



ECOSUMMARY

A Bioassessment Report

OTTER CREEK SR 81 NORTH OF PONCE DE LEON, HOLMES COUNTY

August 15, 1996

PURPOSE

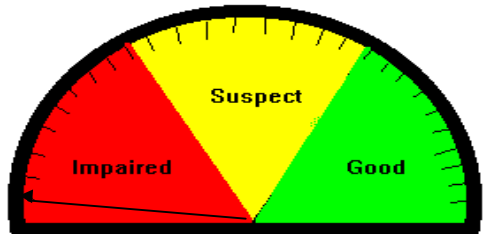
BioRecon: A rapid, cost effective screening mechanism for assessing the health of aquatic ecosystems. A BioRecon was performed at this site to assess any impacts to Otter Creek from rural non-point source runoff. This watershed was on the State of Florida 303(d) Priority TMDL list compiled by FDEP Division of Water Facilities. Section 303(d) of the Clean Water Act requires States to identify impaired water bodies and develop a wasteload allocation known as a Total Maximum Daily Load (TMDL) to reduce pollutants to a level sufficient to protect the water quality of a watershed.



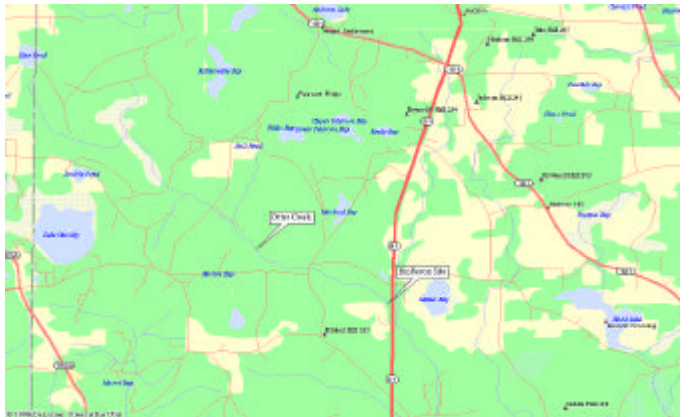
Otter Creek at SR81 Holmes Co.
(N30 °48' 0.67" W87° 57' 34.6")

BASIN CHARACTERISTICS

Otter Creek drains to Choctawhatchee Bay via Blue and Sandy Creeks and the Choctawhatchee River. All the above water bodies are located in the Choctaw-hatchee Ecosystem Management Area. The Otter Creek watershed drains primarily silvicultural and agricultural lands. Observations of agriculture land usage included mostly livestock and some non-irrigated crop production. The 1992 Holmes county census reported 523 farms consisting of 86,706 acres producing 16,307 cattle, 3,195 hogs, 13,755,656 chickens, 209,598 bushels of corn, 39,366 bushels of soybeans, 14,853 dry tons of hay, 884 acres of vegetable farms, and 213 acres of orchards. Otter Creek is located in subecoregion 65f (Dougherty/ Marianna Plains). The underlying geologic formations (Marianna Limestone, Duncan Church, and Chatta-hoochee) consist of fossilized limestone, clay, silt, and sand. USGS topographic maps indicate the watershed land area has elevations of high relief (to 280 ft.) interspersed with wetland bays (to 80 ft.). Otter Creek is 4.6 miles in length with a 9.7 feet average fall per mile (Florida Stream Gazetteer). At sampling, stream depth was 0.2 meters, stream width 1.3 meters, and a velocity of 0.2 m/sec.



Stream Health



RESULTS

The BioRecon monitoring indicated impairment of the Otter Creek watershed. All 3 biological indicators failed to come close to meeting the interim thresholds established to determine healthy panhandle streams:

Taxa 13 threshold is > 24
FI 4 threshold is > 22
EPT 0 threshold is > 11.

The water was turbid with a hydrogen sulfide odor. Habitat substrate types & availability were sub-optimal. Water velocity was suboptimal. Stream sinuosity was marginal from historical artificial channelization. Downstream of the sample area the instream habitat was severely altered by an artificial channelized and straightened streambed with box-cut banks. Habitat smothering was rated marginal with 80% coverage of habitats with sand and silt. Bank stability was marginal with 80% eroded areas and the streambed cut ~3 feet deeper due to recent storm-water erosion from clearcutting in upstream tributaries. The overall habitat assessment score was rated a suboptimal 85 (suboptimal score range is 77 to 105).

SIGNIFICANCE

On the basis of the entire site evaluation, observations and results confirm Otter Creek did not meet Class III State Surface Water Quality Standards 62-302 for recreation and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The cutting of the stream channel was isolating the surrounding forest wetlands, killing the blackgum-dominated wetlands. The streambanks consisted mostly of recently dead exposed blackgum roots. About 2 miles above this sample site, cattle were observed in the creek and their waste had created an ammonia odor and algal bloom.

SUGGESTIONS

Implementation of agriculture and forestry BMP's with the emphasis on riparian zone protection. Many of the tributaries east of SR 81 were historically channelized and their associated wetlands drained for agriculture. Restoration of these wetlands and restoring the stream's natural sinuosity would enhance habitat and improve downstream reaeration to assist in the assimilation of the agricultural wasteload to Otter Creek.

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