

UNRBA Board Meeting May 18, 2016

Location: Butner Town
Hall

Agenda

Introductions and Announcements—Pam Hemminger, Chair

Administrative Item

Approval of the March 16, 2015 Board Meeting Minutes

Regulatory and Legislative Update

Sarah W. Collins, NC League of Municipalities

Agenda (Continued)

Actions Items

Contractor Recommendation for Modeling and Regulatory Support for the UNRBA's Falls Lake Nutrient Management Strategy Reexamination Process
—Michelle Woolfolk

Authorization to Proceed with Revisions to the Current Subject Matter Expert Contracts for Monitoring Program Support by Sauber Water Quality Consulting and Haywood Phthisic—Executive Director

Agenda (Continued)

Progress Status Reports:

Monitoring Program—Review of the Annual Report—Doug Durbin

Nutrient Credits Project Status Update—Alix Matos

Information Items and Reports:

PFC Report--Lindsay Mize and Kenny Waldroup

Treasurer's Report—Jimmy Clayton

Executive Director Report

**Next Scheduled Board Meeting: June 15, 2016, Butner Town Hall,
Beginning at 9:30 AM**

Closing Comments

Pam Hemminger, Chair

Introductions and Announcements

Administrative Item: Approval of March 16, 2016 Meeting Minutes

- Review of Draft Minutes
- Comments and Corrections
- Board Vote



Regulatory and Legislative Update

Actions Items

Contractor Recommendation
for Modeling and Regulatory
Support for the UNRBA's Falls
Lake Nutrient Management
Strategy Reexamination
Process

—Michelle Woolfolk



Water Quality Modeling & Regulatory Support: Contractor Recommendation

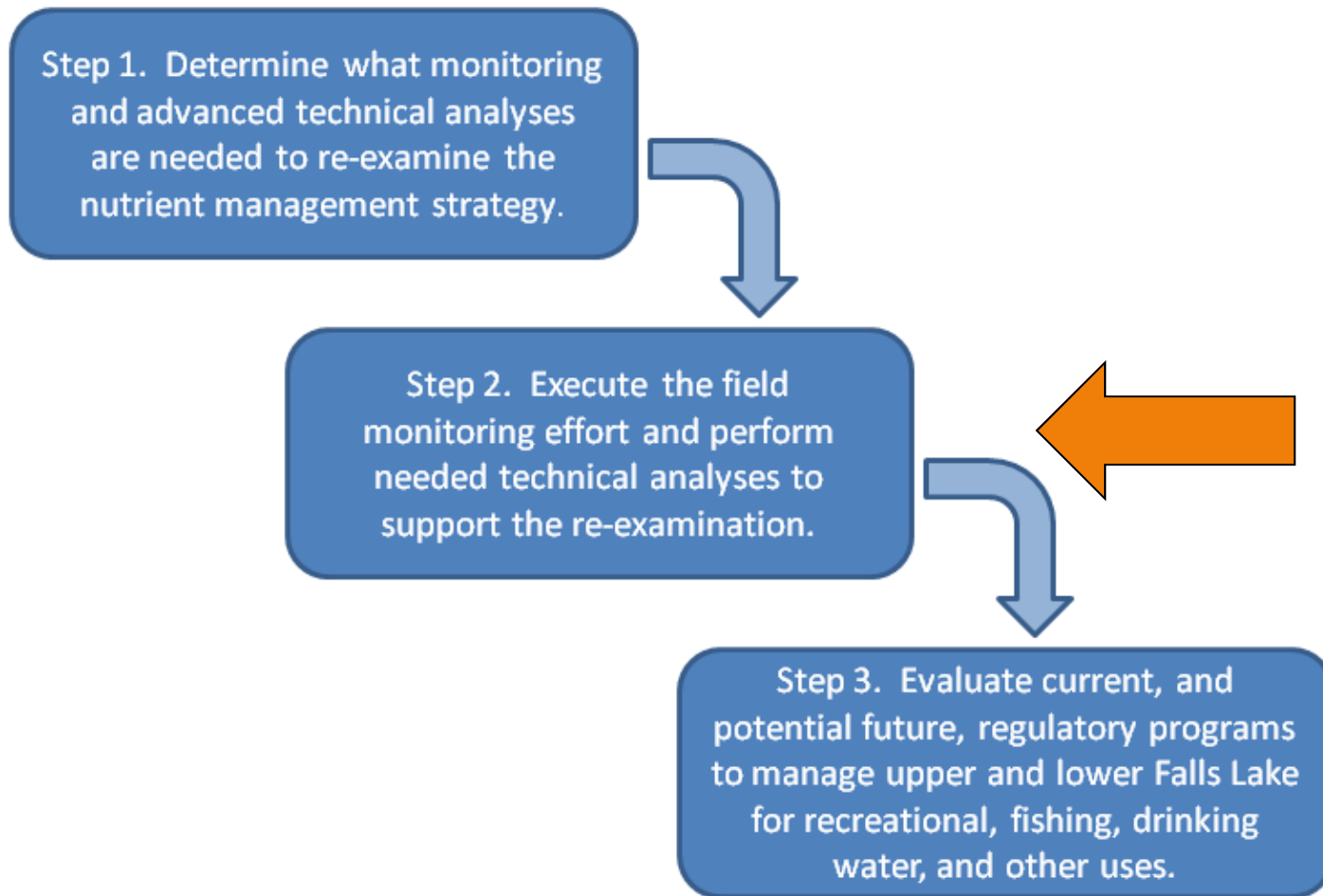
Michelle Woolfolk, Stormwater & GIS Services

Presented at the

UNRBA Board Meeting, May 18, 2016



Re-Examination of the Falls Lake Nutrient Management Strategy



Concern #1

There was an overall lack of team and project qualifications that demonstrated the desirable knowledge and experience with regulatory options and the development of future policy.

Concern #2

Team communication, both within the team and externally to the UNRBA, was not described well in the qualifications package. The proposed team is spread across multiple states and countries. The UNRBA desires a team that works cohesively and efficiently.

Recommendation

The Modeling RFQ Subcommittee and members of the Path Forward Committee recommend selecting the Cardno, Inc. Team for the Modeling & Regulatory Support Contract.

Authorization to Proceed with
Revisions to the Current Subject
Matter Expert Contracts for
Monitoring Program Support by
Sauber Water Quality Consulting and
Haywood Phthisic

—Executive Director

SME Contract Revisions Summary

- Increased demand for support provided by Sauber Water Quality Consulting
- Carry-forward funds from FY 2015 (\$2,340) and residual funds for the FY 2016 contracts (\$2,500) is available to adjust the contract amounts
- Increase Sauber WQ Consulting FY 2016 contract by \$4,840 and reduce Phthisic Consulting, Inc. by \$2,500

Request that Board Authorize
the Chair to approve these
two contract amendments

Progress Status Reports Monitoring and Nutrient Credits

Monitoring Program—Review of the Annual Report

—Doug Durbin

UNRBA
Monitoring Program
Board of Directors Meeting
May 2016

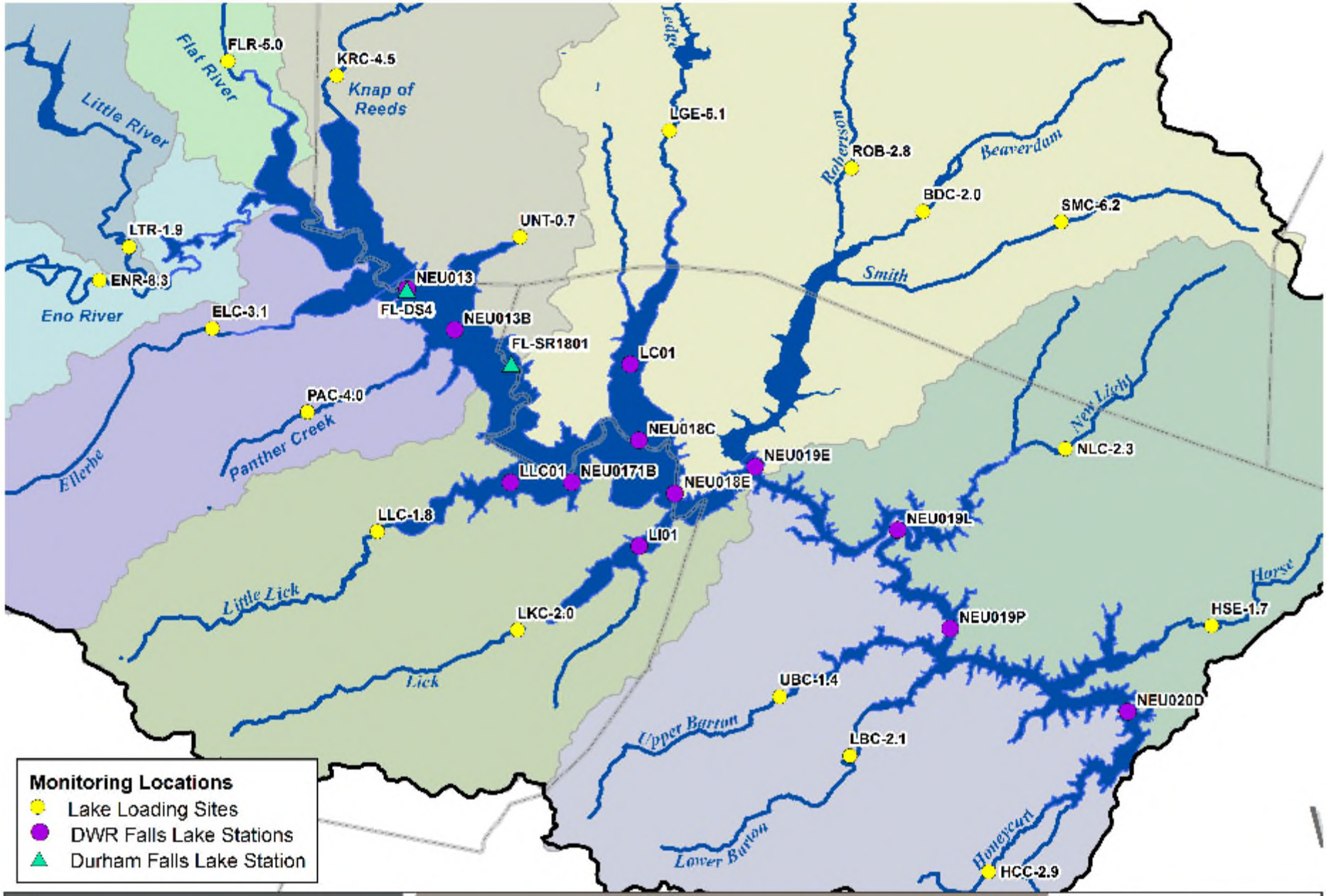


FY2016 Annual Report



Routine Monitoring

- **Lake Loading Stations (25% of FY2016 Monitoring Program Budget)**
 - 18 Stations sampled monthly, 5 of them twice monthly
 - 19 parameters measured
- **Jurisdictional Boundary Stations (8% of FY2016 Monitoring Program Budget)**
 - 20 Stations sampled monthly
 - 10 parameters measured
- **In-Lake (DWR & City of Durham)**
 - 12 Stations sampled monthly (DWR)
 - 17 parameters measured
 - 2 Stations sampled weekly (April-October)
 - 14 parameters measured
- **Data Evaluated Continuously for QA/QC and for Patterns**
- **Data Posted to UNRBA website**



Monitoring Locations

- Lake Loading Sites
- DWR Falls Lake Stations
- ▲ Durham Falls Lake Station



Monitoring Locations
 Upper Neuse River Basin Association
 North Carolina

Cardno
Shaping the Future

Cardno Corporation, 6600 North State Street, Suite 1000, Raleigh, NC 27603
 Phone: 919.200.8800 | Fax: 919.200.8801
 www.cardno.com

PERSON

GRANVILLE

FRANK

ORANGE

DURHAM

WAKE

Active USGS Gages

Monitoring Locations

● Discharge (Flow)

● Lake Loading Sites

▲ Stage (Water Level)

■ Jurisdictional Sites



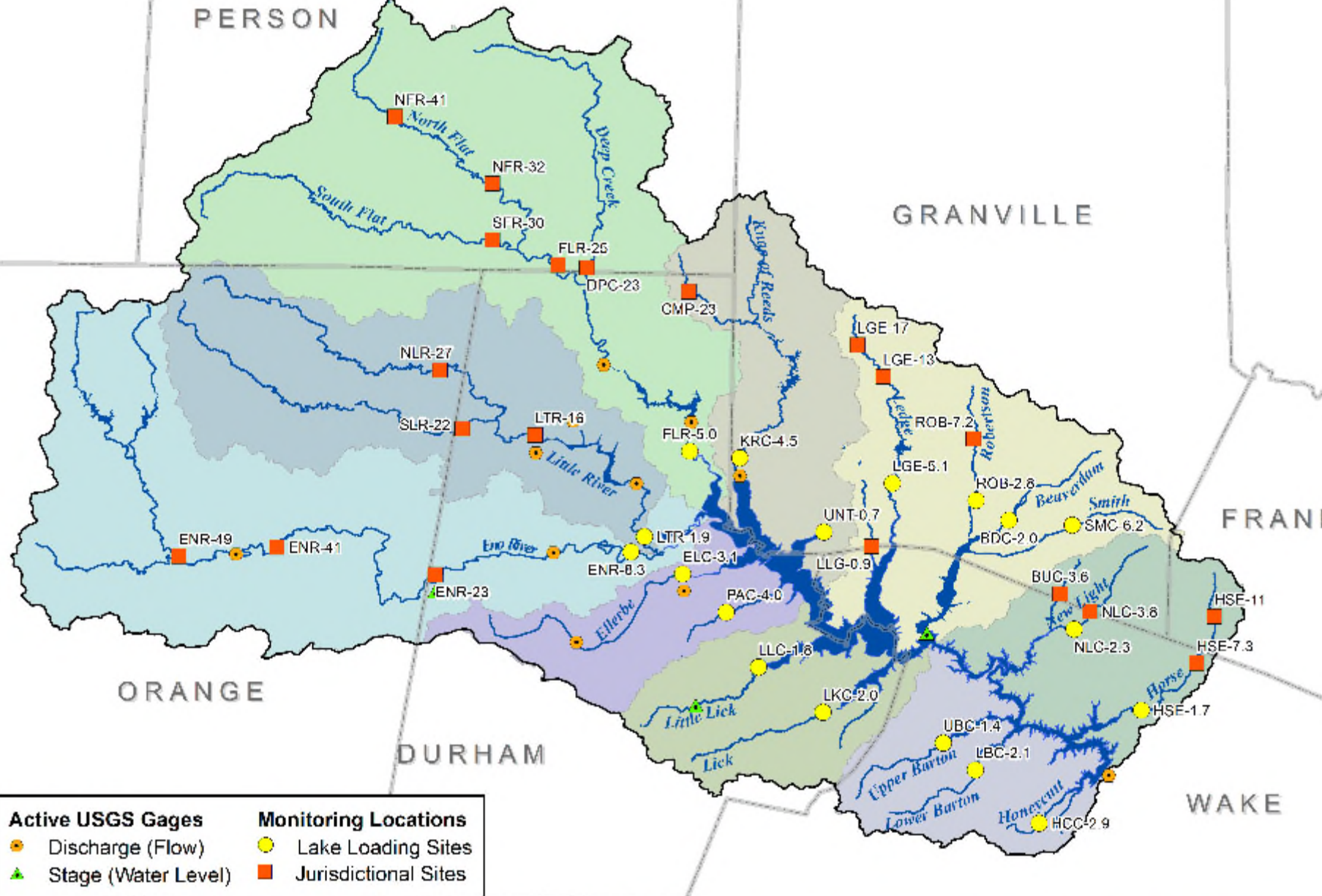
0 2.25 4.5 9 Miles

Tributary Monitoring Locations

Upper Neuse River Basin Association
North Carolina



Cardno Corporation, 6660 North Point Parkway, Suite 100, Raleigh, NC 27615
Phone: 919.200.8800 | Fax: 919.200.8801
www.cardno.com





Special Studies (36% of FY2016 Monitoring Program Budget)

SPECIAL STUDY	INITIATED IN
Storm Event Sampling	FY2015
High Flow Sampling	FY2015
Falls Lake Sediment Sampling	FY2015
Support Development of Alternative Nutrient Strategy	FY2015
Falls Lake Constriction Point Study	FY2016
Measure VSS at Lake Loading and Inlake stations	FY2016
Light Extinction Data Evaluation	FY2016
Basic Evaluation of Model Performance	FY2016
Recreational Use Assessment	FY2016

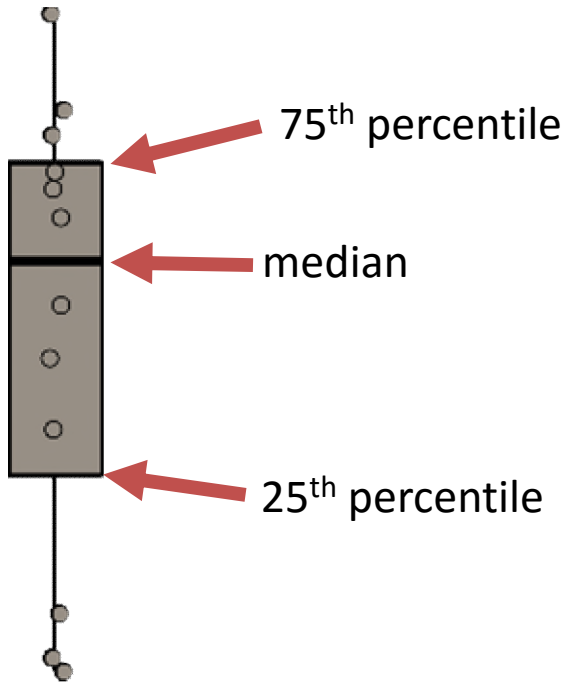


Quality Assurance

- All data collected under the UNRBA program are subject to stringent ongoing QA/QC review
- During F2015, laboratory issues were found associated with analyzing field blanks for some nutrient parameters
- The issues were addressed and changes made by the laboratory for FY2016 work
- Data quality is now very good
- The laboratory was audited by Cardno in 2015 and will be visited again before the end of FY2016
- The laboratory was audited in August of 2015 by DWR

Falls Lake and Lake Loading Stations

2014-2015



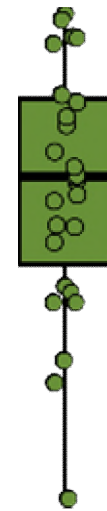
Lake Loading Station

(August 2014 – December 2015)



DWR – Falls Lake

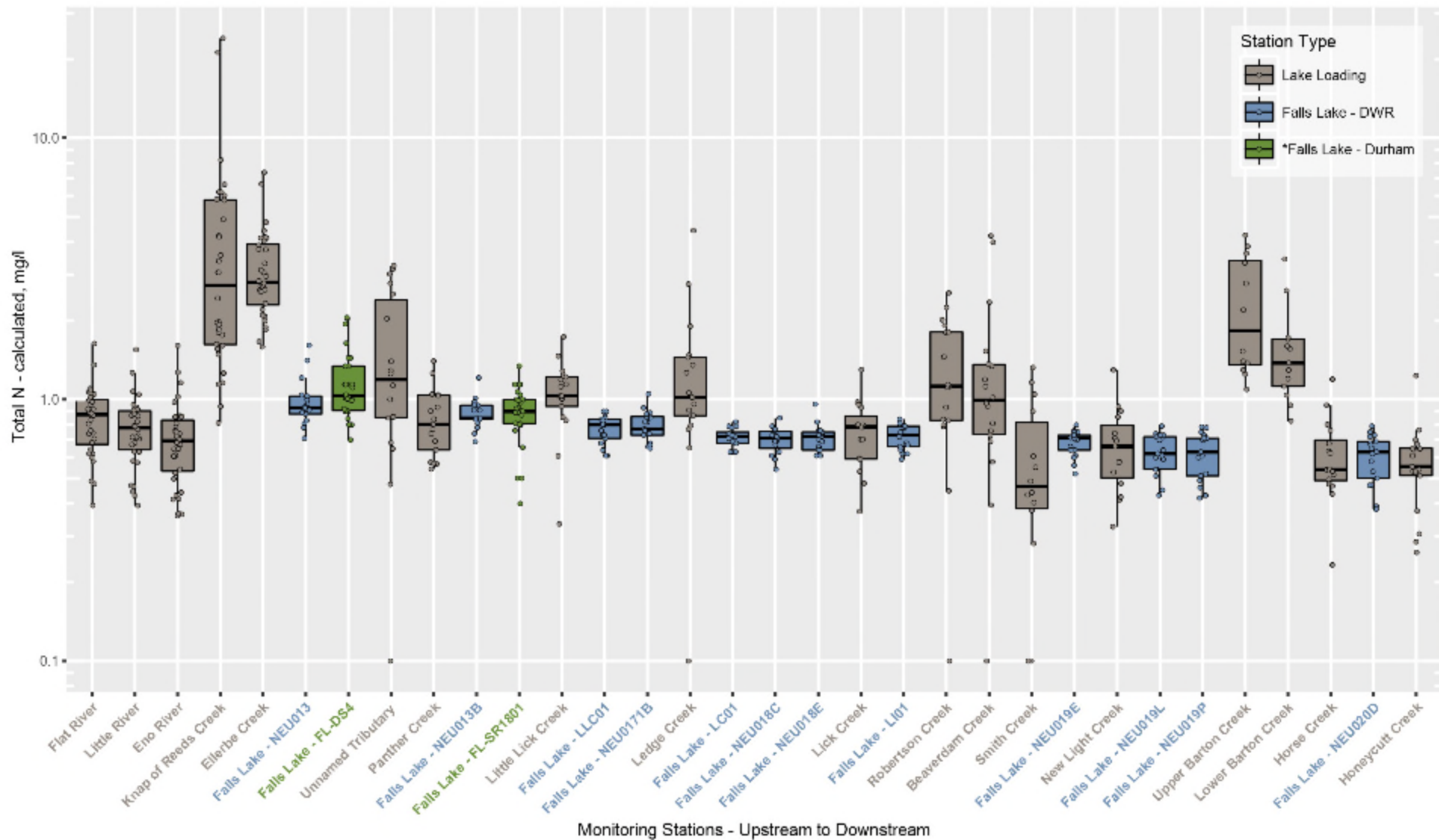
(August 2014 – December 2015)



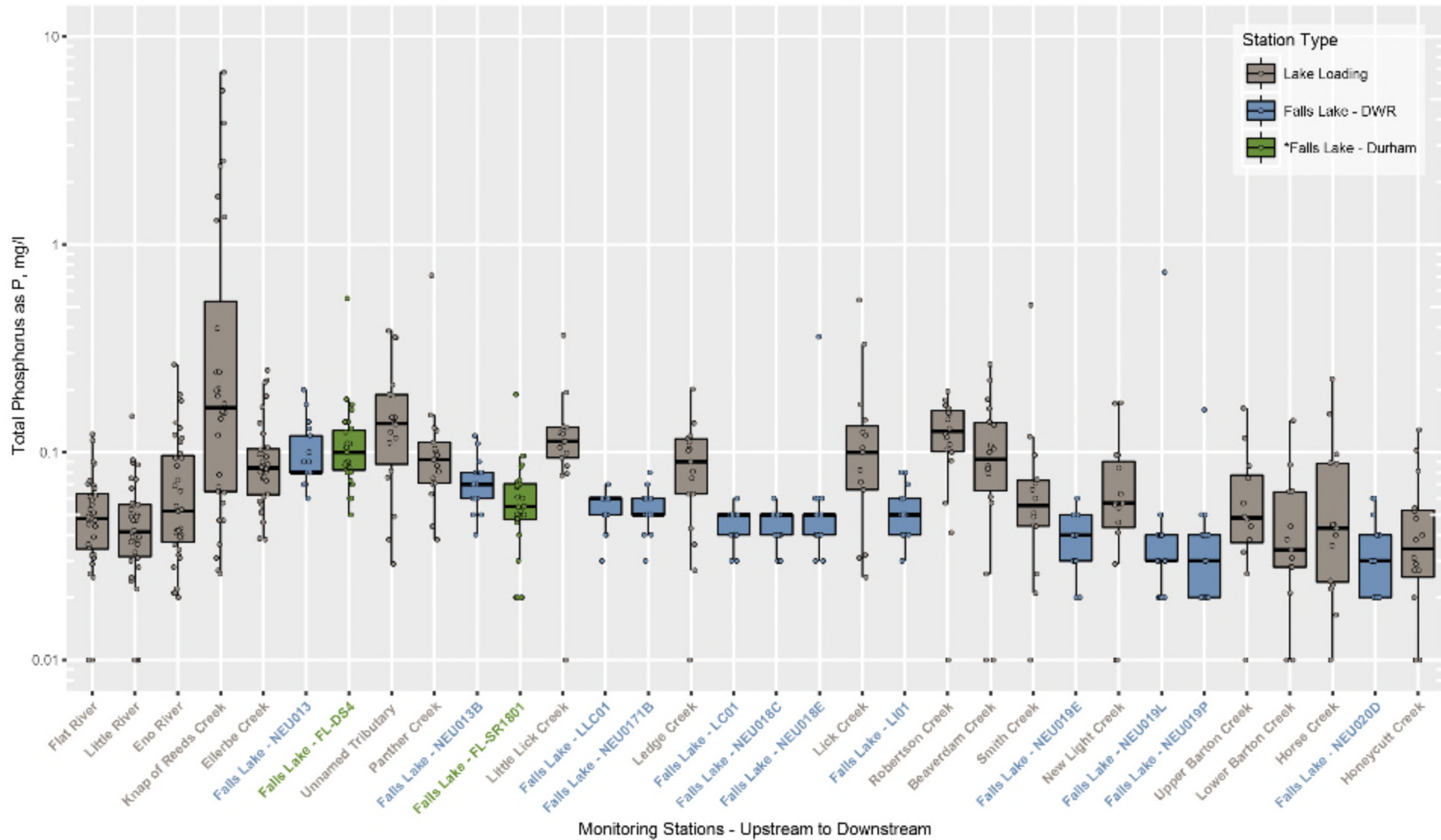
Durham – Falls Lake

(April – October 2015)

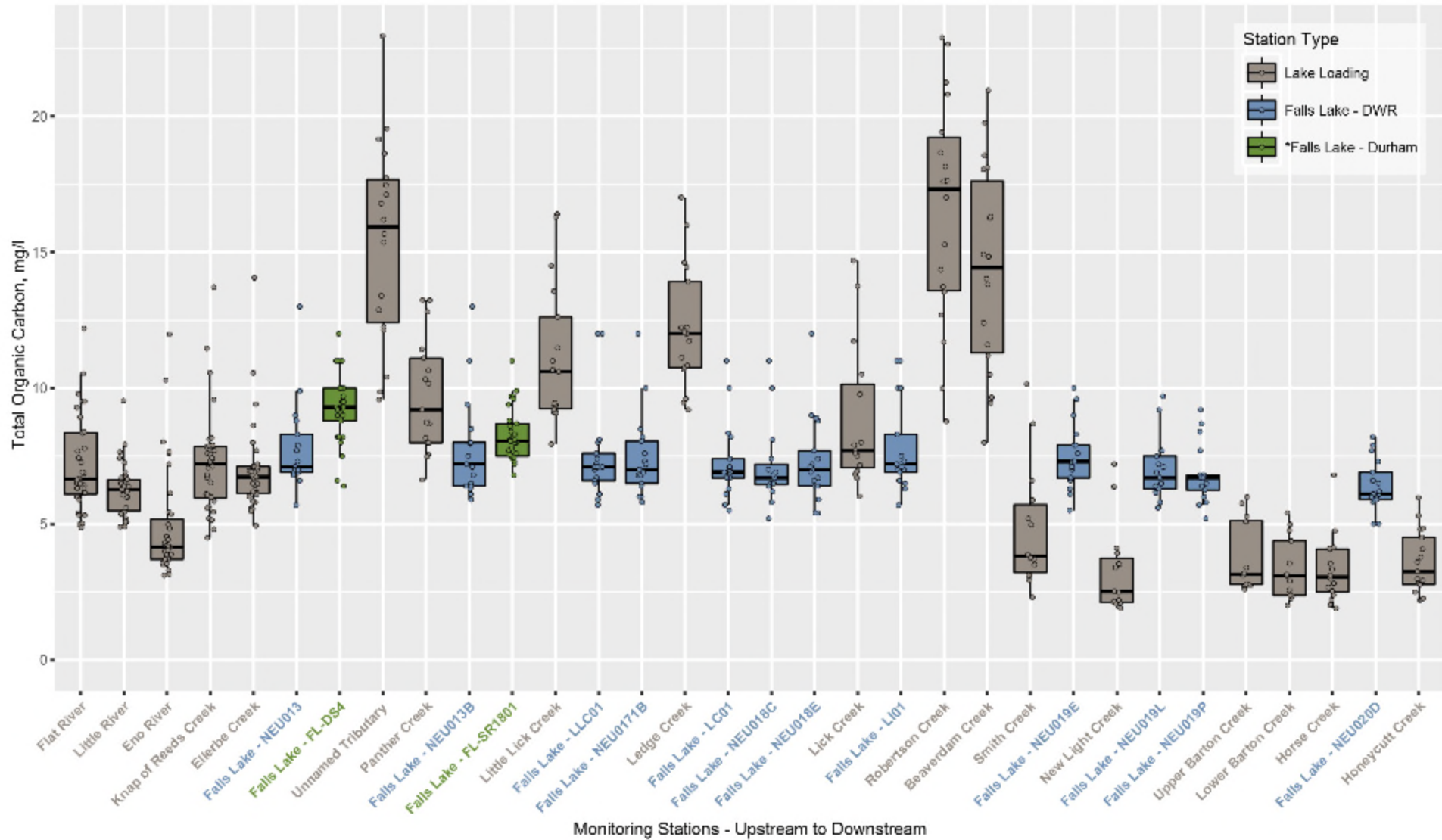
Total Nitrogen: 2014-2015



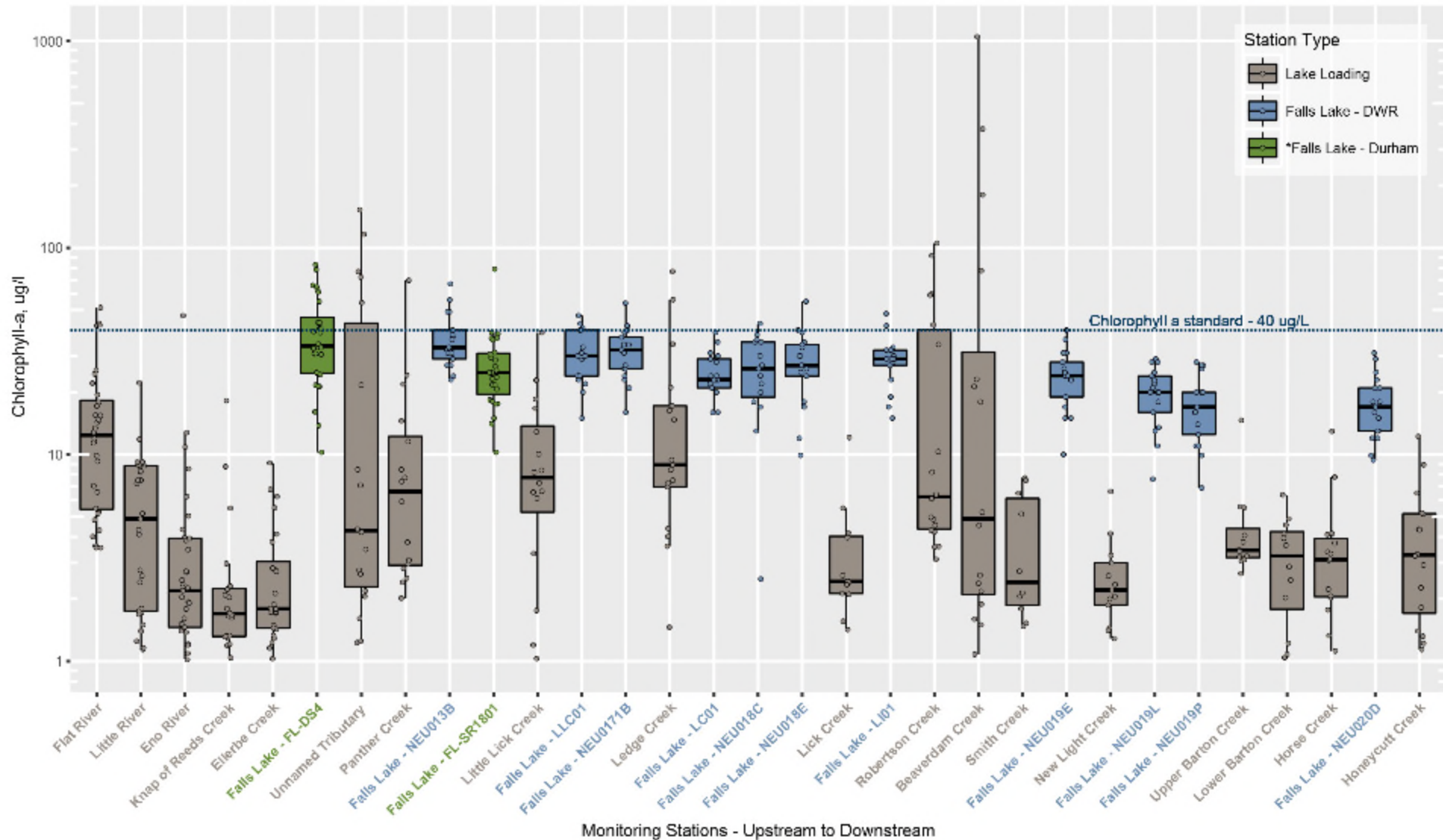
Total Phosphorus



Total Organic Carbon



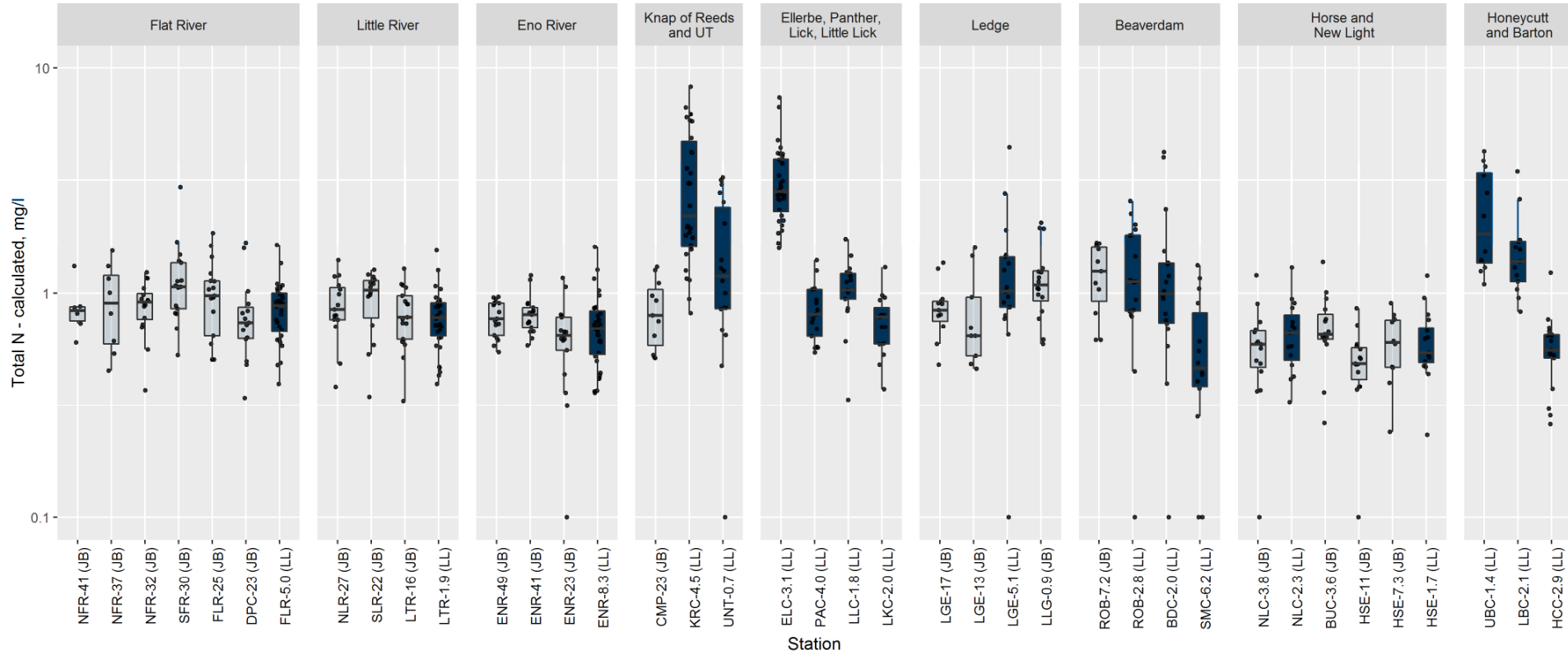
Chlorophyll a



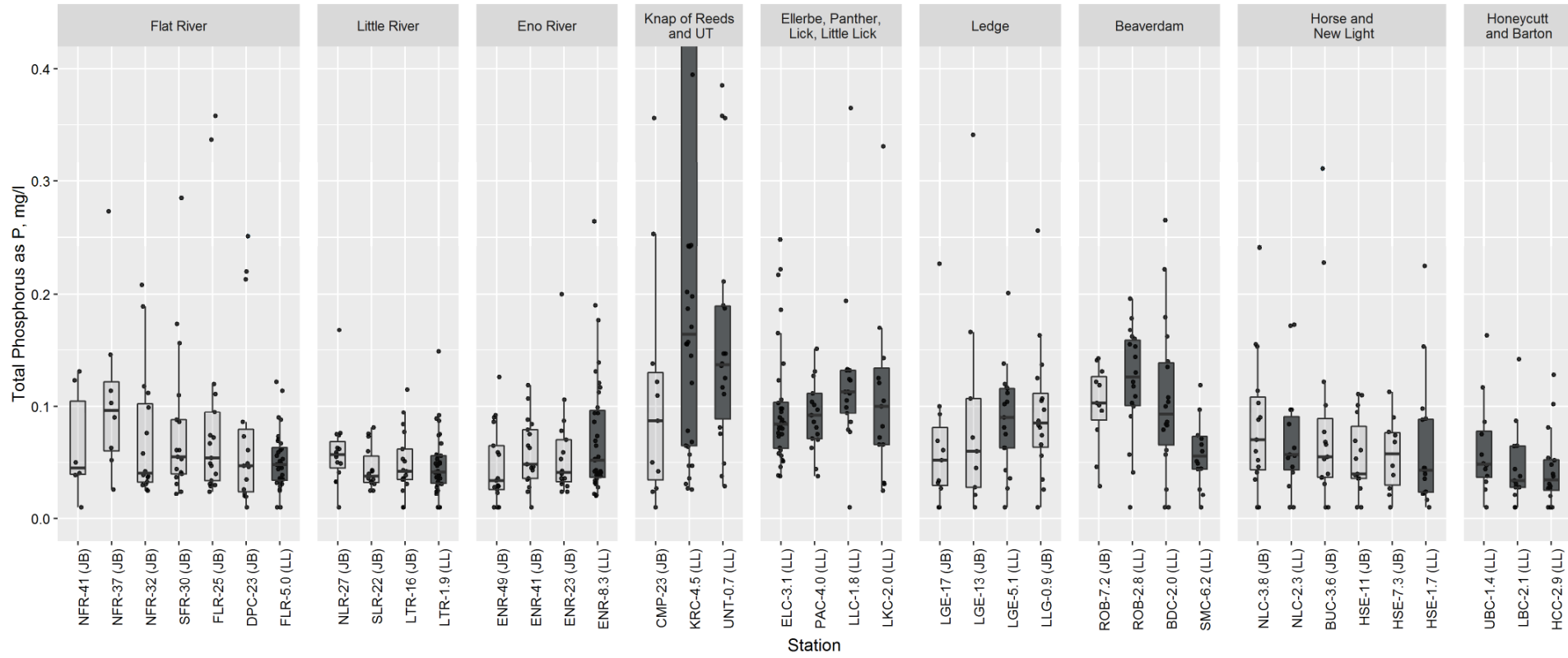
Jurisdictional and Lake Loading Stations

2014-2015

Total Nitrogen

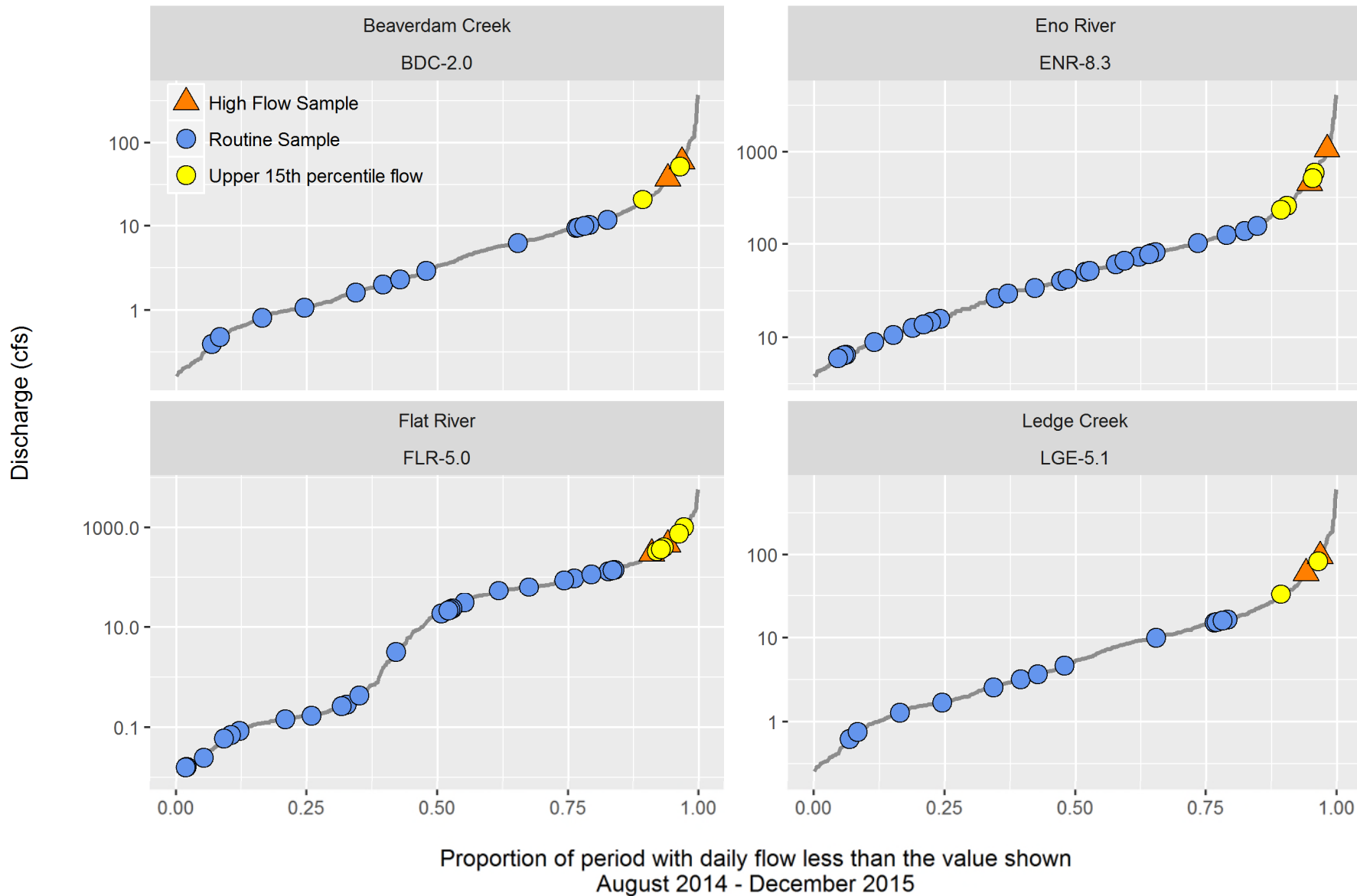


Total Phosphorus

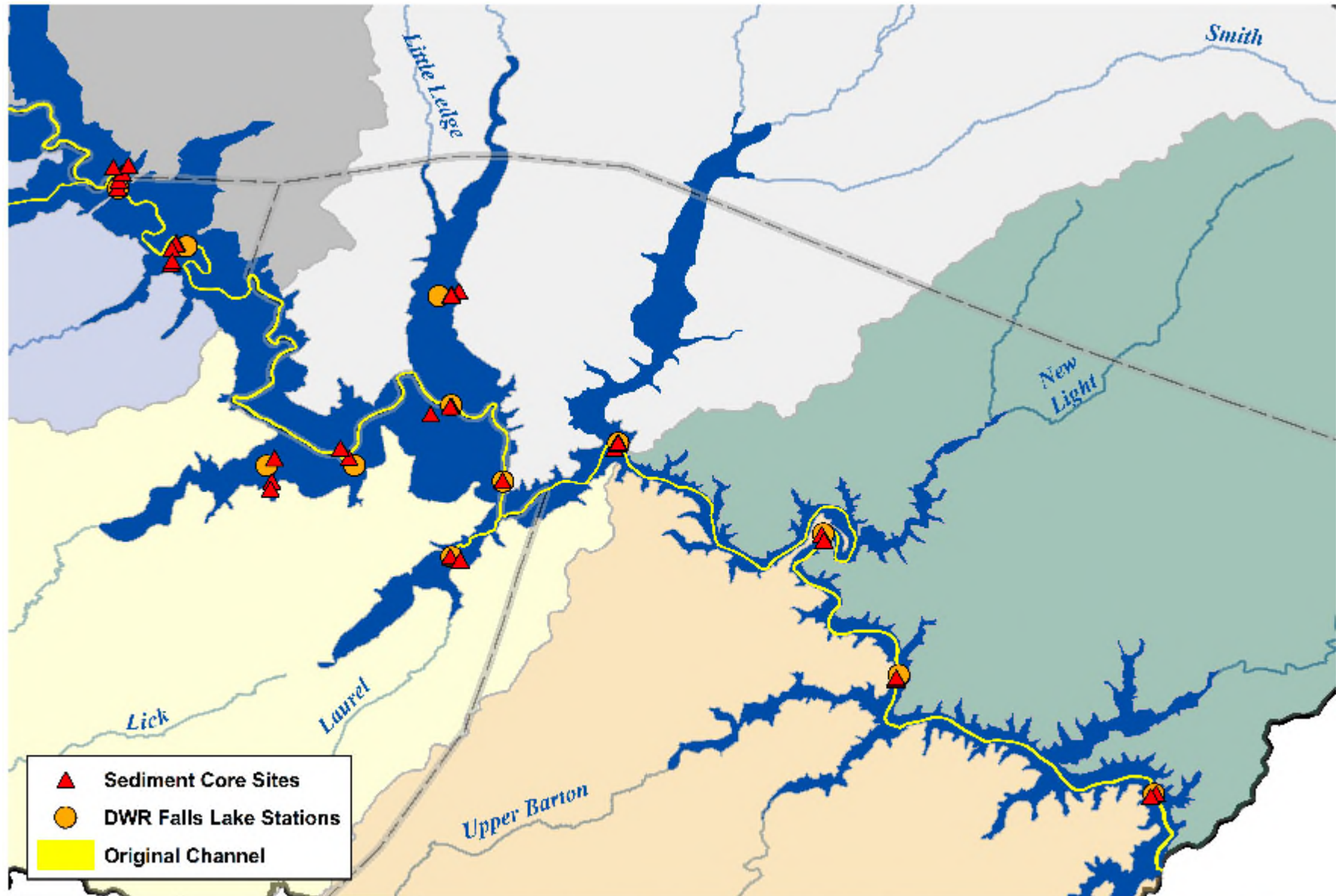


Special Studies

High Flow Sampling



Sediment Evaluation



0 0.5 1 2 Miles

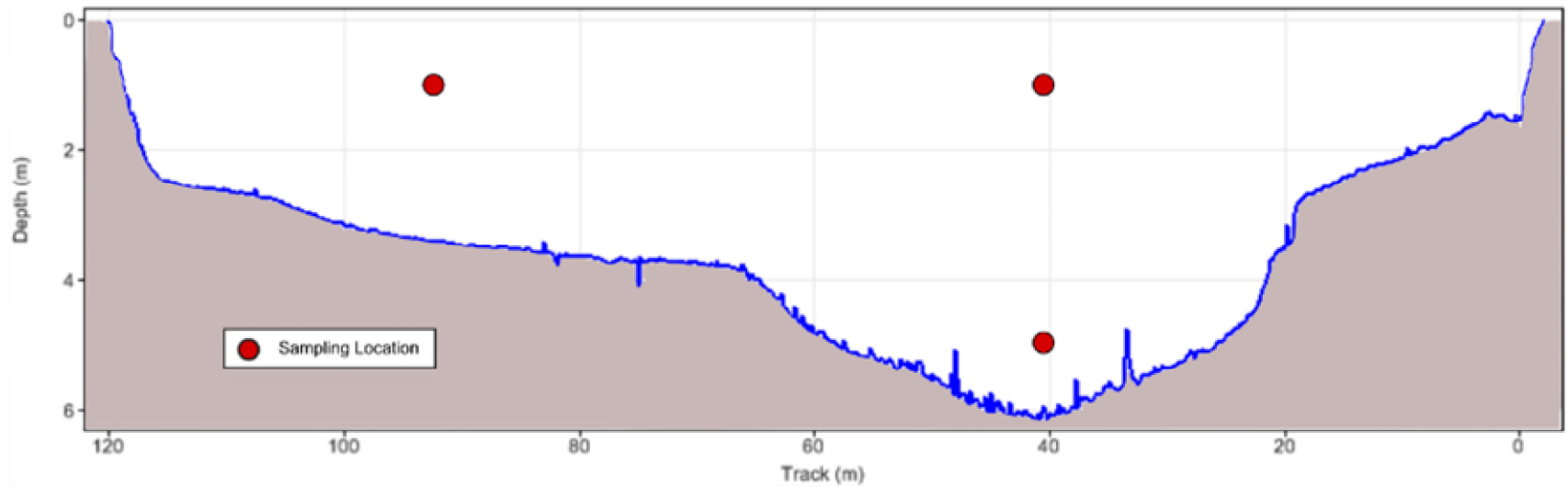
Falls Lake Sediment Core Locations
Upper Neuse River Basin Association
North Carolina



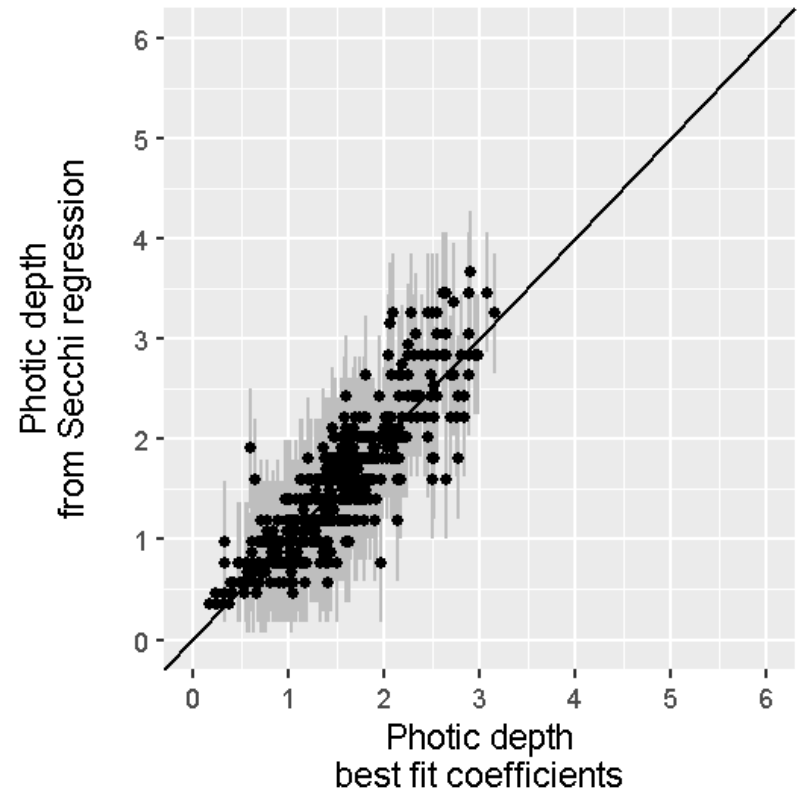
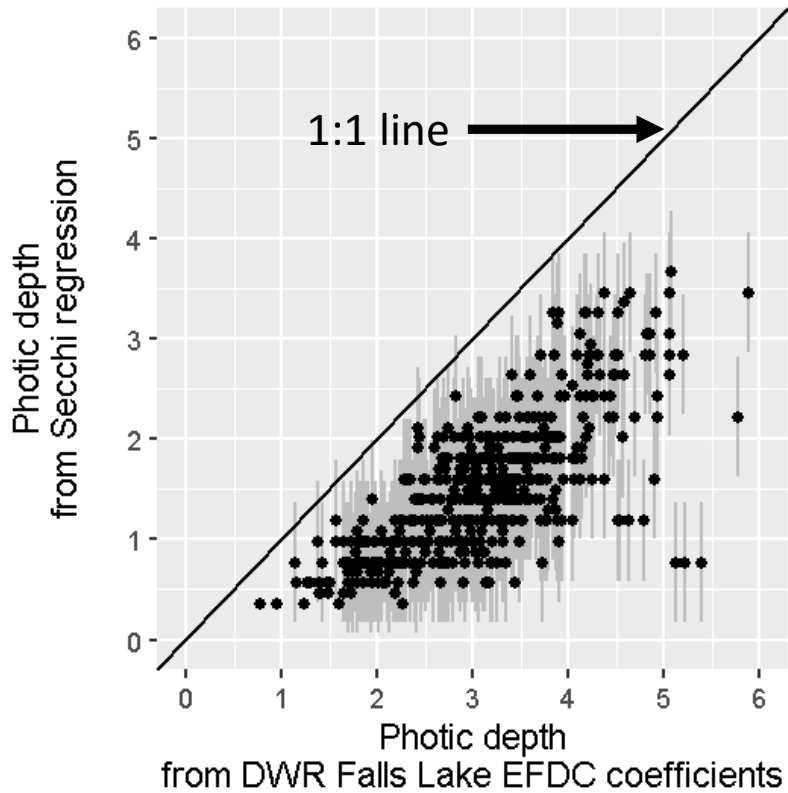
5403 Lakeside Parkway, Raleigh, NC 27605
Phone: 919-529-9200 Fax: 919-529-9202
www.cardno.com



Constriction Point Study



Light Extinction





Model evaluation

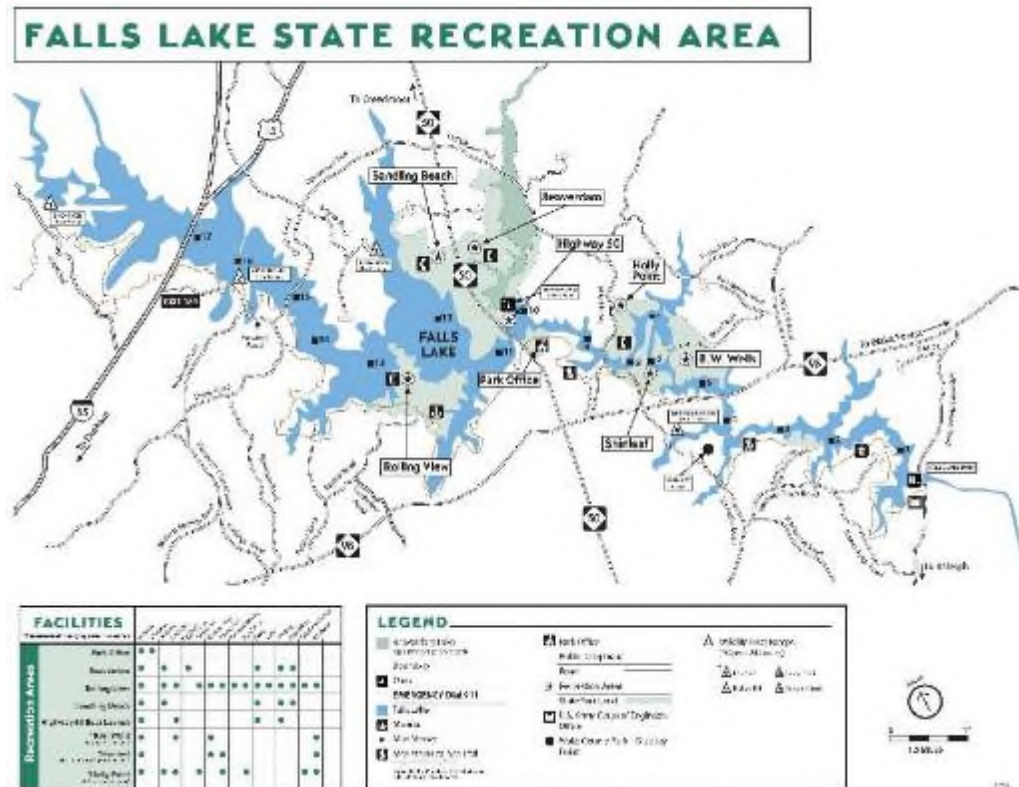
A stand-alone report is forthcoming.

The annual report highlights several model investigations and sensitivity tests examining parameter assumptions and data needs for select parameters.



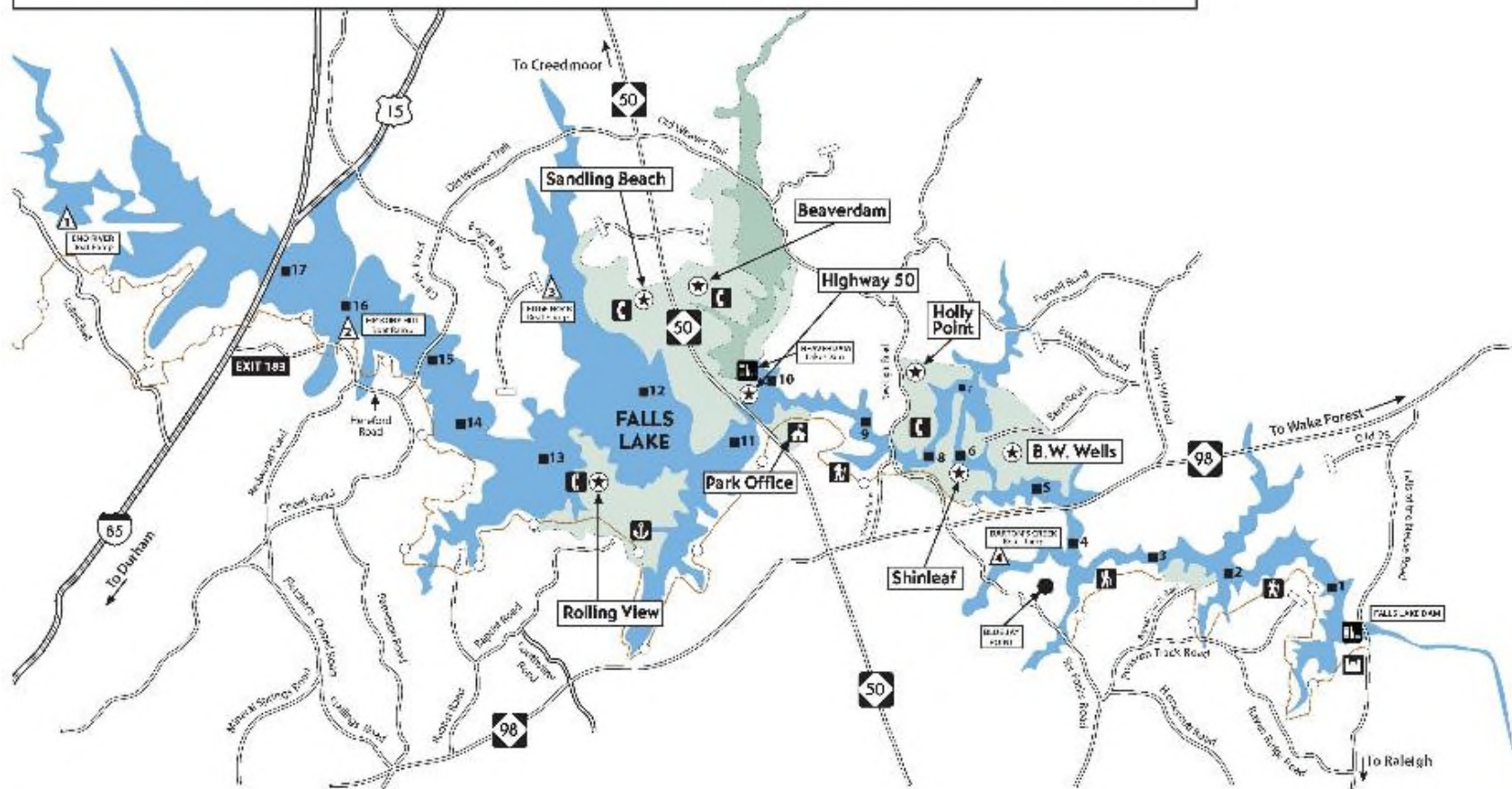
Recreational Use Evaluation

Are water quality conditions affecting recreational use of Falls Lake, or preventing the lake from attaining the recreational facet of its Designated Uses?



Recreational Use Evaluation

FALLS LAKE STATE RECREATION AREA



FACILITIES		Beaverdam	Sandling Beach	Rolling View	Holly Point	B.W. Wells	Shinleaf
Recreation Areas	Park Office	●	●				
	Beaverdam	●	●	●	●	●	●
	Rolling View	●	●	●	●	●	●
	Sandling Beach	●	●	●	●	●	●
	Highway 50 Boat Launch	●	●	●	●	●	●
	B.W. Wells	●	●	●	●	●	●
	Shinleaf	●	●	●	●	●	●
	Holly Point	●	●	●	●	●	●

LEGEND

- Beaverdam Lake (green shaded area)
- Boundary (dashed line)
- Dam (dam symbol)
- Falls Lake (blue area)
- Manna (Manna symbol)
- Mile Marker (M symbol)
- Mountains to Sea Trail (dotted line)
- Park Office (square with 'P')
- Public Telephone (square with 'T')
- Road (solid line)
- Recreation Areas (star symbol)
- State Park Land (green shaded area)
- U.S. Army Corps of Engineers Office (square with 'E')
- Wake County Park - Blue Jay Point (circle with 'W')
- Wildlife Boat Ramps (triangle with 'W')
- Boat Ramp (triangle with 'B')
- Boat Launch (triangle with 'L')
- Boat Ramp (triangle with 'R')

EMERGENCY Dial 911

Scale: 0 to 1.5 MILES

North arrow

Recreational Use Evaluation

Year	Boating	Fishing	Swimming	Total Water-Based Visitation
2005	225,509	151,409	186,635	563,553
2006	242,437	175,095	212,874	630,406
2007	221,916	153,583	182,625	558,124
2008	204,820	144,819	148,715	498,354
2009	227,700	156,808	191,575	576,083
2010	199,232	151,433	170,984	521,649
2011	238,192	138,636	168,163	544,991

- Statistical analysis showed no relationship between water quality and recreational visits to Falls Lake
- North Carolina State Comprehensive Outdoor Recreation Plan (SCORP):
 - *“Despite water quality concerns throughout the watershed, water quality in the reservoir allows for all forms of recreational use to continue.”*
 - *“Recreational facilities at Falls Lake currently meet the most popular recreational activities highlighted in the SCORP.”*
- USACE 2013 Master Plan for Falls Lake says the carrying capacity of Falls Lake limits annual visitation, but water quality is not a limiting factor.
- NC DWR reports show no indication that nutrients or algae prevent the lake from meeting its recreational use standards.

Summary and Recommendations



Summary

- Routine Monitoring has collected more than 14,000 water quality observations from 38 stations on tributaries throughout the watershed.
- Incorporated analysis of DWR monthly monitoring at 12 stations in the Falls Lake Reservoir.
- Successfully collected and analyzed over 90 percent of samples anticipated in the sampling design.
- Created an online database including a guidance document and graphics generator to help users access the data and visualize results.
- Developed Study Plans for Special Studies which were posted to the UNRBA monitoring website. Implemented each plan.
- Significantly improved laboratory quality assurance protocols and data turnaround times.
- Significantly improved efficiency in the monitoring and reporting process.
- Recommended changes to monitoring program to re-allocate resources for upcoming modeling effort.



Nutrient Credits Project Status Report—Alix Matos



UNRBA
Nutrient Credit
Development
Project
BOD Meeting
May 2016



May 18, 2016



Bioretention and Level Spreader Filter Strip Design Variants

- Released draft credit documents for review
 - UNRBA Path Forward Committee
 - Nutrient Scientific Advisory Board
- Presented practices at the March meetings
- Compiled responses to comments and generated preliminary edits
- Discussed with DWR staff on May 13th
- Distribute redline versions to PFC for approval during May 25th meeting
- Forrest to send documents to DWR
- DWR initiate public comment (30 day) and final approval (July)





Infiltration Devices Soil Improvement with Pervious Area Nutrient Management

- Released draft credit documents for review
 - UNRBA Path Forward Committee
 - Nutrient Scientific Advisory Board
- Presented practices at the April meetings
- Compiled responses to comments and generated preliminary edits
- Discuss with DWR staff – early June
- Distribute redline versions to PFC for approval during June meeting
- Forrest to send documents to DWR
- DWR initiate public comment (30 day) and final approval (August)



NCSU Biological & Agricultural
Engineering Dept.



Remaining Practices

- **Livestock exclusion**
 - Working with DWR to reconcile nutrient credits associated with varying stocking rate densities for pastures
- **Land conservation**
 - DWR is planning a meeting to continue discussions within the department and with land conservation groups to consider nutrient credit development
- **Buffer restoration**
 - DWR has been reconciling various buffer rules and related policies and the overlap with similar credit practices
 - Meeting scheduled for May 19th to discuss
- **Elimination of illegal discharges – awaiting local studies**



UNRBA Credit Tool (track nutrient credits)

- Continuing to track status of DWR initiatives that may affect the UNRBA Credit Tool
 - New version of the Jordan Falls Stormwater Load Accounting Tool that will require another “read in” version
 - Discussions about combining the Jordan Falls Stormwater Load Accounting Tool with their Low Impact Design Tool (StormEZ)
 - Rules review process and changes to local government reporting requirements



Status: Additional DWR Funding for the Credits Project



Discussion, Questions, and Feedback Welcome



CENTER FOR
WATERSHED
PROTECTION



Information Items and Reports:

PFC Report— Meetings, March 23rd,
April 23rd, and Upcoming May 27th

Lindsay Mize and Kenny Waldroup

Treasurer's Report—Jimmy Clayton

**Upper Neuse River Basin Association, Inc.
Treasurer's Report**

Date: 5/17/2016

Balance Forward: (per bank statement - 3/23/16)	Checking	\$	88,084.58
	Savings		827,641.38
Debits:		\$	
Cardno (Feb 16 Inv, MDP FY 15)			2,200.00
Cardno (Feb 16 Inv, NCDP *)			14,353.50
Cardno (Feb 16 Inv, MDP FY 16)			63,771.08
McGill Asso. (Feb & Mar 16 Invs)			31,290.61
Hopper, Hicks, & Wrenn (Feb 16 Inv)			504.00
Phthisic Consulting Inc. (Mar 16 Inv)			68.75
MFG Consulting, LLC (Feb & Mar 16 Invs)			225.00
Sauber Water Consulting (Feb & Mar 15 Invs)			5,740.00
Bank Charges (check fee & maintenance fee)			1.00
Total Debits		\$	<u>118,153.94</u>
Credits:		\$	
Interest (checking)			13.47
Interest (savings)			181.99
Transfer from Savings to Checking to Savings			75,000.00
Transfer from Checking to Savings			-
Account Balance (per bank statement -4/26/16)	Checking	\$	44,944.11
	Savings		<u>752,823.37</u>
Total UNRBA Account Balance :		\$	<u>797,767.48</u>

Outstanding invoices/deposits in process since the close of bank statement (4/26/16):

Debits:		\$	
McGill Asso. (Apr 16 Inv)			11,091.09
Cardno (Mar 16 Inv, MDP FY 16)			86,646.47
Cardno (Mar 16 Inv, MDP FY 15)			10.00
Cardno (Mar 16 Inv, NCDP*)			5,951.38
MFG Consulting, LLC (Apr 16 Inv)			100.00
Sauber Water Consulting (Apr 16 Inv)			-
Phthisic Consulting Inc. (Apr 16 Inv)			538.85
			-
Credits:		\$	
Transfer to Checking from Savings			100,000.00
Current Account Balances:	Checking	\$	40,606.32
	Savings		<u>652,823.37</u>
Total UNRBA Account Balance :		\$	<u>693,429.69</u>

* Nutrient Credit Development Project

Executive Director Report

- RFQ Process
- Wake County Planning Letter
- UNRBA Policy Documents/Audit Process
- Comments on NC's 303(d) Process and the Integrated Report (205(b))—Upcoming Meeting May 24th
- Status of Rules Review—Falls Lake Rules
- Upcoming One-Water Summit in Atlanta (Bill Holman invited me to participate with the Triangle group)
- Annual Fees to go out on or shortly after July 1
- Upcoming Monitoring Program Contract—June Meeting
- Modeling and Regulatory Support Contract—September Meeting
- EMC Water Quality Committee and EMC Meeting, May 11th and 12th

**Next Scheduled Board Meeting:
June 16, 2016, Butner Town
Hall, Beginning at 9:30 AM**

Closing Comments