



Jakes Bayou Creek above I-10 Santa Rosa County March 14, 2000

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

Purpose

A bioassessment was performed on Jakes Bayou Creek in an effort to document the environmental health of streams flowing into the Yellow River Aquatic Preserve (YRAP). The BioRecon was conducted in partnership with the YRAP staff.

Background

Jakes Bayou Creek at the bioassessment site is a first order stream originating in a large wetland north of I-10. The creek is located about 4 miles south of Milton in Santa Rosa County (Lat. 30° 33' 44.7" Long. 87° 02' 28.8"). This stream is part of the Pensacola Bay system and flows into Blackwater Bay west of Grassy Point. This site drains the Gulf Coast Flatwoods subecoregion (75a).



Results

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

Biometrics	Value	Thresholds
Taxa Richness	11	≥24
Florida Index	1	≥22
EPT	0	≥17

The Jakes Bayou Creek site was dominated by pollution tolerant aquatic wildlife. Fine anaerobic organic sediment smothered the stream habitat. Dissolved oxygen concentrations were below State Water Quality in the entire water column (2.7-3.6 mg/l bottom-top). Hydrogen sulfide odor emanated from the anaerobic sediments. The stream habitat assessment score was rated poor at 38%. Silvicultural activities, a former sandpit now a residential development with water skiing impoundments, and the interstate highway affected the stream habitat assessment. South of the interstate, cattle utilized the



stream, which had become a series of man-made impoundments. The mouth of Jakes Bayou had been dredged in the past and a network of dead-end canals created.

Significance

This Jakes

Bayou Creek_site did not 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. The organic sediment loading, low dissolved oxygen concentrations, coliform bacteria contamination from cattle waste, altered habitats from dams, culverts, and dead-end canals negatively affect the Yellow River Aquatic Preserve's fish and wildlife in the middle portion of Blackwater Bay. Bacteria sources from cattle waste may affect the Class II shellfish harvesting areas of Blackwater and East Bays. The low dissolved oxygen concentrations, bacterial infections, and habitat destruction from dams and canals could affect the federally endangered Gulf of Mexico sturgeon.

Suggestions

Preservation and protection of the wetland forests above I-10 would benefit the Aquatic Preserve's fish and wildlife community. Using best management practices for agriculture by keeping cattle out of State Water is important to protect the area waters from bacterial contamination. Dam removal and restoration of the watershed's natural hydrological patterns could re-establish Jakes Bayou as a nursery area for aquatic wildlife in the Pensacola Bay basin. Also sturgeon access and migration routes to the Bayou would be restored. For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126 or SC 695-8300