



EcoSummary

Horseshoe Creek downstream of
Horseshoe Creek Road, Davenport
May 17, 1999



BioRecon: A rapid, cost-effective screening mechanism for identification of biological impairment.

Introduction

Horseshoe Creek (also known as Horse Creek) originates in wetlands a few miles east of the community of Loughman just south of Interstate 4 in Polk County. The upstream half of the creek is channelized, fed by a number of small canals dug to drain wetlands. The lower half is essentially unmodified. The stream flows into a portion of the Reedy Creek Swamp known as the Huckelberry Islands, an



extensive wetland area in Osceola County connecting Reedy and Snell Creeks. Almost half of the land in Horseshoe Creek's approximately 26 mi² watershed is devoted to agriculture. About 19% has been urbanized. Approximately 26% of this basin is natural uplands and wetlands. The remainder is made up of rangeland, public utilities, and barren lands. Horseshoe Creek was placed on the 303(d) list due to dissolved oxygen and coliform bacteria violations, plus elevated nutrient levels. Waterbodies on the 303(d) list are required to undergo a Total Maximum Daily Load (TMDL) study. The purpose of the TMDL is to determine the amount of pollution reduction needed to restore the system to a condition suitable for its designated use. In this case, the designated use is for recreation and maintenance of a healthy, well-balance aquatic community. DEP's Central District Surface Water Monitoring staff was requested to assess the status of selected waterbodies on the TMDL list that were placed on the list with "limited data". "Limited data" waterbodies were those with less than 10 observations in the STORET database, with the most recent observations occurring prior to 1990, or those with qualitative, non-point source survey data only. Strictly speaking, this water body lies outside Central District boundaries. However, since Horseshoe Creek is located near several Central District sites that were to be sampled for TMDL purposes, this site was sampled as a courtesy to FDEP's Southwest District office in Tampa.

Results and Discussion

On March 24, 1999, dissolved oxygen and fecal and total coliform measurements were taken. Nutrients and biological community (biorecon) were sampled on May 17, 1999. There were no water quality violations found at Horseshoe Creek. Nutrient levels were low or very low, with the exception of nitrate/nitrite, which was somewhat elevated (0.15 mg/L). The dissolved oxygen level measured 7.6 mg/L. Fecal and total coliform concentrations were both fairly high, but neither represented a violation of state standards. The biorecon indicated a healthy and diverse aquatic community. There were 28 different macroinvertebrates collected. Of these, nine were from the EPT (larval mayflies, stoneflies, and caddisflies) group. A total of 21 points were scored for Florida Index (good water quality indicator) taxa.

Conclusions

Based on these good water quality and biology results, we suggest that Horseshoe Creek might be a candidate for removal from the 303(d) list.

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