ECOSUMMARY Stream Condition Index (SCI) Report

Surface Water Assessment & Monitoring Program
Central District

Ocklawaha River at Gore's Landing

July 2, 1996

Stream Condition Index (SCI)*: The standardized biological assessment tool used by FDEP biologists to indicate ecosystem health and identify impairment, as compared to reference (natural) conditions, of streams within the various ecoregions of the State of Florida.*

PURPOSE

The portion of the Ocklawaha River downstream of Silver River has historically had good water quality due to the large input of clean, clear water from the Silver Springs system. It is also largely surrounded by undeveloped public lands, with almost all of the drainage area lying within the western extremity of the Ocala National Forest. Although other sites on the Ocklawaha had been previously assessed using the Stream Condition Index (SCI), this site near Gore's Landing had not. It was thus chosen as a test site for use in development of the SCI.

Ocklawaha River 100m downstream of Gore's Landing, Marion County (N 29°17' 37.8", W 81°55' 54.8")

BASIN CHARACTERISTICS

Originating at Lake Griffin in northwestern Lake County, the Ocklawaha River flows north and then east, eventually emptying into the St. Johns River near Palatka in Putnam County. The upper Ocklawaha has suffered for many years from the effects of damming, channelization, wetland drainage, and flood control projects. By comparison, the lower Ocklawaha is relatively unimpacted, with the notable exceptions of the Rodman dam and reservoir and the associated unfinished Cross Florida Barge Canal. Ninety percent of the land in the vicinity of the Gore's Landing site is undeveloped wetlands and uplands. Agriculture, pasture, and residential development comprise the other 10% of land use.

Location Map - Ocklawaha River near Gore's Landing

RESULTS

The Stream Condition Index rated the Ocklawaha River at Gore's Landing as very good when compared to biological reference sites not only within the Peninsula, but throughout all bioregions of the state. A total of 31 different macroinvertebrate species were found in the subsample. Of these, eight were members of the pollution sensitive water quality group designated "EPT", which includes larvae of mayflies, stoneflies, and caddisflies. The Florida Index (good water quality) taxa score was 13, nearly doubling the target value of seven. The most abundant macroinvertebrate species (24% of those in the subsample) was the caddisfly *Hydropsyche*, normally associated with good water quality.

The habitat assessment done at the site showed very good results, with a score of 135 out of a possible 145 points. Water velocity was good, riparian vegetation was stable and mainly native, and there was minimal smothering of available habitats by sand and silt. Some habitat types were not accessible to sampling, however, due to high water resulting from recent heavy rains.

Water chemistry measurements suggest a strong influence from Silver Springs. The dissolved oxygen concentration was rather low (4.9 mg/L), the pH was somewhat basic (7.5), and calcium carbonate levels were high (alkalinity = 133 mg/L).

All nitrogen levels were high at the time of sampling. Measurements of total N, Kjeldahl N, and unionized ammonia all exceeded values reported here for the previous 25 years. This might have been due to the fact that heavy rains had occurred in the vicinity prior to sampling, adding nutrients to the river via runoff. Turbidity was also unusually high at the time of sampling, most likely also due to recent heavy rains. Other physical and chemical measurements were normal.

SIGNIFICANCE

Downstream of the Silver River, the Ocklawaha provides habitat and water quality sufficient to support a healthy and diverse macroinvertebrate community. The high nutrient levels do not appear to have negative effects at Gore's Landing, but might be detrimental downstream in the Rodman Reservoir. Aided by preservation of much of its watershed and groundwater input from Silver Springs, however, the ecological health of this portion of the Ocklawaha appears to be good.

SUGGESTIONS

Continued monitoring of this and other sites on the lower Ocklawaha River is needed to make sure that the ecological health of the system is maintained. This should include additional nutrient water chemistry sampling, to determine if the elevated nutrient values found remain high in this stretch of the Ocklawaha.

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