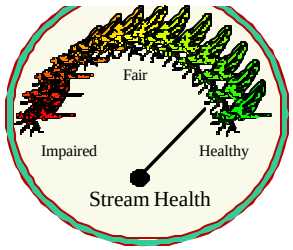
EcoSummary

Black Creek

1/10/2002



Background

Since 1992, minimally disturbed reference streams have been sampled throughout Florida for the purpose of establishing biological community expectations and identifying specific thresholds for assessing stream health. The Stream Condition Index (SCI) has been the primary assessment method, which consists of collecting 20 D-frame dipnet sweeps (0.5 m in length) of the most productive habitats in a 100 m reach of stream. The organisms are sub-sampled, sorted, and identified to the lowest practical taxonomic level. Seven measurements of invertebrate health are calculated and compared with the expectations established by the reference site sampling. These reference streams are sampled periodically to maintain accurate expectations to which other streams in the same ecoregion are compared.

Black Creek is a reference stream located in southwest Leon County, Florida; see Figure 1. Florida DEP's Bureau of Laboratories sampled Black Creek for biological and water quality monitoring on January 10, 2002. A stream habitat assessment was conducted. Samples were collected for SCI, bacteria, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, total suspended solids (TSS), and turbidity analyses; see Figure 2.

Results and Discussion

Nutrients were very low in Black Creek. The nitrate-nitrite concentration in Black Creek was below the detection limit; see Figure 2. The total phosphorus level was below the practical quantitation limit. The TKN concentration (0.43 mg/L) was low compared with other Florida streams. Dissolved oxygen met acceptable criteria for Class III water bodies.

Fecal and total coliform levels complied with Class III water quality standards. *Escherichia coli* concentration was below the recommended standard; *Enterococci* concentration was elevated in comparison to recommended standards. The applicability of these two bacteria indicators in warm Florida waters is still under investigation. The habitat assessment total score for Black Creek (132) was in the optimal category; habitat quality was not a limiting factor for the benthic macroinvertebrate community. The SCI score (31) was in the "excellent" range. The "poor" SCI score from 1995 was due to inappropriate hydrologic conditions for SCI sampling; see Figure 3. Black Creek is an overall healthy system.

Figure 1. Overview Map of the Black Creek Area

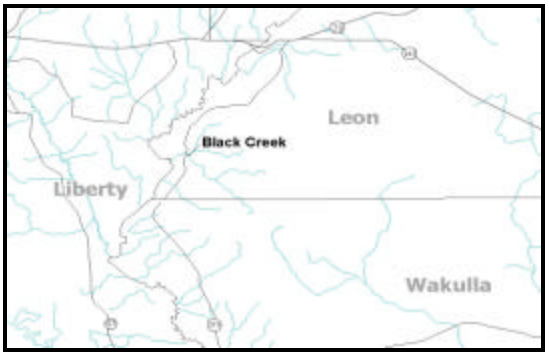
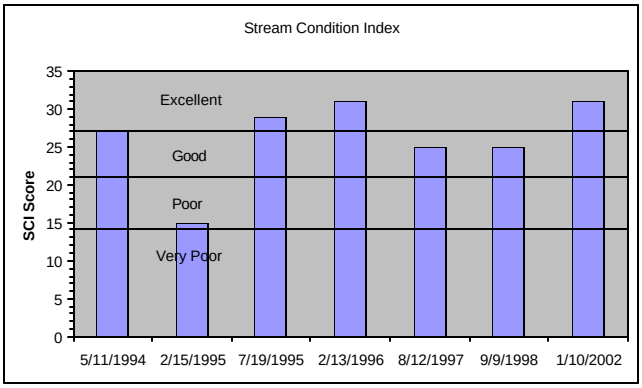


Figure 2. Data Table

BLACK CREEK			
Station		Black Creek @ 375	
Station Nick Name		BLK375REF	
STORET		22020063	
Sampling Date		1/10/2002	
Macroinvertebrate Data		**Chemistry Data**	
SCI Score	31	Nitrate-Nitrite (mg/L)	0.004 U
SCI Evaluation	Excellent	TKN (mg/L)	0.43
SCI Region	Panhandle West	Total Phosphorus (mg/L)	0.017 I
Number of Taxa	29	TSS (mg/L)	4 U
EPT Index	12	Turbidity (NTU)	2
% Dominant Taxon	19.35	**Bacteria Data**	
Florida Index	21	*Enterococci* (col/100 mL)	1200
% Diptera	26.88	*Escherichia coli* (col/100 mL)	150
Number of Chironomidae	6	Fecal Coliforms (col/100 mL)	230
% Filter-Feeders	25.27	Total Coliforms (col/100 mL)	530
Physical-Chemical Data			
Habitat Assessment	132		
Temperature (deg. C)	9.2		
pH (SU)	5.86		
Specific Conductance (umho/cm)	43		
Dissolved Oxygen (mg/L)	12.0		

"I"-Below practical quantitation limit; "U"-Below detection limit

Figure 3. SCI Scores for Black Creek Over Time



FOR MORE INFORMATION, CONTACT:
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