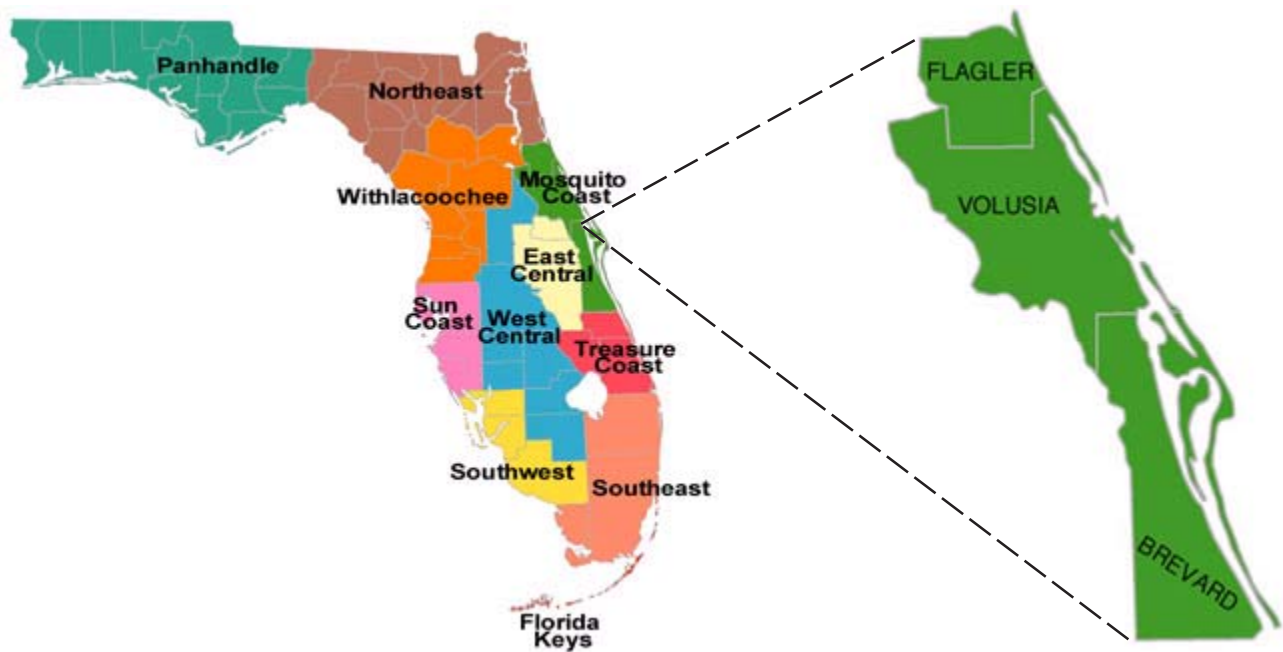


## Mosquito Coast Regional Working Group



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The Mosquito Coast Regional Working Group liaison is Ms. Jackie Smith, DEP Bureau of Invasive Plant Management, 3111 B-13 Fortune Way, Wellington, Florida 33414, phone: 561-722-2479, fax: 561-791-4722, e-mail: [jackie.c.smith@dep.state.fl.us](mailto:jackie.c.smith@dep.state.fl.us)

## Pine Island Conservation Area

County: Brevard

PCL Size: 879 acres

Project ID: MC-040 117 acres \$112,050

Project Manager: Brevard County Parks & Recreation

D. Scott Taylor, Ph.D., EEL Central Region Land Manager

5560 North US Highway 1, Melbourne, Florida 32940

Phone: 321-255-4466, Fax: 321-255-4499

E-mail: [staylor@brevardparks.com](mailto:staylor@brevardparks.com)

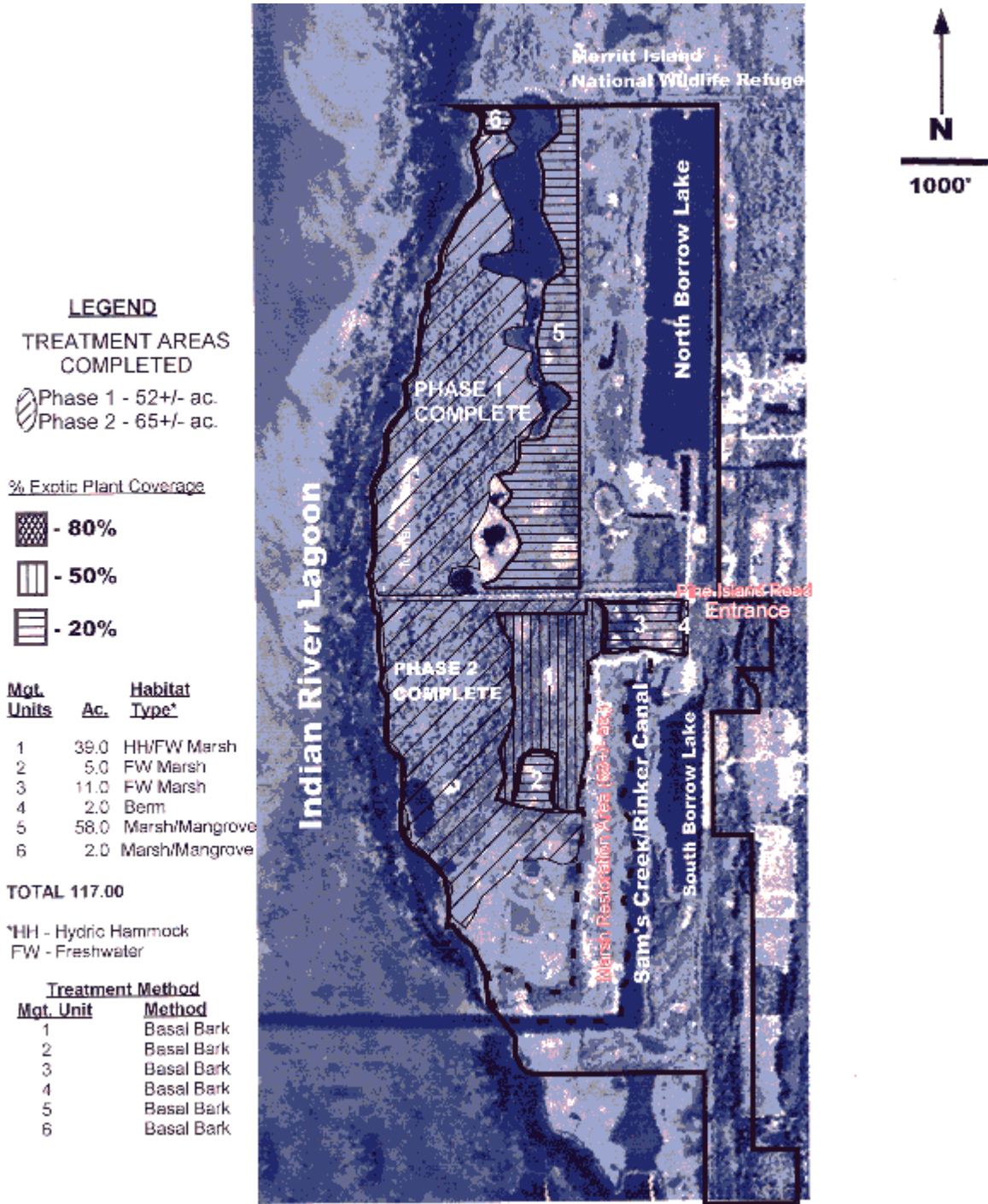
The mesic pine flatwoods “island” for which this conservation land is historically named is regionally unique in that large areas grade directly into the Indian River Lagoon and other areas exhibit rapid transitions to isolated freshwater marshes and impounded estuarine marsh and mangrove forest habitats that fringe the Lagoon. Development activities on Pine Island during the 1960s in support of sand mining and mosquito control operations significantly altered the hydrologic regime and structural integrity of the expansive estuarine marsh system historically characterizing this property. Invasive exotic pest plants, primarily Brazilian pepper, exploited the conditions provided by these land disturbances. This project, the third phase of ongoing work, targeted removal of Brazilian pepper from primarily hydric hammock and impounded freshwater marsh natural community types located in the south-central quadrant of the conservation property. Brazilian pepper occurred throughout the project area in varying degrees of coverage, with the majority of the project exhibiting dense coverage.

Target Plants	Common Name	FLEPPC Rank	Treatment	Herbicide
<i>Albizia julibrissin</i>	mimosa	Category I	basal	Garlon 4
<i>Casuarina equisetifolia</i>	Australian pine	Category I	cut stump	Garlon 4
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	basal	Garlon 4
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	cut stump	Arsenal



Invasive species even compete with each other. This hapless Australian pine (center) is swamped by a monoculture of Brazilian pepper.

# Pine Island Conservation Area



## Merritt Island National Wildlife Refuge

County: Brevard

PCL Size: 139,174 acres

Project ID: MC-041 818 acres \$39,938.49

Project ID: MC-042 376 acres \$95,200.00

Project Manager: U.S. Fish and Wildlife Service

Ron Hight, Refuge Manager

P.O. Box 6504, Titusville, Florida 32782

Phone: 321-861-0667, Fax: 321-861-1276

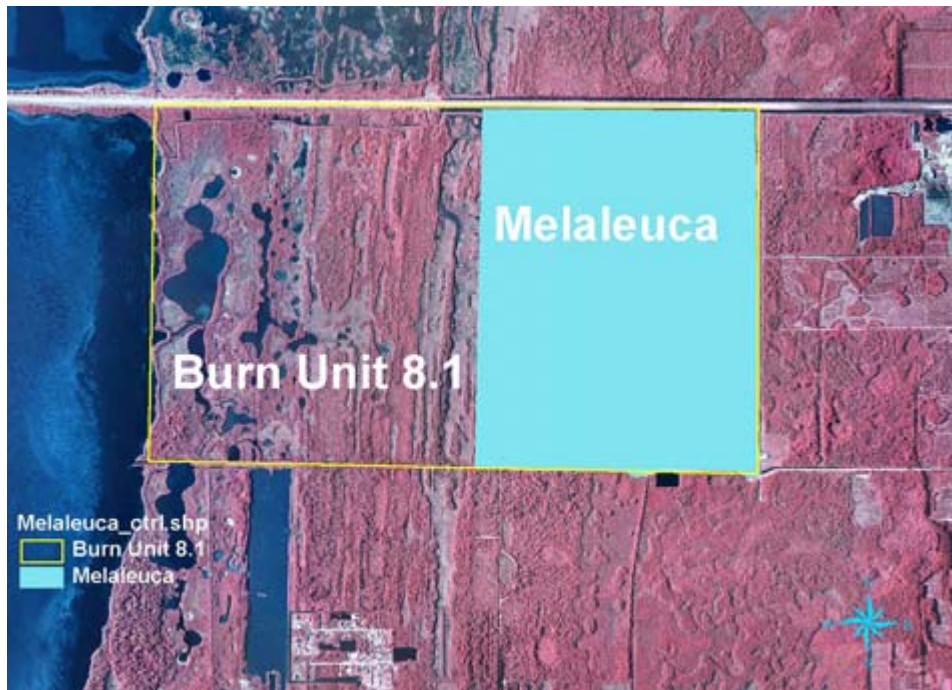
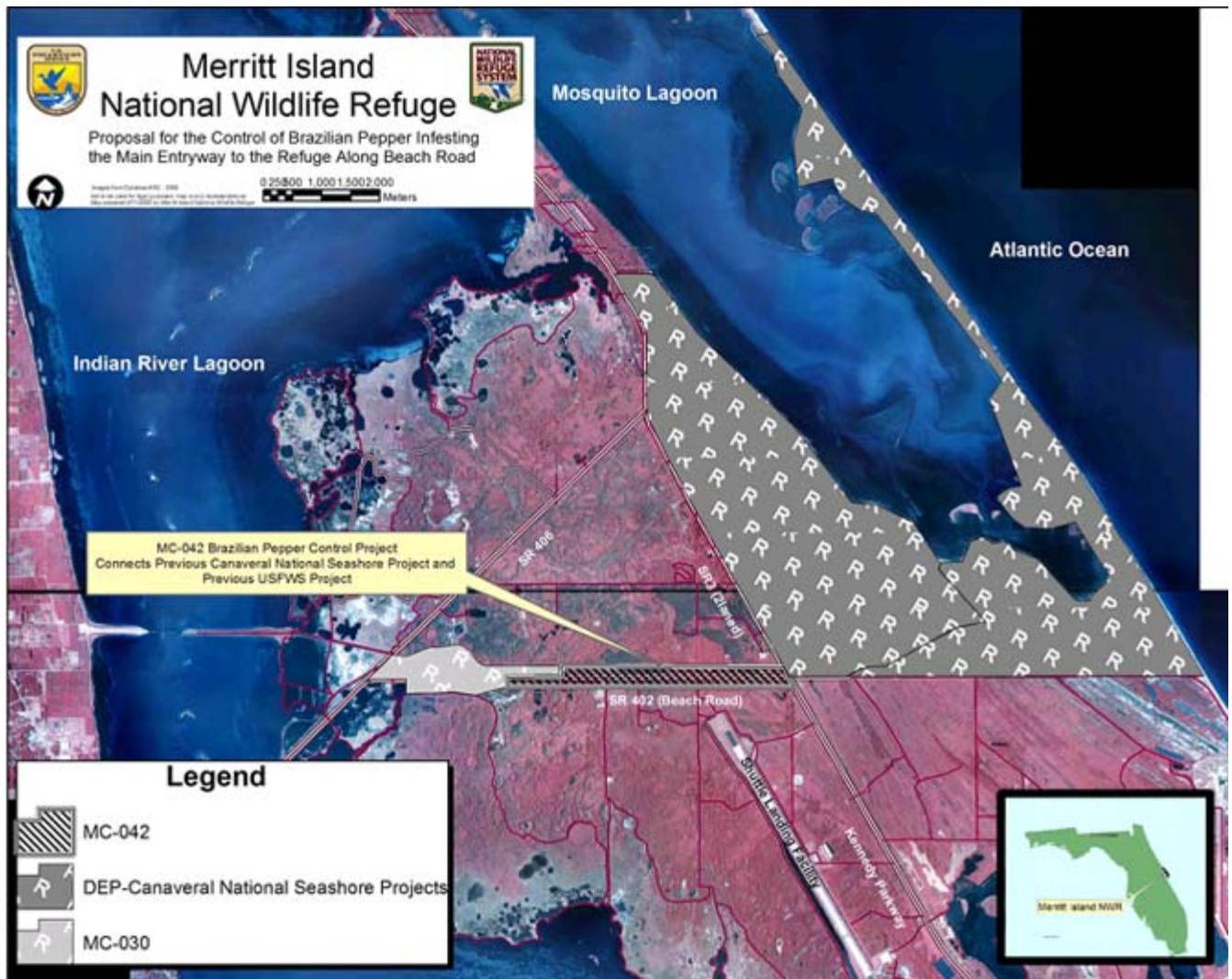
E-mail: ron\_hight@fws.gov

In the early 1960s, NASA began to acquire the land that is now John F. Kennedy Space Center. In 1963, the acquisition was complete and NASA turned those lands not vital to the space program over to the U.S. Fish and Wildlife Service. Today, the Department of the Interior manages the 43-mile long barrier island as Merritt Island National Wildlife Refuge and Canaveral National Seashore. The Refuge is adjacent to the Indian River and Banana Rivers, and Mosquito Lagoon. Approximately one-half of the refuge consists of brackish estuaries and marshes. The remaining land consists of coastal dunes, scrub oaks, pine forest, pine flatwoods, and palm and oak hammocks. Numerous rare plants and animals live on the refuge. These include seventeen state-endangered plants, such as satinleaf (*Chrysophyllum oliviforme*), crested coralroot (*Hexalectris spicata*), Florida peperomia (*Peperomia obtusifolia*), beach star (*Remirea maritima*), bay cedar (*Suriana maritima*), coastal hoary pea (*Tephrosia angustissima*), and sea lavender (*Tournefortia gnaphalodes*).

Early homesteaders that occupied the land before it became a refuge first introduced melaleuca. They planted the tree as an ornamental, as well as for shade, and it later escaped into the natural wetlands of the area. The first of two projects on the Refuge controlled melaleuca scattered within 818 acres of Burn Unit 8.1, located a few miles south of the Beach Road corridor. Melaleuca trees lightly to moderately infested swales that run north to south through the marshes in the Refuge.

Those same homesteaders also introduced Brazilian pepper as an ornamental and it likewise escaped into area wetlands. (This pattern continues throughout Florida to this day). This second project primarily controlled Brazilian pepper that moderately infested the 376 acres of wetlands along the entry road to the Refuge. The Beach Road corridor is often the visitor's first look at the refuge, so it is essential this view be unobstructed by exotic plants to provide the visitor an accurate depiction of the natural communities of Merritt Island. This project also played a key role in the restoration of marshes that provide vital habitat for Henslow's sparrows, bobolinks, sedge wrens, and other birds. Canaveral National Seashore previously conducted an exotic control program on the east end of the Beach Road thoroughfare, thus linking with this project area and providing a corridor of native vegetation for wildlife and improving the visitor's experience.

Target Plants	Common Name	FLEPPC Rank	Treatment	Herbicide
<i>Casuarina equisetifolia</i>	Australian pine	Category I	basal	Garlon 4
<i>Cinnamomum camphora</i>	camphor tree	Category I	cut stump	Garlon 4
<i>Melaleuca quinquenervia</i>	melaleuca	Category I	cut stump	Arsenal
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	basal	Garlon 4
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	cut stump	Arsenal



## Archie Carr National Wildlife Refuge

County: Brevard

PCL Size: 238.62 acres

Project ID: MC-043 153 acres \$73,869

Project Manager: Brevard County Parks & Recreation

Ray Mojica, EEL Land Manager

5560 North US Highway 1, Melbourne, Florida 32940

Phone: 321-255-4466, Fax: 321-255-4499

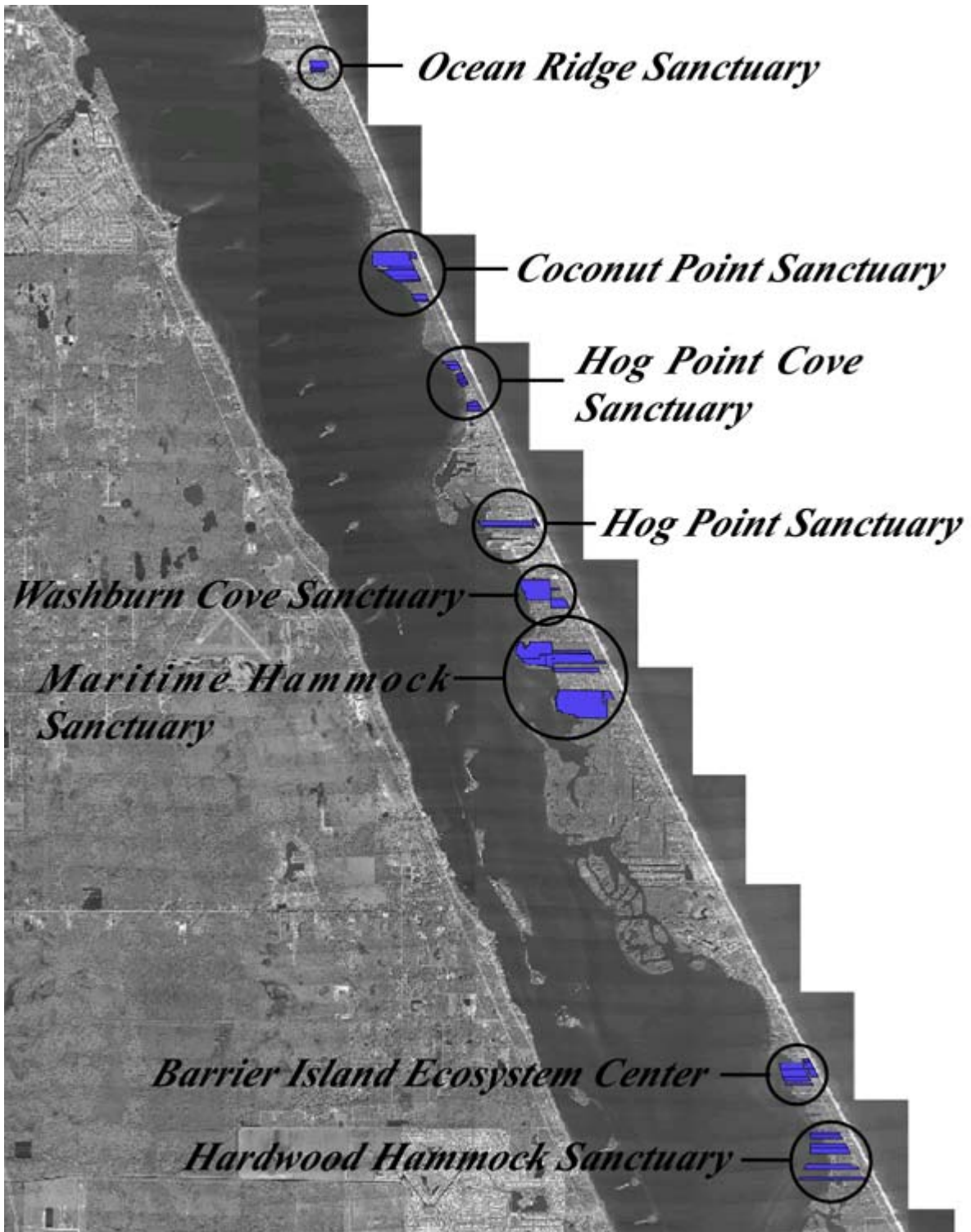
E-mail: rmojica@brevardparks.com

The South Beaches project is a cooperative effort between several partners, including federal, state, and local agencies. The project includes several parcels of publicly owned conservation lands within Brevard County's South Beaches Management Area. All of the property is located within the Archie Carr National Wildlife Refuge. The Refuge, designated by Congress in 1990, is recognized as one of the most important areas in the world for nesting loggerhead turtles and the most significant area in North America for nesting green turtles. Natural communities within the project area include coastal strand, maritime hammock, beach dune, and mangrove forest.

This project is the fifth phase of an aggressive program to remove Brazilian pepper and Australian pine from publicly held lands on the south beaches of Brevard County. The Environmentally Endangered Lands Program, a department within the Parks and Recreation Department, submitted the previous four phases. This project consisted of controlling invasive species with an average coverage of 30% on five sites: the 9.7-acre Ocean Ridge Sanctuary, the Coconut Point Sanctuary additions, which total 5.6 acres, the 17.8-acre Hog Point Cove Sanctuary, the Maritime Hammock additions parcels, which total 66.2 acres, and the Hardwood Hammock parcels, which are four parcels that total 53.6 acres. A Brontosaurus mower removed 26 acres of Brazilian pepper from the Maritime Hammock Yotti Parcel and 2 acres from Hog Point Cove.

Target Plants	Common Name	FLEPPC Rank	Treatment	Herbicide
<i>Casuarina equisetifolia</i>	Australian pine	Category I	cut stump	Garlon 4
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	basal	Garlon 4

Archie Carr National Wildlife Refuge



## Sebastian Inlet State Park

County: Brevard

PCL Size: 870 acres

Project ID: MC-044 13 acres \$15,558

Project Manager: Florida Park Service (DEP)

Ronald N. Johns, Park Manager

9700 South A1A, Melbourne Beach, Florida 32951

Phone: 321-984-4853, Fax: 321-984-4854

E-mail: [ronald.n.johns@dep.state.fl.us](mailto:ronald.n.johns@dep.state.fl.us)

Sebastian Inlet State Park sits on an Atlantic coast barrier island. Natural communities include maritime hammock, beach dune, and mangrove forest. This project was divided into two parts: one 5-acre area to mechanically remove trees with a Brontosaurus mower, and four islands totaling 8 acres to treat with herbicide.

<b>Target Plants</b>	<b>Common Name</b>	<b>FLEPPC Rank</b>	<b>Treatment</b>	<b>Herbicide</b>
<i>Casuarina equisetifolia</i>	Australian pine	Category I	basal	Garlon 4+Stalker
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	basal	Garlon 4+Stalker
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	mechanical	n/a

## Volusia County Public Conservation Lands

County: Volusia

PCL Size: various

Project ID: MC-039 2,100 acres \$113,933.95

Project ID: MC-045 3,600 acres \$63,497.12

Project ID: MC-053 42 acres \$23,223.25

Project Manager: East Volusia Mosquito Control District

David Farr

801 South Street, New Smyrna Beach, Florida 32168

Phone: 386-424-2920, Fax: 386-424-2924

E-mail: dfarr@co.volusia.fl.us

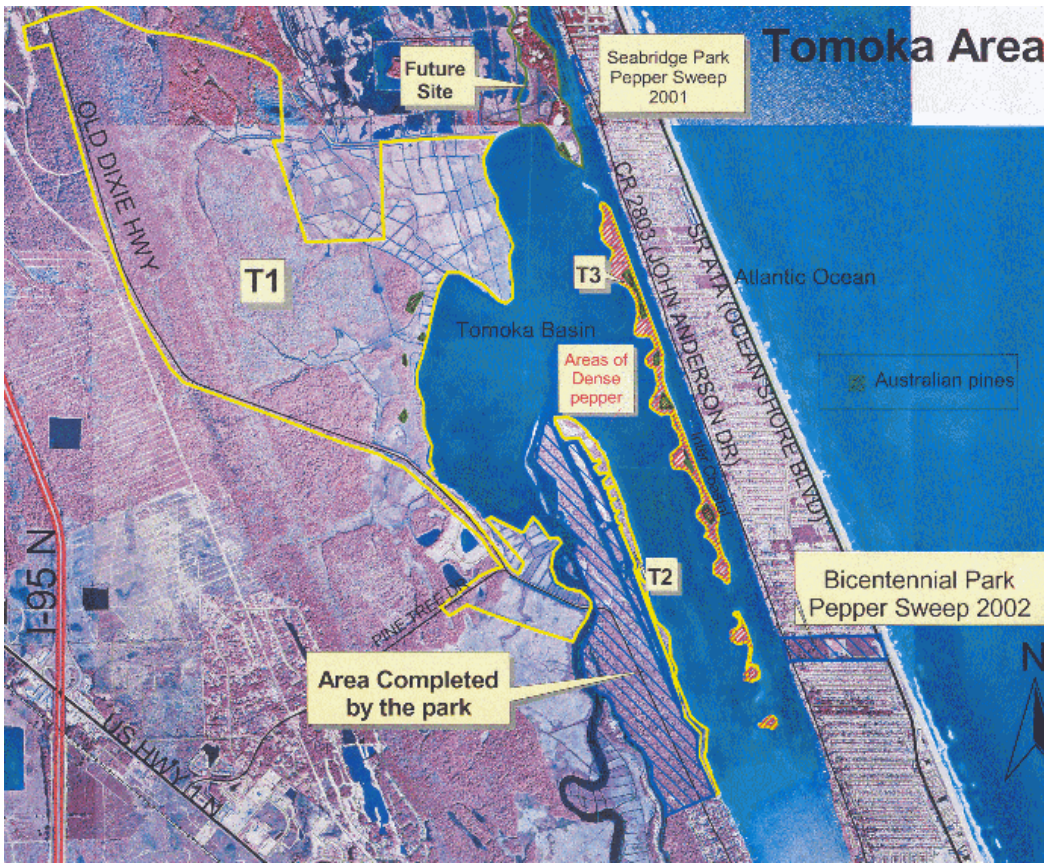
The first project was an annual *Pepper Sweep* maintenance control operation that included one federal and three state properties; Tomoka Basin Geopark (Tomoka and Bulow Creek State Parks), Tomoka Marsh Aquatic Preserve, and Canaveral National Seashore. Much of the project area consists of cabbage palm and live oak hammocks interspersed amidst tidal salt marsh and fringing mangrove forest. Brazilian pepper occurs throughout the Tomoka basin, growing as scattered individuals on dredge spoil bordering dragline ditches, or in small thickets (most less than ½-acre) on pine islands and cabbage palm heads. Eroding shorelines are highly susceptible to invasive peppers, particularly where shallow-rooted red cedars have been washed out by storms in the basin. Brazilian pepper totaled about 110 acres in sparse to dense stands throughout the project area. All of the Australian pines were located in the center portion of the largest island in several densely populated stands. Volusia County provided matching funds of \$19,710 in addition to the project cost.

The second maintenance control project encompassed several county, state, and federal parks. The Volusia County parks included Highbridge, Seabridge, Bicentennial, Smyrna Dunes, and Riverbreeze. These parks were the site of initial control work under three previous “Pepper Sweeps” (1999-2002). Previous control work was also conducted on Tomoka Basin Geopark, North Peninsula State Park, and Canaveral National Seashore. Volusia County provided time and materials valued at \$15,145.76 in matching costs for this project.

The third project consisted of initial control work on 42 acres of Brazilian pepper conducted in concert with maintenance activities. BIPM provided the herbicide only for this work through its Herbicide Bank.

Target Plants	Common Name	FLEPPC Rank	Treatment	Herbicide
<i>Casuarina</i> spp.	Australian pine	Category I	basal, cut stump	Garlon 4
<i>Lantana camara</i>	lantana	Category I	foliar	Garlon 3A
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	basal	Garlon 4
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	cut stump	Garlon 4+Stalker
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	foliar (seedlings)	Garlon 3A
<i>Schinus terebinthifolius</i>	Brazilian pepper	Category I	lacing	Arsenal
<i>Sorghum halepense</i>	Johnson grass	n/a	foliar	Rodeo

**Volusia County Public Conservation Lands**



Control operations were conducted on the northeast (top) and southeast (right) coast of Volusia County.



## Volusia County Public Conservation Lands



Before (top) and after (bottom) treatment of dense pepper stands — a clean sweep!

## Volusia County Public Conservation Lands



But at times, the task of controlling invasive plants may still seem overwhelming...