Florida Department of Environmental Protection

Everglades West Coast and Caloosahatchee Basin Management Action Plan 2013 Progress Report

February 5, 2014





Agenda

- Overview of the Caloosahatchee and Everglades West Coast BMAP Progress Reports.
- Activities During the Reporting Period from Both BMAPs.
- Upcoming Activities.

Annual Reports Overview

- Everglades West Coast and Caloosahatchee BMAPs were adopted in November 2012.
- This is the first annual progress report on BMAP activities.
- Information was provided by the stakeholders on activities from December 1, 2012 through November 30, 2013.
- The reports include:
  - Background on the total maximum daily loads (TMDLs) and BMAP.
  - Activities during the reporting period.
  - Water quality and biological monitoring.

BMAP [403.067(7)]

- Document a phased approach to achieve adopted the TMDLs.
- Itemize initial set of total nitrogen (TN) load reduction activities and projects.
- Identify needs for additional study and monitoring.
- Allow for participation of stakeholder, partners and interested parties.

Everglades West Coast

TMDLs

Hendry Creek

Freshwater Segment

- TN Target = 0.74 mg/l
- Load Reduction = 32%

Marine Segment

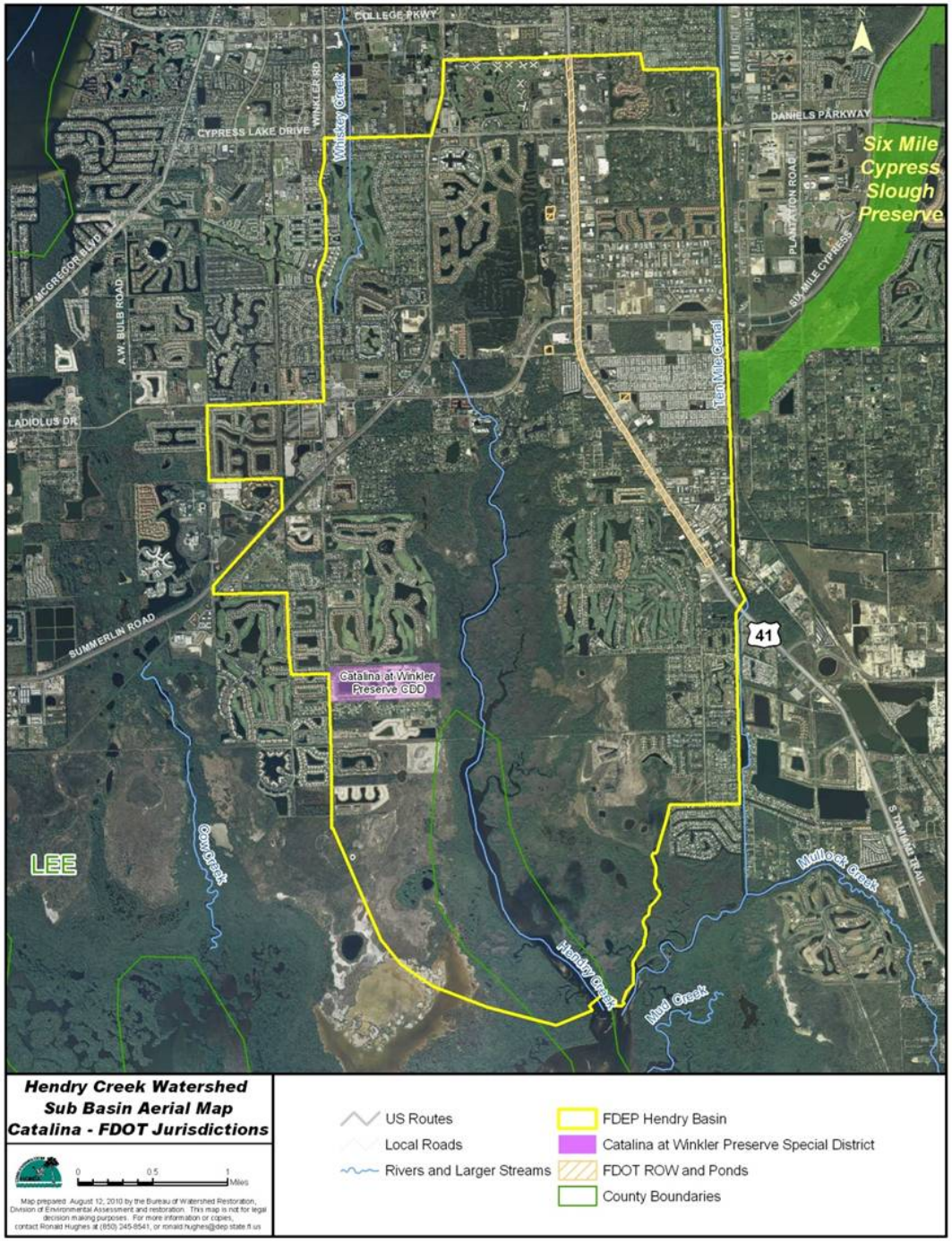
- TN Target = 0.6 mg/l
- Load Reduction = 44%

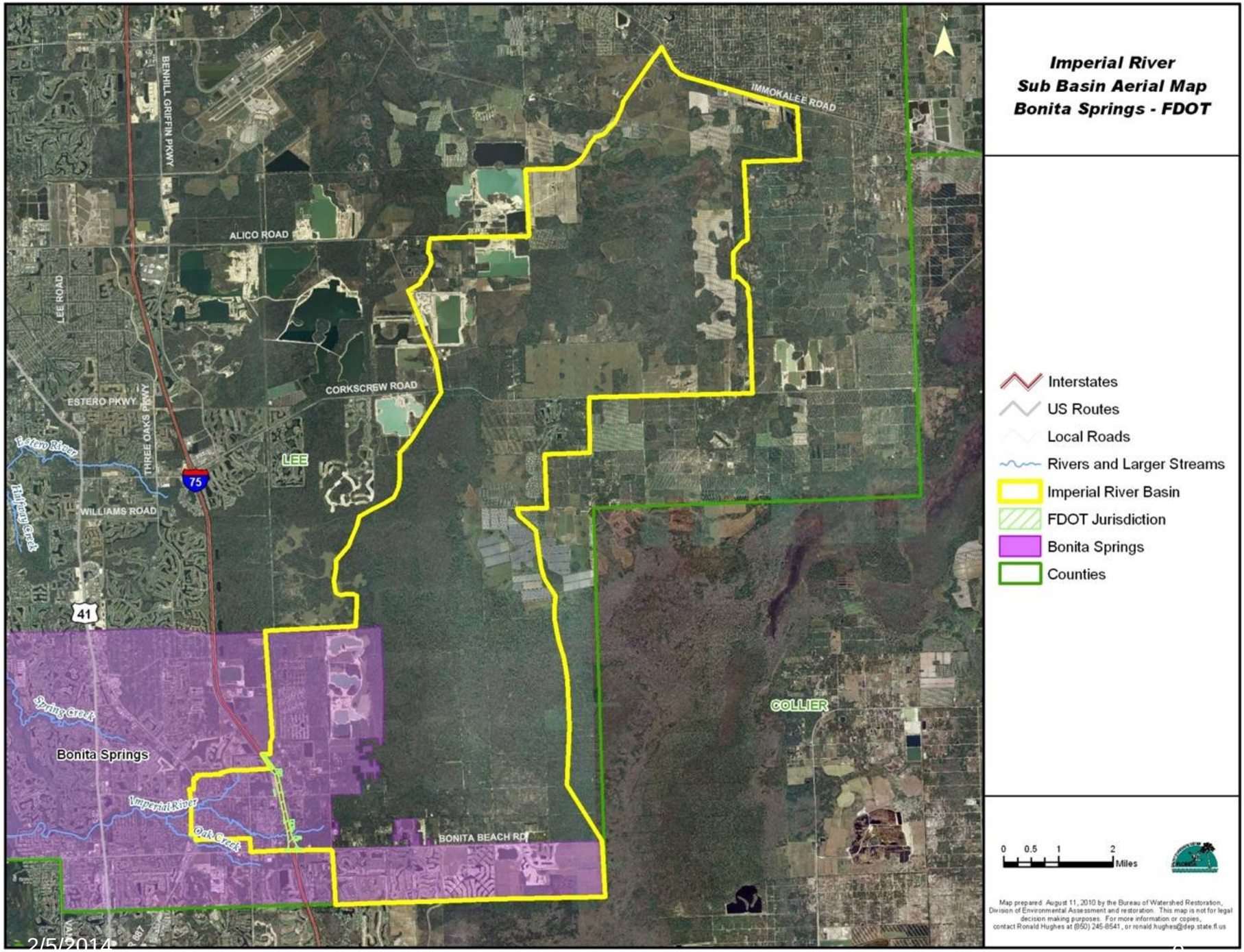
Imperial River

Freshwater Segment

- TN Target = 0.74 mg/l
- Load Reduction = 24.87%

No definition of loading sources, differentiating wastewater treatment facilities, stormwater and agricultural sources.


COLLEGE PKWY
CYPRESS LAKE DRIVE
WINKLER RD
Whiskey Creek
DANIELS PARKWAY
Six Mile Cypress Slough Preserve
PLANTATION ROAD
SIX MILE CYPRESS
MCGREGOR BLVD
A.W. BULB ROAD
LADIOLUS DR
Ten Mile Canal
SUMMERLIN ROAD
Catalina at Winkler Preserve CDD
41
LEE
Green Creek
Hendry Creek
Mud Creek
Mullock Creek
S TAMIAMI TRAIL
Hendry Creek Watershed
Sub Basin Aerial Map
Catalina - FDOT Jurisdictions
0
0.5
1
Miles
Map prepared: August 12, 2010 by the Bureau of Watershed Restoration, Division of Environmental Assessment and restoration. This map is not for legal decision making purposes. For more information or copies, contact Ronald Hughes at (850) 245-8541, or ronald.hughes@dep.state.fl.us
US Routes
Local Roads
Rivers and Larger Streams
FDEP Hendry Basin
Catalina at Winkler Preserve Special District
FDOT ROW and Ponds
County Boundaries


Imperial River
Sub Basin Aerial Map
Bonita Springs - FDOT
IMMOKALEE ROAD
BENHILL GRIFFIN PKWY
ALICO ROAD
LEE ROAD
CORKSCREW ROAD
ESTERO PKWY
THREE OAKS PKWY
Estero River
Halfway Creek
WILLIAMS ROAD
LEE
75
41
Spring Creek
Bonita Springs
Imperial River
Oak Creek
BONITA BEACH RD
COLLIER
Interstates
US Routes
Local Roads
Rivers and Larger Streams
Imperial River Basin
FDOT Jurisdiction
Bonita Springs
Counties
0 0.5 1 2
Miles
Map prepared August 11, 2010 by the Bureau of Watershed Restoration, Division of Environmental Assessment and restoration. This map is not for legal decision making purposes. For more information or copies, contact Ronald Hughes at (850) 245-8541, or ronald.hughes@dep.state.fl.us

Adjustment of TMDL in the BMAP

- For purposes of initial allocation, loading assigned to stakeholders based on land uses.

- Allocation based on relative amount of developed (non-natural) loading:

- **Hendry Creek**
  - Lee County.
  - Catalina.
  - Florida Department of Transportation (FDOT).
  - Agriculture.

- **Imperial River**
  - Lee County.
  - Bonita Springs.
  - FDOT.
  - Agriculture.

Accomplishments

- Hendry Creek – Lee County completed the Lakes Park Water Quality Restoration Project.
- Imperial River- City of Bonita Springs completed the Felts Avenue Stormwater Treatment.

Lee County Lakes Park Restoration Project

City of Bonita Springs Felts Avenue Project

Activities

Hendry Creek

- FDOT continued street sweeping activities and illicit discharge training.
- Stakeholders provided fertilizer ordinance workshops and compliance enforcement.
- The Florida Department of Agriculture and Consumer Services (FDACS) has enrolled 30.7 acres or 33.7% of agricultural lands in the basin.

Activities, continued

Imperial River

- City of Bonita Springs continued education and outreach activities.
- FDOT distributes stormwater education information and implements Illicit Discharge Detection and Elimination Training.
- Lee County continued street sweeping and education and outreach efforts.
- FDACS has enrolled 6,274 acres (95%) of agricultural lands.

Activities, continued

Hendry Creek

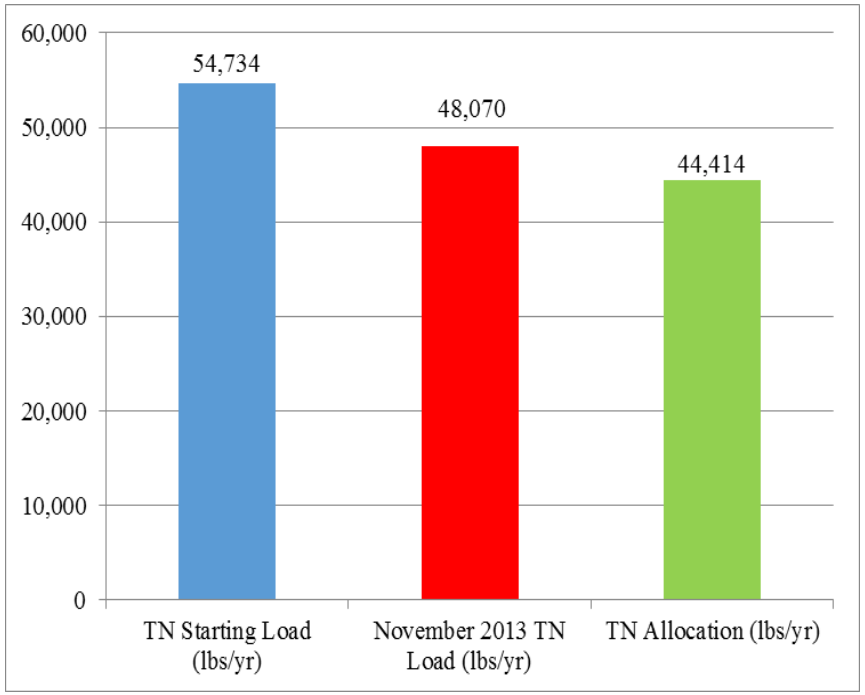
Entity	Project Number	Project Name	TN Reduction (lbs/yr)
Lee County	LC-1	Lakes Park Water Quality Restoration	4,533
Total	**N/A**	**Total Reductions in Reporting Period**	**4,533**

Imperial River

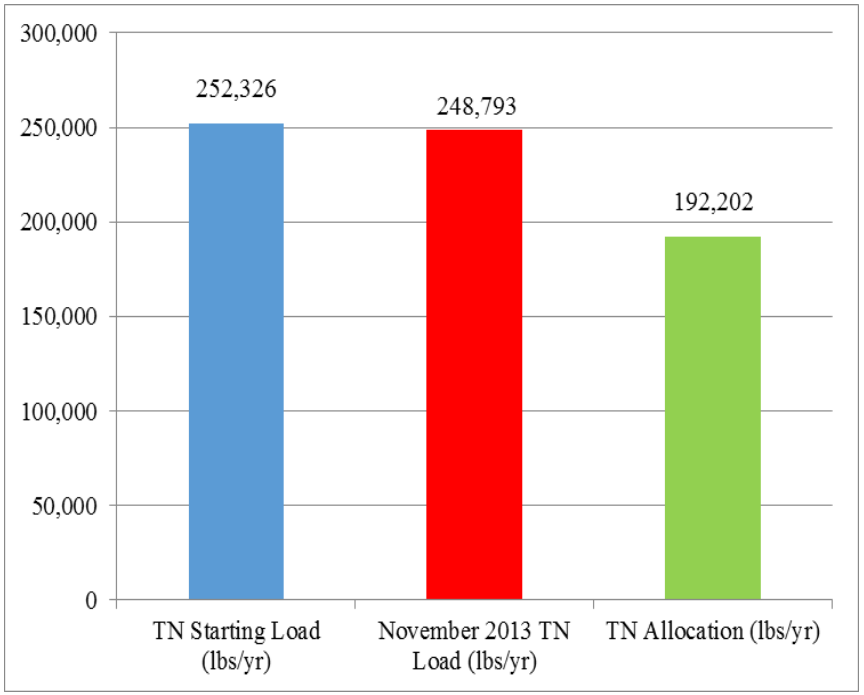
Entity	Project Number	Project Name	TN Reduction (lbs/yr)
Bonita Springs	BS-2	FYN Program	835
Bonita Springs	BS-7	Felts Avenue Stormwater Treatment	258
Total	**N/A**	**Total Reductions in Reporting Period**	**1,093**

Progress to the TMDL

- The total project reductions, including those shown as completed in the BMAP are 6,664 lbs/yr TN in the Hendry Creek Basin and 3,533 lbs/yr TN in the Imperial River Basin.



Hendry Creek Project Reductions



Imperial River Basin Project Reductions

Monitoring Activities

- The BMAP monitoring plan was designed to enhance the understanding of basin loads, identify areas with high nutrient concentrations, and track long-term water quality trends.

- A detailed water quality evaluation will be conducted no later than year four.

- Water quality monitoring is being conducted by:
  - Lee County (Hendry Creek and Imperial River).
  - Department, South District (Hendry Creek).
  - Bonita Springs (Imperial River).

Everglades West Coast Stakeholder Presentations

Caloosahatchee Estuary

Caloosahatchee Estuary TMDL

- 3 Segments: 3240A, 3240B, 3240C.
- TMDL for Nutrients
  - Causative Pollutant – TN.
  - Target: Seagrass light requirements in San Carlos Bay.
- TMDL= 23% reduction in TN loading (over the entire river basin).
- Adopted by the Department Secretary in 2009.

Summary of TMDL

Source of Total Nitrogen	Existing Loading (2004-2006 Avg)		
	Load (lb/yr)	Load (tons/yr)	% of Total
Upstream of S-79			
Lake Okeechobee	7,004,379	3,177	60.5%
NPS Loading	2,731,660	1,239	23.6%
Subtotal From S-79	9,736,039	4,416	84.1%
Estuarine (Below S-79)			
WWTP Loads - Direct	136,875	62	1.2%
WWTP Loads - Indirect	13,713	6	0.1%
NPS Loads	1,690,084	767	14.6%
Subtotal Below S-79	1,840,672	835	15.9%
Total to Estuary	11,576,711	5,251	100.0%
Load at TMDL	8,914,067	4,043	77.0%

Stakeholders

- Lee County.
- Charlotte County.
- City of Cape Coral.
- City of Ft. Myers.
- East County Water Control District.
- Lucaya Community Development District (CDD).
- FDOT.
- FDACS.

Accomplishments

- City of Ft. Myers completed Brookhill Drainage Improvements and Riverfront Improvement Phase 1.
- East County Water Control District Completed Mirror Lake Phase 1.
- Lee County Completed Powell Creek Filter Marsh and Extension Projects.

City of Ft. Myers Downtown Basin

Lee County Powell Creek Filter Marsh

Activities

- Charlotte County continued its education and outreach efforts.
- The City of Cape Coral has continued its outreach program which includes presentations, website and fertilizer information.
- The City of Ft. Myers continues to work on the Ford St. Filter Marsh. Baffle Boxes were installed as part of the Brookhill Utility Drainage Improvements.

Activities, continued

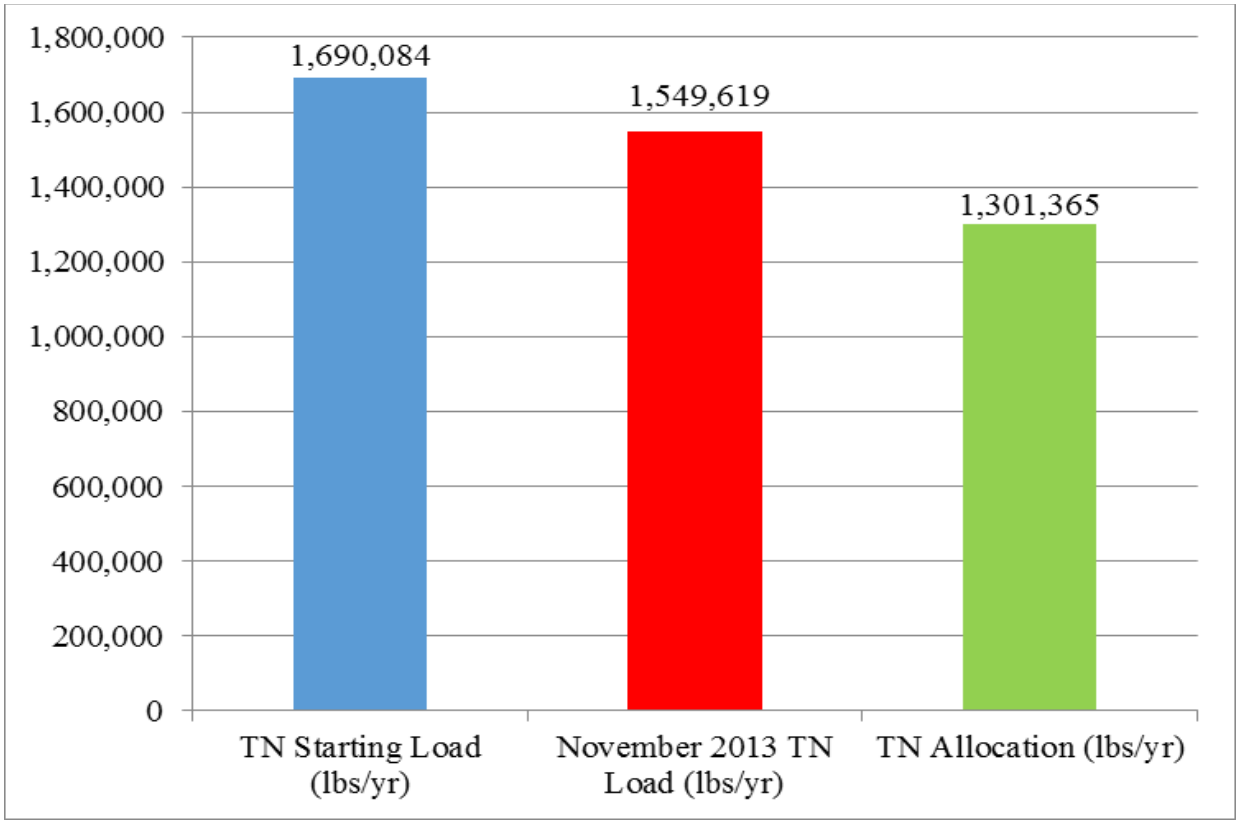
- East County Water Control District continued its education and outreach effort.
- FDOT is constructing various road widening projects that will provide a TN reduction above net improvement and continues to distribute educational information.
- FDACS continues to enroll agricultural lands in BMPs.

Activities, continued

Entity	Project Number	Project Name	TN Reduction (lbs/yr)
City of Fort Myers	FM-7	Brookhill Utility Drainage Improvement	11
City of Fort Myers	FM-10	Riverfront Development Phase 1	90
ECWCD	EC-6	Mirror Lake Phase I	1,357
Lee County	LC-17	NFM Powell Creek Extension/Lost Lane Levee	2,976
Lee County	LC-20	Powell Creek Filter Marsh	1,693
Total	**N/A**	**Total Reductions in Reporting Period**	**6,127**

Progress to the TMDL

- The total project reductions, including those shown as completed in the BMAP, are 140,465 lbs/yr TN.



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- A detailed water quality evaluation will be conducted no later than year four.

- Water quality monitoring is being conducted by:
  - The City of Cape Coral.
  - The City of Ft. Myers.
  - Lee County.
  - SFWMD.
  - Department, South District.

Monitoring Activities, Continued

- Seagrass sampling is being conducted by:
  - SFWMD monthly.
  - Department, South District bi-monthly

- Oyster monitoring is being conducted monthly by SFWMD, with density evaluated semi-annually.

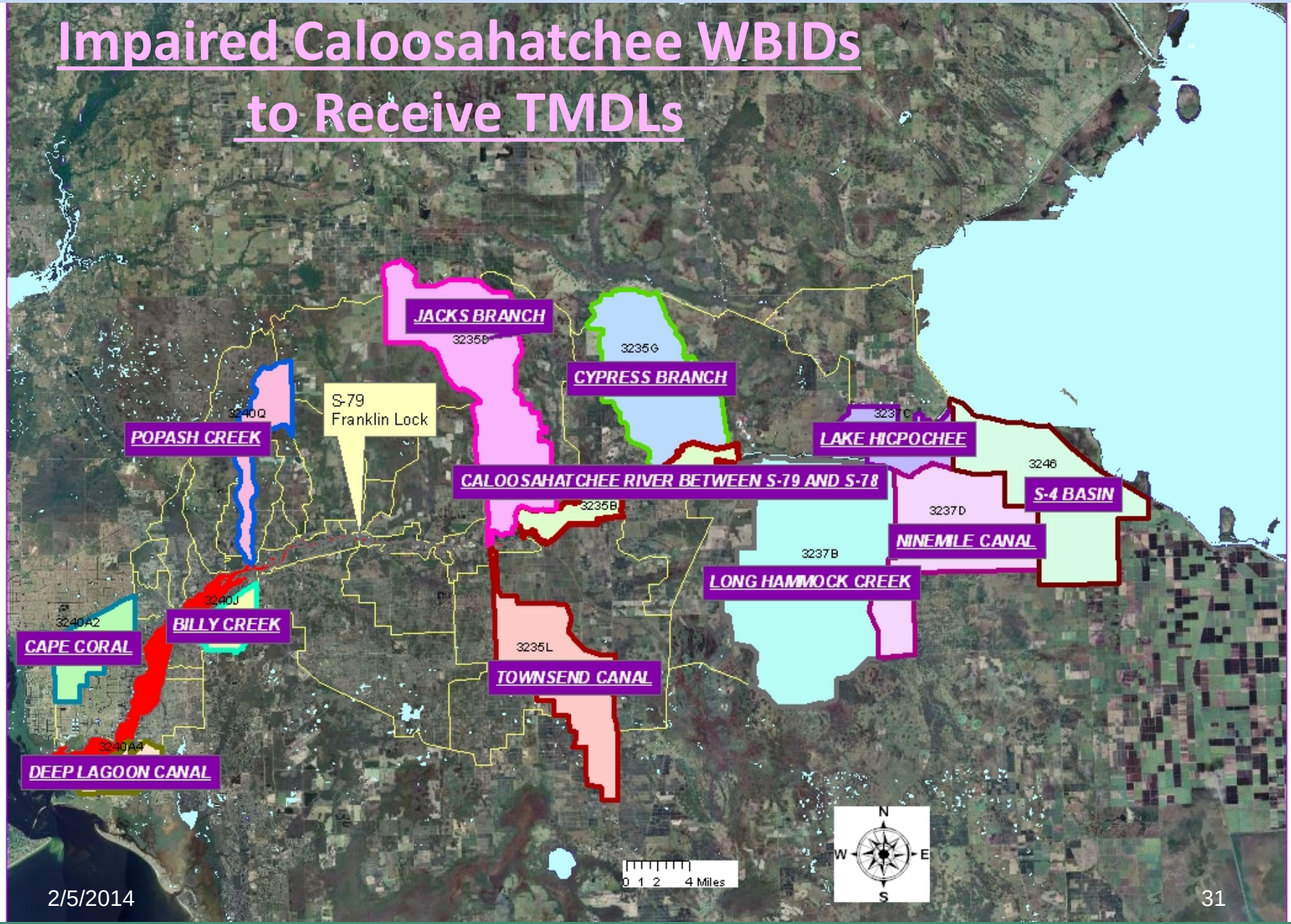
Caloosahatchee Estuary Stakeholder Presentations

Upcoming Activities

Upcoming Activities

- The Department will continue to work with stakeholders to identify relevant projects and funding mechanisms.
- We will continue to monitor watershed and project specific water quality to better identify areas with high TN concentrations and to site projects.
- The Department expects TMDLs for the Caloosahatchee above S-79 by March 2014.
- The Department anticipates initiating a BMAP process for the Caloosahatchee freshwater stretch following TMDL adoption.

IMPAIRMENT OVERVIEW



ArcNLET Modeling

- ArcNLET is a simplified conceptual model of groundwater flow and solute transport, and it can be used to calculate nitrate plumes and loads.
- ArcNLET has been used to calculate the associated nitrogen reductions with septic tank phase-out projects.
- The model has been calibrated, but the calibration data are limited in some areas.
- Need area-specific ground water monitoring data.

Questions and Discussion on the 2013 Progress Reports

Contact Information

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