A site map can be viewed by clicking on the report site name.

EcoSummary

Clear Creek below Whiting Field Branch East of State Road 87

February 25, 2003

IMPAIRED

FLORIDA AMBIENT

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

For samples collected before June 8, 2004
All field and laboratory methods followed FDEP Standard Operating Procedures and met FDEP quality assurance/quality control standards.
For samples collected on or after June 8, 2004
All field and laboratory methods followed FDEP Standard Operating Procedures (SOPs) and met DEP quality assurance/quality control standards.

Introduction



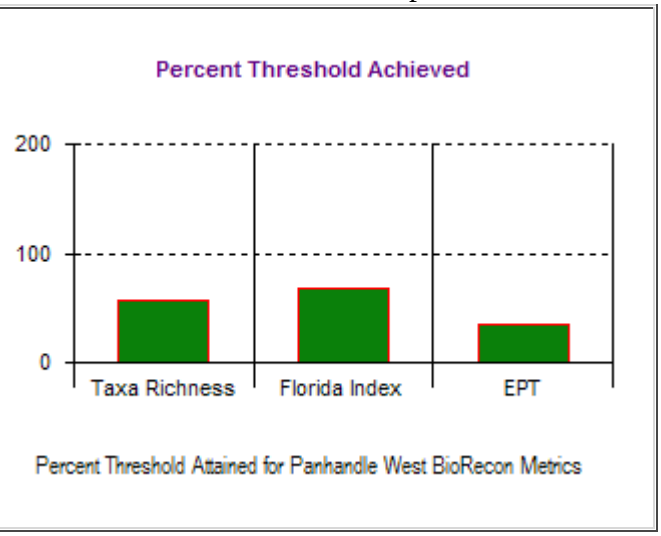
This biological assessment was conducted in support of a request by the United States Fish and Wildlife Service (USFWS) for an Ecosystem Restoration Project in a Clear Creek tributary ("Whiting Field Branch"). Sand mining, historical logging activities and runoff directed from Whiting Field runways had caused sediments to completely fill Whiting Field Branch's stream channel and its riparian wetlands. The sediments filling the channel originated from this hillside runoff that, over time, eroded a mile-long gully as large as 300 feet wide and 30 feet deep. The sediments have been a continuous nonpoint source impact to Clear Creek. The USFWS has initiated a restoration project in Whiting Field Branch that will include re-constructing a sinuous channel and re-planting wetland riparian vegetation. This BioRecon documents the pre-restoration benthic invertebrate community's condition in Clear Creek below Whiting Field Branch. The BioRecon sample reach (Latitude 30 degrees 42 minutes 43 seconds North, Longitude 87 degrees 2 minutes 39 seconds West) is located just below the Whiting Field Branch confluence about 4 miles north of Milton. This Clear Creek site (STORET # 33030146) is a third order stream draining southern pine plains and hills of subecoregion 65F. Clear Creek is a Blackwater River tributary and flows into Pensacola Bay via Blackwater Bay and East Bay. The Blackwater River segment below Clear Creek is 303d listed for Total Suspended Solids. The Blackwater River is designated as "Outstanding Florida Water" as is the Yellow River Aquatic Preserve in

Blackwater Bay.

Results and Discussion

This Clear Creek site failed all three biometrics to indicate an impaired condition.

Biometrics	Value	Threshold
Taxa Richness	14	>= 24
Florida Index	15	>= 22
EPT	6	>= 17



The habitat assessment rated a low suboptimal score (65%). Primary habitat components, such as substrate availability, ranked poor and habitat smothering marginal. However, high water velocity (up to1.15 meters/second) mitigated some habitat smothering by washing much of the fine sediments downstream leaving a gravel and coarse sand bottom. The aquatic biota consisted of a dominance of rheophilic stream invertebrates with low diversity and productivity that reflected scouring from the excess sediment loading (70% habitat smothering). Iron/sulfur bacteria were common and covered some of the aquatic invertebrates, as did a coating of fine silt. Clay, silt, and sand deposits filled areas in the riparian zone along both banks below the Whiting Field Branch confluence. The watershed's naturally dominant riparian zone was an Atlantic white cedar forest (listed as Type 97 by the Society of American Foresters). However, Atlantic white cedars were eliminated in the areas where their roots were covered with clay or silt soils.

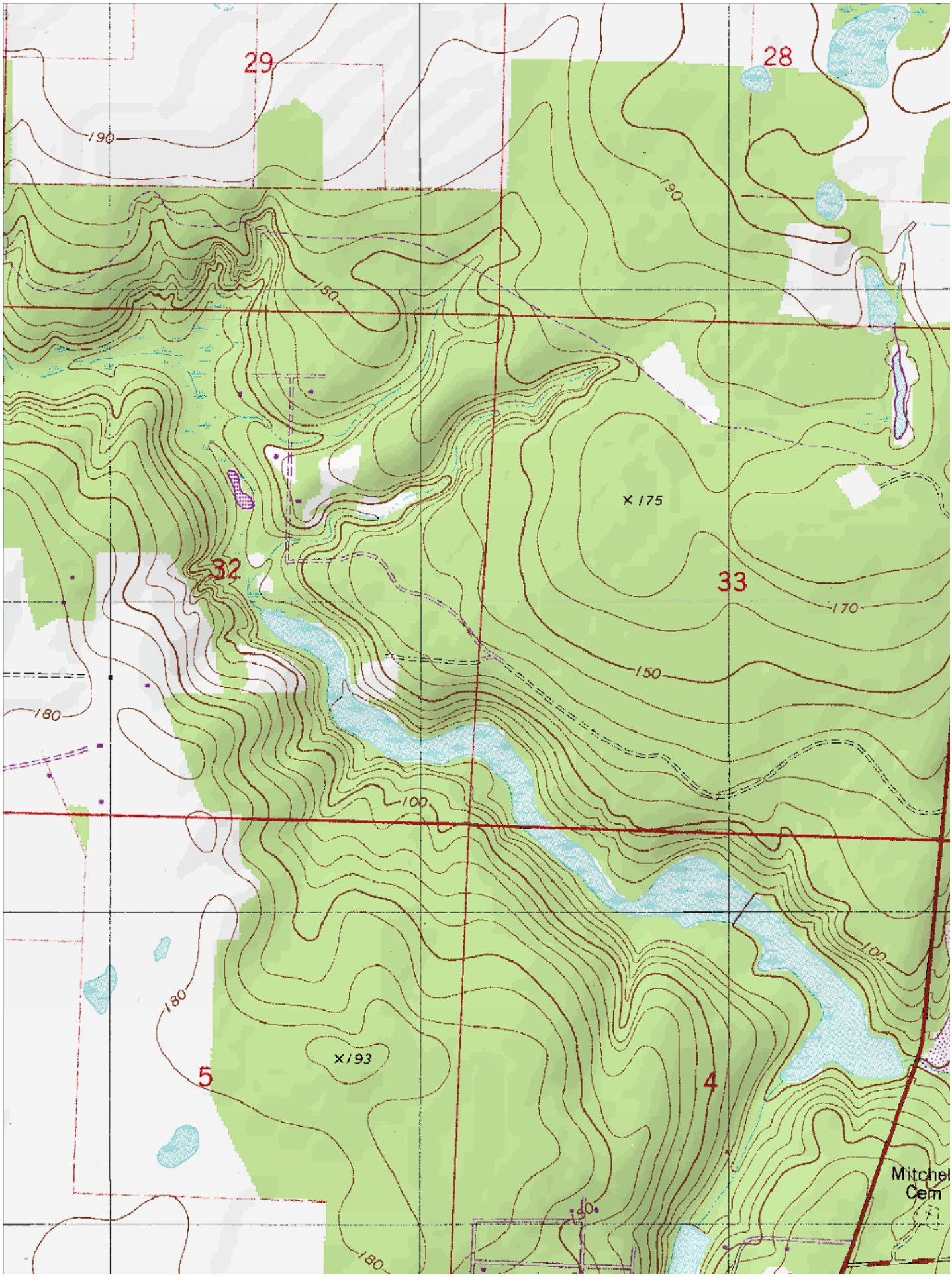
Conclusions

The Whiting Field Branch 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. Sediments from the sand-filled gully now existing in Whiting Field Branch are the major source impacting stream health. The sediments cause scouring and smothering of aquatic wildlife habitats in Clear Creek. The Clear Creek drainage's future sediment load should decrease notably since Whiting Field has significantly reduced stormwater discharges, the mine pit operator agreed to implement soil erosion control, and the USFWS's restoration plan will re-establish native riparian vegetation. Sediment loading and total suspended solid in the Blackwater River and Bay, along with East Bay, should be reduced upon completion of this USFWS stream restoration project. The aquatic wildlife at this Clear Creek site should attain healthy conditions after the ecosystem restoration project in Whiting Field Branch is completed. Post-restoration biometric scores should range between that of the adjacent fourth order Pond Creek southwest of Milton (74 Taxa, 49 Florida Index, 37 EPT) and Point Baker Branch, one of its first order tributaries less than a mile away, located just west of State Road 87 (46 Taxa, 30 Florida Index, 24 EPT).

For more information, please contact
Donald H. Ray
Northwest District Office
160 Government Center, Pensacola, FL 32502
(850) 595-8300 (Suncom 695-8300 x 1126)
E-mail: donald.ray@dep.state.fl.us

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Clear Creek below Whiting Field Branch East of State Road 87


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