

2006 Monitoring Summary

Little Dry Creek at Marengo County Road 44 Crossing (32.354304/ -87.655255)

BACKGROUND

The Alabama Department of Environmental Management (ADEM) selected the Little Dry Creek watershed for biological and water quality monitoring as part of the 2006 Assessment of the Escatawpa, Mobile, and Lower Tombigbee (EMT) River Basins. The objectives of the EMT Basin Assessments were to assess the biological integrity of each monitoring site and to estimate overall water quality within the EMT basin group.

Habitat and macroinvertebrate assessments are conducted to assess biological conditions within the reach. Neither assessment could be conducted because there was no flow.

WATERSHED CHARACTERISTICS

Watershed characteristics are summarized in Table 1. Little Dry Creek is a *Fish & Wildlife (F&W)* stream located in Marengo County. Landuse within the watershed is primarily pasture and hay (73%) with some forest (11%) (Table 1). Population density is very low within the watershed. No NPDES permits have been issued in this watershed as of 18 September 2009.

REACH CHARACTERISTICS

Little Dry Creek is a low-gradient stream reach located in the Flatwoods/ Blackland Prairie Margins (65b) ecoregion (Table 1). The stream bed was dry during five of nine site visits.

WATER CHEMISTRY

Results of water chemistry analyses are presented in Table 2. Monthly sample collections were scheduled March through October of 2006. However, intermittent flow conditions prevented sample collection, July through October.

SUMMARY

Little Dry Creek at LDRM-29 was selected for biological and water quality monitoring as part of the 2006 assessment of the EMT River Basins. However, habitat and macroinvertebrate assessments could not be conducted because the reach was dry July through October. Additional monitoring will need to be conducted before biological conditions at this site can be assessed.



Figure 1. Little Dry Creek at LDRM-29, January, 2010.

Table 1. Summary of watershed characteristics.

Watershed Characteristics			
Basin		Lower Tombigbee River	
Drainage Area (mi ²)		15	
Ecoregion ^a		65b	
% Landuse			
Open water		1	
Wetland	Woody	4	
Forest	Deciduous	5	
	Evergreen	2	
	Mixed	4	
Shrub/scrub		4	
Pasture/hay		73	
Cultivated crops		2	
Development	Open space	4	
Population/km ^{2b}		3	
# NPDES Permits ^c		0	
		TOTAL	0

a.Flatwoods/Blackland Prairie Margins

b.2000 US Census

c.#NPDES permits downloaded from ADEM's NPDES Management System database, 18 Sep 2009

Table 2. Summary of water quality data collected March-October, 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. Metals results were compared to ADEM's chronic aquatic life use criteria adjusted for hardness.

Parameter	N	Min	Max	Median	Avg	SD
Physical						
Temperature (°C)	4	17.0	25.1	18.3	19.7	3.7
Turbidity (NTU)	4	3.5	48.5	3.9	14.9	22.4
Total Dissolved Solids (mg/L)	4	214.0	415.0	340.0 ^M	327.2	84.4
Total Suspended Solids (mg/L)	4	6.0	59.0	7.5	20.0	26.0
Specific Conductance (µmhos)	4	243.9	600.0	565.4 ^M	493.7	169.0
Alkalinity (mg/L)	4	108.6	234.8	219.7 ^M	195.7	58.8
Stream Flow (cfs)	3	0.6	34.4	1.8	12.3	19.2
Chemical						
Dissolved Oxygen (mg/L)	4	5.6	8.7	7.2	7.2	1.4
pH (su)	4	7.3	7.7	7.6	7.6	0.2
Ammonia Nitrogen (mg/L)	4	< 0.015	0.037	0.036	0.029	0.014
Nitrate+Nitrite Nitrogen (mg/L)	4	< 0.003	10.3	0.076	2.613	5.125
Total Kjeldahl Nitrogen (mg/L)	4	0.404	1.004	0.543	0.624	0.278
Total Nitrogen (mg/L)	4	< 0.406	10.731	0.905	3.237	5.006
Dissolved Reactive Phosphorus (mg/L)	4	< 0.004	0.155	0.064 ^M	0.071	0.079
Total Phosphorus (mg/L)	4	< 0.067	0.225	0.132 ^M	0.135	0.089
CBOD-5 (mg/L)	4	< 1.0	3.1	2.8	2.3	1.2
Chlorides (mg/L)	2	14.8	19.0	16.9 ^M	16.9	3.0
Biological						
Chlorophyll a (µg/L)	4	0.53	17.60	5.88	7.47	7.83
^J ^G Fecal Coliform (col/100 mL)	3	120	18000	170	6097	10309

N= # of samples; M= value > 90th percent of ADEM's 65b reference reach samples; J= estimate; G= Analyte present but greater than quantifiable.

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