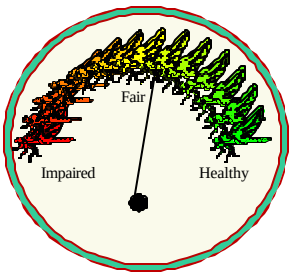


EcoSummary

Orange Grove Sink
at Peacock Springs
11/07/2002



Background

Florida DEP's Division of Recreation and Parks selected Orange Grove Sink at Peacock Springs, as well as several other springs from 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. Peacock Springs State Recreation Area is located in Suwannee County; a few miles north of the Suwannee River (see Figure 1).

Orange Grove Sink is part of the Peacock Springs system; it is directly connected to Peacock Spring #1 through a system of underground caves. Samples were taken from Orange Grove Sink on November 7, 2002. 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 samples were also collected.

Results

The nitrate-nitrite concentration at Orange Grove Sink (2.2 mg/L) was much higher than the values found in 95% of other Florida streams; see Figure 2. Ammonia and total Kjeldahl nitrogen (TKN) were both below detection limits. The total phosphorus level (0.049 mg/L) was lower than is found in 60% of state streams. *Enterococci* and *E. coli* concentrations complied with the EPA "designated beach area" guidelines of 61 CFU/100mL and 235 CFU/100mL, respectively. Fecal and total coliform levels complied with Class III water quality standards (800 CFU/100mL and 2400 CFU/100mL, respectively). The periphyton community in Orange Grove Sink was dominated by diatoms with some blue-green taxa. The particular taxa found were indicative of eutrophic conditions.

In conclusion, this sampling indicated that elevated nitrate-nitrite levels and a relatively low-quality algal community exist in Orange Grove Sink, similar to the findings at Orange Grove Sink in May 2002 and at Peacock Spring #1 in October 2001. Continued sampling will monitor conditions at both locations in Peacock Springs State Recreation Area.

Figure 1: Overview Map of the Peacock Springs Area

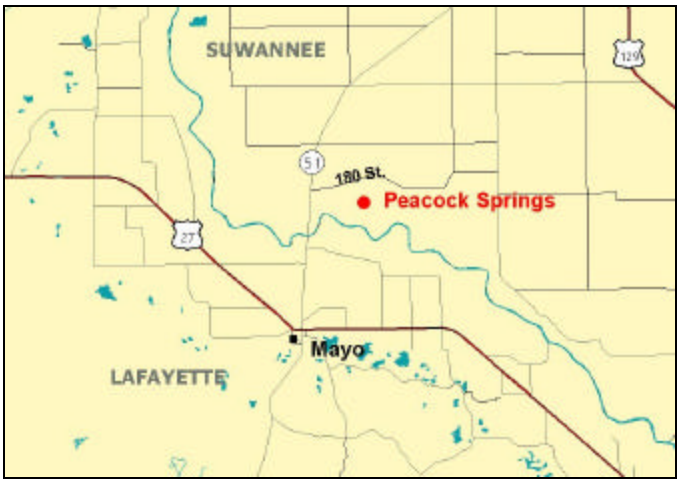


Figure 2: Data Table

Orange Grove Sink at Peacock Springs	
Sampling Date	11/07/2002
Chemistry Data	
Ammonia (mg/L)	0.01 U
Nitrate-Nitrite (mg/L)	2.2
TKN (mg/L)	0.06 U
Total Phosphorus (mg/L)	0.049
Color (PCU)	5 U
Turbidity	0.1
Periphyton Parameters	
% Bacillariophyta	82.68
% Chlorophycota	6.21
% Cyanophycota	10.13
% Euglenophycota	0.65
Dominant taxon	*Melosira granulata/ Aulacoseira granulata*
% Dominant Taxon	66.67
Physical-Chemical Data	
Specific Conductivity (umhos/cm)	370
Dissolved Oxygen (mg/L)	4.7
pH (SU)	7.4
Temperature (deg C)	21.8
Bacteria Parameters	
Enterococci (col/100mL)	10 Q
Escherichia coli (col/100mL)	42 Q
Fecal Coliforms (col/100 mL)	34 Q
Total Coliforms (col/100mL)	280 Q

"U"=Value Reported is the Minimum Detection Limit; "Q"=Out of Holdiong Time

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