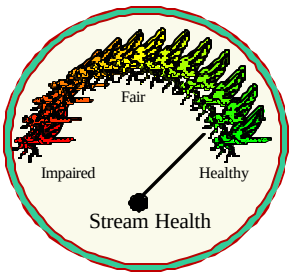


EcoSummary

Juniper Springs

04/09/2002

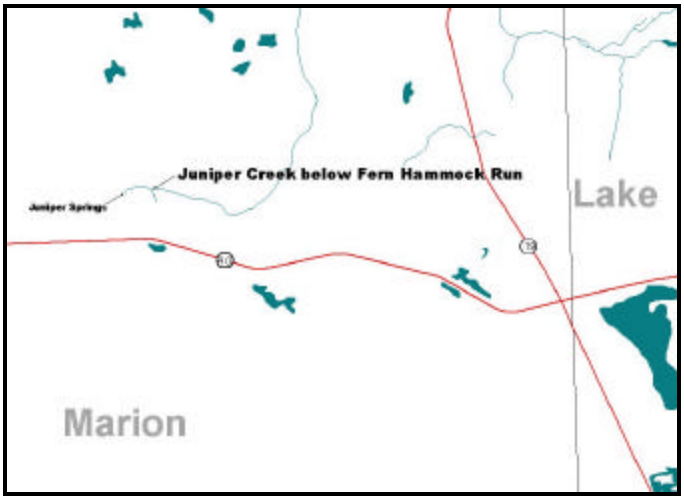


Background

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 9, 2002. Water chemistry samples were taken for ammonia, nitrate-nitrite, total Kjeldahl nitrogen (TKN), total phosphorus, other chemical parameters, *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 (0.072 mg/L) in Juniper Springs was lower than the values found in 50% of Florida streams (0.0825 mg/L); see Figure 2. Ammonia and TKN concentrations were both below detection limits. The total phosphorus level was below the quantitation limit.

The overall habitat assessment score (143) was in the "optimal" range. The *Enterococci* concentration (112 CFUl/100 mL) was above the EPA single-sampling guideline value of 61 CFU/100mL for "designated beach areas." Some species of *Enterococci* are known to be free-living in warm waters; the applicability of the above guideline in Florida waters is currently under investigation. *Escherichia coli* concentration (270 col/100 mL) was slightly above the designated beach guideline of 235 CFU/100 mL. Fecal and total coliform levels complied with Class III water quality standards. The SCI score of 29 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, *Enterococci* and *Escherichia coli* were the only parameters of potential concern in Juniper Springs.

Figure 2: Data Table

JUNIPER SPRINGS			
Sampling Date		4/9/2002	
Macroinvertebrate Data		**Periphyton Data**	
SCI Score	29	% Bacillariophyceae	96.06
SCI Evaluation	excellent	% Cyanophyceae	3.4
Number of Taxa	34	% Chlorophyceae	0.36
EPT Index	4	Dominant Taxon	Fragilariaceae
Florida Index	18	% Dominant Taxon	33.09
% Dominant Taxon	20.39	**Physical-Chemical Data**	
% Diptera	38.83	Total Habitat Assessment Score	143
Total Number of Chironomidae	14	Temperature (deg. C)	22.29
% Filter-Feeders	6.8	pH	8.34
Chemistry Data		Dissolved Oxygen (mg/L)	8.4
Turbidity (NTU)	0.15	Specific Conductance (umhos/cm)	124
Color (PCU)	5 U	**Bacteria Data**	
Ammonia (mg/L)	0.01 U	*Escherichia Coli* (col/100 mL)	112 Q
Nitrate-Nitrite (mg/L)	0.072	*Enterococci* (col/100 mL)	270 Q
TKN (mg/L)	0.06 U	Fecal Coliforms (col/100 mL)	112 Q
Total Phosphorus (mg/L)	0.036 I	Total Coliforms (col/100 mL)	310 Q

"U"=Below detection limit; "I"=Below practical quantitation limit; "Q"=Outside holding time

FOR MORE INFORMATION, CONTACT:
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