

**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: September 16 - 22, 2014

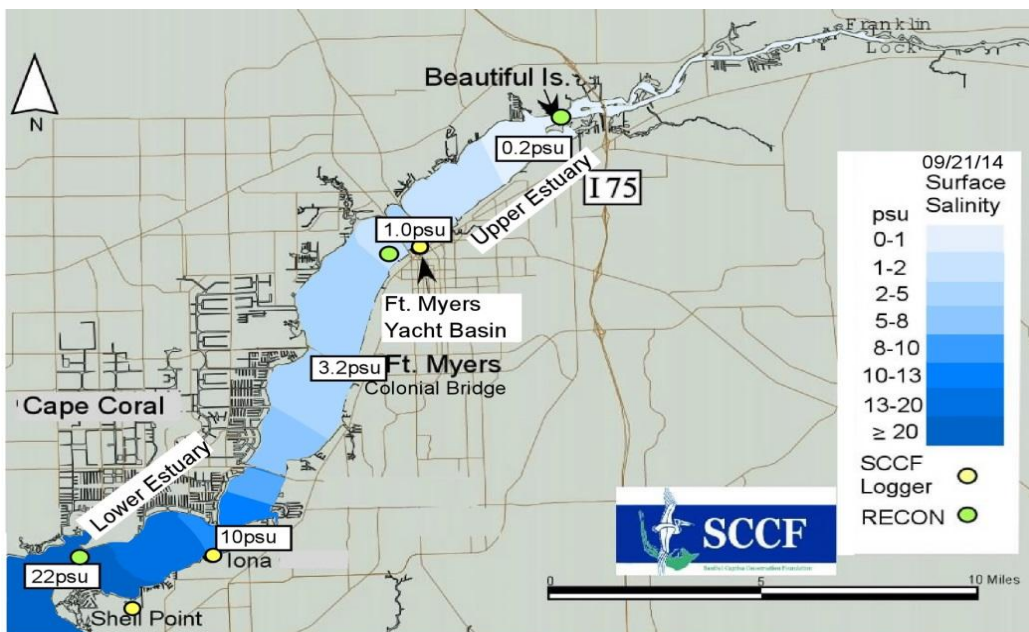
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

**Caloosahatchee Condition Summary:** The oligohaline zone extends from S79 downstream to the Cape Coral Bridge. Flows to the estuary at S79 averaged **2,221 cfs** over the past week with **98%** of flow originating from the watershed. Flows are currently in the suitable range for tape grass in the upper estuary, but **light levels are too low to sustain submerged aquatic vegetation at depth due to high CDOM. The salinity at Iona this week continues to be below the optimal range for oysters.**

**USACE Action:** On 9/12/14 and 9/19/14 the USACE initiated a 7-day pulse release with average flows of **650 cfs** to the estuary measured at S79.

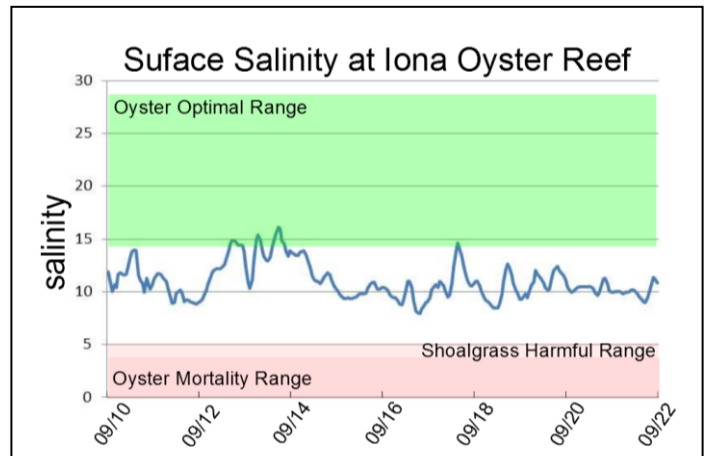
**Recommendation:** To meet ecological targets in the estuary at S79, flows should be maintained between **650 –1000 cfs**. Watershed runoff will likely provide adequate flows to meet or exceed this target, resulting in little to no water being needed from the Lake at S-77.

<b>Lake Okeechobee Level:</b>	<b>14.75 ft. (Low Sub-Band)</b>		Last wk: <b>14.56 ft.</b>
<b>Lake Okeechobee Inflow:</b>	<b>6,234 cfs</b>		<b>Lake Okeechobee Outflow: 0 cfs</b>
<b>Weekly Rainfall:</b>	WP Franklin 1.98"	Ortona 1.32"	Moore Haven 3.38"
<b>Salinity Fort Myers:</b>	<b>1.0 -7.3</b> psu (SCCF RECON Marker 52)		Previous wk <b>0.9 - 5.5</b> psu
<b>Salinity Beautiful Island:</b>	<b>0.2 -0.3</b> psu (SCCF RECON Marker 18)		Previous wk <b>0.2 – 0.4</b> psu
<b>Salinity Shell Point:</b>	<b>12 – 31</b> psu (SCCF RECON)		Previous wk: <b>13 – 32</b> psu



**Flow & Water Quality:** Flows into the Caloosahatchee Estuary at S79 over the 7 day pulse release initiated on 9/12/14 averaged **2,281 cfs**. Flows over the past 7 days averaged **2,221 cfs** with **98%** of estuary flows originating from the watershed. The past 14 days, approximately **2%** of Lake Okeechobee outflows were delivered to the Caloosahatchee via S77.

ACOE September 12, 2014 Pulse Release					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
9/12/2014	1	900	3054	1377	0
9/13/2014	2	1000	2899	1593	0
9/14/2014	3	900	2804	1363	0
9/15/2014	4	750	2143	1054	0
9/16/2014	5	400	1351	517	0
9/17/2014	6	300	1966	676	0
9/18/2014	7	300	1750	1137	92
<b>7 day Avg</b>		<b>650</b>	<b>2281</b>	<b>1102</b>	<b>13</b>



**Upstream of S79/Franklin Conditions:** On 9/23/14 at the Olga Water Treatment plant, chlorides measured **54 mg/L**, apparent color was **148 CU** and turbidity measured **1.01 NTU**.

**Upper Estuary Conditions:** Surface salinities at the Fort Myers Yacht Basin are in the suitable range for tape grass but **light levels are too low to submerged aquatic vegetation at depth**. The oligohaline zone extends to Cape Coral Bridge.

**Lower Estuary Condition:** The salinity at Iona (**10 psu**) is below the optimal range for oysters but the average salinity at Shell Point (**22 psu**) is in the optimal range for oysters. **Light levels are too low to sustain submerged aquatic vegetation at depth at the Sanibel Causeway.**

**McIntyre Creek and Tarpon Bay in J.N. "Ding" Darling NWR:** McIntyre Creek salinity decreased from **32 - 28.5 psu** over the last week and CDOM increased from **17 - 27 qse**. Tarpon Bay salinity dropped from **32 - 27.5 psu** and CDOM increased from **23 - 39 qse**. Salinity at both locations is below or in the lower end of the preferred range for shoal grass and turtle grass (**30 to 40 psu**).

**Oysters:** September sampling by FGCU reported disease prevalence of *Perkinsus marinus* of 26.6%-73.3. Disease intensity of *P. marinus* ranged from 0.40-0.73. (scale 0 = no infection, 1 = low, 3 = medium, 5 = heavy) Mean larval recruitment for the estuary was 7.10 spat/shell.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
<b>Target Values</b>	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
<b>Colonial Br.</b>	7.5	332	1.2	0.55
<b>Iona</b>	5.7	222	2.6	0.71
<b>Causeway</b>	4.3	103	5.2	1.03

Target light penetration: **CE-** Caloosahatchee Estuary =1 m  
**SCB-** San Carlos Bay = 2.2 meters  
 Definition of 25% lz: **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)
9/16/2014	Tues	1351	517	0
9/17/2014	Wed	1966	676	0
9/18/2014	Thur	1750	1137	92
9/19/2014	Fri	1937	794	172
9/20/2014	Sat	2496	864	0
9/21/2014	Sun	3032	1298	0
9/22/2014	Mon	3015	1450	0
<b>7 Day</b>	<b>Avg</b>	<b>2221</b>	<b>962</b>	<b>37</b>