

Ridge Lakes Recovery

May 5, 2016

Lake Wailes Recovery

Meeting Agenda

- Background
- Overview of MFLs
- Identification of potential project options
- General discussion
- Next steps

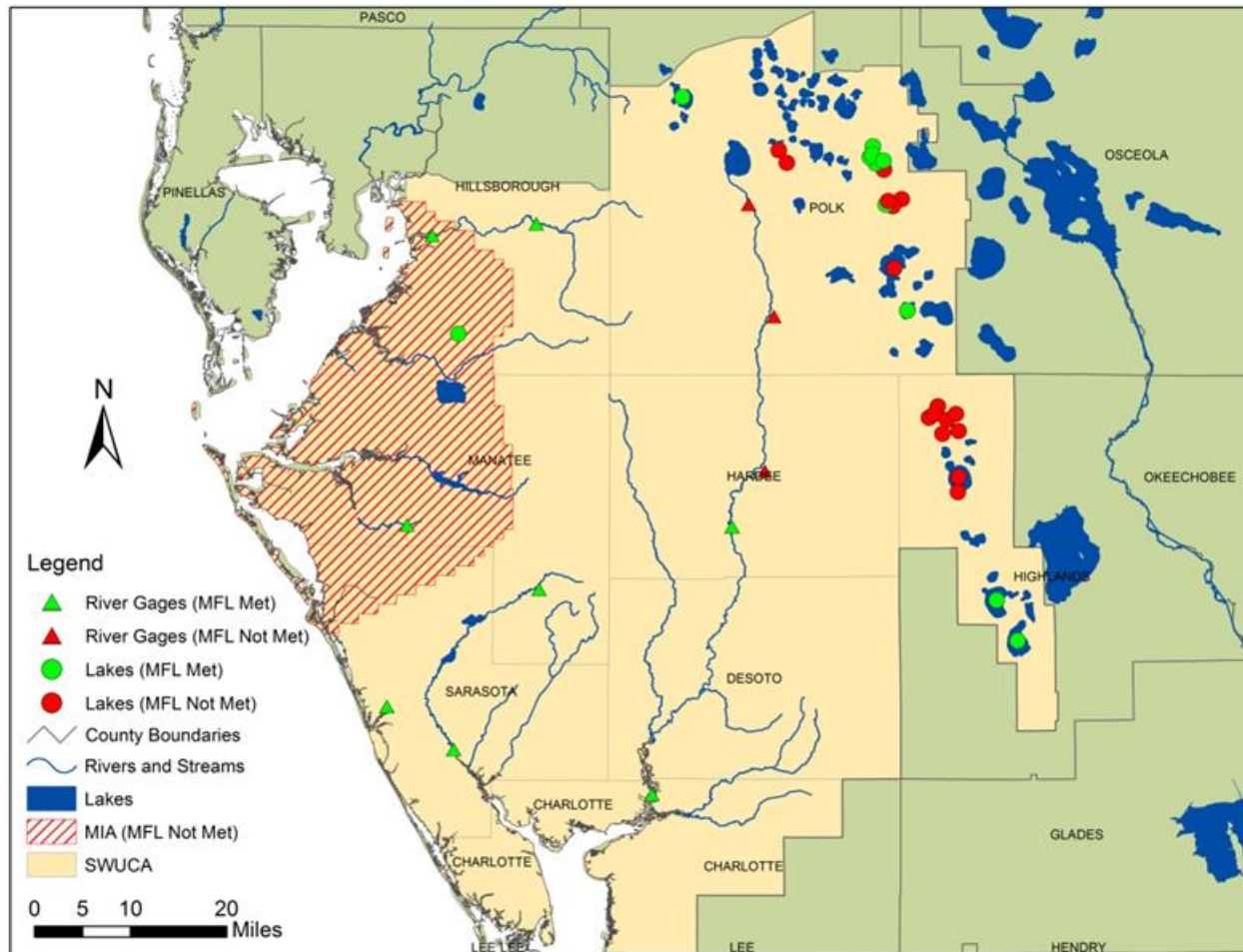
Lake Wailes Recovery

Goals

- Work collaboratively with stakeholders to identify and evaluate potential projects to recover lake levels
- Implement projects with project partners
- Establish process for other lakes

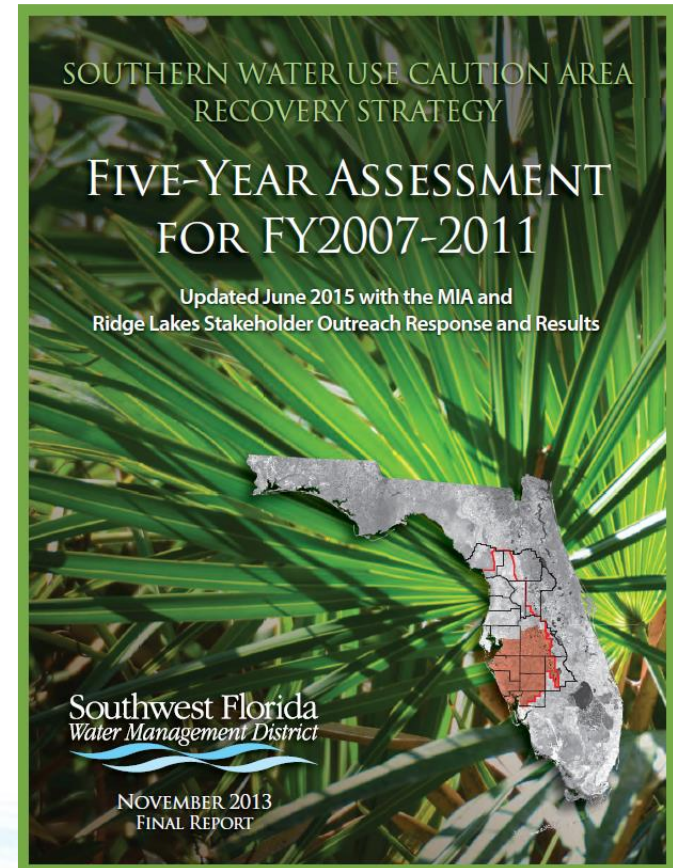
BACKGROUND

SWUCA: 2014 Status of MFLs

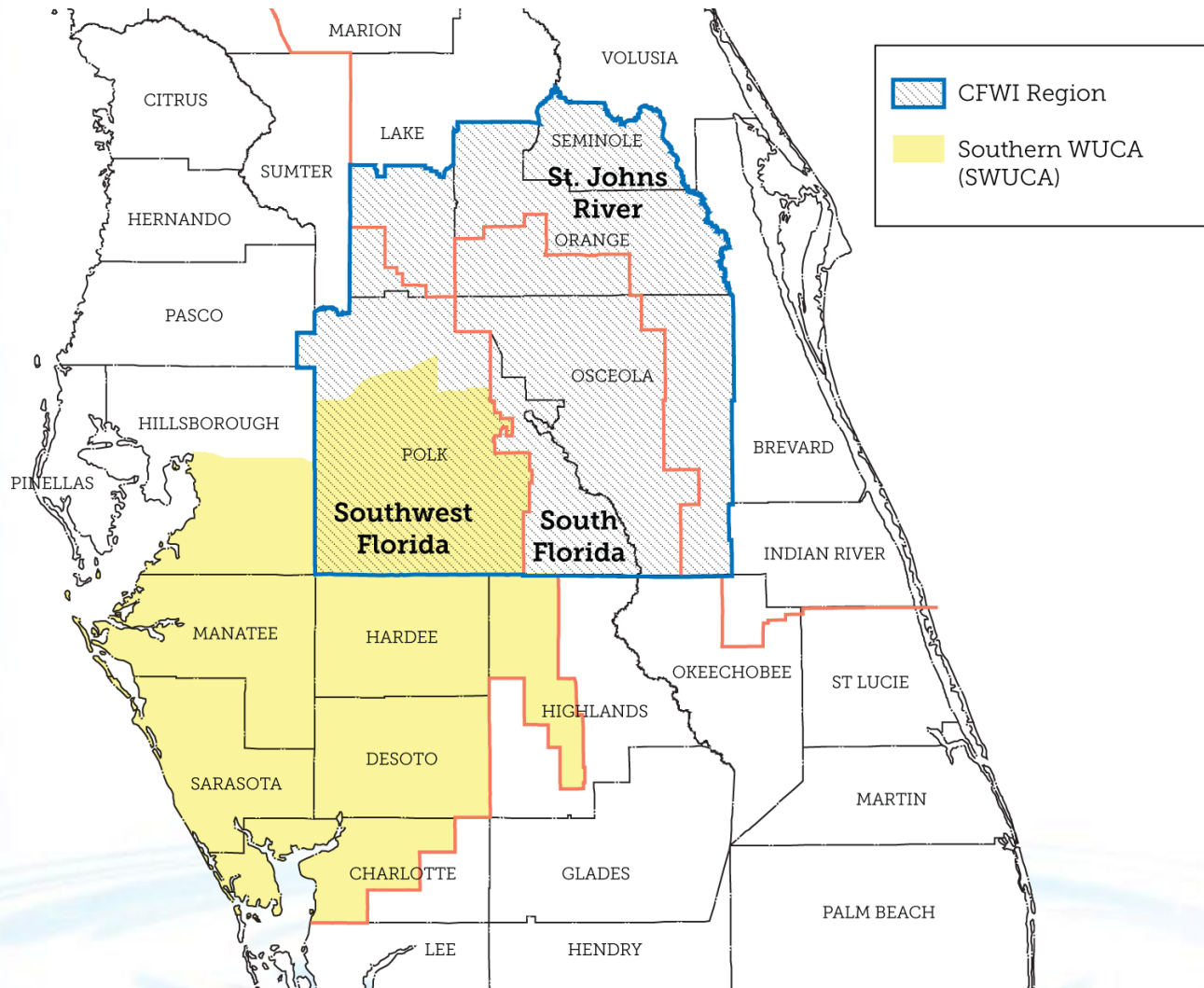


Five-Year Assessment For FY2007-2011

- **Recovery Strategy requires annual updates and a detailed review every five years**
- **First-five year review process with stakeholder input completed in 2015**
 - **Continue to monitor**
 - **Re-assess minimum lake levels**
 - **Develop lake specific recovery plans**



Central Florida Water Initiative Area and Southern Water Use Caution Area



OVERVIEW OF MFLS

Minimum Flows and Levels

Florida Statutes, Section 373.042



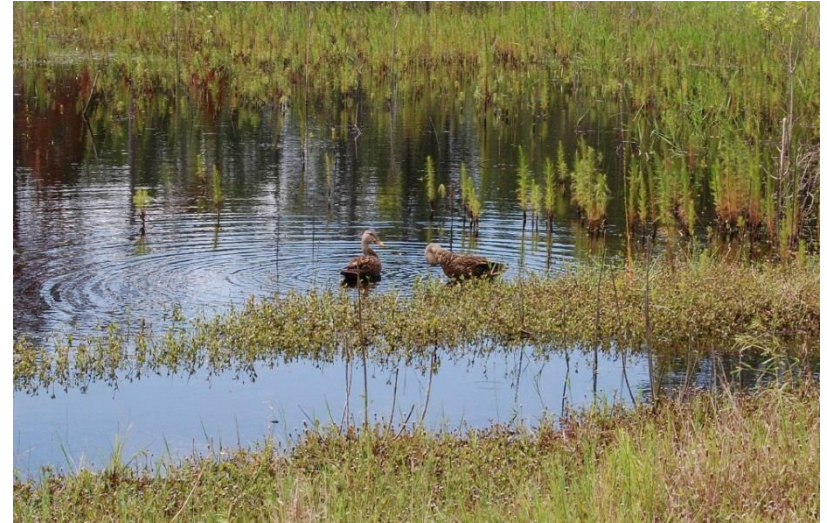
The **minimum water level** shall be the level of groundwater in an aquifer and the level of surface water at which further withdrawals would be significantly harmful to the water resources of the area.

Purpose of Minimum Levels

Protect and maintain lake ecology and recreational uses

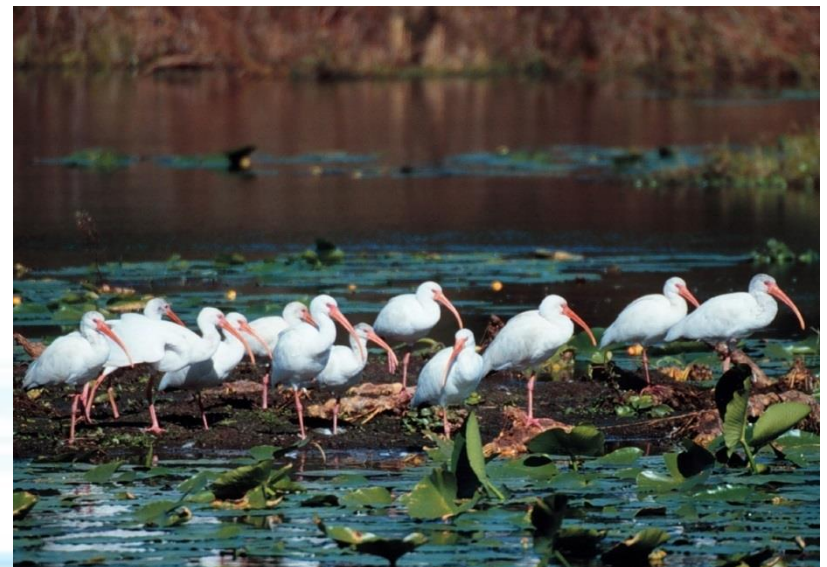
Lake Ecology Resources:

- fringing wetlands
- wildlife habitat
- fish habitat
- aquatic vegetation
- water quality

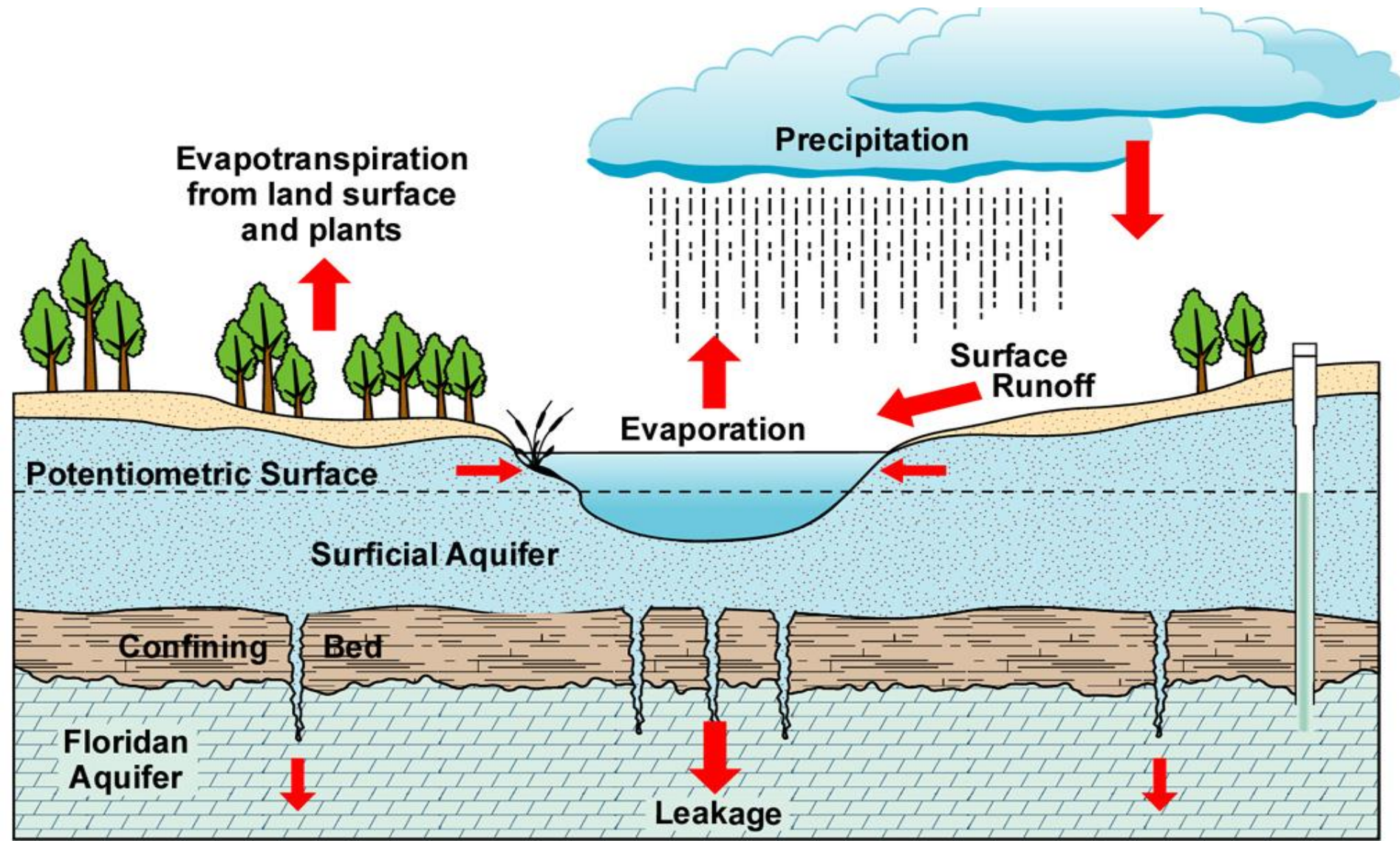


Recreational Uses:

- fishing
- boating / canoeing
- water skiing
- aesthetics
- wildlife observation



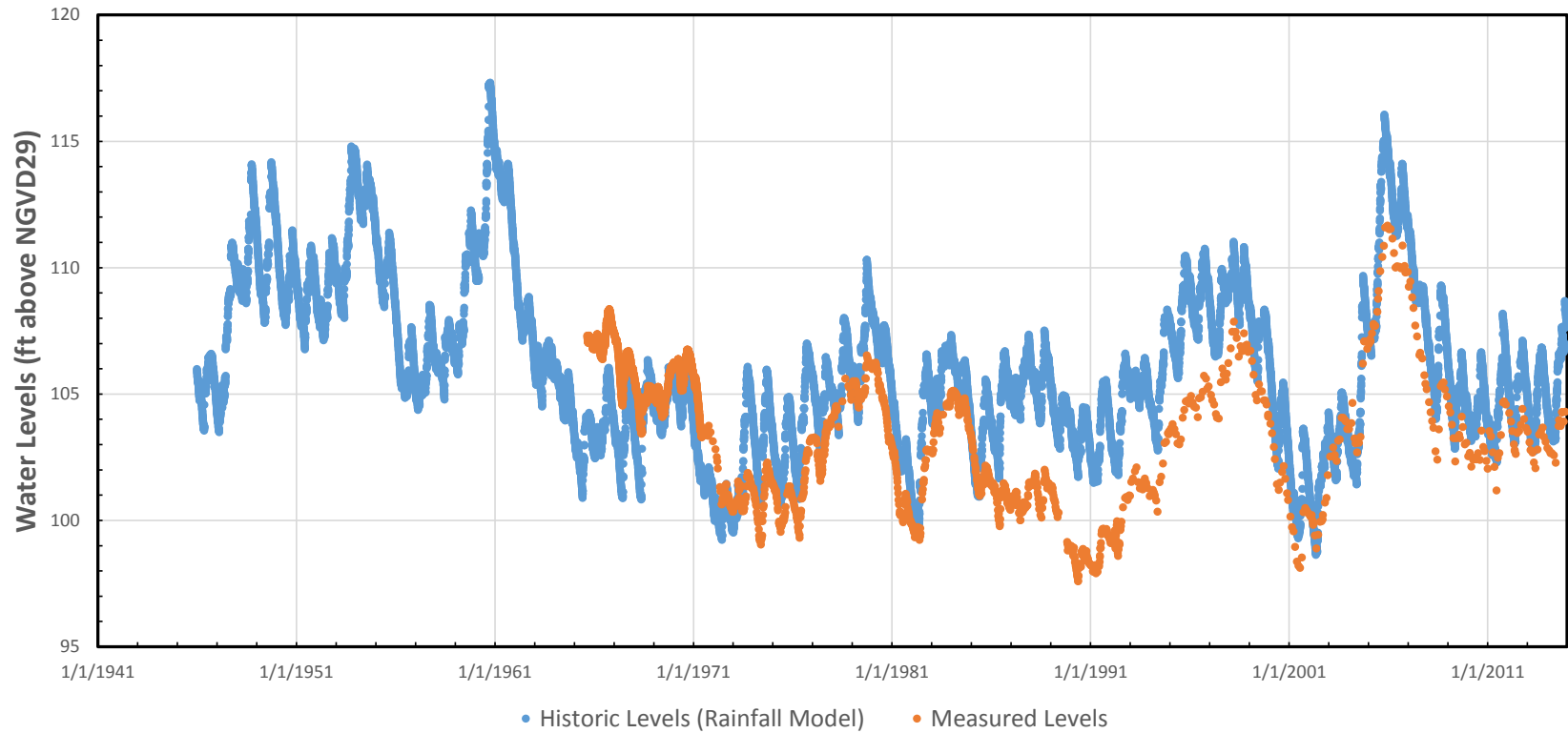
Water Budget Model



Definitions for Levels

- **High Minimum Lake Level (HMLL)**
Elevation that the lake water level must equal or exceed 10% of the time
- **Minimum Lake Level (MLL)**
Elevation that the lake water level must equal or exceed 50% of the time

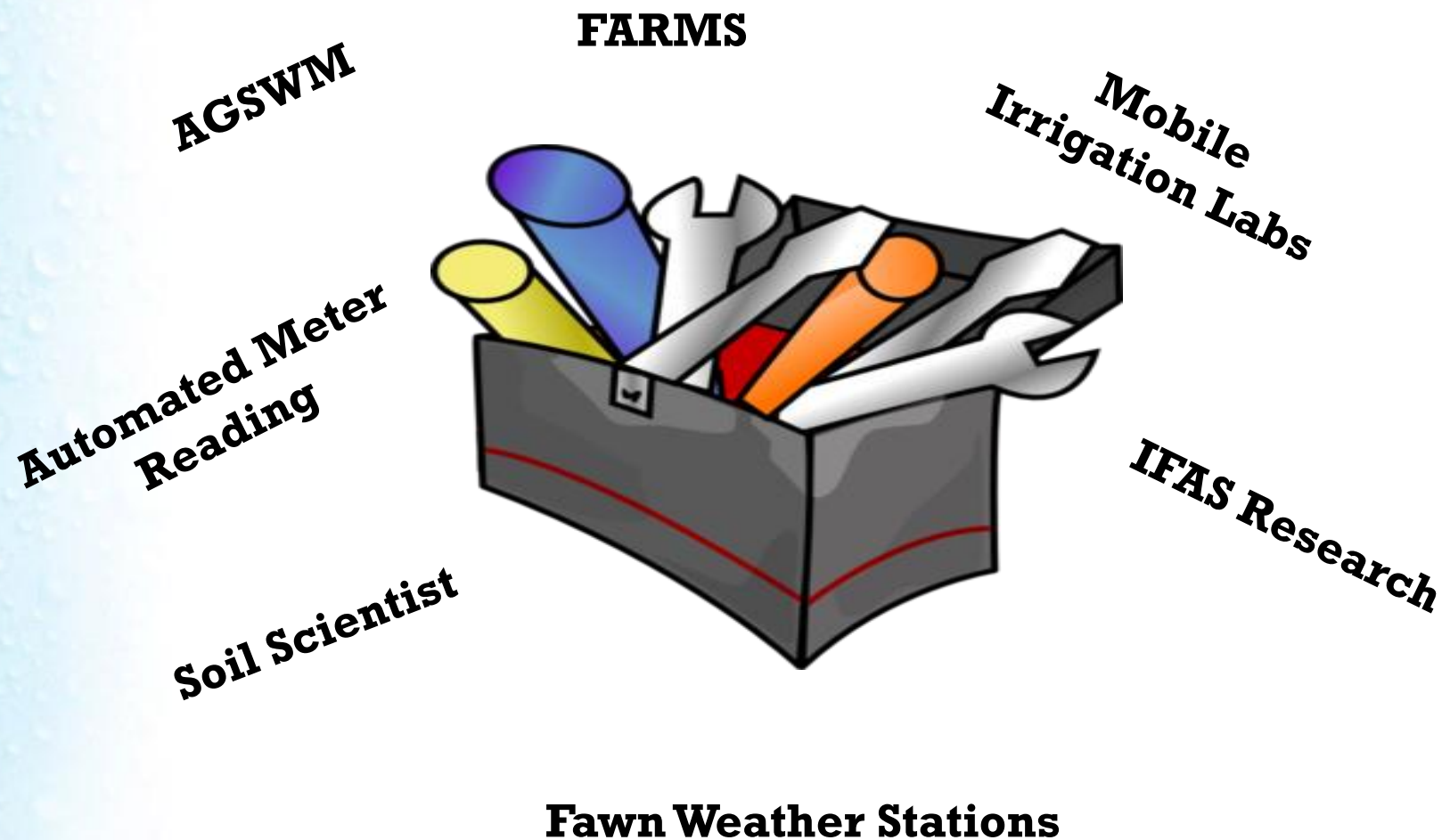
Lake Wailes



Lake Level Percentiles	Minimum Levels	Current Levels	Difference (MLL – Current)
P10	107.7	107.9	-0.2
P50	104.8	103.3	1.5



IDENTIFICATION OF POTENTIAL PROJECT OPTIONS



**Surface Water/Tailwater Reservoir
Pump Stations, Filtration Systems,
Piping**



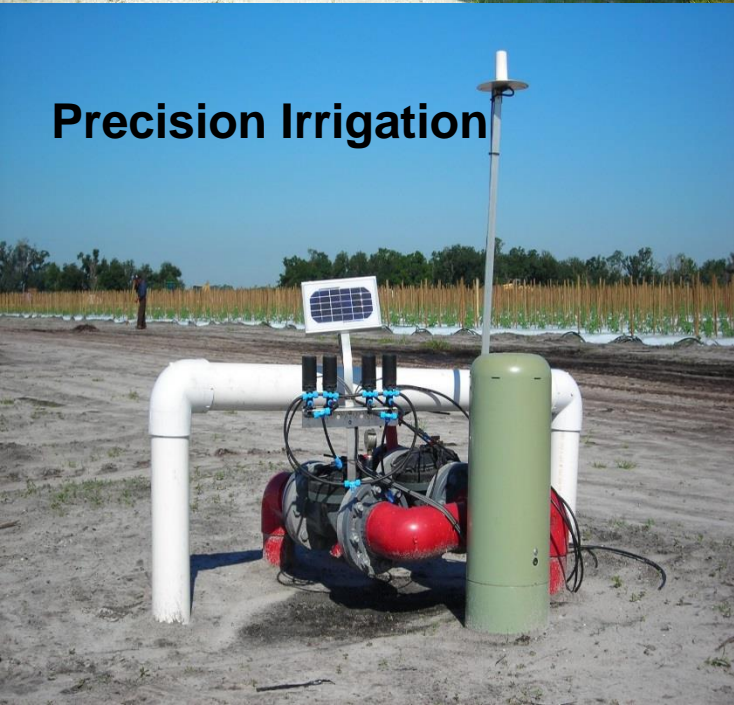
Weather Stations



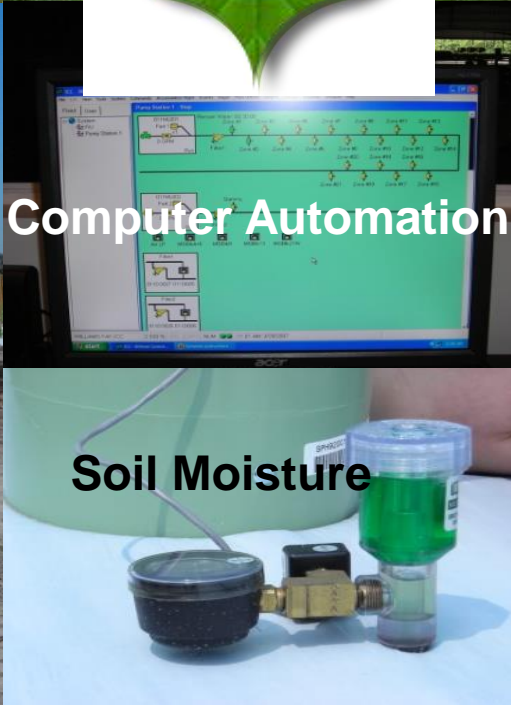
Surface Water Control



Precision Irrigation



Computer Automation



Soil Moisture

Frost Cloth



Mobile Irrigation Lab (MIL)

Joint effort between SWFWMD, USDA-NRCS, and Agricultural Community

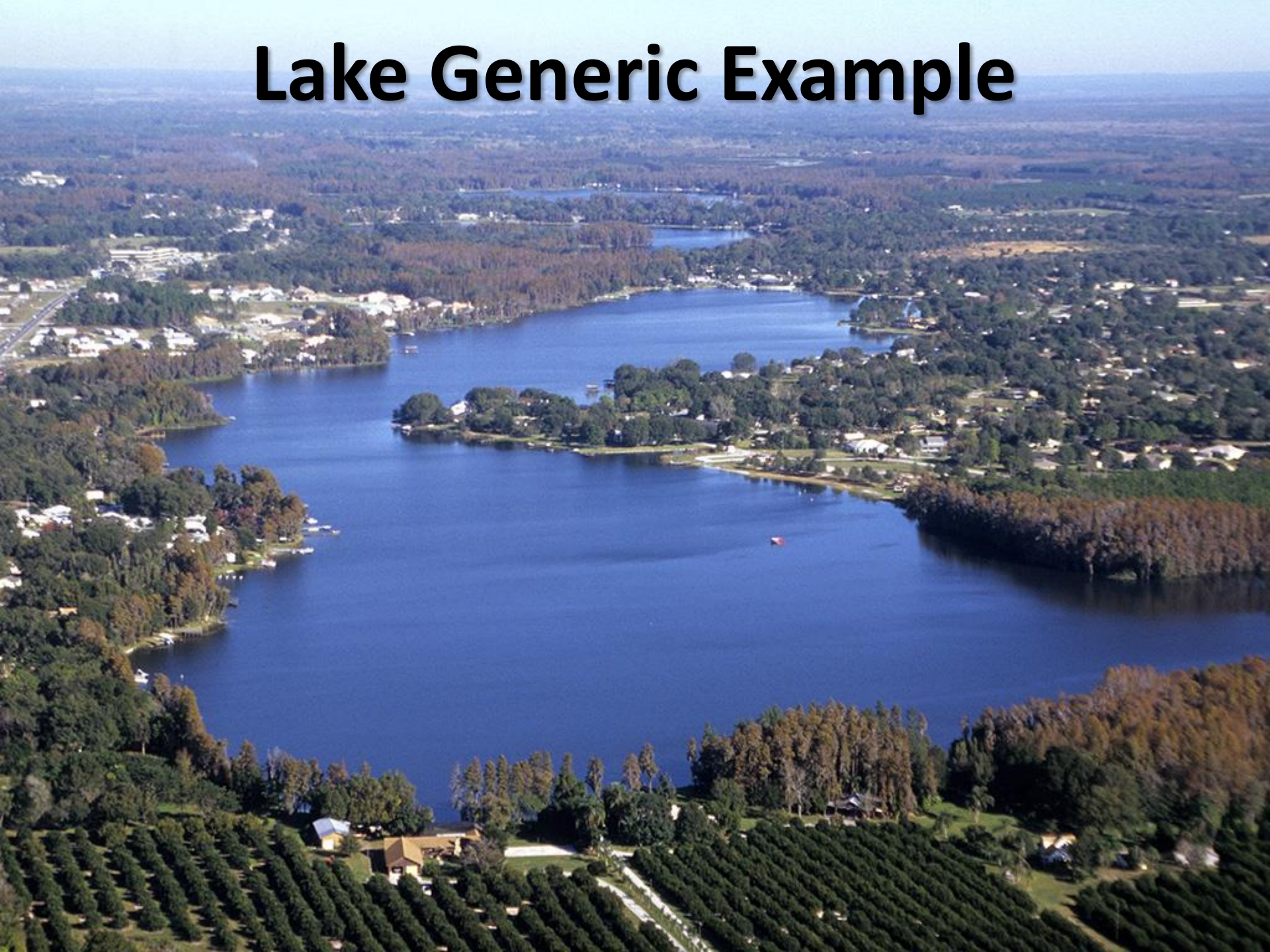
- Grower Contacts MIL for appointment
- MIL Technician performs site visit
- Information collected is analyzed
- Confidential report is provided to grower
 - Results and recommendations

Mobile Irrigation Lab

Assisting the agricultural community with water conservation and water quality improvements



Lake Generic Example



Relocate Withdrawal



Relocate Withdrawal



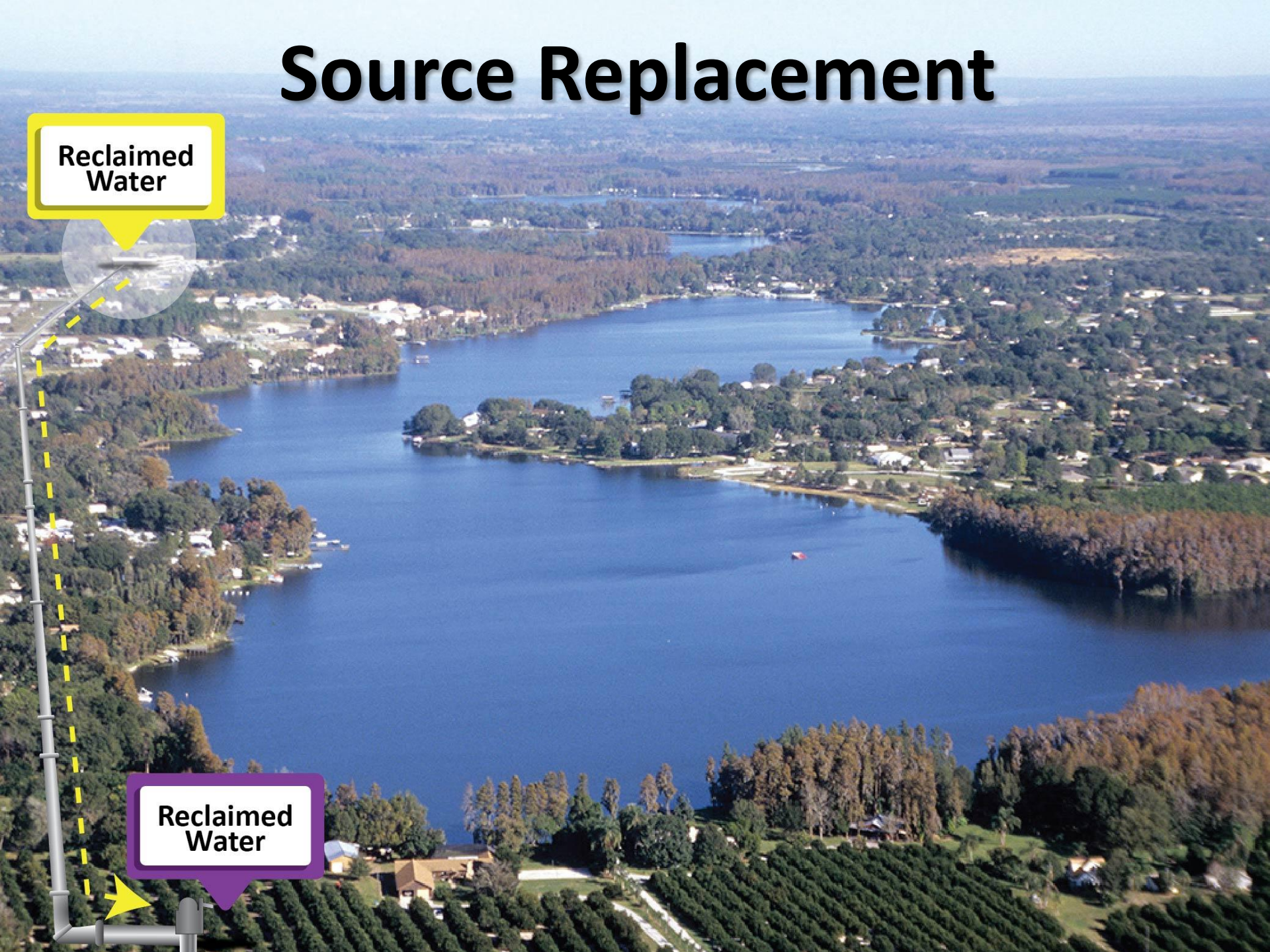
Source Replacement



Source Replacement

Reclaimed
Water

Reclaimed
Water



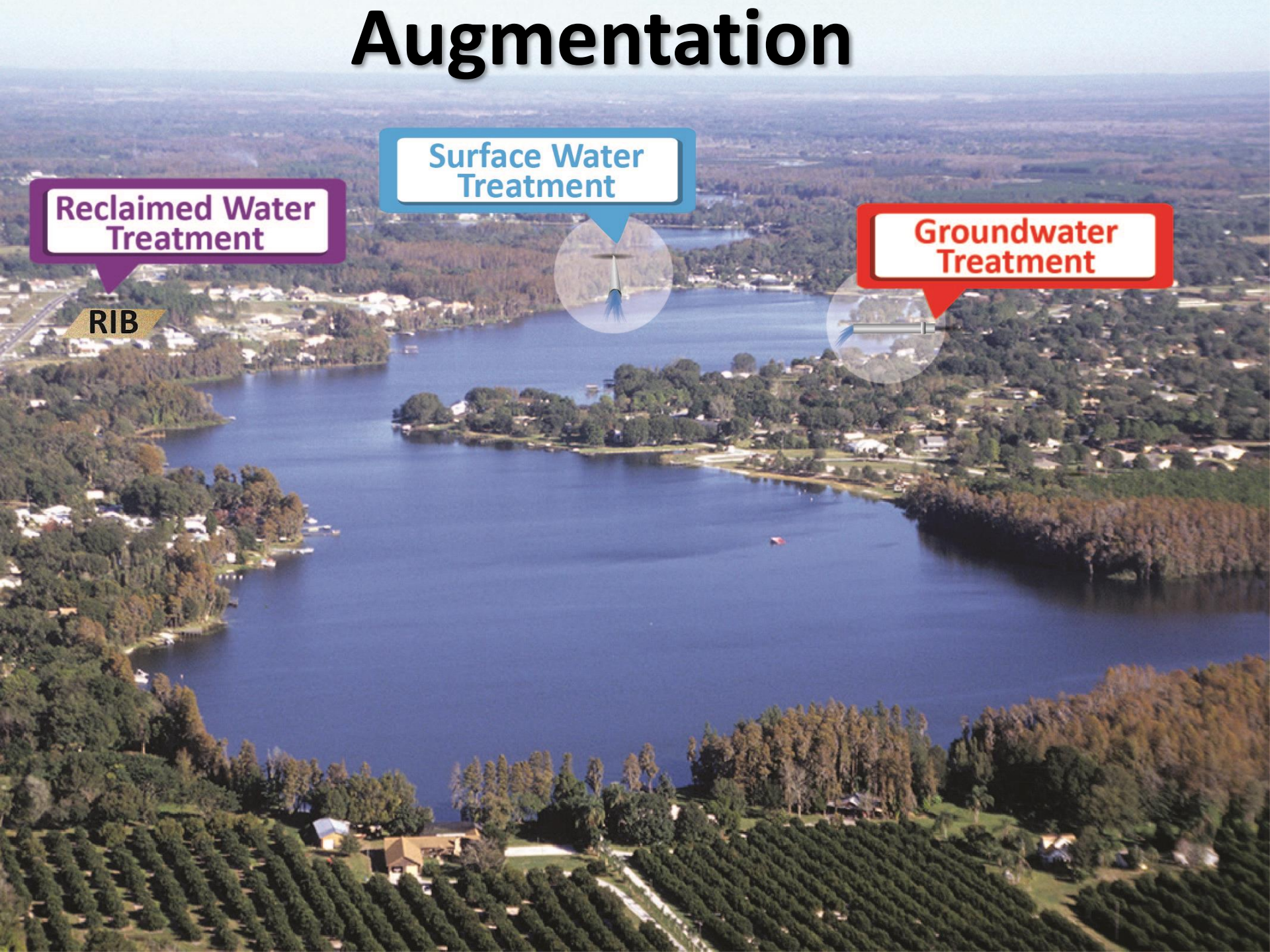
Augmentation

Reclaimed Water
Treatment

RIB

Surface Water
Treatment

Groundwater
Treatment



DISCUSSION

Potential Project Options

Project Types	Benefits	Potential Issues
BMPs to reduce groundwater withdrawals	<ul style="list-style-type: none"> • Increase UFA levels • Long-term management of resource • TMDLs - reduced runoff • All users can participate • Cost share opportunities 	<ul style="list-style-type: none"> • Coordination with many stakeholders
Recharge Upper Floridan aquifer (UFA)	<ul style="list-style-type: none"> • Increase UFA levels • Reduce lake outflow 	<ul style="list-style-type: none"> • Locate close to lake • Multiple sites • Advanced water quality treatment • Long-term O & M • Cost
Recharge Surficial aquifer (SA)	<ul style="list-style-type: none"> • Increase SA levels • Reduce outflow and/or increase inflow to lake • Incorporate into parks 	<ul style="list-style-type: none"> • Land requirements • Generally slow rate of application • Water quality treatment • Long-term O & M

Potential Project Options (cont'd)

Project Types	Benefits	Potential Issues
Direct lake augmentation	<ul style="list-style-type: none">• Most efficient use of water	<ul style="list-style-type: none">• Water quality treatment• Long-term O & M• Cost
Source substitution	<ul style="list-style-type: none">• Reduce pumping from UFA• Increase UFA levels	<ul style="list-style-type: none">• Limited access to alternative water sources• Cost
Deepen wells	<ul style="list-style-type: none">• Reduces impact of pumping• No additional land	<ul style="list-style-type: none">• Potential treatment requirements• Cost
Relocate withdrawals	<ul style="list-style-type: none">• Reduces impact of pumping	<ul style="list-style-type: none">• Only practical for large withdrawals near lake• Land for relocation• Pipe water back to use• Cost

NEXT STEPS