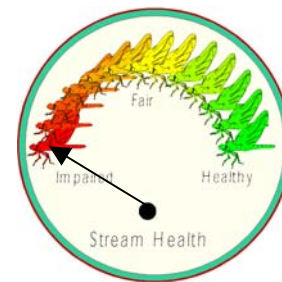




EcoSummary

BioRecon Report



Judges Branch below St. Regis Road, Sterling Fibers Inc, Pace June 13, 2001

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

Introduction

The RCRA Hazardous Waste section in Tallahassee requested a bioassessment on Judges Branch at the Sterling Fibers Facility to document its environmental health. The BioRecon was conducted in partnership with the RCRA and Sterling Fibers staff. The watershed drains to the Escambia Bay in the Pensacola Bay system via Judges Bayou. The stream flows through the south edge Sterling Fibers Facility's "weak" wastewater spray irrigation expansion field below the railroad tracks. A RCRA surface impoundment was located in the watershed near the headwaters. Judges Branch at the bioassessment site is a first or possible second order stream originating on the seepage slopes adjacent to the developed manufacturing site border. The creek is located about 4 miles southwest of Milton in Santa Rosa County (Lat. 30° 33' 39.9" Long. 87° 7' 38.9"). This site is located in the Gulf Coast Flatwoods subcoregion 75A.



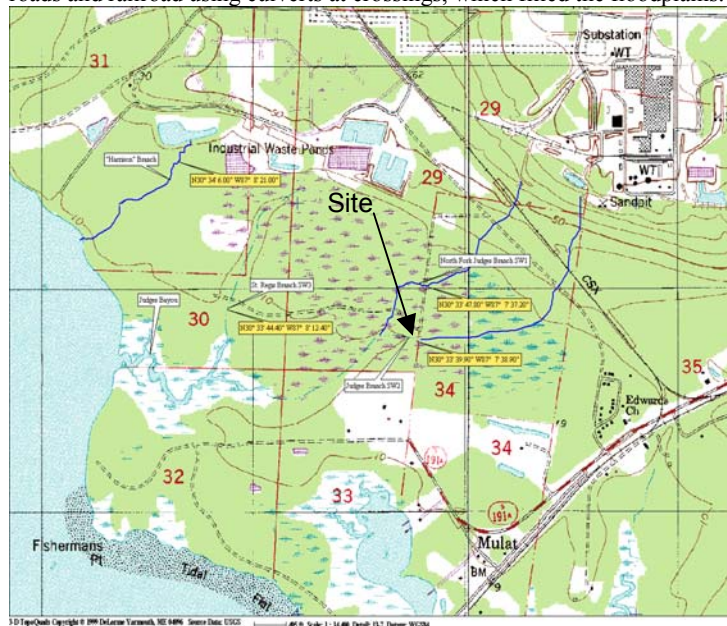
Results and Discussion

The BioRecon indicated a severely impaired biological community. All 3 biological indicators failed thresholds established for healthy aquatic ecosystems:

Biometrics	Value	Thresholds
Taxa Richness	8	≥24
Florida Index	4	≥22
EPT	2	≥17

This Judges Branch site rated a stream habitat assessment of a near optimal 78% score. Clear-cutting within 7 meters of the riparian buffer zone during 1995 and recent aerial herbicide spraying of the riparian forest lowered the habitat rating. However, it appeared water quality factors limited the stream health. Sterling Fibers found high total nitrogen (1.48 mg/l) at this site on 01/30/01, a concentration greater than about 80% of the streams in Florida. A lower than expected dissolved oxygen (DO) concentration indicated loading from organic (carbon/nitrogen) and/or chemical sources (the Chemical Oxygen Demand was 61mg/l). The percent DO saturation typically found during winter in area streams is near 100% at the reported water temperature of 13.3 ° C. The expected DO concentration at that temperature would be 10.5 however; it was only 5.7mg/l, depressed by 46%. During this sample the DO ranged from 2.25 below the road to 3.1mg/l over 100 meters downstream after the water flowed through riffles.

This was in violation of the Class III State Water Quality Standard of a minimum of 5mg/l (62-302530(31). An elevated specific conductance (220 umho/cm) compared to local streams (≥ 40 umho/cm), high nitrogen, and low DO concentrations suggest contamination from the sprayfield and/or runoff from the manufacturing facility. Other possible pollution sources were hydromodification/habitat alteration to the stream from at least 2 dirt roads and railroad using culverts at crossings, which filled the floodplains.



Conclusions

Larger buffer zones may be needed to protect from sprayfield and facility nonpoint source runoff. Groundwater should be checked as a possible source of chemical contaminants. If monitoring indicates chemical loading, reducing application rates or eliminating application in the Judges Branch watershed should protect stream health. Best Management Practices (BMP's) for forest management are needed to protect the stream's fish and wildlife by preserving the native riparian and transitional zone forests. Also BMP's for dirt roads, especially minimizing affects on stream morphology, would improve its biota. With elimination of wastewater and nonpoint source runoff and following BMP's, this Judges Branch site could meet Class III State Water Quality Standards 62-302 for recreation and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 or SC 695-8300 x 1126