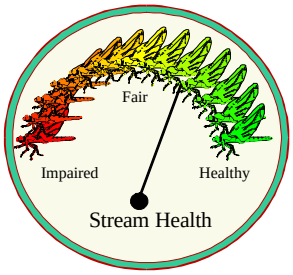


EcoSummary

Manatee Springs
10/12/00

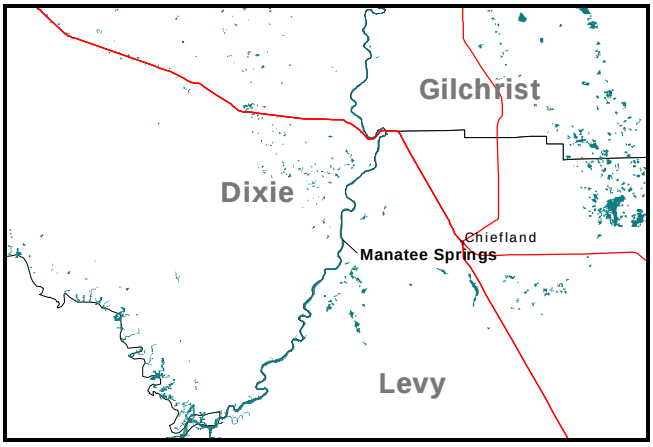


Background

Florida DEP's Division of Recreation and Parks selected Manatee Springs, as well as springs from seven other state parks, for biological and water quality monitoring. Data from these efforts will be used for documenting conditions within each park and for making resource protection decisions. Manatee Springs State Park is located in Levy County, Florida; see Figure 1. Manatee Springs is a Floridan Aquifer-dominated system and is known for its recreational and aesthetic qualities.

Baseline samples were taken at all eight park locations in October 2000. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total phosphorus, color, turbidity, *Enterococci*, *Escherichia coli*, fecal coliform and total coliform analysis; see Figure 2. Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted.

Figure 1: Overview Map of the Manatee Springs Area



Results

Nitrate-nitrite concentrations (1.6 mg/L) at the sampling site were higher than those found in 95% of Florida streams (1.05 mg/L); see Figure 2. Elevated nitrate-nitrite levels in Manatee Springs River are related to nitrogen loading in the recharge basin (mostly inorganic fertilizers applied to pasture). Ammonia, total Kjeldahl nitrogen, and total phosphorus concentration were below quantitation limit (see figure 2). The overall habitat assessment score (137) was in the optimal range (>120), with only the riparian buffer zone width on the right bank receiving a marginal score. *Enterococci* and *Escherichia coli* densities were below the EPA guidelines for a designated beach area. Fecal and total coliform levels complied with Class III water quality standards. The stream condition index (SCI) score of 21 for Manatee Springs was in the "good" range. The periphyton community in Manatee Springs was dominated by diatoms with some blue-green taxa. The particular taxa found were indicative of eutrophic conditions, which was not surprising given the nutrient enrichment in Manatee Springs. In conclusion, elevated nitrate-nitrite levels in Manatee Springs appeared to be the main stressor associated with a relatively low quality an algal community.

Figure 2: Data Table

MANATEE SPRINGS			
Station		Manatee Springs	
Station Nick Name		MANATEE	
STORET		SPRINGS003	
Sampling Date		10/12/00	
Macroinvertebrate Parameters		**Periphyton Parameters**	
SCI	21	Number of Taxa	21
SCI Evaluation	good	% Bacillariophyceae	93.67
SCI Region	peninsula	% Chlorophyceae	1.12
Number of Taxa	20	% Cyanophyceae	5.21
Number of Ephemeroptera	1	% Dinophyceae	0
Number of Plecoptera	0	% Dominant Taxon	47.3
Number of Trichoptera	1	**Physical-Chemical Data**	
EPT Index	2	Habitat Assessment	137
% Dominant Taxon	29.13	Sample Depth (m)	0.5
Florida Index	6	Specific Conductivity (umho/cm)	430
% Diptera	38.83	Dissolved Oxygen (mg/L)	2.5
Number of Chironomidae	0	pH (SU)	6.5
Number of Orthocladiinae	4	Temperature (deg. C)	22.5
Total Number of Chironomidae	4	**Chemistry Data**	
% Filter-Feeders	14.56	Ammonia (mg/L)	0.01 U
Bacteria Parameters*		Nitrate-Nitrite (mg/L)	1.6
Enterococci (col/100 mL)	16 Q	TKN (mg/L)	0.06 U
Escherichia coli (col/100 mL)	6 Q	Total Phosphorus (mg/L)	0.035 I
Fecal Coliforms (col/100 mL)	14 Q	Color (PCU)	5 U
Total Coliforms (col/100 mL)	100 Q	Turbidity (NTU)	0.2

"U"- Below Detection Limit; "I"- Below Quantitation Limit; "Q"- Information Only

FOR MORE INFORMATION, CONTACT:
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