

# Dispersed Water Storage and Treatment



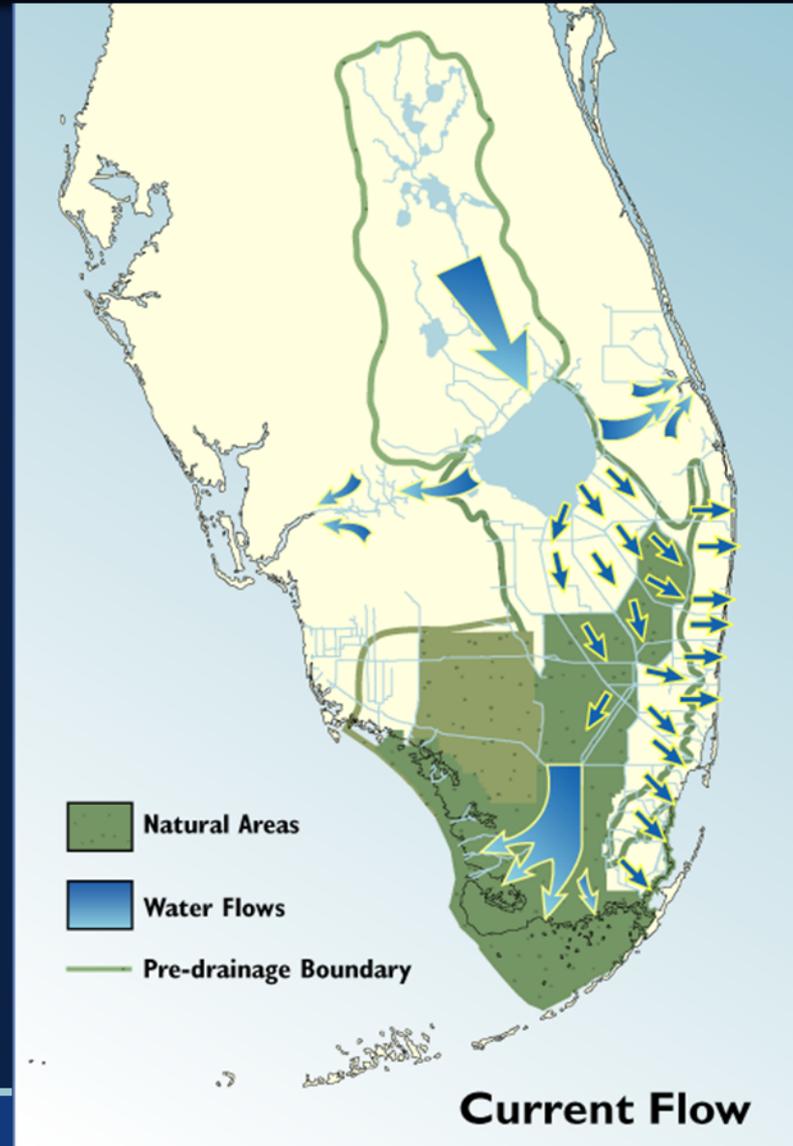
Water Resources Advisory Commission  
Lake Okeechobee Committee  
September 30, 2009



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*Sarah Lynch, Director, Agriculture, World Wildlife Fund*  
*John Winfree, Sr. Field Representative, The Nature Conservancy*



# Challenge: Everglades Yesterday and Today





# Dispersed Water Storage and Treatment

## Definition:

Shallow water distributed across parcel landscapes using relatively simple structures.





# Approaches

- **Payment for Services**
- **Easements**
- **Cost-share**





# Programs

## ➤ Payment for Services

- Florida Ranchlands Environmental Services Program
- Water Farming concept

## ➤ Easements

- USDA NRCS Wetland Reserve and Reserved Rights Pilot Program

## ➤ Cost-share

- FL Department of Ag & Consumer Services BMPs
- USDA NRCS Environmental Quality Incentives Program
- Alternative Water Storage/Disposal
- Alternative Water Supply
- Watershed restoration efforts and St. Lucie and Caloosahatchee initiatives

A large, mature palm tree stands prominently on the left side of the frame. The background features a vast wetland landscape with shallow water reflecting the sky, interspersed with green and brown vegetation. The sky is a clear, vibrant blue with a few wispy white clouds. The overall scene is bright and natural, typical of a Florida wetland environment.

# The Florida Ranchlands Environmental Services Project (FRESP)

# Partners Implementing FRESP



Participating Florida Ranchers



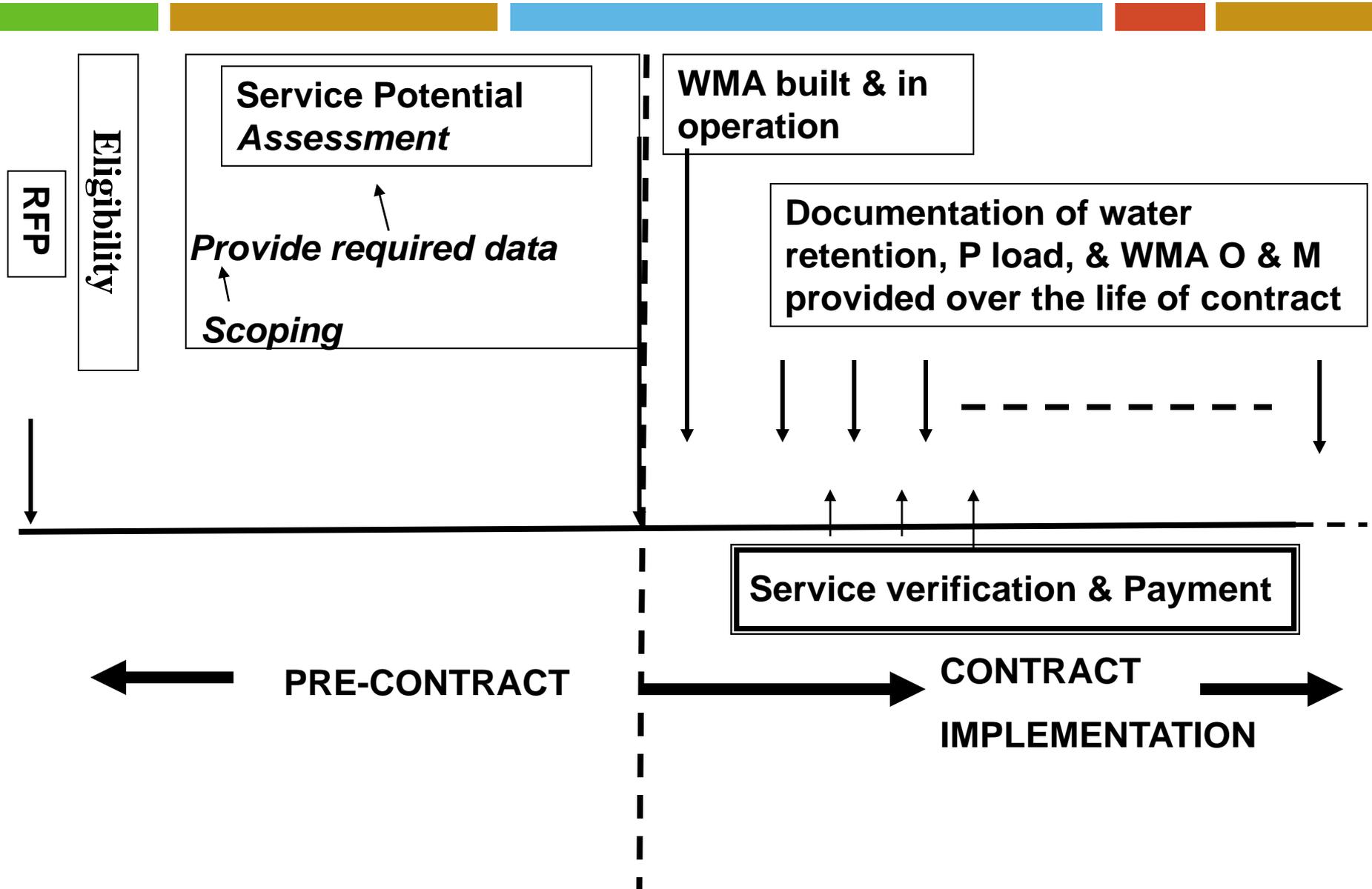
**NRCS** Natural Resources Conservation Service

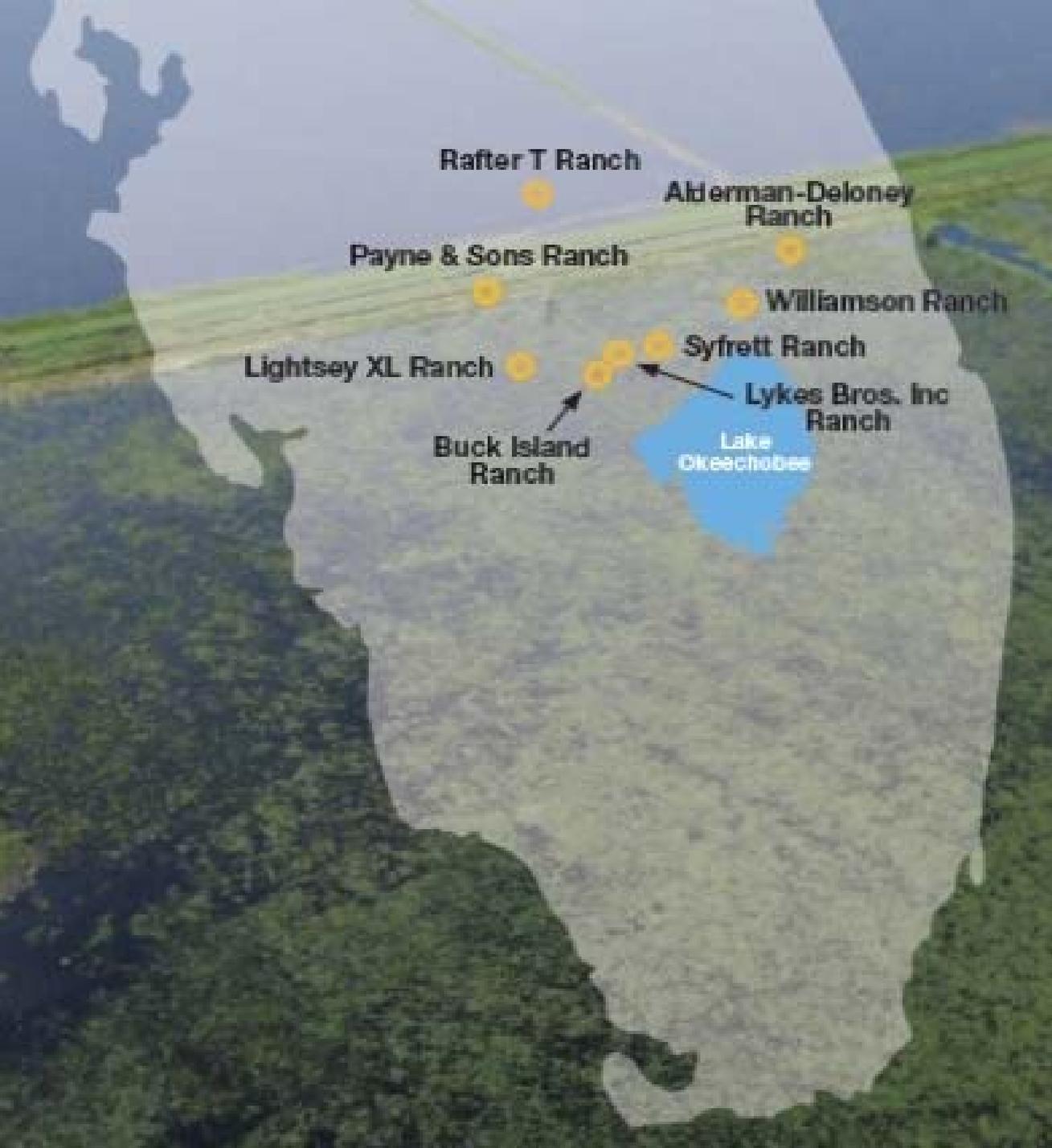


# The FRESP Vision for a Payment for Environmental Services (PES) Program:

Extensive *working ranch landscapes*, relying on *modification to existing water management structures and strategies*, will enter into *fixed term contracts* to provide publicly demanded water related environmental services and habitat, *above and beyond regulatory requirements* creating a new *profit center* for ranch enterprises.

# PES Contract Process





The FRESP  
Effort- What  
have we  
learned?

# Generating water management services on ranches...

Pumps



Culverts & riser boards



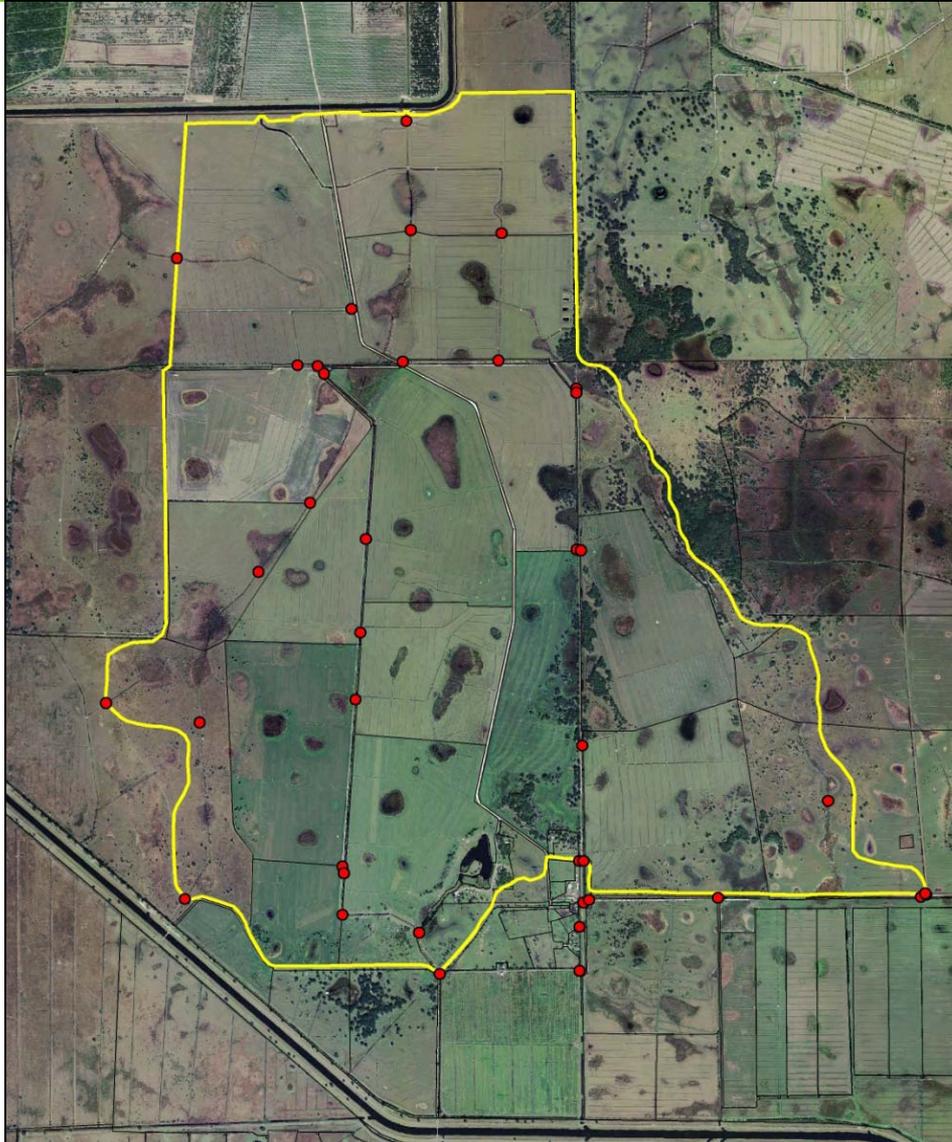
Impoundments



Ditch networks

...utilizing existing infrastructure

# Water Retention Service – 7 Water Management Projects



## Buck Island Ranch

Modified drainage on  
3700 acres of improved  
pasture



# Water Retention Service: Preliminary Results



## Current WMA Projects

- Six Water Retention WMAs with a service area of 9,500 acres generated an estimated:
  - Incremental water retention of 4,200 ac-ft/yr and
  - P load reduction of 3,300 lbs (1.5 MT)/yr

## Scaled Up Estimates

- A 200,000 acre WMA service area generated an estimated:
  - Incremental water retention of 95,000 ac-ft/yr and
  - P load reduction of 75,000 lbs (34 MT)/yr

# Nutrient Reduction Service: 1 Water Management Project

Lykes Bros. Inc. West Waterhole Marsh

2,500 Acre marsh in existing detention area treating off-site water



Results:

As operated during the pilot phase

- removed 7220 lbs P (3.3 MT) a P treatment efficiency of 55% and
- Removed 39,763 lbs N a treatment efficiency of 39%



## Building interest

- Buyers & sellers
- Citizens, public leaders, etc.

## Resolving remaining questions:

- T & E species issues
- Eligibility and regulatory compliance
- Price discovery
- Reduction in administrative costs
- Others



# Next Steps



- Phase 1
  - Targeted investment now to secure landowner provided services to achieve progress in NE water quality and quantity objectives.
  - Conduct program evaluation and identify best approach for integrating with regional systems coming on line.
- Phase 2
  - Transition to optimal mix of landowner and public projects.
- Phase 3
  - Integrated system in operation.



# Wetlands Reserve Program (WRP)

- PROS:
  - Well funded
  - Easement and Restoration
  - 100% paid
- CONS:
  - Retirement program
  - Agricultural restrictions/grazing



## Reserved Rights Pilot Program (RRPP)

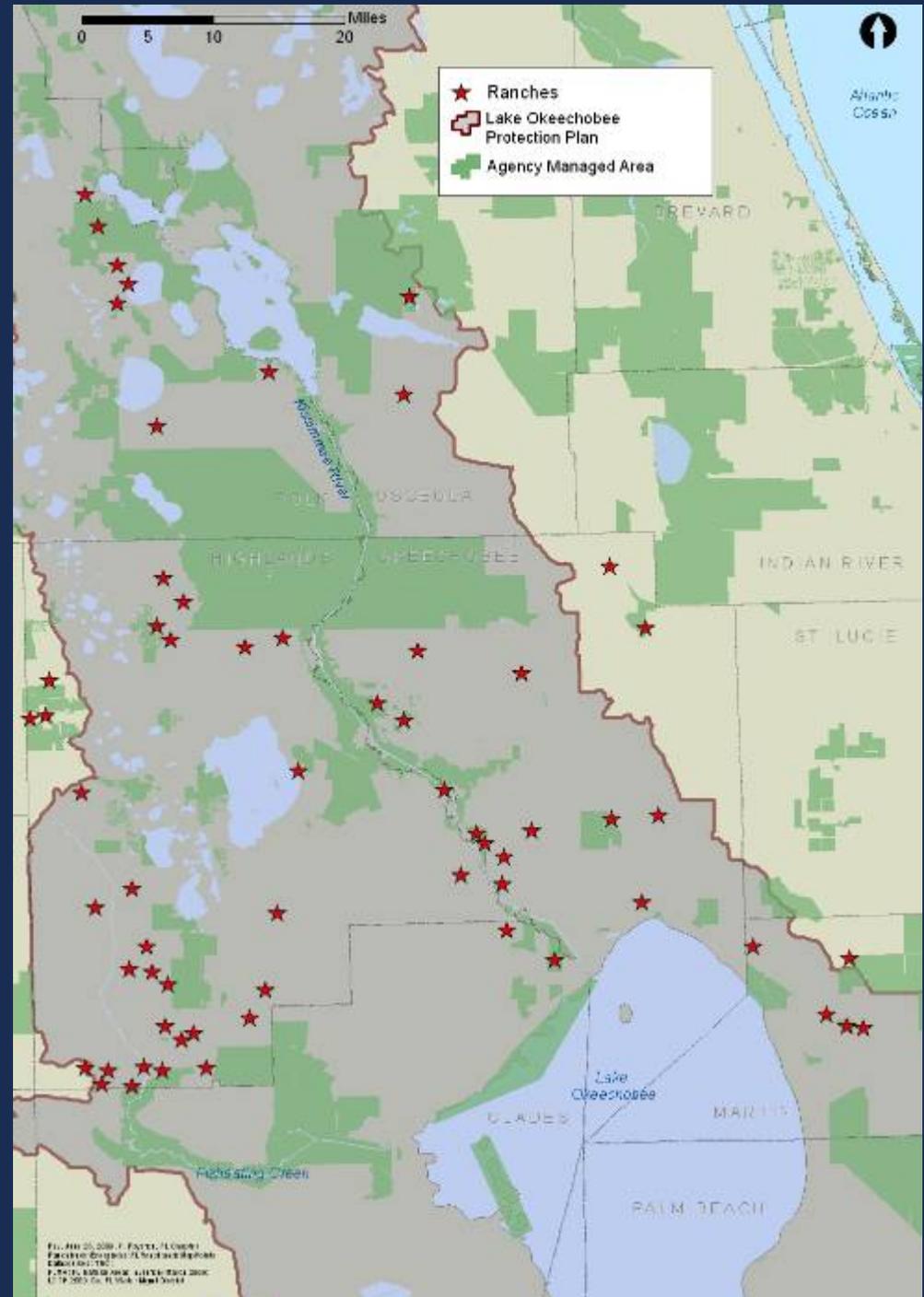
- Provision of Wetlands Reserve Enhancement Program in new Farm Bill
- Landowner may reserve grazing rights, if
  - a) compatible with the land
  - b) consistent with the restoration
- Compensation: Usual WRP valuation less the value of retained grazing right

The Nature  
Conservancy



Protecting nature. Preserving life.™

# Northern Everglades Ranchlands





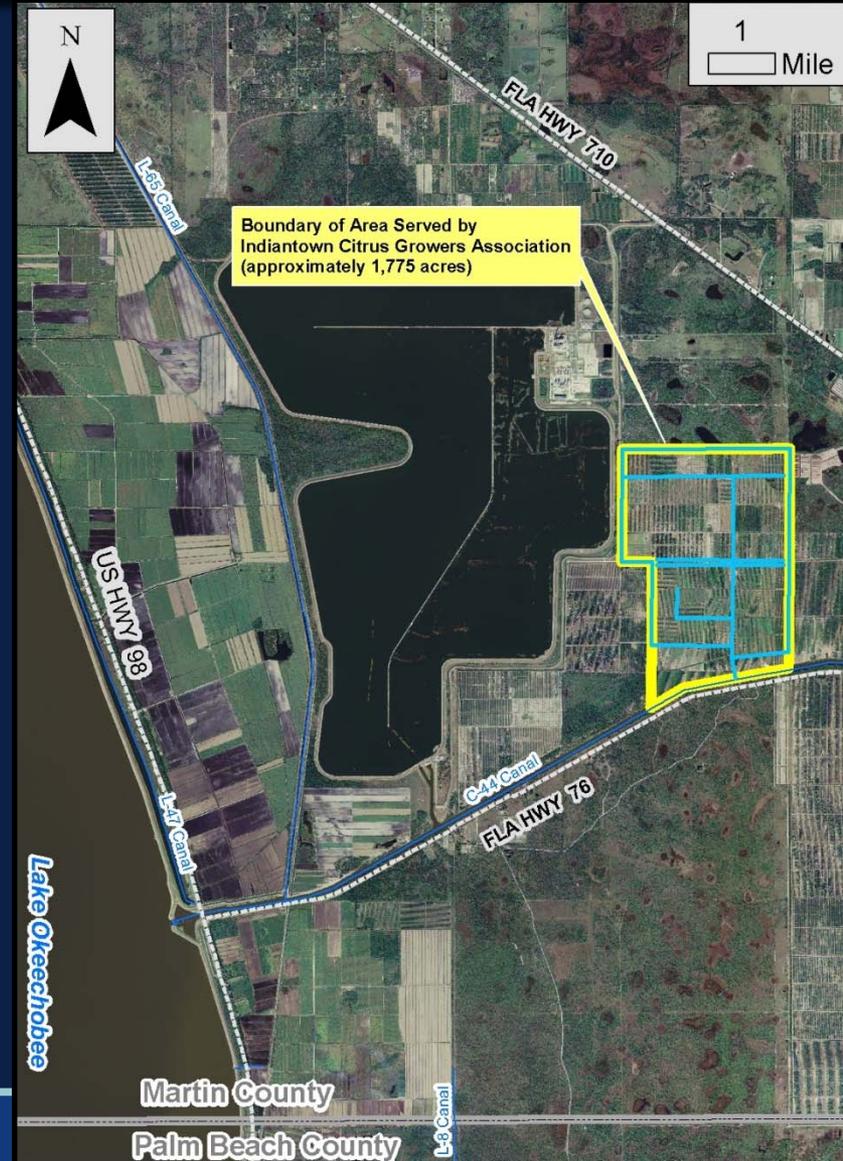
## Benefits of WRP/RRPP

- Permanent protection of land and water
- Federal Funds
- Landowner interest
- Opportunity for watershed scale restoration



## Example Cost-Share Project: Indiantown Citrus Growers Assoc.

- 1,775 of agricultural land within service area
- Phase I: Pump rehabilitation (complete) AWS/D
- Phase II: Internal canal widening (FDACS – complete)
- Phase III: Internal structures 60+ (NRCS, SLRIT – complete)
- Storage within system:
  - ❖ 7,000 acre-feet
- Volume from St. Lucie Canal during LO regulatory releases:
  - ❖ 3,550 acre-feet





# Current Status

## Project Tracking & Mapping

- Tracking projects since October 2005
- Since 2005, ~120,000 ac-ft of additional water storage ('bath-tub' storage) has been brought online
- Projects anticipated for implementation will provide additional storage in the future

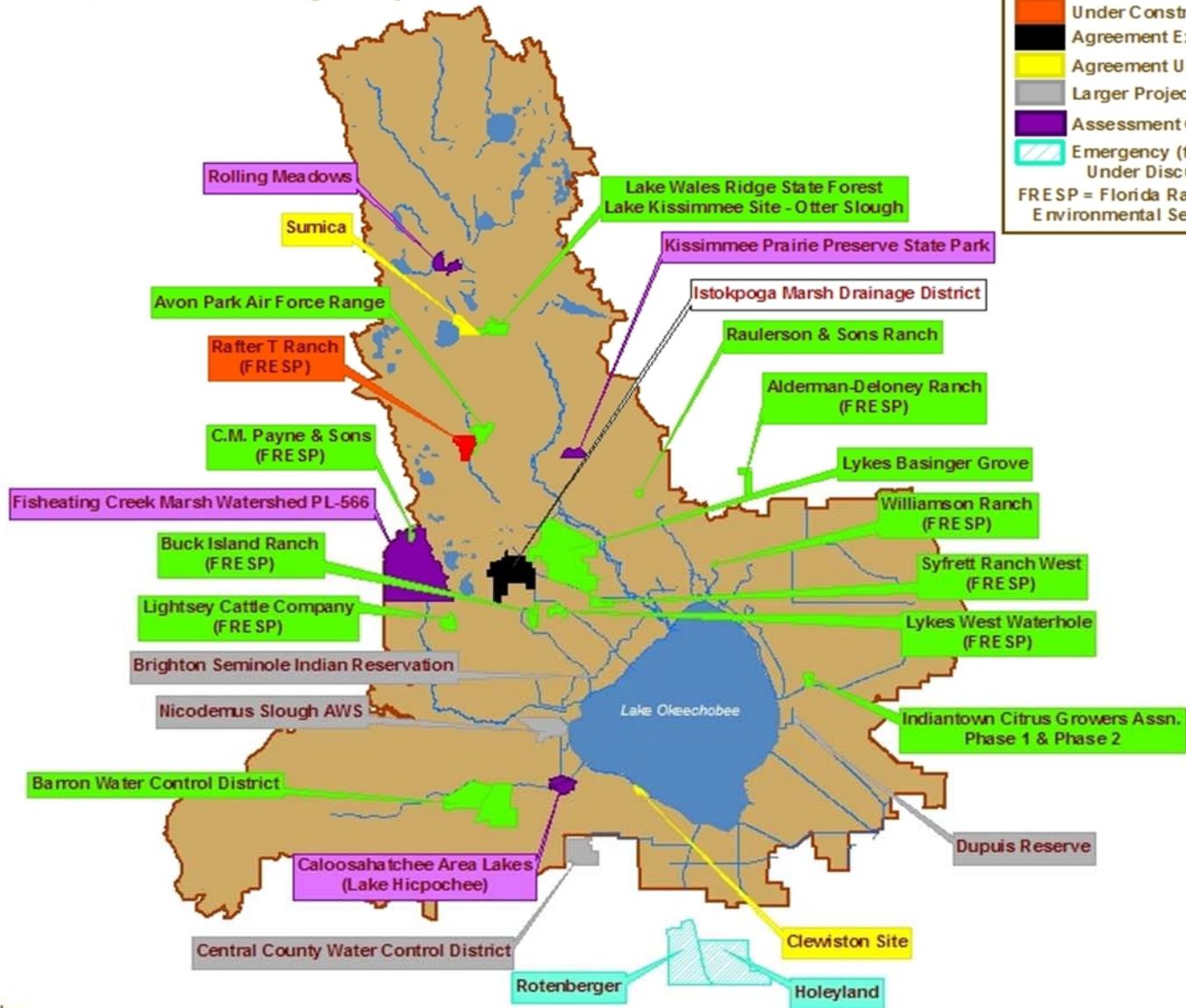
# Lake Okeechobee and Estuary Recovery

## Ongoing Alternative Water Storage Projects

**Legend**

- Construction Complete
- Under Construction
- Agreement Executed
- Agreement Under Development - FY10
- Larger Project Under Discussion
- Assessment Complete
- Emergency (temporary) projects Under Discussion

FRESP = Florida Ranchlands Environmental Services Program



September 25, 2009



## Next Steps

- **Continue representation in FRESP program development**
- **Complete/refine project cost estimates & cost effectiveness update (\$/ac-ft; \$/lb P) for comparison**
- **Continue to update GIS Program project tracking and storage accounting**



## LO WRAC Input/Discussion

- **Approach/program emphasis and level of effort?**
- **Program management: Development of a project solicitation process?**