Alabama Department of Environmental Management

Basin Assessment Site

Rivers and Streams Monitoring Program

2005 Monitoring Summary

Tallatchee Creek at state road 41 in Monroe County (32.82405/-87.38222)

BACKGROUND

The Alabama Department of Environmental Management (ADEM) selected the Tallatchee Creek watershed for biological and water quality monitoring as part of the 2005 Assessment of the Alabama, Coosa, and Tallapoosa (ACT) River Basins.

Habitat and macroinvertebrate assessments are conducted to assess the biological integrity of each monitoring site and to estimate overall water quality within the ACT basin group. Assessments of habitat quality and macroinvertebrate community were attempted but could not be completed due to un-wadeable site conditions. Sampling at this site ended in May due to lack of flow.

WATERSHED CHARACTERISTICS

Watershed characteristics are summarized in Table 1. Tallatchee Creek at TALM-1 is a deep, low-gradient *Fish & Wildlife (F&W)* stream located in the Southern Hill Gulf Coastal Plains ecoregion (65d) in the Alabama River Basin. Landuse within the watershed is primarily forest, with some shrub areas (Fig. 1). As of June 9, 2008 ADEM's NPDES management database did not contain any permitted discharges located within the watershed.

WATER CHEMISTRY

Results of water chemistry analyses are presented in Table 2. The site was un-wadeable during monthly site visits conducted March-May and stopped flowing in June. General samples were collected monthly; metals were collected in March and May. Median turbidity, Total Kjeldahl Nitrogen, and chlorophyll *a* concentrations were slightly elevated for this stream type.

CONCLUSIONS

Un-wadeable conditions in Tallatchee Creek at TALM-1 prevented the completion of habitat and macroinvertebrate assessments. Monthly water quality samples collected during March, April, and May did not indicate impairment.

Table 1. Summary of watershed characteristics.

Watershed Characteristics		
Drainage Area (mi^2)		29
Ecoregion[a]		65d
% Landuse		
Open water		<1
Wetland	Woody	5
	Emergent herbaceous	<1
Forest	Deciduous	31
	Evergreen	46
	Mixed	7
Shrub/scrub		6
Grassland/herbaceous		<1
Pasture/hay		2
Cultivated crops		2
Development	Open space	2
Low intensity		<1
Population/km^2[b]		3

a. Southern Hill Gulf Coastal Plains
b. 2000 U.S. Census Data

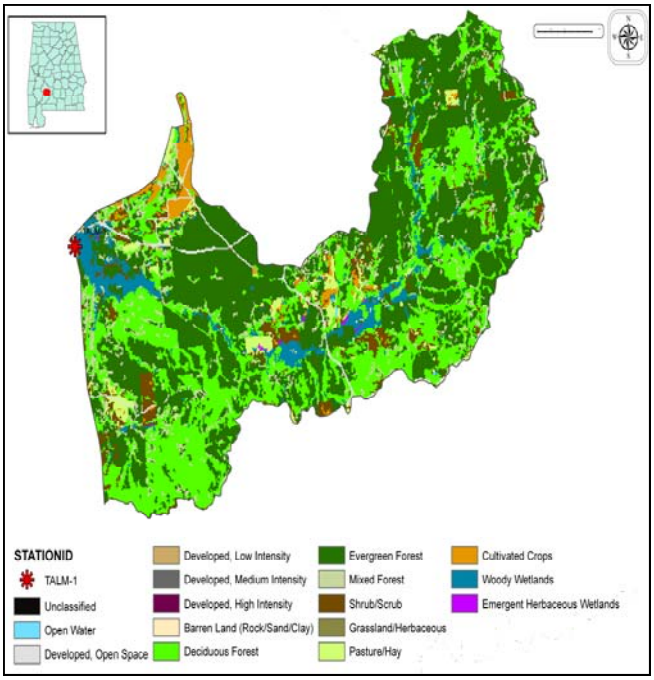

Figure 1. Sampling location and landuse within the Tallatchee Creek watershed at TALM-1.

Table 2. Summary of water quality data collected March-May, 2005. Minimum (Min) and maximum (Max) values calculated using minimum detection limits (MDL) when results were less than this value for non-metals parameters. Median, average (Avg), and standard deviations (SD) values were calculated by multiplying the MDL by 0.5 when results were less than this value for non-metals parameters.

Parameter	N	Min	Max	Median	Avg	SD
Physical						
Temperature (°C)	3	18.5	20.0	20.0	19.5	0.9
Turbidity (NTU)	3	22.3	98.9	58.8[M]	60	38.0
Total dissolved solids (mg/L)	3	83.0	90.0	84.0	85.7	3.8
Total suspended solids (mg/L)	3	14.0	108.0	54.0	58.7	47.2
Specific conductance (µmhos)	3	53.5	86.3	73.7	71.2	16.5
Hardness (mg/L)	2	23.1	23.8	23.5	23.5	0.5
Alkalinity (mg/L)	3	7.9	21.2	12.0	13.7	6.8
Chemical						
Dissolved oxygen (mg/L)	3	7.5	8.6	8.3	8.1	0.6
pH (su)	3	7.0	7.2	7.1	7.1	0.1
Ammonia Nitrogen (mg/L)	3	< 0.015	0.163	0.008	0.059	0.090
Nitrate+Nitrite Nitrogen (mg/L)	3	0.040	0.169	0.081	0.097	0.066
Total Kjeldahl Nitrogen (mg/L)	3	0.366	1.067	0.591[M]	0.674	0.358
Total nitrogen (mg/L)	3	0.535	1.148	0.631	0.771	0.330
Dissolved reactive phosphorus (mg/L)	3	< 0.004	0.010	0.004	0.005	0.004
Total phosphorus (mg/L)	3	0.063	0.170	0.071	0.101	0.060
CBOD-5 (mg/L)	2	1.8	2.6	2.2	2.2	0.6
Chlorides (mg/L)	3	4.6	6.18	6.1	5.6	0.9
Atrazine (µg/L)	1	---	---	---	< 0.05	---
Total Metals						
Aluminum (mg/L)	2	0.015	0.941	0.474	0.474	0.7
Iron (mg/L)	2	1.83	2.47	2.15	2.150	0.5
Manganese (mg/L)	2	0.035	0.052	0.0435	0.044	---
Dissolved Metals						
Aluminum (mg/L)	2	0.048	0.256	0.152	0.152	0.1
Antimony (µg/L)	2	< 2	< 2	1	1	---
Cadmium (mg/L)	2	< 0.005	< 0.005	0.0025	0.0025	---
Chromium (mg/L)	2	< 0.004	< 0.004	0.002	0.002	---
Copper (mg/L)	2	< 0.005	< 0.005	0.0025	0.003	---
Iron (mg/L)	2	0.499	0.505	0.502	0.502	---
Lead (µg/L)	2	< 2	< 2	1	1	---
Manganese (mg/L)	2	< 0.005	0.054	0.0283	0.028	---
Mercury (µg/L)	2	< 0.3	< 0.3	0.15	0.15	---
Nickel (mg/L)	2	< 0.006	0.01	0.0065	0.0065	---
Selenium (µg/L)	1	---	---	---	< 10	---
Silver (mg/L)	2	< 0.003	< 0.003	0.0015	0.0015	---
Thallium (µg/L)	2	< 1	< 1	0.5	0.5	---
Zinc (mg/L)	2	< 0.006	< 0.006	0.003	0.003	---
Biological						
[J] Chlorophyll a (µg/L)	3	0.53	7.12	5.34[M]	4.33	3.4
[J] Fecal Coliform (col/100 mL)	3	60	1100	630	597	521

J=estimate; N=# samples; Min=minimum; Max=maximum; M=value > 90% of ADEM's reference reach data collected within ecoregion 65d.

FOR MORE INFORMATION, CONTACT:
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