

2012 Lower East Coast
Water Supply Plan Update
WORKSHOP #3
June 19, 2012



Reservoirs

Dean Powell
Water Supply Bureau Chief
Water Resources Division



RESERVOIR:

A large natural or artificial lake used as a source of water supply

Source: Oxford Dictionary, 2012

L-8 Reservoir Project



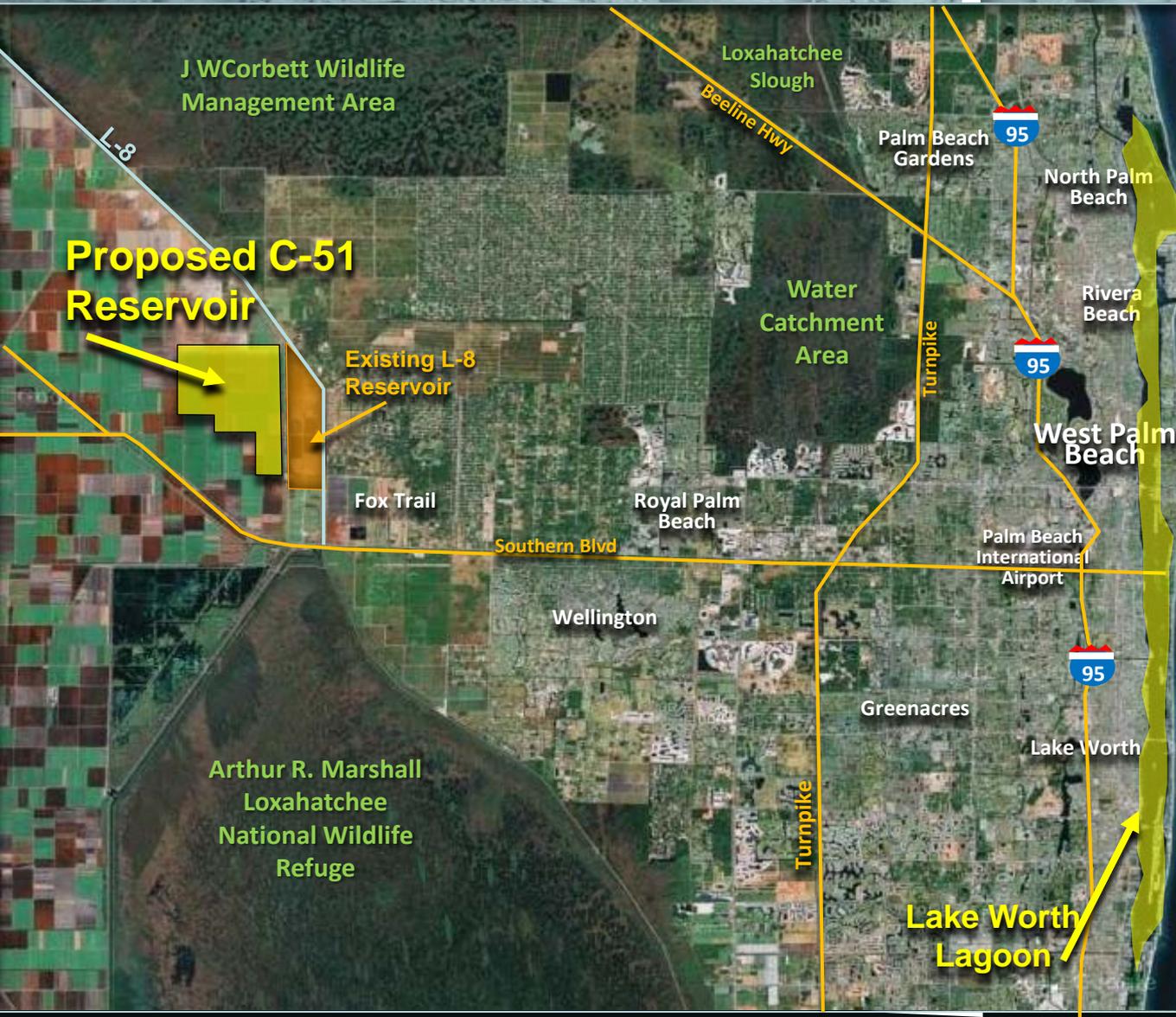
- Existing
- Northwestern Palm Beach County
- Former 950-acre rock mine
- 46,000 ac/ft of storage
- Capture and store excess surface water from L-8 basin
- Benefit South Florida's ecosystem and sustain regional water supplies

L-8 Reservoir

Recent Regional Water Resource Benefits

- In 2004 and 2005 used for flood control to protect local communities during hurricanes
- In 2010, used for FPL cooling system, reducing demands on groundwater supplies
- In 2011 pilot project utilized small pumps to send freshwater to the federally designated “Wild and Scenic” Northwest Fork of Loxahatchee River
- In 2007 and 2011 provided deliveries to the City of West Palm Beach

C-51 Reservoir Project



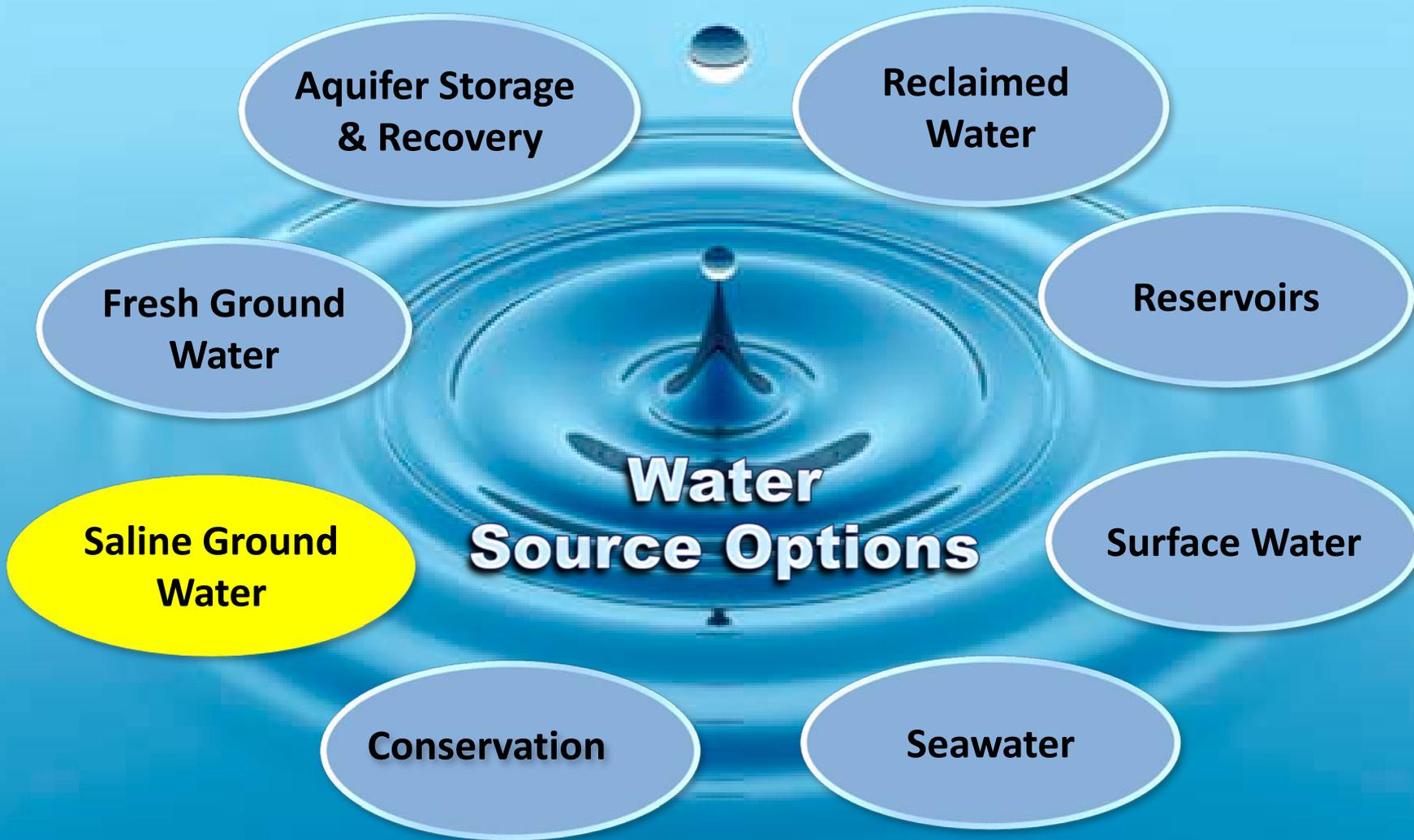
- Proposed
- Located in western Palm Beach County
- 75,000 ac/ft of storage
- Capture and store excess surface water from C-51 basin
- Increased water storage and delivery to help benefit South Florida's ecosystem and sustain regional water supplies
- Reduce harmful discharges to the Lake Worth Lagoon

C-51 Reservoir

Preliminary Design and Cost Report

- I. Background/Introduction
- II. Water Demand Projections
- III. Water Availability Analysis
- IV. Conveyance Analysis
- V. Water Quality Discussion
- VI. Cost Estimates

COMING UP



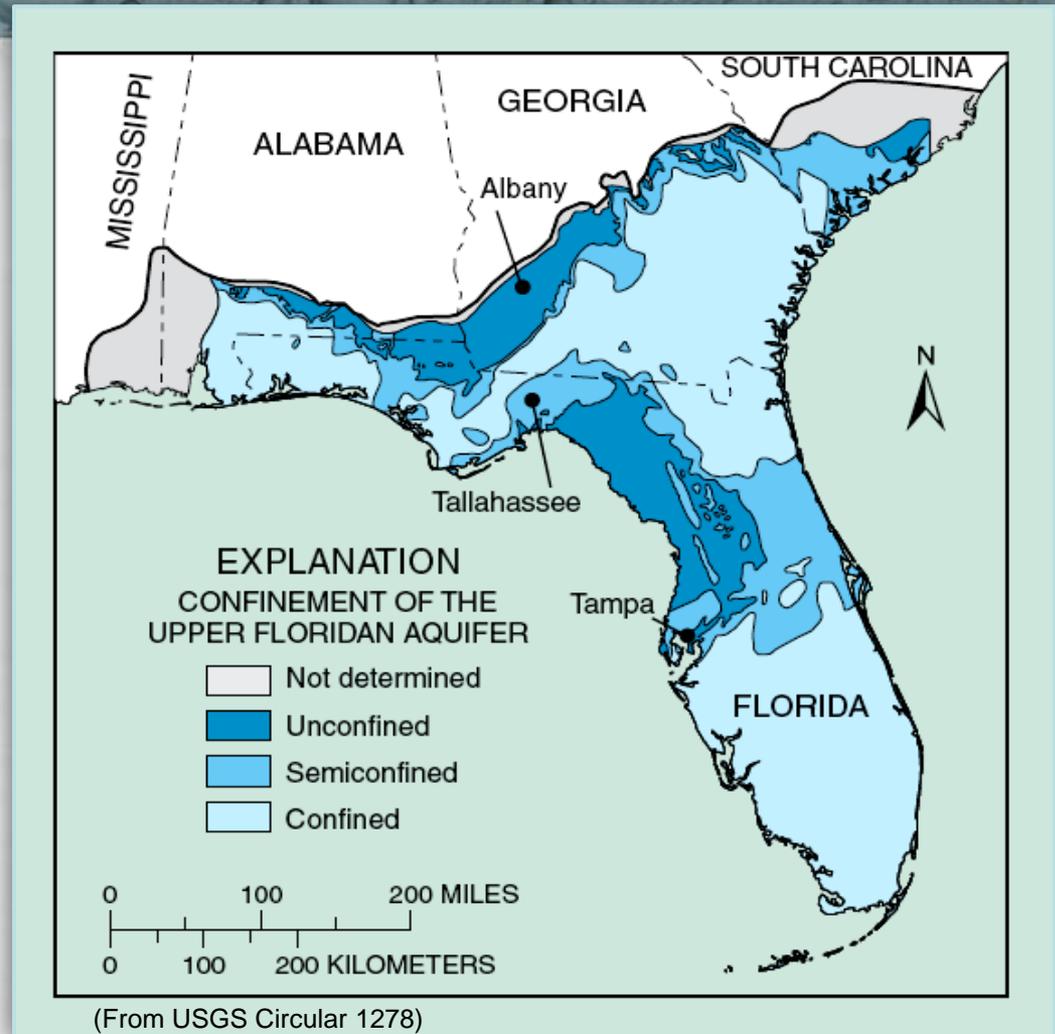
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Saline Ground Water

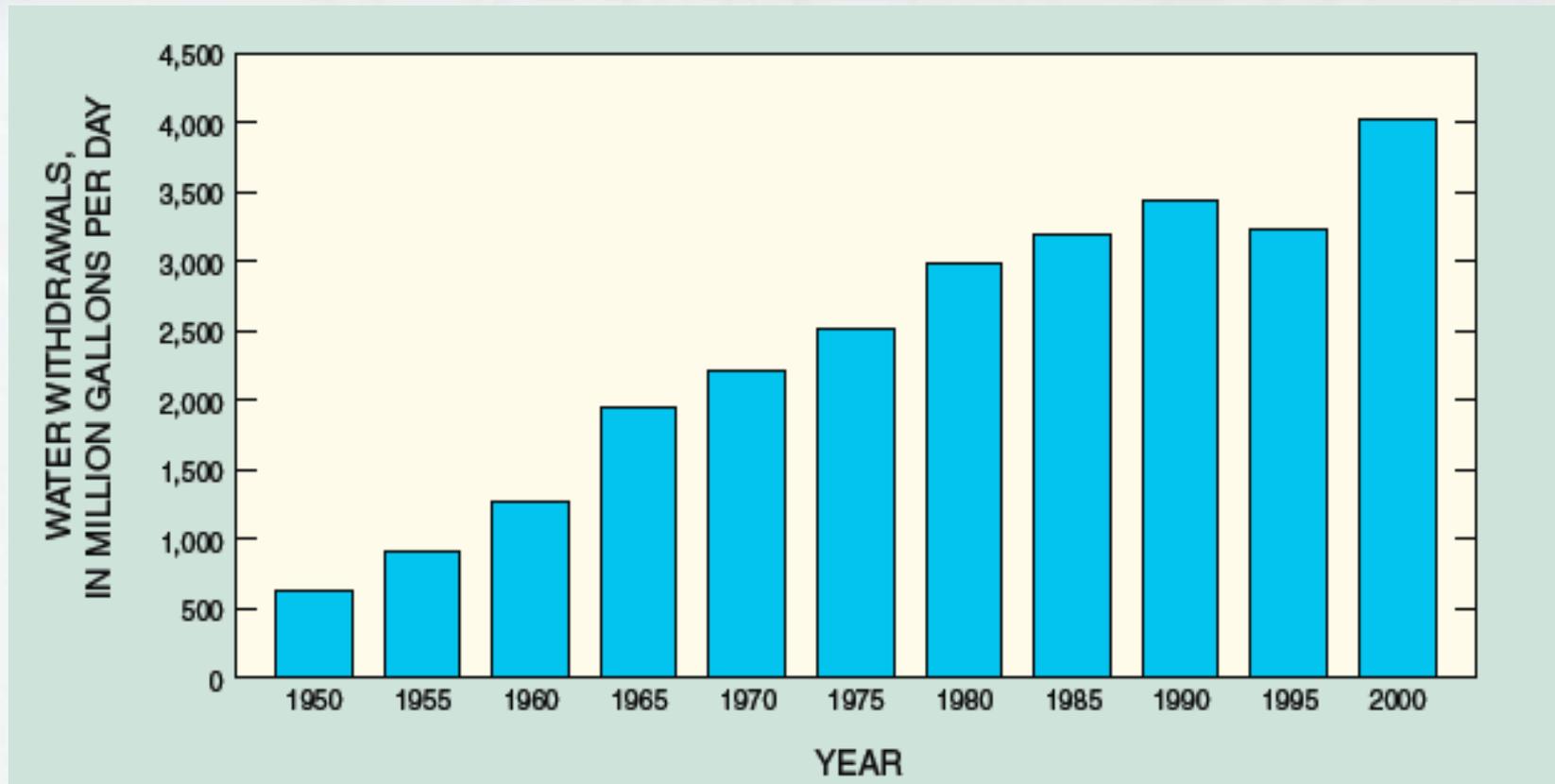
Bob Verrastro, P.G.
Lead Hydrologist
Water Supply Bureau

Floridan Aquifer System

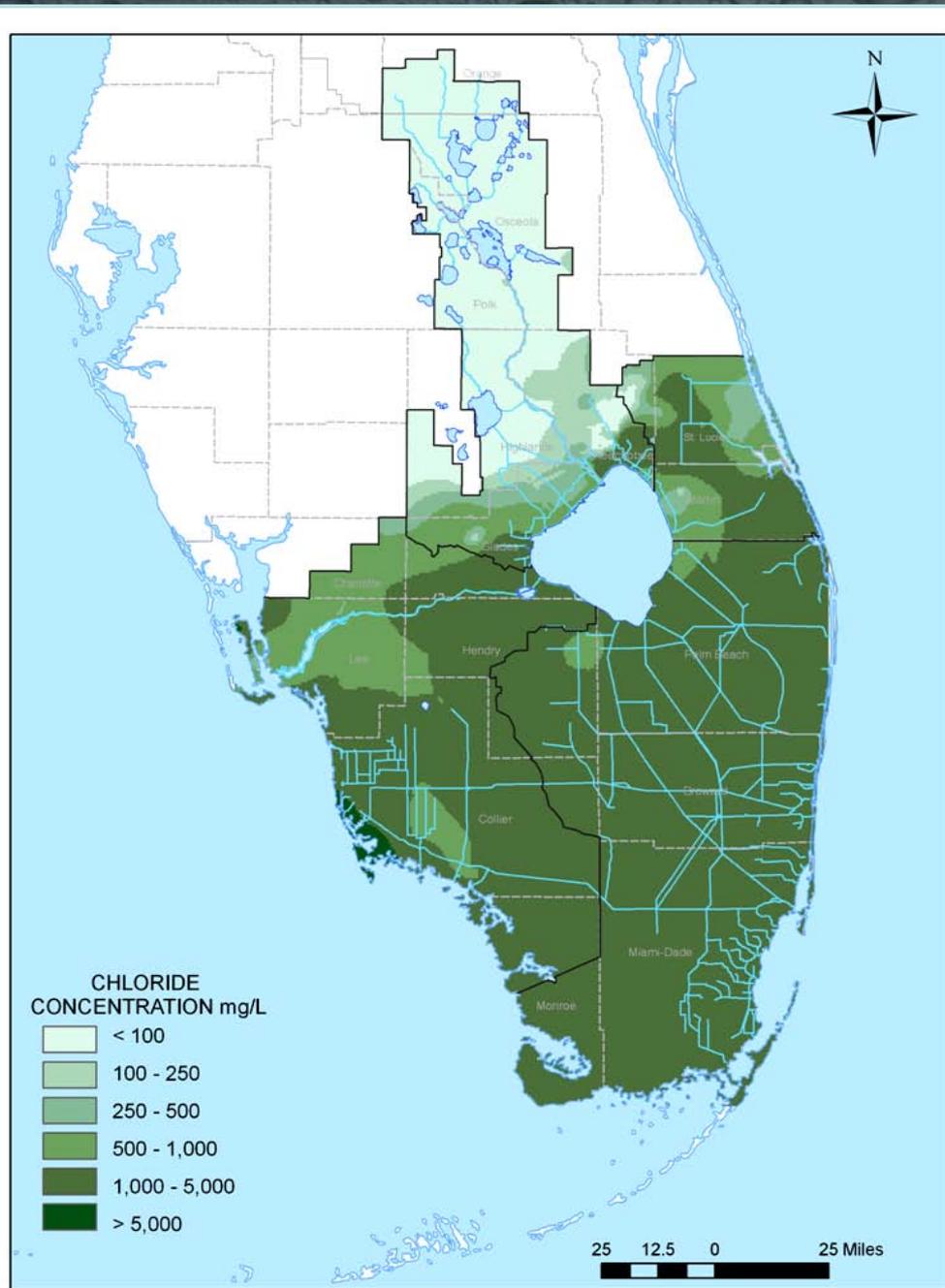
- Recharge Area in Central Florida (Unconfined)
- Confined aquifer in south Florida – less water released from storage, greater drawdowns



Use of the Floridan Aquifer



Total Demand from the Floridan Aquifer System from 1950 to 2000
(USGS Circular 1278)

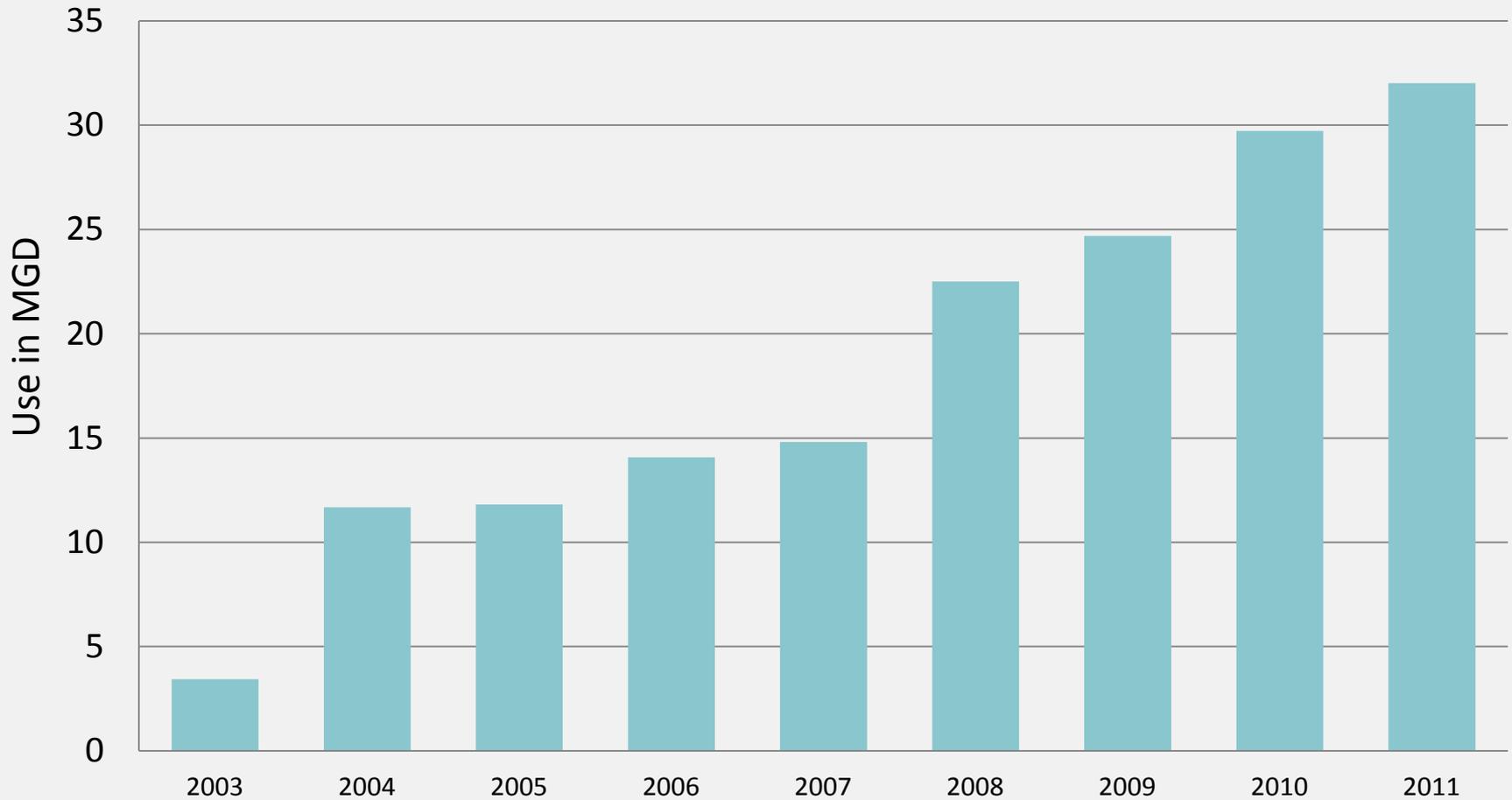


Chloride Concentrations in the Upper Floridan Aquifer

In LEC

- Chlorides above 1,000 mg/L require treatment by membrane process
- Wells are deeper and treatment costs are higher than surficial sources
- Wellfield design is critical to maintaining dependable water quality

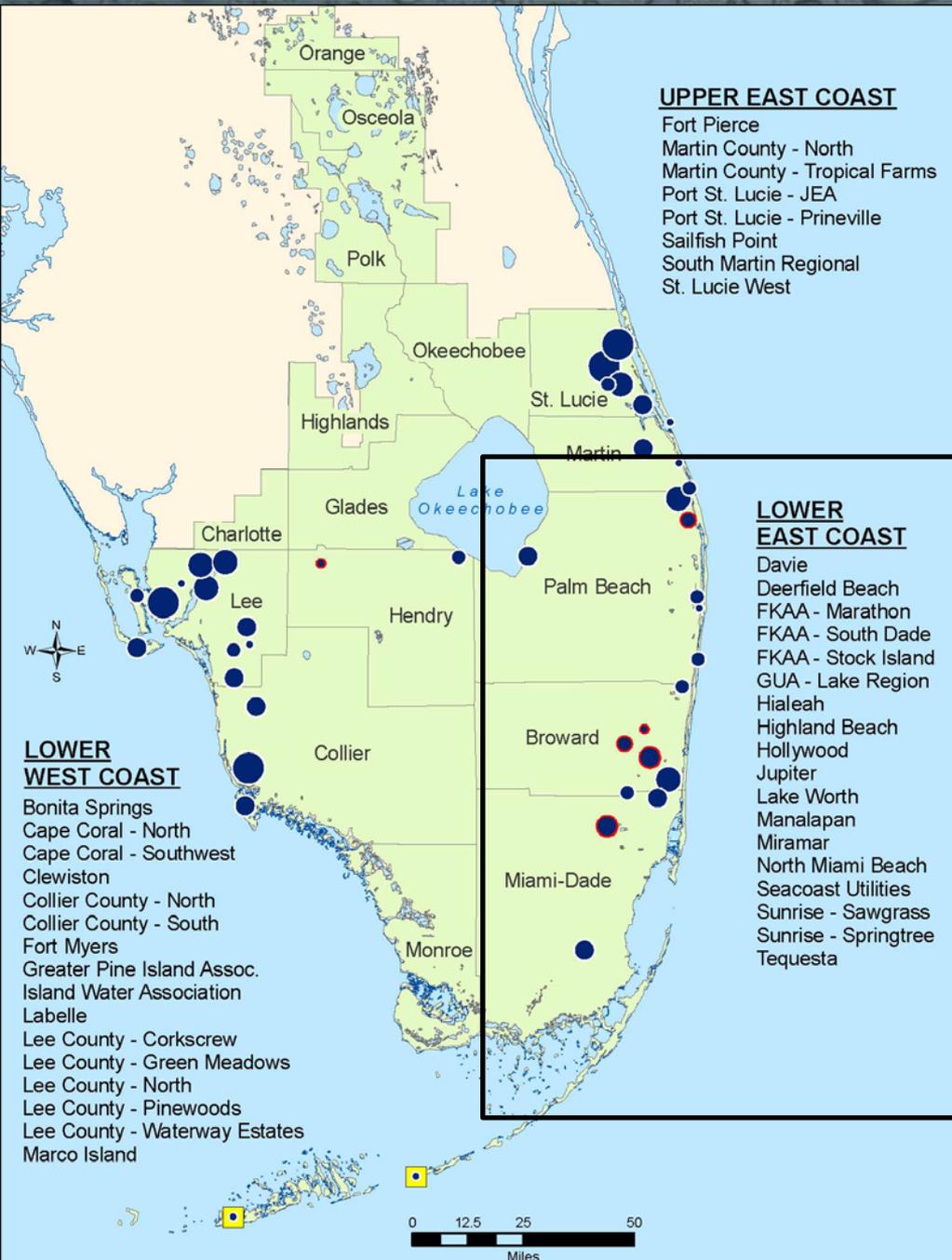
Floridan Aquifer Withdrawals in LEC in 2011 – 32 MGD



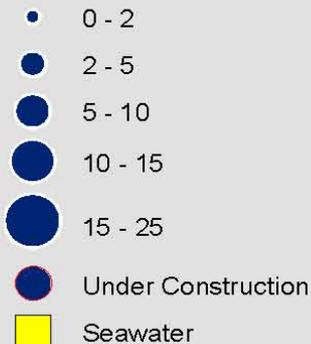
Potable Water Desalination Plants in 2012

Number of Facilities in LEC: 13

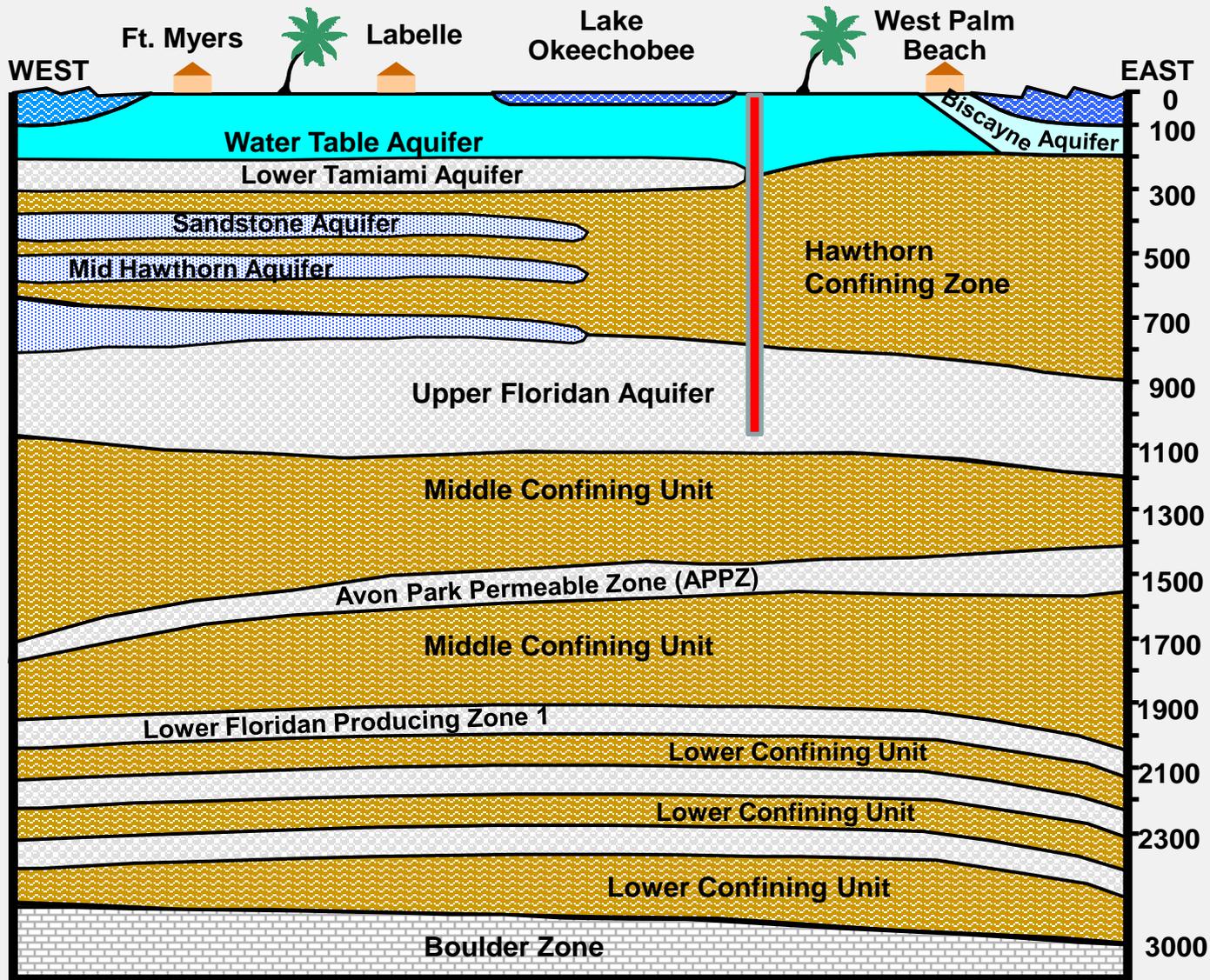
Total Treatment Capacity in LEC: 85.7 MGD



Desalination Facilities by MGD



Generalized Aquifer System of South Florida



Upper Floridan Aquifer Public Supply Wells

In the LEC

- Oldest is Jupiter (since 1989)
- Biggest is Jupiter (12 wells, 13.7 MGD)
- Newest is Lake Worth (10 wells, 4.5 MGD)
- Typical well capacity ~1 to 2 MGD
- Multiple uses

