

Florida's Water Quality Trading

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Agenda

- ▶ Florida's motivation for Water Quality Trading
- ▶ Background of Florida's Trading Legislation
- ▶ Basin Management Action Plans
- ▶ Lower St. Johns River Pilot Program
- ▶ Results
- ▶ Where are they now?

Motivation

- ▶ Allows market forces to find the most cost-efficient solutions to water quality problems
 - ▶ Different abatement costs between sources
- ▶ Cheaper generally means greater/faster reductions in loading for the same fixed costs
- ▶ Allows additional nexus (money) for addressing nonpoint sources
- ▶ Provides mechanism to offset loads from new growth, thereby allowing for growth.
- ▶ Development of site specific Numeric Nutrient Criteria

Background - Trading Legislation

- ▶ 2008: HB 547
 - ▶ Revisions to Florida Watershed Restoration Act (FWRA/ Section 403.067)
 - ▶ Authorized trading, but limited to the pilot project in the Lower St. Johns River Basin
 - ▶ Long-term plan: DEP thought that trading will be limited to basins with adopted Basin Management Action Plans (BMAPs)
 - ▶ BMAPs are TMDL implementation plans, and include implementation schedules and funding
 - ▶ Can include site-specific information needed to ensure trading is protective

Basin Management Action Plans - BMAPs

- ▶ In developing and implementing the TMDL for a water body, the department may develop a BMAP that addresses some or all of the watersheds and basins tributary to the water body.
 - ▶ BMAPs must:
 - ▶ Have established schedule for implementing the management strategies
 - ▶ Have established basis for evaluating the plan's management strategies
 - ▶ Equitably allocate pollutant reductions to individual basins, as a whole to all basins, or to each identified point source or category of nonpoint sources, as appropriate
 - ▶ Include milestones for implementation and water quality improvement, and an associated water quality monitoring component sufficient to evaluate whether reasonable progress in pollutant load reductions is being achieved over time
 - ▶ Identify the mechanisms that will address potential future increases in pollutant loading

Basin Management Action Plans - BMAPs

▶ Informal or “Pre-BMAP” Trading:

- ▶ Before the BMAP is finalized the initial allocations are brought to the stakeholders. At this point the stakeholders are able to shift allocation from one facility to the other.
- ▶ When there is agreement with the allocations the BMAP is finalized.
- ▶ No money is involved in this action
- ▶ Most entities with both wastewater facilities and MS4s agreed to this type of trade, with allocation moved from the wastewater facility to the MS4.
- ▶ This type of trading helps evolve the final adopted allocation towards the lowest cost alternatives.

▶ Formal Trading:

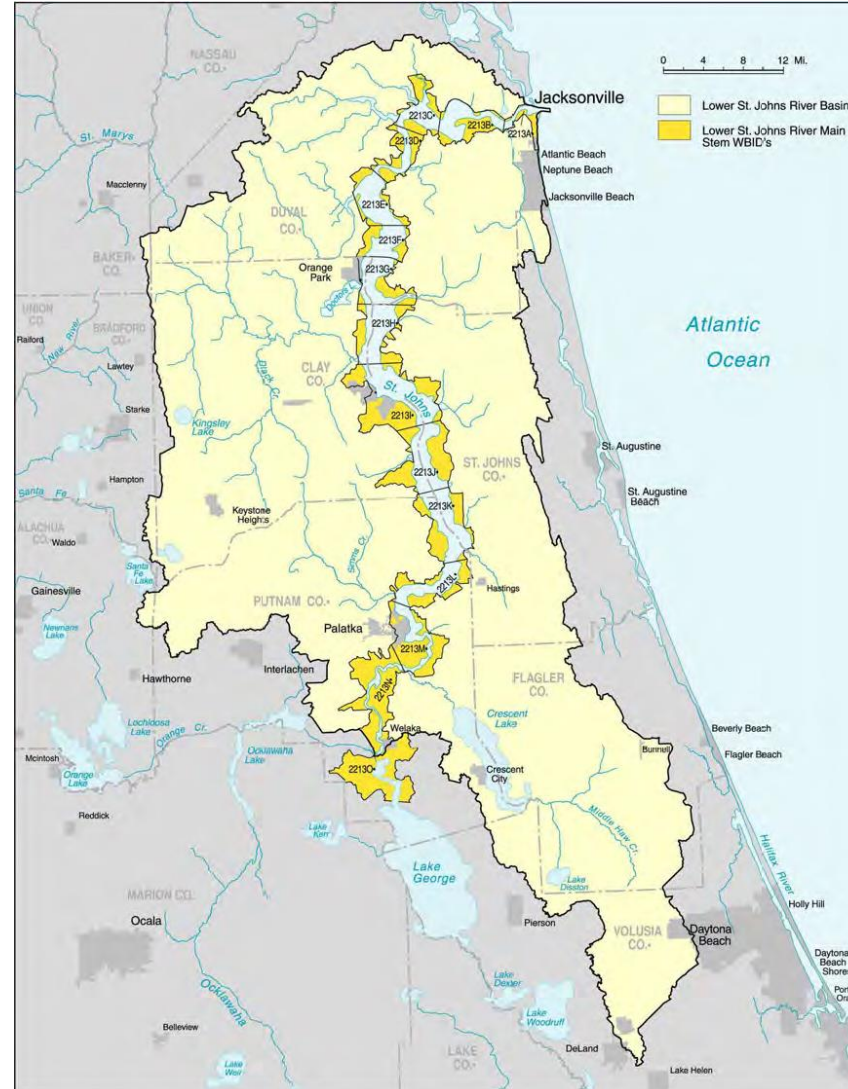
- ▶ After the BMAP is finalized stakeholders are able to trade water quality credits

Water Quality Credit Trading

SELLER	BUYER		
	Wastewater Facility	MS4 (Phase I and II)	Nonpoint Source
Wastewater Facility	Both Permits Revised	Sellers Permit Revised, and MS4 submits affidavit	Sellers Permit Revised, and NPS submits affidavit
Phase I MS4s (Phase II MS4s not allowed under pilot)	Both Permits Revised	Sellers Permit Revised, and MS4 Buyer submits affidavit	Sellers Permit Revised, and NPS submits affidavit
Nonpoint Source	Buyer's Permit Revised to incorporate NPS Control Activity, and buyer fully liable.	Limited to Phase I MS4s as buyer because Buyers Permit must be revised to include NPS Control Activity	Not Allowed

Lower St. Johns River - Background

- ▶ TMDL and BMAP apply to the main stem segments of the Lower St. Johns River between Buffalo Bluff and the mouth
 - ▶ 101 river miles
 - ▶ 115 sq. miles of water surface area
 - ▶ 2,750 sq. mile of drainage area



Lower St. Johns River - Background



FIGURE 2: MARINE AND FRESHWATER REACHES IN THE LOWER ST. JOHNS RIVER

Lower St. Johns River - BMAP

- ▶ The LSJR BMAP represents the collaborative effort of stakeholders to identify current and planned management strategies to reduce discharges of TN and TP. It contains both structural and non-structural strategies, including:
 - ▶ Wastewater treatment plant upgrades
 - ▶ Redirecting wastewater discharges to beneficial reuse for irrigation and other purposes
 - ▶ Stormwater retrofits
 - ▶ Urban Structural BMPs
 - ▶ Urban nonstructural BMPs such as cleaning and maintenance activities
 - ▶ Agricultural BMPs
 - ▶ Environmental education
 - ▶ Water quality credit trading

Lower St. Johns River - BMAP



FIGURE 4: POINT SOURCE FACILITIES IN THE FRESHWATER REACH



FIGURE 6: POINT SOURCE FACILITIES IN THE MARINE REACH

Lower St. Johns River - Tracking Implementation

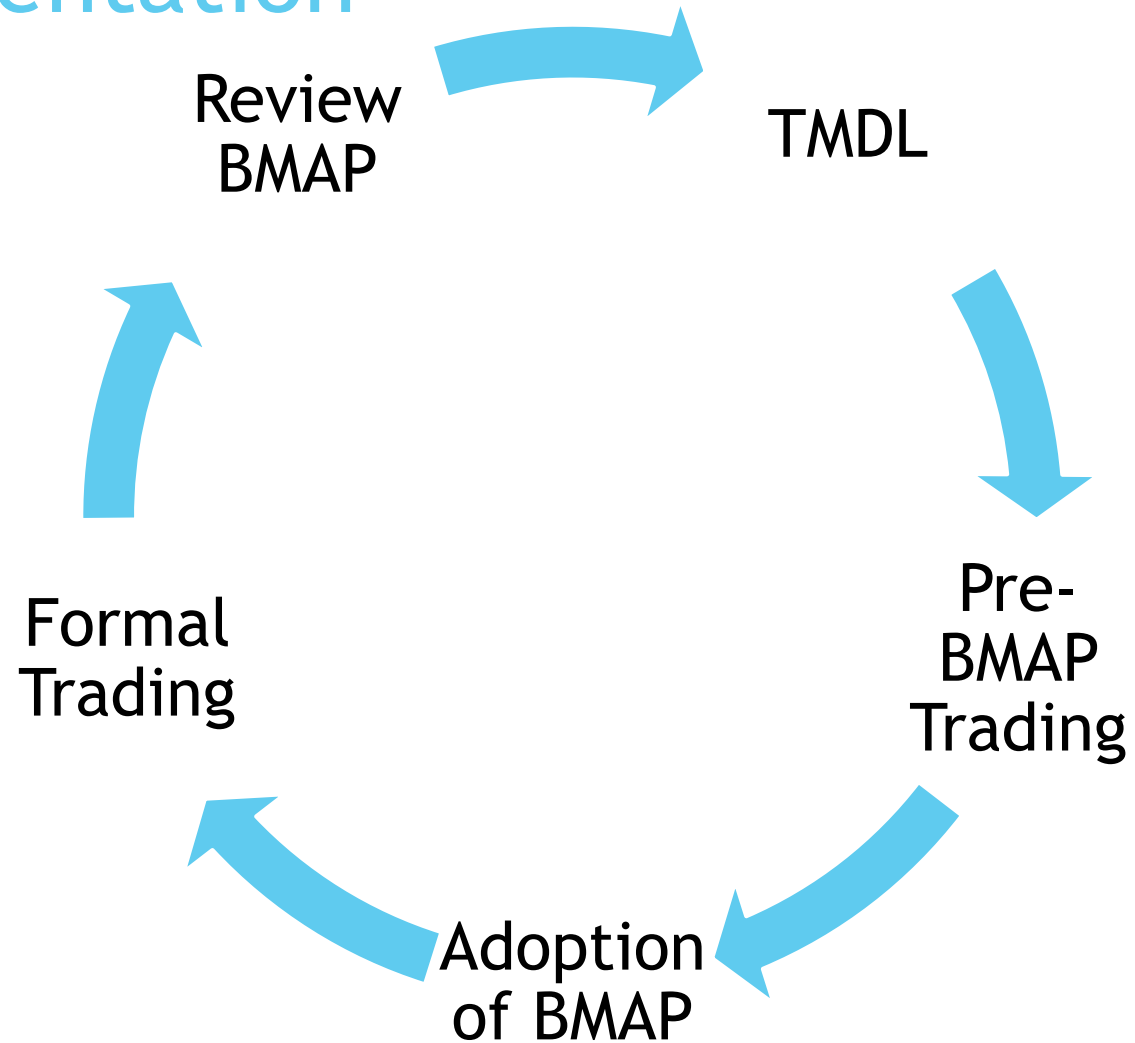


TABLE 32: PROPOSED BMAP ANNUAL REPORTING FORMAT

2008 Lower St. Johns River Main Stem Nutrient Basin Management Action Plan

____ YEAR ____ ANNUAL IMPLEMENTATION REPORT

REPORTING ENTITY: _____ DATE: _____

Note: Relevant MS4 activities, whether contained in the BMAP or not, may be included in this report.

IMPLEMENTATION STATUS – BMAP MANAGEMENT STRATEGIES

1 BMAP PROJECT #	AFFECTED AREA (WBID)	2 BRIEF DESCRIPTION	3 PROJECTED START/END	4 PROJECT/ACTIVITY STATUS	5 TN OR TP REMOVAL ESTIMATE (LBS/YR)		6 PROJECT MONITORING RESULTS	7 COMMENTS
					Total	Interim		
Shade if also an MS4 activity								

NEW MANAGEMENT STRATEGIES

1 BMAP PROJECT #	AFFECTED AREA (WBID)	2 BRIEF DESCRIPTION	3 PROJECTED START/END	4 PROJECT/ACTIVITY STATUS	5 TN OR TP REMOVAL ESTIMATE		6 PROJECT MONITORING RESULTS	7 COMMENTS
					Total	Interim		
Shade if also an MS4 activity								

City of Palatka WWTF 5,954.7
 FL0040061

Facility Name	Project Number	Description	Deadline	Project TP Reduction (kg/yr)	Project TP Reduction (lbs/yr)
Palatka WWTF		Total Reduction Required		4,000.3	8,800.7
Palatka WWTF FL0040061	PAL-1	Reuse to golf course	Completed	1,730	3,806
Palatka WWTF FL0040061	PAL-2	Reuse to ball fields	10/31/2008	691	1,520
Palatka WWTF FL0040061	PAL-3	Reuse to cemeteries	10/31/2008	1,205	2,651
Palatka WWTF FL0040061	PAL-4	Reuse at WTP	12/31/2008	1,555	3,421
Palatka WWTF FL0040061	PAL-5	Zero discharge	12/31/2010	4,774	10,503
Palatka WWTF		Total Project Reductions		9,955	21,901
Palatka WWTF		Credit/(Deficit)		5,954.7	13,100.3
Palatka WWTF Total			Implementation Schedule		
Reuse to ball fields and cemeteries					
a. Final Plans and Specifications Complete			11/30/2007		
c. Begin Construction			12/01/2007		
d. End Construction			09/30/2008		
e. Begin Operation			09/30/2008		
f. Operational Level Attained			10/31/2008		
Reuse at WTP					
a. Final Plans and Specifications Complete			11/30/2007		
b. Begin Construction			12/01/2007		
c. End Construction			12/31/2008		
d. Begin Operation			12/31/2008		
e. Operational Level Attained			12/31/2008		
Zero Discharge					
a. Preliminary Plans Complete			01/31/2008		
b. Final Plans and Specifications Complete			10/31/2008		
c. Begin Construction			11/01/2008		
d. End Construction			05/30/2010		
e. Begin Operation			05/30/2010		
f. Operational Level Attained			12/31/2010		

Results: 2014

TABLE 13: PROGRESS TOWARDS THE TP TMDL IN THE FRESHWATER REACH

*Exceeded the total required reductions for the source category.

SOURCE	% OF CONTROLLABLE LOAD	STARTING LOAD (KG/YR)	2014 LOAD (KG/YR)	ALLOCATION (KG/YR)	REMAINING REDUCTIONS (KG/YR)	% COMPLETE
WWTF*	45%	81,015	37,881	44,386	0	100%
MS4	1%	1,500	1,256	1,256	0	100%
Non-MS4	7%	12,358	10,157	9,408	749	75%
Agriculture	47%	83,455	75,626	70,974	4,652	63%
Total	100%	178,329	124,920	126,025	5,401	90%

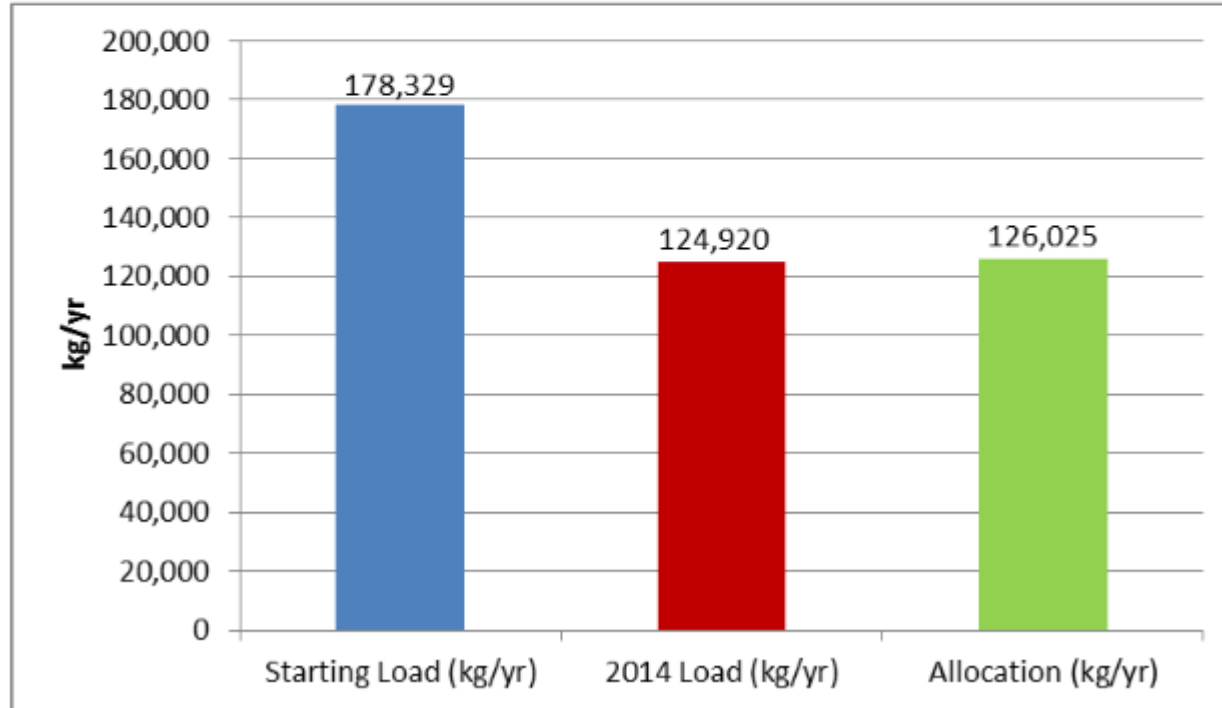


FIGURE 23: PROGRESS TOWARDS THE TP TMDL IN THE FRESHWATER REACH

Results: 2014

TABLE 14: PROGRESS TOWARDS THE TN TMDL IN THE FRESHWATER REACH

*Exceeded the total required reductions for the source category.

SOURCE	% OF CONTROLLABLE LOAD	STARTING LOAD (KG/YR)	2013 LOAD (KG/YR)	ALLOCATION (KG/YR)	REMAINING REDUCTIONS (KG/YR)	% COMPLETE
WWTF*	47%	364,650	195,560	237,200	0	100%
MS4	1%	9,731	8,685	8,685	0	100%
Non-MS4	11%	88,705	75,978	74,119	1,859	87%
Agriculture	40%	310,700	232,709	194,336	38,373	67%
Total	100%	773,786	512,932	514,340	40,232	84%

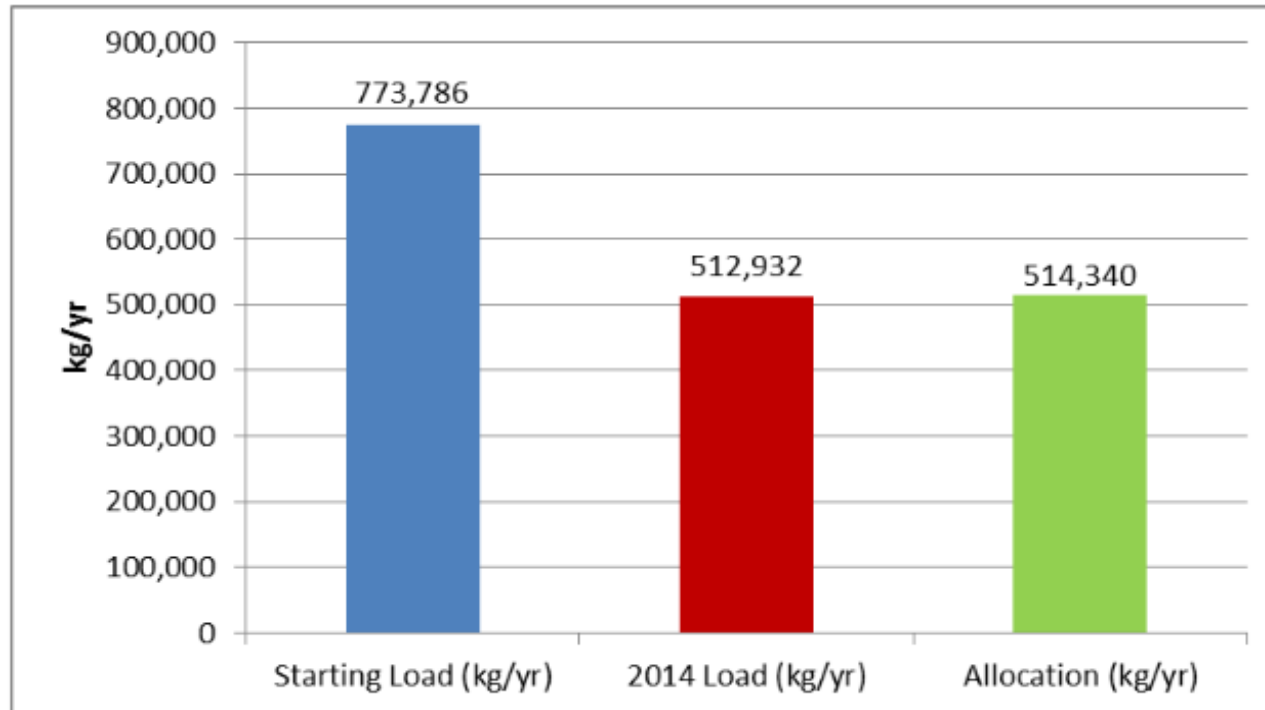
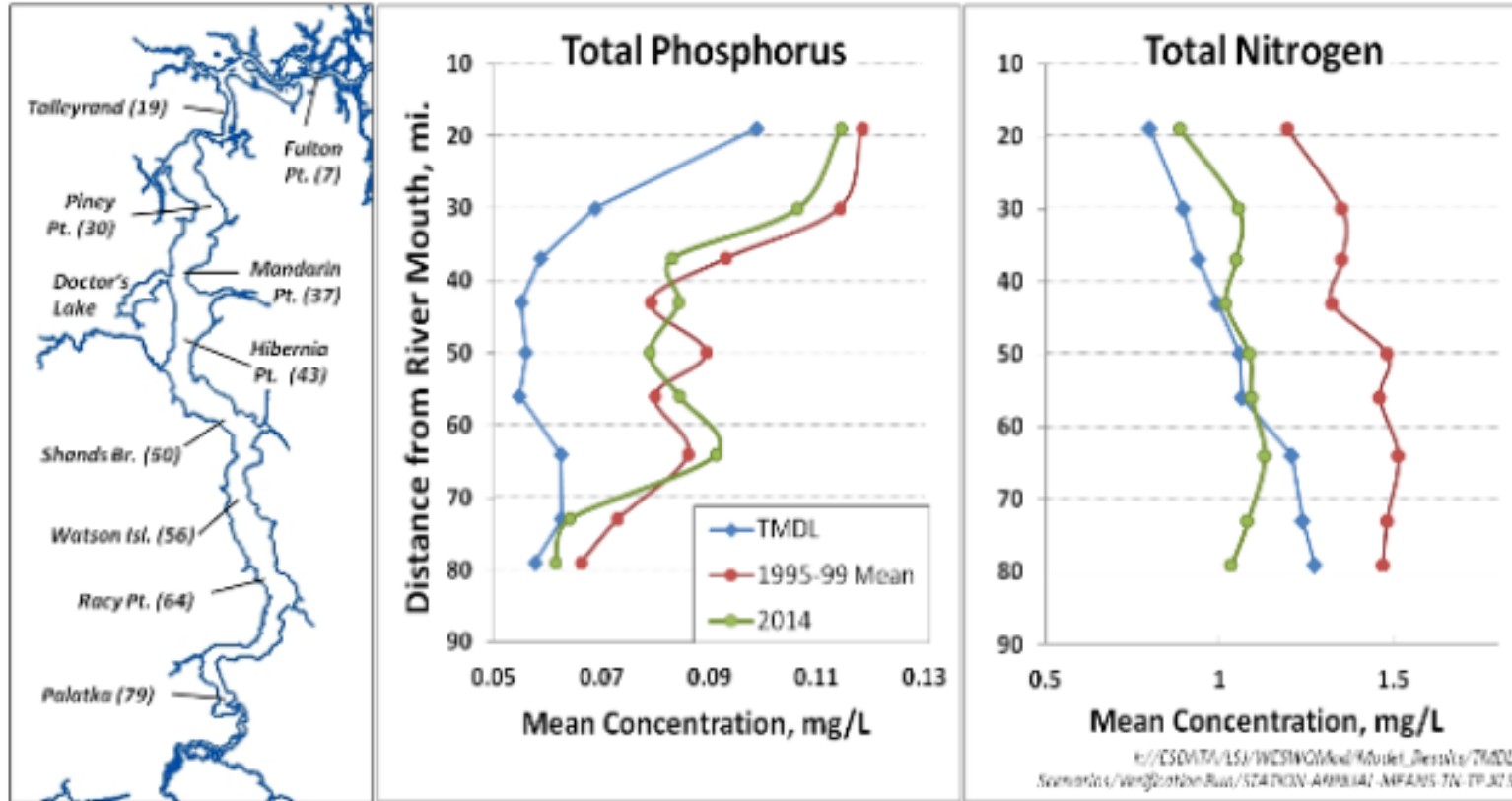


FIGURE 24: PROGRESS TOWARDS THE TN TMDL IN THE FRESHWATER REACH

Results: 2014



Note: TMDL mean concentrations were derived from the daily values for the verification simulation, based on hydrologic conditions for 1995–99 and all point and nonpoint source discharges at their allocated load. These concentrations are only a general reference, and should not be construed as river targets and compliance with the TMDL, which is based on chlorophyll-a and DO.

FIGURE 30: GEOMETRIC MEAN TP AND TN CONCENTRATIONS FOR THE TMDL CONDITION (BLUE), THE 1995–99 BASELINE CONDITION (RED), AND 2014 (GREEN)

What now?

- ▶ Annual Progress Reports are done for every finalized BMAP found at <http://www.dep.state.fl.us/water/watersheds/bmap.htm>
- ▶ Since the initial rule making for the Lower St.Johns River Basin BMAP:
 - ▶ 21 new BMAPs state wide
 - ▶ 4 new BMAPs are currently un-finalized and holding public meetings

Thank you!

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<http://stjohnsriveralliance.com/>

<http://www.dep.state.fl.us/water/watersheds/bmap.htm>