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

FLORIDA AMBIENT

EcoSummary

Big Escambia Creek Original channel below Fannie Road, Escambia County

January 9, 2003

IMPAIRED

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



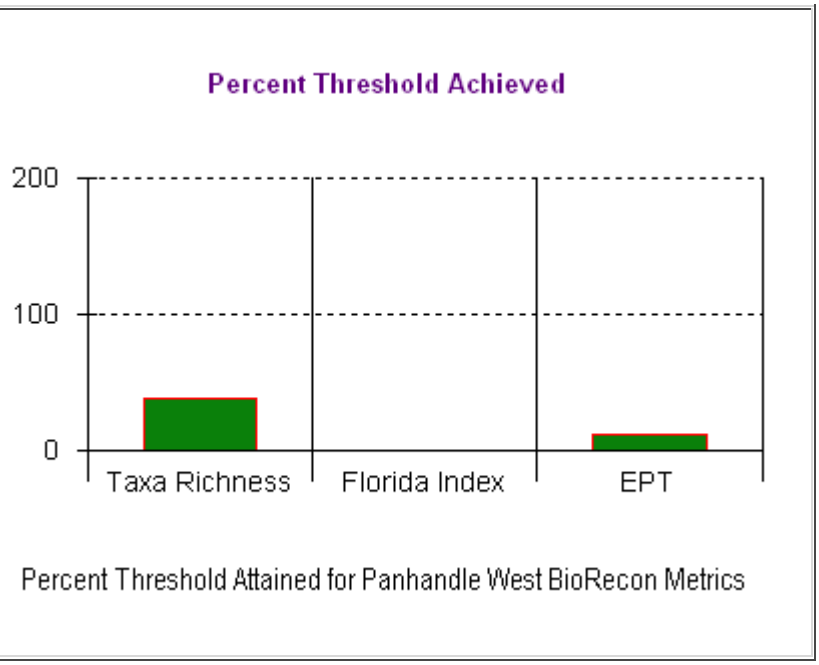
This biological assessment was conducted in support of a request by the United States Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Commission (FFWC) as part of a $6.39 million United States Corps of Engineers Section 206 Ecosystem Restoration Project in Big Escambia Creek. Historical accounts indicate that gravel mining and clear cutting the riparian zone forest had led to re-routing of the creek channel from Fannie Road to the Escambia River. This BioRecon documents the pre-restoration benthic invertebrate commuity's condition in Big Escambia Creek's abandoned stream channel. The BioRecon sample reach (Latitude 30 degrees 59 minutes 0.09 seconds North, Longitude 87 degrees 13 minutes 59 seconds West) is located in the abandoned stream channel below Fannie Road. As part of the restoration, a diversion structure will be constructed in the south bank of the North Channel of the creek. This structure will direct Big Escambia Creek back into its original channel. This sample site will again become the mainstream channel after the restoration activities are completed. In July 1998, a BioRecon was conducted in Big Escambia Creek's north channel below the Fannie Road Bridge.

Results and Discussion

This Big Escambia Creek site in the abandoned channel severely failed all three biomentrics to

indicate an impaired condition.

Biometrics	Value	Threshold
Taxa Richness	9	>= 24
Florida Index	0	>= 22
EPT	2	>= 17



In contrast, the 1998 bioassessment of the flowing portion of the North Channel below the Fannie Road Bridge indicated a much healthier condition (Taxa 48, Florida Index 33, and EPT 22). These biometric numbers were still low compared with BioRecons at Yellow River near Milligan (Taxa 81, Florida Index 50, and EPT 40), Alaqua Creek near Portland (Taxa 57, Florida Index 45, and EPT 37), and Pond Creek near Milton (Taxa 74, Florida Index 49, and EPT 37). The United States Geological Survey average annual flows for the Yellow River, Alaqua Creek, and Pond Creek sites were approximately 1173, 171, and 76 cubic feet per second (cfs) respectively compared to 667 cfs of Big Escambia Creek. The habitat assessment of the abandoned channel rated optimal for secondary habitat components such as no artificial channelization, bank stability, riparian buffer zone width and quality. However, the lack of flow caused primary habitat components, such as substrate diversity and water velocity to rate poor. The aquatic biota consisting of a dominance of mosquitoes, midges, worms, and beetles reflected the stagnant conditions of the re-routed channel. A recently constructed road crossing had filled the abandoned channel, but it was washed out. The fill dirt smothered aquatic habitat and exacerbated the stagnant conditions (dissolved oxygen 4.67 mg/l at only 39% saturation) by damming the channel. Exotic and invasive plants such as Chinese tallow, Chinese privet, and Japanese climbing fern were recent colonizers of disturbed areas in the riparian zone along Big Escambia Creek

Conclusions

Big Escambia Creek's biometric scores should approach the levels of the Yellow River after the stream flow is restored to its original channel. The Big Escambia Creek drainage's sediment load should decrease because of reported improved timber harvesting techniques and timber management practices along with improved regulation governing sand and gravel mining in the watershed. The Escambia basin historically was recognized by the United States Fish and Wildlife Service as among the most diverse in Florida. Big Escambia Creek would be expected to recover to its previous exceptional biodiversity after the Section 206 restoration if the

pollution load reduction noted above occurs.

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