

## **Northern Everglades River Watershed Protection Plans Update**

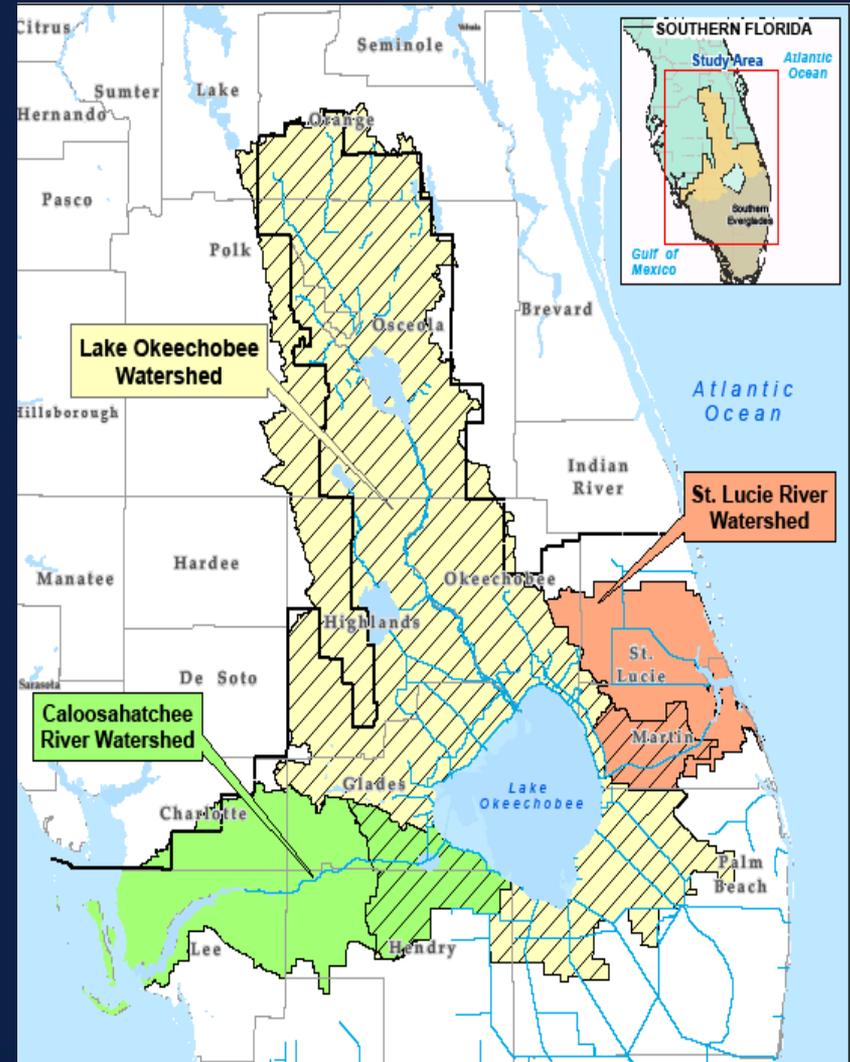
***WRAC Lake Okeechobee Committee Meeting- 03/25/09***

**Pinar Balci, Ph.D – Northern Everglades Technical Program  
Specialist**



# Northern Everglades and Estuaries 2007 Legislation

- Required development of **Caloosahatchee** and **St. Lucie River Watershed Protection Plans**
  - Due by Jan 1, 2009
- Included requirements for-
  - Annual Reports
  - Triennial Plan Updates





# River Watershed Protection Plan- Objectives



- **Nutrient load reductions to achieve adopted Total Maximum Daily Loads**
- **Reduce frequency and duration of undesirable salinity ranges in estuary, while meeting other water-related needs of the region**



# River Watershed Protection Plan- Elements



- **Watershed Pollutant Control Program**
- **Watershed Construction Project**
- **Watershed Research and Water Quality Monitoring Program**



# Plan Development

- **Developed through working team process**
- **Alternative formulation and evaluation**
  - **Formulated alternatives using management measures**
  - **Built upon existing efforts**
  - **Determined whether additional projects are needed to achieve objectives**
  - **Four alternatives were evaluated for**
    - **Nitrogen and phosphorus load removal**
    - **Water quantity performance**



# Preferred Plan Summary

St. Lucie Preferred Plan	Caloosahatchee Preferred Plan
<ul style="list-style-type: none"> <li>• Indian River Lagoon-South Project</li> <li>• BMPS/Regulatory Programs</li> <li>• Additional regional phosphorus treatment in C-23/24 basin</li> <li>• Local quality/quantity projects (e.g., stormwater retrofits; septic conversions; Alternative Water Storage Facilities)</li> </ul>	<ul style="list-style-type: none"> <li>• C-43 West Reservoir</li> <li>• BMPs/Regulatory Programs</li> <li>• Additional storage</li> <li>• Regional water quality projects- emphasis on nitrogen</li> <li>• Local quality/quantity projects (e.g., stormwater retrofits; septic conversions- Lehigh, Cape Coral; Alternative Water Storage Facilities)</li> <li>• Additional watershed monitoring in watershed</li> </ul>
Summary	Summary
<ul style="list-style-type: none"> <li>• ~200,000 ac-ft/yr storage (IRL and Ten Mile Creek)</li> <li>• Nutrient treatment- primarily phosphorus treatment</li> </ul>	<ul style="list-style-type: none"> <li>• ~400,000 ac-ft/yr storage (including C-43 West Reservoir)</li> <li>• Nutrient treatment- primarily nitrogen treatment</li> </ul>



# Plan Implementation Strategy

- **Multiple Phases**
  - **Phase I- projects initiated 2009-2012**
  - **Phase II- projects initiated 2013-2018**
  - **Long Term Implementation Phase- projects initiated beyond 2018**



# Caloosahatchee RWPP- Phase I (2009-2012)

		Initiated	Completed
Construction Project	Powell Creek Algal Turf Scrubber		✓
	Alternative Water Storage Facilities- Barron Water Control District		✓
	Caloosahatchee Area Lakes Restoration (Lake Hicpochee)	✓	
	C-43 Water Quality Treatment Demonstration Project (BOMA)	✓	
	Spanish Creek/Four Corners Environmental Restoration Phase I	✓	
	C-43 West Reservoir	✓	
	Local-Stormwater Projects (e.g., treatment wetlands, conveyance and structural improvements, and stormwater recovery projects)	✓	✓
	Florida Ranchlands and Environmental Services Projects	✓	
	Farm and Ranchland Protection Program	✓	



# St. Lucie RWPP- Phase I (2009-2012)

		Initiated	Completed
Construction Project	Alternative Water Storage Facilities- Indiantown Citrus Growers Association Phase I and II		✓
	Florida Ranchlands and Environmental Services Projects (Alderman-Deloney complete)	✓	✓
	CERP-IRL South: C-44 Reservoir/STA	✓	
	CERP-IRL South: Allapattah Complex- Natural Storage and Water Quality Area	✓	
	Alternative Water Storage Facilities-Indiantown Citrus Growers Association- Phase III, Dupuis, Waste Management St Lucie Site, Caulkins	✓	
	Hybrid Wetland Treatment Technology Pilot Project	✓	
	Local-Stormwater Projects (e.g., retention/detention ponds, treatment wetlands, conveyance and structural improvements)	✓	✓
	Local-Wastewater Projects (e.g., sludge disposal management, sewage treatment and disposal systems)		✓
	Local- Habitat Restoration (e.g., muck removal, oyster balls)	✓	✓
	Florida Ranchlands and Environmental Services Projects	✓	
	Farm and Ranchland Protection Program	✓	

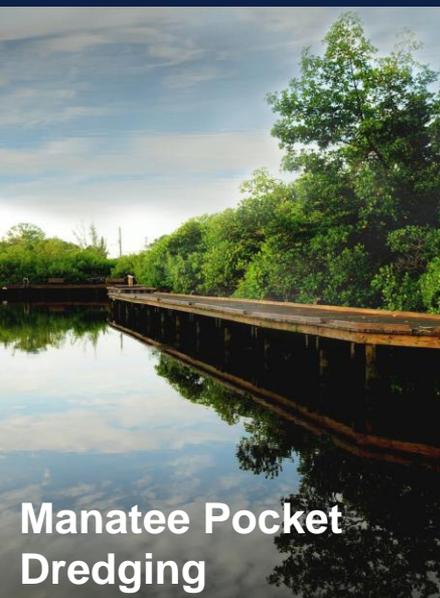


## **Plan Submittal and Ratification**

- **Final Plans submitted to the Legislature on Jan 1, 2009**
- **If the Legislature takes no action on the plans during the 2009 legislative session, the plans are deemed approved and may be implemented**
- **RWPPs will provide the basis for FDEP's BMAP development**



# STATUS OF ON-GOING PROJECTS





# Status of Ongoing Projects- Caloosahatchee

- **C-43 Water Quality Treatment and Testing Facility**
  - **Completed:**
    - Cultural resources field work
    - Phase I/II Environmental Site Assessments
    - Project Information Collection and Summary Report
    - Total Nitrogen Reduction Technologies Review
  - **Initiated:**
    - Environmental remediation
    - Wetland delineation and assessments (Unified Mitigation Assessment Method)
    - Topographic Survey work order
    - Water quality evaluation work order
  - **Next step- Basis of design Report by September 2009**



## Status of Ongoing Projects- Caloosahatchee

- **Spanish Creek/Four Corners Phase I**
  - **Completed gopher tortoise relocation survey and submitted permit to FWCC**
  - **Completed monitoring well installation of the Four Corners Flowway Study area**
  - **Currently gathering data from monitoring wells for flow model**
  - **Working with Hendry County to coordinate County Line Ditch Maintenance**
  - **Next steps – Completing flow model**



## Status of Ongoing Projects- Caloosahatchee

- **Powell Creek Algal Turf Scrubber**
  - **Pilot construction completed and operation began in Oct 08**
  - **Data collection underway**
  - **Next steps- Completion of monitoring and final report by Jan 2010**



# Status of Ongoing Projects- Caloosahatchee and St. Lucie

- **Alternative Water Storage/Disposal Projects**
  - **Caloosahatchee:**
    - Caloosahatchee Area Lakes Restoration/Alternative Water Storage Project- Assessment Complete
    - Barron WCD Phase I- Complete; Phase II- Canceled
    - Clewiston Site- On Hold
    - Central County WCD- Under Discussion
  - **St. Lucie:**
    - Alderman- Deloney Ranch (Florida Ranchlands Environmental Services Project)- Complete
    - Indian Town Citrus Growers Association Water Storage Project- Complete



# Status of Ongoing Projects- Caloosahatchee and St. Lucie

- **Research and Water Quality Monitoring**
  - Synoptic monitoring is being planned for freshwater Caloosahatchee (east of S-79)
  - **Research- Several studies are underway**
    - Caloosahatchee Oligohaline Zone
    - Groundwater Seepage to Caloosahatchee Estuary and St. Lucie estuary



# Status of Ongoing Projects- St. Lucie

- **5/5/5 projects with Martin County**
  - **Manatee Pocket Dredging**
    - Removal of accumulated muck for water quality and habitat improvement
  - **Manatee Creek Basin Water Quality Retrofit**
    - Provides treatment of uncontrolled discharges to the Manatee Pocket from the Manatee Creek
  - **North River Shores Vacuum Sewer System**
    - Enhances water quality in the North Fork of the St. Lucie River by eliminating nutrient loading from septic systems
  - **Old Palm City Phase III Water Quality Retrofit**
    - Improves water quality through developing a neighborhood stormwater quality management system



# Status of Ongoing Projects- St. Lucie

- **Hybrid Wetland Treatment Technology Pilot Project**
  - **Ideal #2 Grove**
    - Treats citrus runoff that drains to the Indian River Lagoon from St. Lucie County
    - Reduced mean inflow TP levels from 151 to 21  $\mu\text{g/L}$  (86% reduction)



Ideal #2 Grove

<https://my.sfwmd.gov/northerneverglades>



## Questions

