

Exotic Plant Control Project Report

Big Cypress National Preserve

August 2004

Project: Brazilian Pepper Removal, Bear Island Management Unit.

Task Order No.: T51200341303

Contractor

Aquatic Vegetation Control, Inc.
6753 Garden Road, Riviera Beach, FL 33404

Contract No.: C5120036100

Funding Sources:

Related PMIS No.: 41189, Exotic Plant Control

Contributes to PMIS Goals: Ia1b – By September 30, 2005, 82,000 (50%) of the 164,000 acres of BICY lands known to be impacted by targeted exotic vegetation is contained.

Treatment Objectives and Methods

The major component of this exotic plant control task order was to begin removal of Brazilian pepper (*Schinus terebinthifolius*) trees from the Bear Island Management Unit, with activities concentrated adjacent to roads and trails within the Bear Island Unit. Brazilian pepper control was done primarily to about 50 feet (18 m) from the road or trail edges. The objective is to treat 100% of Brazilian pepper trees in this area with basal bark chemical treatment, cut surface chemical treatment, hand pulling seedlings, or any combination of these treatments to eliminate this exotic tree from the identified area. Several other roads and trails in the vicinity were similarly treated, including part of Turner River Road that extends south of the Bear Island area, part of Concho Billy Trail, Fire Prairie Trail, a follow-up treatment on the southern side of US41 (Tamiami Trail), and at least three sites of former habitation.

Results

Bear Island Roads and Trails. Brazilian pepper removal in the Bear Island trails areas effectively eliminated removal of this exotic from the margins of about 13 mi of road and ORV trails. Significant areas near the Pink Jeep camping area and an abandoned

oil drilling pad. Other exotic plants that were removed included guava (*Psidium guajava*) and citrus (*Citrus* spp.) trees.

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Citrus</i> spp.	Citrus	30
<i>Psidium guajava</i>	guava	50
<i>Schinus terebinthifolius</i>	Brazilian pepper	undet.

Turner River Road. Treatment along Turner River Road occurred on the western and eastern sides of the road from about 12 miles south of I-75 north to the terminus of the road at Bear Island (1.7 mi. north of I-75). On the eastern side of Turner River Road, the area treated extended 50 feet (18 m) east of the borrow canal that occurs along the entire length of Turner River Road on its eastern side; this effectively created a treatment area about 100 feet wide on that side of the road. . Several other non-native plants were also treated as encountered, including cogon grass (*Imperata cylindrica*), Melaleuca (*Melaleuca quinquenervia*), lead tree (*Lucaena leucocephala*), Java plum (*Syzygium cuminii*), and guava (*Psidium guajava*).

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Schinus terebinthifolius</i>	Brazilian pepper	undet.

Concho Billy ORV Trail and Fire Prairie Hiking Trail are trails that may be accessed from Turner River Road. Each is a remnant of a constructed access to previously occupied (now abandoned) oil drilling installations; each is about 2.5 mi long. These trails are elevated, and as such supported Brazilian pepper trees. The Concho Billy ORV trail diverges from the elevated trail and continues through natural communities for several miles; exotic plants are not commonly found in these natural communities.

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Schinus terebinthifolius</i>	Brazilian pepper	undet.

Former Residences. Three areas that were previously privately owned were addressed with treatment of exotics persisting after human habitation.

Bock Parcel: This area was recently acquired by DOI, so that much exotic landscape remained near buildings. Exotics included:

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Callistemon viminalis</i>	bottlebrush tree	2
<i>Carica papaya</i>	papaya	15
<i>Dalbergia sissoo</i>	West Indian Rosewood	3
<i>Ficus microcarpa</i>	banyan	5
<i>Hibiscus tiliaceus</i>	seaside mahoe	75
<i>Musa paradisiaca</i>	banana	50

<i>Phoenix</i> sp.	Phoenix palm	1
<i>Psidium guajava</i>	guava	10
<i>Schinus terebinthifolius</i>	Brazilian pepper	6168
<i>Syngonium podophyllum</i>	--	50
<i>Syzygium cuminii</i>	Java plum	4

Deb's former residence: This is a former residence on the western side of Birdon Road that was used for several years as Preserve Employee housing. Exotic plants removed from this location included:

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Araucaria</i> sp	Norfolk Island pine	2
<i>Dalbergia sissoo</i>	West Indian rosewood	120
<i>Schinus terebinthifolius</i>	Brazilian pepper	250
<i>Juniperus</i> sp.?	cedar	60

Unknown former residence: This location, on the eastern side of Turner River Road was occupied by perhaps three or four small camps; these were abandoned many years ago. The substrate here has been dredged and elevated, so that non-native trees are supported and dominated the area. Exotic plants removed from this location included:

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Melaleuca quinquenervia</i>	melaleuca	1
<i>Schinus terebinthifolius</i>	Brazilian pepper	60
<i>Syzygium cuminii</i>	Java plum	150
sp. undet. Fabaceae	--	2

US41 Treatment. The road margins along US41 (Tamiami Trail) were treated for Brazilian pepper two years ago. As part of the current work, part of this area received follow-up attention on this first treatment. Brazilian pepper was treated on the southern side of the road, from the intersection of SR29 (western boundary of the preserve) to about 6.7 mi. east.

<u>Species</u>	<u>Common name</u>	<u>Stems</u>
<i>Schinus terebinthifolius</i>	Brazilian pepper	undet.

Areas Treated

Control of Brazilian pepper and other exotics as encountered was done primarily to about 50 feet (18 m) from the road or trail edges. The objective was to treat 100% of Brazilian pepper trees in this area with basal bark chemical treatment, cut surface chemical treatment, hand pulling seedlings, or any combination of these treatments to eliminate this exotic tree from the identified area. Other areas (former small residential areas) were also identified as locations appropriate for treatment. These locations are also on the roadsides, but extended farther from the roads and were severely infested with problem exotics.

Location	Treated Area (ac.)	Density*	Exotic Area (ac.)*
Bear Island Area: 13.0 mi. Turner River Road	157.6	2	24.4
east side: 13.7 mi.	166.1	3	63.1
west side: 13.7 mi.	83.0	2	12.9
Concho Billy ORV Trail 2.5 mi.	30.3	2	4.7
Fire Prairie Hiking Trail 2.5 mi	30.3	1	0.8
Bock former residence	3.9	5	3.3
Deb's former residence	1.4	3	0.5
Unknown former residence	5.0	4	3.2
US 41 follow-up initial treatment south side 6.7 mi	<u>40.6</u>	1	<u>1.0</u>
Total	518.2		113.9

	Mean Density
*Exotic Density Ratings: 1 = $\leq$ 5%	2.5%
2 = 6-25%	15.5%
3 = 26-50%	38.0%
4 = 51-75%	63.0%
5 = 76-95%	85.5%
6 = >95%	97.5%

Exotic Density Ratings are ratings used on NPS Daily Progress Report for Invasive Plant Control daily report pages.

*Exotic Areas are areas completely dominated by exotics and are estimated as a product of mean density of each Exotic Density Rating (above) that is associated with each identified Treatment Area, and the number of acres of each Treatment Area.

Cost

Cost of Contracted Services: \$78,400.00
 Cost of contracted services includes herbicide.

Cost per Acre (Treatment Area): \$151.29
 Cost per Acre (Exotic Area): \$688.32

Treatment Methods Used

The contractor supplied a crew of six laborers with one supervisor. These employees treated exotic plants primarily with a basal herbicide spray, but also cut trees and applied herbicide to stumps, girdled trees and applied herbicide to exposed cambium, and pulled seedlings, as necessary to eliminate these plants. Brazilian pepper tree (*Schinus terebinthifolius*) is the tree that was primarily identified for control, but other exotic plants were also treated when they were encountered.

Herbicide Used

Herbicide was mostly applied as a basal spray treatment on exotics, but was also applied on cut stumps, or on girdled stems as appropriate. In all cases the herbicide that was applied was a mix of Garlon 4 (15%), Stalker (1%), and Impel Red (84%).

<u>Location</u>	<u>Herbicide Used Amount (oz.)</u>
Bear Island Area	
Turner River Road	
Concho Billy ORV Trail	192
Fire Prairie Hiking Trail	192
Bock former residence	
Deb's former residence	
Unknown former residence	
US 41 follow-up initial treatment	