

EcoSummary

BioRecon Report



Turtle Creek below Eglin Road 239 & Clay pit B-165, Okaloosa County August 08, 2000

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

Purpose

A bioassessment was performed at this Turtle Creek site to document its biota and wildlife habitat for Eglin Air Force Base's watershed rehabilitation project prior to sediment stabilization of clay pit B-165 pit. The BioRecon was a quality assurance comparison conducted to assist the Base's Jackson Guard stream biomonitoring program.

Background

Turtle Creek at the bioassessment site (Lat. 30° 32' 22.1" Long. 86° 39' 53.8") is a second order stream originating in steepheads on Eglin Air Force Base, north of Ford Walton Beach. Turtle Creek flows into Pensacola Bay via East Bay River. This site drains the Southern Pine Plains and Hills subecoregion (65f).



Results

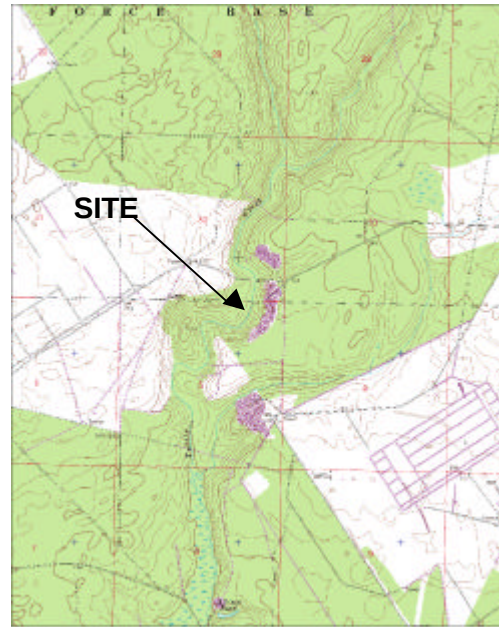
The BioRecons indicated a healthy biological community. In both the FDEP and Eglin samples, all 3 biological indicators passed thresholds established for a healthy aquatic wildlife community:

Biometrics	DEP Values	Eglin values	Thresholds
Taxa Richness	38	37	≥24
Florida Index	31	30	≥22
EPT	19	19	≥17

This site's habitat rated a marginal score (50%). Substrate diversity and water velocity were the only 2 of 8 parameters, which rated optimal. Four productive habitats and velocity of over 0.3 meter/sec provided the optimal substrate diversity rating. Both stream banks had 0-5 meters of buffer zone that rated in the poor category. The west bank's burned shrub riparian plant community rated a poor condition. The east bank had vegetation including Atlantic white cedar dead and dying from clay pit sediment runoff that smothered roots. Habitat smothering from sand and silt affected 91% of the stream limiting the fish and wildlife productivity. The stream channel was filled with sediments from clay pit runoff, which caused the water to flood the riparian zone in last half section of the monitoring site. This channel widening to a stream width of 50 meters eliminated riparian zone functions. Note lavender colored areas on the map below that indicated recent sediment deposits from mining pits, dirt roads, and cleared land.

Significance

This Turtle Creek site met 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. Nevertheless, previous land management practices such as the clay mine pit along the stream and a dirt road stream crossing had caused erosion, which caused watershed sedimentation problems. In addition, burning the riparian buffer zone eliminates leaf litter and wood debris, which act as filters preventing sediment runoff reaching the stream. This reduced habitat and limited Turtle Creek's fish and wildlife nursery function. The western panhandle of Florida experiences severe erosion. Soft sandy soil, intense rainfall, and steep topographical relief make Turtle Creek highly susceptible to erosion after removal of vegetative cover. Stabilization of the clay pit should address much of the site's sediment problems. To determine the effectiveness of the clay pit restoration project, another biological assessment will be made after completion of the sediment stabilization work.



Suggestions

Stabilizing and re-vegetating the B-165 clay pit during Eglin's stream restoration project should prevent sediment runoff. This work, along with maintaining a riparian buffer zone along Turtle Creek of greater than 18 meters, should assist in preserving the stream's natural morphological characteristics. The buffer zones provide the shade, food, habitat (woody debris/leaf fall) and filtration necessary for the continued propagation of Turtle Creek's biota. Preserving the stream's natural hydrology (i.e. depth/width ratio) and riparian forests buffer zones (eliminate mine sediment runoff, restrict burning and forest clearing) would benefit the watershed's fish and wildlife. **For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126 or SC 695-8300**