

UNRBA Board of Directors

Monitoring Program Status Update

March 21, 2018



Routine Monitoring Update

March 2018

Routine Monitoring Status

Date	Sample Collection	Sample Analysis	Data Review	Posted to Database
Aug - Dec 2014	✓	✓	✓	✓
Jan - Dec 2015	✓	✓	✓	✓
Jan - Dec 2016	✓	✓	✓	✓
Jan - Dec 2017	✓	✓	✓	✓
January 2018	✓	✓		
February 2018	✓			

As of December 2017, the UNRBA has generated 41 months, 3 full growing seasons, and 3 full calendar years of water quality data.

Little River at Johnson Mill Rd (Jurisdictional Station JB06)
August 2014

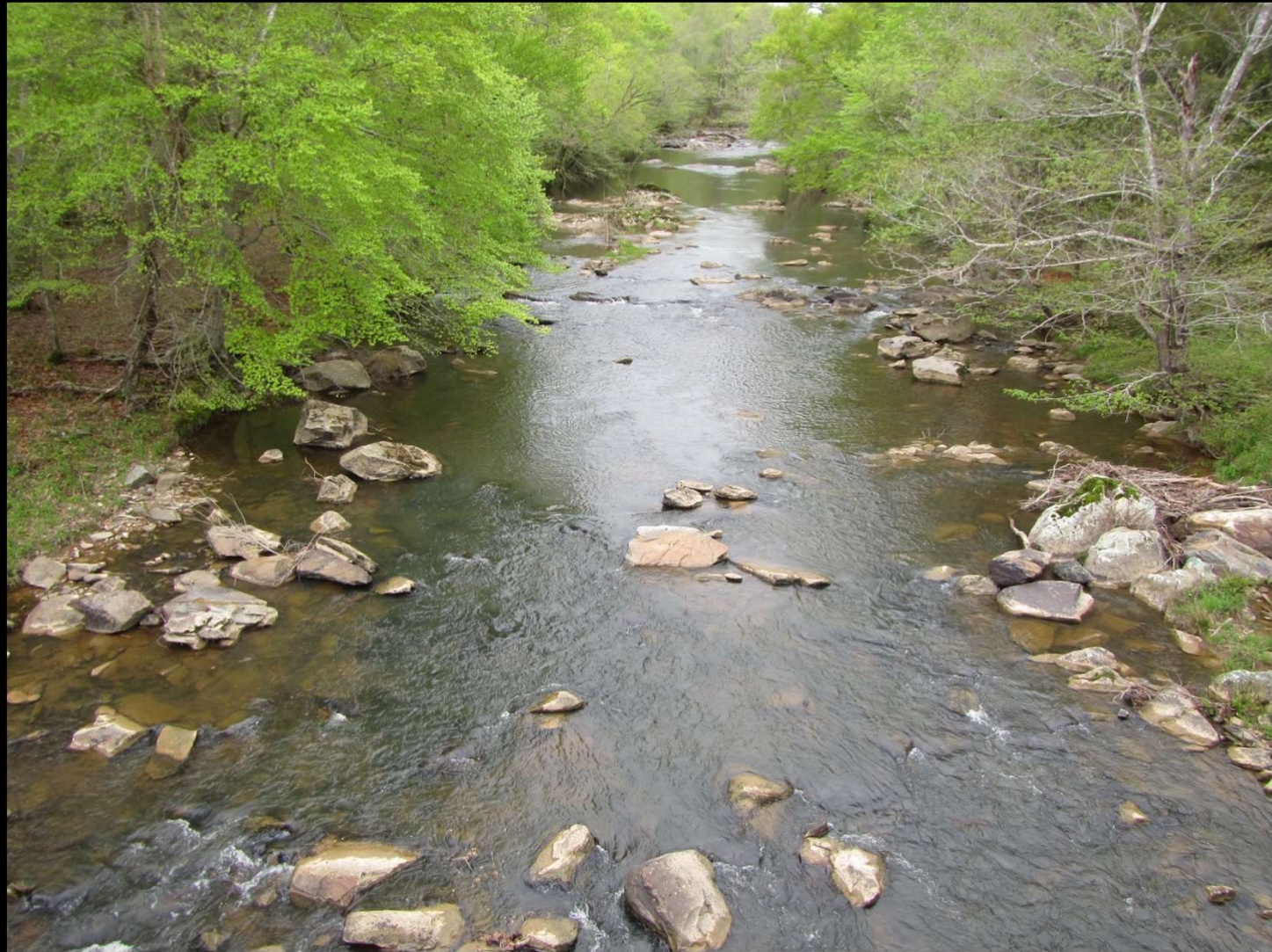














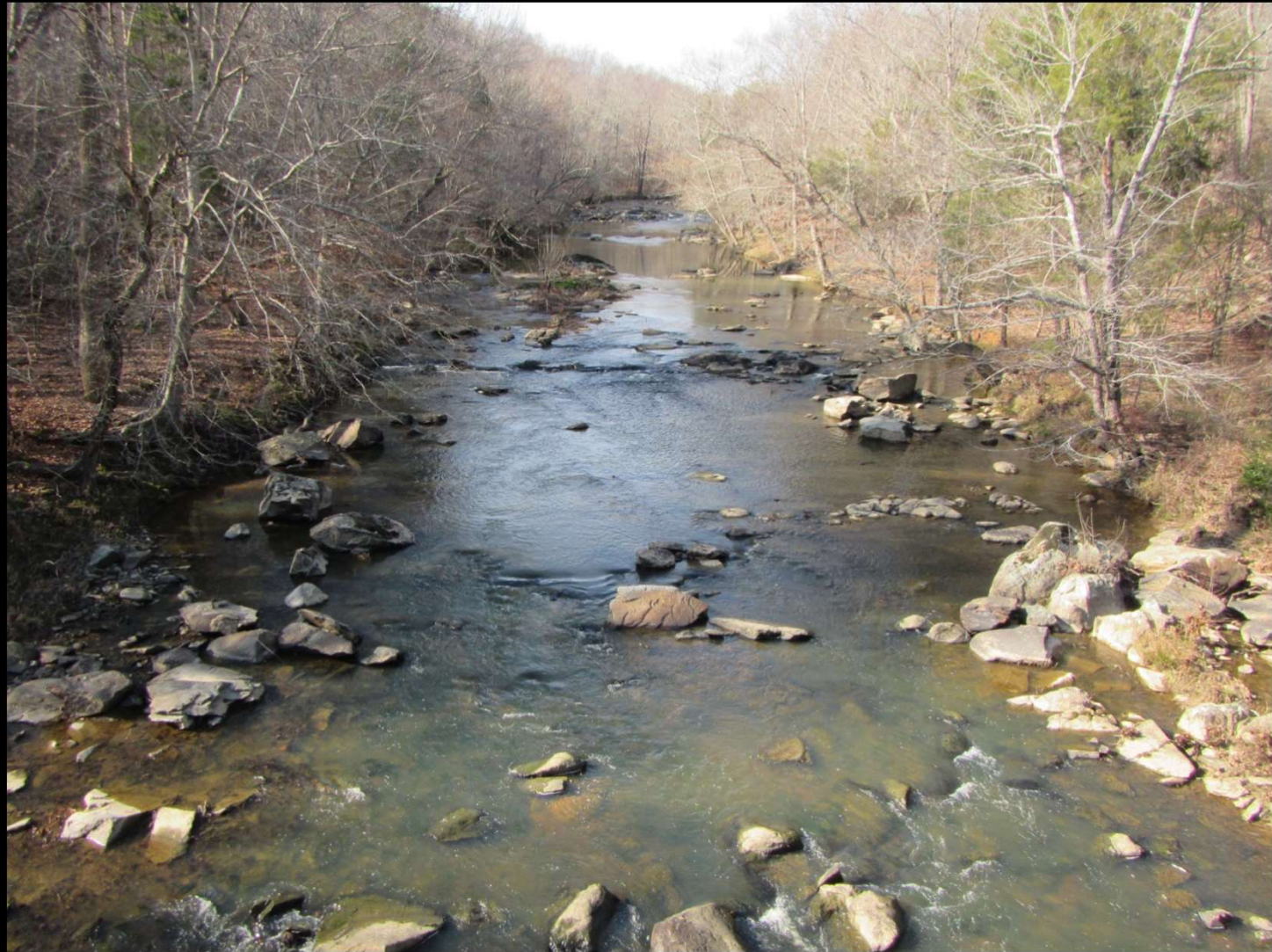
























































Little River at Johnson Mill Rd (Jurisdictional Station JB06)
November 2017



Special Studies Update

March 2018

High Flow Sampling

- The first High Flow sampling event of FY2018 was on January 23.
- A second event was conducted on January 29

Sediment Study

- Dr. Marc Alperin (UNC) is completing his report this week on sediment sampling and analysis
- To be included in the Annual Report
- Results will be provided to the modeling team



Monitoring Program Activities Ahead

- Annual Report in preparation
 - Due to PFC in April 2018
 - Working with SME's and modeling team on content
 - More extensive analysis than in prior reports

Exploring Relationships Among Parameters

	Outflow, cfs	Avg. Residence Time, 90 Days	Avg. Residence Time, 30 Days	Blue-green Algae	Chrysomonads	Cryptomonads	Diatoms	Dinoflagellates	Euglenoids	Green Algae	Pymnesiophytes	
NEU013B	0.56	-0.51	-0.59	-0.21	-0.02	0.15	-0.29	0.04	-0.24	-0.05	0.22	Stage, ft
		-0.36	-0.47	-0.19	-0.09	0.22	-0.25	-0.02	-0.10	-0.27	0.10	Outflow, cfs
			0.87	0.01	0.11	0.00	0.52	-0.16	0.13	0.28	-0.01	Avg. Residence Time, 90 Days
Outflow, cfs	0.60			0.13	0.19	-0.13	0.40	-0.10	0.03	0.30	0.04	Avg. Residence Time, 30 Days
Avg. Residence Time, 90 Days	-0.49	-0.22			0.03	0.00	-0.12	-0.04	0.44	0.32	-0.02	Blue-green Algae
Avg. Residence Time, 30 Days	-0.51	-0.36	0.79			0.20	0.10	0.16	-0.04	0.15	0.02	Chrysomonads
Ammonia Nitrogen as N, mg/l	0.24	0.16	-0.21	-0.13			-0.01	0.06	0.11	-0.03	0.18	Cryptomonads
Chlorophyll-a, ug/l	-0.46	-0.32	0.53	0.43	-0.35			-0.17	0.03	0.33	0.04	Diatoms
Dissolved oxygen, mg/l	0.18	0.19	-0.07	-0.18	0.09	-0.23			-0.01	0.02	0.08	Dinoflagellates
Kjeldahl Nitrogen as N, mg/l	-0.75	-0.30	0.56	0.52	-0.40	0.61	-0.43			0.28	-0.02	Euglenoids
Nitrate/Nitrite as N, mg/l	0.02	0.35	-0.16	-0.28	0.27	-0.30	0.51	-0.08			0.13	Green Algae
Total Organic Carbon, mg/l	0.23	0.47	0.03	-0.25	-0.03	-0.06	0.31	0.02	0.29			
Total Phosphorous as P, mg/l	-0.72	-0.26	0.53	0.41	-0.22	0.50	-0.34	0.85	0.18	0.00		
Turbidity	-0.56	-0.09	0.22	0.12	0.16	0.13	-0.15	0.55	0.47	0.03	0.79	
	Stage, ft	Outflow, cfs	Avg. Residence Time, 90 Days	Avg. Residence Time, 30 Days	Ammonia Nitrogen as N, mg/l	Chlorophyll-a, ug/l	Dissolved oxygen, mg/l	Kjeldahl Nitrogen as N, mg/l	Nitrate/Nitrite as N, mg/l	Total Organic Carbon, mg/l	Total Phosphorous as P, mg/l	

Monitoring Program Activities Ahead

- Developing options for changes to Routine Monitoring after October 2018
 - Working closely with ED and SMEs
 - Bring options to Path Forward Committee in March
 - Looking at various combinations of reducing frequency, stations, parameters and the associated data management and reporting.
 - Include refined recommendations in Annual Report
 - Develop estimated monitoring budget for FY2019 and forecast for 2020

Other Activities

- Considering additional efforts to address Designated Use support
 - Addressing the Biological Integrity facet of the standard, for example
 - Working with ED and SMEs, the MRSW and the PFC
 - Assessing available information and data
 - Considering whether supplemental data acquisition or analysis may be warranted
- Evaluating UNRBA Monitoring Program findings relative to analyses and reporting by others.

Questions ?

