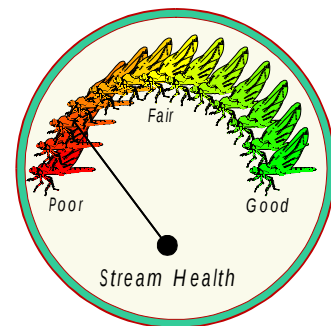


EcoSummary

SCI Report



Ocklawaha R. upstream of Silver R., Marion Co. 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

Substantial long-term alteration of the upper Ocklawaha has historically resulted in poor water quality in the river above its confluence with the spring-fed Silver River. Although FDEP biologists have sampled areas farther upstream for some time, no upstream biological monitoring had been done this close to the confluence of the two rivers prior to this time.



Basin Characteristics

The Ocklawaha River originates at Lake Griffin in NW Lake County, flowing north and then east, eventually emptying into the St. Johns River near Palatka in Putnam County. Although influenced by elements of the aborted Cross-Florida Barge Canal Project, good water quality is the general rule in the lower (northern) Ocklawaha, due to the tremendous contribution of clean, clear water from Silver Springs, and the modest amount of development in the watershed. The upper Ocklawaha, however, has suffered for many years from the effects of damming, channelization, wetland drainage, and flood control projects. Restoration efforts by the St. Johns River Water Management District are ongoing in some areas of the upper Ocklawaha. In the immediate vicinity of the sample site, approximately 90% of the land is undeveloped. The remaining 10% of land use includes agricultural, residential, and pasture.

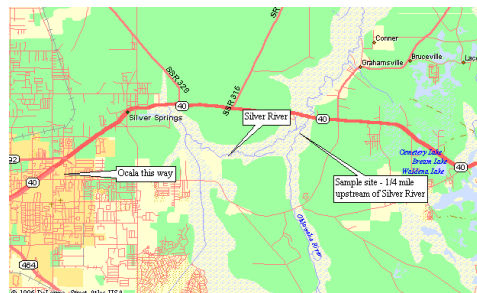
Results

Water quality is poor at this site. Biological sampling yielded an SCI score of 19, putting it in the "poor" category. Twenty-one kinds of aquatic macro-invertebrates were collected, but only two were members of the sensitive water quality group designated "EPT". This group includes larvae of mayflies, stoneflies, and caddisflies. The Florida Index (good water quality taxa) score was only four. The macroinvertebrate community was imbalanced, with chironomids (midge larvae) making up 70% of the animals collected. A preponderance of midges often is an indication of poor water quality. The habitat assessment done in the immediate vicinity of the site

showed good results, due to the lack of development in the area. At the time of sampling, the water velocity was quite high (0.6 m/s) due to recent heavy rains. Usually, however, flow is minimal in this area of the river. Most physical and chemical measurements taken at this time revealed normal values. Dissolved oxygen levels, however, were very low. On the sampling date, the DO value was 2.7 mg/L, well below the state standard of 5.0 mg/L. Dissolved oxygen readings taken at this site have been consistently low for nearly ten years, with a minimal reading of 0.5 mg/L taken in May 1988. The addition of enormous amounts of nutrients from agricultural and residential sources, the construction of canals and impoundments which deprive the stream of its flow, and the destruction of cleansing wetlands undoubtedly have contributed to this depression in oxygen levels in the upper Ocklawaha.

Significance

These results reaffirm the fact that historical channelization and habitat alteration activities, combined with current point-source and nonpoint-source nutrient inputs, continue to adversely affect the water quality of the upper Ocklawaha.



Suggestions

Hopefully, restoration efforts being undertaken by SJRWMD will eventually improve the water quality and fish and wildlife habitat of the upper Ocklawaha. Included in these efforts are the restoration of marshes (which serve as filters to help clean up lakes) and the rehydration of wetlands formerly disrupted by large-scale farming activities. The use of best management practices by other land-owners and users within the watershed could also contribute greatly to the eventual restoration of the upper reaches of this important Florida river.

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