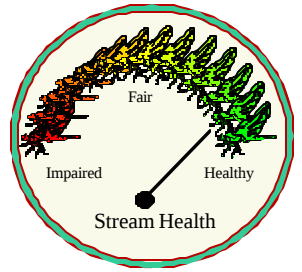




EcoSummary

Welaunee Creek

8/13/92-3/6/96



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. While similar to the SCI, the BioRecon procedure consists of 4 dipnet sweeps, field sorting, and identification of all taxa except for worms, midges, and water mites. BioRecon thresholds have been established for taxa richness, the EPT Index, and the Florida Index. Reference streams are sampled by both SCI and BioRecon periodically to maintain accurate expectations to which other streams in the same region are compared. Welaunee Creek, located in Jefferson County south of U.S. Route 27 and the small town of Capps, drains into the Wacissa River.

Welaunee Creek was sampled eight times from March 1992 to present for Stream Condition Index (SCI), BioRecon, and water quality; see Figure 2.

Results and Discussion

With the exception of nitrate-nitrite, other water quality values were not problematic. During the 1992 through 1994 period, nitrate-nitrite concentrations (ranging from 1.1 mg/l to 2.0 mg/L) were higher than those found in 70% of Florida streams, potentially due to agricultural activities in the area.

Stream Condition Index results indicated that Welaunee Creek scored in the "excellent" category for all eight sampling events. Welaunee Creek's benthic invertebrate communities also scored "healthy" on two occasions using the FDEP BioRecon methodology.

In conclusion, although the invertebrates were healthy, elevated nitrate-nitrite in Welaunee Creek may contribute to eutrophication further downstream in the system.

Figure 1: Overview Map of the Welaunee Creek Area

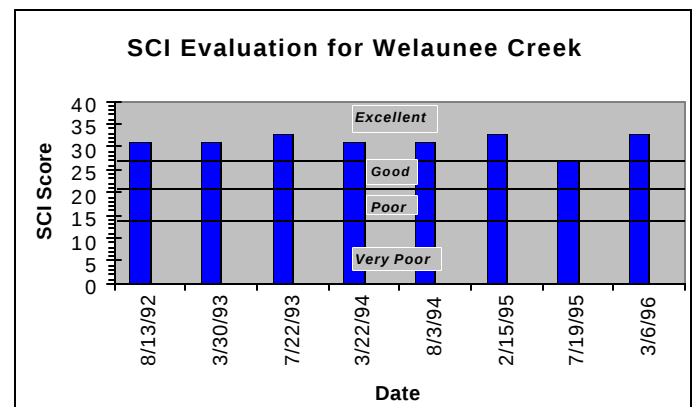


Figure 2: Data Table

Welaunee Creek								
Station	Welaunee Creek							
Station Nickname	WELREF							
SCIREF	2204022							
Date Sampled	8/13/92:3696							
Date	8/13/92	3/30/93	7/22/93	3/22/94	8/3/94	2/15/95	7/19/95	3/6/96
SCI	31	31	33	31	31	33	27	33
Temperature (°C)	1850	1600	2500	1900	2520	-	2470	880
pH(SU)	-	59	72	64	63	-	63	69
Dissolved Oxygen (mg/L)	7.8	84	68	69	68	-	59	116
Specific Conductivity (µmhos/cm)	60	46	74	55	60	-	70	30
Turbidity (NTU)	30	44	-	51	12	-	-	37
TKN (mg/L)	0.43	0.71	0.36	0.68	0.67	0.44	1.1	0.46
Nitrate-Nitrite (mg/L)	1.4	1.4A	2	1.1	0.65	0.39	0.33	0.29
Ammonia (mg/L)	-	0.052	0.071	0.063	0.08A	0.11	0.29	0.091
Total Phosphorus (mg/L)	-	0.04	0.2	0.12	0.17	0.099	0.14	0.053

"T"-Value between the laboratory detection limit and laboratory practical quantitation limit; "U"-Below detection limit; "A"-Average value

Figure 3: SCI Evaluation



FOR MORE INFORMATION, CONTACT:

Thomas Deck, FDEP Environmental Assessment Section
2600 Blair Stone Road MS#6511 Tallahassee, FL 32399-
2400 (850) 245-8074 thomas.deck@dep.state.fl.us