



EcoSummary

BioRecon Report



Dead River above State Road 87 Santa Rosa County March 9, 2000

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

Purpose

A bioassessment was performed on Dead River 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



Dead River at the bioassessment site (Lat. 30° 35' 15.5" Long. 86° 55' 36.9") is a second order stream originating above I-10 about 5 miles south of Milton in Santa Rosa County. This stream flows to the Yellow River below State Road 87, then to Blackwater Bay, which empties into Pensacola Bay. This site drains the Gulf Coast Flatwoods subecoregion (75a) with the Southern Pine Plains and Hills (6 5f) in the headwaters.

Results

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

Biometrics	Value	Thresholds
Taxa Richness	18	≥24
Florida Index	4	≥22
EPT	6	≥17

The biota was dominated by pollution tolerant aquatic wildlife. The CR-184 road culverts impounded the headwater tributaries affecting the Dead River. A lifetime landowner noted the County moved the road from the uplands into the headwater wetlands of Dead River and created severe erosion during road construction. He also reported that Dead River 15 years ago looked liked Weaver Creek where you could see log habitat on the bottom at 20 feet. Now most of Dead River is filled with mud/muck/silt leaving a depth of about 1.5 feet. Sediments were anaerobic with a hydrogen sulfide odor. Silt smothering of fish and wildlife habitats was severe. Logging and

silviculture had also contributed to aquatic habitat destruction. Elevated total nitrogen (800 ug/l), mainly in the nitrite-nitrate form (590ug/l) was present. The nitrates might be from former corporate farmland, which once injected fertilizer into ground water to withdraw for spray irrigation. An abundant growth of algae and Eurasian milfoil, an exotic pest in Florida, was stimulated by the nutrients.



Significance

This Dead River 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 dam effects of the CR184 culvert crossings of its headwater tributaries contributed to Dead River not meeting State designated use. Reduced stream flow from the damming and sedimentation negatively affects the system's fish and wildlife nursery function. Organic sediment and nutrient loading could lead to warm weather oxygen depletion. Reduced channel depth, high nutrient concentrations, and organic sediment loading could affect the federally endangered Gulf of Mexico sturgeon. Locals had named the adjacent waterbody Stergen Lake because of the presence of a sturgeon population.

Suggestions

Restoration of the stream's natural hydrology (i.e. flow, depth) and preserving riparian wetland forests buffer zones would benefit the Aquatic Preserve's fish and wildlife community including the sturgeon. Replacing culverts with bridges that span the streamside wetlands and restoration of the watershed's natural hydrological patterns could enhance Dead River as fish and wildlife nursery area. A goal would be to restore the Dead River to a sturgeon summer refugia with deep, cool spring fed channels. For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126 or SC 695-8300