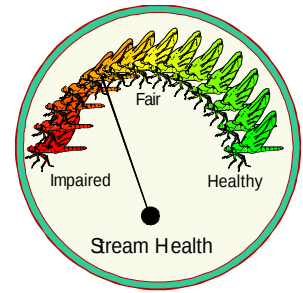


EcoSummary

BioRecon Report

**Stevens Branch Off CR 204, St
Johns County**

20 July 1998



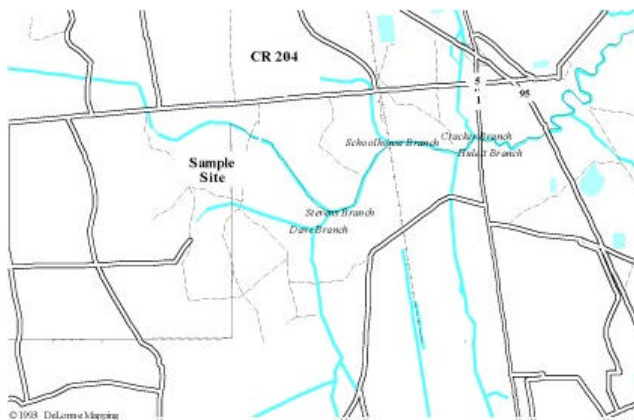
BioReconnaissance Report (BioRecon): A rapid, cost effective screening mechanism for identification of biological impairment.

Purpose

This study was initiated to provide water quality information for those water bodies that appeared on the 303d list. This list includes sites with little data that were graded fair or poor in the 1994 305b report. This information will be used to help with selection of those areas that need future investigation. To help meet this objective, a BioRecon and water chemistry were collected at Stevens Branch. The BioRecon includes an aquatic macroinvertebrate taxa list, number of taxa, Florida Index, EPT index, habitat assessment and physical characteristics. The water chemistry includes nutrients, metals, major ions, bacteriological results.

Basin Characteristics

Stevens Branch is located in the Florida Upper Coast Basin (HUC 03080201) and river reach 26 according to the



Environmental Protection Agency River Reach File 3 (RF3). This small first order stream in southeastern St. Johns County flows into Pelicer Creek which flows into the Intercoastal Waterway near Marineland, Florida. Land use in the basin consists of silviculture (85% pine tree plantations), natural wetlands (10%), upland forest (4%) and residential (1%). The primary soil type is Myakka fine sand. This soil type is characterized as nearly level, poorly drained and occurs in flatwoods and formed in marine deposits of sandy material. Stevens Branch is 2 meters wide and 0.8 meters deep with steep banks. The water velocity was 0.15 m/sec. There were swales in the riparian zone which would allow rapid runoff during storm events.

Results

Results from the BioRecon show Stevens Branch to be suspect. The EPT index (3) did not pass the threshold (4) for the peninsula bioregion. The total number of taxa (22) and the Florida Index (13) were above the respective thresholds of ≥ 18 and ≥ 10 . The primary reasons for the suspect rating was habitat alteration and poor water quality. Approximately 80% of the in stream habitat was smothered with silt. The habitat assessment was suboptimal. The dissolved oxygen of 4.6 mg/L is below the state standard of 5.0 mg/L for Class III waters. The turbidity of 7.0 mg/L and total phosphorus of 0.13 mg/l are poor compared to other freshwater streams in Florida. Total coliform of 2500/100 mL and fecal coliform of 800/100 ml were above or equal to the respective state standards of 2400/100 mL and 800 mL. Over half of the organisms were rarely present. If two or three of these rarely found species were absent, this site could be rated impaired.

Significance

The BioRecon results coupled with the habitat alteration and poor water chemistry reflect a suspect water body. The primary land use in the drainage basin is pine tree plantations. This land use activity appears to contribute to the suboptimal habitat assessment through habitat smothering, increased turbidity and low dissolved oxygen levels.

Suggestions

This site should remain on the 303d list. A Stream Condition Index and further water chemistry sampling should be done at a future date to fully characterize the system. Best Management Practices should be checked for compliance.



FOR MORE INFORMATION, CONTACT:

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