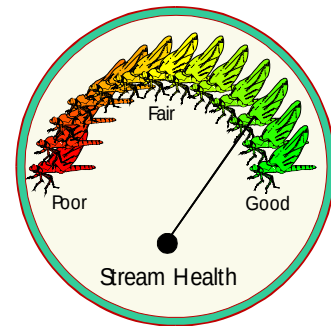


EcoSummary

SCI Report



Lake Ashby Creek @ Lake Ashby Park 10 February 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

This site was chosen for Stream Condition Index (SCI) assessment because Lake Ashby Creek flows into Lake Ashby at a frequently used public park beach. Also, this site had not previously been monitored by FDEP biologists. Results from this monitoring effort will be used for the continuing refinement of the SCI methodology.

Basin Characteristics

Lake Ashby Creek flows south into Lake Ashby, which is located in southeastern Volusia County about halfway between the cities of Sanford and New Smyrna Beach. The outflow from the lake, Lake Ashby Canal, continues southward to join Deep Creek, which travels in a southeasterly direction and empties into the



St. Johns River near the community of Osceola in Seminole County. The largest fraction (>55%) of land within the Lake Ashby Creek watershed is undeveloped forest and other

natural areas. Agriculture makes up approximately 35% of the land use, with the remaining 10% of the watershed being about equally split between residential development and pasture land. The sample site is located just upstream of the lake in Volusia County's Lake Ashby Park. The various park activities include picnicking, camping, lake swimming, and fishing.

Results

From an *ecological* standpoint, these results indicate that Lake Ashby Creek appears to be in very good health. It earned a Stream Condition Index score of 27 ("very good" category), with 29 macroinvertebrate taxa collected at the site. Six of these are members of the sensitive water quality group designated "EPT" (larval mayflies, stoneflies, and caddisflies). The number of good water quality taxa present gave it a Florida Index score of 18. Seventy-six percent of the invertebrates collected were dipterans (fly larvae).

The site received a habitat assessment score of 115 out of a possible 145 points. This places it within the optimal range for habitat quality. The stream was unaltered, possessing a natural sinuous pattern and good native riparian (bank) vegetation. There

was little smothering of habitats by sand and silt. However, the water velocity was quite low (0.08 m/sec). The availability of habitats for colonization by aquatic invertebrates was fairly good.

The water quality in Lake Ashby Creek was very good at the time of sampling, with the notable exception of the coliform bacteria levels. Measurements indicated 11,200 colonies/100mL total coliforms and 6200 colonies/ 100mL fecal coliforms (nearly **eight** times the allowable level for Class III fresh waters). Both measurements are definite violations of water quality standards. All other water quality parameters were within normal ranges.



Significance

Lake Ashby Creek is currently in good condition from an ecological standpoint, as evidenced by a diverse and healthy macroinvertebrate community, good habitat, and overall very good water quality. However, the large quantity of fecals present could present a public health hazard to swimmers in the lake. Although no obvious sources of contamination were detected, it is possible that a faulty septic system(s) could have been the cause. It should be noted, though, that it was raining at the time the stream was sampled, and coliform concentrations might have been elevated at that point above normal levels due to contaminated runoff. As a precaution, a letter relating our findings was sent to the Volusia County Office of Environmental Health.

Suggestions

Encourage good land use practices in the basin, and maintain a monitoring program to further refine BioRecon thresholds for streams and detect effects of changes in local land use.

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Published by the Florida Department of Environmental Protection, Tallahassee, FL, 1997.