EcoSummary

Lloyd Creek

1/16/2002

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.

Lloyd Creek is a reference stream located in Jefferson County, Florida, north of US 27 and east of the town of Lloyd; see Figure 1. Florida DEP's Bureau of Laboratories sampled Lloyd Creek for biological and water quality monitoring on January 16, 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

The nitrate-nitrite concentration (0.2 mg/L) and total phosphorus level (0.12 mg/L) in Lloyd Creek was relatively average compared with other Florida streams; see Figure 2. TKN concentration (0.52 mg/L) was below the thirtieth percentile. The dissolved oxygen concentration (11.3. mg/L) met acceptable criteria for Class III water bodies.

Fecal and total coliform levels complied with Class III water quality standards. *Enterococci* and *Escherichia coli* concentrations were elevated in comparison to recommended standards, but the applicability of these indicators in warm Florida waters is still under investigation. The habitat assessment total score for Lloyd Creek (119) was just one point below 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 scores in the past were due to inappropriate hydrologic conditions for SCI sampling; see Figure 3. Lloyd Creek is an overall healthy system.

Figure 1: Overview Map of the Lloyd Creek Area

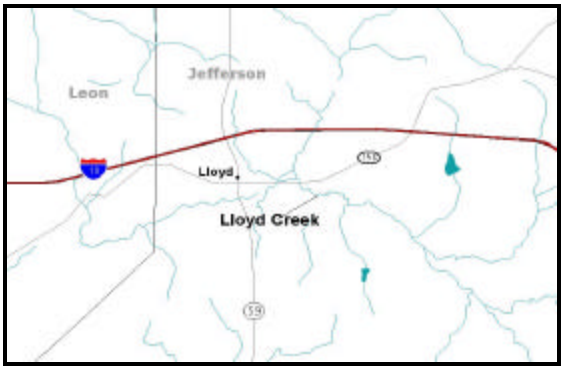
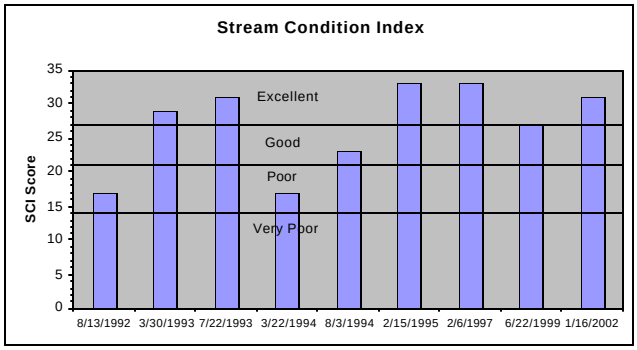


Figure 2: Data Table

LLOYD CREEK			
Station		Lloyd Creek	
Station Nick Name		LLOYDREF	
STORET		22030061	
Sampling Date		1/16/2002	
Macroinvertebrate Data		**Chemistry Data**	
SCI Score	31	Nitrate-Nitrite (mg/L)	0.2 J
SCI Evaluation	Excellent	TKN (mg/L)	0.52
SCI Region	Panhandle East	Total Phosphorus (mg/L)	0.12
Number of Taxa	39	TSS (mg/L)	10 I
EPT Index	6	Turbidity (NTU)	7.9
% Dominant Taxon	14.14	**Bacteria Data**	
Florida Index	23	*Enterococci* (col/100 mL)	1500
% Diptera	64.65	*Escherichia coli* (col/100 mL)	460
Number of Chironomidae	16	Fecal Coliforms (col/100 mL)	600
% Filter-Feeders	29.29	Total Coliforms (col/100 mL)	1700
Physical-Chemical Data			
Habitat Assessment	119		
Temperature (deg. C)	9.5		
pH (SU)	6.6		
Specific Conductance (umho/cm)	79		
Dissolved Oxygen (mg/L)	11.3		

"I"- Below practical quantitation limit; "J"- Estimated value

Figure 3. SCI Scores for Lloyd Creek Over Time



FOR MORE INFORMATION, CONTACT:
Amy Wheeler, FDEP Environmental Assessment
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-2400 (850) 245-8070
amy.wheeler@dep.state.fl.us