

EcoSummary

BioRecon Report



Panther Creek above Eglin Road 678, Santa Rosa County August 24, 2000

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

Purpose

A bioassessment was performed at this Panther Creek site to document its biota and wildlife habitat for Eglin Air Force Base's watershed monitoring. The BioRecon was a quality assurance comparison conducted to assist the Base's Jackson Guard stream biomonitoring program.

Background

Panther Creek at the bioassessment site (Lat. 30° 27' 2.3. " Long. 86° 48' 45.0") is second order stream originating in steephead springs in Eglin Air Force Base's range A-79, northeast of Navarre. Panther 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:

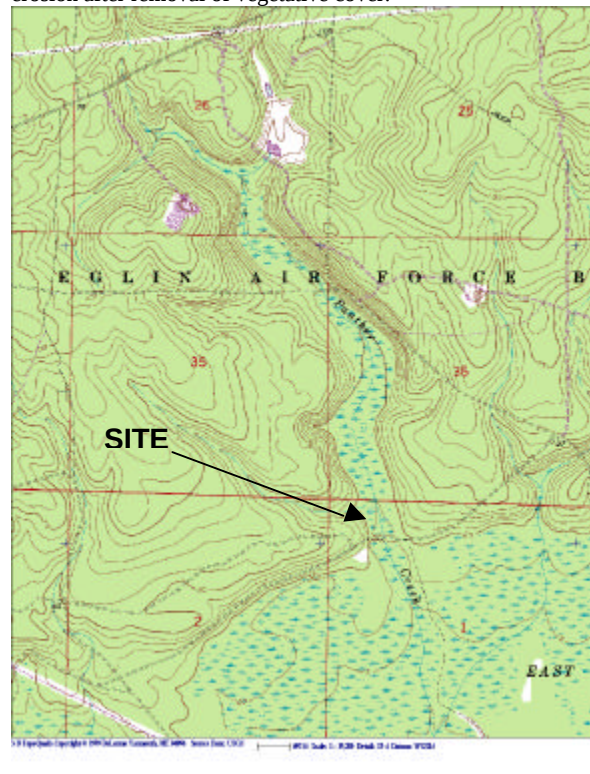
Biometrics	DEP Values	Eglin values	Thresholds
Taxa Richness	44	44	≥24
Florida Index	35	33	≥22
EPT	24	20	≥17

However, because of historical human impacts (clay pit, silviculture, and dirt roads) this site's habitat rated a suboptimal score (58%). Sediment smothering covered 90% of the stream, limiting potential fish and wildlife productivity. Previously, hydraulic overload runoff had increased stream width by eroding its banks. The stream width was now 7 meters with a depth of only 0.2 meter, too shallow for larger fish like bass, bream, suckers, catfish, and the endangered sturgeon. The erosion was aggravated by recent severe fire, which killed many trees in the Atlantic white cedar riparian zone forest, baring soil along the stream banks. Sediment runoff had straightened the stream somewhat by channel filling. Eglin road 678 culvert crossing's dam-like affects reduced water velocity, increasing the sedimentation rate in this stream reach.

Significance

This Panther 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. Minimal runoff due to dry

conditions mitigated some of the sedimentation impact to this stream reach. Nevertheless, a clay pit, silviculture, including burning the stream banks, and dirt road management activities had caused erosion leading to watershed sedimentation problems. This reduced habitat and limited Panther Creek's fish and wildlife nursery function. The sediment impacts especially affect the slower flowing downstream reaches as the stream nears the East Bay River swamp. At this point, the sediments settle and accumulate, smothering aquatic wildlife habitats. The western panhandle of Florida experiences severe erosion. Soft sandy soil, intense rainfall, and steep topographical relief make Panther Creek highly susceptible to erosion after removal of vegetative cover.



Suggestions

Remove the riparian zone road fill and replace it and the culvert with a bridge spanning the stream and wetland to restore the stream's natural morphological characteristics. Stabilizing and re-vegetating the upstream clay pit during Eglin's stream restoration project should reduce sediment runoff. This project, along with maintaining a greater than 18 meters riparian buffer zone along Panther Creek, 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 Panther Creek's biota. Preserving the stream's natural hydrology (i.e. depth/width ratio, velocity) and riparian forests buffer zones (eliminate 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**