

Florida Department of Environmental Protection



Caloosahatchee Estuary Basin Management Action Plan (BMAP) Stakeholder Meeting

March 4, 2015





Agenda

- SFWMD Data from the Caloosahatchee River Watershed Protection Plan
- New Tributary Total Maximum Daily Loads (TMDLs)
- Overview of the Caloosahatchee BMAP Monitoring Data.
- Discussion of future projects in tributary areas.
- Potential data needs.
- Next steps.



Caloosahatchee River Watershed Protection Plan 2015: Total Nitrogen Results



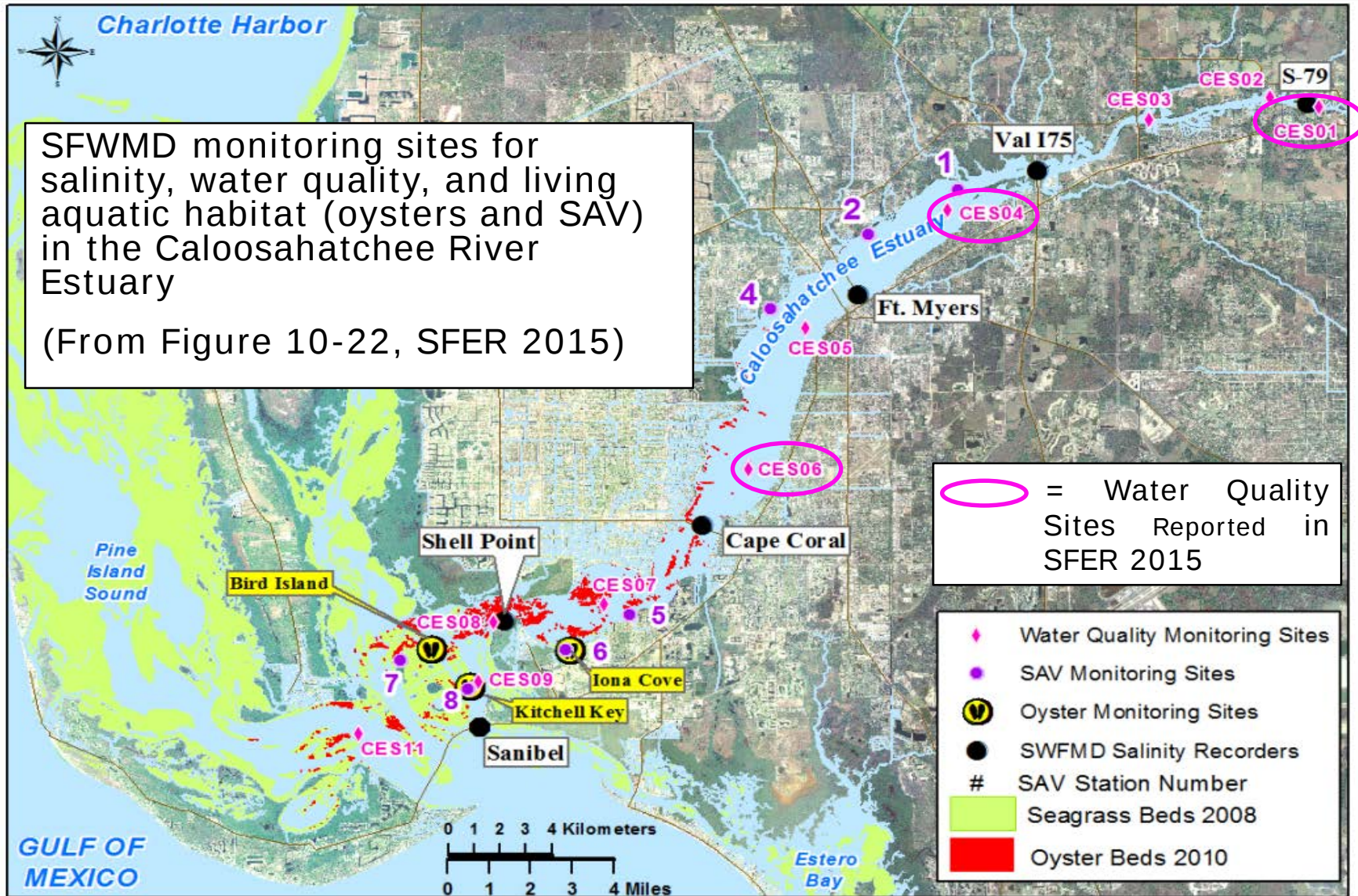
Caloosahatchee River Watershed Protection Plan 2015

- Final Caloosahatchee River Watershed Protection Plan 2015 (South Florida Environmental Report, SFER 2015) released this week (03/02/15) on the SFWMD web site (www.sfwmd.gov/sfer)
- Brief presentation today (03/04/15) summarizes total nitrogen (TN) concentrations reported in the SFER 2015:
 - Peter Doering (SFWMD) presented initial results at Northern Everglades Interagency Meeting in Ft. Myers (10/01/14)
 - Water column properties are determined from sampling at a depth of 0.5 m at approximately monthly intervals
 - Three stations (CES01, CES04, CES06) with the most complete records were selected to characterize estuarine water quality

Kevin Carter contact information: kecarter@sfwmd.gov
Office Phone: 561-682-6949 <https://my.sfwmd.gov/northerneverglades>

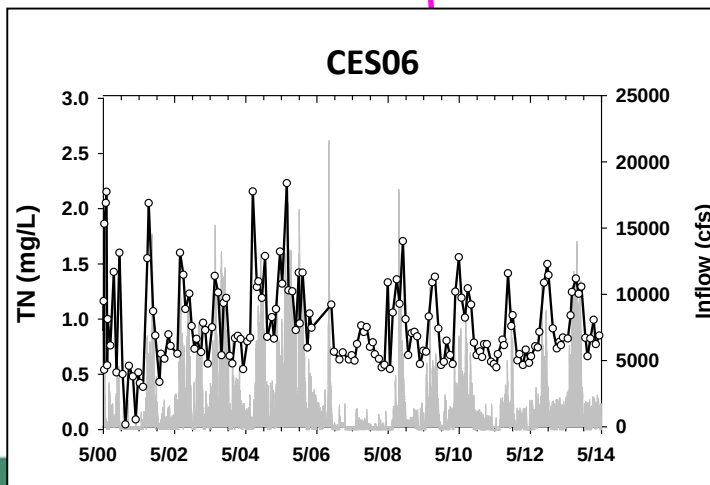
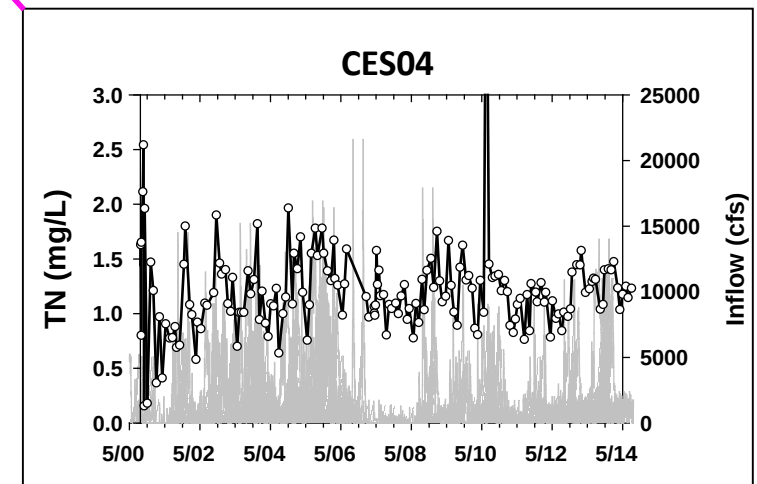
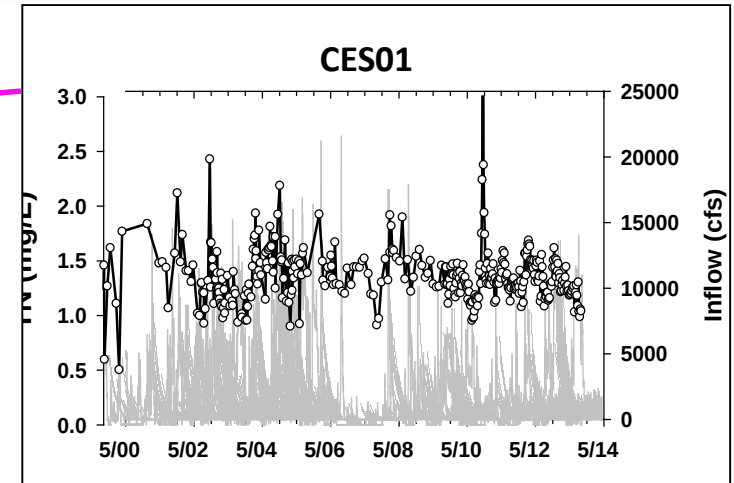
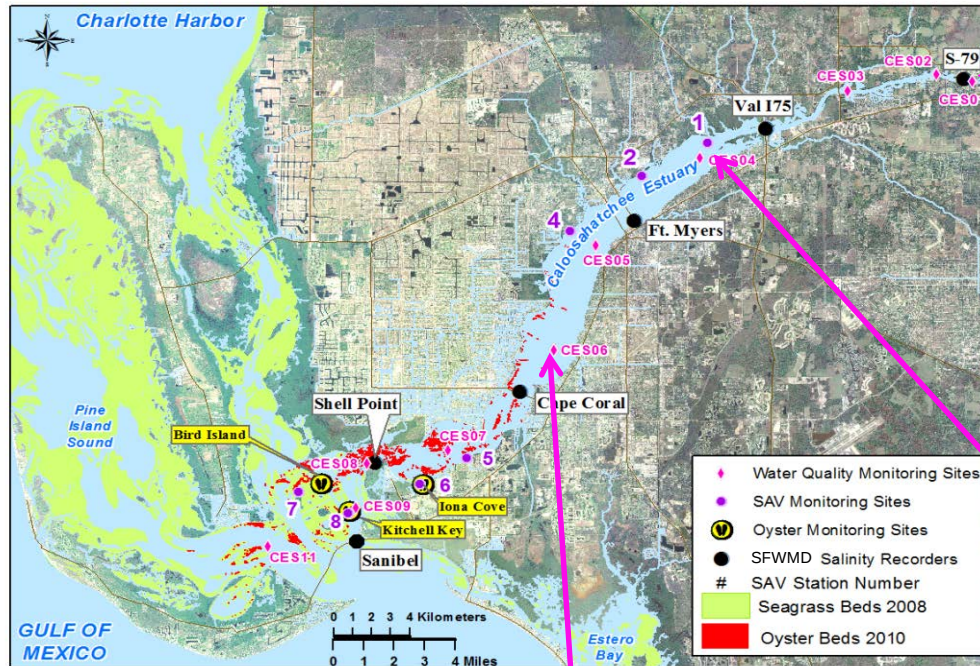


Caloosahatchee River Watershed Protection Plan 2015





Caloosahatchee River Watershed Protection Plan 2015



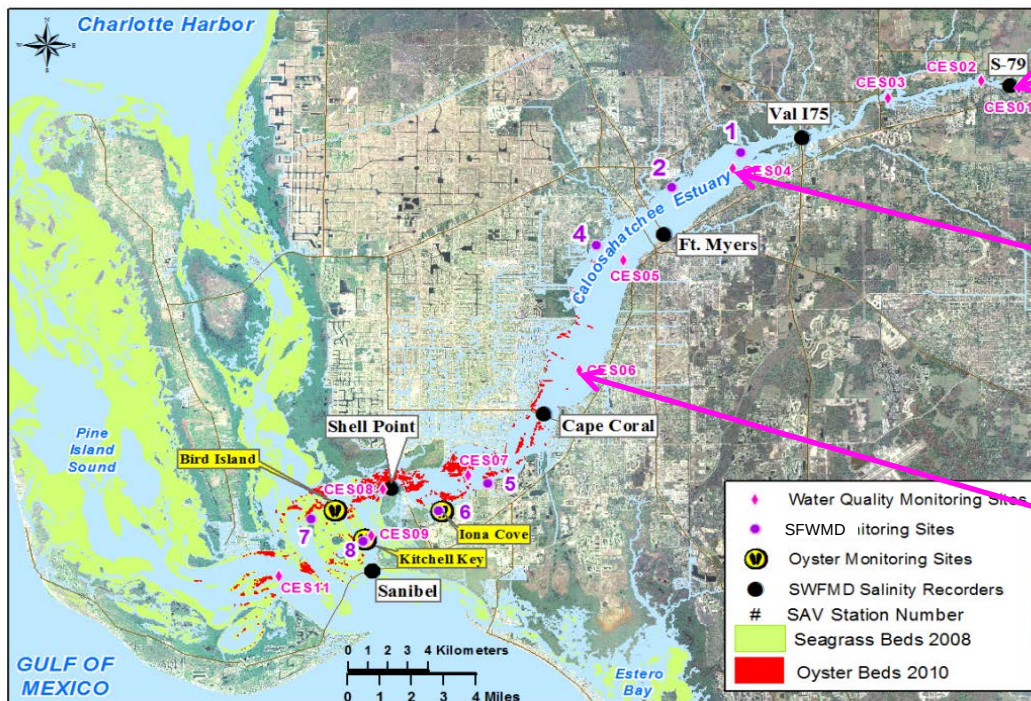
* Water Year (WY) is from May 1st until April 30th
(e.g., WY2014 was from May 1, 2013 until April 30, 2014)



Caloosahatchee River Watershed Protection Plan 2015

Summary of seasonal total nitrogen (TN; milligrams per liter) water column concentrations in the Caloosahatchee River Estuary over long term (Water Year* (WY) 2000 through WY2014) and previous three WYs

(From Table 10-11, SFER 2015).



CES01	TN	
	Dry	Wet
Avg+SD	1.33 $\pm$ 0.19	1.45 $\pm$ 0.17
WY2012	1.35	1.61
WY2013	1.35	1.37
WY2014	1.20	1.33

CES04	TN	
	Dry	Wet
Avg+SD	1.14 $\pm$ 0.25	1.25 $\pm$ 0.14
WY2012	0.98	1.13
WY2013	1.32	1.22
WY2014	1.18	1.30

CES06	TN	
	Dry	Wet
Avg+SD	0.77 $\pm$ 0.18	1.08 $\pm$ 0.16
WY2012	0.71	0.86
WY2013	0.91	0.98
WY2014	0.82	0.96

* Water Year (WY) is from May 1st until April 30th
(e.g., WY2014 was from May 1, 2013 until April 30, 2014)



Caloosahatchee River Watershed Protection Plan 2015

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Questions About CRWPP?





New Tributary TMDLs

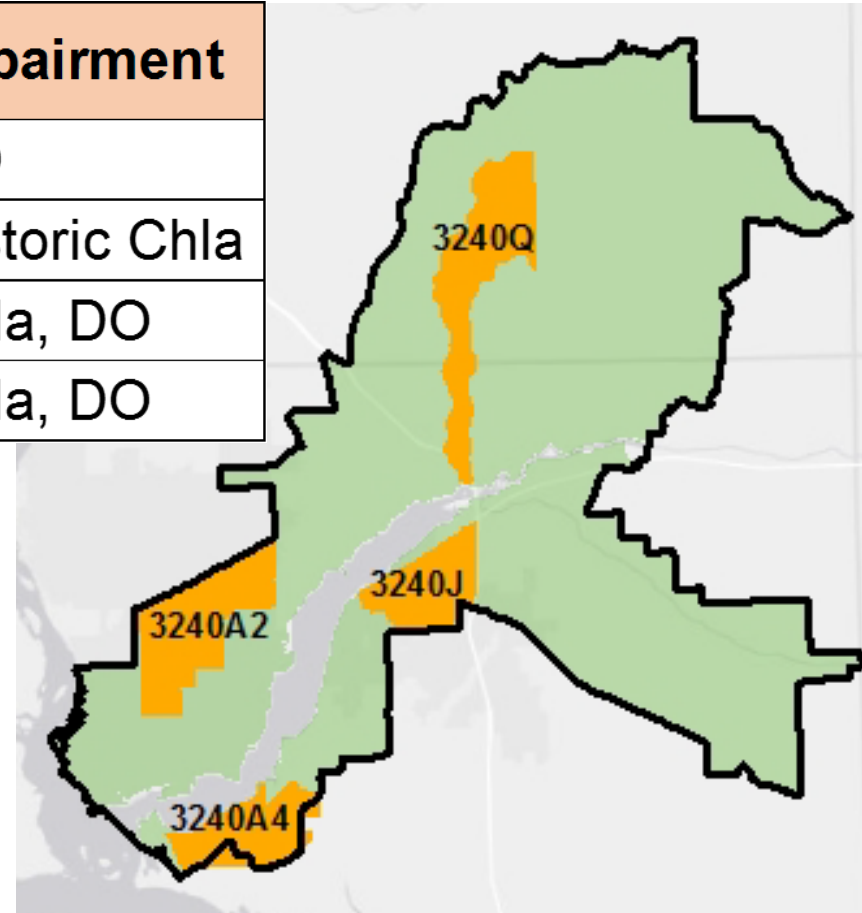


Tributaries TMDLs

TMDLs are planned for the following tributaries:

Tributary Name	WBID	Impairment
Billy Creek	3240J	DO
Cape Coral	3240A2	Historic Chla
Deep Lagoon Canal	3240A4	Chla, DO
Popash Creek	3240Q	Chla, DO

DO=Dissolved Oxygen





Plans for Addressing New TMDLs

- New TMDLs in the BMAP area will establish tributary specific targets.
- TMDL process has provided more calibration data which is being used to refine the model for the entire basin.
- TMDL modeling may refine the TMDL for Tidal Caloosahatchee.



Effects of New TMDLs on the BMAP

- Potential to include tributary TMDLs in next phase of Tidal Caloosahatchee BMAP.
- Projects specific to these tributary areas will need to be identified and quantified.
- Additional monitoring sites may need to be added to measure progress towards these TMDLs.

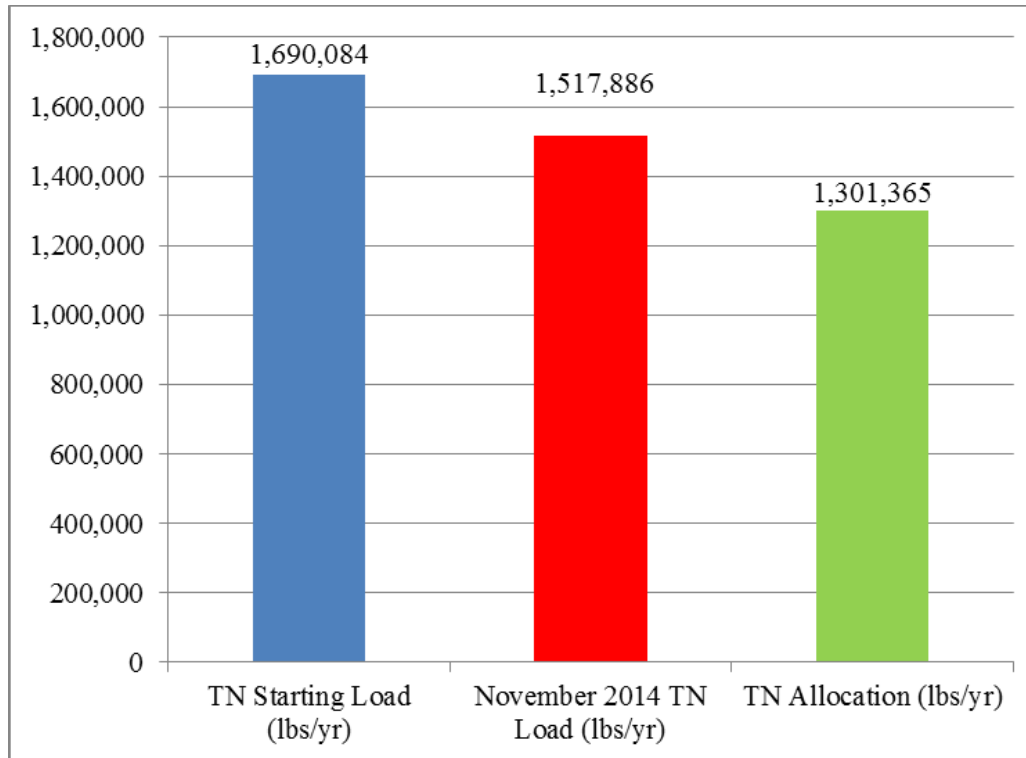


Overview of the Caloosahatchee BMAP Monitoring Data



Progress Towards the Total Maximum Daily Loads (TMDLs)

- The total project reductions, including those shown as completed in the BMAP, are 172,198 lbs/yr total nitrogen (TN).



- Further reductions of 216,521 lbs/yr TN are necessary to achieve the TN Allocation.



Monitoring

- Water quality monitoring is being conducted by:
 - City of Cape Coral.
 - City of Ft. Myers.
 - East County Water Control District.
 - Lee County.
 - South Florida Water Management District (SFWMD).
 - Florida Department of Environmental Protection (FDEP)-South District.
- Most data have been uploaded to Florida STORET, but some data are stored elsewhere.
- We need to work together to get all pertinent data uploaded so it can be used for future assessments.



Caloosahatchee Tributaries

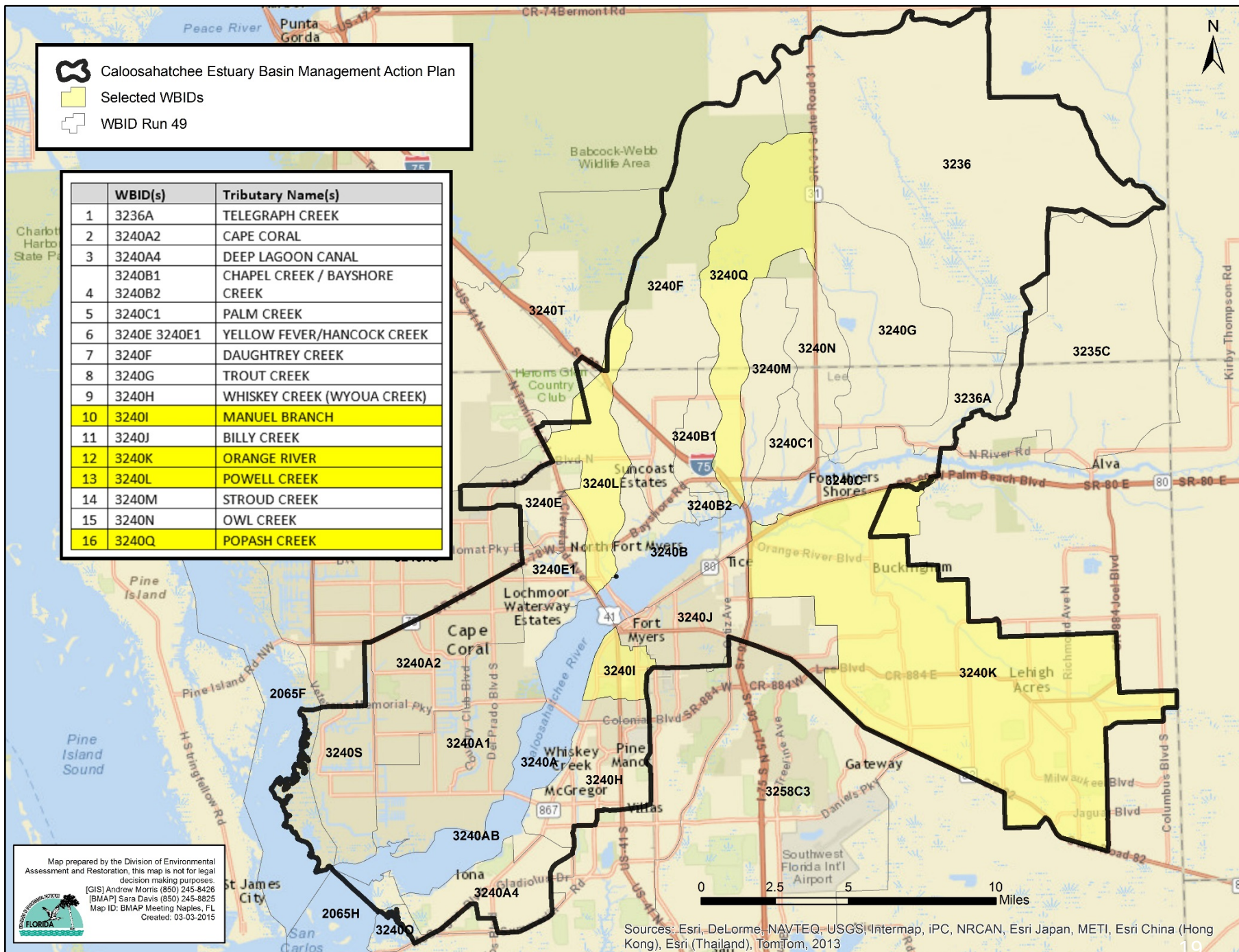
- TN data from 2009-2014 has been compiled for stations tributary to the Caloosahatchee Estuary.
- Stakeholder involvement is essential to ensure all data are being considered.
- Some examples of TN trends are presented, and data for all tributaries will be available on the ftp site.



Water Quality Trends, by Tributary

-  Caloosahatchee Estuary Basin Management Action Plan
-  Selected WBIDs
-  WBID Run 49

	WBID(s)	Tributary Name(s)
1	3236A	TELEGRAPH CREEK
2	3240A2	CAPE CORAL
3	3240A4	DEEP LAGOON CANAL
4	3240B1	CHAPEL CREEK / BAYSHORE CREEK
5	3240C1	PALM CREEK
6	3240E 3240E1	YELLOW FEVER/HANCOCK CREEK
7	3240F	DAUGHTREY CREEK
8	3240G	TROUT CREEK
9	3240H	WHISKEY CREEK (WYUOA CREEK)
10	3240I	MANUEL BRANCH
11	3240J	BILLY CREEK
12	3240K	ORANGE RIVER
13	3240L	POWELL CREEK
14	3240M	STROUD CREEK
15	3240N	OWL CREEK
16	3240Q	POPASH CREEK



MANUEL BRANCH WBID: 32401

02293230

-  STORET Stations
-  USGS Station Locations
-  Caloosahatchee Estuary Basin Management Action Plan
-  Manuel Branch WBID
-  Interstates
-  Major Highways
-  Level 3 Sec Highway
-  Level 4 Sec Highway
-  Counties
-  Canal/Ditch
-  Stream/River

Caloosahatchee River

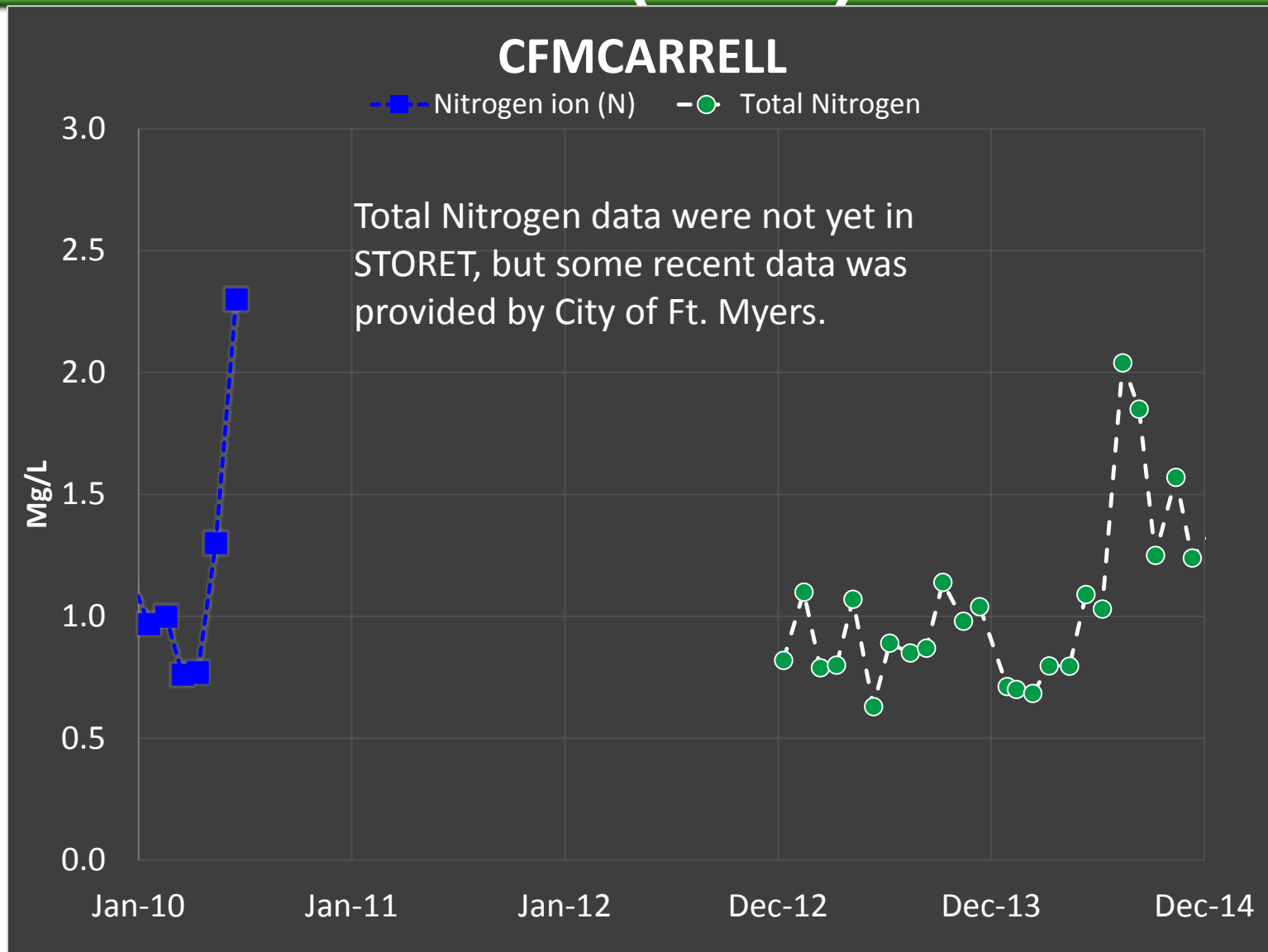
0 0.125 0.25 0.5
Miles

Map prepared by the Division of Environmental
Assessment and Restoration,
this map is not for legal decision making purposes.
[GIS] Andrew Morris (850) 245-8426
[BMAP] Sara Davis (850) 245-8825
Map ID: Manuel Branch
Created: 03-03-2015

Sources: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

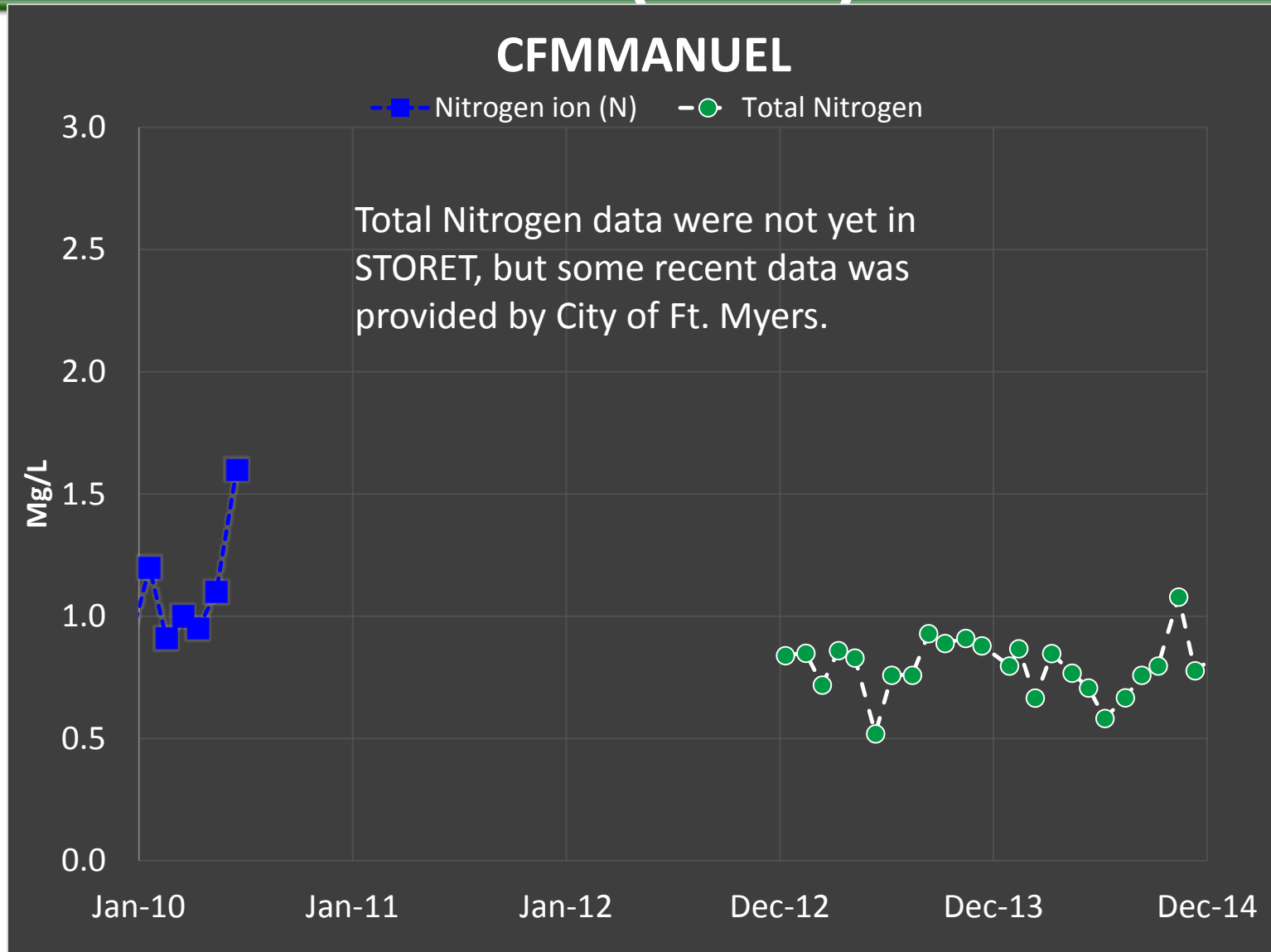


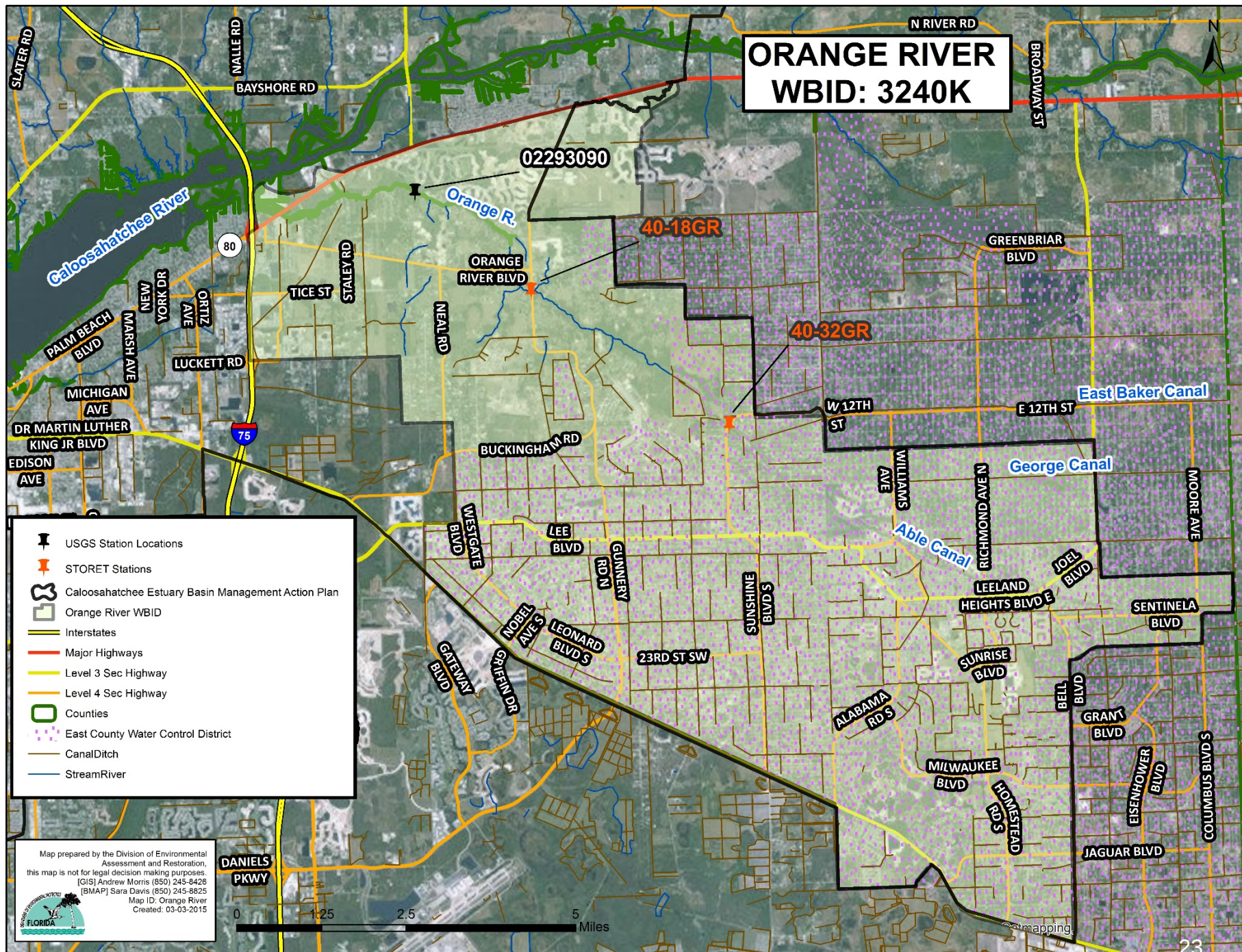
Manuel Branch (WBID 3240I) TN Trends (1 of 2)





Manuel Branch (WBID 3240I) TN Trends (2 of 2)

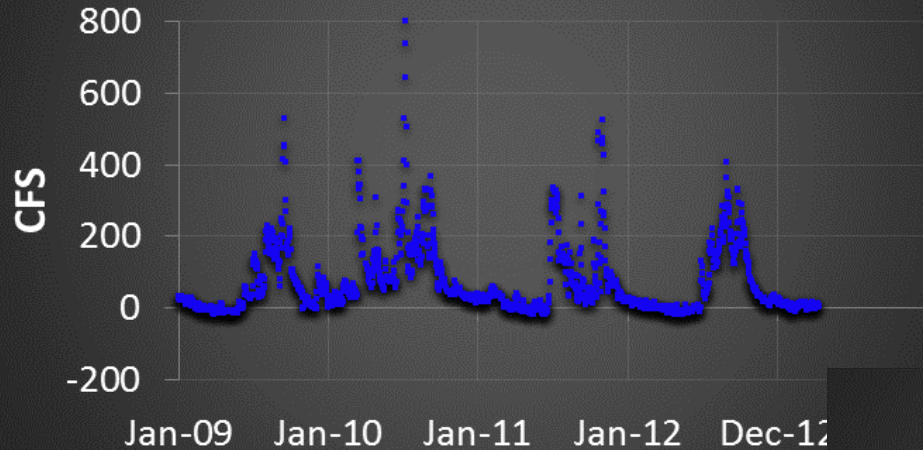






Orange River (WBID 3240K) Discharge/Gage Height

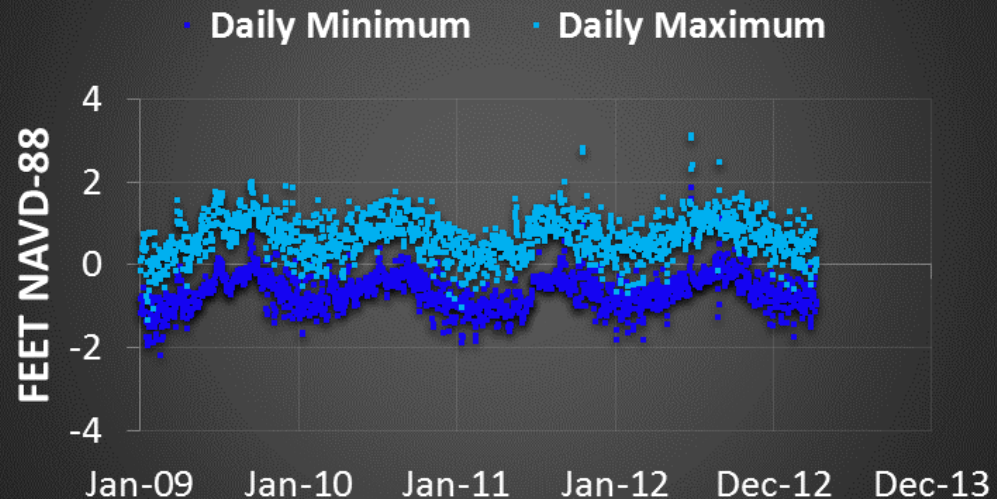
Daily Mean Discharge
(Tidally Filtered)



USGS Gage 02293055
ORANGE RIVER NEAR
BUCKINGHAM, FL

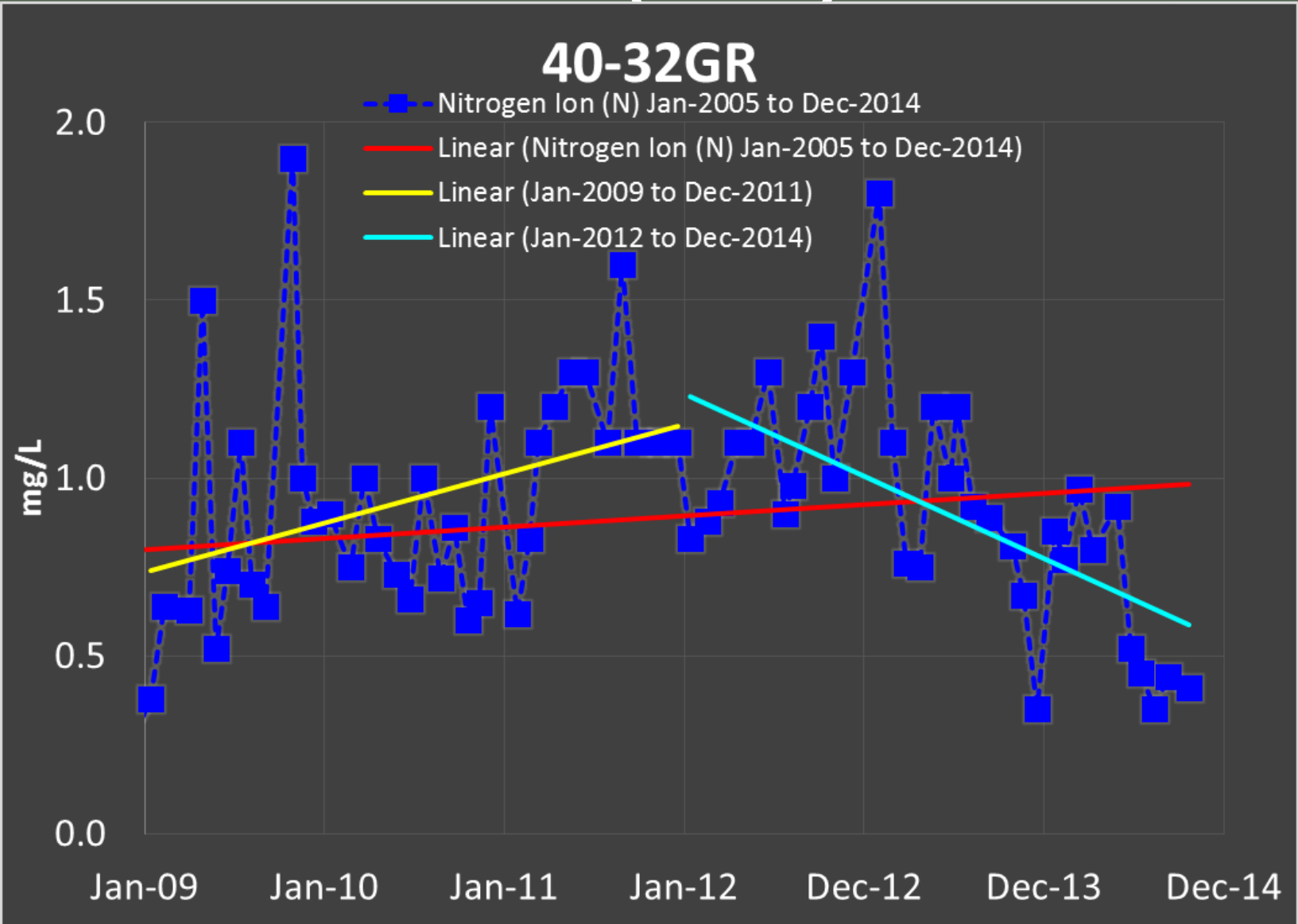
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to 4/9/2013

Gage Height



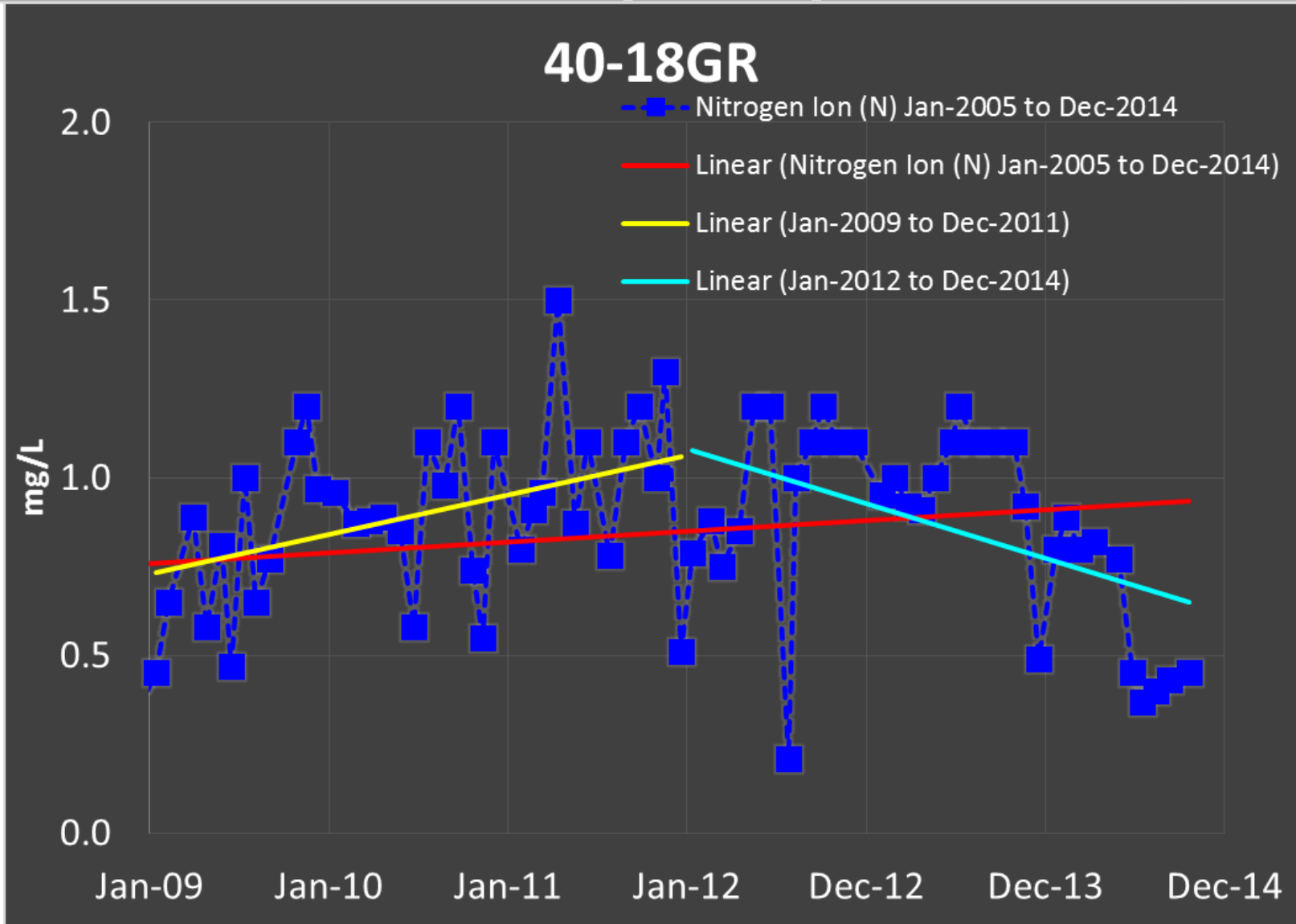


Orange River (WBID 3240K) TN Trends (1 of 2)





Orange River (WBID 3240K) TN Trends (2 of 2)



POWELL CREEK WBID: 3240L

-  STORET Stations
-  Caloosahatchee Estuary Basin Management Action Plan
-  Powell Creek WBID
-  Interstates
-  Major Highways
-  Level 3 Sec Highway
-  Level 4 Sec Highway
-  Counties
-  Canal/Ditch
-  Stream/River

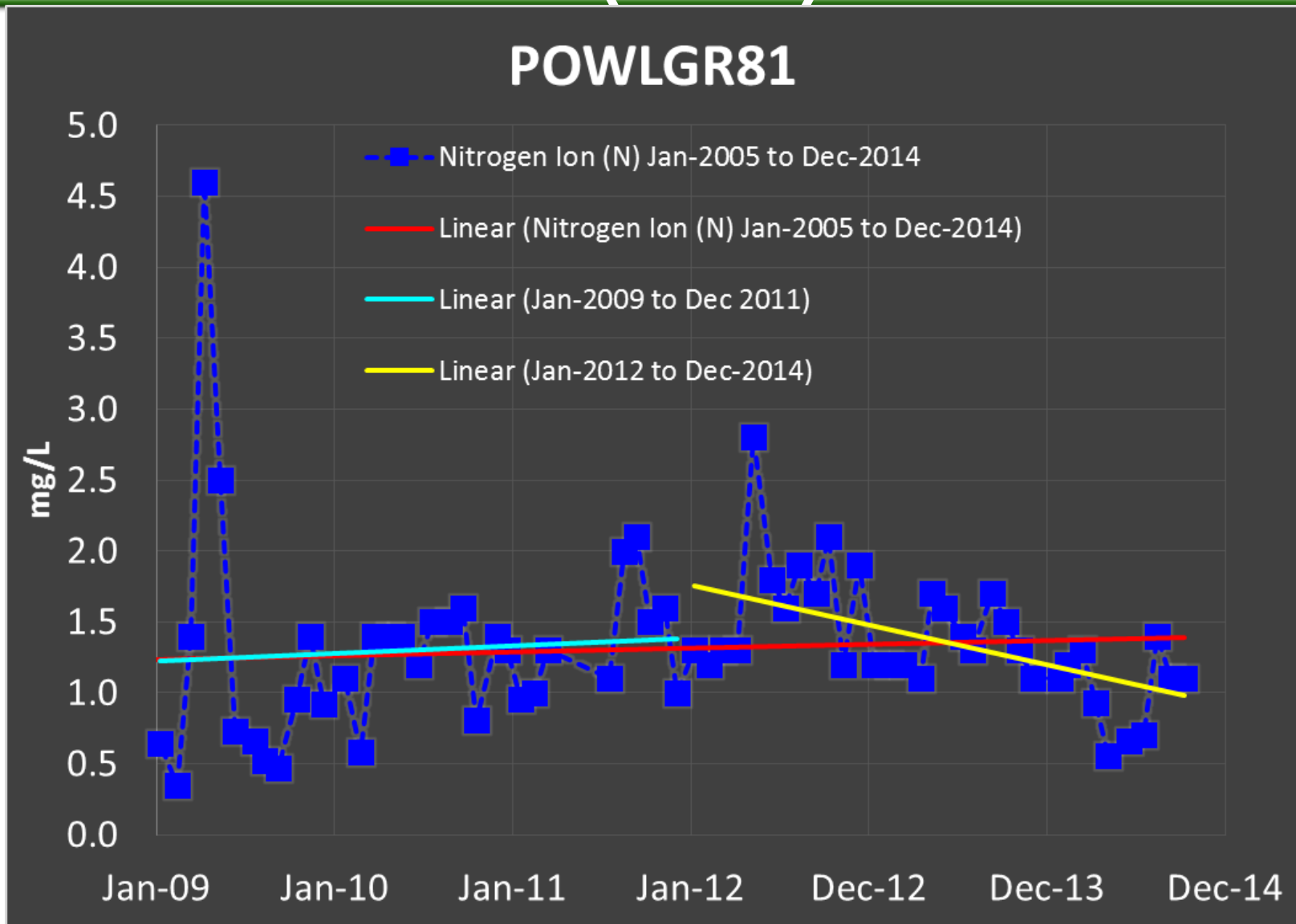
0 0.75 1.5 3 Miles

Map prepared by the Division of Environmental Assessment and Restoration, this map is not for legal decision making purposes.
[GIS] Andrew Morris (850) 245-8426
[BMAP] Sara Davis (850) 245-8825
Map ID: Powell Creek
Created: 03-03-2015

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

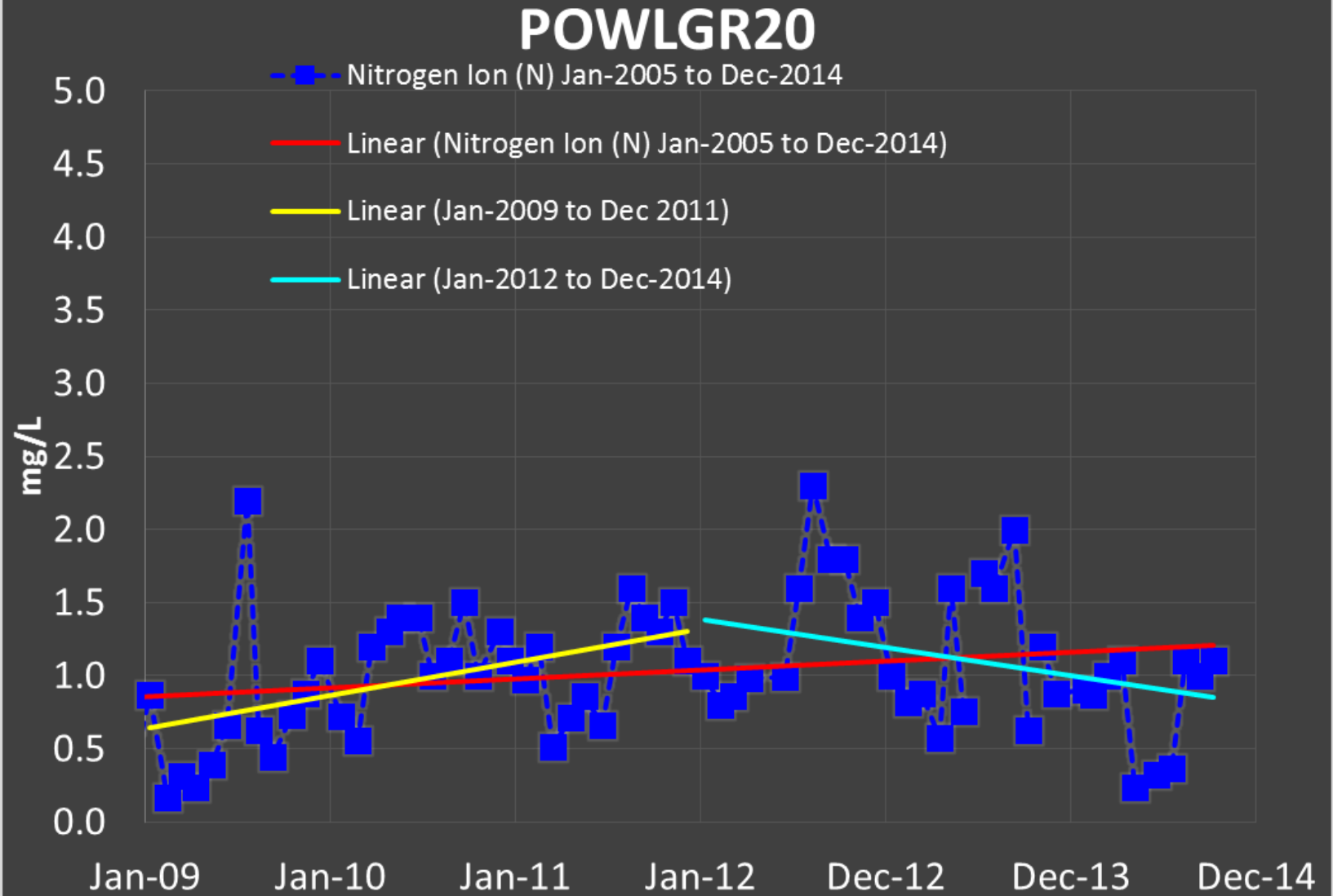


Powell Creek (WBID 3240L) TN Trends (1 of 3)



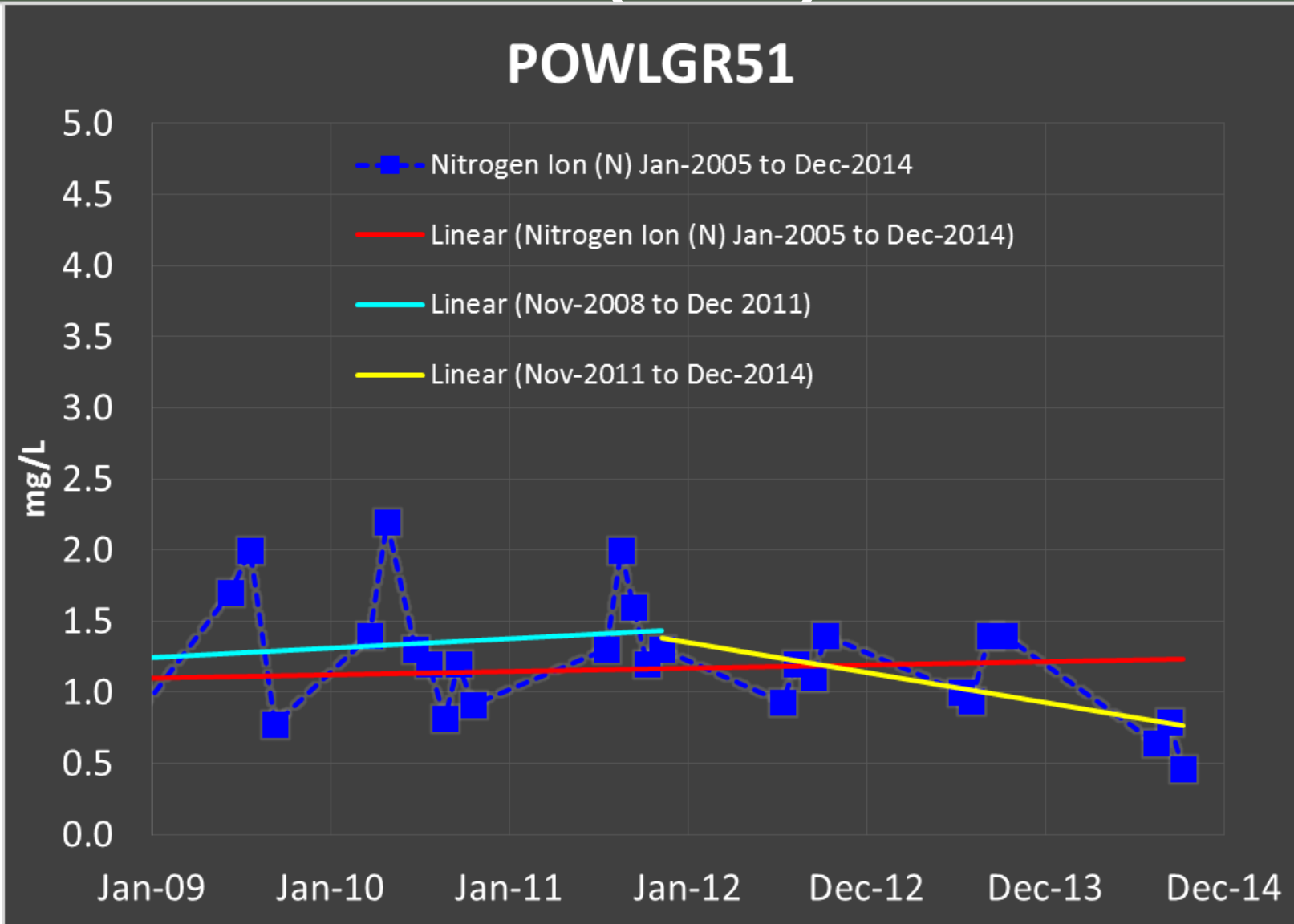


Powell Creek (WBID 3240L) TN Trends (2 of 3)

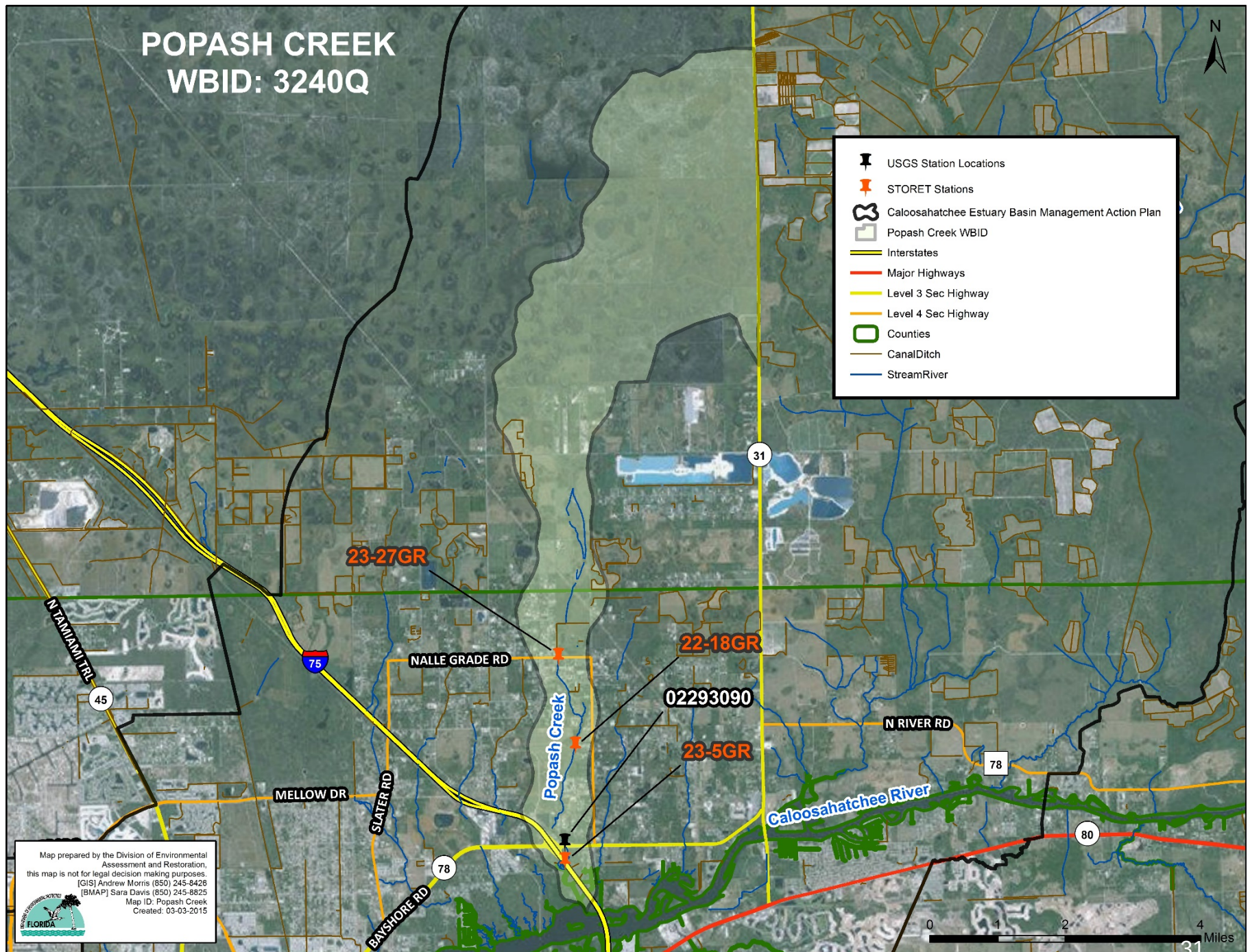




Powell Creek (WBID 3240L) TN Trends (3 of 3)



POPASH CREEK WBID: 3240Q



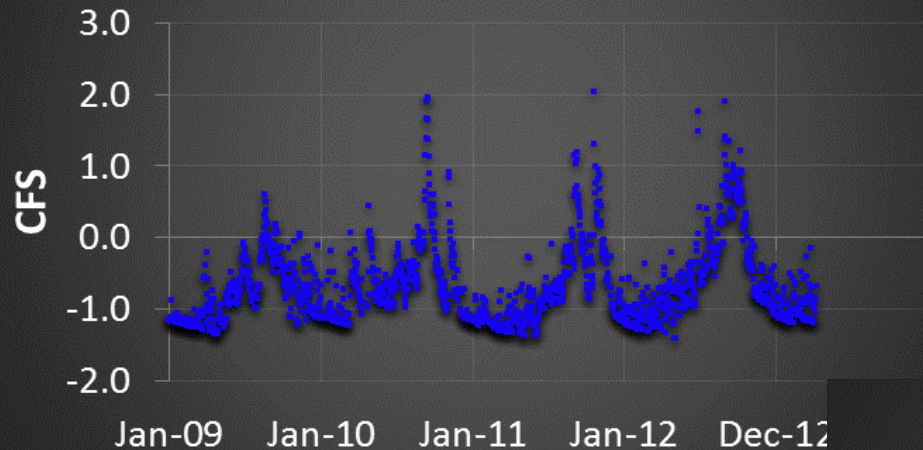
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this map is not for legal decision making purposes.
[GIS] Andrew Morris (850) 245-8426
[BMAP] Sara Davis (850) 245-8825
Map ID: Popash Creek
Created: 03-03-2015





Popash Creek (3240Q) Discharge/Gage Height

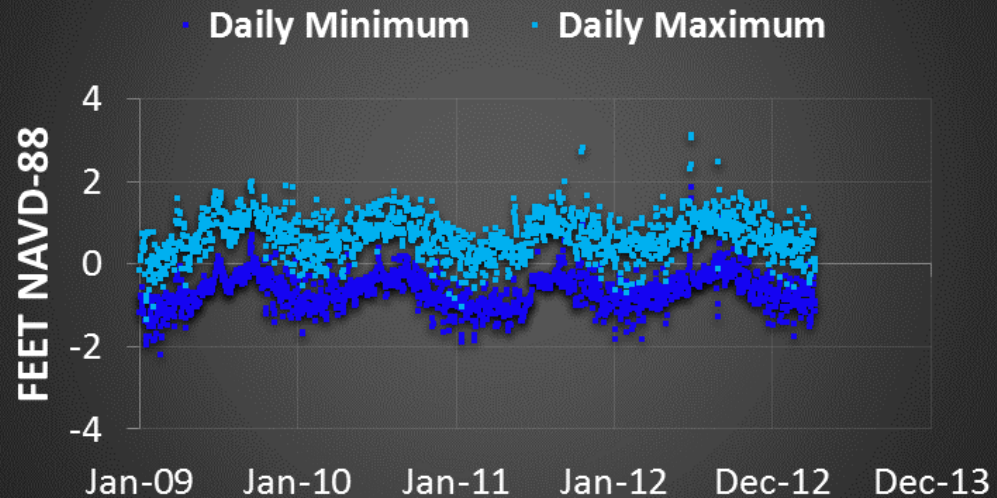
Daily Mean Discharge
(Tidally Filtered)



USGS Gage 02293090
Popash Creek at
Leetana Rd. near
North Fort Myers, FL

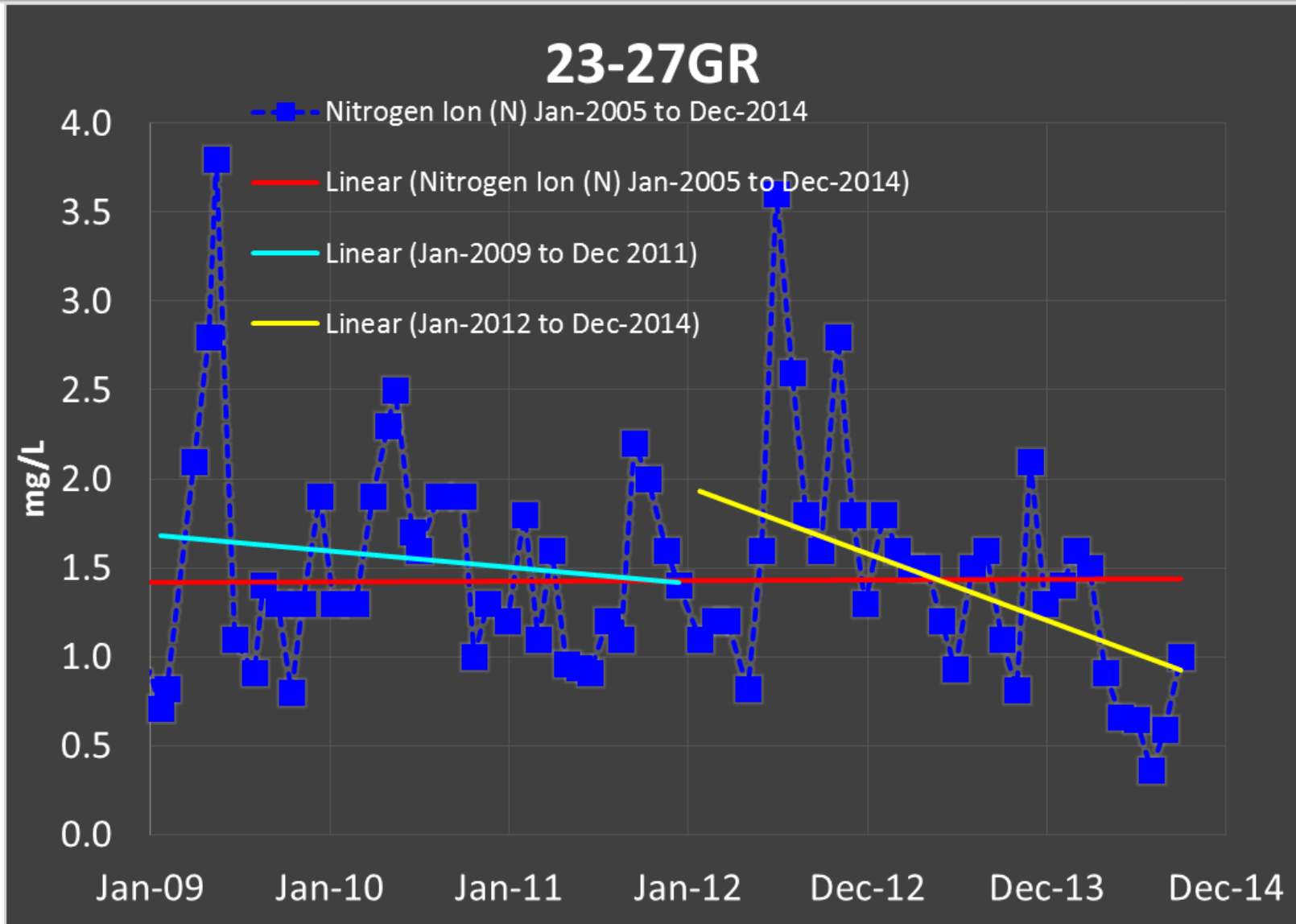
Data Available:
12/27/2007
to 4/5/2013

Gage Height





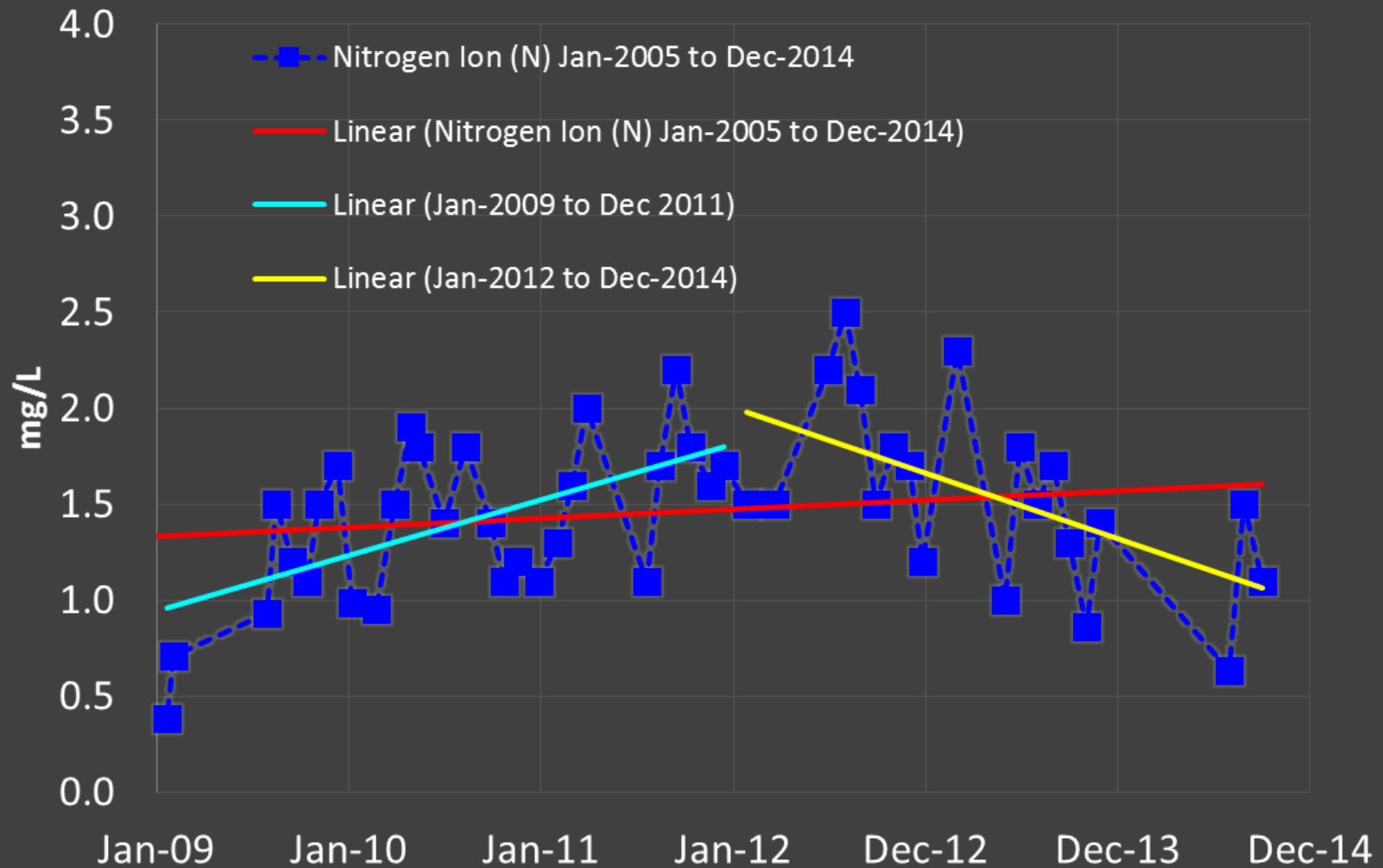
Popash Creek (3240Q) TN Trends (1 of 3)





Popash Creek (3240Q) TN Trends (2 of 3)

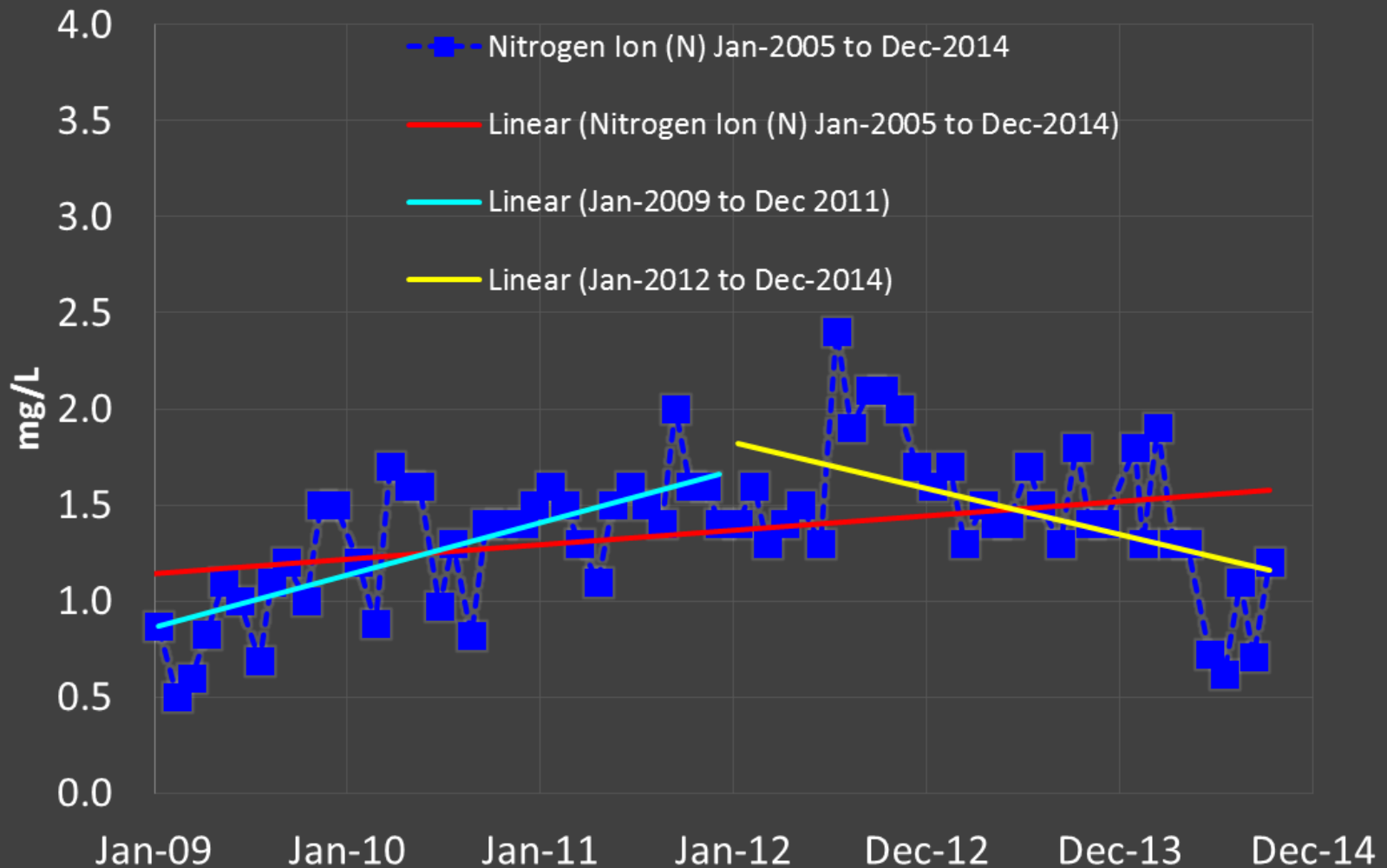
22-18GR





Popash Creek (3240Q) TN Trends (3 of 3)

23-5GR





Local Knowledge: What may be happening in these tributaries?



Discussion of Future Projects in Tributary Areas



- The Department would like to hold individual meetings with stakeholders to identify future projects in tributaries.

Plan to discuss any priority areas, timetables, and planning processes.



Potential Additional Data Needs

Tributary

- BILLY CREEK
- CHAPEL CREEK / BAYSHORE CREEK
- DAUGHTREY CREEK
- DEEP LAGOON CANAL
- MANUEL BRANCH
- ORANGE RIVER
- OWL CREEK
- PALM CREEK
- POPASH CREEK
- POWELL CREEK
- STROUD CREEK
- TELEGRAPH CREEK
- TROUT CREEK
- WHISKEY CREEK (WYOWA CREEK)
- YELLOW FEVER/HANCOCK CREEK



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, Aero, GeoMapping, AeroGrid, IGN, IGP, Swisstopo, and the GIS User Community, Copyright © 2014 Esri, DeLorme, HERE, TomTom



Areas with Fewer Data

- Discussion:
 - Are there areas you feel need additional stations because information is incomplete?
 - What is needed?
 - What monitoring resources are available?



Next Steps



Action Items

- Continue work on new TMDLs.
- Monitoring data uploaded to STORET.
- More discussion on monitoring needs for focus areas or data gaps.
- Additional analyses of more parameters such as light attenuation and changes in loads.
 - **SCCF**
 - **ECWCD**
 - **SFWMD**
 - **USGS**
- Discussion of additional project ideas.
- The Department plans to hold the next meeting in June 2015.



Contact Information

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Questions?





Contact Information

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Sara.C.Davis@dep.state.fl.us



Contact Information



Monitoring

- 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.
- Latest draft (March 2015) of the Caloosahatchee River Watershed Protection Plan shows some analysis of this biological monitoring.

SCCF Data Parameters

- Salinity
- Specific Conductance
- CDOM
- Chlorophyll
- Dissolved Oxygen
- Water Temperature
- Turbidity
- Sensor Depth

