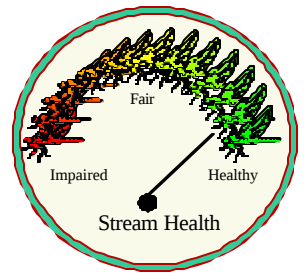




EcoSummary

Robinson Creek @ CR 131
03/13/00



Background

Robinson Creek is located in Columbia County, north of Lake City, Florida (see Figure 1). Robinson Creek is in the Okefenokee Plains and Swamps Subecoregion (75e). This area is characterized predominantly by flat plains, with over fifty percent of the land covered by standing water. The swamp forests lend themselves to poorly drained pine flatwoods. Land use is mainly silviculture, with agriculture, natural forest, and wetlands.

The Florida DEP sampled Robinson Creek as part of a Fifth Year Inspection of the PCS Phosphate Chemical Complex and Mines in March 2000. Robinson Creek was selected as a control site for the collection of biological and water quality monitoring parameters. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, fecal coliform, and total coliform analysis; see Figure 2. Habitat assessment, qualitative periphyton and phytoplankton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted.

Results

Ammonia and nitrate-nitrite values for Robinson Creek were in the good range, defined as being at concentrations lower than those found in 70% of Florida streams. The ammonia concentration (0.026 mg/L) was lower than the values in roughly 90% of state streams; see Figure 2. The nitrate-nitrite (NO_x) value (0.04 mg/L) was less than the values found in 75% of Florida streams. Total phosphorus was slightly elevated (0.32 mg/L), measuring higher than 75% of state streams. The overall habitat assessment score (129) was in the optimal range (105-140). Fecal and total coliform levels complied with the Class III water quality standard of 800 CFU/100ml and 2400 CFU/100ml, respectively. The stream condition index (SCI) score of 31 for Robinson Creek was in the "excellent" range. The periphyton community was dominated by diatoms with some blue-green and green taxa, with the dominant taxa indicative of eutrophic conditions.

In conclusion, total phosphorus levels were slightly elevated in Camp Branch, measuring higher than 75% of state streams, while the remaining water chemistry scored in the good category. The habitat assessment score for Robinson Creek was in the optimal range, and the SCI scored in the

excellent category. The periphyton community was dominated by taxa indicative of eutrophic conditions.

Figure 1: Overview Map of the Robinson Creek Area



Figure 2: Data Table

Robinson Creek			
Station	Robinson Creek @ CR 131		
Station Nickname	ROBCKCR131		
STORET	21010056		
Sampling Date	3/13/00		
Macroinvertebrate Parameters		Phytoplankton Parameters	
SCI	31	Number of Taxa	25
SCI Evaluation	excellent	% Bacillariophyceae	32.2
SCI Region	Northeast	% Chlorophyceae	36.1
Number of Taxa	36	% Cyanophyceae	12.9
Number of Ephemeroptera	4	% Dominant Taxon	22.08
Number of Plecoptera	2	Chlorophyll <i>a</i> (µg/L)	1.0 U
Number of Trichoptera	2	Periphyton Parameters	
EPT Index	8	Number of Taxa	42
% Dominant Taxon	15.9	% Bacillariophyceae	85.36
Florida Index	19	% Chlorophyceae	4.5
% Diptera	53	% Cyanophyceae	7.7
Number of Chironomidae	5	% Dominant Taxon	23.57
Number of Orthocladinae	8	Chlorophyll <i>a</i> (mg/m ²)	9.1
Total Number of Chironomidae	13	Physical-Chemical Data	
% Filter-Feeders	37	Habitat Assessment	133
Chemistry Data		Sample Depth (m)	0.3
Ammonia (mg/L)	0.026	Specific Conductivity (umho/cm)	153
Nitrate-Nitrite (mg/L)	0.04	Dissolved Oxygen (mg/L)	5.5
TKN (mg/L)	0.79	pH (SU)	6.87
Total Phosphorus (mg/L)	0.32	Temperature (deg. C)	13
Ortho-phosphate (mg/L)	0.24	Bacteria Parameters	
Color (PCU)	-	Fecal Coliforms (col/100 mL)	10 ^B
Turbidity (NTU)	-	Total Coliforms (col/100 mL)	260

^B - Results based on colony counts outside the acceptable range
U - Below the detection limit



FOR MORE INFORMATION, CONTACT:

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