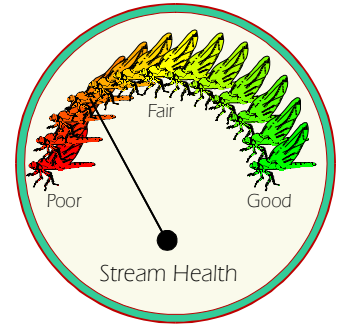


EcoSummary

SCI Report



Salt Creek @ Packard Avenue Black Hammock, Seminole County 12 August 1997

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

Salt Creek and other streams flowing through Black Hammock have the potential to carry large loads of agricultural nonpoint-source pollution to Lake Jesup downstream. It is therefore important to monitor the health of these water bodies. This site was chosen for the dual purposes of providing information to persons and agencies involved in restoration efforts being undertaken on Lake Jesup (spearheaded by St. Johns River Water Management District) and for the continuing development of FDEP stream bioassessment methodology.

Basin Characteristics

This stream is aptly named, since it is fed by base flow from partially saline groundwater. It originates near SR 426 just east of Oviedo only about a mile from the Econlockhatchee River. A large portion of the stream has been canalized, where it functions as a roadside ditch and receives input from a number of other smaller ditches. Only where it enters the marshy area near the lake has it not been altered. The



watershed of this stream is only sparsely developed. More than 75% of the land in the Salt Creek basin is upland forest and wetlands. About 15% is low-density urban development. The remaining land use is agricultural and rangeland.

Results

Salt Creek received a poor Stream Condition Index rating. Nineteen macroinvertebrate taxa were collected in the sample, scoring only five Florida Index points. There were only two animals from the EPT group found here. The dominant macroinvertebrate species was the hydrobiid snail *Pyrgophorus platyrachis*.

Nitrogen levels were moderate to high at Salt Creek. Total Kjeldahl nitrogen was the highest (2.9 mg/L), whereas the nitrate/nitrite concentration was intermediate (0.16 mg/L). As would be expected from the saline groundwater influence, chloride and sulfate concentrations were very high (810 and 150 mg/L respectively). Both were in the 99th percentile range compared with other Florida streams. Total phosphorus was also very high in this creek, 0.35 mg/L, or the 87th percentile. Specific conductance was measured at 3000 Tmho/cm. The water was very darkly tannic in Salt Creek. The fecal coliform concentration, although fairly high, did not exceed state standards.

The habitat quality, though not excellent, did fall within the low part of the optimal range. Despite the fact that the stream's course has largely been altered, this was done many years ago, allowing for some recovery, and the surrounding area is largely undeveloped.

Significance

Monitoring at Salt Creek revealed a depressed biological community, high nutrients and fecal coliforms, and highly altered and degraded instream habitat. The main ecological problem with Salt Creek and other streams in Black Hammock has to do with agriculture. All have been channelized to function as drainage ditches for the agricultural operations prevalent in this area. Water laden with nutrients and probably pesticides flows into these



ditches, which in turn flow due north into Lake Jesup.

Suggestions

We believe that the Black Hammock area is an ideal candidate for an Ecosystem Management effort. Farmers in the area could be educated about current problems and offered suggestions for more environmentally sound and hopefully financially feasible alternative methods. The establishment of better land management practices in the area should help to improve the water quality in Salt Creek and other streams, as well as Lake Jesup downstream.

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