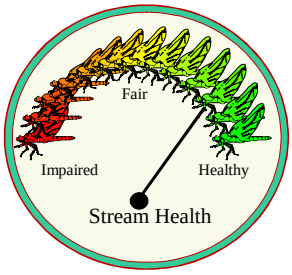


EcoSummary

Juniper Springs

10/13/2003

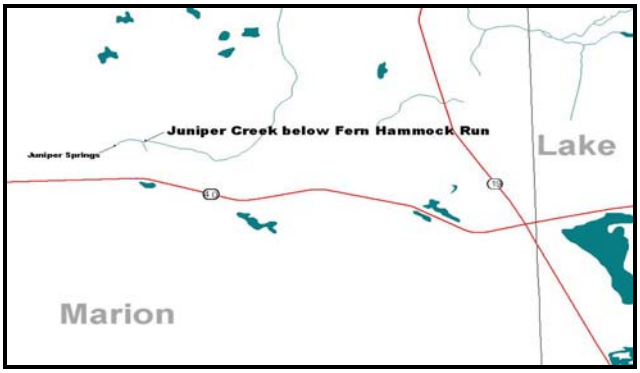


Background

Florida DEP's Division of Water Resource Management selected Juniper Springs for biological and water quality monitoring as part of the Springs Initiative. Data from these efforts will be used for documenting conditions within springs throughout Florida and for making resource protection decisions. Juniper Springs Recreation Area is located in Marion County, Florida, in the Ocala National Forest; see Figure 1. Juniper Creek, which flows from Juniper Springs to Lake George, is a popular canoeing creek known for its aesthetic qualities.

Samples were collected from Juniper Springs in Juniper Creek downstream from the confluence with Fern Hammock Creek on October 13, 2003. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, *Escherichia coli*, *Enterococci*, fecal coliform, and total coliform analyses; see Figure 2. Habitat assessment, qualitative periphyton sampling, and benthic invertebrate stream condition index (SCI) sampling were conducted.

Figure 1: Overview Map of the Juniper Springs Area



Results

The nitrate-nitrite concentration (0.075 mg/L) in Juniper Springs was lower than the values found in 50% of Florida streams (0.083 mg/L); see Figure 2. The total phosphorus concentration was below the practical quantitation limit. Ammonia and TKN concentrations were below detection limits.

The *Enterococci* concentration (1300 CFU/100 mL) was well above the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas." Although the source of this high level of *Enterococci* is not known, one potential source is wildlife input. Also, some species of *Enterococci* are known to be free-living in warm waters. The applicability of the above *Enterococci* guideline in Florida waters is under investigation. *Escherichia coli* concentration (200 CFU/100 mL) was below the EPA designated beach guideline of 235 col/100 mL. Fecal and total coliform levels complied with the Class III water quality standard values.

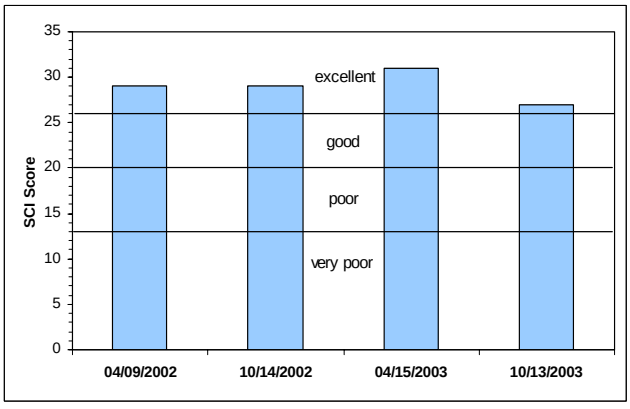
The SCI score of 27 for Juniper Springs was in the "excellent" range. The overall habitat assessment score (142) was in the "optimal" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, *Enterococci* was the only parameter of potential concern in Juniper Springs.

Figure 2: Data Table

JUNIPER SPRINGS			
Sampling Date		10/13/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	27	% Bacillariophyta	88.82
SCI Evaluation	Excellent	% Cyanophycophyta	10.54
Number of Taxa	39	% Chlorophycota	0.64
EPT Index	5	Dominant Taxon	*Cocconeis placentula*
Florida Index	16	% Dominant Taxon	13.42
% Dominant Taxon	13.73	**Physical-Chemical Data**	
% Diptera	47.06	Habitat Assessment Score	142
Number of Chironomidae	13	Temperature (deg. C)	22.3
% Filter-Feeders	6.37	pH	7.5
Chemistry Data		Dissolved Oxygen (mg/L)	7.1
Turbidity (NTU)	0.42 Q	Specific Conductance (umhos/cm)	114
Color (PCU)	5 Q	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	200 Q
Nitrate-Nitrite (mg/L)	0.075	*Enterococci* (col/100 mL)	1300 B,Q
TKN (mg/L)	0.06 U	Fecal Coliforms (col/100 mL)	280 Q
Total Phosphorus (mg/L)	0.035 I	Total Coliforms (col/100 mL)	1200 B,Q

"U"=Below detection limit; "I"=Below practical quantitation limit; "Q"=Outside of holding time; "B"=Results based on colony counts outside the acceptable range

Figure 3: Stream Condition Index Scores Over Time



FOR MORE INFORMATION, CONTACT:
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