

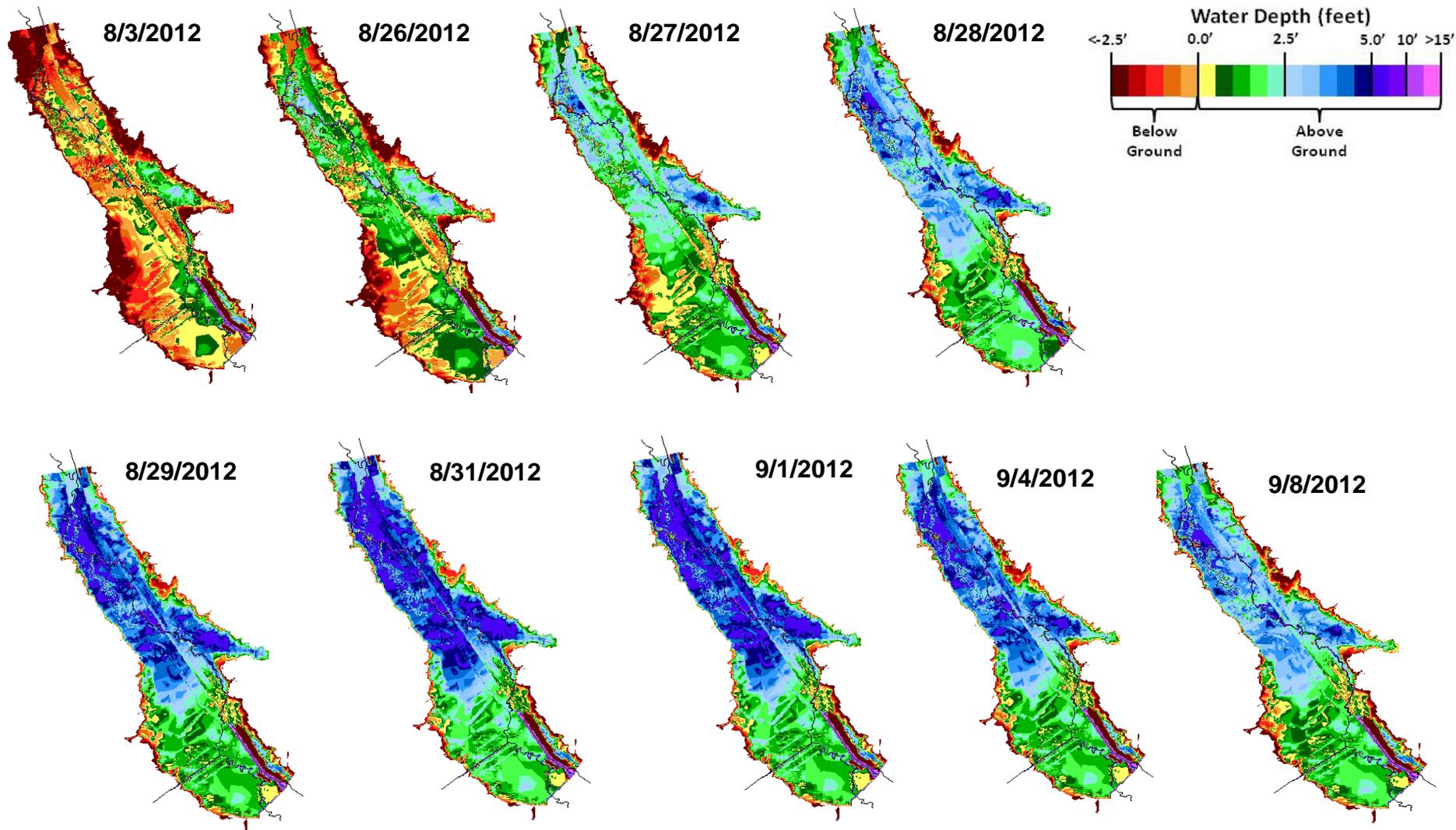
Environmental Conditions Update



Terrie Bates
Ernie Barnett

**Governing Board Meeting
September 13, 2012**

Kissimmee River (Pool C) TS Isaac Impact



Kissimmee River S-65C

Phase I Restoration Area After TS Isaac



Kissimmee River

Phase I Restoration Area After TS Isaac



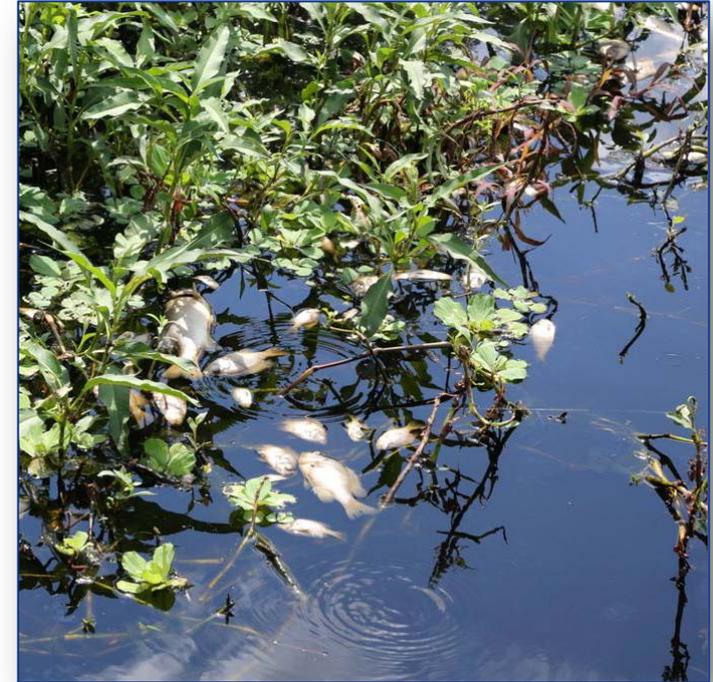
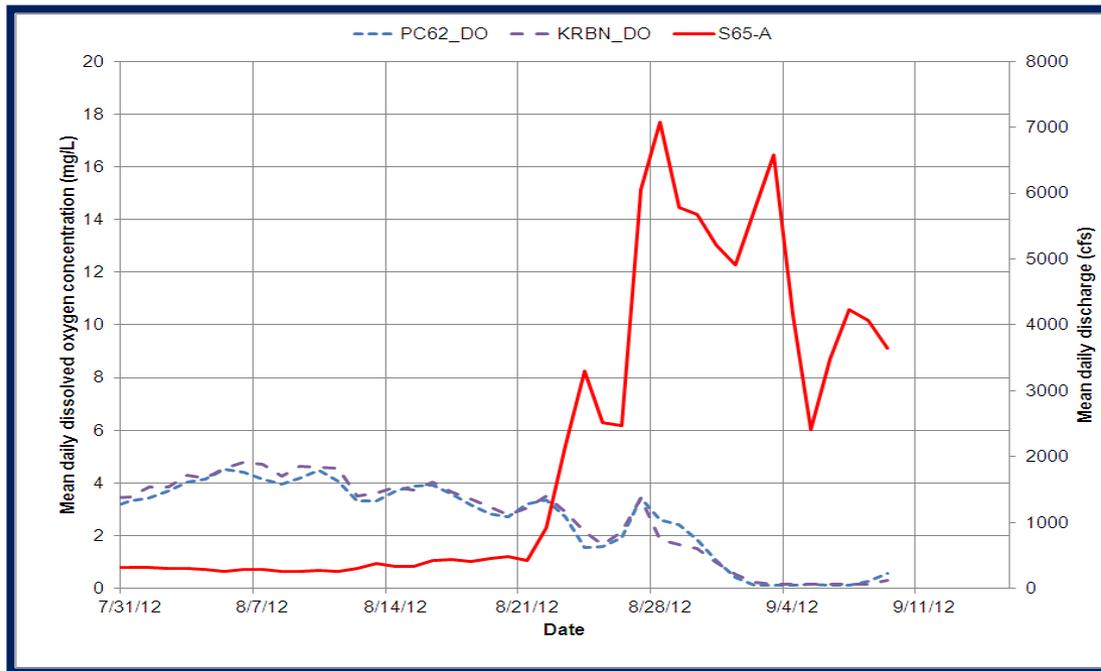
Looking north over the river floodplain on Aug 21st



Same area on Aug 30th after TS Isaac – inundated treeline to treeline

Kissimmee River

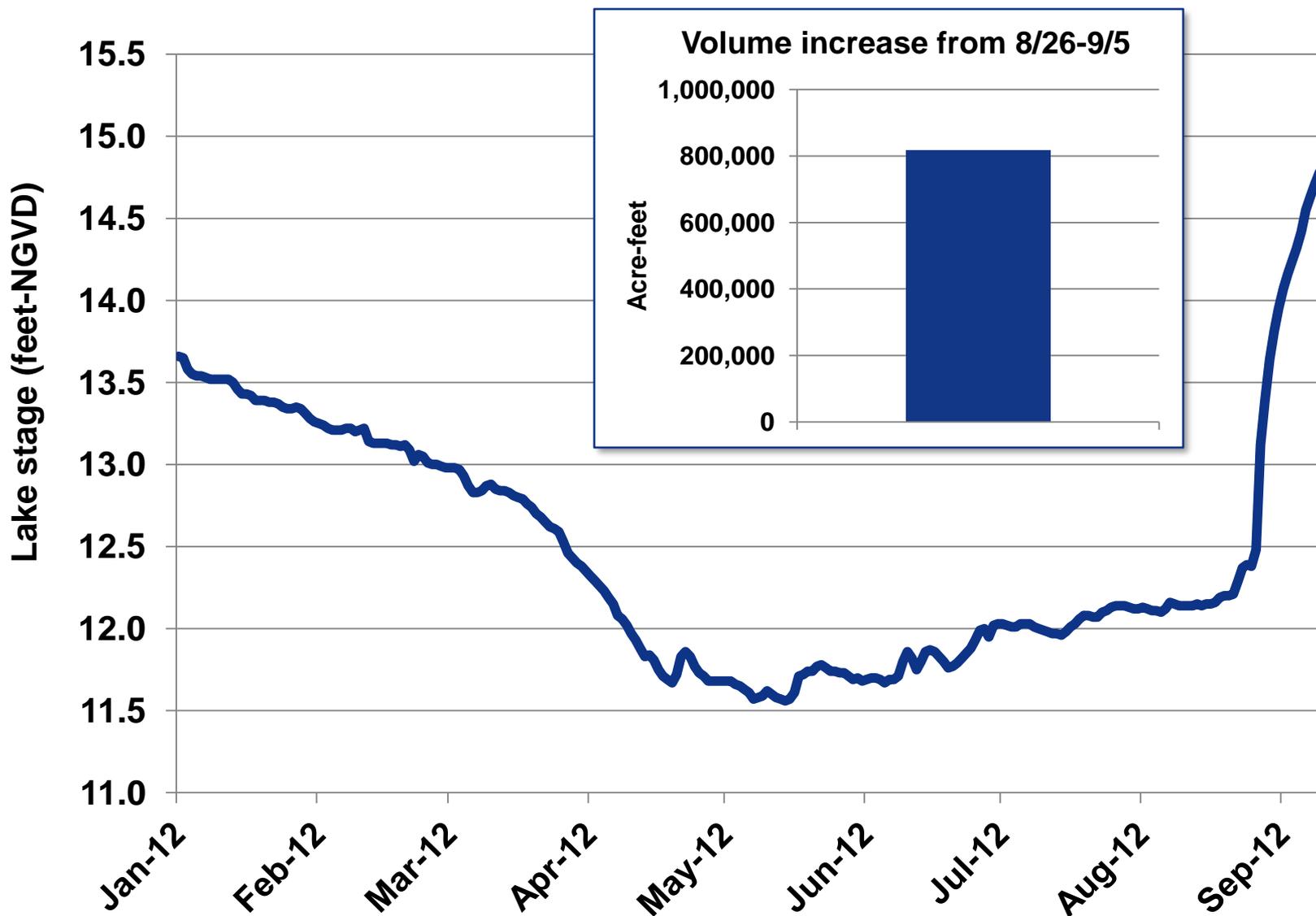
(Phase I Restoration Area After TS Isaac)



- Decline in dissolved oxygen (DO) in the Phase I restoration area after upstream increases in discharge at S65-A associated with TS Isaac

- ~3,800 dead fish from survey on 9/5 and 9/6 in Pool C
- Declines in dissolved oxygen are common after rapid increases in discharges

Lake Okeechobee Stage January to September 2012

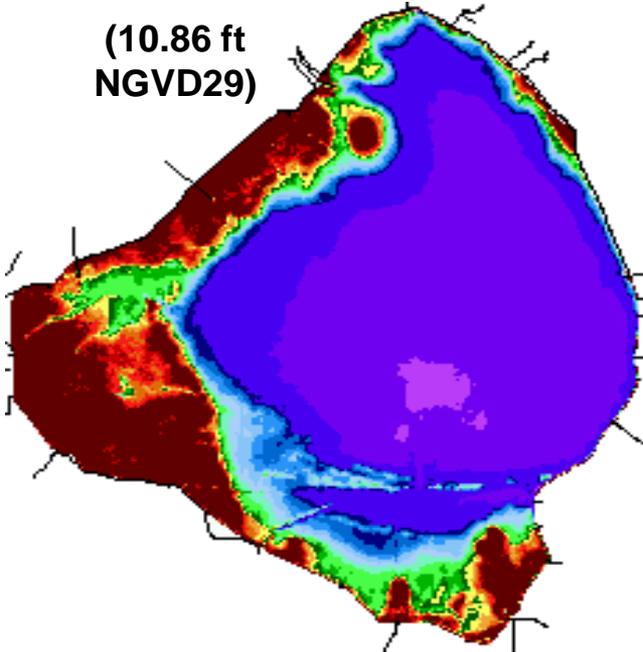


Lake Okeechobee

Water Depth Timeseries Maps

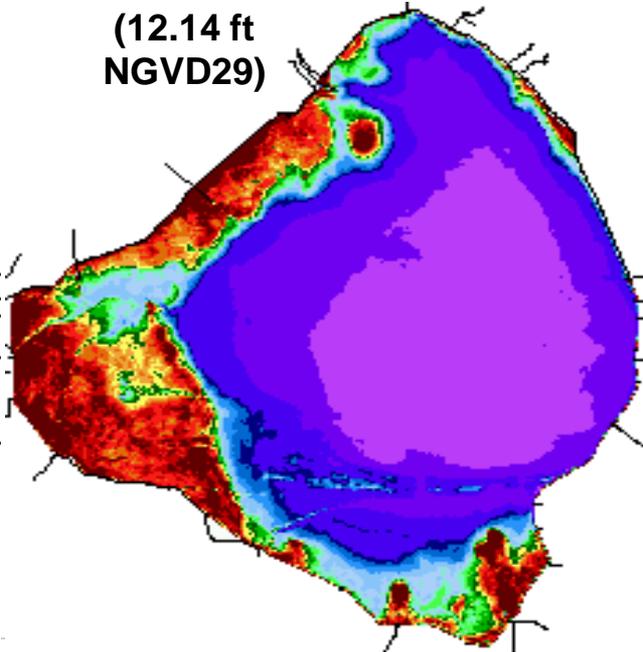
1 Year Ago: 09/10/2011

(10.86 ft
NGVD29)



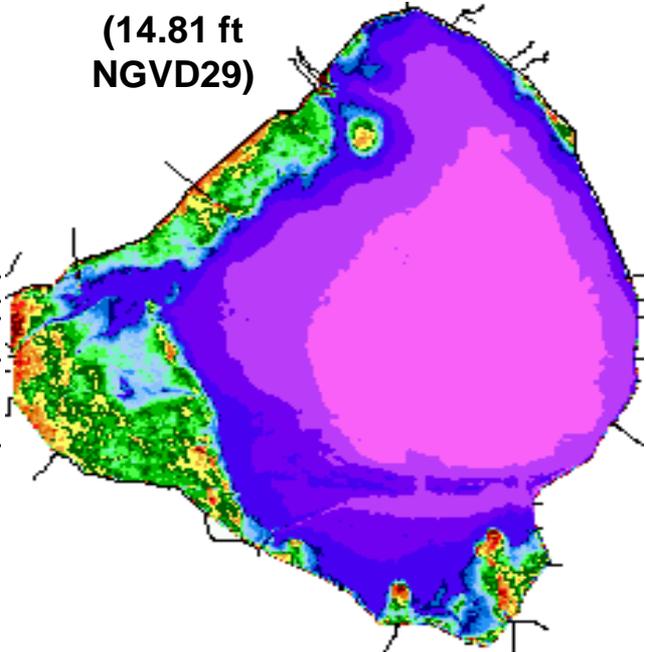
1 Month Ago: 08/11/2012

(12.14 ft
NGVD29)

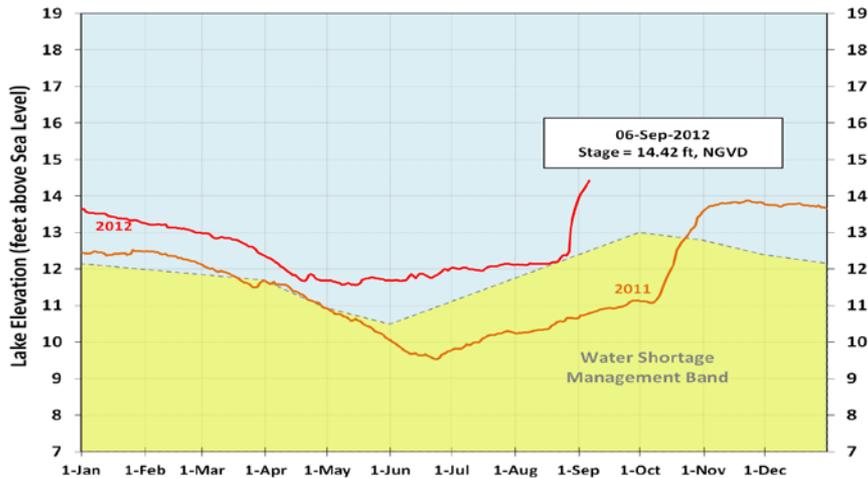


Current: 09/10/2012

(14.81 ft
NGVD29)

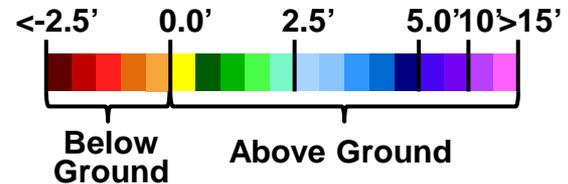


Lake Okeechobee Water Level Comparison

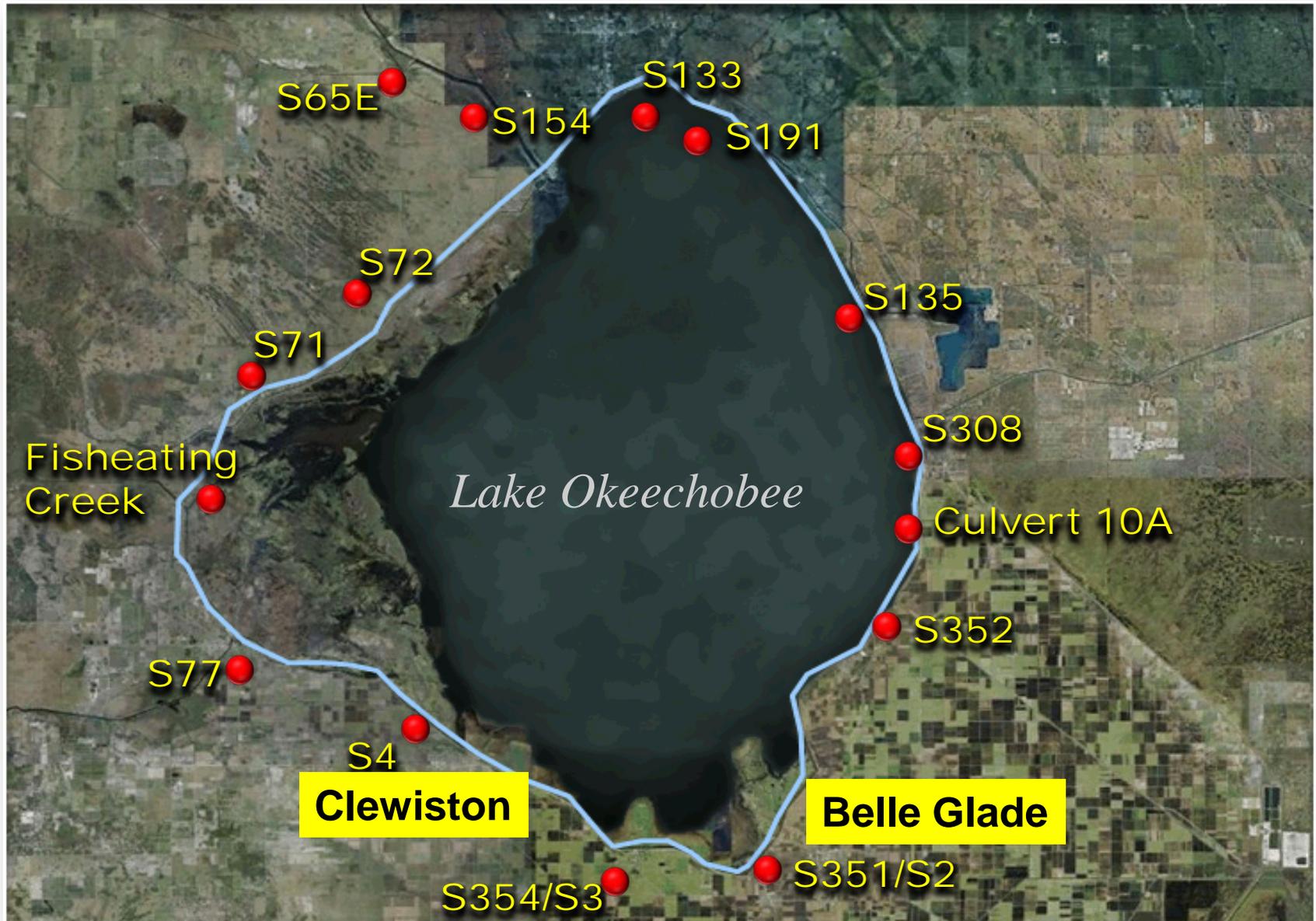


Lake Okeechobee stage is
14.81 feet NGVD
(9/10/12)

Water Depth (feet)



Lake Okeechobee



Flood Control Event Monitoring – Provisional Data

August 27, 2012 - September 5, 2012 Comparison of Loads to Lake Okeechobee*

Structure	Flow (ac-ft)	TP Loads (metric tons)	TP Flow- weighted Mean (ppb)	TN Loads (metric tons)	TN Flow- weighted Mean (ppb)
S2 (Belle Glade)	36,196	15.0	337	380.8	8,529
S3	4,198	0.9	179	49.4	9,540
S4 (Clewiston)	8,880	2.4	215	40.3	3,679
Total	49,274	18	301	470.5	7,741
S65E	185,939	64.9	283	438.5	1,912
S71	32,388	5.2	130	68.6	1,718
S72	16,424	3.4	167	38.0	1,876
S191	49,951	52.8	857	146.9	2,385
Total#	284,702	126.3	360	692.1	1,971

* data are provisional and subject to change

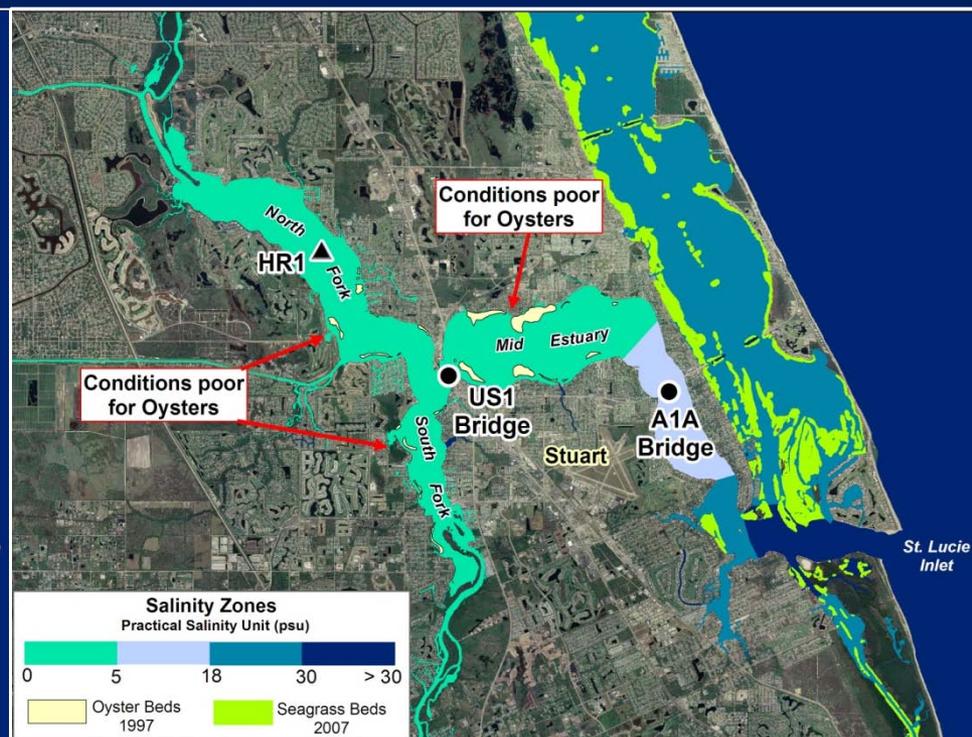
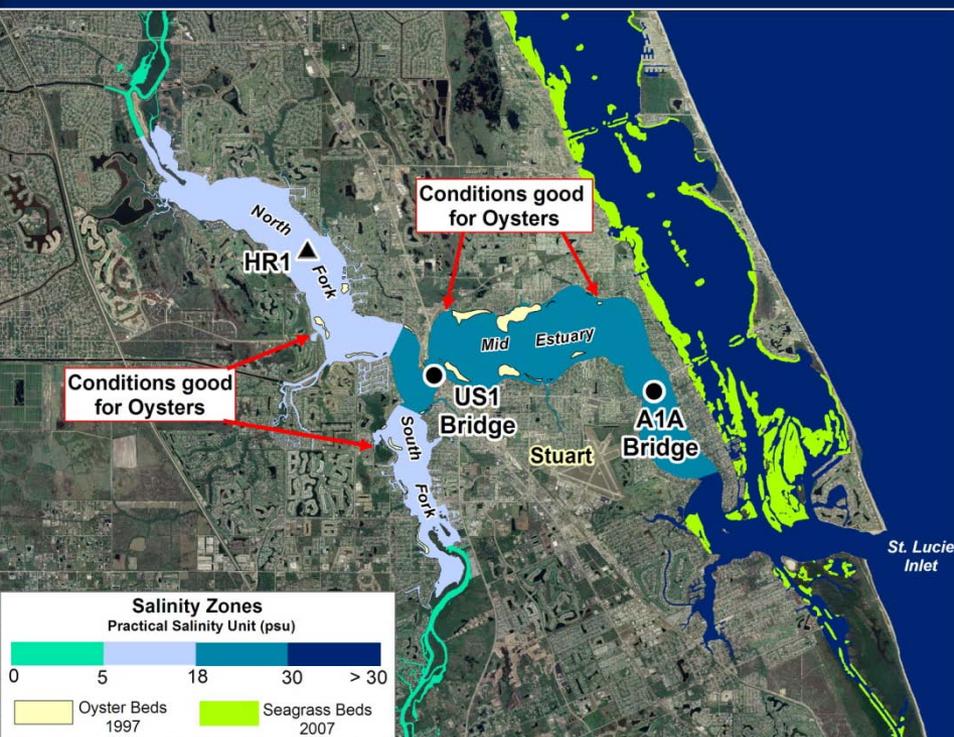
Represents approx. 35% of total input to lake (not all structures, not direct rainfall)

St. Lucie Estuary

Salinity Conditions

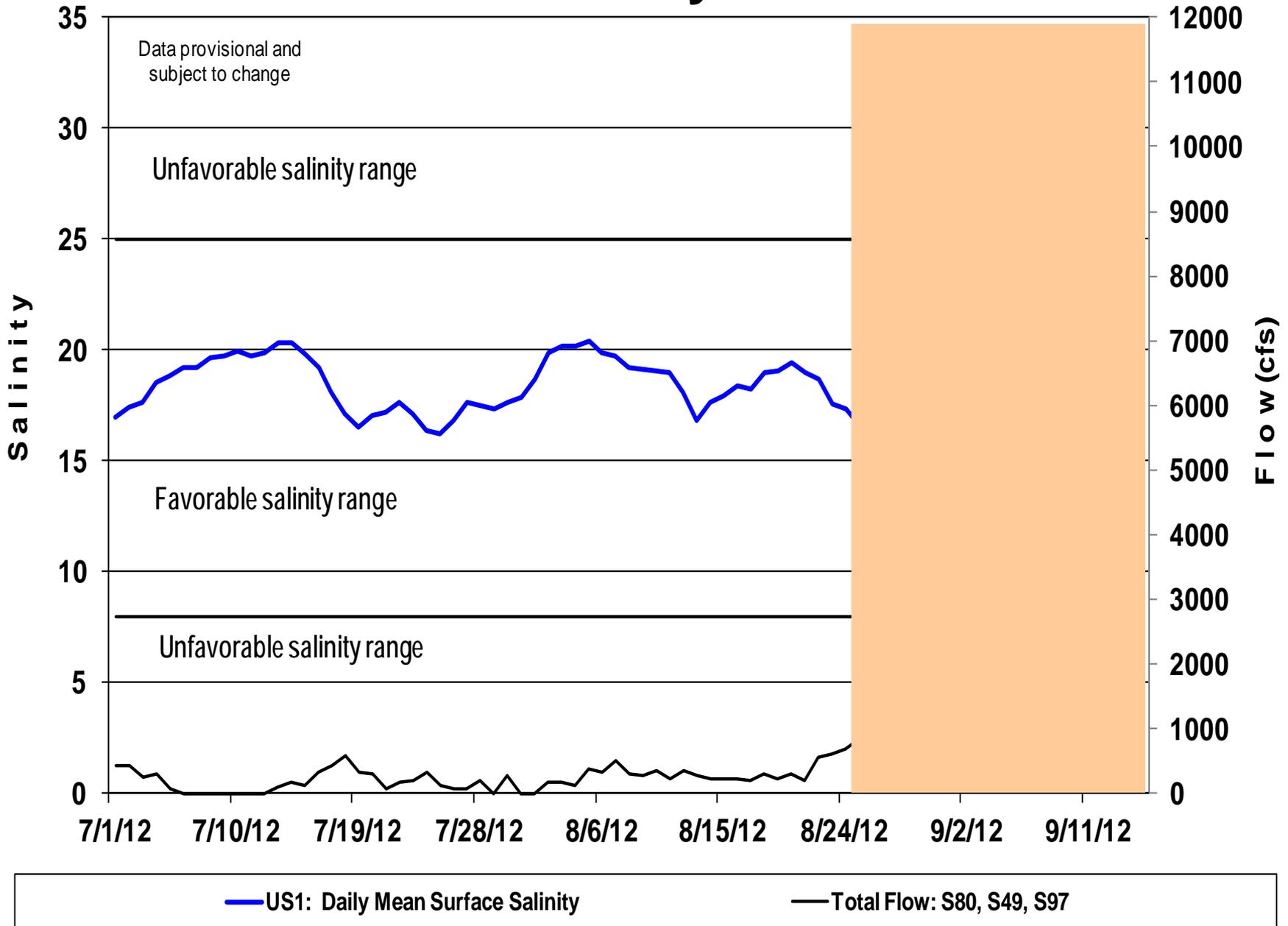
August 6, 2012

September 10, 2012



NOTE: Good Range for Oysters: 10 – 30

St. Lucie Salinity Conditions

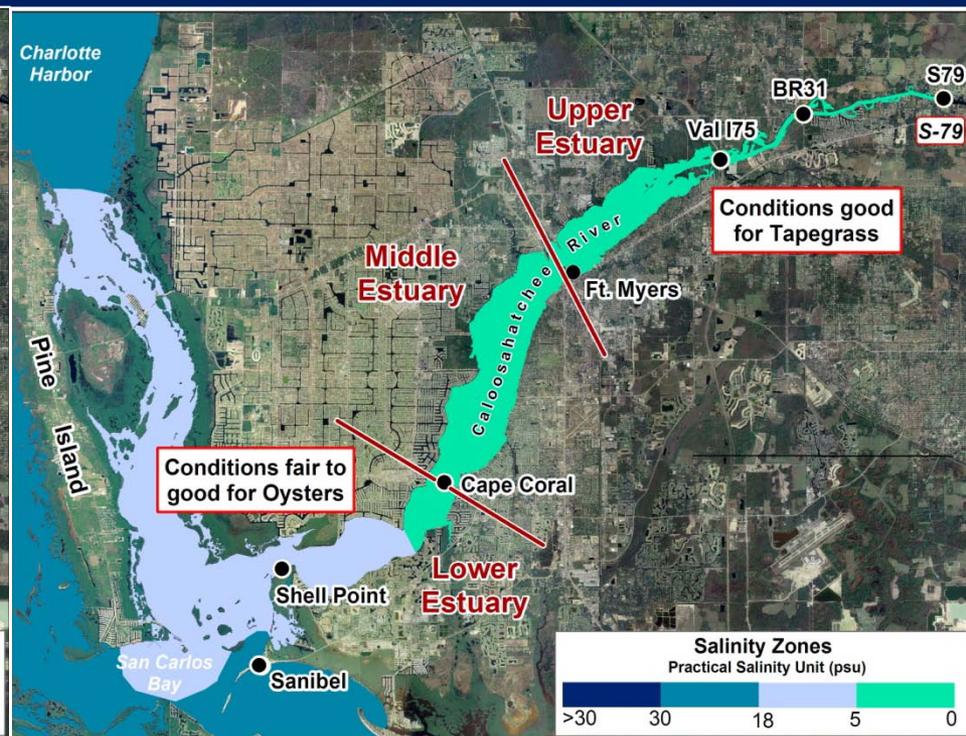
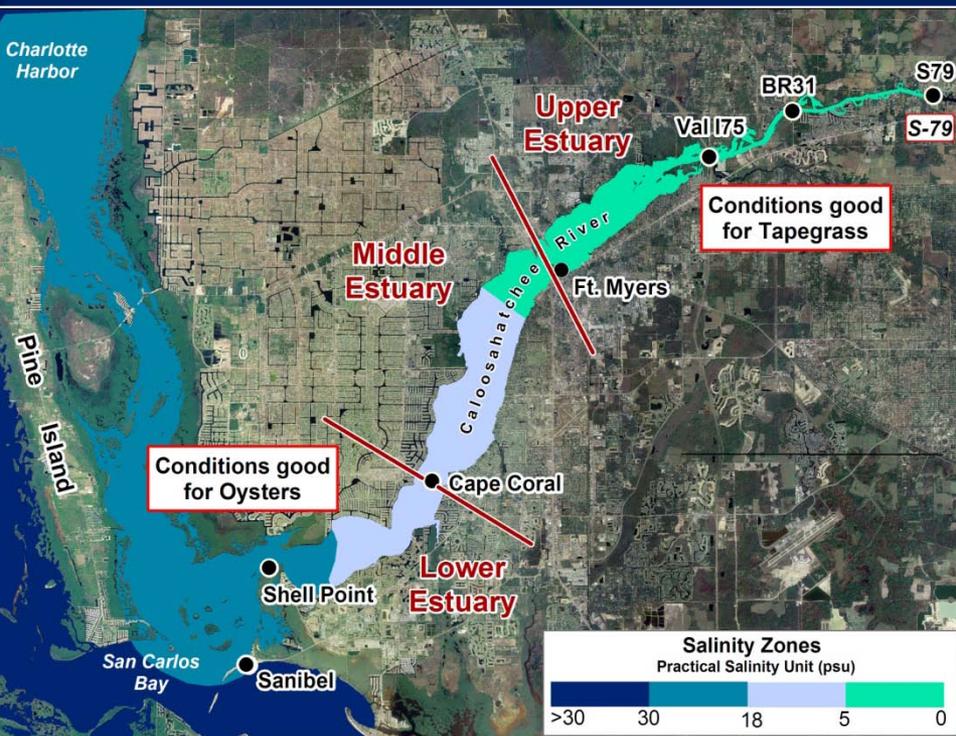


Caloosahatchee Estuary

Salinity Conditions

August 6, 2012

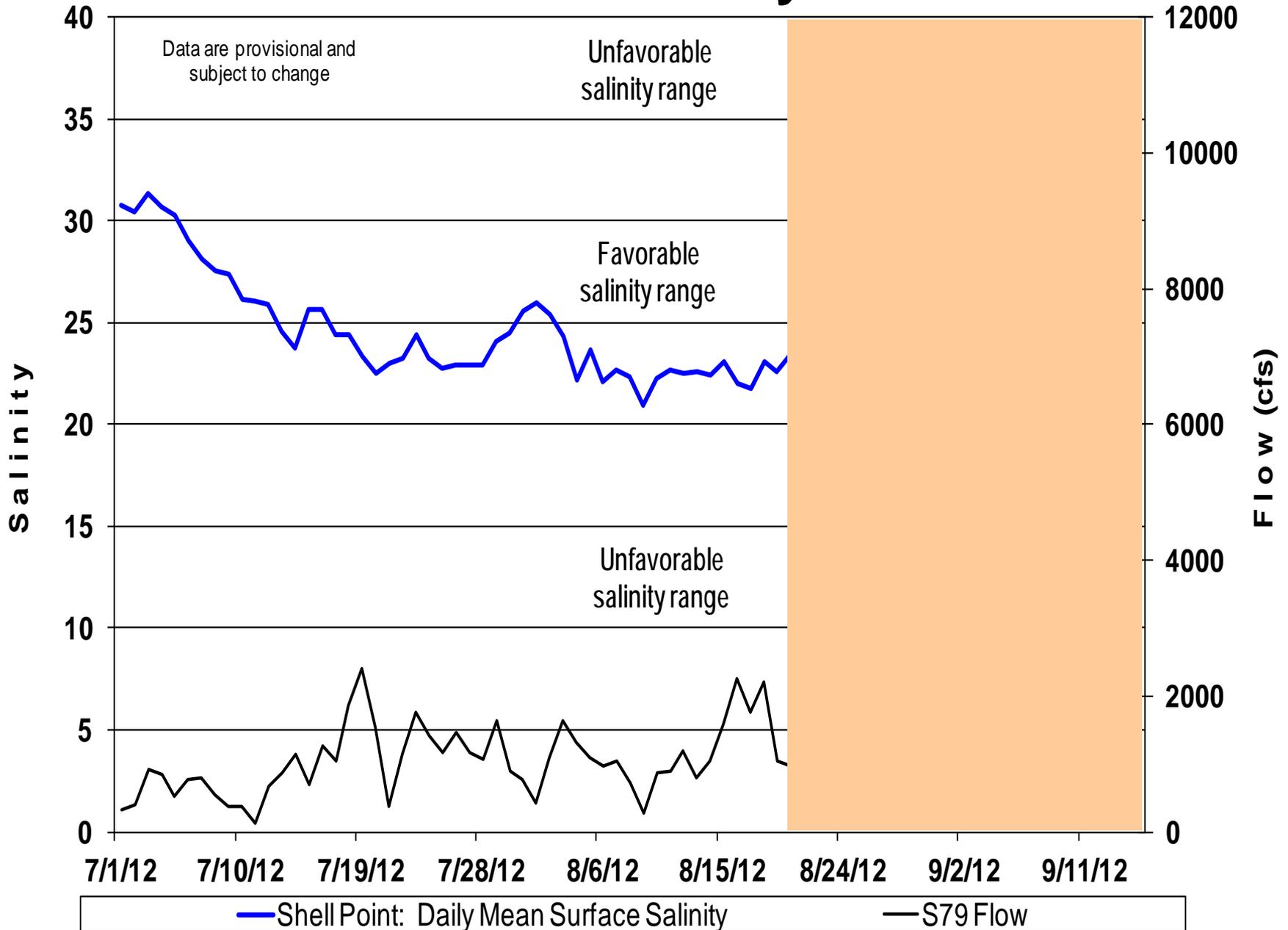
September 10, 2012



NOTE: Good Range for Oysters: 10 – 30

Optimal Range for Tape Grass: 0 – 5

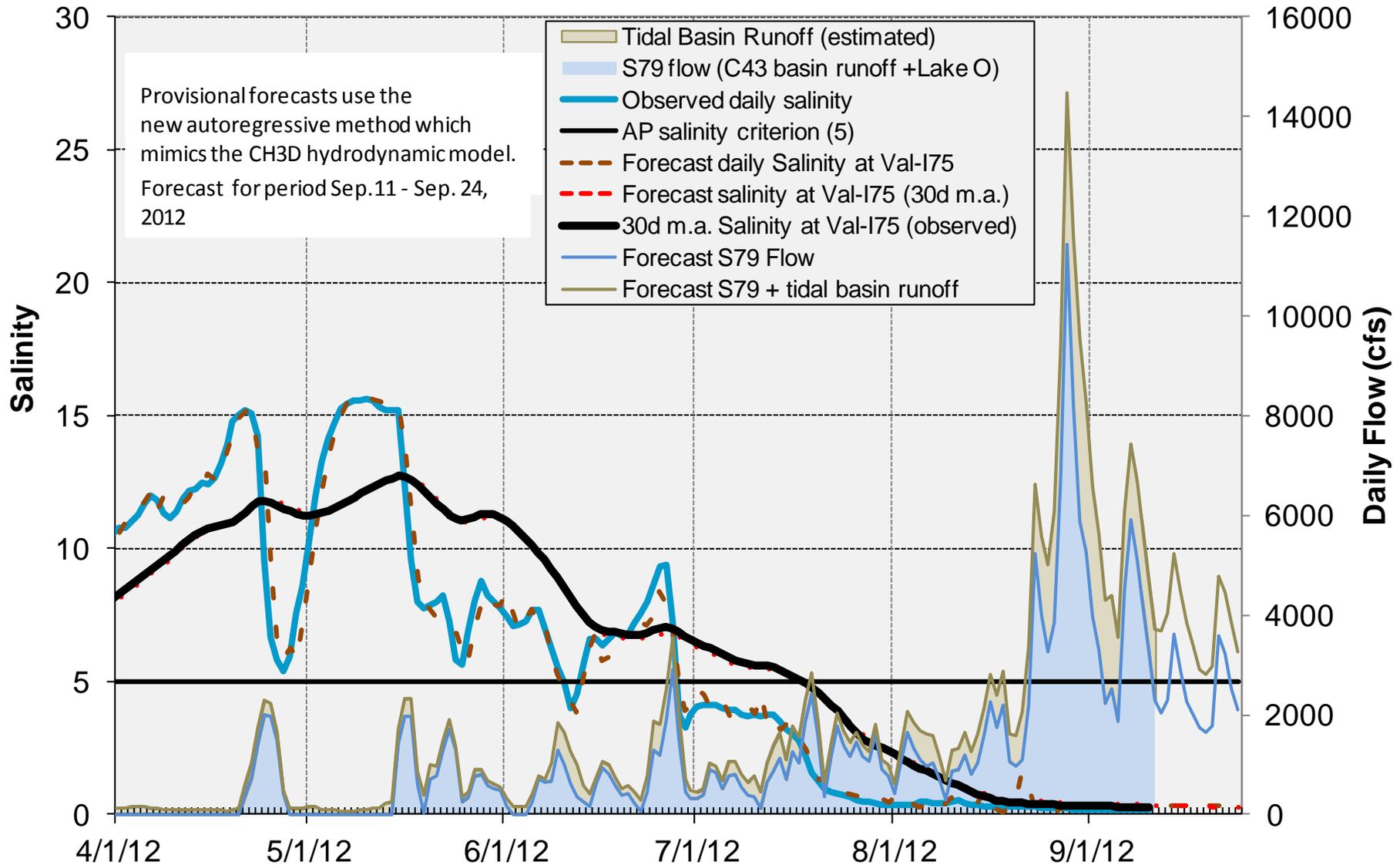
Caloosahatchee Salinity Conditions



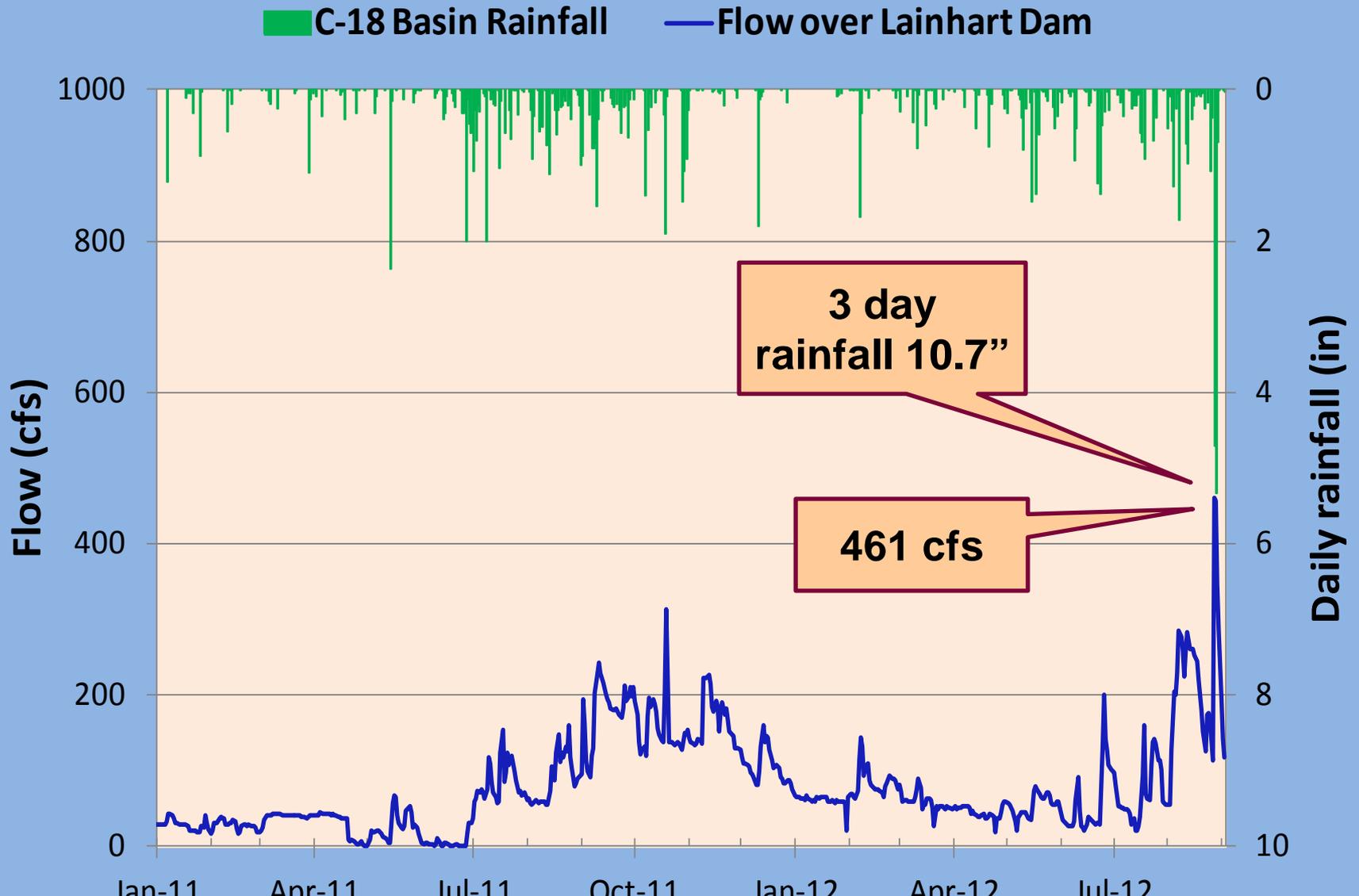
Caloosahatchee Estuary Flows and Salinity

Observed and Forecast Salinity at Val I-75

Forecast 1: S-79 =2400 cfs of C-43 basin runoff & TBR = 1400 cfs



NW Fork of Loxahatchee River Lainhart Dam flows during TS Isaac



Lainhart Dam
May 16, 2008
25 cfs



**Lainhart Dam
50-100 cfs**

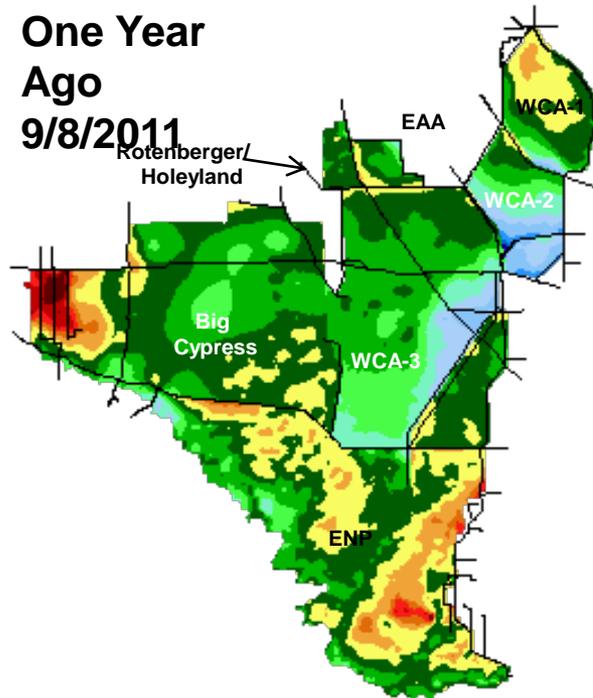


**Lainhart Dam
August 30, 2012
287 cfs**

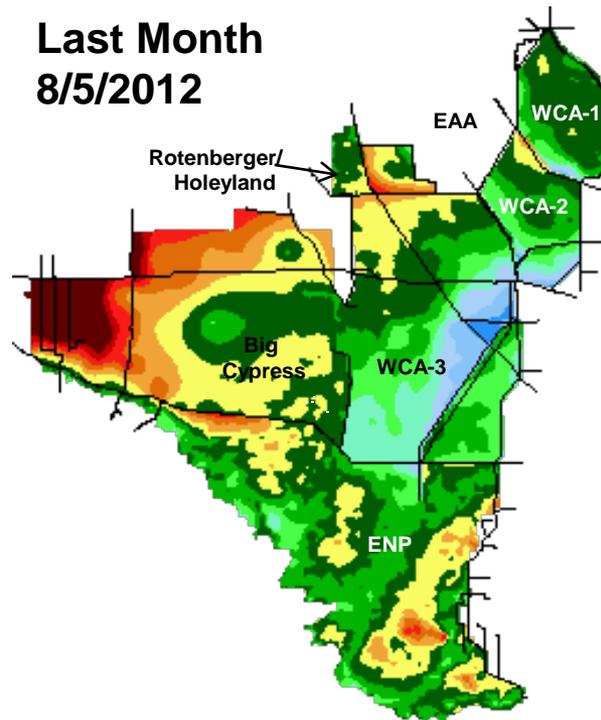


Greater Everglades Water Depth Monthly Snapshots

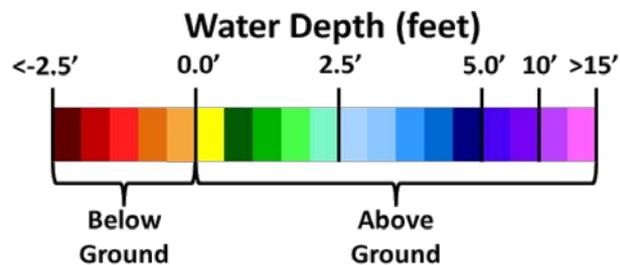
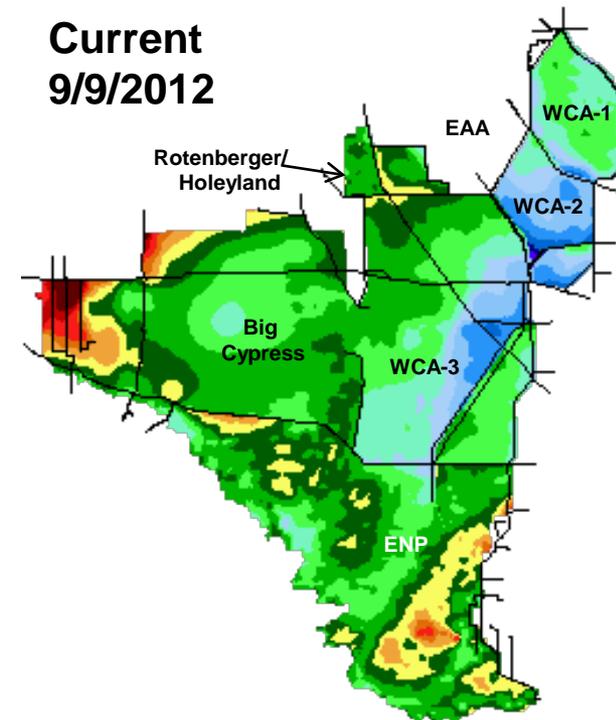
One Year
Ago
9/8/2011



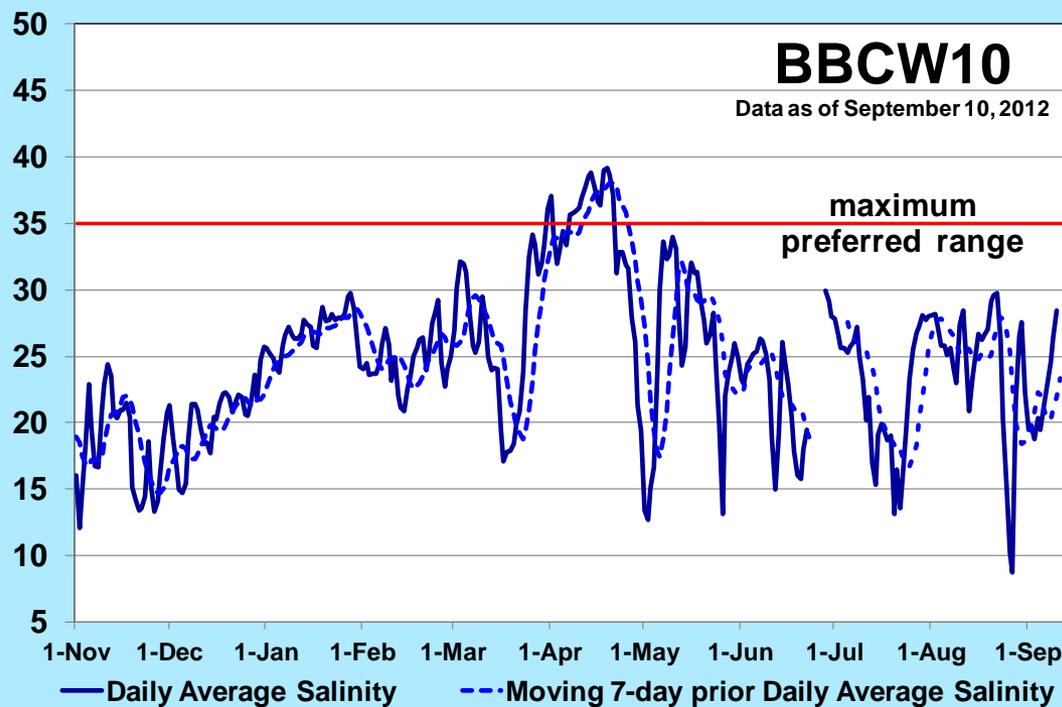
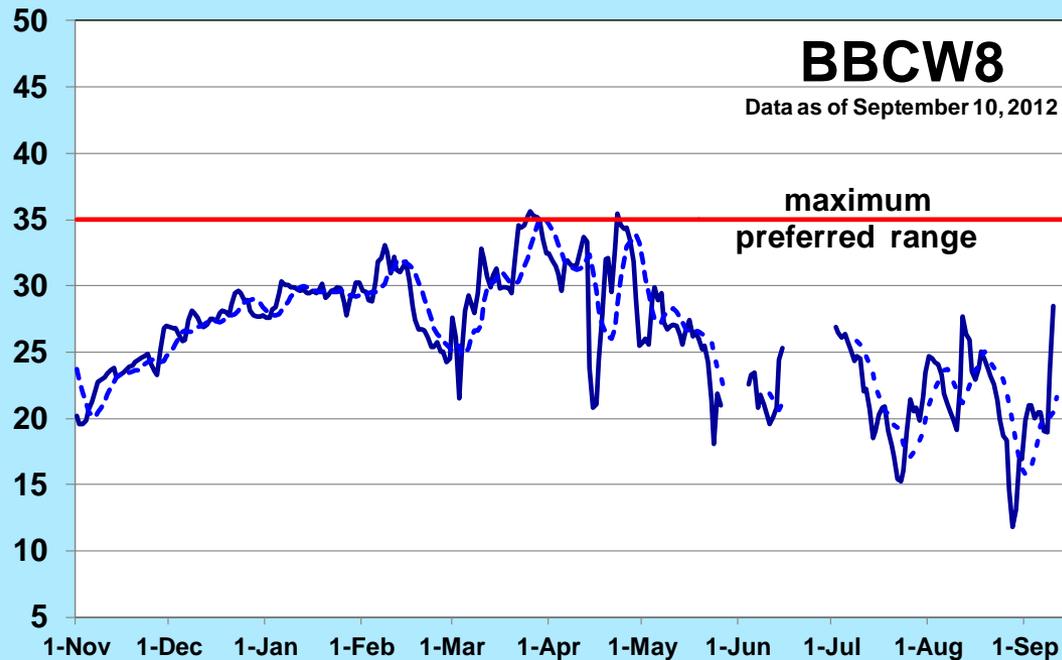
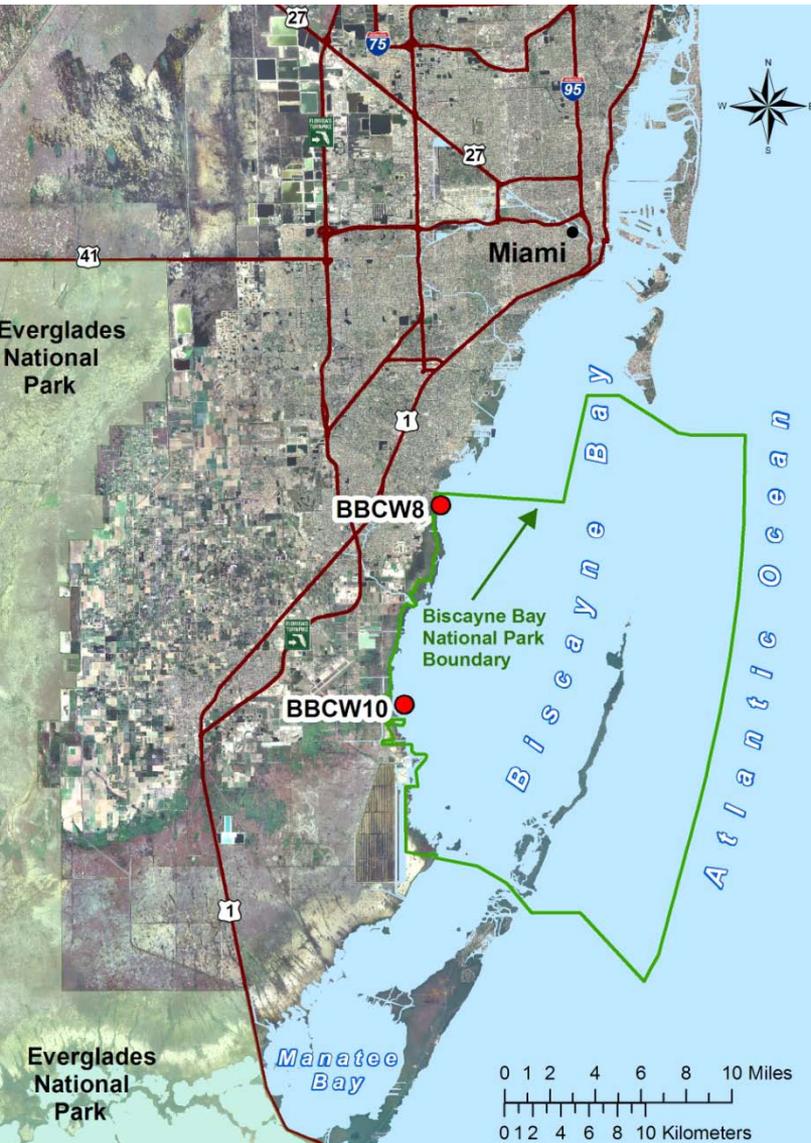
Last Month
8/5/2012



Current
9/9/2012

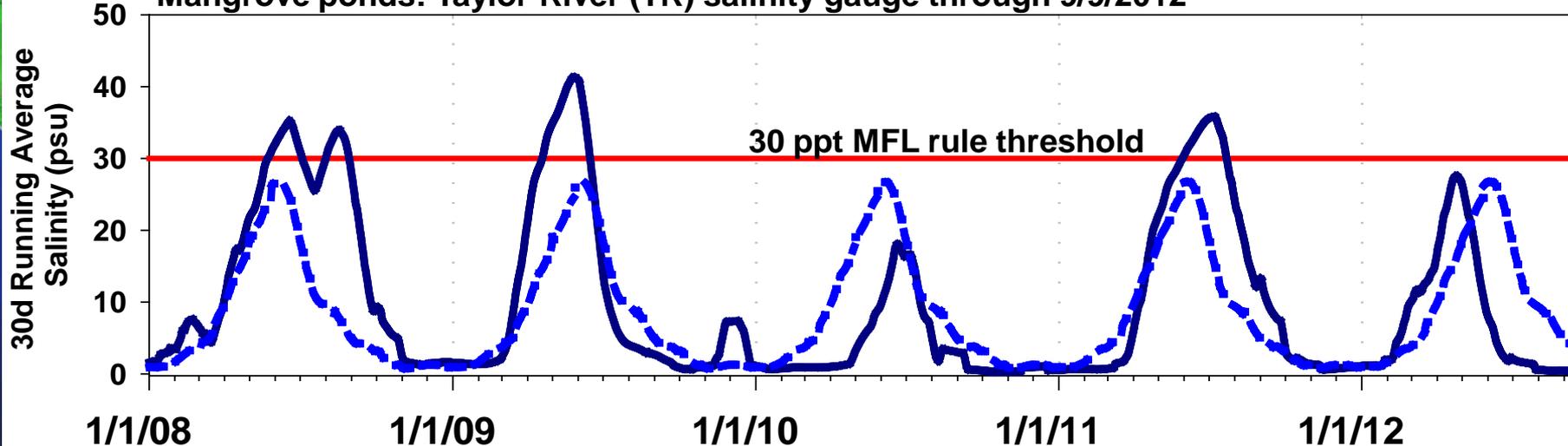


Biscayne Bay Salinity



Tracking Salinity in Florida Bay

Mangrove ponds: Taylor River (TR) salinity gauge through 9/9/2012



-- Typical conditions — Actual conditions

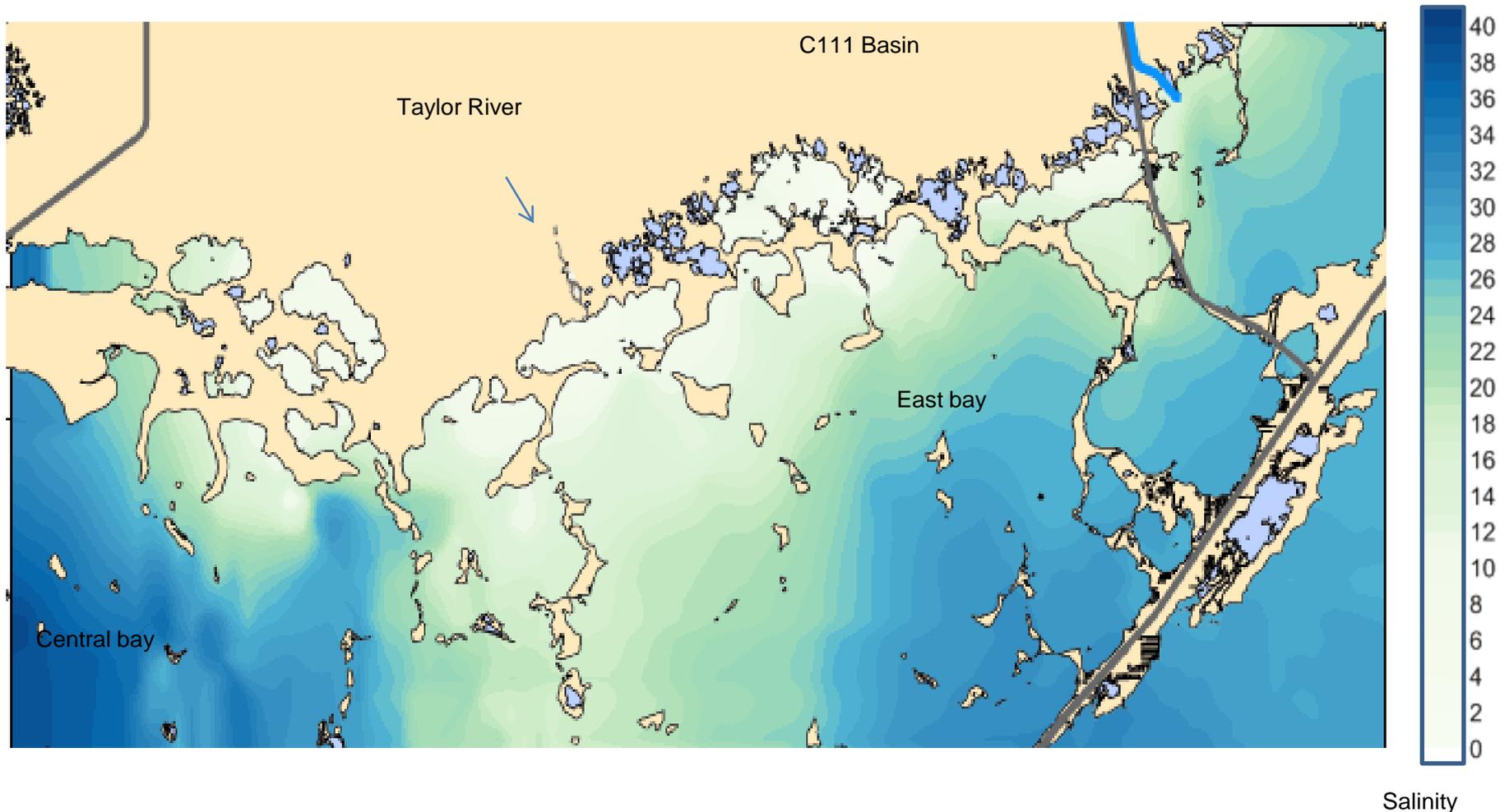
Florida Bay MFL salinity threshold was exceeded in late June of 2011

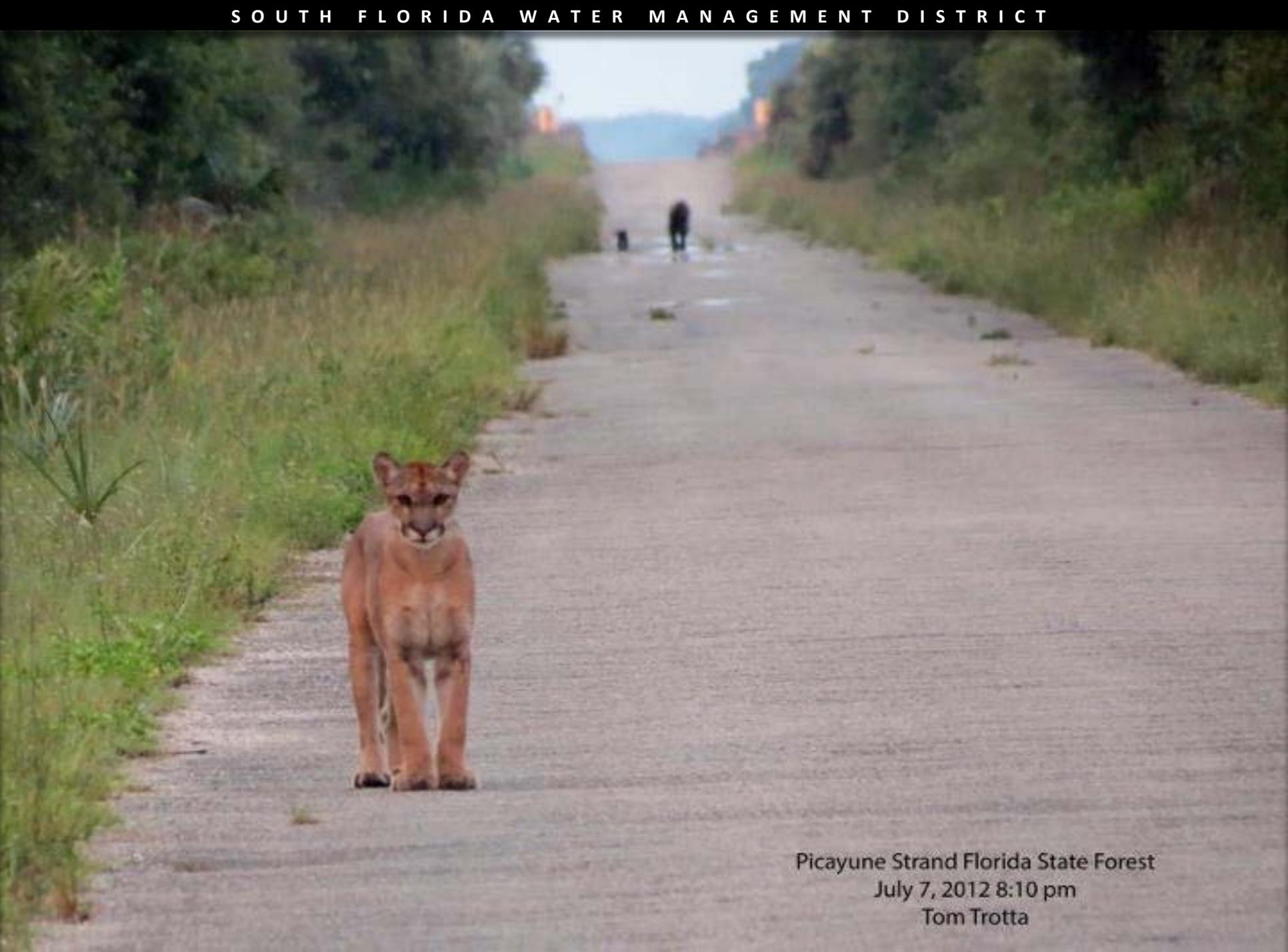
TR

★ Salinity gauge
★ Creek flow gauge

Impacts of T.S. Isaac on Florida Bay

Dataflow salinity distribution on days 10-11 post-storm, Sept 7-8, 2012





Picayune Strand Florida State Forest
July 7, 2012 8:10 pm
Tom Trotta

Stormwater Treatment Areas Tropical Storm Isaac Impacts

High Flows & Water Depths in Everglades Agricultural Area STAs:

STA-1E, STA-1W, STA-3/4:

- 24 hour maximum inflows 4 days following storm
- Implemented flood control diversions to WCA-1 on 8/27
- STAs continued to receive high inflows for two weeks
- STA-1W most affected by high flows and deep water conditions

STA-2

- High inflow volume
- Compartment B inflow gates opened to relieve inflows to STA-2

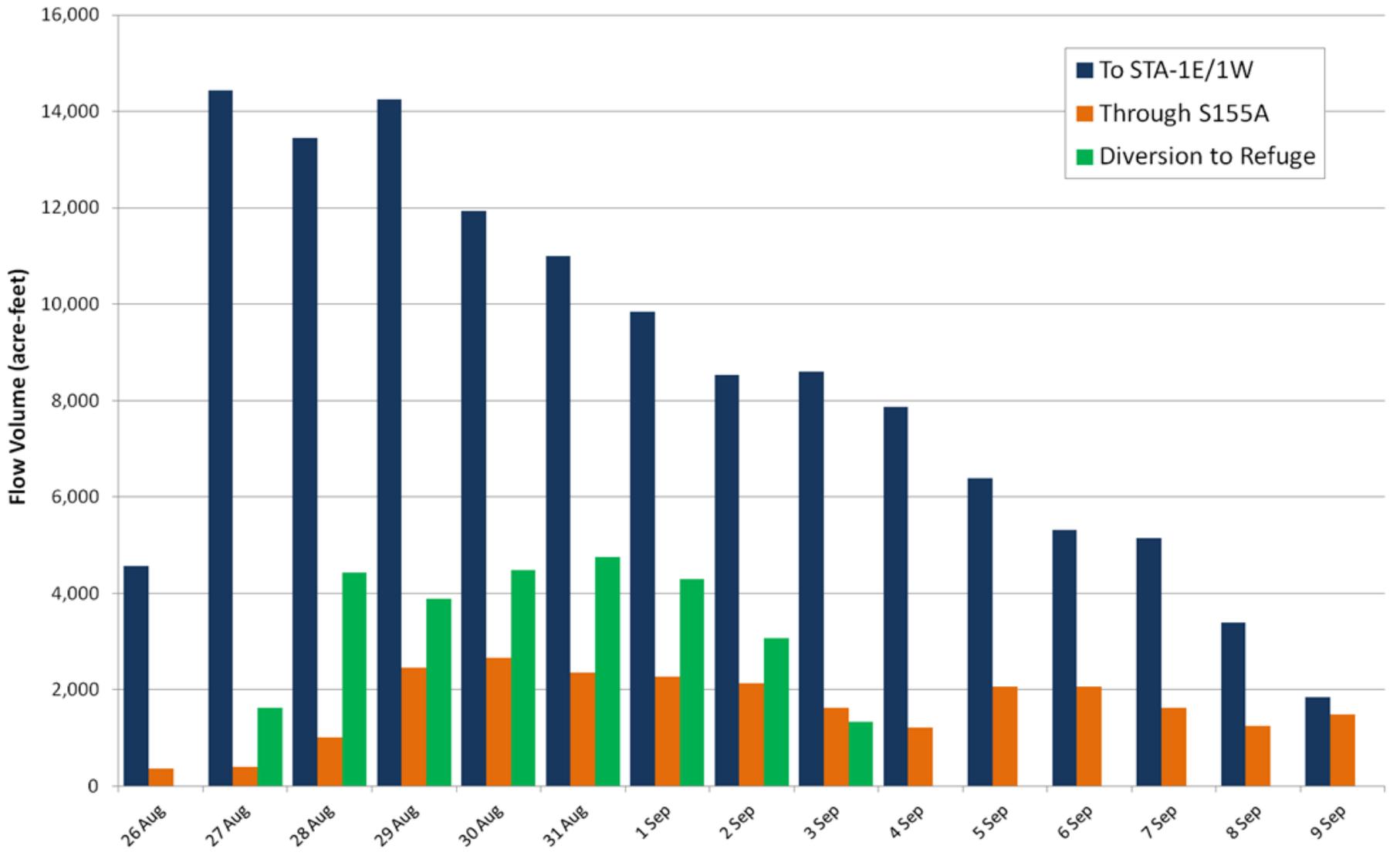
STA-5: Moderate inflow volume

STA-6: Low inflow volume



Inflow gate into STA-1W fully opened.

Summary of Flows to STA -1E and STA-1W, Diversions to Loxahatchee National Wildlife Refuge and Transfers to Eastern C-51 Basin





Loxahatchee National Wildlife Refuge Sampling

**Routine monthly sampling on
September 5th and 6th**

Refuge compliance stations
LOX3 through LOX16

STA Damage

- **No structural damage sustained within STA treatment works**
- **Minimal damage to aquatic vegetation observed**
STA vegetation in good condition prior to event
Will continue to assess potential storm effects
Minimal wind damage
- **Culvert washed out downstream of Lakeside Ranch STA**

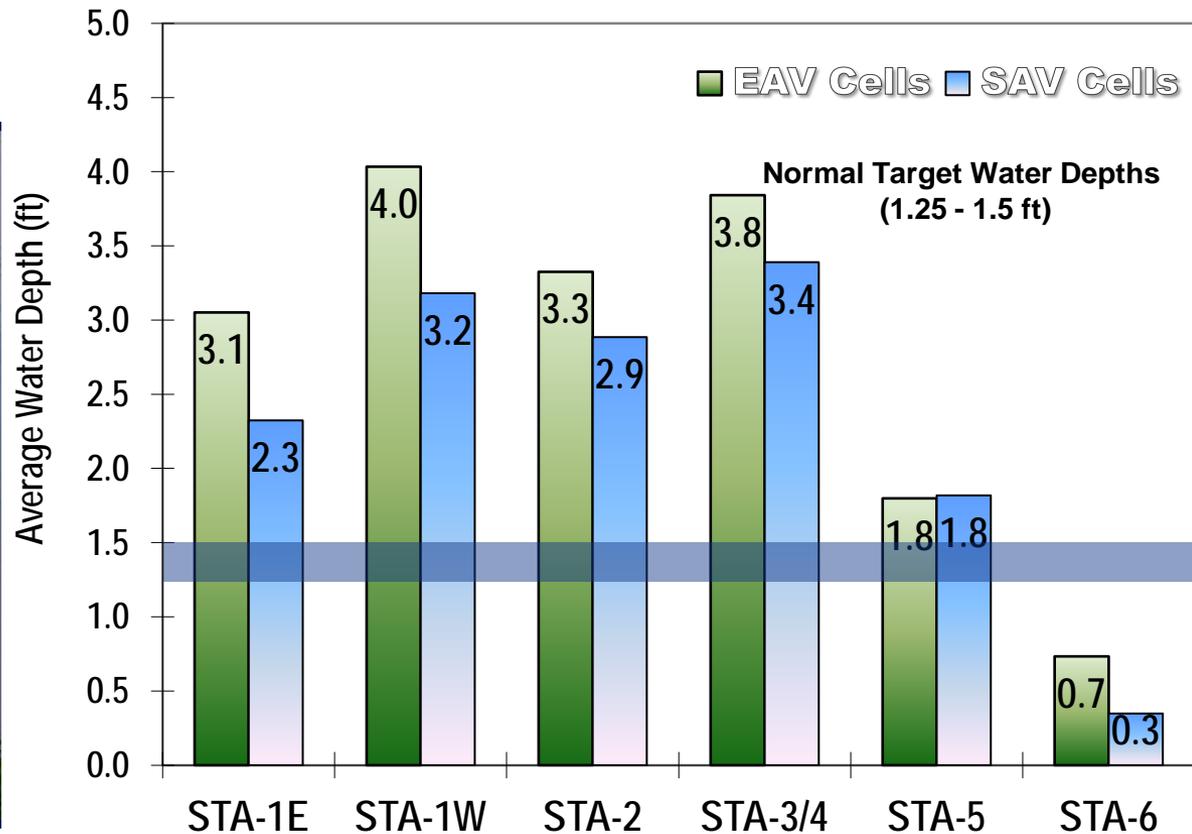


Rollup of Submerged Aquatic Vegetation in STA-2 Cell 2.

STA Water Depths

Except for STA-6 water depths remain above target

Stages on August 31, 2012

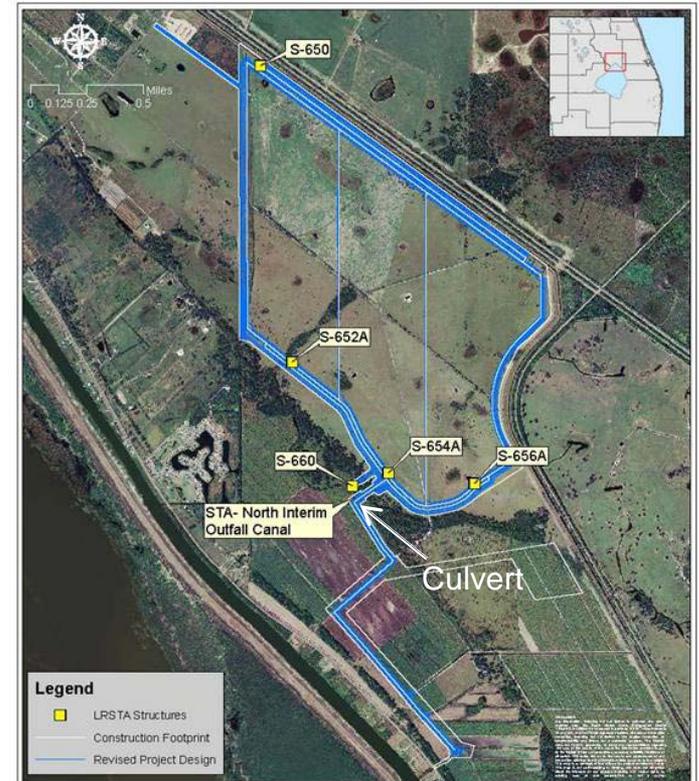


Northern STAs: Lakeside Ranch Damage



*Photo of damaged outflow structure 8/28/12
(looking southeast from downstream end)*

Culvert washout near Lakeside Ranch STA



ERCPC
South Florida Water Management District
2301 Center Park West Drive, Suite # 150
West Palm Beach, FL 33409
Tel # (561) 242-5520

Lakeside Ranch STA
Project Location



www.sfwmd.com
Lakeside Ranch STA
9/1/10

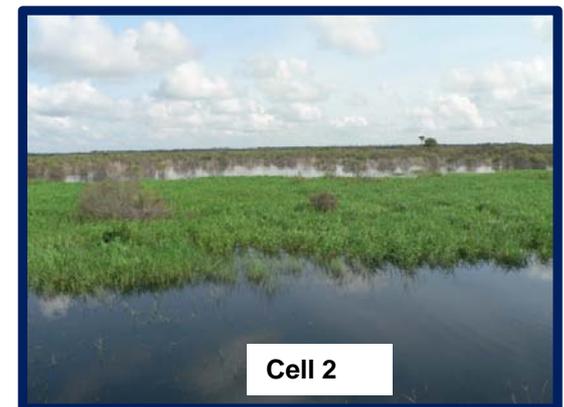
Northern STAs: Taylor Creek

- STA & surrounding areas flooded
 - Inflow auto sampler rendered inaccessible
 - No other significant impacts on infrastructure or operations
- In anticipation of high rainfall volumes, the STA was shut down before the storm then put back online 2 days after the storm



Northern STAs: Nubbin Slough

- Severe flooding in the STA
- No structural damage sustained
- STA in start-up mode, but was shut down prior to storm and remains offline due to an old drainpipe that was discovered in Cell 1, conveying water into the seepage canal





Questions?