



Central Florida Coordination Area

**PROGRESS REPORT OF ACTIVITIES & PATH FOR THE FUTURE**

September 25, 2009

9:30 AM

Orlando Utilities Commission, 3800 Gardenia Avenue, Orlando

Agenda Item
I. Introduction and Background
II. Status- Model Development
III. Status- Environmental Assessment
IV. Status- SWS Source Development
V. Master Schedule
VI. Questions & Answers
VII. Next meeting

# **Progress Report of Activities & Path for the Future**

South Florida, St. Johns River and Southwest Florida  
Water Management Districts

**Central Florida Coordination Area**

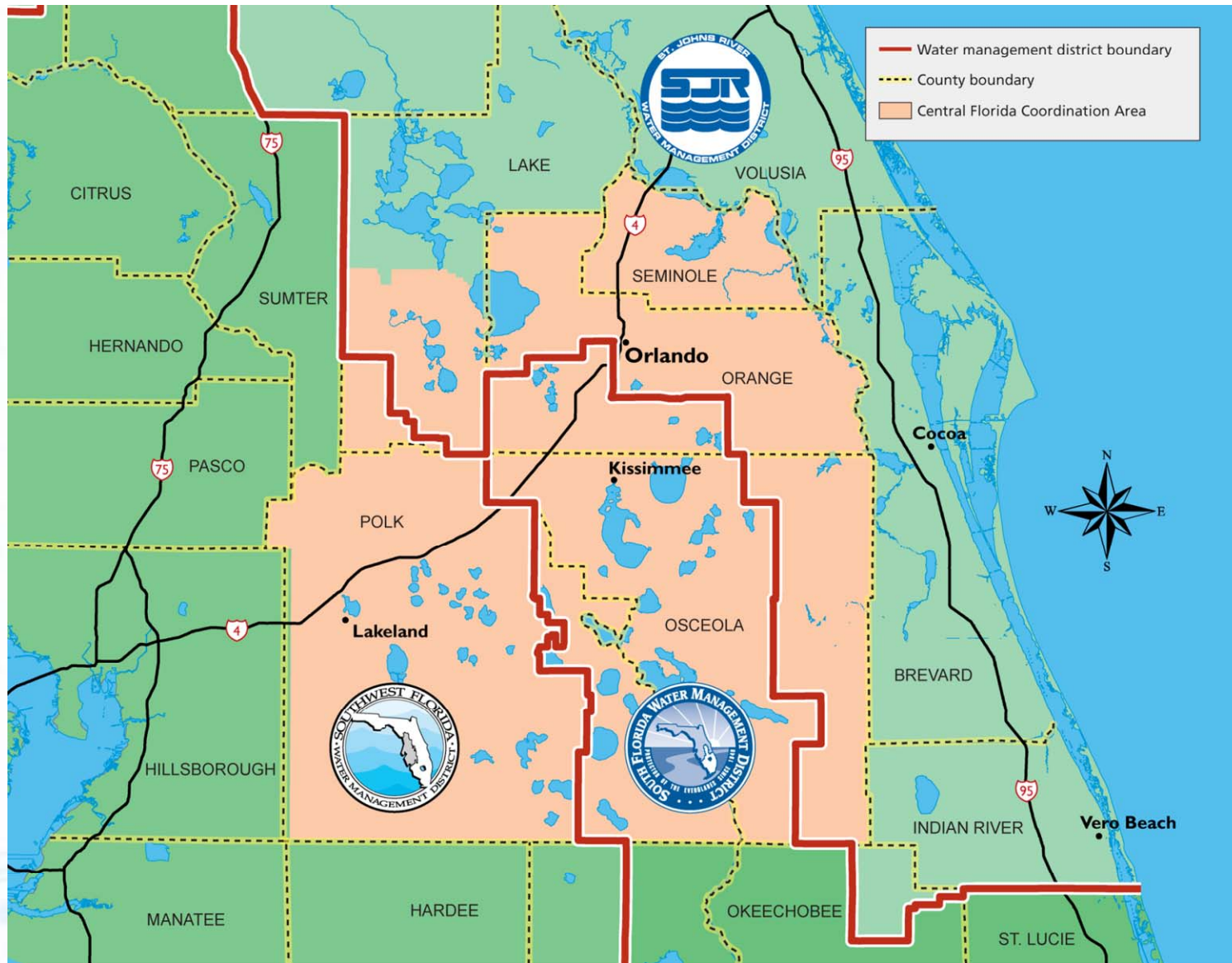
September 25, 2009



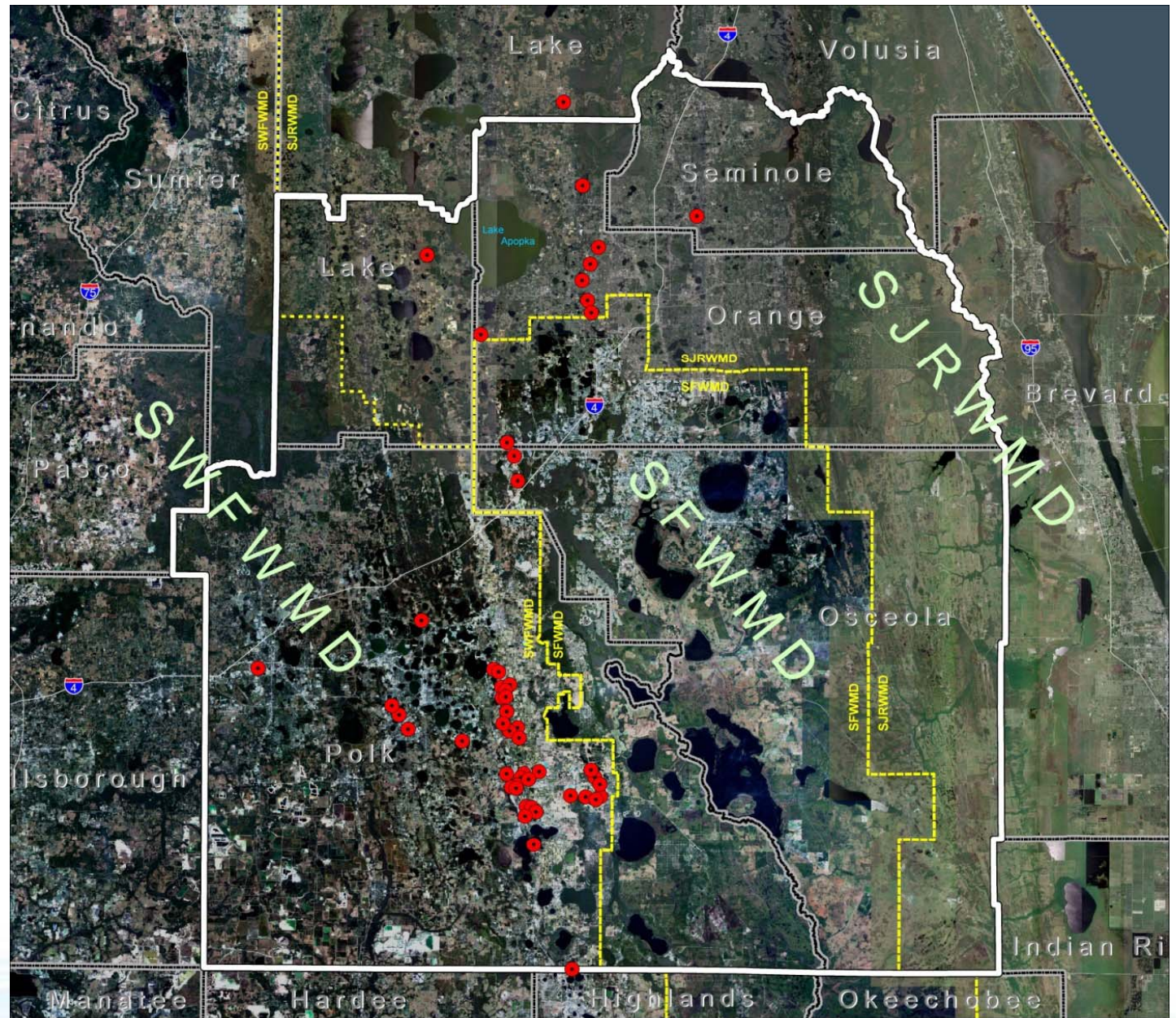
# Agenda

- I. Introduction & Background
- II. Status: Model Development
- III. Status: Environmental Assessment
- IV. Status: SWS Source Development
- V. Master Schedule
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# Central Florida Coordination Area (CFCA)







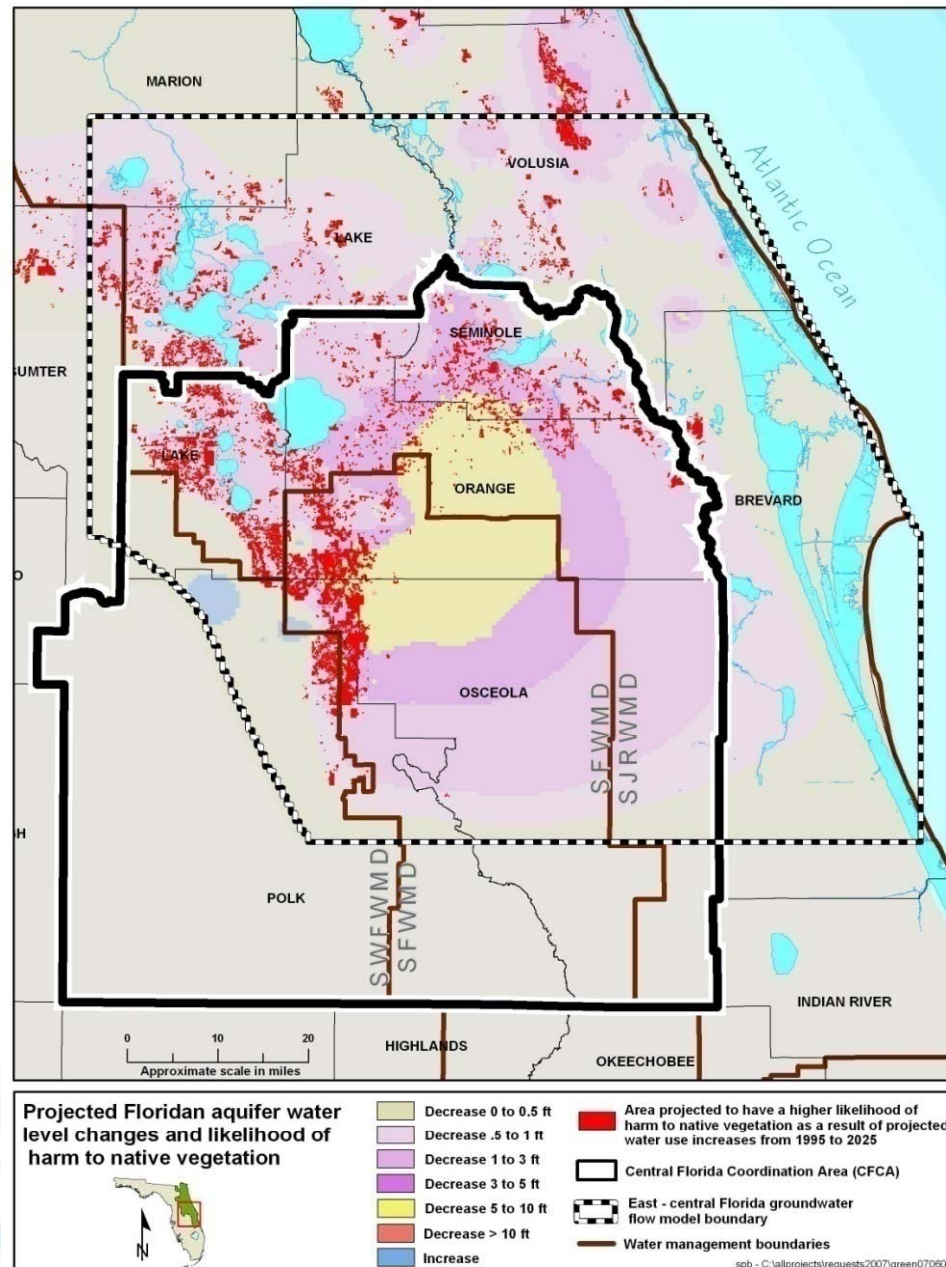
## Lakes/ Wetlands With Currently Observed Impacts

-  CFCA boundary
-  Water management districts
-  Lakes and wetlands with observed impacts / stressed lakes
-  County boundary





# ***Future impacts within SJRWMD model domain (portion of CFCA)***



# Impetus for development of joint WMD action plan

- **The three water management districts concluded that groundwater impacts will become unmanageable at or near 2013 withdrawal levels.**
- **Unacceptable cumulative impacts are the result of aquifer drawdowns from water withdrawals in all three districts.**

# Action Plan in 2005

- 3 WMDs Developed “Central Florida Coordination Area (CFCA) Action Plan”
  - 3 Components:
    - Regulatory
    - Planning
    - Modeling and Predictive Tools



# Action Plan

- **Over the short term:**
  - Greater regulatory consistency
  - Equitable distribution of available groundwater
  - Expedited development of Supplemental Water Supply (SWS) projects
- **Over the long term:**
  - Enhanced planning coordination among the WMDs
  - Coordinated data collection, models & tools in the region
  - Equitable distribution of any additional groundwater determined to be available
  - Implementation of SWS projects to meet future needs

# Planning Component

## *2006 to 2007 Timeframe*

- Identify:
  - Future demands
  - Supplemental water supply (SWS) projects to satisfy needs beyond 2013 demand
- Evaluate combinations of SWS projects to best meet projected demands
- Develop implementation strategies, including funding from Water Protection & Sustainability Program
- Coordinate all of above with stakeholders

# Modeling and Tools Component

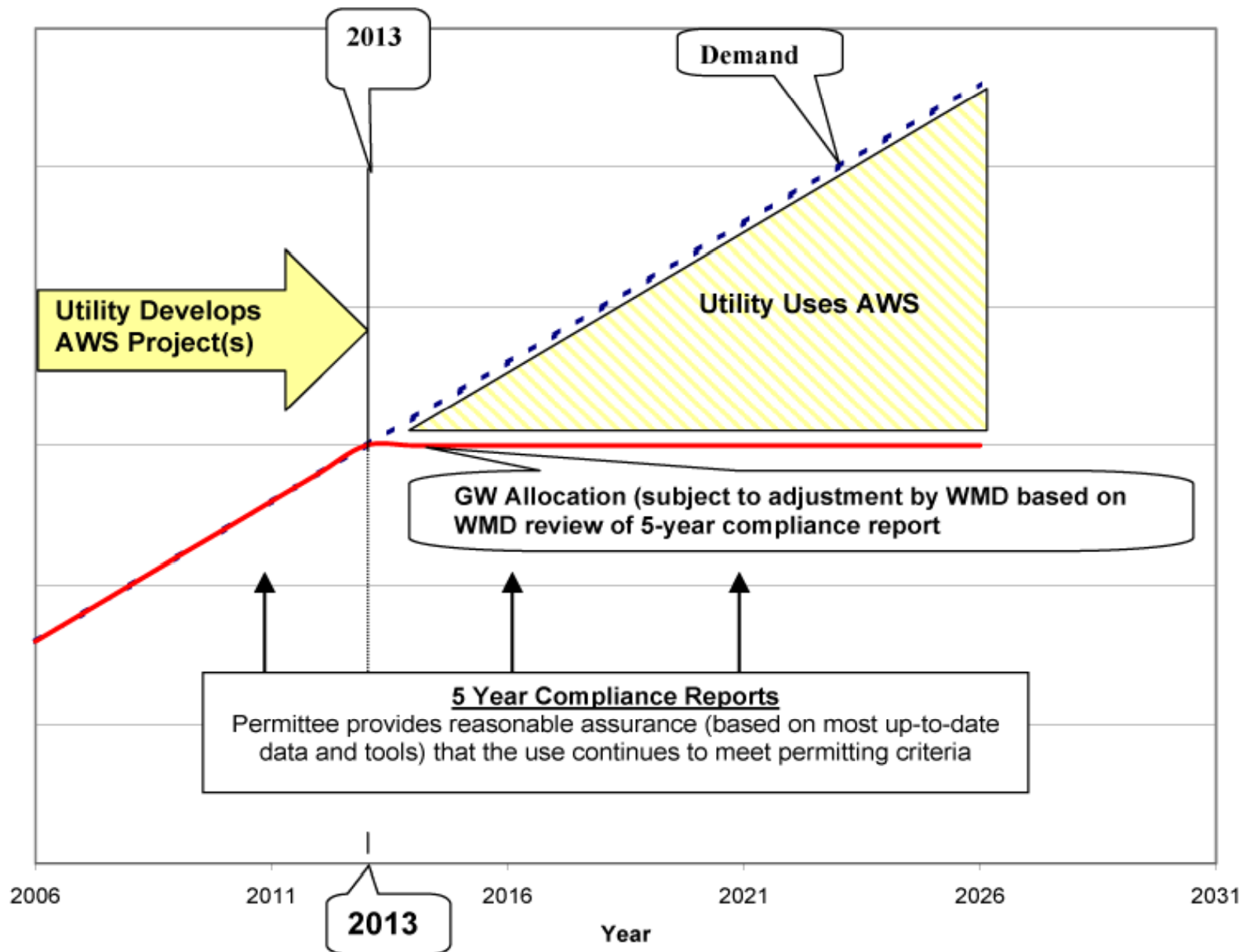
- Goal is to make the best set of tools available for regulatory and planning in the region.
- Develop tools with improved precision for better assessment of impacts due to groundwater uses.
- Organize and coordinate data-sharing that will ensure consistency in application and updating of the tools.



# Regulatory Component: Joint WMD rulemaking (CFCA rule provisions)

- **“The intent of the CFCA rules** is to provide an interim regulatory framework for public supply utilities and other similar applicants in the area to expeditiously implement CFCA SWS projects, and, pending the implementation of SWS projects, to provide for allocation of available groundwater while employing avoidance and mitigation measures to prevent harm.

# CFCA Regulatory Work Plan Permit Framework for 20-year Permit



**Note:** 2013 Allocation Limit Constant Regardless of Permit Issuance date

# Key provisions for utilities and similar applicants

- CFCA rule provisions were adopted by all three WMDs in 2006 and sunset in December 31, 2012
- Effective in entire CFCA area, except portion of SWFWMD with SWUCA rule provisions
- Additional groundwater withdrawals limited to no more than that needed to meet 2013 demands
- Permit duration limited to 2013, unless commitment to use SWS after 2013 to meet additional demands
  - develop alternative water supply projects to meet additional demands after 2013 unless infeasible, or
  - use alternative water supplies when provided by others unless infeasible



# Key Provision – Allocations and SWS Development

- Groundwater allocations would be limited to a maximum of the demonstrated 2013 demand
- “Demonstrated 2013 demand” based on accepted water use projections, water conservation & reuse
- To obtain 20 year permits:
  - develop alternative water supply projects to meet additional demands after 2013 unless infeasible, or
  - use alternative water supplies when provided by others unless infeasible

# **Key Aspects of Permitting that Remain Unchanged**

- 2013 groundwater allocation - efficient utilization, water conservation and reuse of reclaimed water.
- An applicant must avoid or mitigate adverse impacts that otherwise would occur.
- Specific avoidance/mitigation will be different for each utility, depending on local conditions.
- Allocations and permit conditions are subject to revision based on impact monitoring and/or 5-year compliance reports.

# ECFT Modeling Update

*Presented by:*

Chris Sweazy, P.G.

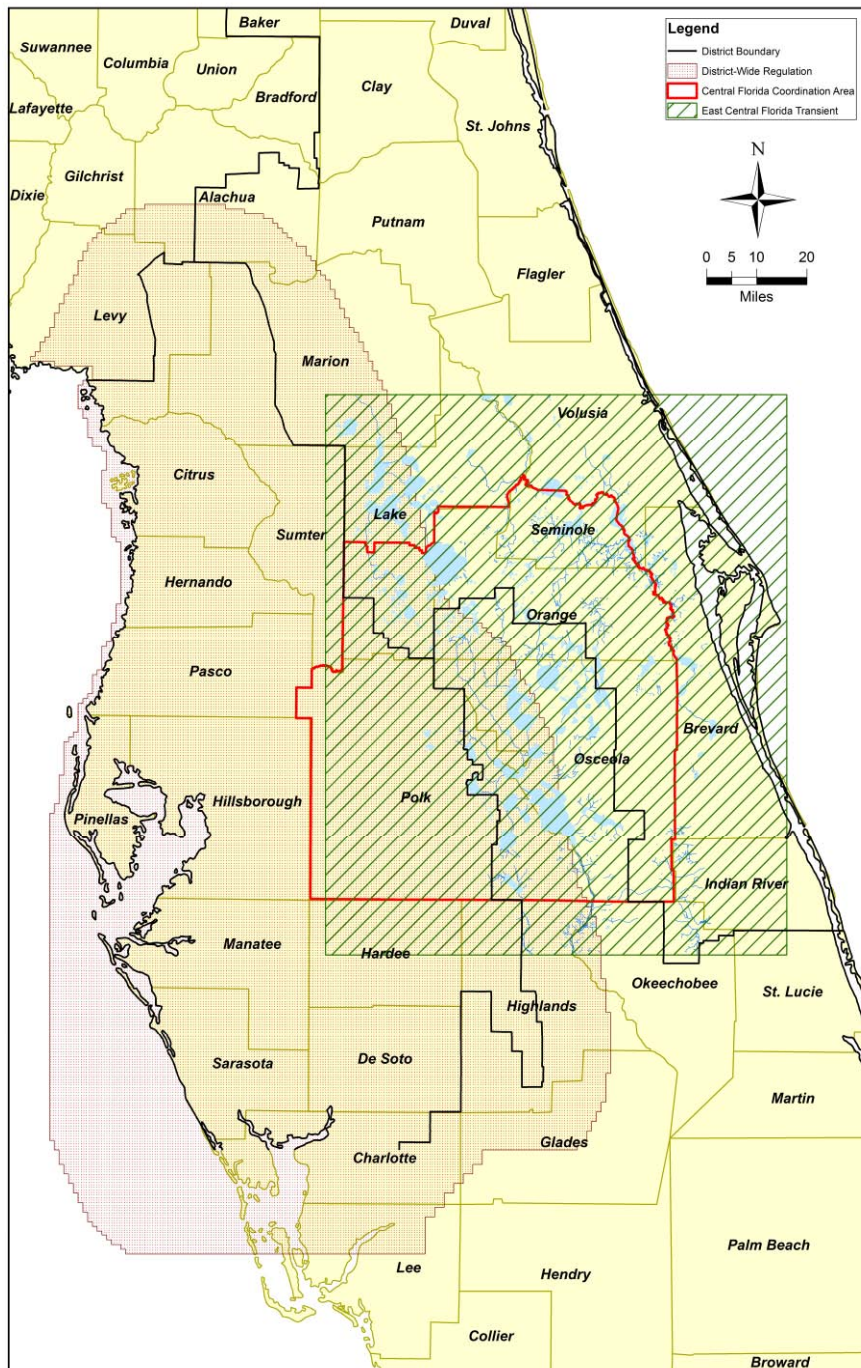
South Florida Water Management District

September 25, 2009





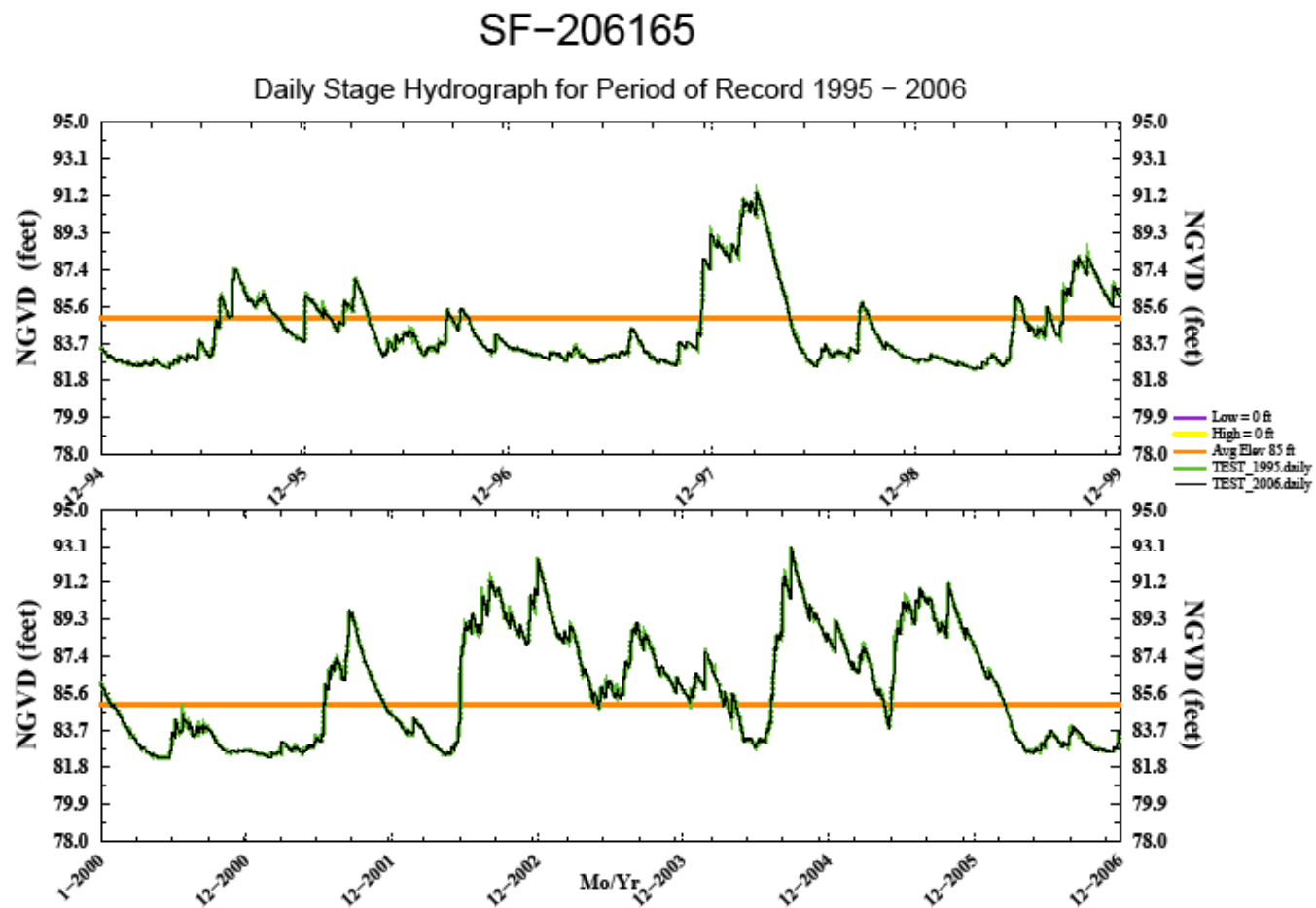
# Model Domains for the ECFT Model and DWRM



# East Central Florida Transient Model

- Model Compilation and Construction Began in 2002
  - Base model is the ECF model by SJRWMD
- Preliminary Calibration & Documentation – October 2006
- Completion of Peer Review – February 2007
  - Incorporated Most Peer Review Comments
  - Extend Calibration Period (1995 to 1999) to 2006 (12 yrs)
  - Add newly acquired aquifer test data
- Completed Post-Processing Tool (PMViewer) – June 2009
- Recalibrated Model – September 2009
  - Reviewing water use data and findings of the Environmental work
  - Poised to begin simulation within next month

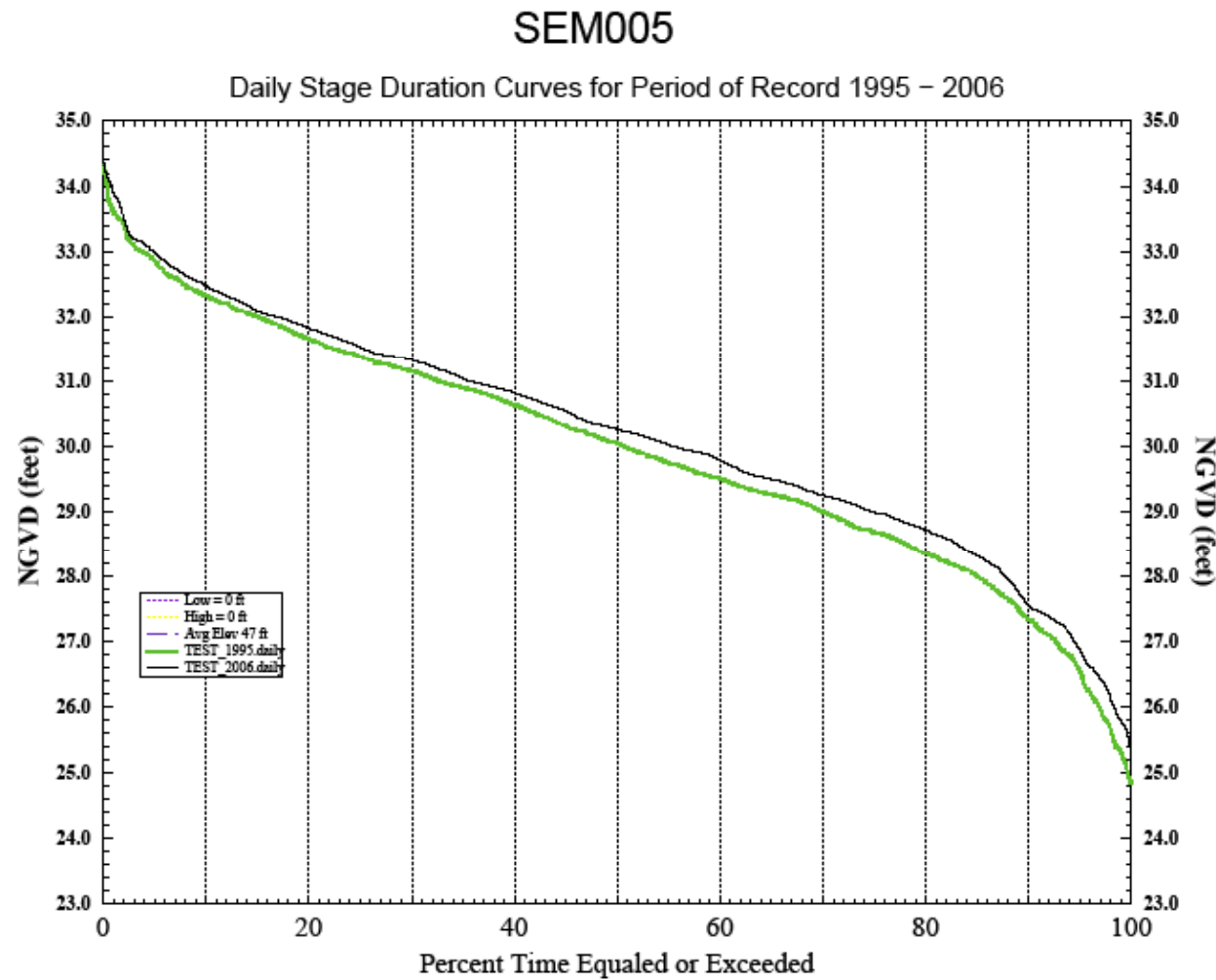
# Sample Hydrograph



Run date: Thu Jun 25 10:33:14 EDT 2009  
For Planning Purposes Only (#60)  
Modflow WPA edit SubRegional GW Model

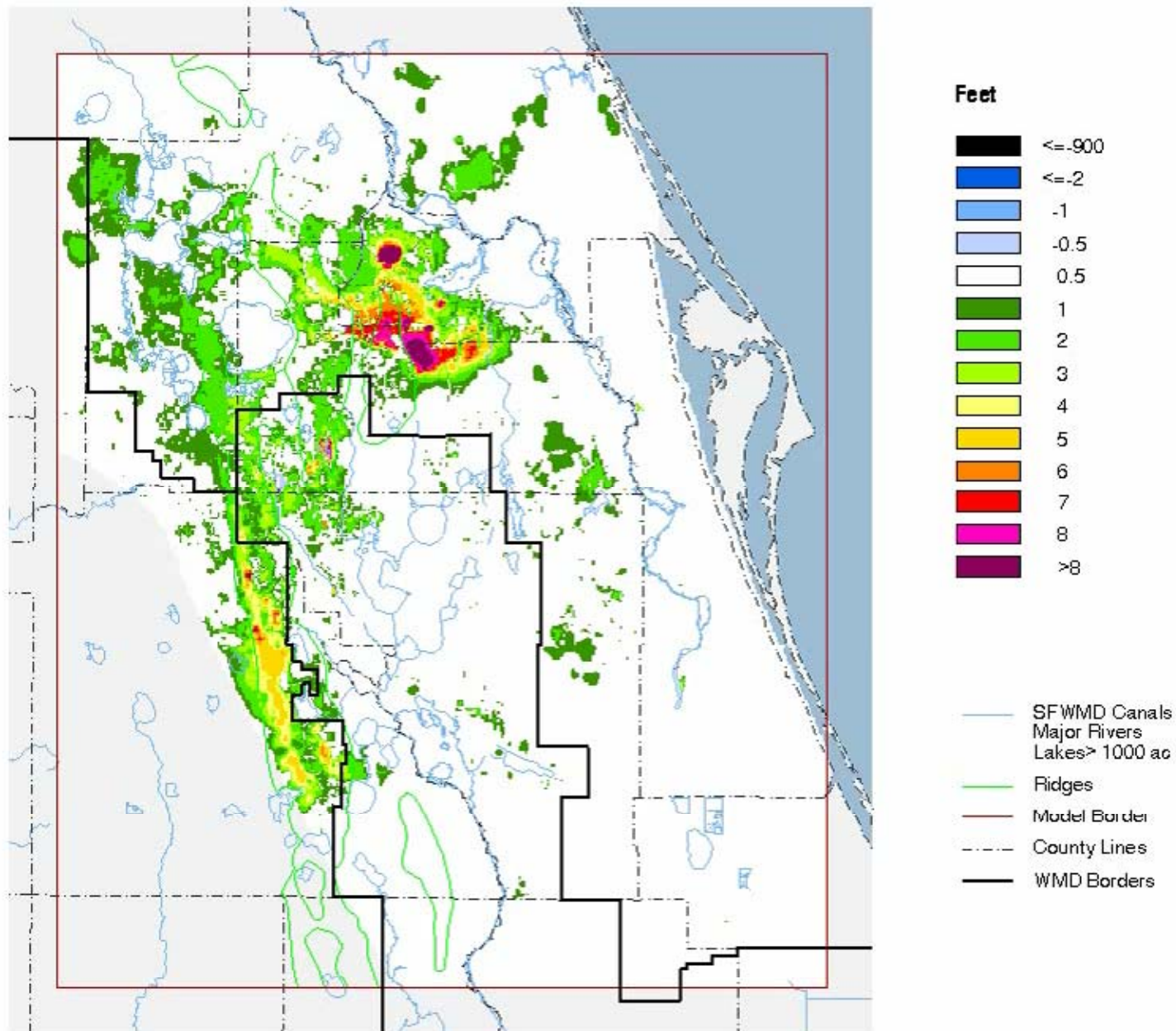


# Sample Stage Duration Curve



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For Planning Purposes Only (#74)  
Modflow ecft SubRegional GW Model

# **Groundwater Drawdown for Upper Surficial Aquifer** **East Central Florida Transient Groundwater Model - TEST\_2006**

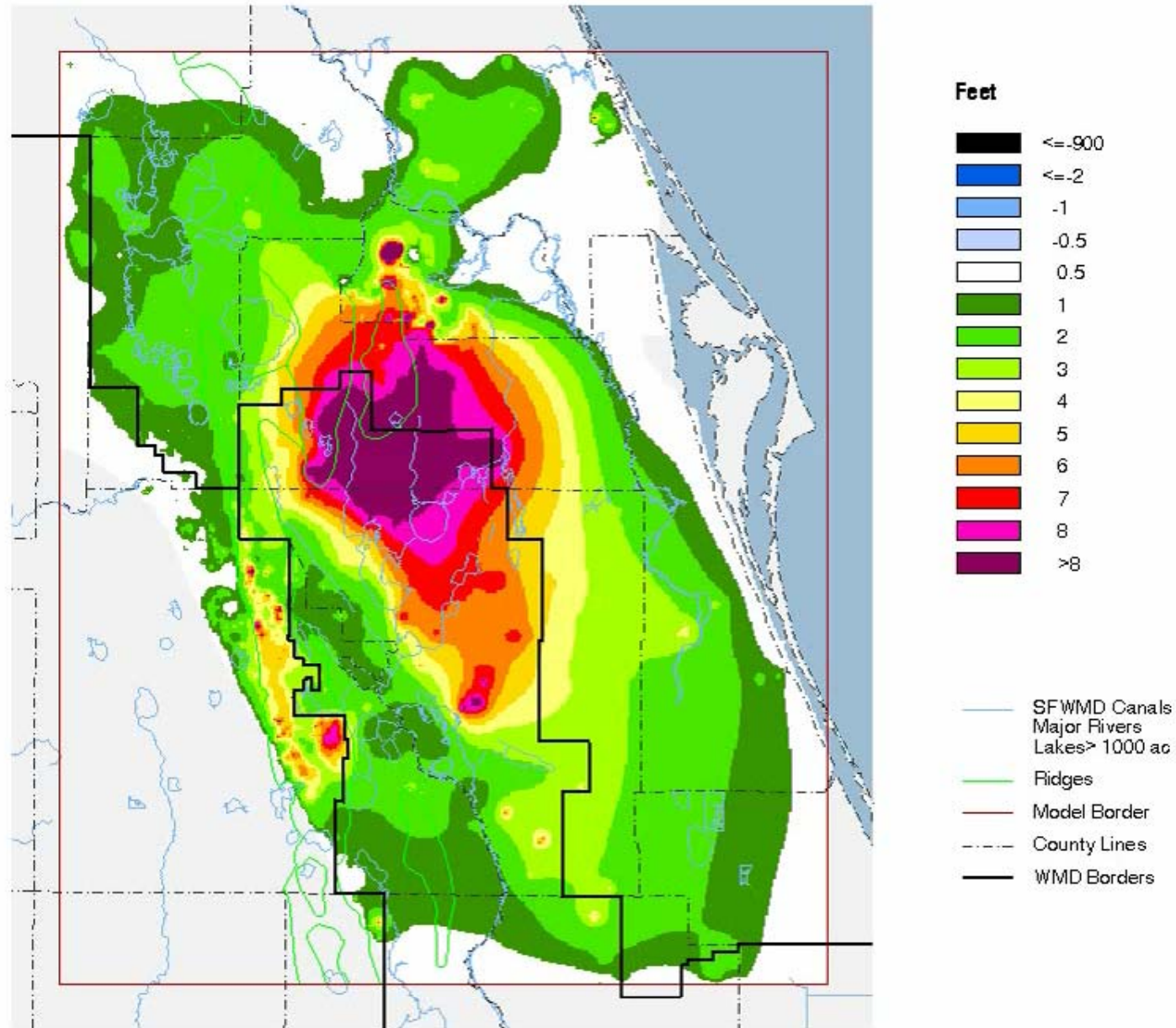


Run Post Date: 062309

ECFT - Source MODFLOW

**Jan 31 1997**

# Groundwater Drawdown for Upper Floridan Aquifer East Central Florida Transient Groundwater Model - TEST\_2006



Run Post Date: 062309

ECFT - Source MODFLOW

**Jan 31 1997**



# District-Wide Regulation Model (DWRW)

*Presented by:*

Mark Barcelo, P.E.

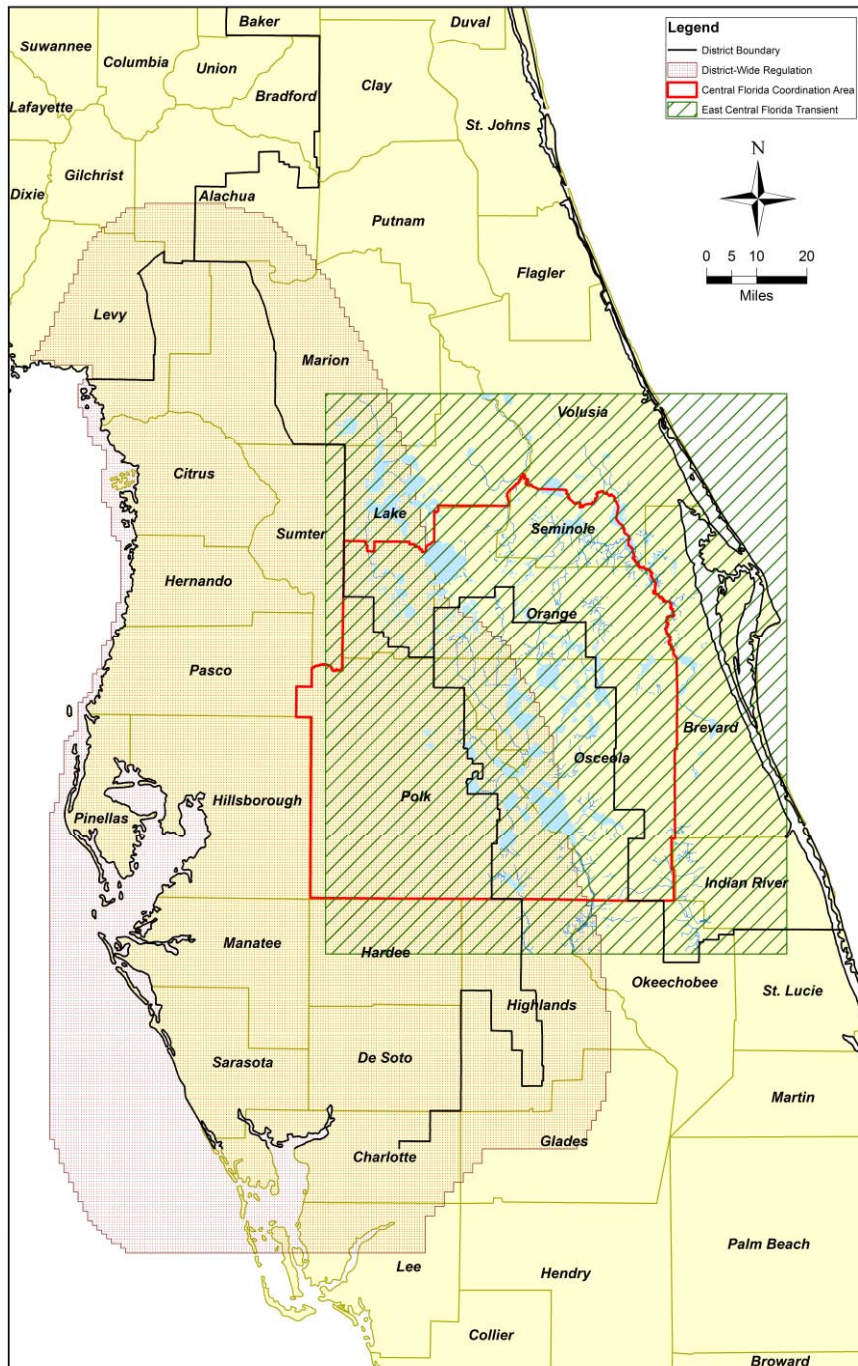
Program Director for Hydrologic Evaluation  
Southwest Florida Water Management District

*September 25, 2009*





## Central Florida Interdistrict Water Supply Strategic Boundary Ground Water Models



## Model Domains for the ECFT Model and DWRM Model

# District-Wide Regulation Model

- Development began in 2003 (DWRM and DWRM<sub>2</sub>)
- Calibration & Documentation - January 2007
  - Includes a Focused Telescopic Mesh Refinement option
- Peer Review Report – January 2009
  - Incorporate Peer Review Comments (DWRM<sub>3</sub>) – January 2010
- Simulation Period Extended - 1995 to 2006
- Calibration for CFCA – December 2009
- Interaction with the ECFT Model

# Predictive Simulations

1. 12 yr calibration period (1995 to 2006)
2. No-Pumping Conditions
3. 1995 Withdrawals
4. Current (2006) Withdrawals
5. Permitted 2013 Withdrawals
6. Estimated 2013 Withdrawals

# Hydrologic Data Evaluations

*Presented by:*

Doug Munch, P.G.

Division Director for Groundwater Programs

St. Johns River Water Management District

*September 25, 2009*







# Identification of Natural and Anthropogenic Effects in Ground-Water and Lake-Level Data, East-Central Florida

## *Project Team*

Andy O'Reilly, USGS, Orlando

Paul Conrads, USGS, Columbia, SC

Ed Roehl, Advanced Data Mining LLC, Greenville, SC



# Problem:

Considerable historical groundwater and lake level data exist, yet a comprehensive compilation and systematic analysis of these data has not been performed to ascertain the effects of both natural and anthropogenic stresses on the hydrologic system in east-central Florida.

# Objectives:

- Quantify both natural and anthropogenic effects
- Identify effective data-mining technique
- Assess the adequacy of available data
- Suggest additional data collection

*“To understand the past is to understand the future”*

# Approach:

- Development of Artificial Neural Network(ANN) models of select long-term time series.
- Spatial interpolation of multiple ANN models for short-term and long-term time series (1995-2005, 1950 to 2005) to quantify regional ground-water system behavior.
- Compare ANN results with ECFT model calibration results to strengthen model predictive capabilities as demonstrated by the system behavior inferred from historical data

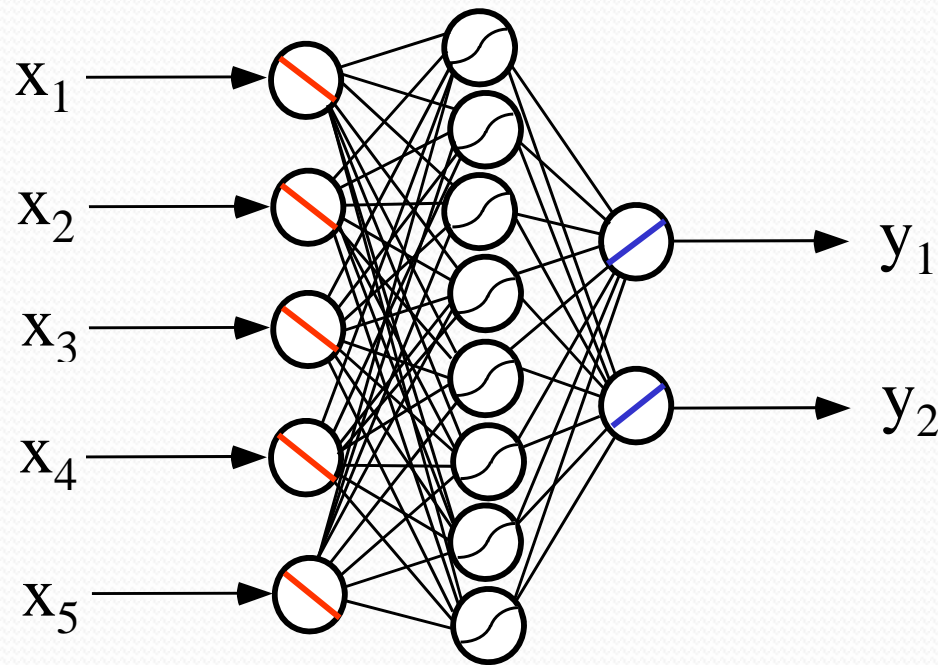


# Artificial Neural Networks (ANNs):

**Hidden**

Inputs

Rainfall  
ET  
Pumping  
Water Levels  
Spring Flows



Outputs

Water levels  
Lake levels  
Spring Flows

- models are synthesized from observed data
- Nonlinear and multivariate
  - machine learning



# Project Schedule:

- Data Mining/ANN Development thru March 2010
- Comparison of ANN's to ECFT thru March 2011
- Reporting thru December 2011

# Statistical analysis of long-term records of groundwater levels, lake levels, and spring discharge measurements

Intera, Inc.



# Objectives:

- Identify significant trends present in times series of groundwater levels, lake levels, or spring discharge measurements
- Identify spatial distribution of trends through cluster analysis
- Determine the relationship between spatial distributions of groundwater level trends to spatial distributions of lake level trends?
- Identify the predominant temporal distribution of any trends.

*That is, are there particular time periods in the period of record during which trends existed or were prevalent?*



# Project Schedule:

- Exploratory Data Analysis
  - Memorandum summarizing the methodology, analysis and results
    - 12/31/09
- Trend and Cluster Analyses
  - Memorandum summarizing the methodology, analysis and results - 3/31/10
- Final Report - 6/30/10

# Near Term Modeling Activities:

- Modeling
  - Conduct predictive simulations
  - Compare and consolidate ECFT/DWRM results
  - Coordinate with ES team on wetland/MFL issues
- Hydrologic Data Evaluations
  - Begin comparing ECFT results to hydrologic data evaluations
  - Begin to compare hydrologic data evaluations to wetland/MFL issues



# CFCA ENVIRONMENTAL ASSESSMENT SUBGROUP

PROGRESS REPORT  
25 September 2009



Wetland SF-CT, Orange County, Florida

# Goal

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To perform a cumulative environmental impact assessment resulting in a unified supportable conclusion regarding sustainable groundwater withdrawals in the Central Florida Coordination Area (CFCFA) that will support future water supply planning and rulemaking by all three water management districts.



# Tasks

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The cumulative environmental wetlands assessment will include:

1. an evaluation of existing conditions.
2. an analysis of potential future conditions.

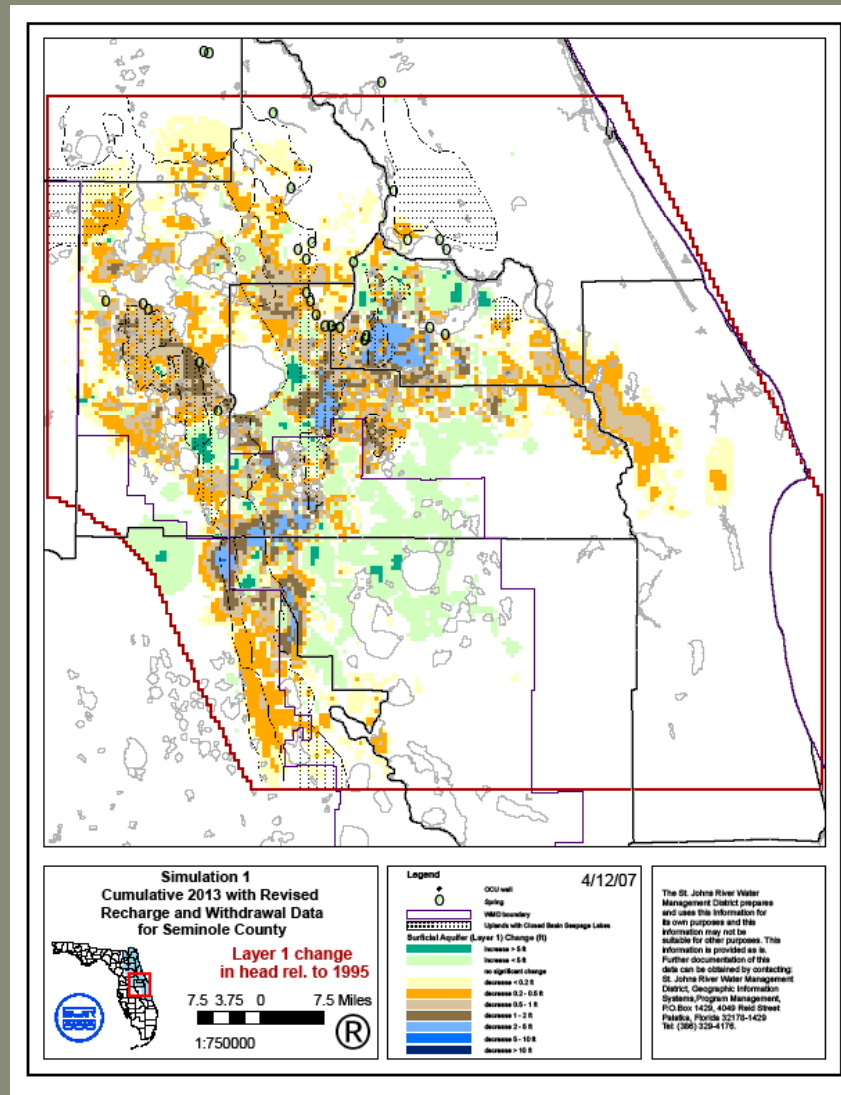
# Assessment Site Selection

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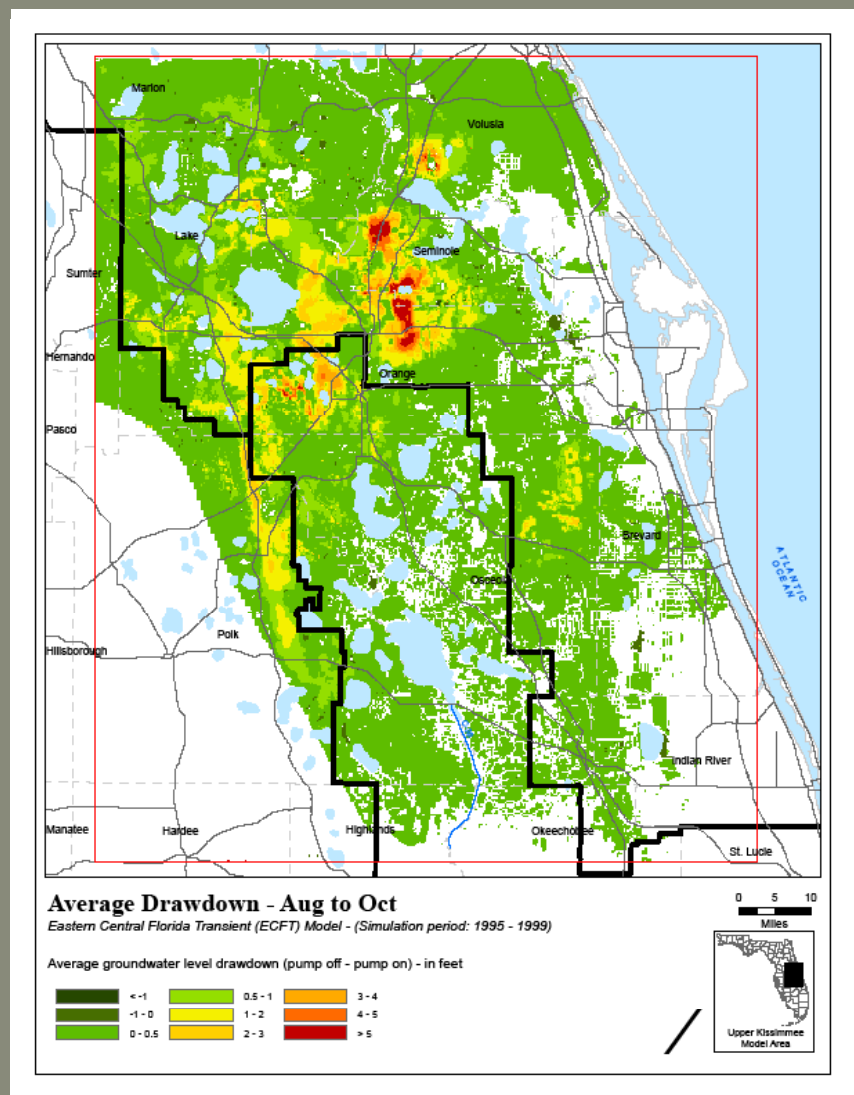
SFWMD and SJRWMD staff used preliminary results of the ECFT and ECF models, aerial photography, and GIS to help select sites for assessment in the field.

SWFWMD staff relied on current knowledge using permitted public supply applications with groundwater modeling results, District monitored sites, and “Stressed Lakes” (a SWFWMD evaluation criterion).

# Assessment Site Selection



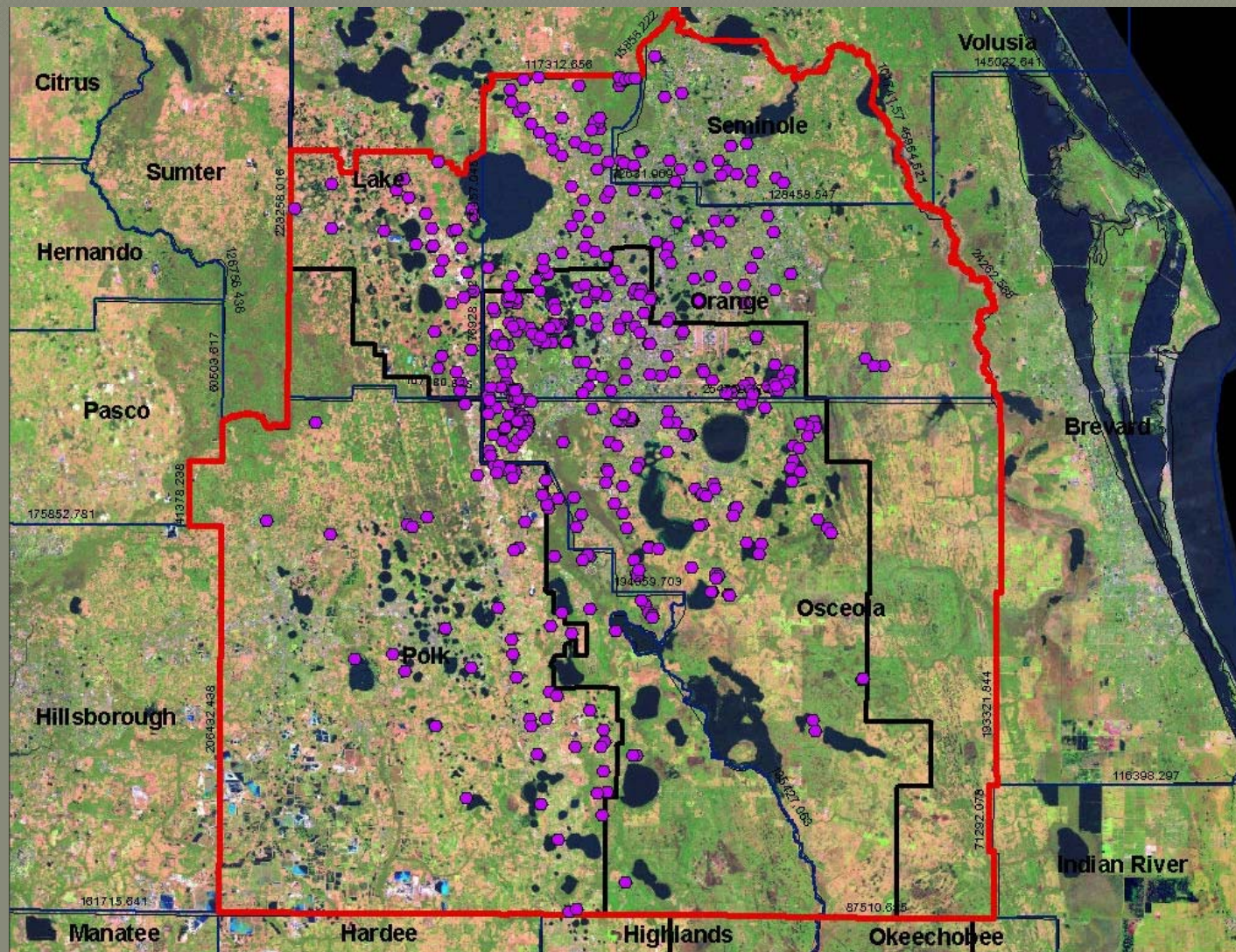
ECF model simulation



ECFT model simulation



# Assessment Site Selection



Sites identified for wetland assessment.



# Field Assessment Data

## Site Information

- General information

- Location, date, time, evaluators

- Site characteristics

- Wetland type and general topographic, hydrologic, and vegetative characteristics

- Wildlife

- Listed species observed (Florida sandhill crane, wood stork, little blue heron, snowy egret, American alligator, etc.)



Wetland SF-CT, Orange County, Florida

# Field Assessment Data

## Hydrology

- Water level on day of assessment
- Hydrologic indicators
  - Moss collars, lichen or stain lines, adventitious roots, tree buttressing, wetland edge characteristics
- Drainage alterations
  - Ditches, canals, drainage wells, culverts, retention ponds
- Other alterations
  - Roads, shopping centers, adjacent residential units, etc.



Wetland SF-CT, Orange County, Florida

# Field Assessment Data

## Vegetation

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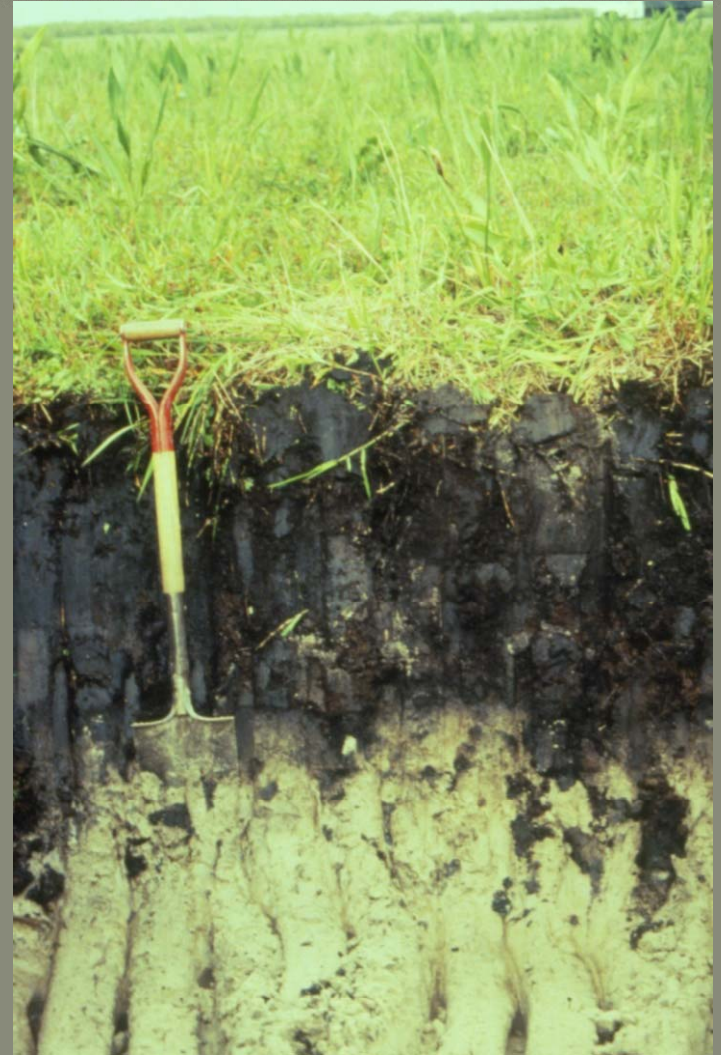
- Vegetative community characteristics
  - Community type(s)
  - Plant species list and abundance
  - Community health

# Field Assessment Data

## Soils

### ● Soil characteristics

- Soil type
- Observed condition (subsidence, fissures)
- Moisture condition (inundated, moist, dry)



Samsula muck, photo courtesy of the NRCS



# Field Assessment Data

## Indicators of Stress: Examples

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### ● Vegetation

- Invasion by plants of drier communities
- Presence of invasive/exotic species
- Leaning/fallen trees
- Dead trees or other vegetation
- Shifts and changes in plant communities
- Age class differences of trees
- Lack of regeneration

### ● Soils

- Oxidation/subsidence
- Fissuring

### ● Hydrology

- Evidence of reduced hydrology, etc.
- Lack of hydrologic indicators

# Other Data

- Pre-development vegetation database
  - Comparison of pre-development and current vegetation maps
- FLUCCS land use/land cover
- Historical aerial photographs
  - Aerial photo time series
- NRCS county soils database
  - Hydric soil distribution and characteristics
- Monitoring data
  - Water level data from monitoring wells and staff gauges



Wetland SF-CT, Orange County, Florida

# Database Construction

Attributes of UKBW_allsites_091908									
FID	Shape *	SITE_NAME	VERIFIED	ASSMT_DATE	SITE_DESCR	COUNTY	WET_TYPE	HYDRO_ALTR	
0	Point	1A	YES	AUG 16 2007	Off Reedy Creek Rd, W of treatment pla	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	NO	NO
1	Point	1B	YES	AUG 16 2007	Off Reedy Creek Rd, E of abandoned sp	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	NO	NO
2	Point	1C	YES	AUG 16 2007	Reedy Creek floodplain E of Reedy Cree	OSCEOLA	RIVERINE FLOODPLAIN	NO	NO
3	Point	2A	YES	AUG 17 2007	Just SE of Formosa Gardens and Living	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	YES (SW INPUTS, REDUCED SIZE 1947)	NO
4	Point	2B	YES	AUG 17 2007	Just SE of Formosa Gardens and Living	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	YES (SW INPUTS)	NO
5	Point	2C	YES	AUG 17 2007	Just SE of Formosa Gardens and Living	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	YES (SW INPUTS)	NO
6	Point	3A N/A	N/A	N/A	Just N of Livingston Rd- Not assessed	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	N/A	N/A
7	Point	3B	YES	AUG 17 2007	Just W of Old Lake Wilson Rd	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	YES (SW INPUTS, HISTORIC OUTFLOW)	NO
8	Point	3C N/A	N/A	N/A	Along Lake Wilson Rd	OSCEOLA	PALUSTRINE	N/A	N/A
9	Point	5A N/A	N/A	N/A	Lake Butler	ORANGE	LACUSTRINE LITTORAL	N/A	N/A
10	Point	6B2	YES	SEP 05 2007	Lake Butler	ORANGE	LACUSTRINE FLOODPLAIN	NO	NO
11	Point	7A1	YES	AUG 22 2007	Tibet-Butler Preserve	ORANGE	LACUSTRINE LITTORAL	NO	NO
12	Point	7B	YES	OCT 09 2007	Lake Mabel	ORANGE	LACUSTRINE LITTORAL	NO? (NEAR DISNEY CANAL)	NO?
13	Point	7C1	YES	AUG 22 2007	Lake Sheen	ORANGE	LACUSTRINE LITTORAL	NO	NO
14	Point	8A	YES	SEP 04 2007	Little Sand Lake	ORANGE	LACUSTRINE LITTORAL	NO	NO
15	Point	8B	YES	SEP 04 2007	Spring Lake	ORANGE	LACUSTRINE LITTORAL	YES (DITCH)	YES
16	Point	9B	YES	SEP 04 2007	Shadow Bay Park	ORANGE	LACUSTRINE LITTORAL	NO	NO
17	Point	9A	YES	SEP 04 2007	SW of Turnpike at SR 435	ORANGE	LACUSTRINE FLOODPLAIN	YES (SW INPUTS)	NO
18	Point	10A	YES	SEP 23 2007	Lake Reedy floodplain	ORANGE	LACUSTRINE FLOODPLAIN	NO	NO
19	Point	10B1	YES	OCT 09 2007	N of Bay Lake and Disney perimeter can	ORANGE	PALUSTRINE ISOLATED	YES (NEAR DISNEY CANAL AND LEEVE	YES
20	Point	10C	YES	AUG 23 2007	Cypress Creek S of Lake Sheen	ORANGE	PALUSTRINE INTERCONNECTED	NO	NO
21	Point	11A N/A	N/A	N/A	International Dr near Lake Forest- Not A	ORANGE	PALUSTRINE	N/A	N/A
22	Point	11B N/A	N/A	N/A	Shingle Cr marsh- Not Assessed	ORANGE	PALUSTRINE	N/A	N/A
23	Point	11C	YES	AUG 23 2007	SE of Lake Bryan	ORANGE	PALUSTRINE ISOLATED	YES (SEVERED LAKE CONNECTION, IMP	NO
24	Point	12	YES	SEP 11 2007	Lake Lucy- Same as SJ-ET	ORANGE	LACUSTRINE LITTORAL	YES (DITCHED BETWEEN 1954-69)	YES
25	Point	13	YES	SEP 13 2007	Near Intersection of Marigold and Bourn	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	NO	NO
26	Point	14	YES	SEP 05 2007	Lake Speer	ORANGE	LACUSTRINE FLOODPLAIN	NO	NO
27	Point	15	YES	SEP 11 2007	Behind Ramada at US 192 & Poiniana B	OSCEOLA	LACUSTRINE FLOODPLAIN	YES (SW RUNOFF, DITCH TO LAKE BEF	YES
28	Point	16A	YES	SEP 05 2007	W of Hartzog	ORANGE	LACUSTRINE FLOODPLAIN	YES (DITCHED LAKE CHAIN AFTER 195	YES
29	Point	16B	YES	SEP 05 2007	W of Hartzog	ORANGE	LACUSTRINE FLOODPLAIN	YES (DITCHED LAKE CHAIN AFTER 195	YES
30	Point	17A	YES	SEP 12 2007	Davenport Creek Swamp off Funie Stee	OSCEOLA	PALUSTRINE INTERCONNECTED	NO	NO
31	Point	18A	YES	SEP 06 2007	Green Swamp-Alice Lockmiller Parcel	LAKE	PALUSTRINE INTERCONNECTED	NO	NO
32	Point	18B	YES	SEP 06 2007	Jahna Ranch Conservation Easement	POLK	PALUSTRINE INTERCONNECTED	YES (PERIMETER DITCH BEFORE 1958)	YES
33	Point	19	YES	SEP 11 2007	Lake Bream	ORANGE	PALUSTRINE DEPRESSIONAL	NO	NO
34	Point	20A	YES	SEP 06 2007	E of US 27 on Hurtwood Marsh Rd	LAKE	PALUSTRINE ISOLATED DEPRESSIONAL	NO	NO
35	Point	20B	YES	SEP 06 2007	Flat Lake	LAKE	LACUSTRINE LITTORAL	NO	NO
36	Point	21	YES	SEP 06 2007	Hunt Trace Rd.	LAKE	LACUSTRINE LITTORAL	YES? (LOWERED WATER TABLE AFTE	YES
37	Point	22A	YES	SEP 12 2007	Near I-4 at Water Ski Museum	POLK	PALUSTRINE INTERCONNECTED	UNKNOWN	UNP
38	Point	22B	YES	SEP 12 2007	Old Polk City Rd at I-4 rest area retention	POLK	PALUSTRINE INTERCONNECTED	YES	YES
39	Point	23A	YES	SEP 12 2007	E of US 17-US 92	POLK	LACUSTRINE LITTORAL	YES (LOWERED WATER TABLE BEFOR	YES
40	Point	23B	YES	SEP 12 2007	W of US 17-US 92, S of Mystery House	POLK	LACUSTRINE LITTORAL	YES (DITCHED BEFORE 1952)	YES
41	Point	24A	YES	SEP 13 2007	Near Solivita Rd, S of County Highway 5	POLK	PALUSTRINE ISOLATED DEPRESSIONAL	NO? (NEAR RETENTION POND)	UNP
42	Point	24B	YES	SEP 13 2007	Near Solivita Rd, S of County Highway 5	POLK	PALUSTRINE ISOLATED DEPRESSIONAL	NO	NO
43	Point	25	YES	SEP 25 2007	Along International Dr W of Gateway Poi	ORANGE	PALUSTRINE ISOLATED DEPRESSIONAL	NO	NO
44	Point	4A	YES	AUG 21 2007	Reedy Cr floodplain E of Old Lake Wilso	OSCEOLA	RIVERINE FLOODPLAIN	NO	NO
45	Point	4B	YES	AUG 21 2007	E of Old Lake Wilson Rd near Reedy Cr f	OSCEOLA	PALUSTRINE INTERCONNECTED	YES (DITCHED 1944-51)	YES
46	Point	4C	YES	AUG 21 2007	Reedy Cr floodplain E of Old Lake Wilso	OSCEOLA	RIVERINE FLOODPLAIN	NO	NO
47	Point	4D	YES	AUG 21 2007	Mystic Dunes Development, S of Fant	OSCEOLA	PALUSTRINE INTERCONNECTED	YES (DITCHED 1944-51)	YES
48	Point	4E	YES	AUG 21 2007	Mystic Dunes Development, S of Fant	OSCEOLA	PALUSTRINE INTERCONNECTED	YES (DITCHED 1944-51)	YES
49	Point	5A N/A	N/A	N/A	W of Formosa Gardens at expressway-	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	N/A	N/A
50	Point	5B N/A	N/A	N/A	W of Formosa Gardens at expressway-	OSCEOLA	PALUSTRINE ISOLATED DEPRESSIONAL	N/A	N/A
51	Point	5C	YES	AUG 22 2007	Davenport Cr swamp W of expressway	OSCEOLA	PALUSTRINE/RIVERINE	NO	NO
52	Point	26	YES	SEP 12 2007	Oak hammock	OSCEOLA	BORROW PITS	N/A (ARTIFICIAL WATERBODY)	N/A
53	Point	27	YES	SEP 13 2007	Reassessed as Wetland SF-BN in 2008	OSCEOLA	LACUSTRINE LITTORAL	YES (REGULATED LAKE, CANAL DRED	YES
54	Point	4B2	YES	Part of Wetland	Part of Wetland 4B	OSCEOLA	PALUSTRINE	Part of Wetland 4B	Part
55	Point	4D3	YES	Part of Wetland	Part of Wetland 4D	OSCEOLA	PALUSTRINE	Part of Wetland 4D	Part

Record: 1

Show: All Selected

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# Future Condition Assessment

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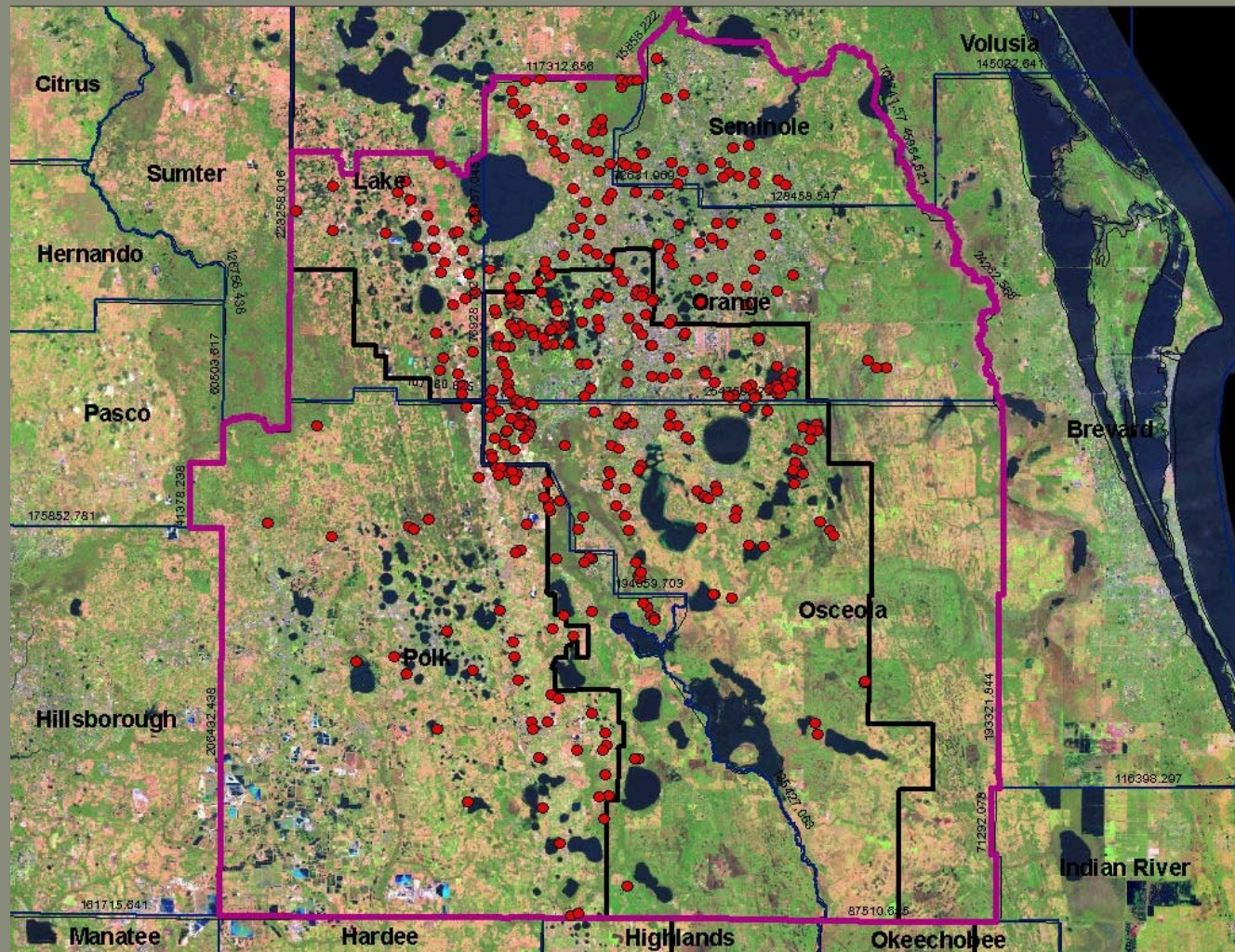
Staff will analyze the potential effects of future groundwater withdrawals on:

- wetlands, lakes, springs, and streams,
- MFL sites,
- and the proposed Kissimmee Water Reservations.



# Progress

- Sites in the CFCFA have been assessed.





# Remaining Work

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- Complete the wetland assessments and database construction
- Develop methods for evaluating harm
- Acquire model runs from the Modeling Subgroup and perform a preliminary data analysis
- Identify and acquire any additional data as necessary
- Perform the final data analysis
- Evaluate existing monitoring network
- Prepare final report

# Status:

# SWS Source Development

September 25, 2009

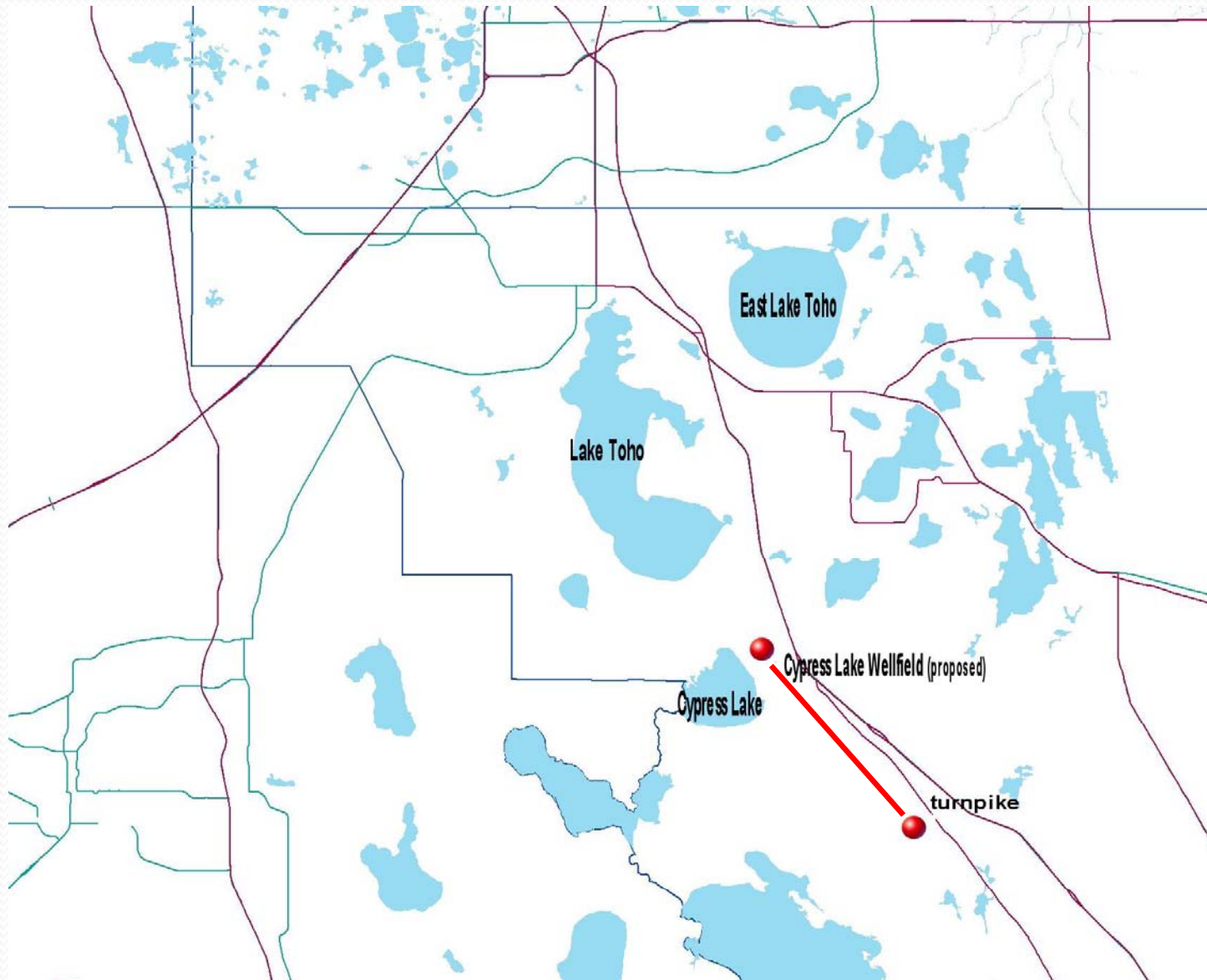


# Cypress Lake Wellfield Investigation

*Chris Sweazy, P.G – SFWMD*  
*September 25, 2009*

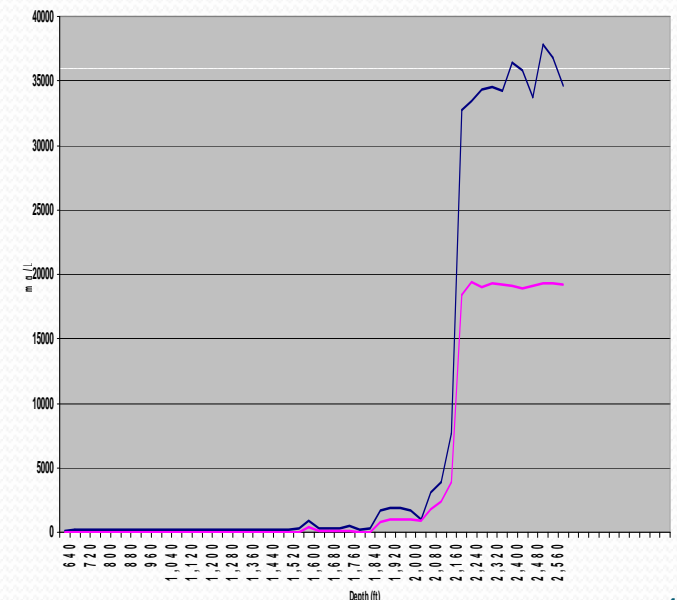
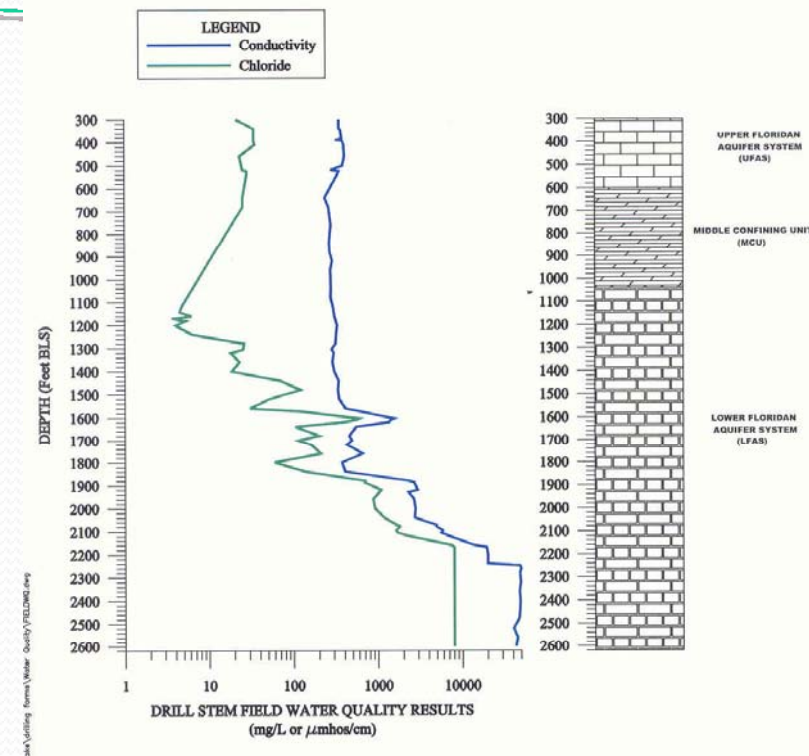


# Project Location



# Project Status

- Two LFA Well Testing Sites
  - Both partially funded by SFWMD
  - Northern location – testing complete in 2008
  - Fresh water to about 1800 feet, good production
  - Southern Location
    - testing started in 2009
    - expected completion in 2010
- Wellfield permit application submitted - 2009
  - On Request for Additional Information (RAI)
  - Request for 30 MGD



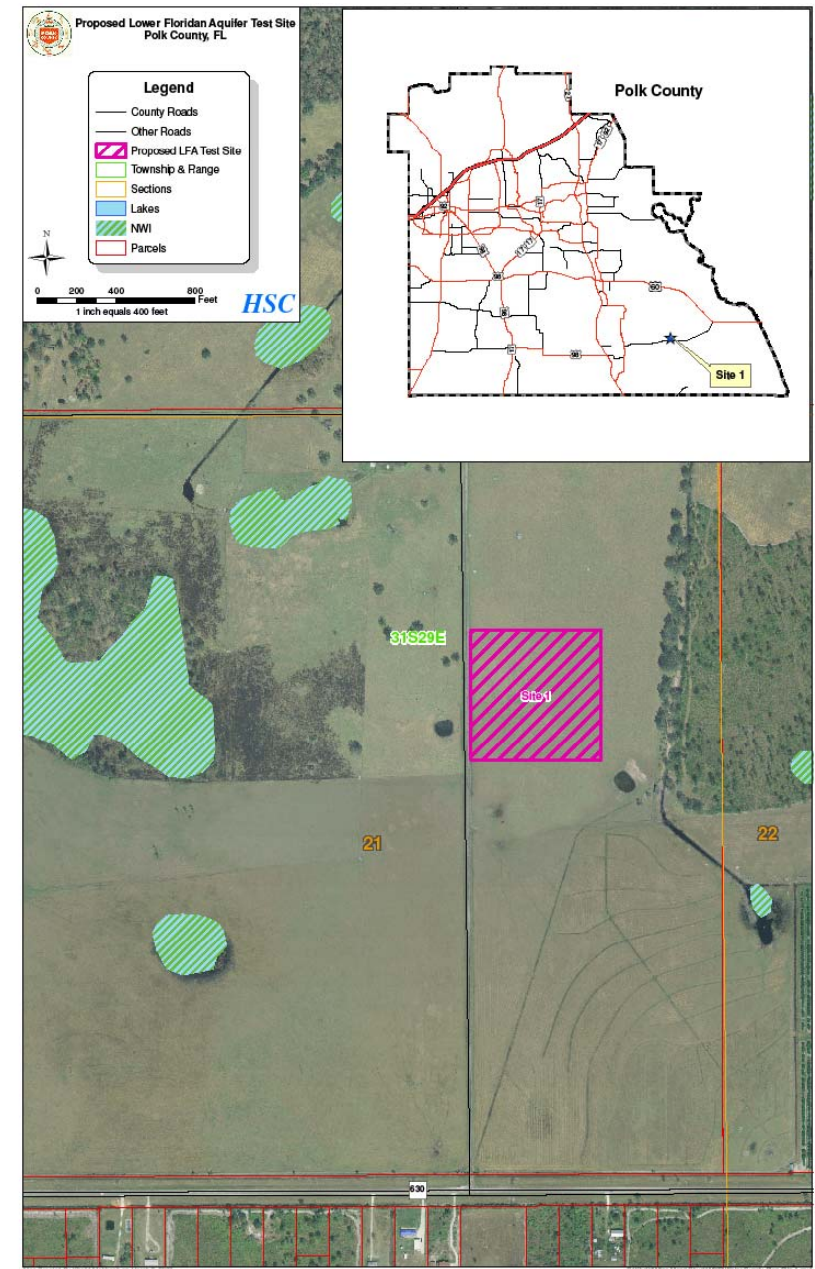
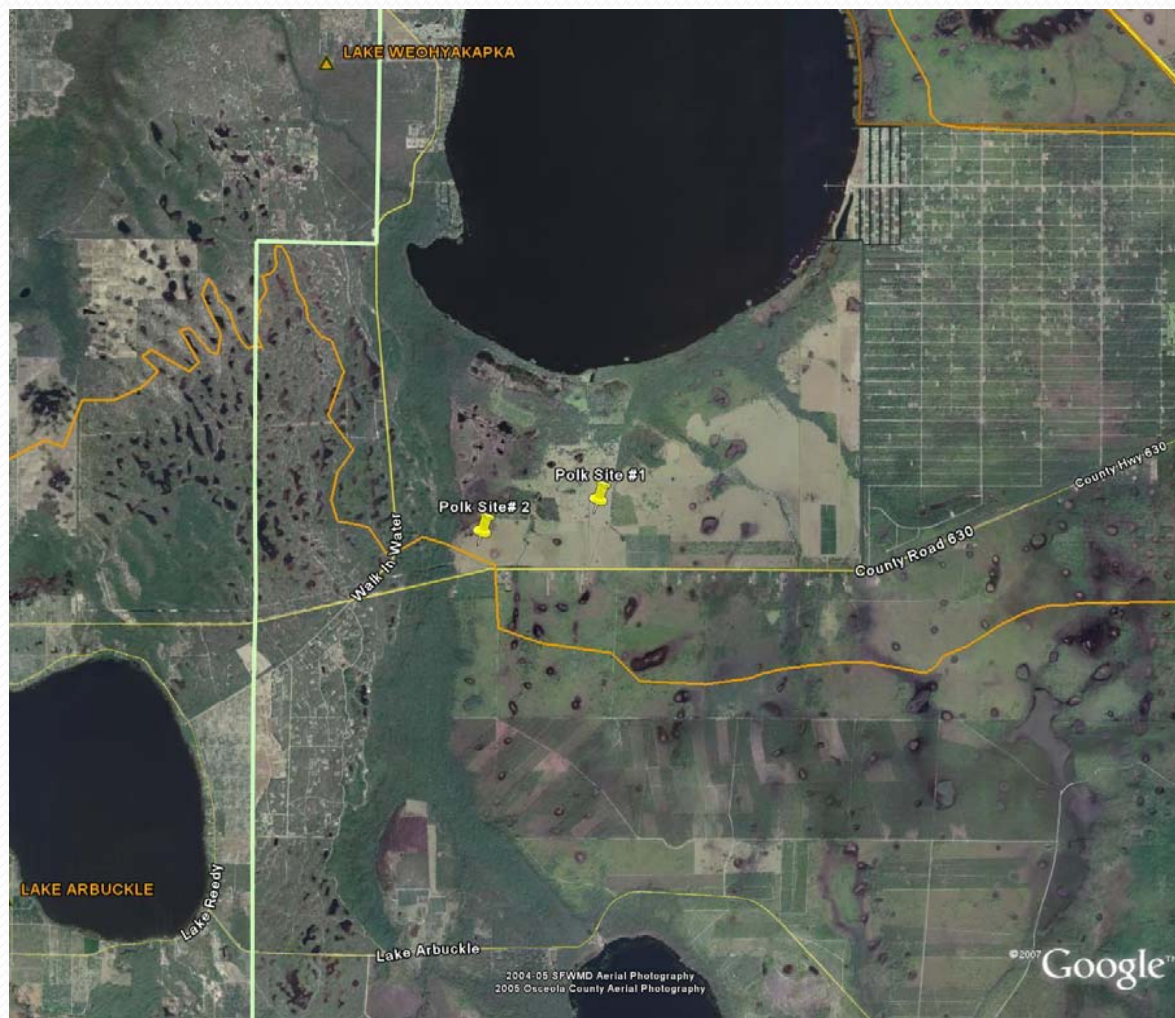


# Southeast Polk County Test Well

*Chris Sweazy, P.G – SFWMD*  
*September 25, 2009*



# Project Location



# Project Status

- Proposed to investigate water resource options for Polk County
  - Begun in 2008 as a joint venture between the County and SFWMD
  - Test design for deep exploratory (2500+ ft)
- Completion of second well for testing the Lower Floridan Aquifer – October, 2009
- Aquifer performance testing and construction report – November 2009
- Proposed as a monitoring well thru 2012
- Polk County retains ownership of the wells





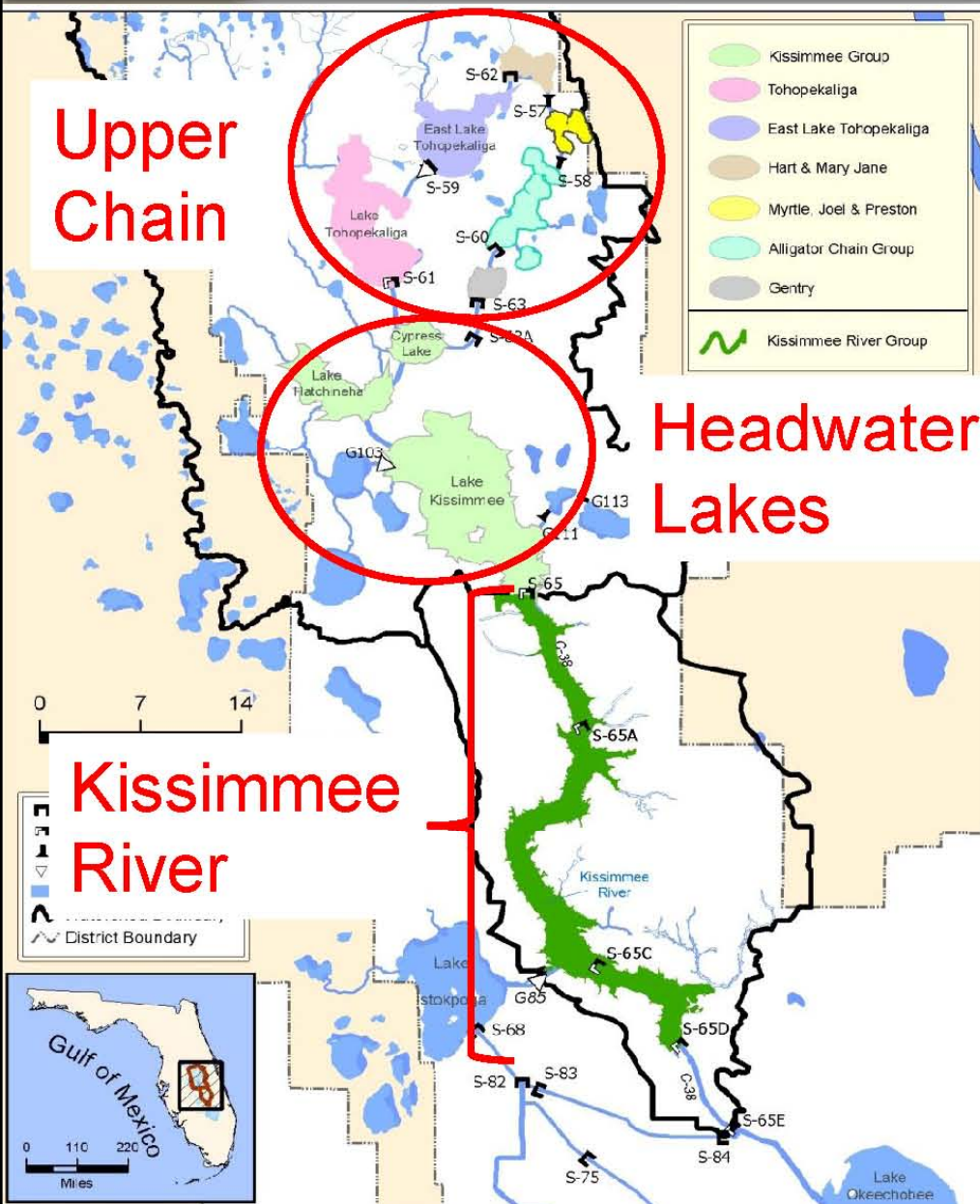
# Kissimmee Basin Water Reservations:

*Chris Sweazy, P.G – SFWMD*

*September 25, 2009*



# Reservation Water Bodies: Kishwaukee River and the Chain of Lakes



- Restored Kissimmee River and floodplain (S-65 to S-65E)
  - 103 miles of River and floodplain
  - 27,000 acres wetland habitat
- 7 lake management areas (19 lakes)



# Reservation Status

- Staff presented information at the September Governing Board
- Staff returns the Governing Board in October for additional direction



- Copy of the full September Board presentation:

[https://my.sfwmd.gov/portal/page/portal/pg\\_grp\\_sfwmd\\_governing\\_board/portlet\\_gb\\_subtab\\_presentations\\_page/tab23985102/w10\\_glen\\_n\\_kiss%20reserv.pdf](https://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_governing_board/portlet_gb_subtab_presentations_page/tab23985102/w10_glen_n_kiss%20reserv.pdf)

- Video of the September 9<sup>th</sup> presentation (+1 hr, 38 min):

[https://my.sfwmd.gov/portal/page/portal/pg\\_grp\\_sfwmd\\_news/pg\\_sfwmd\\_news\\_meetingsandevents](https://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_news/pg_sfwmd_news_meetingsandevents)

**Thank You**



# Polk County Water Supply Plan

Brian Armstrong, P.G.

Manager

Water Supply and Resource Development Section  
Southwest Florida Water Management District







# Polk County Water Supply Plan

- Began in February 2008 - Completed July 2009
- Individual plans developed for all 17 municipality
- Identified total County 2030 deficit of 27.82 mgd
- Local Sources: 66.43 mgd
  - Conservation (15.41 mgd)
  - RW (10.38 mgd)
  - Land Use Transitions (27.68 mgd)
  - Lower Floridan (12.96 mgd)
- Regional Sources: up to 41 mgd

# Polk County Water Supply Plan

## Projects Selected for Funding

- Six Projects identified by the County for WRAP and FY2010 funding consideration
  - Conservation
    - Countywide Rain Sensor Program
  - Reclaimed Water
    - NERUSA Holly Hill Reclaimed Water Storage and Pumping/ LFA Well (APT)(H090)
    - Polk County SWRUSA Reclaimed Water Connection to TECO (H091)
    - Construction of the NW Reclaimed Water Reservoir (N024)
  - Lower Floridan GW
    - Lower Floridan Well Testing Program – City of Winter Haven
  - Recharge
    - Indirect Aquifer Recharge Study in the NERUSA

# Polk County Water Supply Plan

## Projects Selected for Funding

- Three Projects selected to receive funding
  - Polk County NWRUSA Reclaimed Water Storage & Pumping Station (N024)
  - NERUSA Holly Hill Reclaimed Water Storage and Pumping/ LFA Well (APT)(H090)
  - Polk County SWRUSA Reclaimed Water Connection to TECO (H091)
- \$ 4.4 Million in funding provided
- In FY2010 \$12.8 Million in funding was budgeted to other Conservation/Reuse Projects in Polk County



# Polk County Water Supply Plan

## *Next Steps*

- Public Utilities Outreach Program
- Continued evaluation and development of projects through Cooperative Funding program
- Plan is available at:

<http://www.reisscivilengineering.com/client/polk-county/>





# **2005 District Water Supply Plan**

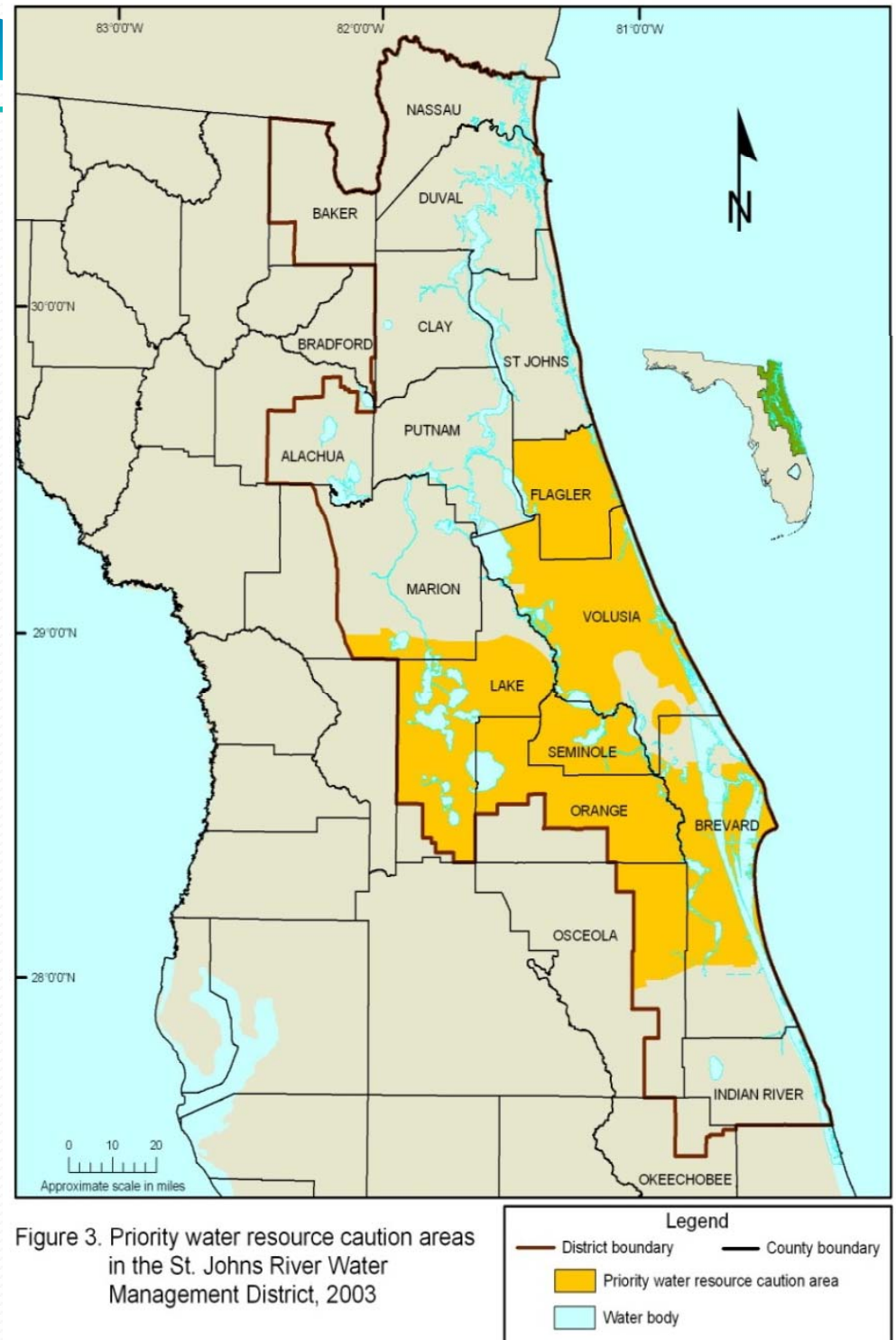
**Fourth Addendum**

**May 2009**

**Provides updated information  
on AWS Districtwide  
and SWS in CFCA**

# Current (2003) Priority Water Resource Caution Areas

- Areas in which proposed water sources cannot sustain proposed uses through 2025



# Fourth Addendum — Purpose

- **Add expanded details on water conservation and the use of reclaimed water to meet future demands**
- **Remove 4 water supply development project options**
- **Identify 16 completed projects**
- **Provide refined project option descriptions**



## Cost-sharing for reclaimed water projects

### *Water Protection & Sustainability Program*

- Of all potential WPSP Projects, 71% are reclaimed projects sharing \$44 million in cost share dollars
- Active WPSP reclaimed water projects represent \$195 million in construction cost
- 30 Reclaimed projects were funded in the first two years of the program representing \$28.9 million in cost share



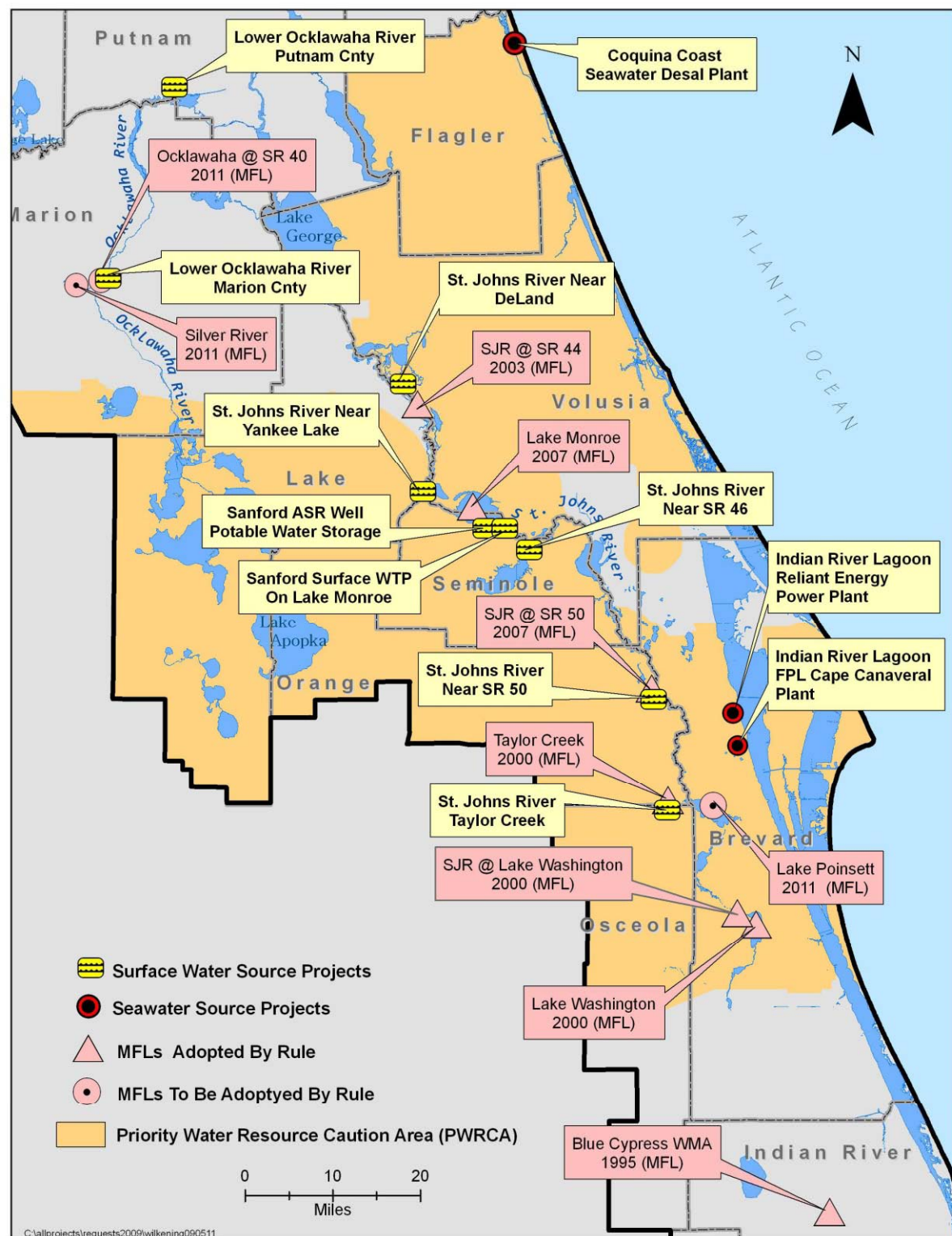


## Clermont Reclaimed and Stormwater System Expansion Projects

# Water Supply Development Project Options

- **80 project options currently in District Water Supply Plan**
  - **11 Surface Water Source for Potable Use**
  - **6 Brackish Groundwater Source for Potable Use**
  - **4 Seawater Source for Potable Use**
  - **48 Reclaimed Water Source**
  - **9 Reclaimed Augmentation Source**
  - **2 Other (Agricultural Irrigation)**





# Central Florida Coordination Area Key Components and Initiatives

Marjorie Craig, P.E.



Director, Department of Water Supply  
South Florida Water Management District

*September 25, 2009*





# CFCA Master Schedule

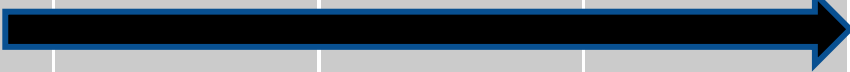
	2006	2007	2008	2009	2010	2011	2012
<b>PHASE I</b> Interim Rulemaking							
<b>PHASE II</b> Long-term Rulemaking							

PHASE II- Initiatives	Key Components
Modeling and Tools Support	ECFT & DWRM Model Calibration
	Estimate Groundwater Availability
	Solution Development Simulations
	2030 Simulation
	Report Documentation
	Data Mining – Statistical Trends Analysis
Environmental Assessment	Organization and Background
	Cumulative Environmental Assessment
	Review Criteria Development and Model Output Review
	Evaluate Existing Monitoring Network
Stakeholder Participation/Input Process	Modeling and Tools Workshops
	Environmental Assessment Workshops
	Solution Development Workshops
Long Term CFCA Rulemaking	3-District Internal Rulemaking Discussions
	Public Rulemaking Process
Supplemental Water Source (SWS) Source Development	St. Johns River/Taylor Creek Reservoir Project
	Kissimmee River/Chain of Lakes
	Cypress Lakes Wellfield
	NE Polk Wellfield
	SE Polk Wellfield
	SJR @ S.R. 46
	SJR @ Yankee Lake
	Water Conservation and Reuse
Water Supply Plans	SJRWMD
	SWFWMD
	SFWMD

# Modeling and Tools Support


- ECFT & DWRM Model Calibration
- Estimate Groundwater Availability
- Solution Development Simulations
- 2030 Simulation
- Report Documentation
- Data Mining
- Statistical Trends Analysis

	2008	2009	2010	2011	2012
ECFT & DWRM Model Development					



# Environmental Assessment

- Assessment Organization and Background
- Cumulative Environmental Assessment
- Review Criteria Development and Model Output Review
- Evaluate Existing Monitoring Network

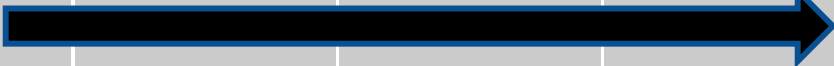
	2008	2009	2010	2011	2012
Environment Assessment					



# Stakeholder Participation and Input Process


- Modeling and Tools Workshops
- Environmental Assessment Workshops
- Solution Development Workshops

	2008	2009	2010	2011	2012
Stakeholder Participation/Input Process					




# Long Term CFCA Rulemaking

- 3-District Rulemaking Discussions
- Stakeholder Rulemaking Process

	2008	2009	2010	2011	2012
Long Term CFCA Rulemaking					

# SWS Source Development


- SJR/TCR Project
- Kissimmee River/Chain of Lakes
- Cypress Lakes Wellfield
- SE Polk Wellfield
- SJR @ S.R. 46 S
- SJR @ Yankee Lake
- Water Conservation
- NE Polk Wellfield

	2008	2009	2010	2011	2012
SWS Source Development					

# Water Supply Plans

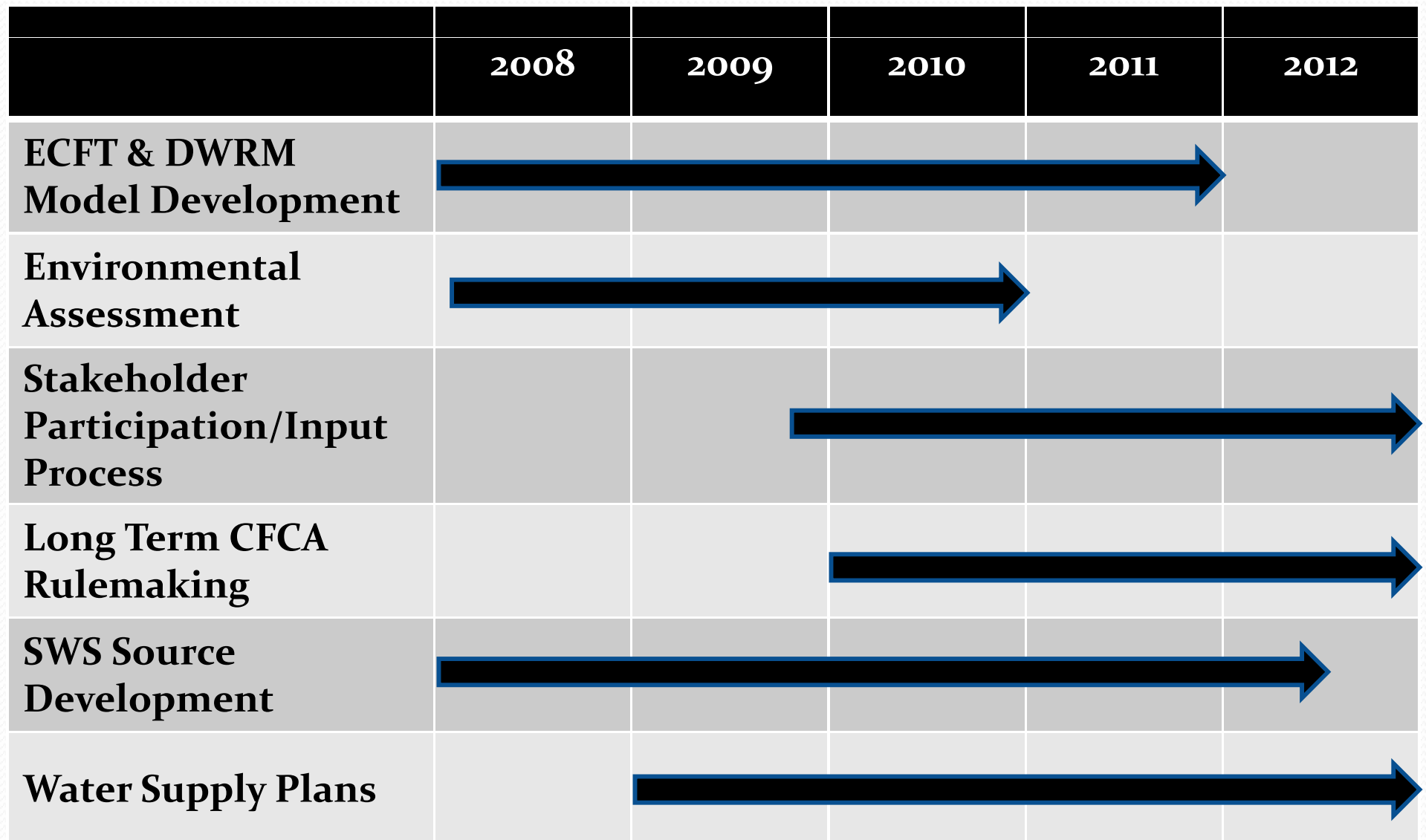
- SJRWMD Regional Water Supply Plan
- SWFWMD Regional Water Supply Plan
- SFWMD Regional Water Supply Plan

	2008	2009	2010	2011	2012
Water Supply Plans					





# CFCA Master Schedule- Phase II



# Questions?

*For further information contact:*

- ✓ Roy Mazur at: [Roy.Mazur@swfwmd.state.fl.us](mailto:Roy.Mazur@swfwmd.state.fl.us)
- ✓ Dwight Jenkins at: [djenkins@sjrwmd.com](mailto:djenkins@sjrwmd.com)
- ✓ Chris Sweazy at: [csweazy@sfwmd.gov](mailto:csweazy@sfwmd.gov)
- ✓ John Shearer at: [johnshearer@cfl.rr.com](mailto:johnshearer@cfl.rr.com)