

MEMORANDUM

To: USACE Colonel Alan M. Dodd, Lt. Colonel Thomas Greco, Richard McMillen, SFWMD Blake Guillory, Dan Delisi, Terrie Bates, Jeff Kivett, Susan Gray, Peter Doering, DEP Herschel Vinyard

From: Periodic Scientists Conference Call Participants
Paul Tritaik & Joyce Palmer - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex
James Evans & Holly Milbrandt - City of Sanibel
Keith Kibbey - Lee County Environmental Lab
Connie Jarvis – City of Cape Coral
Keith Laakkonen - Town of Fort Myers Beach
Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: December 9 - 15, 2014

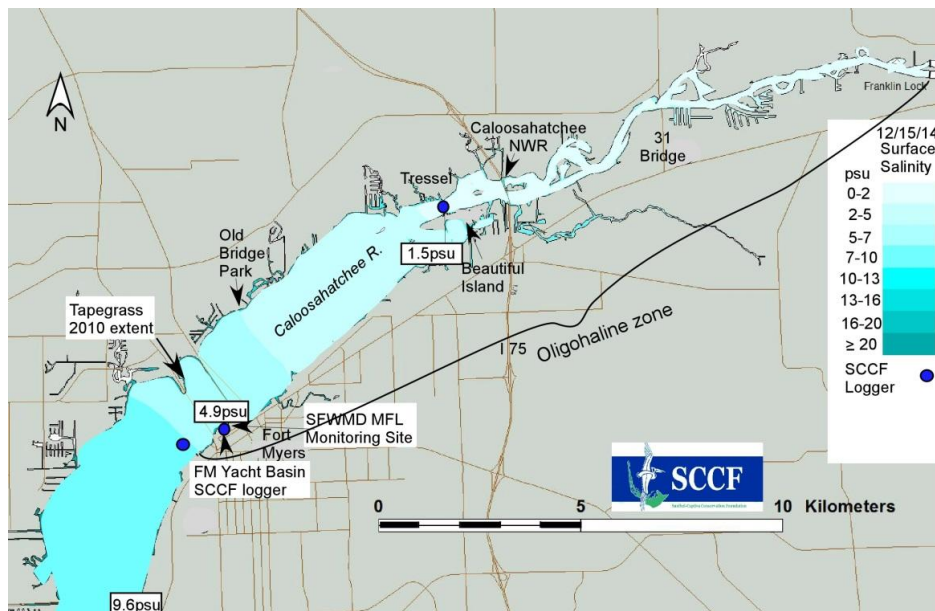
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: The oligohaline zone extends to Fort Myers. Over the past week flows to the estuary at S79 averaged **1,483 cfs**. Flows are currently in the suitable range for tape grass in the upper estuary and oysters in the lower estuary.

USACE Action: On 12/5/14 the USACE initiated a 7-day pulse release that increased targeted average flows to the Caloosahatchee at S79 to **1,500 cfs**. On 12/12/14 the pulse was continued through 12/18/14.

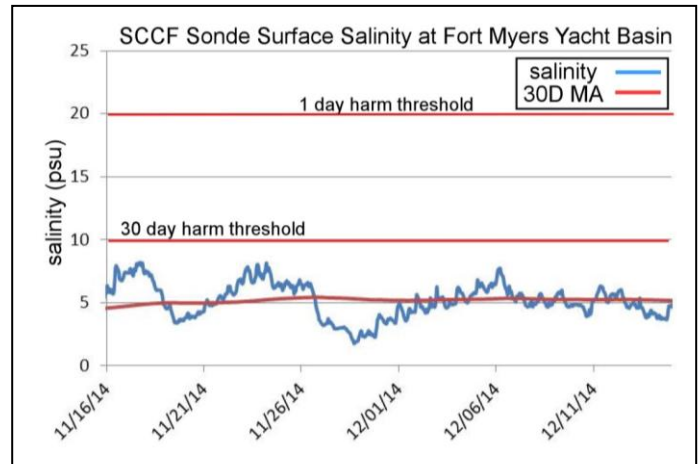
Recommendation: We recommend maintaining flows between **800 - 1,200 cfs** to meet the established ecological targets for the estuary. Maximized storage currently being achieved in the Kissimmee Chain of Lakes and floodplain helps manage high dry season rainfall and retain water in the headwaters of the system. We urge all additional storage in the Caloosahatchee watershed be utilized to moderate inflows to the estuary.

Lake Okeechobee Level:	15.35 ft. (Low Sub-Band)	Last wk: 15.53 ft.
Lake Okeechobee Inflow:	2, 485 cfs	Lake Okeechobee Outflow: 5,161 cfs
Weekly Rainfall:	WP Franklin 0.0" Ortona 0.04"	Moore Haven 0.0"
Salinity Fort Myers:	6.5 – 12.8 psu (SCCF RECON Marker 52)	Previous wk 7.3 – 13 psu
Salinity Beautiful Island:	1.0 - 2.8 (SCCF RECON Marker 18)	Previous wk 0.5 – 3.2 psu
Salinity Shell Point:	15 - 31 (SCCF RECON)	Previous wk: 17 - 32



Flow & Water Quality: Flows into the Caloosahatchee Estuary at S79 during the pulse release ending on 12/11/14 averaged **1,462 cfs** and over the past 7 days flows averaged **1,483 cfs** with **53%** of estuary flows originating from Lake Okeechobee releases. Over the past 14 days, approximately **26%** of total Lake Okeechobee outflows were delivered to the Caloosahatchee at S77.

ACOE December 5, 2014 Pulse Release					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/5/2014	1	2000	1380	1238	1104
12/6/2014	2	2400	2218	1500	1452
12/7/2014	3	2100	2087	1512	1369
12/8/2014	4	1400	1524	1030	1033
12/9/2014	5	1200	1315	1040	1264
12/10/2014	6	900	1095	889	1194
12/11/2014	7	500	615	562	591
7 day avg		1500	1462	1110	1143



Upstream of S79/Franklin Conditions: On 12/16/14 at the Olga Water Treatment plant, chlorides measured **66 mg/L**, apparent color was **100 CU** and turbidity measured **1.05 NTU**.

Upper Estuary Conditions: Surface salinities at the Fort Myers Yacht Basin are in the suitable range for tape grass. The oligohaline zone extends to Fort Myers.

Lower Estuary Condition: The salinity at Iona (**14 psu** on 12/15/14) and Shell Point (**24 psu** weekly average), were in the optimal range for oysters. Chlorophyll spikes above 10µg/L were recorded at Shell Point and the Gulf of Mexico RECONS.

McIntyre Creek & Tarpon Bay in J.N. "Ding" Darling NWR: Salinity at McIntyre Creek ranged from **29 to 33 psu** over the last week and CDOM ranged from **12 to 28 qse**. Salinity at Tarpon Bay ranged from **27 to 33 psu** and CDOM ranged from **18 to 33 qse**. Salinity at both locations is just below or in the lower end of the preferred range for shoal grass and turtle grass (30 to 40 psu).

Coastal Conditions:

Red Tide: On 12/12/14 FWRI reported no *Karenia brevis*, the Florida red tide organism, in samples collected the past week throughout Florida.

Wildlife Impacts: CROW, the wildlife rehabilitation clinic on Sanibel, has received and is treating **8** new double-crested cormorants suffering from brevetoxicosis.

Manatees: Over the past week Lee County Manatee Park staff report over 100 manatees congregating in the warm water of the Orange River by the FPL power plant. With the cold front numbers increased as water temperatures decreased.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Ft. Myers	2.4	180.6	1.8	0.86
Colonial Br.	6.5	164	1.5	0.90
Iona	5.3	137	1.7	1.01

Target light penetration: **CE**- Caloosahatchee Estuary =1 m
SCB-San Carlos Bay = 2.2 meters
 Definition of 25% I_z: **z** where **I** is 25% of surface **I**.
I = irradiance, **z**= depth

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/9/2014	Tues	1315	1040	1264
12/10/2014	Wed	1095	889	1194
12/11/2014	Thur	615	562	591
12/12/2014	Fri	1516	862	775
12/13/2014	Sat	2211	1391	1364
12/14/2014	Sun	2143	1491	1586
12/15/2014	Mon	1490	1082	1388
7 Day	Avg	1483	1045	1166