



EcoSummary

BioRecon Report



Yellow River Dripping Rock, Covington County Alabama February 26, 2002

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

Purpose

A bioassessment was performed at the Yellow River Dripping Rock site in support of a Northwest Florida Aquatic Preserves project identifying gulf sturgeon spawning habitats and migratory patterns. The BioRecon was conducted in partnership with the Northwest Florida Aquatic Preserves staff.

Background

The bioassessment site is located two miles south of Alabama Highway 55, eight miles northwest of Lockhart (Lat. 31° 05' 23.8" Long. 86° 27' 31.9"). Dripping Rock was identified by the US Fish Wildlife Service as the best of five distinct sites on the Yellow River for potential spawning habitat for the gulf sturgeon. Its substrate of exposed limestone bedrock overlain with gravel and small cobble is typical of gulf sturgeon spawning areas. Yellow River at this site is a 4th – 5th order stream. Yellow River originates in southern Alabama, north of Andalusia and Opp and flows to Pensacola Bay via Blackwater and East Bays. This site (STORET station 33040137) drains the Southern Pine Plains and Hills ecoregion (65f).



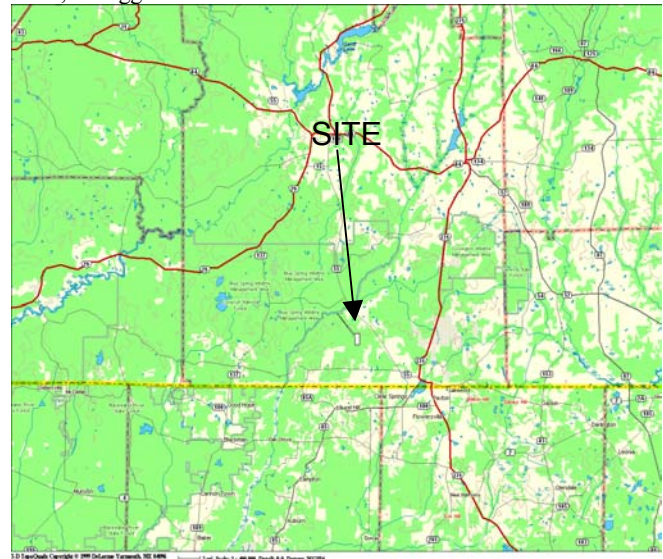
Results and Discussion

The BioRecon indicated a healthy biological community. All 3 biological indicators surpassed thresholds established for a healthy aquatic wildlife community:

Biometrics	Value	Thresholds
Taxa Richness	62	≥24
Florida Index	47	≥22
EPT	33	≥17

The biota was dominated by clean water indicating aquatic wildlife including nine stonefly species. Alabama State biologists have observed young of the year (YOY) gulf sturgeon at the Dripping Rock area in recent years. A local fisherman reported seeing a YOY gulf sturgeon here at Dripping Rock during the past summer. However, it was noted that 50% of the limestone bedrock was smothered by sand. Much of the remaining limestone bedrock substrate was sand blasted or scoured by sand movement. The stream habitat assessment was rated 78%, lowered by sediment loading. This sediment load reduced

wildlife habitat by smothering available substrate (rock, snags, leaf pack/mats, undercut banks/roots). Sediment sources include severe hillside erosion along dirt roads and agricultural/silvicultural lands. Severe gully formation was observed locally on cleared lands with steep topographical relief and erodible soils. Bedrock and clean gravel substrate are necessary habitats as attachment sites for sturgeon eggs and shelter for developing larvae. If sturgeon spawn in mud and sand areas, the eggs can be buried in the sediment and suffocate.



Significance

This Yellow River Dripping Rock site is proposed for listing as critical habitat for the Federally listed threatened gulf sturgeon. However, the sediment loading in this river reach had an affect on fish and wildlife productivity by reducing available habitat. Sediment runoff that exceeds an amount a stream is able to assimilate (i.e. Total Maximum Daily Load or "TMDL") is common in the Southern Pine Plains and Hills ecoregion (65f). This aquatic habitat smothering could affect the gulf sturgeon. Sedimentation may restrict sturgeon's upstream migration, smother spawning habitats, limit the sturgeon food supply by reduction of the benthic macroinvertebrate productivity, and fill in summer resting pools. Restoration of the stream's natural hydrology (i.e. depth, flow) by reducing the watershed's sediment runoff would benefit Yellow River's fish and wildlife nursery area at Dripping Rock. Watershed land management to protect natural resources, including the use of Best Management Practices (BMPs) to minimize problems from nonpoint source runoff, is needed to protect the Yellow River. BMP's such as maintenance of riparian vegetation buffer zones of greater than 18-meter along the watershed's streams would be a first step to reduce sediment runoff. This would help protect the river's wildlife's diversity and productivity. **For more information, contact Donald Ray, FDEP Northwest District, 160 Governmental Center, Pensacola, FL 32501 (850) 595-8300 x1126 or SC 695-8300**