

Upper Wakulla River and Wakulla Springs Basin Management Action Plan

Proposed Monitoring Plan for Discussion

May 16, 2013

The following paper outlines the proposed monitoring plan for the Upper Wakulla River and Wakulla Springs Basin Management Action Plan (BMAP) to track trends in water quality and the biological community to measure progress towards the total maximum daily load (TMDL).

Objectives

The following objectives were drafted for discussion:

- Track trends in nitrate concentrations and loads in the Upper Wakulla River and Wakulla Springs.
- Track trends in the biological communities in the Upper Wakulla River.

Water Quality Monitoring Parameters

Core Parameters	Supplemental Parameters	Field Parameters
Nitrate + Nitrite (as N)	Sucralose (spring vent and conduits)	Water Temperature
Ammonia (as N)	Nitrogen Isotopes (spring vent and conduits)	pH
Kjeldahl Nitrogen	Oxygen Isotopes (spring vent and conduits)	Specific Conductance
-	Total Phosphorous	Dissolved Oxygen
-	Ortho-Phosphate (as P)	Sample Depth
-	Organic Carbon	Secchi Depth (river sites only)
-	Dissolved Solids	-
-	Suspended Solids	-
-	Turbidity	-
-	Color (true)	-
-	Corrected Chlorophyll-a (river sites only)	-
-	Total Organic Carbon	-
-	Boron	-
-	Calcium	-
-	Magnesium	-
-	Sodium	-
-	Potassium	-
-	Chloride	-
-	Sulfate	-
-	Fluoride	-
-	Alkalinity as CaCO ₃	-

Note: Certain parameters will only be collected at the spring vent and conduit sites while other parameters will only be collected at the river sites.

Biological Monitoring

- Rapid periphyton survey (RPS) – assessment of the abundance and variety of algae in the river.
- Linear vegetation survey (LVS) – assessment of the vegetation in the river to identify the native versus non-native species and plant density.

Monitoring Responsibility, Network, and Sampling Frequency

- Water quality monitoring
 - Existing monitoring – The Northwest Florida Water Management District (NFWFMD) will continue to collect quarterly water samples at the spring vent, monthly samples at the upper bridge, and field parameters at the boat dock. The Florida Department of Environmental Protection (FDEP) Ground Water Protection Section will continue to collect quarterly water quality samples at the springs vent and five conduits, as conditions allow.
 - Proposed monitoring – It is being proposed for NFWFMD to start collecting monthly water quality samples at the recreation area boat dock and water quality samples two times per year at the proposed RPS and LVS locations.
- Biological monitoring
 - Planned Monitoring – Starting in October 2013, NFWFMD will conduct the RPS, LVS, and stream condition index (SCI) two times per year near the upper bridge.
 - Proposed monitoring – It is being proposed for NFWFMD to conduct RPS and LVS two times per year at the location where the tour boats turn around.