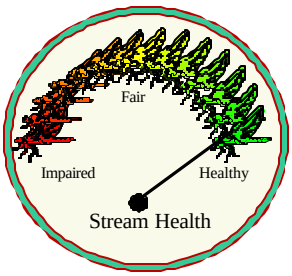


EcoSummary

Juniper Springs

04/15/2003

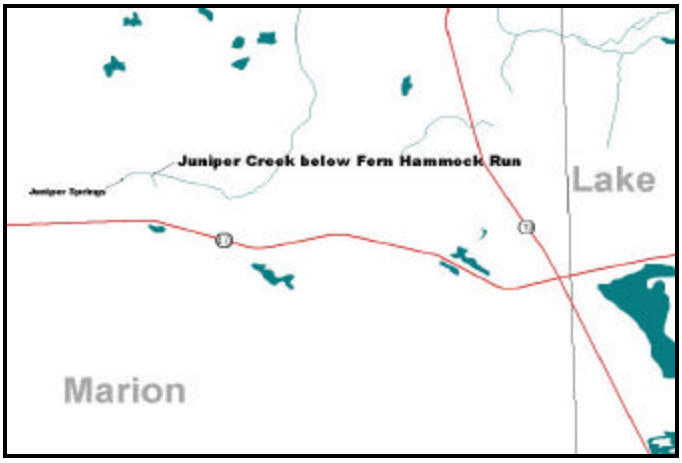


Background

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 April 15, 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 (0.073 mg/L) in Juniper Springs was lower than those found in 50% of Florida streams (0.083 mg/L); see Figure 2. The total phosphorus level (0.029 mg/L) was lower than those found in 80% of Florida streams (0.03 mg/L). Ammonia and TKN concentrations were below detection limits.

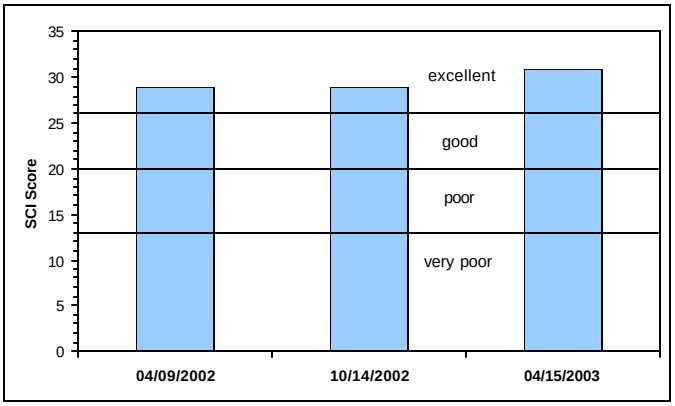
The overall habitat assessment score (144) was in the "optimal" range. *Enterococci* concentration (8 CFU/100 mL) was below the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas." *Escherichia coli* concentration (206 CFU/100 mL) was less than the EPA designated beach guideline of 235 CFU/100 mL. Fecal and total coliform levels complied with Class III water quality standards. The SCI score of 31 for Juniper Springs was in the "excellent" range. The periphyton community was dominated by diatoms, with some blue-green and green algal taxa. In conclusion, there were no parameters of concern in Juniper Springs. This spring run can be regarded as an undisturbed reference site.

Figure 2: Data Table

JUNIPER SPRINGS			
Sampling Date		04/15/2003	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	31	% Bacillariophyta	96.47
SCI Evaluation	excellent	% Cyanophycophyta	2.88
Number of Taxa	33	% Chlorophycota	0.64
EPT Index	8	Dominant Taxon	Fragilariaceae
Florida Index	21	% Dominant Taxon	25.32
% Dominant Taxon	17.31	**Physical-Chemical Data**	
% Diptera	31.73	Habitat Assessment Score	144
Number of Chironomidae	9	Temperature (deg. C)	21.9
% Filter-Feeders	6.73	pH	8.3
Chemistry Data		Dissolved Oxygen (mg/L)	7.7
Turbidity (NTU)	0.3	Specific Conductance (umhos/cm)	118
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia coli* (col/100 mL)	206 Q
Nitrate-Nitrite (mg/L)	0.073	*Enterococci* (col/100 mL)	8 Q
TKN (mg/L)	0.06 U	Fecal Coliforms (col/100 mL)	128 Q
Total Phosphorus (mg/L)	0.029	Total Coliforms (col/100 mL)	320 Q

"U"=Below detection limit; "Q"=Outside of holding time

Figure 3: Stream Condition Index Scores Over Time



FOR MORE INFORMATION, CONTACT:
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