EcoSummary

De Leon Springs

4/20/04

Background

Florida DEP's Division of Recreation and Parks selected De Leon Springs for biological and water quality monitoring. Data from these efforts will be used for documenting existing conditions and for making resource protection decisions. De Leon Springs, located in Volusia County, flows into Spring Garden Lake; see Figure 1. De Leon Springs is a Floridan Aquifer-dominated system known for its recreational and aesthetic qualities.

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. Qualitative periphyton sampling was also conducted.

Results

The nitrate-nitrite concentration (0.62 mg/L) at the sampling site was higher than the values found in approximately 90% of other Florida streams; see Figure 2. Elevated nitrite-nitrate levels in De Leon Springs are related to nitrogen loading in the recharge basin. Ammonia concentrations (0.051 mg/L) and Total Kjeldahl nitrogen concentrations (0.23 mg/L) were non-problematic.

Bacteria parameters were not reported for this sampling due to holding time issues. The periphyton community in De Leon Springs was dominated by diatoms with some blue-green taxa.

In conclusion, elevated nitrate-nitrite levels continue to be of concern in De Leon Springs.

Figure 1: Overview Map of the De Leon Springs Area

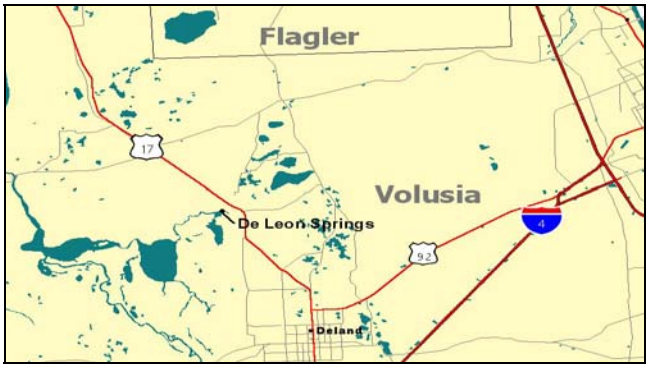
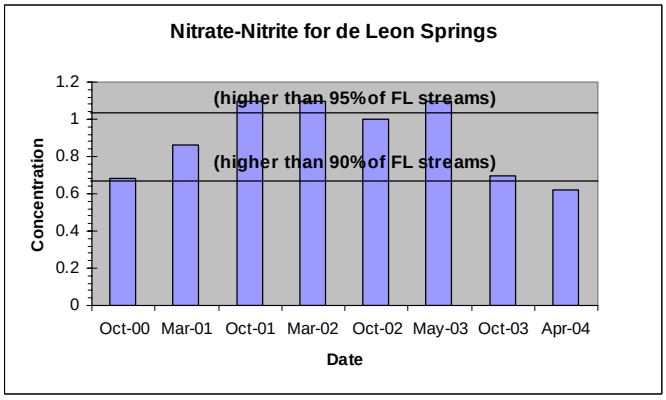


Figure 2: Data Table

deLeon			
Sampling Date		4/20/2004	
Chemistry Data		Periphyton Parameters	
Ammonia (mg/L)	0.051		
Nitrate-Nitrite (mg/L)	0.62	%Bacillariophyceae	86.9
TKN (mg/L)	0.23	%Cyanophyceae	10.9
Total Phosphorus (mg/L)	0.081	%Chlorophyceae	2.24
Color (PCU)	5 Q	Percent Dominant taxon	22.12
Turbidity (NTU)	0.45 Q	Physical-Chemical Data	
Bacteria Parameters		Habitat Assessment	NA
Enterococci (col/100 mL)	NA	Specific Conductivity (umhos/cm)	879
Escherichia coli (col/100 mL)	NA	Dissolved Oxygen (mg/L)	NA
Fecal Coliforms (col/100 mL)	NA	pH (SU)	7.2
Total Coliforms (col/100 mL)	NA	Temperature (deg C)	23.7

"B"-Based on colony counts outside acceptable range; "J"- Estimated Value; "Q"- Information Only, "U"-Below minimum detection limit

Figure 3. Nitrate-Nitrite 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