

INTERAGENCY SECTION 7 BIOLOGICAL EVALUATION

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PROJECT NAME (Grant Title/Number): Aerial Treatment of Brazilian pepper in abandoned agricultural fields and other disturbed areas.

Background

Big Cypress National Preserve (the Preserve) consists of 729,000 acres of mainly prairies, forested lands, and wetlands located in south Florida on the northern boundary of Everglades National Park. The northern boundary of the Preserve runs east to west seven miles north of Interstate 75 or "Alligator Alley," the western boundary is State Highway 29, and the eastern boundary is shared with the Miccosukee Indian Reservation. In addition to Everglades National Park, the Preserve is bounded by State Water Conservation Area 3A, Florida Panther National Wildlife Refuge, Fakahatchee Strand Preserve State Park, Big Cypress Seminole Indian Reservation, and private properties. Within the Preserve are over 200 single-family dwellings and backcountry camps registered and permitted to remain under the restrictions of the Preserve's enabling legislation. Eleven American Indian villages and two important religious sites are located in the Preserve. The largest single inholding is the Dade-Collier Training and Transition Airport, whose initial construction was a major impetus for creating the Preserve.

Areas in the Preserve that supported agricultural activities prior to becoming conservation lands present a difficult challenge for exotic plant management. Typically, these areas were either farmed or grazed and subsequently abandoned. The disturbed soil and/or altered hydrology that accompanied these agricultural activities provide excellent conditions for exotic invasive plants to establish. In these areas, Brazilian pepper (*Schinus terebinthifolius*), old world climbing fern (*Lygodium microphyllum*) cogon grass (*Imperata cylindrica*), tropical soda apple (*Solanum viarum*) and caesarweed (*Urena lobata*) are commonly encountered, serious exotic invasive plants. These species usually dominate the subsequent community succession that occurs after agricultural activities stop by outcompeting native species.

Brazilian pepper is the most significant invasive species encountered in abandoned agricultural areas in the Preserve. Land use history and extent of modification both play a role in how this species impacts these areas. Some old fields are currently monocultural stands of Brazilian pepper. In other areas, Brazilian pepper is patchy with pasture grasses (eg. Bahia grass *Paspalum notatum*) dominating the open areas. These areas probably become completely dominated by Brazilian pepper as pasture grasses are shaded out. Brazilian pepper is also found as a canopy co-dominant with early successional native hardwood species such as willow (*Salix caroliniana*), salt bush (*Baccharis glomeruliflora*) wax myrtle (*Myrica cerifera*) and cabbage palm (*Sabal palmetto*). The

long term community type that results from this combination of species is unknown. In general, these areas are thought to be of low quality to native wildlife.

As with any exotic invasive, Brazilian pepper infestations disrupt natural communities, displace native organisms and hinder restoration of native plant communities. In addition, Brazilian pepper infestations produce a great number of seeds that are then dispersed by animals to adjacent natural areas. As a result of lifecycle characteristics, abundance and widespread distribution within the Preserve, the Exotic Plant Management Program has identified this species as a top priority. The majority of the Preserve exotic plant management resources are currently being devoted to Brazilian pepper control.

Currently, Brazilian pepper in the Preserve is controlled by ground crews. Workers apply herbicide to individual trees with backpack sprayers and pull seedlings where possible. Using ground crews affords several advantages to exotic plant control. Treatment can be extremely selective which is critical for effective control in intact natural communities. In addition, smaller individuals and individuals of other species (eg. Old World climbing fern) are more likely to be found by ground crews. However, using ground crews to treat heavily infested areas is labor intensive and costly. The cost to treat dense infestations of Brazilian pepper can exceed \$4000/acre when trees are sprayed by hand.

In an effort to reduce costs and enhance Brazilian pepper control capabilities in the Preserve, aerial application of herbicide to densely infested abandoned agricultural fields is being recommended. In this treatment method, a helicopter equipped with a boom sprayer is used to apply herbicide to a large area in a short time. As a result, aerial treatment can reduce costs to as little as \$125/acre. Infestations as small as ¼ acre can be treated using this method. In addition, restricting treatment to abandoned fields minimizes the need for selectivity. Ground crews will continue to be used to treat all other infestations.

I. Agency Program:

☐ **Ecological Services**

☐ **Federal Aid**

☐ **Clean Vessel Act**

☐ **Coastal Wetlands**

☐ **Endangered Species Section 6**

☐ **Partners for Fish and Wildlife**

☐ **Sport Fish Restoration**

☐ **Wildlife Restoration**

☐ **Fisheries**

☒ **National Park Service**

II. State/Agency: Florida/National Park Service (NPS)

III. Station Name: Big Cypress National Preserve (Preserve)

IV. Description of Proposed Action (attach additional pages as needed):

Six sites have been identified as suitable for a one time aerial treatment of Brazilian pepper in the addition lands management unit: five sites are located north of Interstate 75 and one is located south of Plantation Island in the southwestern corner of the preserve. These sites, totaling approximately 358 acres represent some of the most severely infested areas in Big Cypress. Sites range in size from 18-106 acres (See attached maps). All sites are monocultural or dense (>50% cover) infestations of Brazilian pepper mixed with other undesirable vegetation. Damage to non-target species will be minimal and no threatened or endangered species are known to be present in the proposed treatment areas.

At each site, Brazilian pepper will be treated with a foliar application of 2 oz/acre Metsulfuron methyl (Escort) solution in water with a surfactant using a boom sprayer attached to a contracted helicopter. This herbicide was chosen because of its potential as an herbicide with some selectivity for Brazilian pepper. Application of Escort at this rate has been demonstrated to effectively control Brazilian pepper, however, application to large monocultural sites has not been undertaken. Results from this treatment will be used to assess the effectiveness of this methodology. Applications will only be made in appropriate environmental conditions as required by law. All treatment sites will be closed to visitors and staff while spraying occurs and until foliage dries completely. Signs indicating this closure will be placed at access points in the vicinity of the treatment site.

Records will be kept as required by the National Park System (NPS), and the Florida Department of Environmental Protection (DEP). These include measurements of environmental conditions at the site, amount and concentration of herbicide applied and area treated. Records will be submitted to DEP and will be retained at BICY in paper form and in the exotic plant treatment database. Within 12 months of aerial treatment, ground crews will revisit the site to treat any individuals that were not killed and seedlings that have emerged since the treatment. Surrounding natural communities will be surveyed by ground crews and all significant exotic invasive species will be treated with appropriate methods. It is anticipated that one or more additional retreatments by ground crews will be needed to ensure maximum control of these areas.

V. Pertinent Species and Habitat:

A. Include species/habitat occurrence map: The endangered Florida panther is extant in the wild only in southern Florida. Approximately 80 individuals occupy much of the remaining contiguous natural habitat in the region. Florida panthers are known to occur in the Preserve, utilizing natural upland and wetland communities. However, panthers are thought to avoid the invasive infested agricultural fields that are the focus of this project.

B. Complete the following table:

SPECIES/CRITICAL HABITAT	STATUS ¹
Florida Panther (<i>Puma concolor coryi</i>)	E

¹STATUS: E=endangered, T=threatened

VI. Location:

- A. **Ecoregion Number and Name:** 53, South Florida
- B. **County and State:** Collier County, Florida
- C. **Section 1-36, Township 49-56, Range 29-35.**
- D. **Distance (miles) and direction to nearest town:** Everglades City, Florida, is immediately adjacent to the Preserve's southwest border.
- E. **Species/habitat occurrence:** Critical habitat has not been designated for Florida panthers. Suitable panther habitat found in the vicinity of the projects area includes pine flatwoods, oak hammock, cypress strand and prairie. State biologists regularly monitor panther activity in this part of the preserve. These biologists and preserve biologists were consulted about panther use of Brazilian pepper fields. It was indicated that panthers do not use these areas as denning sites due to availability of preferred habitat in pine flatwoods. Florida panther are unlikely to be negatively affected by this project. They generally do not utilize the habitat to be treated under this project. No undisturbed natural communities will be treated under this project.

Herbicide application will be in habitat that is densely infested with Brazilian pepper. Potential exposure of panthers, their prey or their habitat is minimal. Application will be in strict accordance with manufacturers labeling and designed to minimize off target damage due to drift. In addition, metsulfuron methyl is essentially non-toxic (LD-50 >5000mg/kg in rats). In the unlikely event that a panther came into contact with this herbicide, no injury would occur. This project may have moderate beneficial impacts to panthers. Returning these communities to early successional stages should provide forage for white tailed deer, the primary prey of panther.

VII. Determination of Effects:

- A. **Explanation of effects of the action on species and critical habitats in item V. B (attach additional pages as needed):**

SPECIES/ CRITICAL HABITAT	IMPACTS TO SPECIES/CRITICAL HABITAT
Florida panther	This project is not likely to adversely affect this species. This project targets areas that have limited wildlife value and are substantially impaired by the presence of Brazilian pepper. The long-term benefits to the species and its habitat will be substantially more important to maintain and recover viable populations. Critical habitat has not been designated for the Florida panther, however, no treatment will occur in natural communities including those preferred by panthers.

B. Explanation of actions to be implemented to reduce adverse effects:

SPECIES/ CRITICAL HABITAT	ACTIONS TO MITIGATE/MINIMIZE IMPACTS
Florida panther	• Prior to any aerial treatment, state and preserve biologists will be consulted for potential panther locations in the project area. The affected area will be checked against all available sources for panther denning activity, including the Florida Fish and Wildlife Conservation Commission's panther telemetry data. Preserve biologists will be notified prior to any aerial treatment implementation to assess panther activity. • Non-denning panthers found to be within a treatment area will be allowed to move out of the unit on their own accord before activities begin. • If denning panthers are found within a treatment area, it will not be treated. • Aerial application will proceed across the treatment area in

SPECIES/ CRITICAL HABITAT	ACTIONS TO MITIGATE/MINIMIZE IMPACTS
	transects such that panthers could exit the area without contacting herbicide.

VIII. Effect Determination and Response Requested:

SPECIES/ CRITICAL HABITAT	DETERMINATION ¹			RESPONSE ¹ REQUESTED
	NE	NA	AA	
Florida panther		X		Concurrence

¹DETERMINATION/ RESPONSE REQUESTED:

NE = no effect/no adverse modification.

NA = not likely to adversely affect.

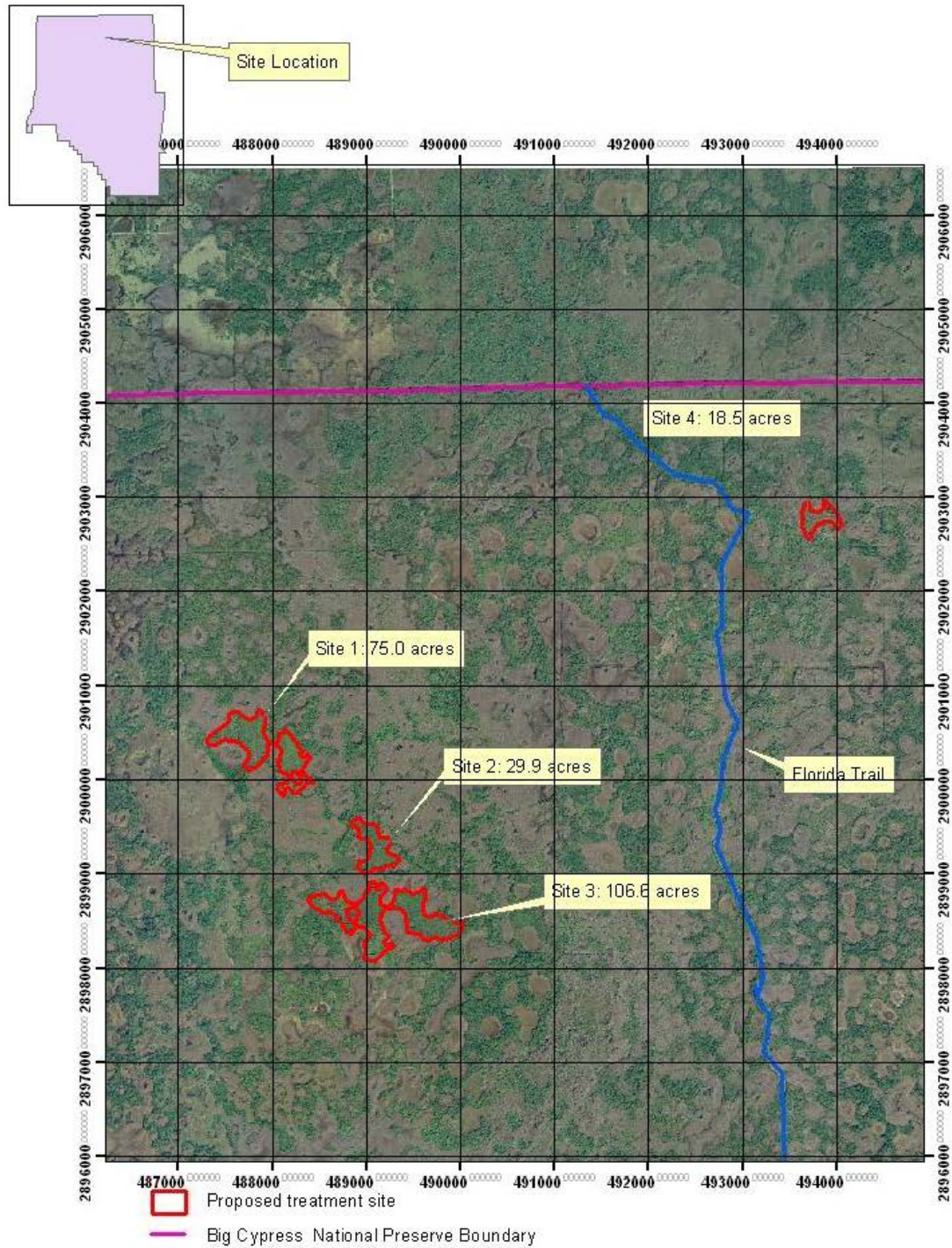
AA = likely to adversely affect.

Signature (originating station)

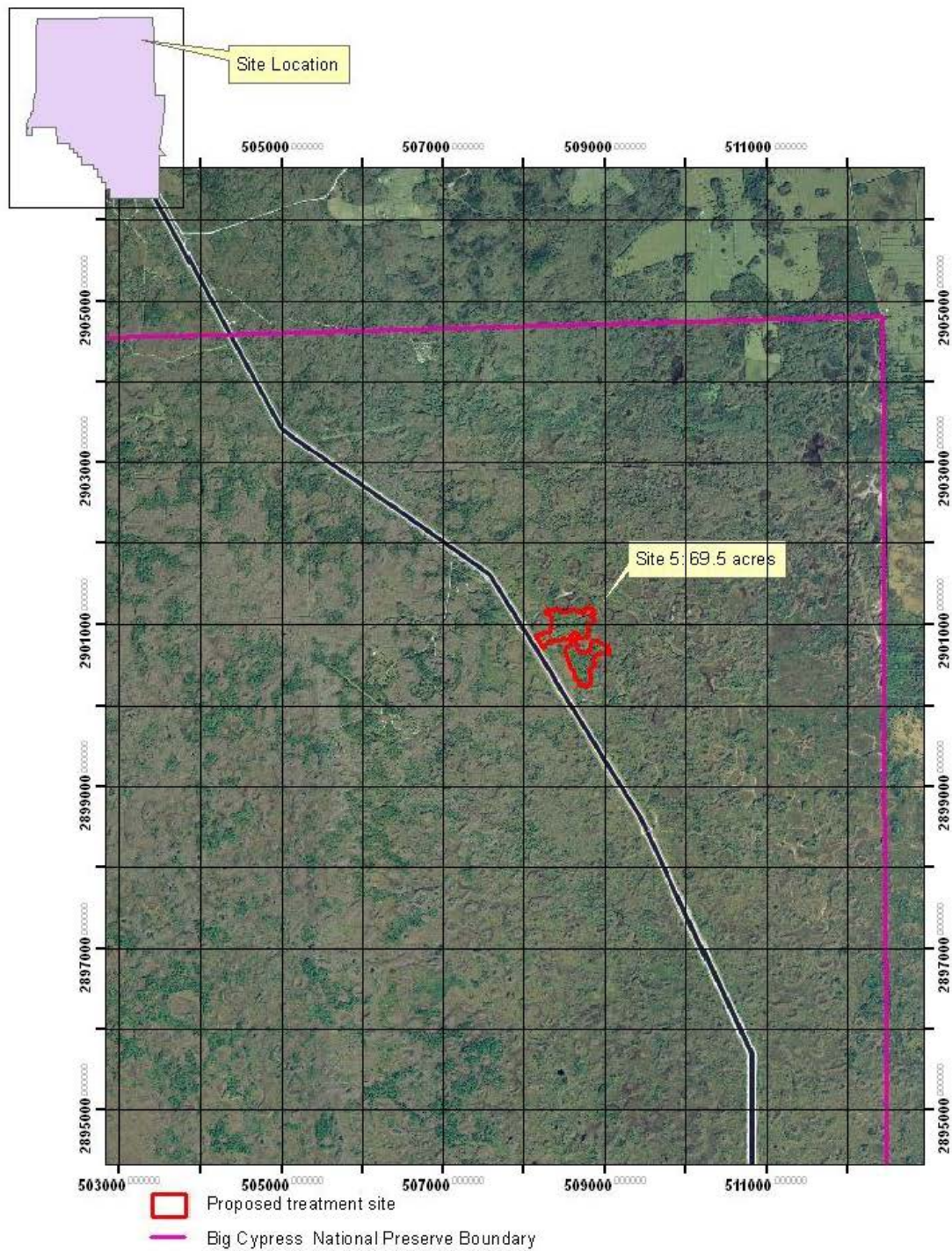
Date

Title

Proposed aerial treatment sites: Addition Lands, Sites 1-4.



Proposed aerial treatment site: Addition Lands, Site 5.



Proposed aerial treatment site: Addition Lands, Site 6.

