures 5 & 6).

The primary carrier of fire in fuel model SH6 is woody shrubs and shrub litter. This fuel type consists of dense shrubs and fire behavior is much more intense with spread rates high combined with high flame lengths (Figures 5 & 6). The shrubs may act as ladder fuels resulting in passive torching into the overstory of south Florida slash pine (*Pinus elliotii* var. *densa*).

This type of fire behavior has been observed by Everglades Fire Management in areas of the Pine rocklands that are more than 5 years post fire and/or consist of a dense shrub layer. Fire behavior is expected to be high to extreme, with high spread rates and flame lengths (Figures 5 & 6).

### Periphyton

Periphyton is a complex community consisting of a variety of species of algae diatoms, microorganisms, and invertebrates. Periphyton is prevalent throughout the Park and long hydroperiods wetlands where it forms a continuous surface above the soil. Periphyton is an important consideration in wildland fire situations as it is both a receptive fuel source for spot fires and will sustain smoldering fires when dry.

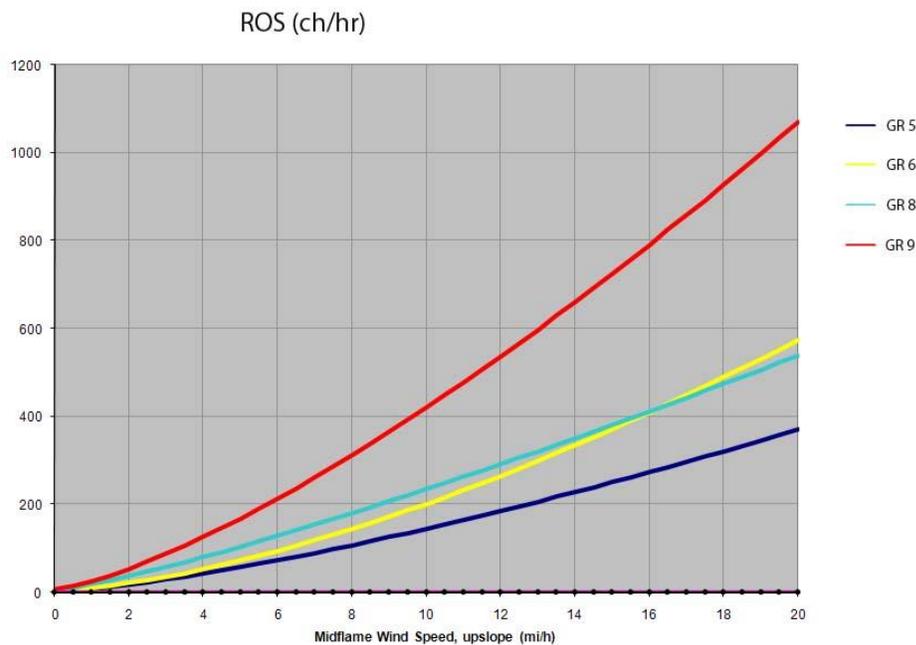


Figure 3. Rate of spread (ROS) for grass fuel models (chains/hour \*chain=66 feet)

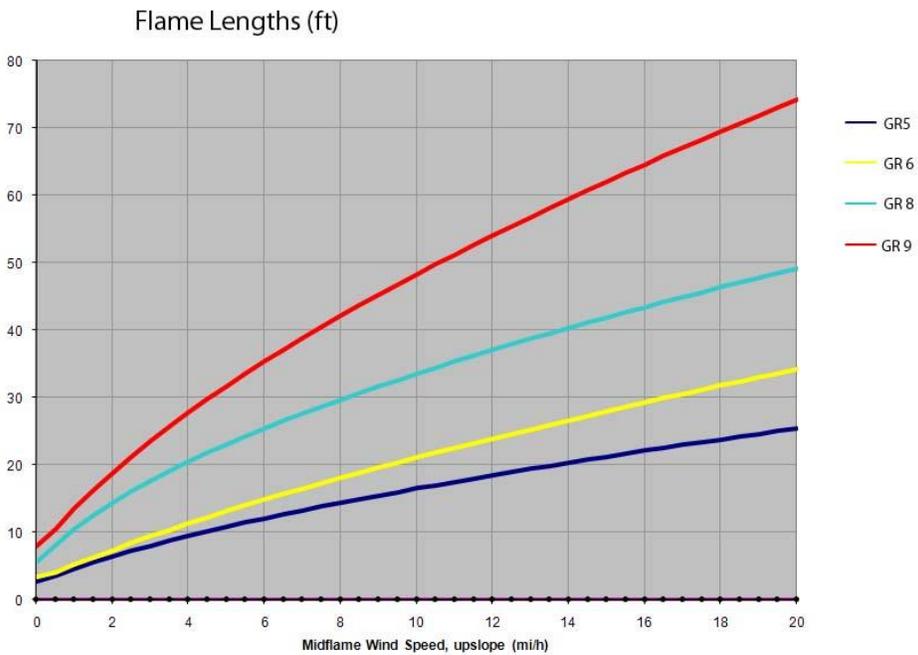


Figure 4. Flame lengths for grass fuel models

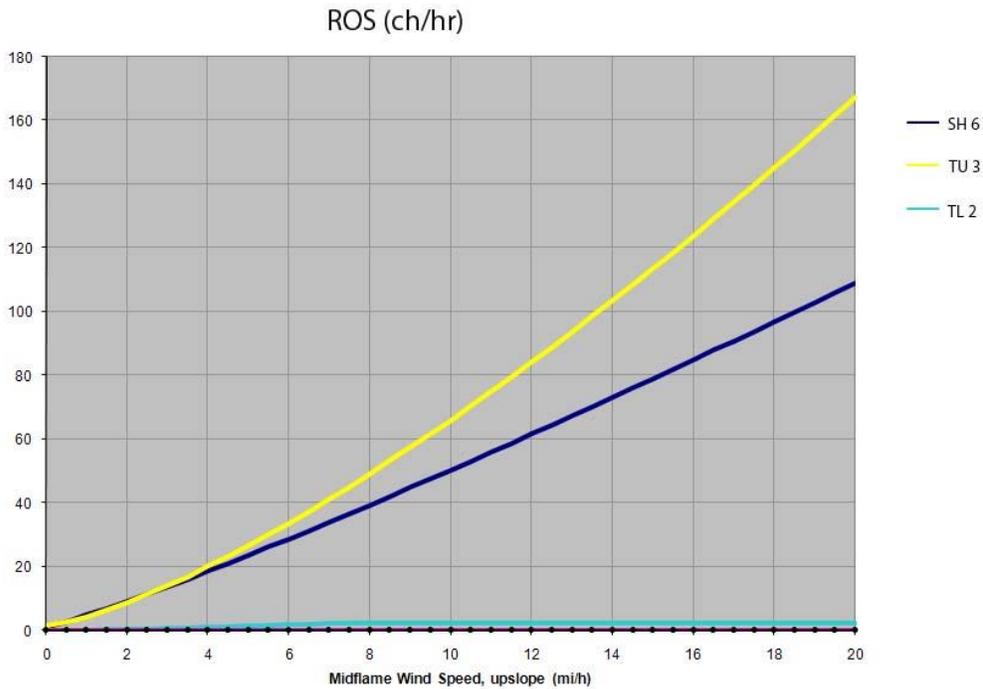


Figure 5. Rate of spread (ROS) for shrub and timber fuel models (chains/hour \*chain=66 feet)

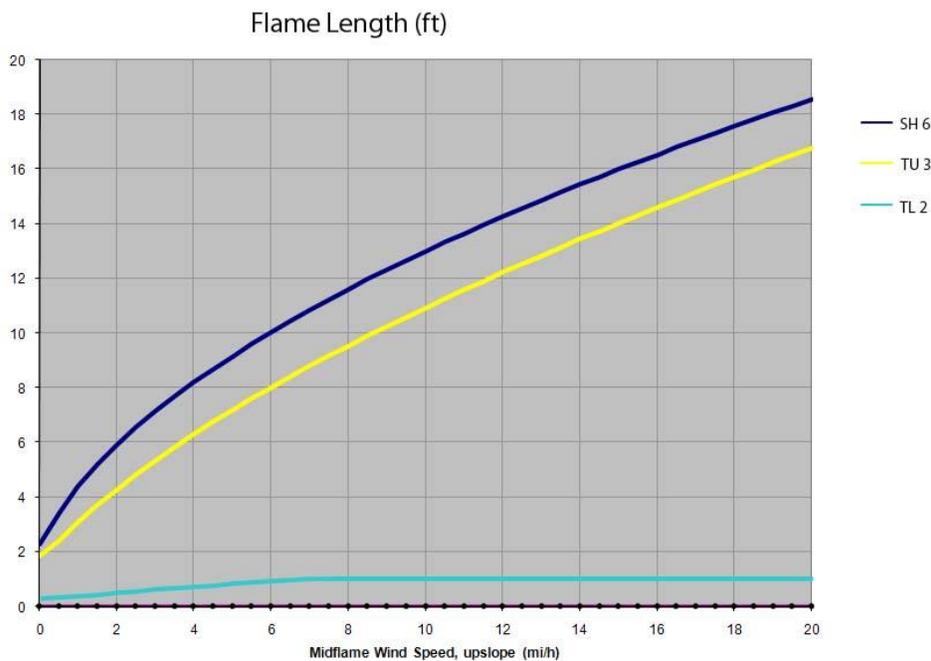


Figure 6. Flame lengths for shrub and timber fuel models

## 12. Fire Duty Officer Roles & Responsibilities

Duty Officer responsibilities can be found on the server at the Robertson Building: M:/Preparedness.

## 13. Identify location of geospatial data for managing large fires

Everglades NP spatial data can be found on the server at the Robertson Building: M:/GIS.

## 14. Operational Considerations

### Aviation

Access to the interior of FMU's 1 and 2 often require helicopter transportation. If fire escapes initial attack, helicopters and other special equipment such as single engine air tankers (SEATs) are often required. In FMU 4, although vehicle access is possible in some areas, SEAT's and helicopter use is often needed. In the pine rocklands of FMU 3, single engine airtankers are less effective, therefore engines and helicopters are used.

The Everglades NP Aviation Hazard map contains airports, helispots, helibases, and communication towers within and surrounding the Park (Figure 7). Table 3 contains the coordinates for the airports, helibases, and helispots accessible to ENP aviation resources.

<b>Airports/Helibases/Helisports:</b>		
	<u>DDM</u>	<u>Decimal Degrees</u>
Beard Center Helibase:	N 25 23' 16" x W 80 41' 00"	N 25 23.265' x W 80 41.00'
Big Cypress HQ Helispot	N 25 53' 59" x W 81 19' 15"	N 25 53.99' x W 81 19.25'
Chekika Helispot	N 25 36' 45" x W 80 35' 03"	N 25 36.748' x W 80 35.049'
Everglades City Airport	N 25 50' 58" x W 81 23' 22"	N 25 50.965' x W 80 23.367'
Flamingo Helispot	N 25 08' 40" x W 80 55' 29"	N 25 08.651' x W 80 55.477'
Homestead General Airport	N 25 30' 05" x W 80 33' 05"	N 25 30.079' x W 80 33.085'
Miccosukee Tribal Helispot	N 25 45' 36" x W 80 47' 53"	N 25 45.598' x W 80 47.883'
Oasis Helibase and landing strip	N 25 51' 46" x W 81 02' 02"	N 25 51.764' x W 81 02.033'
Key Largo Helispot	N 25 05' 09" x W 80 27' 09"	N 25 05.148' x W 80 27.15'
Deep Lake Helispot	N 25 02' 33" x W 81 20' 37"	N 25 02.55' x W 81 20.624'

*Table 3. Airports, helibases, and helispots*

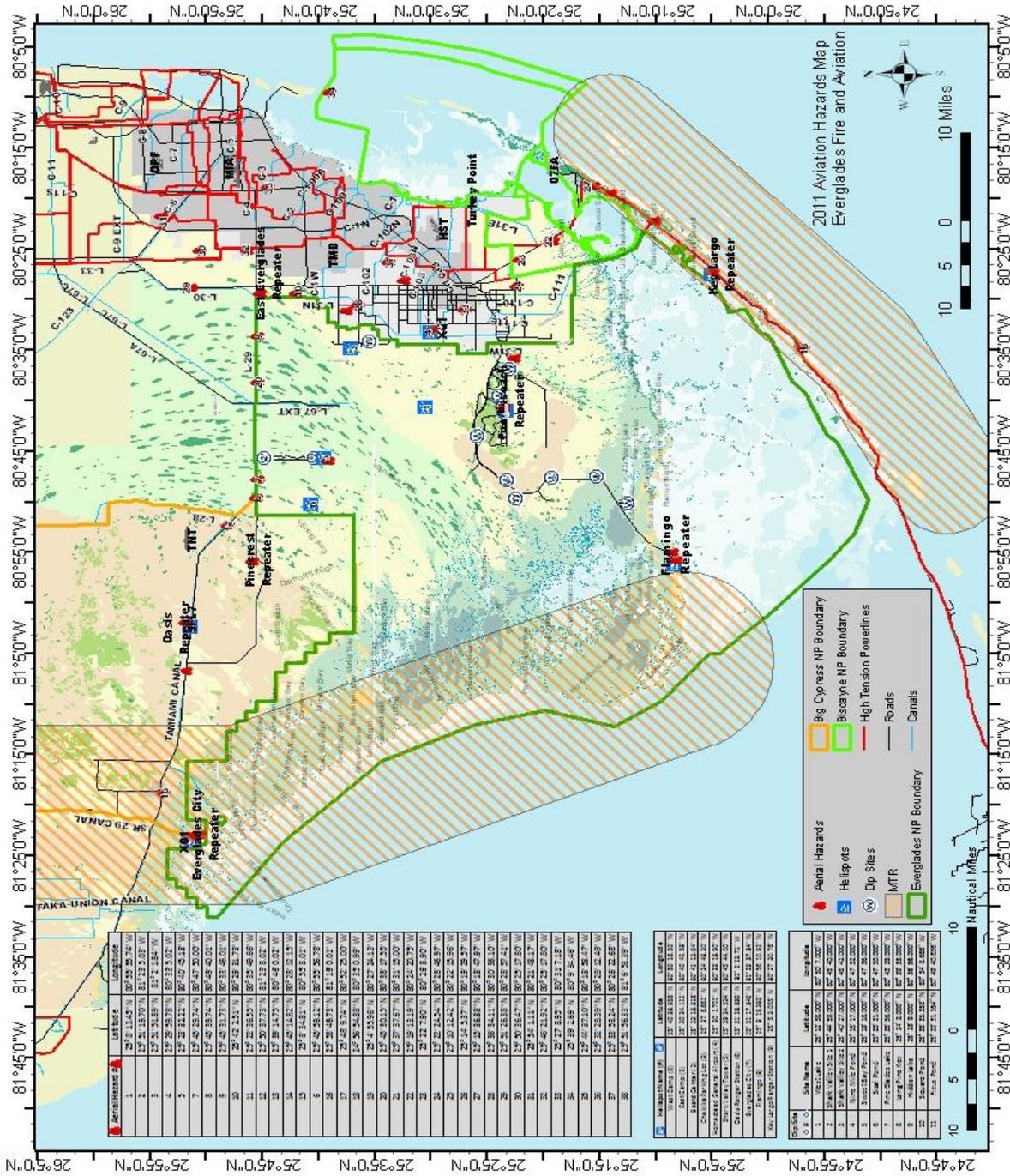


Figure 7. Aviation Hazard Map

## **15. Logistical Considerations**

### **Roads**

Hard surfaced roads in the park include:

- Main Park Road (SR 9336)
- Royal Palm Road
- Research Road
- Pine Island Road
- Long Pine Key Campground Road
- Various Scenic Spur Roads off Main Park Road
- Shark Valley Loop
- SW 168<sup>th</sup> Street
- SW 237<sup>th</sup> Avenue

Unpaved Roads include:

- Context Road
- U-Road
- The system of fire roads in the Pine Rocklands.
- SW 136<sup>th</sup> Street

### **Staging areas**

- Beard Center
- Robertson Building
- Chekika
- Homestead General Airport

### **Utilities**

Florida Power and Light is the electrical provider for the park. The 24 hour contact # is 800-468-8243.

Rich Ahern, park Utilities Supervisor is responsible for all park utility operations and can be reached at 305-242-7781.

**Medical**

All buildings have first aid kits available and Ranger Stations can provide first aid. AEDs are located in most park offices buildings.

Medical Transport:

Miami Dade Fire Rescue provides both ground and air transport.

Nearest Urgent Care Clinic:

Campbell Urgent Care Clinic:

1855 NE 8<sup>th</sup> Street

Homestead, FL 33033

305-242-8025

Nearest Hospital:

Homestead General Hospital

975 Baptist Way

Homestead, FL 33033

786-243-8000

N 25.28.50 W 80. 25. 53

Nearest Burn Center:

Jackson Memorial Hospital

1611 NW12th Avenue

Miami, FL

305-585-1111

N 25.47.31 W 80.12.44

## **Law Enforcement**

The Everglades NP Division of Visitor and Resource Protection provides Law Enforcement, EMS, and structural fire protection for the park. Miami-Dade County Police provide law enforcement for Homestead and other unincorporated areas of Miami Dade County. Monroe County Sheriff's Department provides law enforcement for all of mainland Monroe County. The Miccosukee Police Department provides law enforcement for all Miccosukee tribal lands.

## **Communications**

Everglades National Park has two telecommunications specialists who can be reached at 305-242-7782 and 7784. They can assist in establishing all radio, phone and internet systems. The Everglades Communication Center is a 24-hour dispatch center handling all emergency service dispatching for Biscayne NP, Big Cypress NP, and Dry Tortugas NP and all dispatching except wildland fire for Everglades NP. On past incidents a communications trailer has been obtained from the Florida Division of Forestry Everglades District office.

## **Maintenance Facilities**

There is a full service auto shop in the Pine Island District maintenance facility. Contact the Pine Island District Maintenance Supervisor at 305-242-7788.

## **16. Designated locations for ICP and Base Camp**

Everglades NP does not have facilities in the Park that would be adequate locations for ICP and/or base camp. The nearest location for these facilities would be private buildings in Homestead or Florida City.

## **17. Planning Considerations**

Everglades National Park is located in the southern tip of Florida west of the greater Miami area (Figure 8). There are several WUI values within and surrounding the Park that will be taken into consideration when planning operational strategies. Fire management has specific mitigations in place to prevent to the degree practicable, impacts to these values. These can be found in the Fire Management Plan.

The park is divided into four fire management units: Coastal Prairies (FMU 1); River of Grass (FMU 2); Pine Rocklands (FMU 3); and East Everglades (FMU 4) (Figure 9). Each FMU has specific fire management objectives, management constraints, and values (Figures 10-13). These can be found in the Fire Management Plan.

Approximately 90% of the Park contains the Marjory Stoneman Douglas Wilderness (Figure 14). The Wilderness Act provisions apply to all fire management activities undertaken on wilderness lands Wilderness character will be protected and preserved and all fire management operations will comply with Wilderness legislation. Mitigations to assist fire managers in achieving this objective can be found in the Fire Management Plan.



# Everglades National Park and Vicinity



ENP Fire and Aviation Management  
2011

- Everglades NP Boundary
- Big Cypress NP Boundary
- Biscayne NP Boundary
- Urban Areas
- Roads



Figure 8: Land status map



## Fire Management Units of Everglades NP



ENP Fire and Aviation Management  
2011

20 10 0 20 Miles

Figure 9: Park base map



# Coastal Prairies (FMU 1)

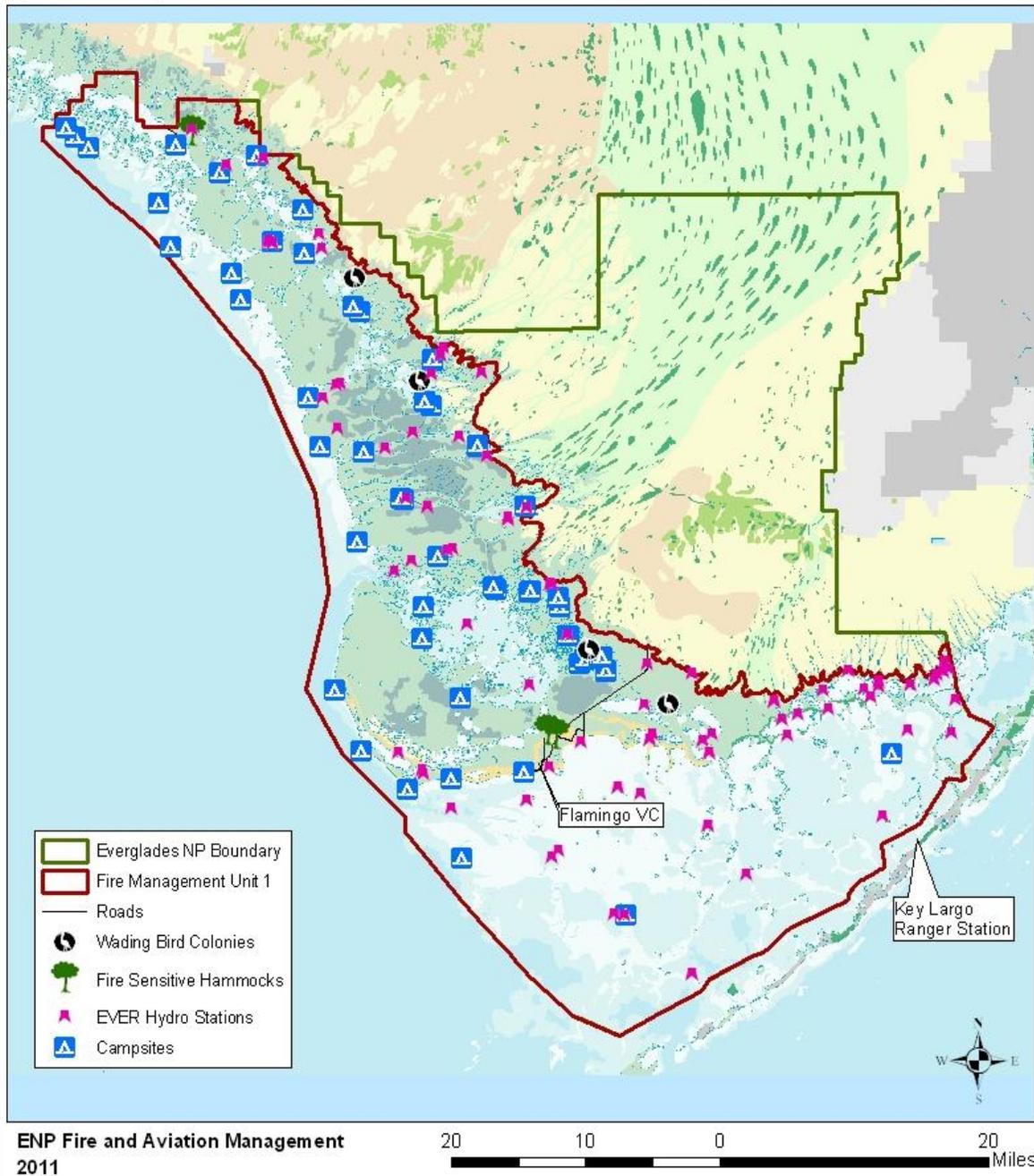


Figure 10: FMU 1: Locations of sensitive natural and cultural resources and special visitor use areas



# River of Grass (FMU 2)

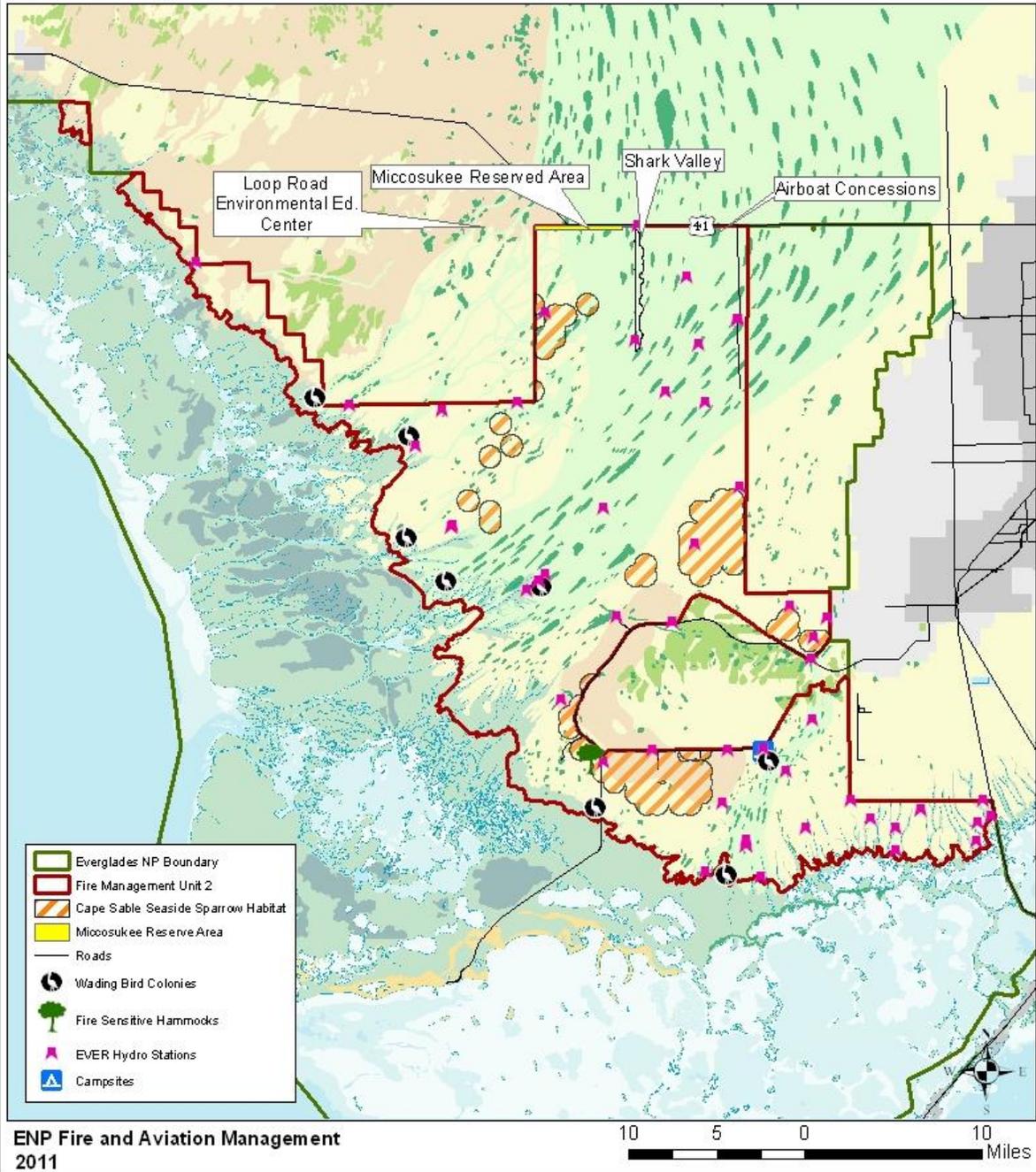


Figure 11: FMU 2: Locations of sensitive natural and cultural resources and special visitor use areas



# Pine Rocklands (FMU 3)

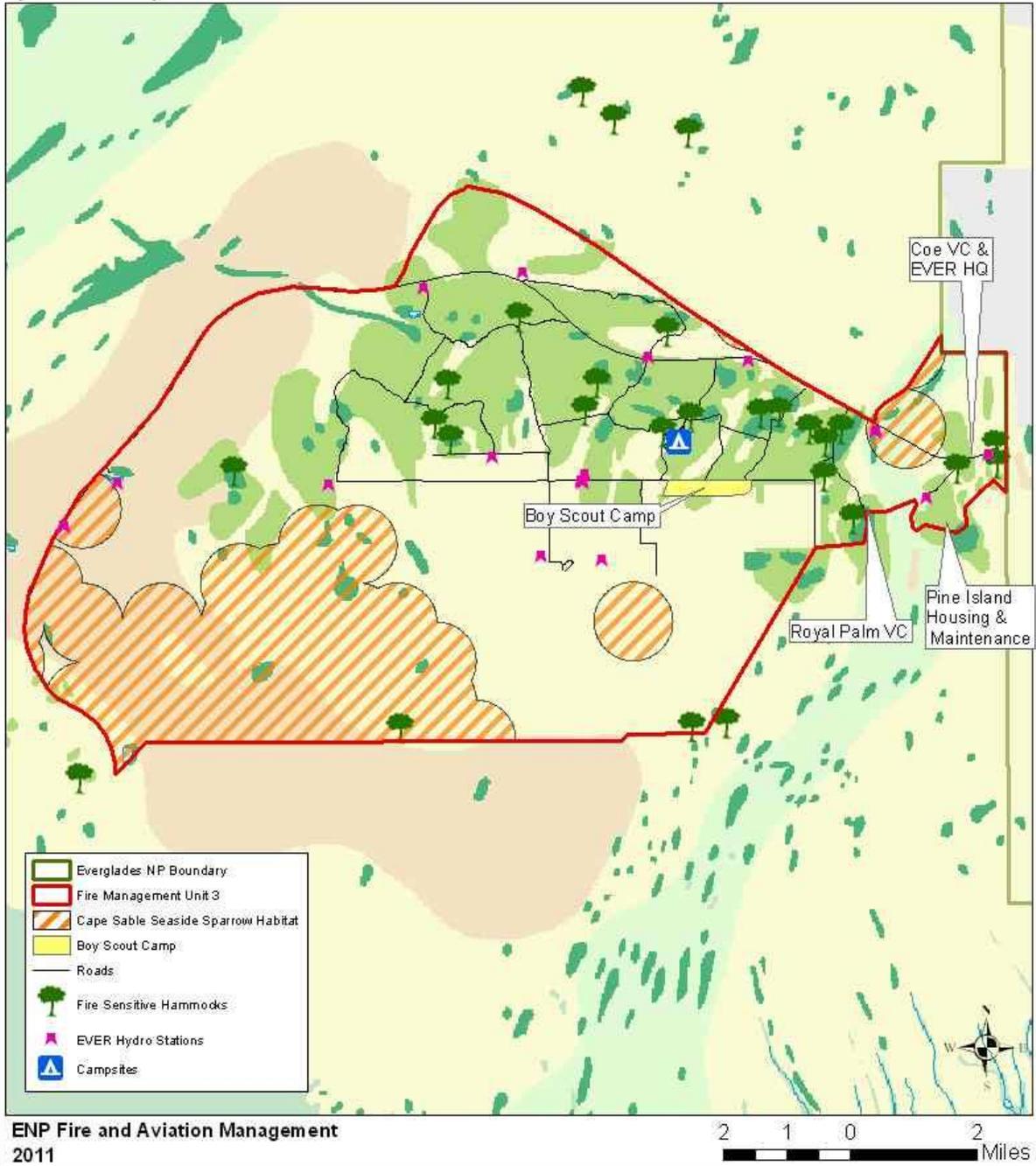


Figure 12: FMU 3: Locations of sensitive natural and cultural resources and special visitor use areas



# East Everglades (FMU 4)

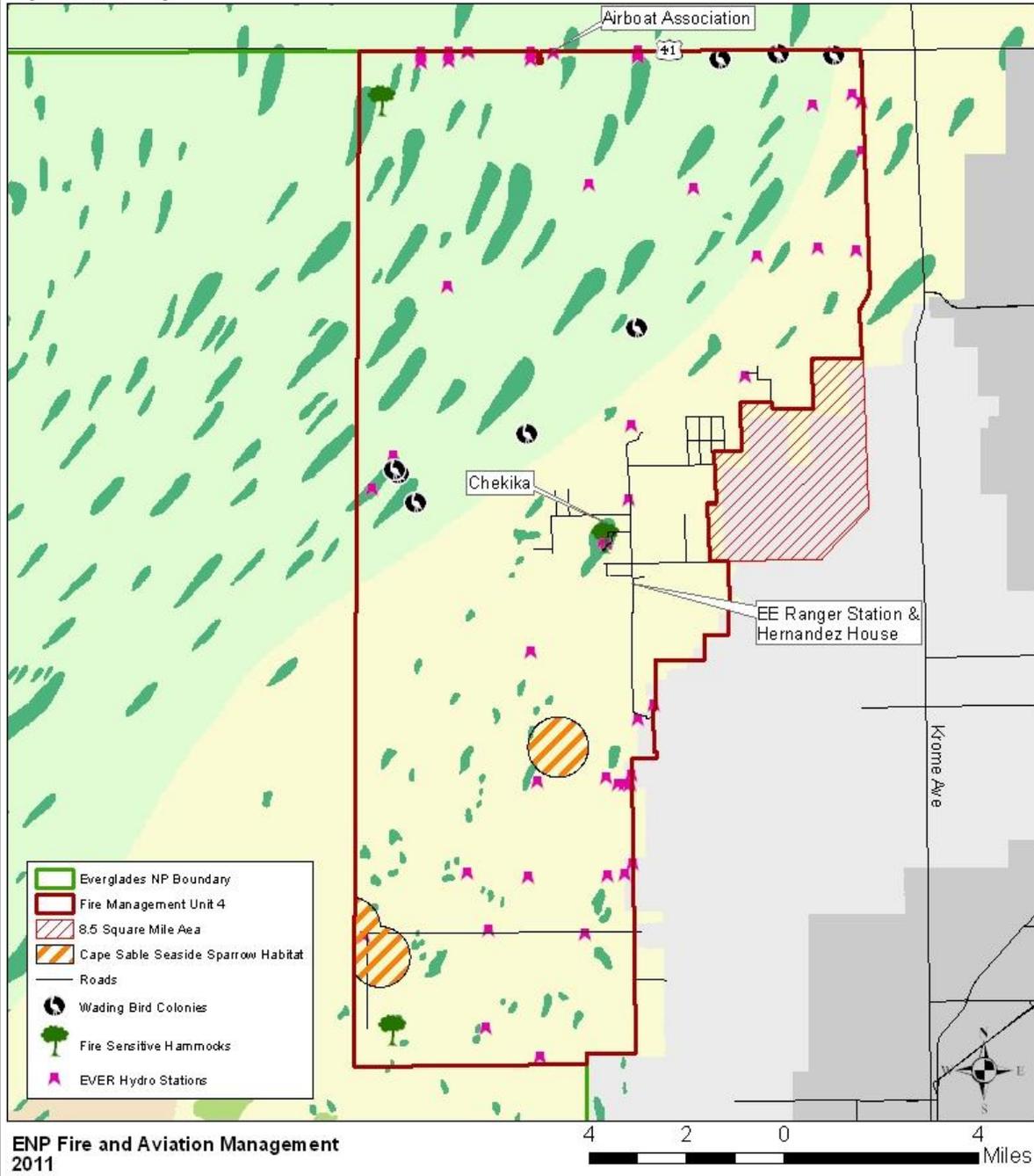
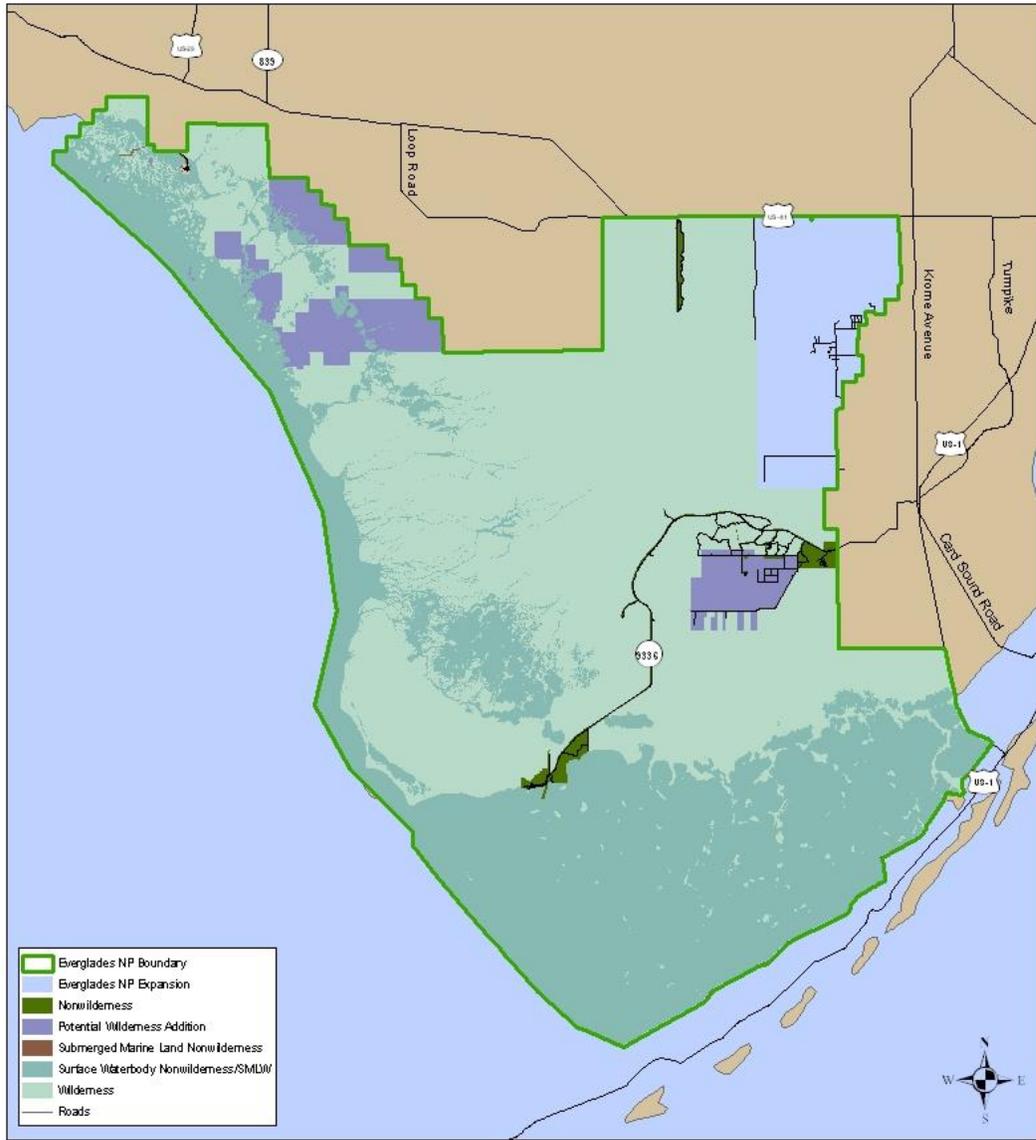


Figure 13: FMU 4: Locations of sensitive natural and cultural resources and special visitor use areas



# Everglades NP Wilderness

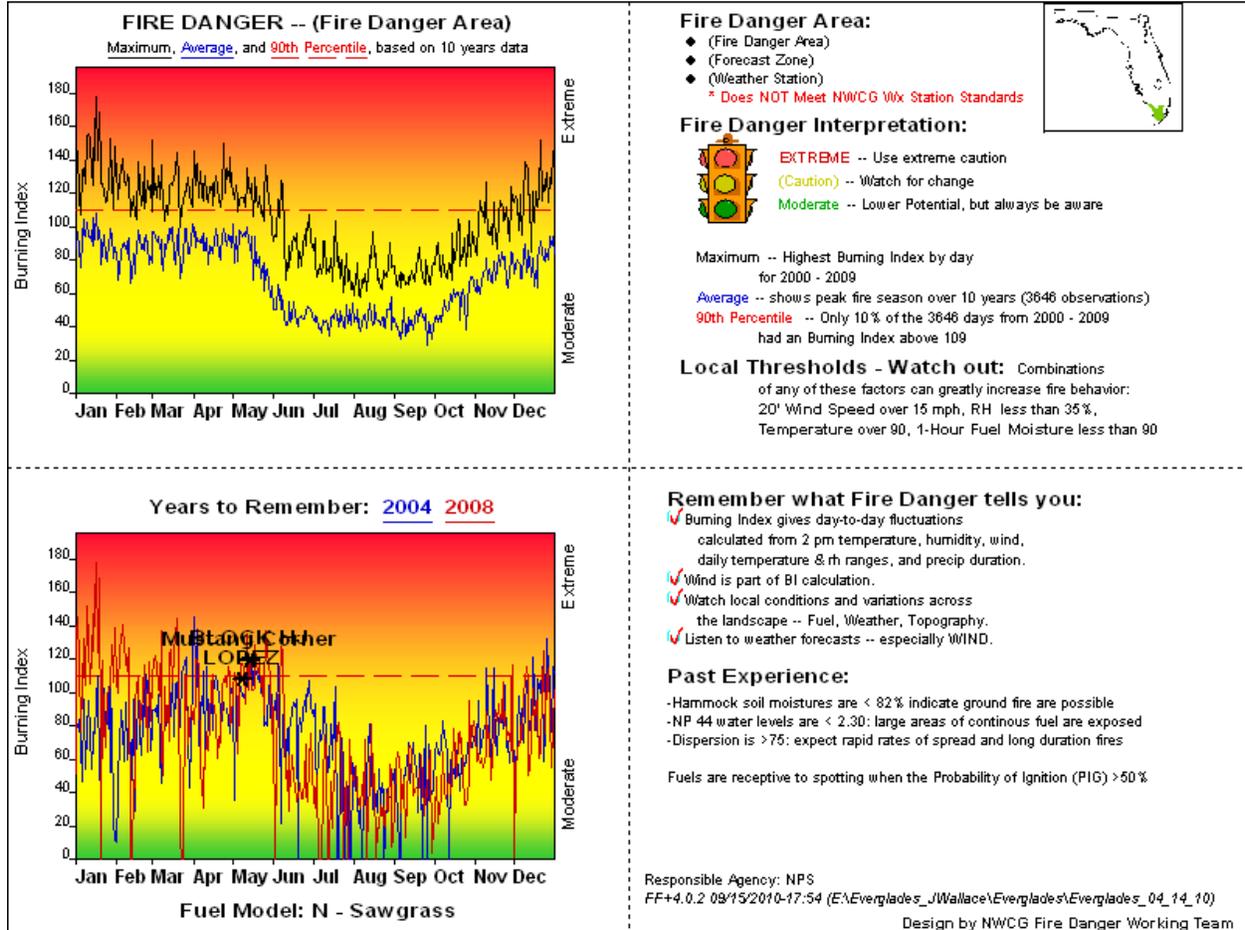


ENP Fire and Aviation Management  
2011

20 10 0 20 Miles

Figure 14: Restrictions and special concerns by management area

# Appendix O Pocket Card



**Appendix P  
Step-up Plan**

Everglades Step-Up Plan will aid in directing preparedness actions in response when increasing fire danger exists at the Park. Preparedness actions are delineated by staffing classes that range from 1=low, 2=moderate, 3=high, 4=very high & 5= extreme. Each staffing class contains the planned actions that are intended to mitigate the fire danger conditions. The actions listed within each class are designed to enhance the Park’s fire management capabilities for short periods when staffing cannot meet initial attack needs.

Everglades NP has chosen National Fire Danger Rating System (NFDRS) Burning Index (BI), standing water levels, and lighting activity levels (LAL) to determine the daily staffing class. The staffing class breakpoints were determined by using Fire Family Plus to identify the 90<sup>th</sup> and 97<sup>th</sup> percentiles. Historical fire occurrence from 1980-2010 was observed with the BI values to result in the best breakpoints.

Procedures for determining staffing class:

**Step 1** Determine base staffing class by using the calculated BI from model 8N for the Cache RAWS fire weather station.

BI is 0-23	Base Staffing Class = 1
BI is 24-47	Base Staffing Class = 2
BI is 48-95	Base Staffing Class = 3
BI is 96-110	Base Staffing Class = 4
BI is > 111	Base Staffing Class = 5

**Step 2** Determine water level at NP44.

Water Station	Water Level	Add to Base Staffing Class
NP44	≤ to 2.30' msl	+1
NP44	≤ to 1.00' msl	+2
NP44	> to 4.00' msl	-1

**Step 3** Determine LAL for that day.

<b>LAL</b>	<b>Description of Lightning Activity</b>	<b>Add to Base Staffing Class</b>
1	No expected thunderstorms	-1
2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1-5 ground strikes in a 5 minute period.	
3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 ground strikes in a 5 minute period.	0
4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 ground strikes in a 5 minute period.	
5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 ground strikes in a 5 minute period.	+1
6	Dry lightning (same as LAL 3). This type of lightning activity has the potential for extreme fire behavior and is normally accompanied with Red Flag Warnings.	

The following table summarizes preparedness actions to be taken based upon the day's staffing class:

<b>Staffing Class</b>	<b>SC1</b>	<b>SC2</b>	<b>SC3</b>	<b>SC4</b>	<b>SC5</b>
<b>Burning Index (BI) Fuel Model 8N</b>	5 day	5 day	5 day	7 day	7 day
<b>Fire Danger</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>	<b>Very High</b>	<b>Extreme</b>
<b>Open Preparedness Account for extended staffing and outside resources ordered as required</b>	No	No	No	Obtain preparedness account number from Regional Office	Request severity funding if prolonged fire danger is anticipated

<b>Command</b> * ITC4 can function as ENGB or HECM during SC1 and SC2	ITC4*	ITC4*	ITC4 w/command vehicle	ITC3 w/command vehicle	ITC3 w/command vehicle
<b>Aviation</b>	Type 3 Helicopter w/HEGB 2 HECM	Type 3 Helicopter (Fire dedicated) w/HEGB 2 HECM			
				SEAT w/ SEAT MGR	SEAT w/ SEAT MGR
<b>Engines (ENGB+FFT)</b>	1 Type 6 or Type 3	1 Type 6 or Type 3	2 Type 6 or 1 Type 6 and 1 Type 3	2 Type 6 and 1 Type 3	2 Type 6 and 1 Type 3
<b>Support Function</b>	IA Dispatcher	IA Dispatcher	IA Dispatcher	IA Dispatcher	IA Dispatcher
	Flight Following	Flight Following	Flight Following	Flight Following	Flight Following
<b>Management Actions</b>	None	None	None	FMO/Duty Officer determines need for extended hours	FMO/Duty Officer determines need for extended hours  Initiate daily incident planning meetings as needed
<b>Daily Coordination</b>	FL-DOF BICY	FL-DOF BICY	FL-DOF BICY	FL-DOF BICY	FL-DOF BICY  Coordinate with Statewide unified command and local cooperators

<b>Prevention Activities</b>	None	None	None	Post High Fire Danger Signs	Post High Fire Danger Signs Increase patrols in high visitor use areas
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