

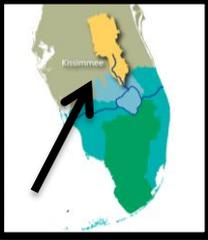
Governing Board Meeting

September 8, 2011

Ecological Conditions Update

Terrie Bates

Director, Water Resources Division



Kissimmee Basin



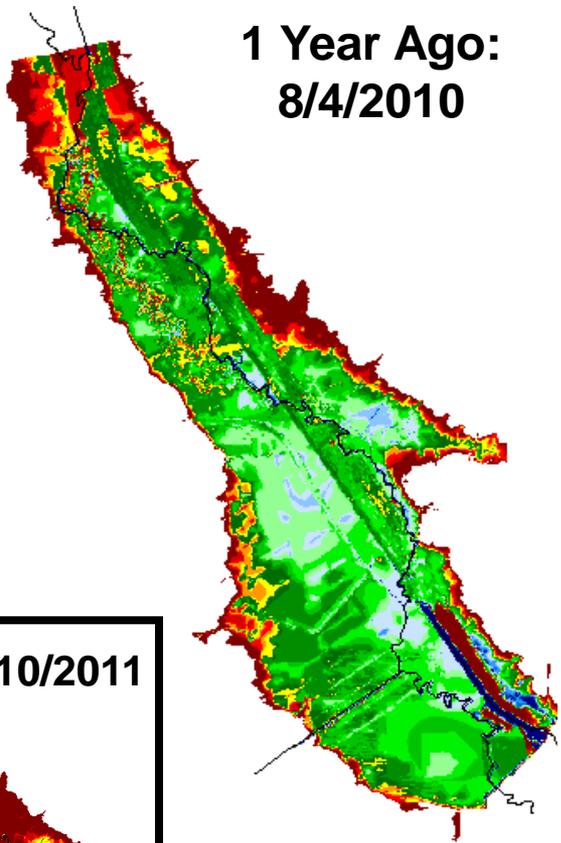
Sunrise on Lake Myrtle, Kissimmee Chain of Lakes



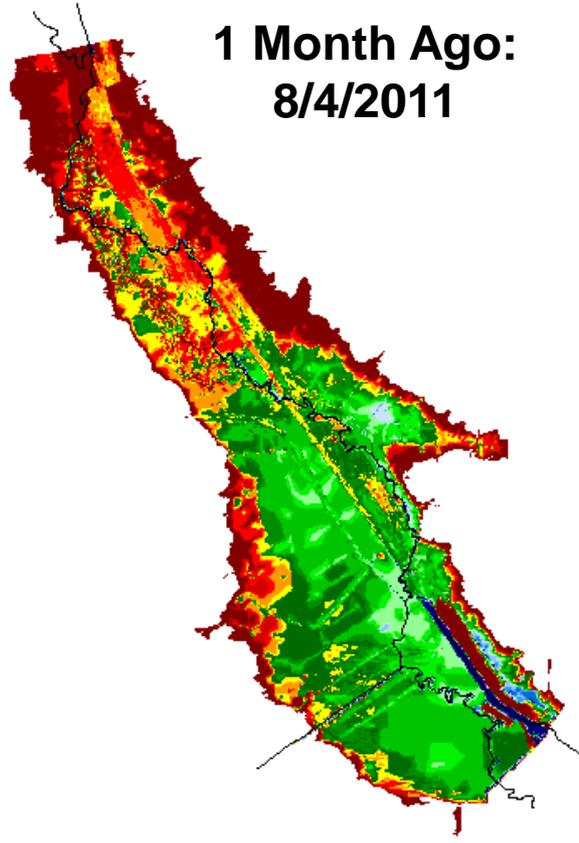
Kissimmee Basin

Kissimmee River Floodplain Water Depth Maps

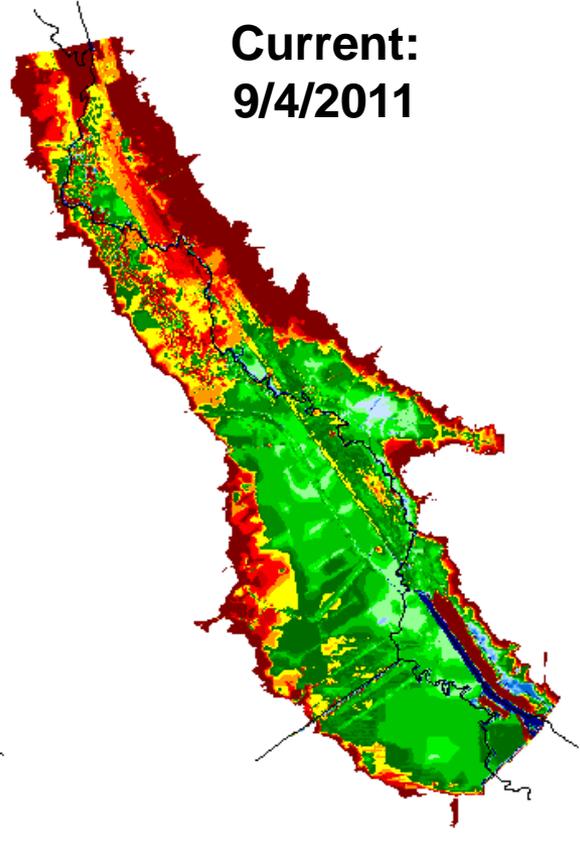
1 Year Ago:
8/4/2010



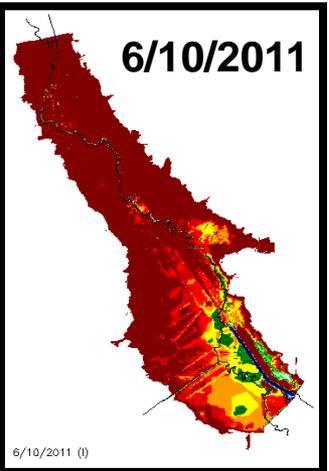
1 Month Ago:
8/4/2011



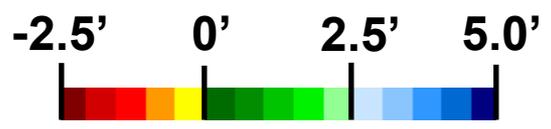
Current:
9/4/2011



6/10/2011

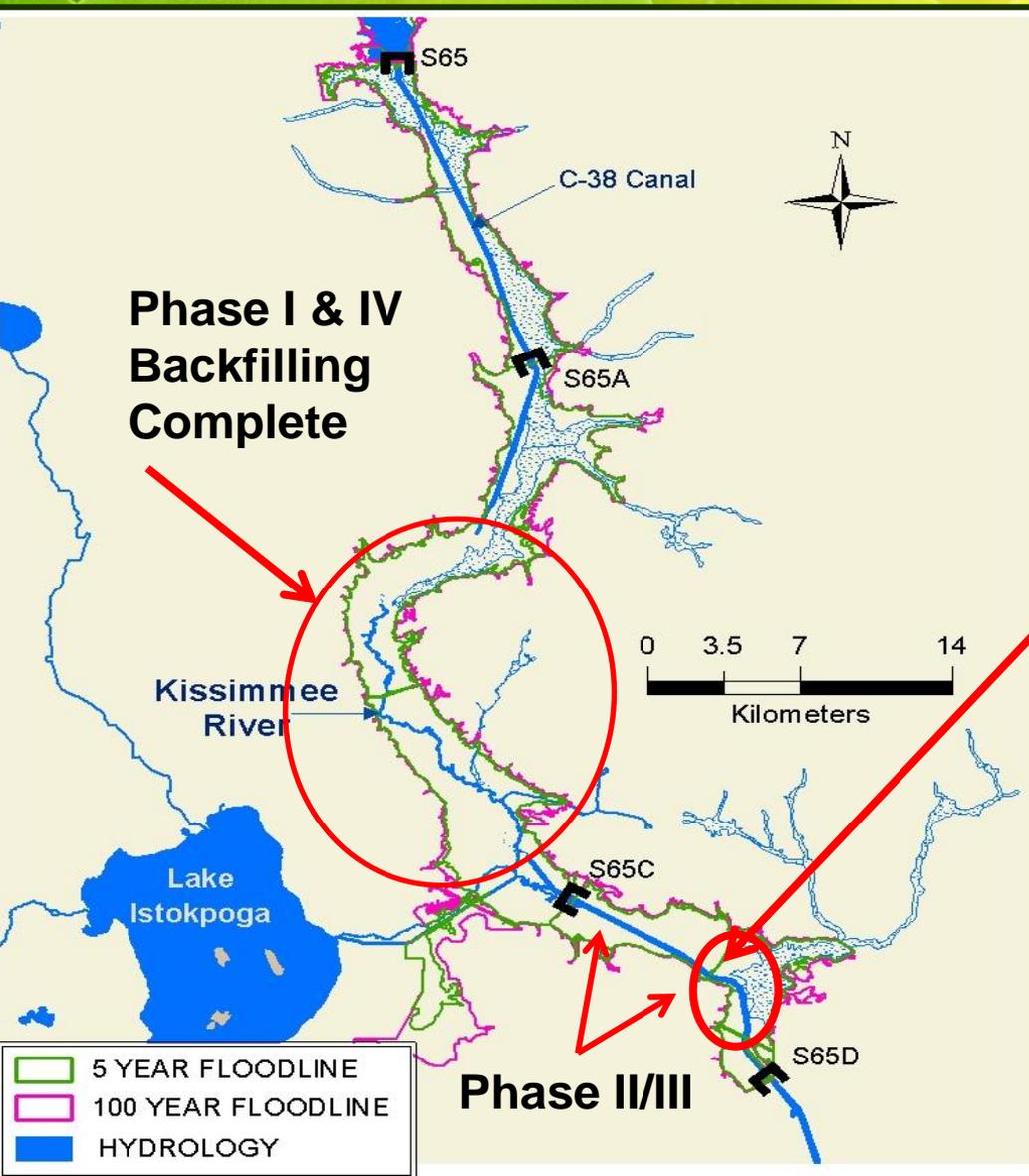


Water Depth (feet)



Kissimmee Basin

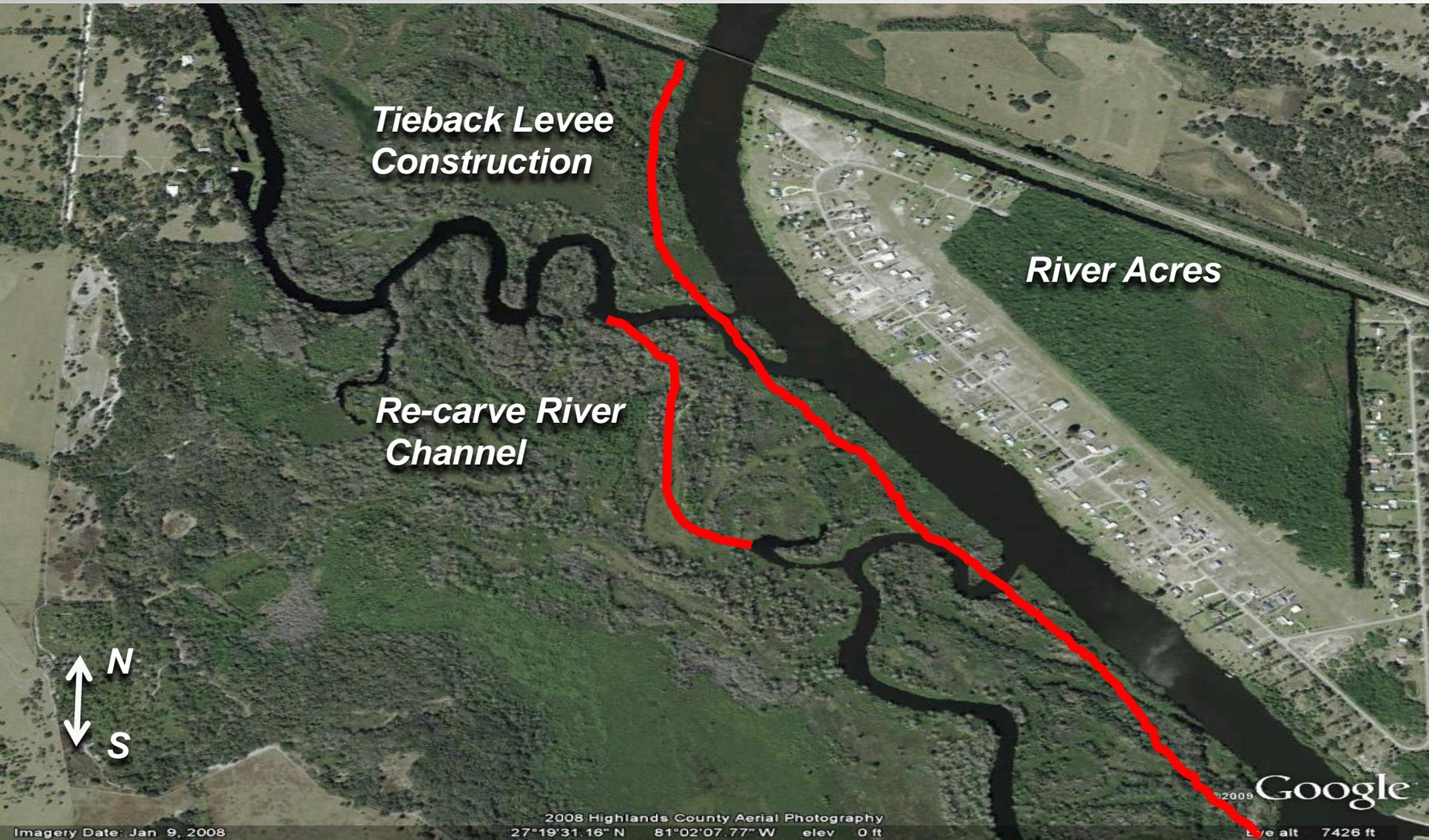
Pool D Construction Features



Most Pool D Features are located at the bottom of the Pool

- River Acres Flood Reduction
- CSX Railroad Bridge
- U-Shaped Weir
- Tie-back levee
- Recarved River Reaches

Kissimmee Basin **Phase II/III Tie Back Levee**



Tieback Levee Construction

River Acres

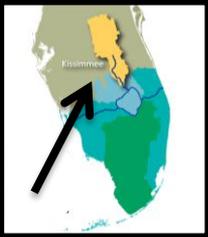
Re-carve River Channel



2008 Highlands County Aerial Photography
Imagery Date: Jan 9, 2008
27°19'31.16" N 81°02'07.77" W elev 0 ft

©2009 Google

Earth alt 7426 ft



Kissimmee River Restoration Project Construction



River Acres

Pool D

S
N

Oxbow



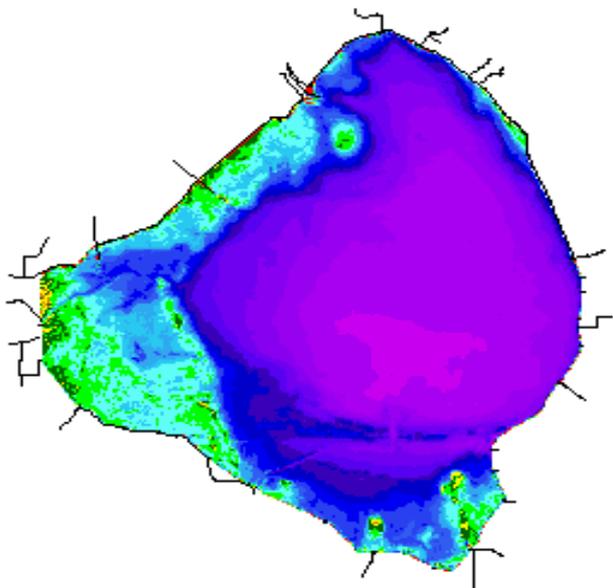
Lake Okeechobee

Water Depth Timeseries Maps

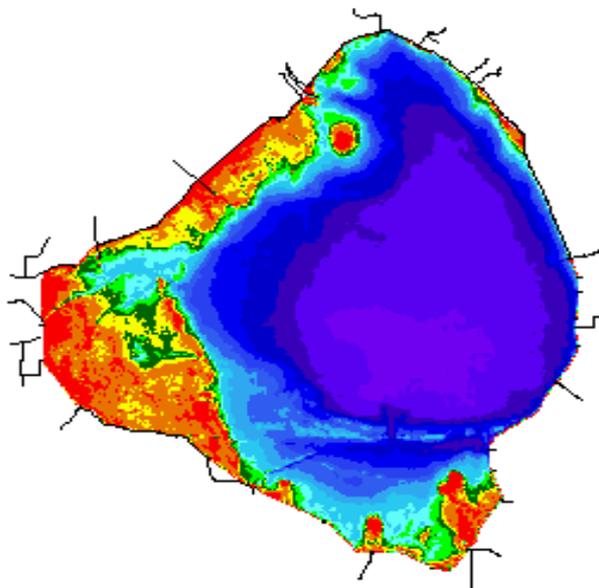
1 Year Ago: 09/05/2010

1 Month Ago: 08/06/2011

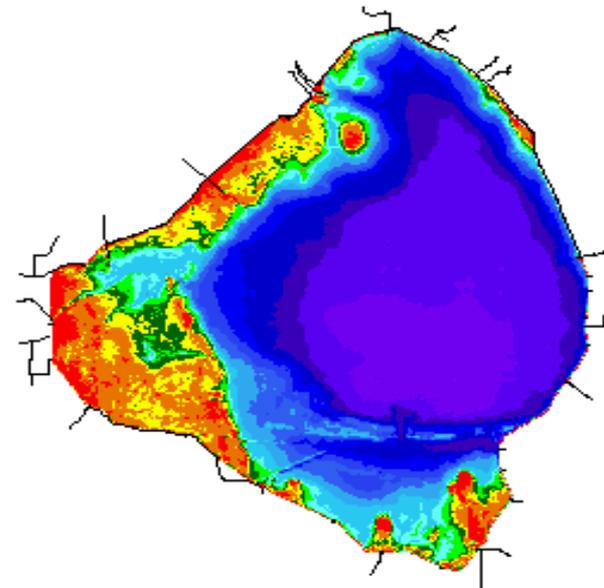
Current: 09/07/2011



(14.06 ft NGVD29)



(10.26 ft NGVD29)

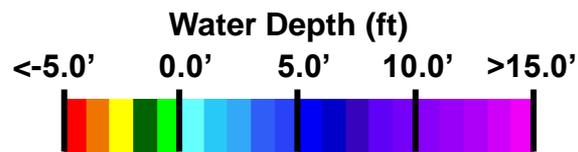


(10.79 ft NGVD29)

Lowest lake stage this year:
9.53 ft NGVD29 (06/24/11)

Record low lake stage:
8.82 ft NGVD29 (7/2/07)

CURRENT LAKE LEVEL:
10.79 ft NGVD29 (09/07/11)



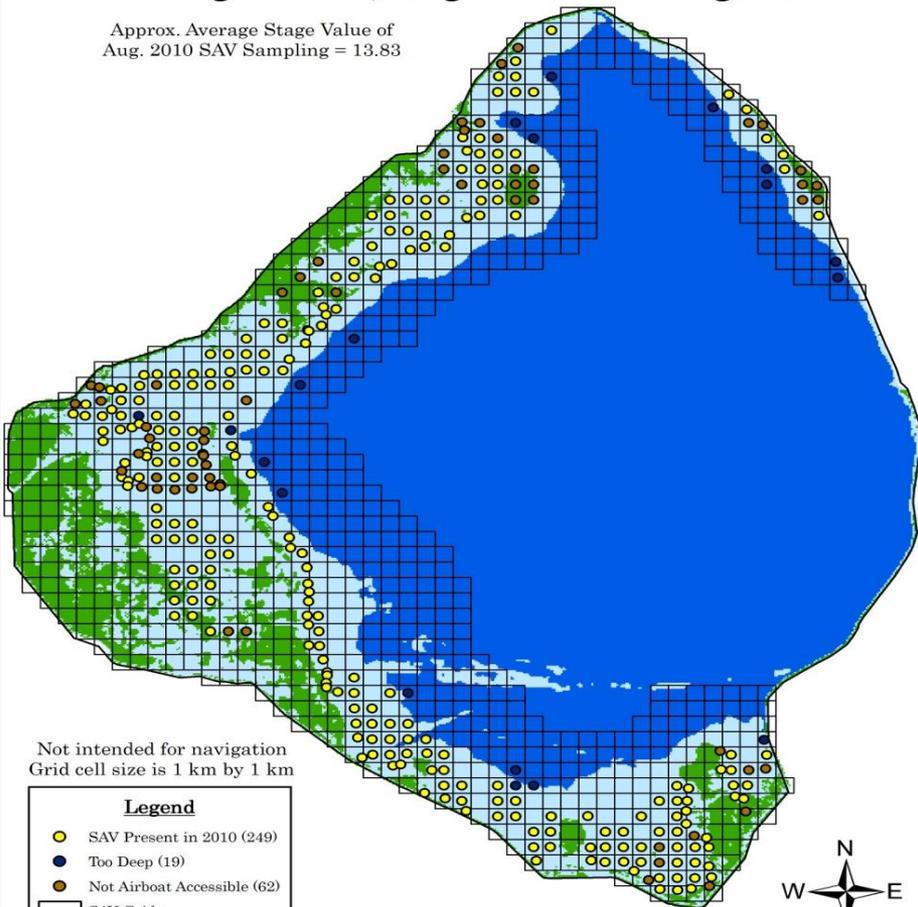


Lake Okeechobee

Submerged Aquatic Vegetation

Lake Okeechobee SAV Distribution at Peak Growing Season, August 2010: Stage 13.83

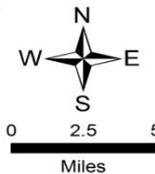
Approx. Average Stage Value of Aug. 2010 SAV Sampling = 13.83



Not intended for navigation
Grid cell size is 1 km by 1 km

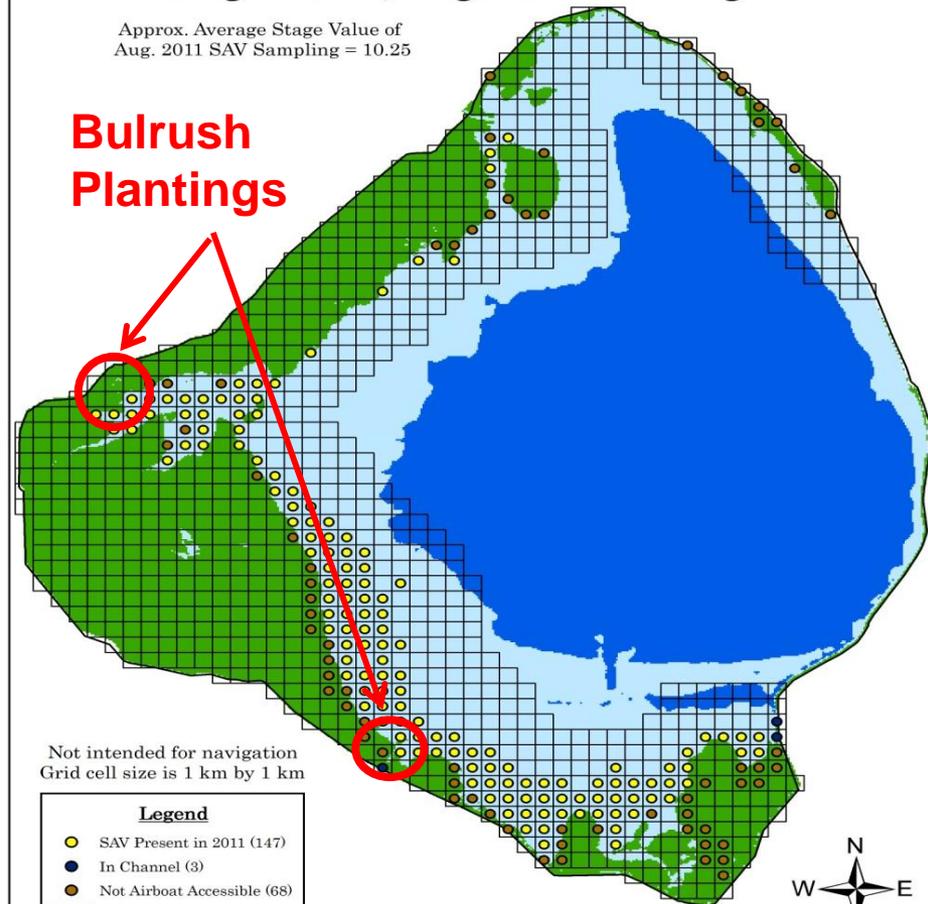
- Legend**
- SAV Present in 2010 (249)
 - Too Deep (19)
 - Not Airboat Accessible (62)
 - SAV Grids
 - Dry ground
 - ≤ 2 meters
 - > 2 meters deep

Genera represented include:
Chara, Hydrilla, Vallisneria, Ceratophyllum, Potamogeton, Najas, Utricularia, Bacopa, and Nitella



Lake Okeechobee SAV Distribution in Peak Growing Season, August 2011: Stage 10.25

Approx. Average Stage Value of Aug. 2011 SAV Sampling = 10.25

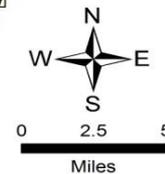


Bulrush Plantings

Not intended for navigation
Grid cell size is 1 km by 1 km

- Legend**
- SAV Present in 2011 (147)
 - In Channel (3)
 - Not Airboat Accessible (68)
 - SAV Grids
 - Dry ground
 - ≤ 2 meters
 - > 2 meters deep

Genera represented include:
Chara, Hydrilla, Vallisneria, Ceratophyllum, Potamogeton, Najas, Utricularia, Bacopa, and Nitella



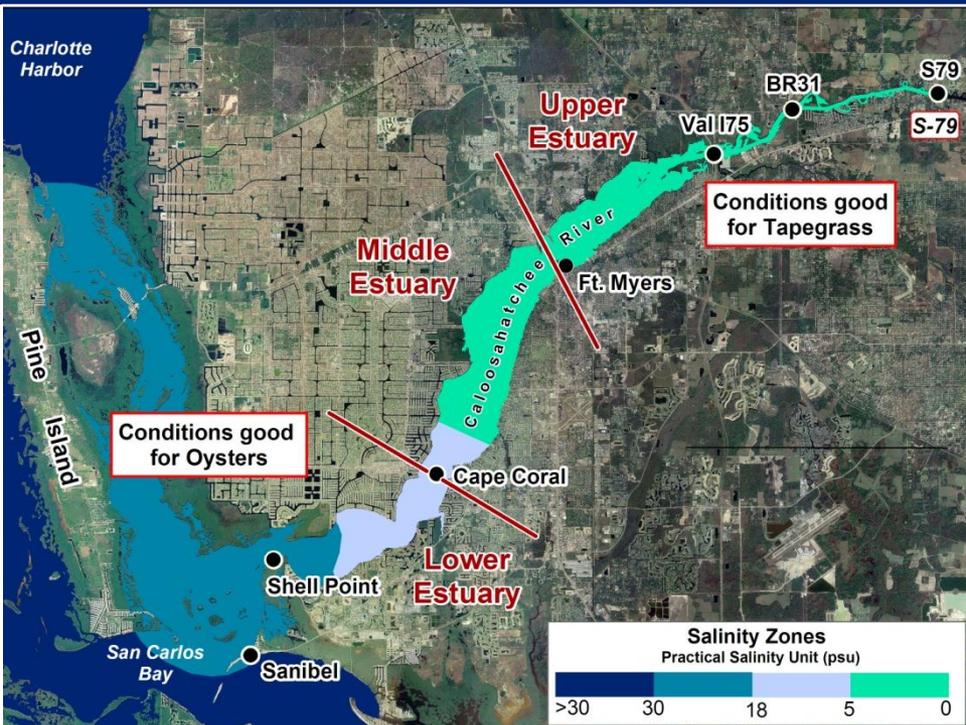
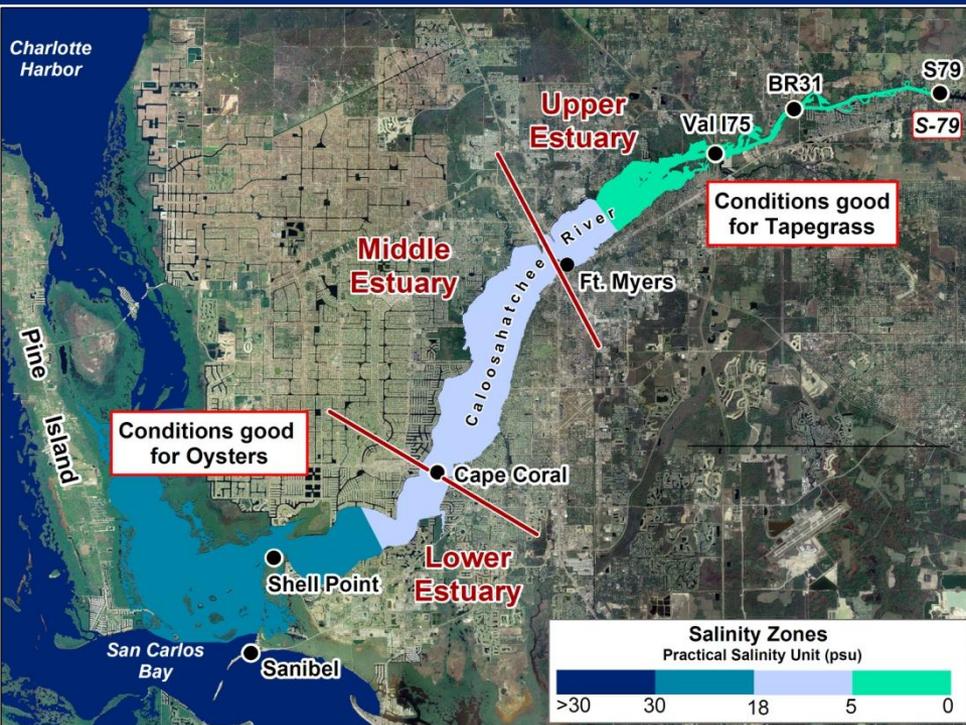
Caloosahatchee Estuary



Salinity Conditions

August 8, 2011

September 5, 2011



NOTE: Optimal Range for Oysters: 14 – 28 psu

Optimal Range for Tape Grass: 0 – 5 psu

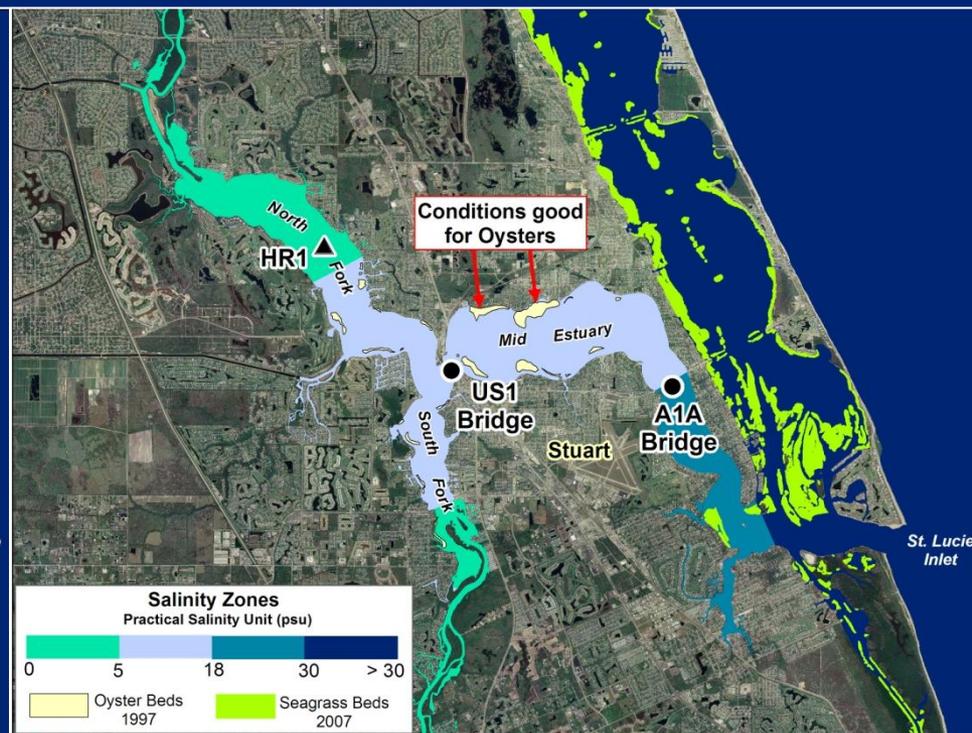
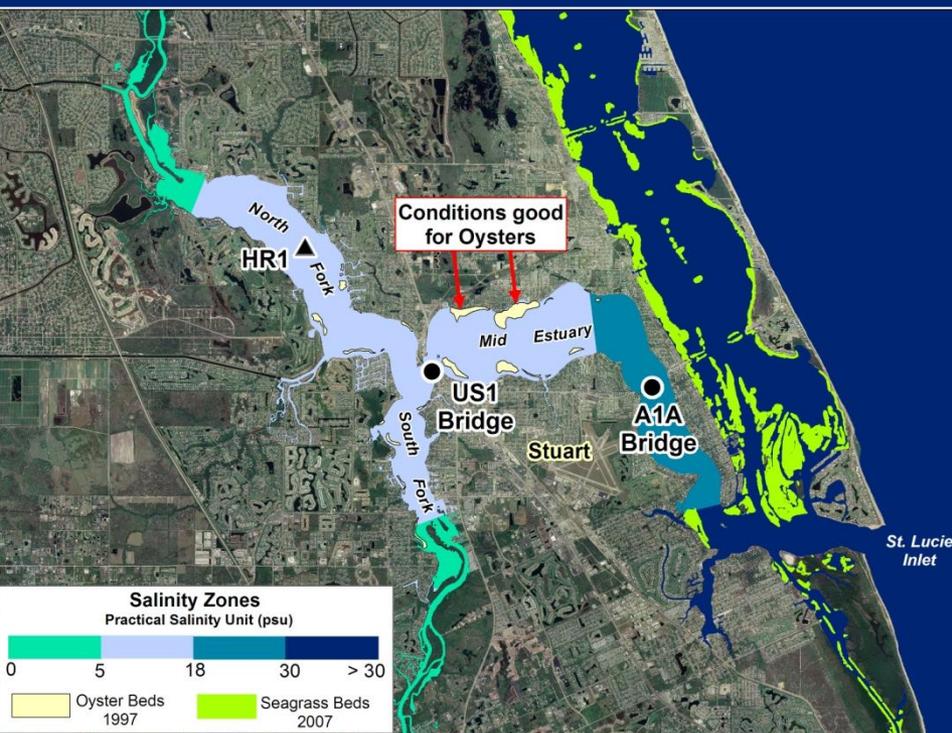


St. Lucie Estuary

Salinity Conditions

August 8, 2011

September 5, 2011



NOTE: Optimal Range for Oysters: 14 – 28 psu

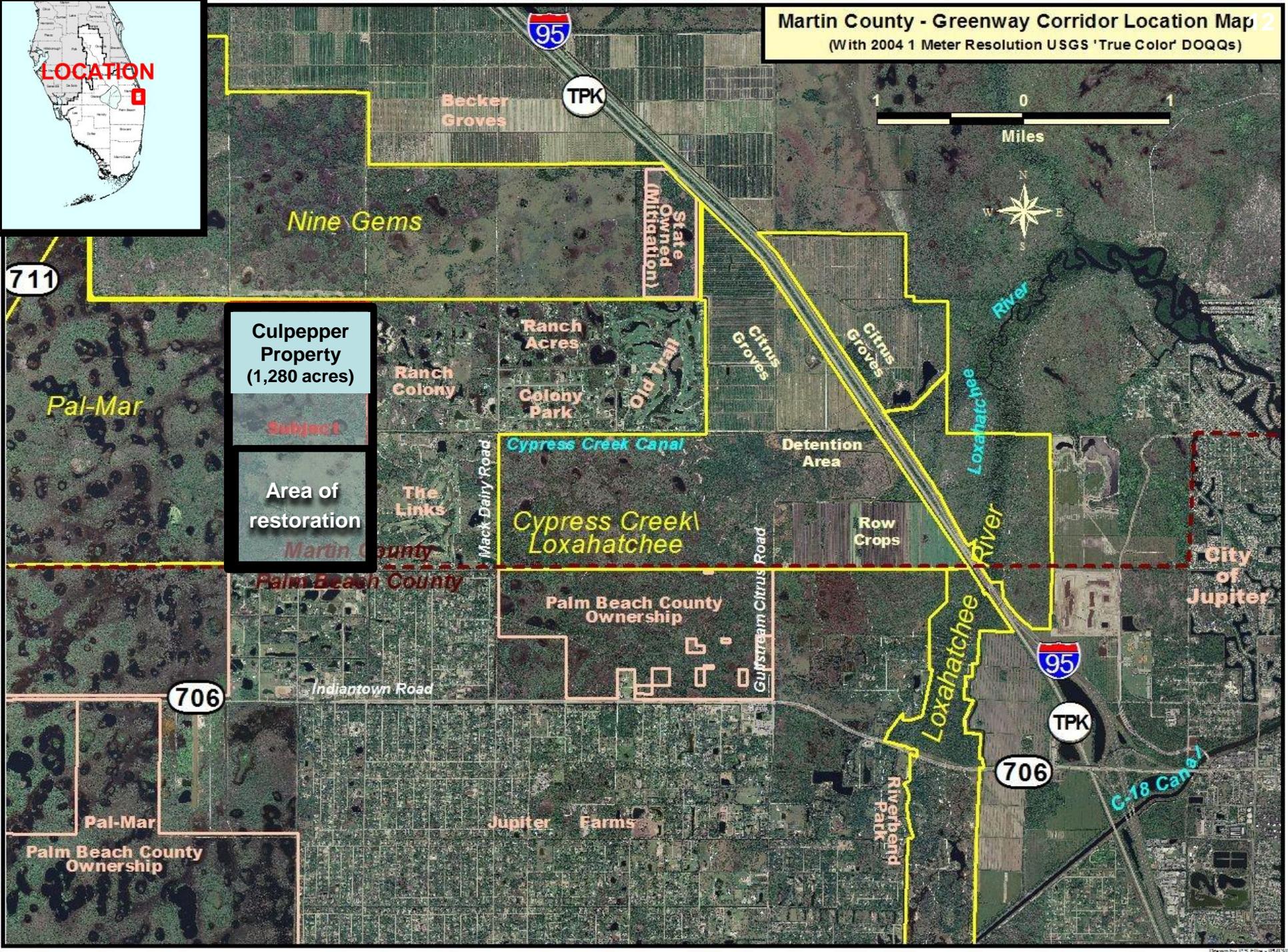


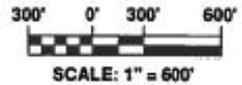
Culpepper Ranch Restoration

- Property purchased in 3 phases with Martin County
 - 1,280 acres – primarily cattle ranch
 - Component of Flowway 3– Lox. River Watershed Restoration Project
- Restoration activities
 - Loxahatchee River Preservation Initiative funding
 - Joint permit from DEP to Martin County and SFWMD
 - Ditch plugs and berm breaches – completed April 2011
 - Physical and chemical control of exotics
 - Two monitoring stations (water level/rainfall)
 - Estimated improvement of 450-500 wetland acres

Martin County - Greenway Corridor Location Map 2

(With 2004 1 Meter Resolution USGS 'True Color' DOQQs)





LEGEND

-  PROPERTY LINE
-  PARCEL LINE
-  EXISTING ROAD
-  EXISTING WETLAND (APPROX 120 AC)
-  EXISTING DITCH (INTERNAL)
-  EXISTING DITCH (BYPASS)
-  EXISTING CANAL (SIRWCD)
-  PROPOSED IMPROVEMENT AREA
-  PROP. WETLAND (APPROX 410 AC, ESTIMATED)
-  PROPOSED FLOW DIRECTION

Culpepper Wetland Restoration



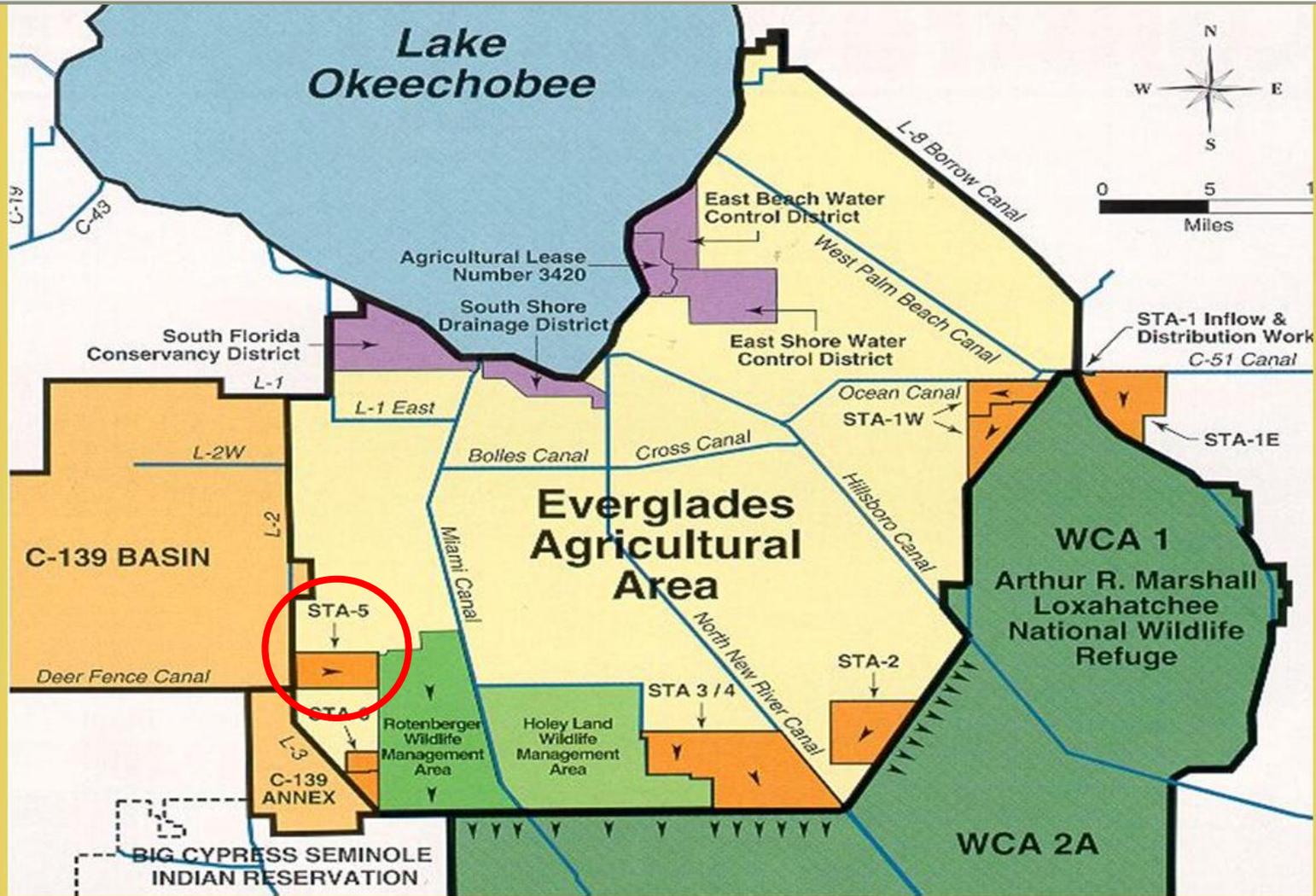
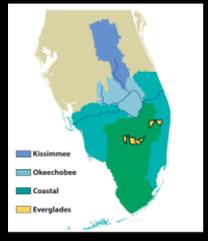
Berm removal



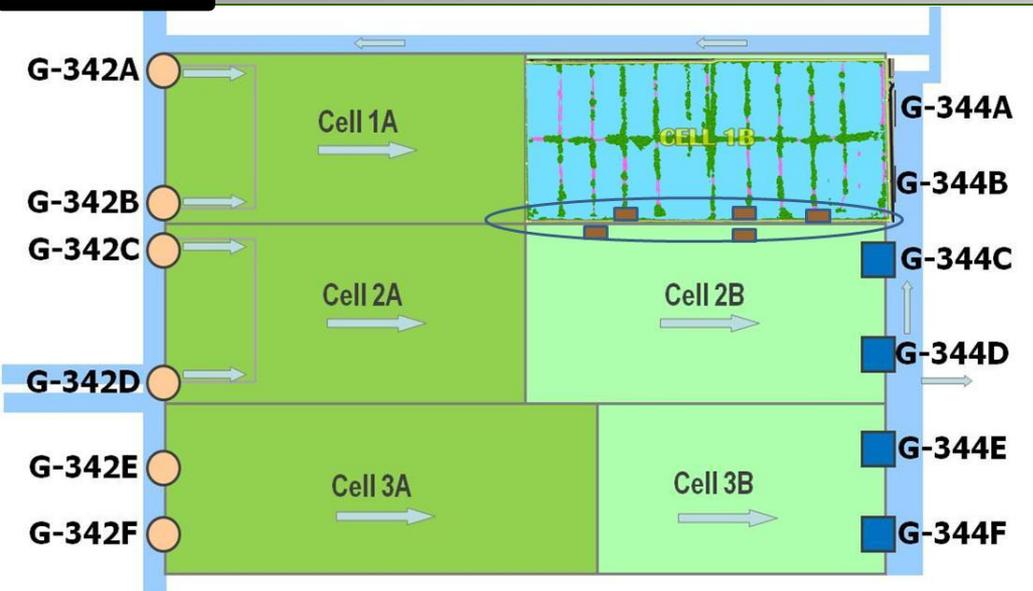
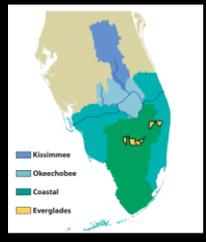
Post- construction



Stormwater Treatment Area 5 Vegetation Strip Plugs & Plantings



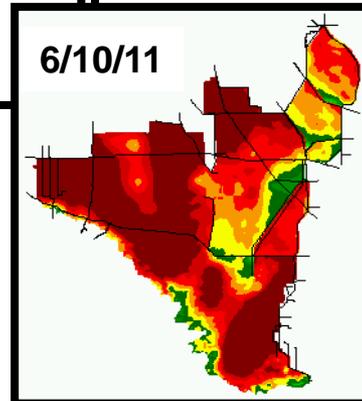
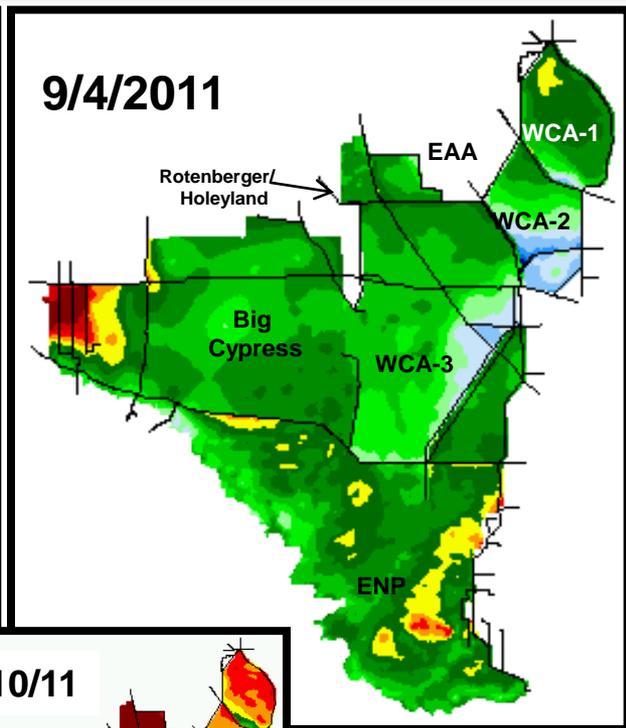
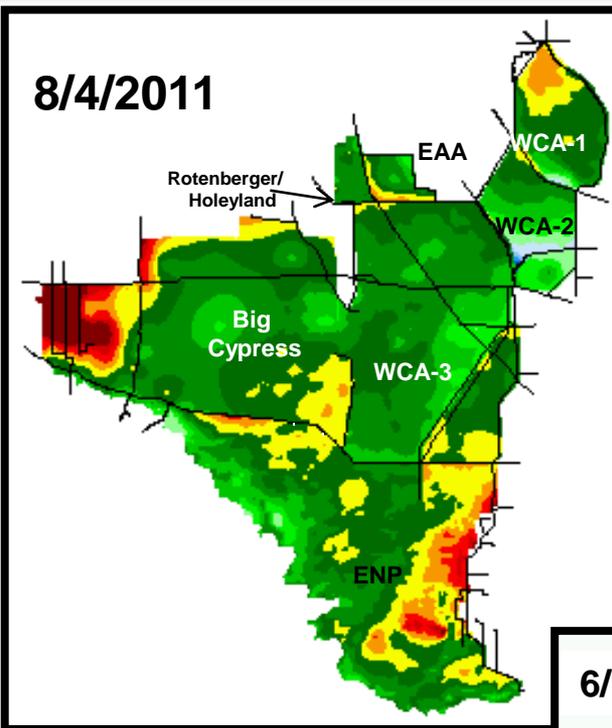
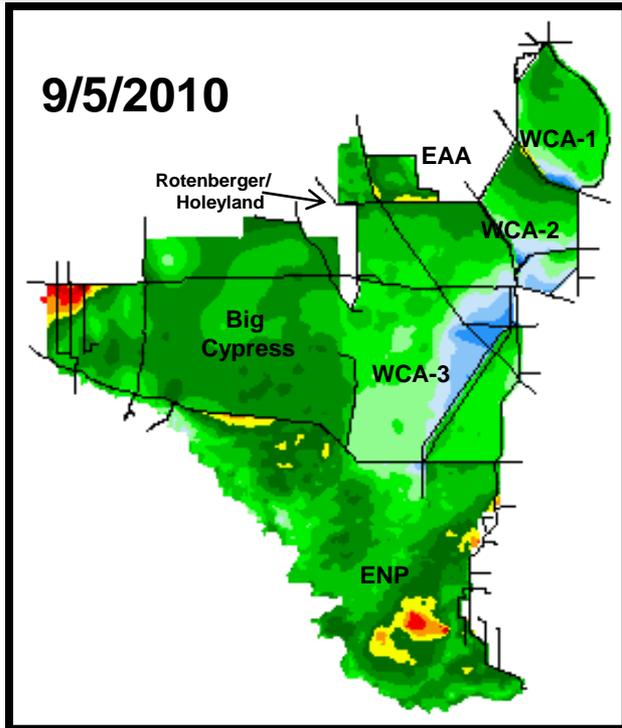
Stormwater Treatment Area 5 Vegetation Strip Plugs & Plantings



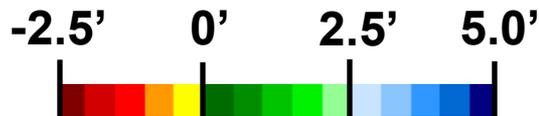
- Deep areas along the levee in Cell 1B and 2B plugged June 2011
 - Plugs expected to reduce hydraulic short-circuiting
 - Create continuous vegetation strips across treatment cell
- Bulrush was planted on the plugs & open areas in the Cell 1B vegetation strips
- Coordinated by Vegetation Management Division



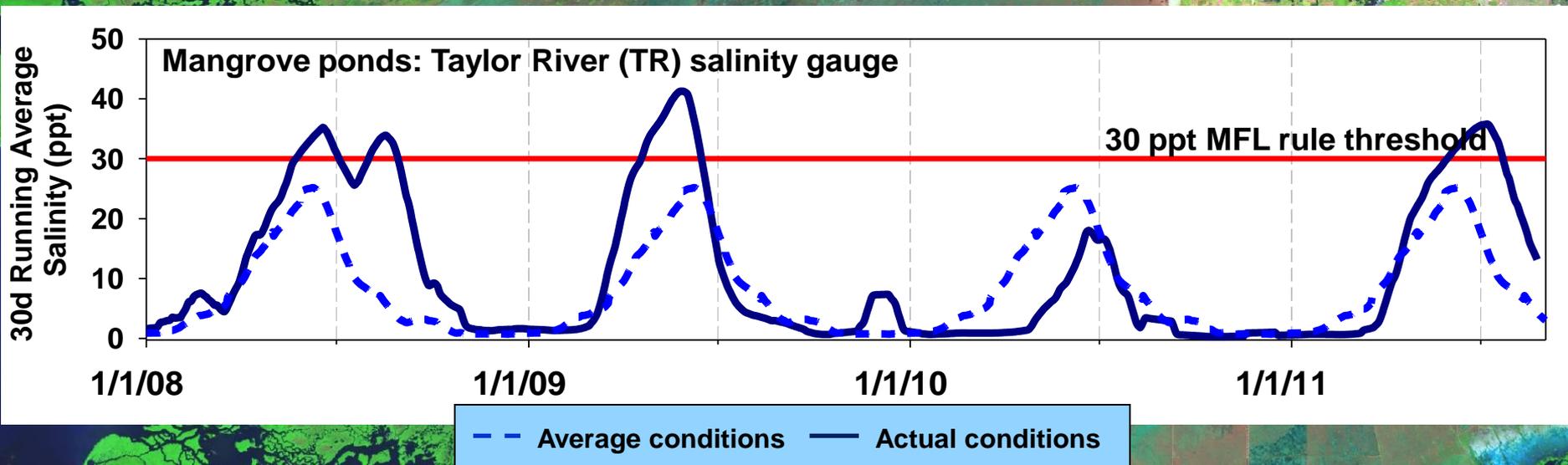
Greater Everglades Water Depth Monthly Snapshots



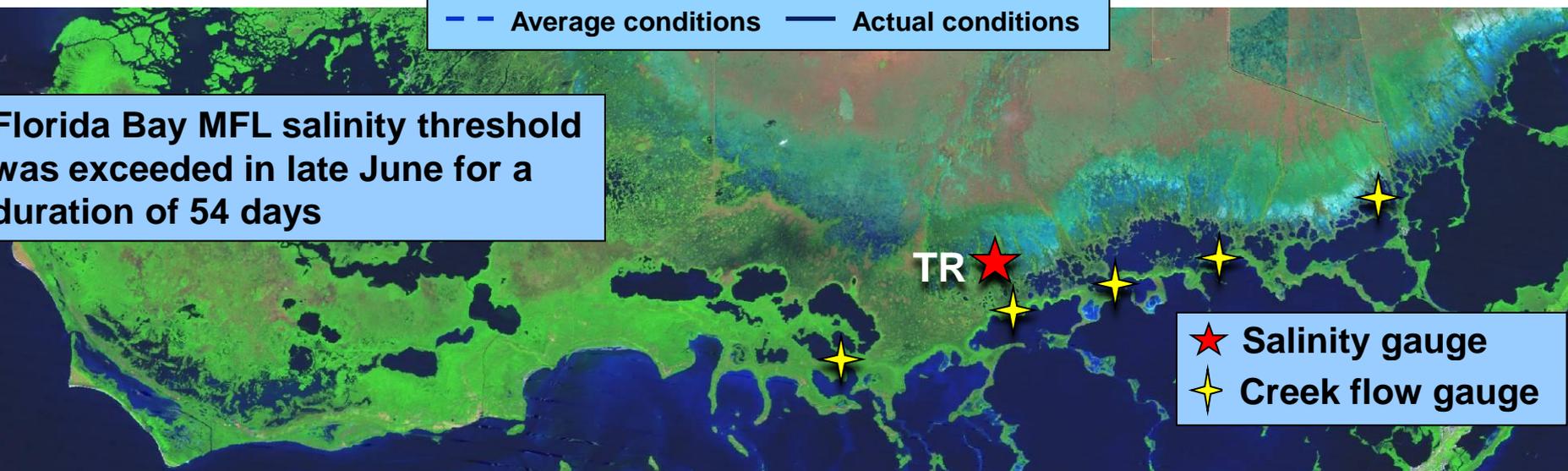
Water Depth (feet)



Tracking Salinity in Florida Bay

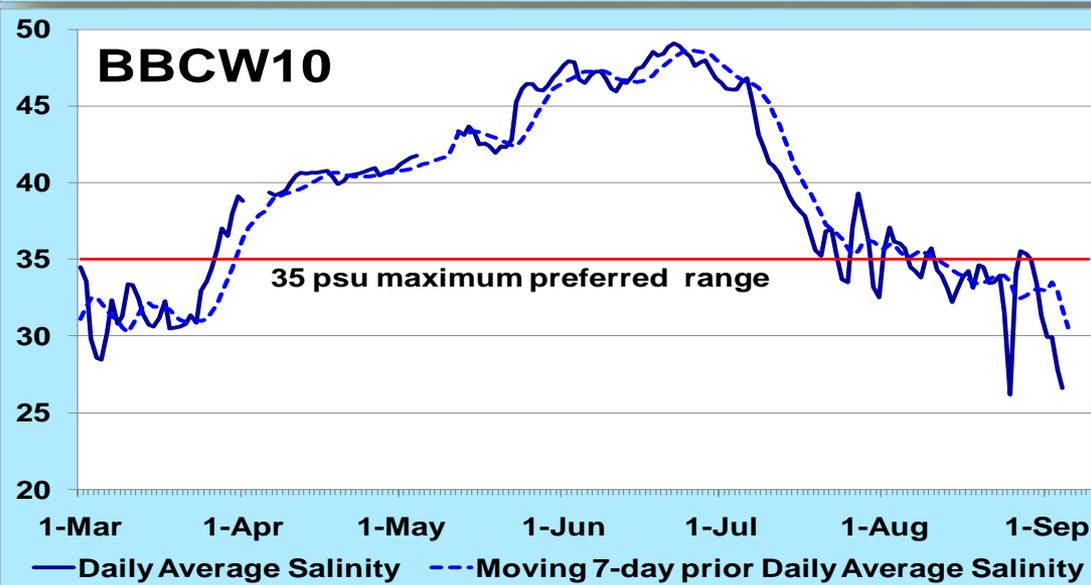
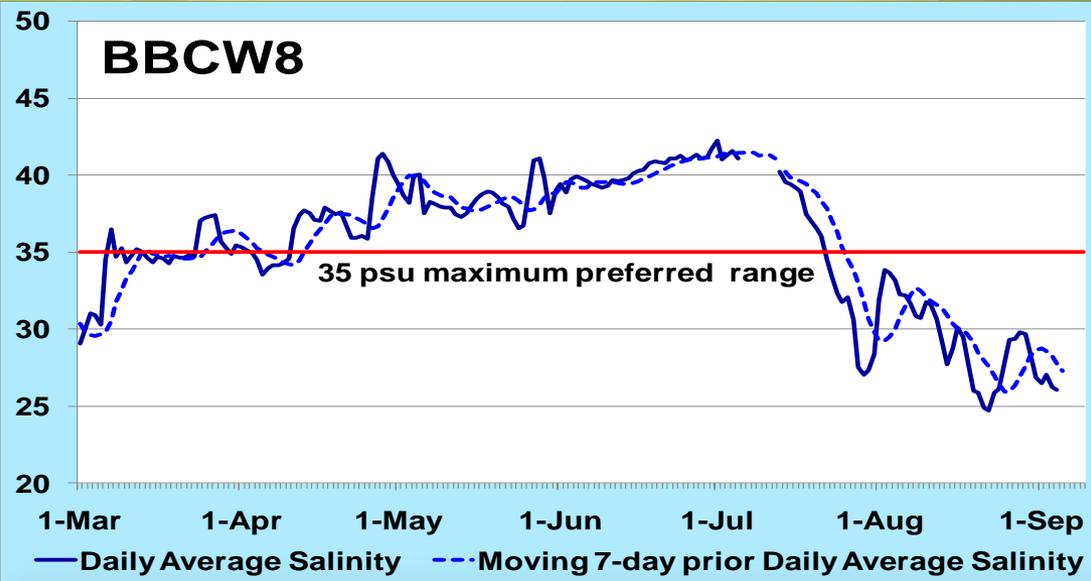
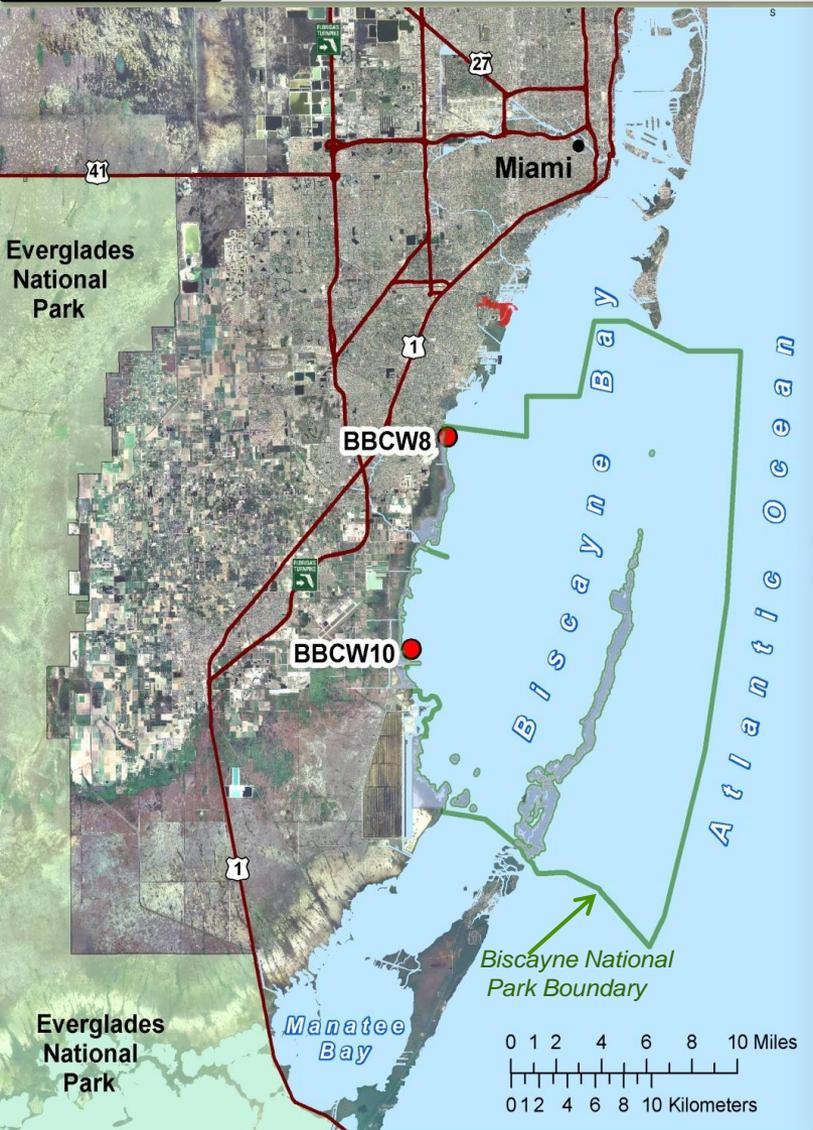


Florida Bay MFL salinity threshold was exceeded in late June for a duration of 54 days



★ Salinity gauge
★ Creek flow gauge

Biscayne Bay Salinity



Thank You



Kingfisher in STA $\frac{3}{4}$
Photo by Dave Unsell