



# Melaleuca Eradication and Other Exotic Plants – Implement Biological Controls

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US Army Corps  
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[sfwmd.gov](http://sfwmd.gov)



# Recommended Plan

- **Construct mass rearing lab annex for USDA Quarantine Facility at Davie, FL**
  - **Cost**
    - Initial – \$1,300,000
    - Annual - \$76,000
- **Implement adaptive management strategy with variable bio-control production and release intensity**
  - Inoculate all infested cells with approved biological control agents for Melaleuca and Australian Pine
  - Inundate all infested cells with approved biological control agents for Brazilian pepper and Old World climbing fern
  - **Cost**
    - Annual \$465,000

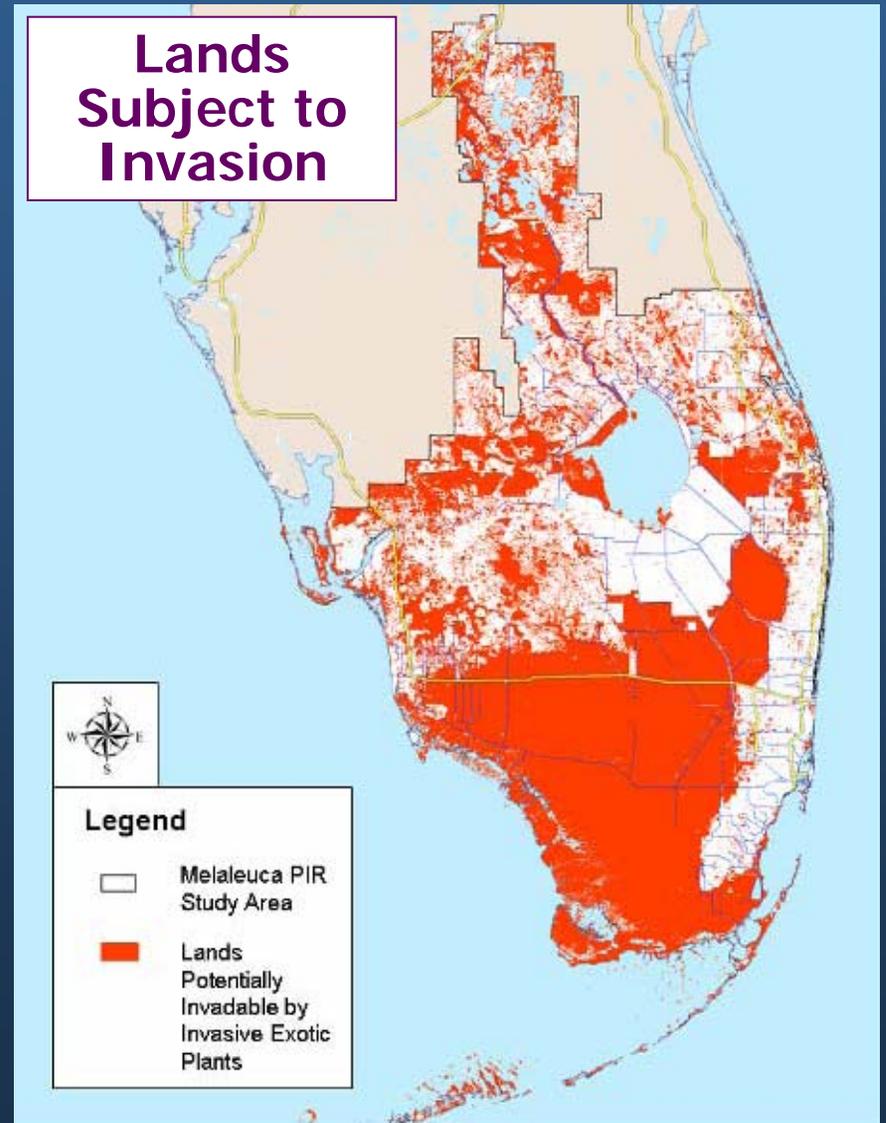


# Project Study Area and Lands Subject to Invasion

**Study Area**

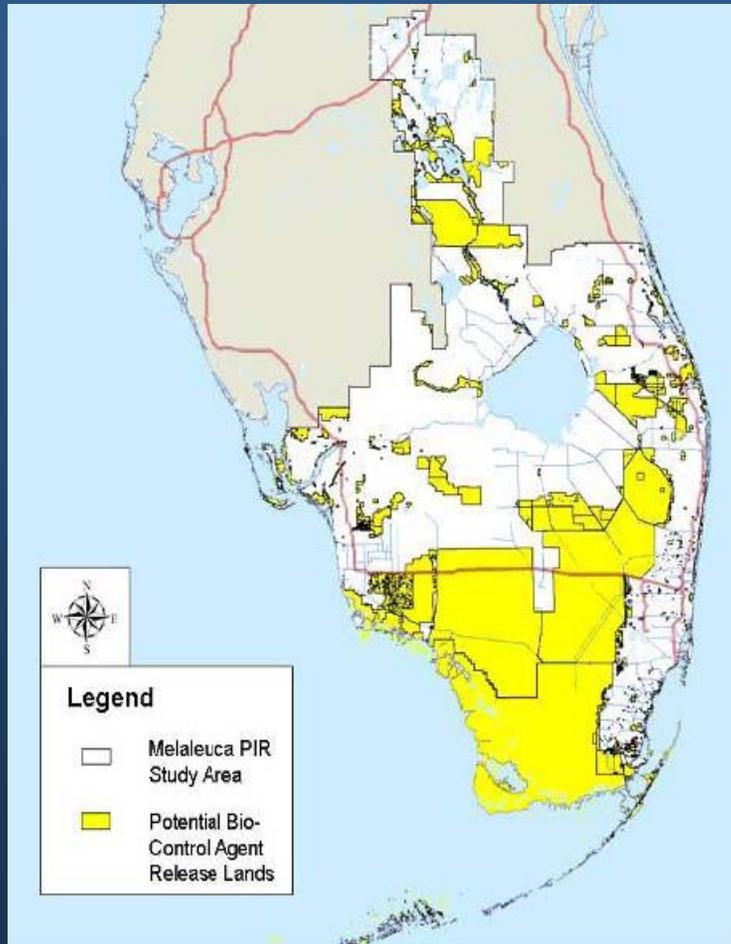


**Lands Subject to Invasion**





# Potential Biological Control Release Areas



- Release sites only on public land
- Exotics on private lands may be affected
- It is illegal to purchase or sell target species



# Project Purpose

## Section 601 of WRDA 2000:

*“This project calls for the mass rearing, field release, establishment and field monitoring of approved biological control agents for Melaleuca and other exotic plants.”*



# Problems and Opportunities

- Long-term impacts to ecosystem function
- Reduction of biodiversity, habitat and native wildlife and plant species
- Increased costs for land management, navigation and flood control
- Opportunity to improve ecosystem stability and resilience
- Opportunity to increase control and prevent reinvasion in ecologically sensitive areas
- Reduce long-term maintenance costs and dependence on herbicides





# Planning Objectives and Constraints

- Reduce exotic plant reproductive capacity within 10 to 20 years
- Reduce exotic plant densities
- Increase exotic seeding mortality rate
- Use only approved biological control organisms (those permitted by USDA)



# Initial Array of Alternatives

Alternative Plan	Factor 2			Factor 3			Factor 1	
	Release approach			Infestation level of treated cells			Rearing Annex	
	Inoculative	Inundative	High Density	Moderate	Dense	All	With	Without
1								X
2	X					X		X
3	X					X	X	
4	X				X			X
5	X				X		X	
8		X				X		X
9		X				X	X	
10		X			X			X
11		X			X		X	
12		X		X				X
13		X		X			X	
15			X			X		X
16			X			X	X	
17			X		X			X
18			X		X		X	
19			X	X				X
20			X	X			X	



# Final Array of Alternatives

	<b>Alternative 1 (no action)</b>	<b>Alternative 3</b>	<b>Alternative 9</b>	<b>Alternative 16</b>
<b>Release approach</b>	None	Inoculative	Inundative	High Density
<b>Infestation level of treated cells</b>		All	All	All
<b>Time to establishment</b>	> 50 years	6 years	8 years	11 years
<b>Time to saturation</b>	> 50 years	12 years	8 years	11 years
<b>Time to full benefits</b>	> 50 years	19 years	13 years	14 years





# Recommended Plan – Biocontrol Implementation

## Alternative 3

**Melaleuca**



**Australian pine**



## Alternative 9

***Lygodium* (Old World climbing fern)**



**Brazilian pepper**





## Biological Control Agents Approved or in the "Pipeline"

- Melaleuca – 4 approved, 2 in process
- Lygodium – 3 approved, 2 in process
- Brazilian Pepper – 1 approved, 2 in process
- Australian Pine – 1 in process



# Project Implementation

- **Draft PIR/EA released for public review and comment: December 2008-January 2009**
- **Final PIR/EA completed: July 2009**
- **Begin Design: January 2010**
- **Begin Construction: September 2011**



# Project Costs – Recommended Plan

**Total Estimated Project Cost: \$14,175,000**

- **Implementation and Monitoring – \$ 12,844,000**
- **Rearing Lab Annex Construction – \$ 1,331,000**