

Stream Conservation Planning

Planning Restoration and Preservation Actions to Maximize Aquatic Benefits

THE PROBLEM:

THE GOOD: Georgia ES has served as an integral member of the Savannah District, Corps of Engineers' interagency review team for over 50 approved commercial mitigation banks in Georgia. In addition to mitigation banks, Georgia ES biologists have helped design and provided funding for numerous Partners for Fish and Wildlife Program projects that restored stream habitat, and assisted the Corps of Engineers with multi-million dollar stream restoration projects under the Water Resources Development Act. Together, these projects have protected or restored over 20,000 acres of wetlands and 125 miles of stream corridor throughout the State, including habitat for a number of federally protected species.

THE BAD: Unfortunately, the location of many stream preservation and restoration projects in Georgia were selected without regard for how the upstream watershed would develop, how upstream urbanization would affect stormwater runoff and water quality, whether the site was adjacent to or provided a corridor between other protected lands, or whether aquatic species using or colonizing the site would be fragmented from other populations due to culverts, dams, poor habitat or other factors that could affect aquatic movement.



Wilkinson-Oconee Bank, Wilkinson County, GA (Photo by Acer Environmental, Inc.)



*Recent research indicates that the endangered Etowah darter (*Etheostoma etowahae*) may disappear from suitable shoal habitat when upstream effective impervious surface exceeds 3-5% (Photo by Candace Stoughton, The Nature Conservancy).*



Many of these stream restoration projects are not monitored to determine if restoration actions the Service recommended resulted in stable streams with diverse aquatic communities. And, most projects where monitoring is conducted do not use standard sampling methodologies that allow comparison of sites and success of different restoration actions.

Poorly designed and installed culverts can isolate a restoration site and reduce value to aquatic resources (Photo by Eric Prowell, US Fish and Wildlife Service)

Georgia ES Actions:

Georgia ES is working with the Savannah District, Corps of Engineers, EPA, Georgia Department of Natural Resources, Georgia Department of Transportation, The Nature Conservancy, and Georgia Wetlands Trust Fund to encourage location of mitigation banks and other stream preservation and restoration projects in areas essential for recovery of endangered and threatened aquatic species or in streams identified as priority by GADNR. Primary watershed focus areas we selected in Georgia include the Conasauga, Coosawattee, Etowah, Flint, lower Chattahoochee, and Tallapoosa River basins.

Champion Streams: Within each of the six Georgia focus areas, we selected Champion Streams, where we encourage Partners projects, in lieu trust funds, WRDA 1135 and 206 projects, and Corps mitigation banks in the basin to be concentrated. The ultimate goal is protection/restoration of an entire sub-basin, rather than a piecemeal approach to selecting stream conservation projects. Champion Streams were selected based on overall aquatic diversity, including listed species, presence of other protected lands, and existing land use in the watershed. For example, we selected two Champion Streams in the Conasauga River basin: the river's mainstem in the Alaculsy Valley and Holly Creek. Both reaches are adjacent to Forest Service land, have one or more mitigation banks or Partners projects in place, and support two or more federally listed fish or mussels.



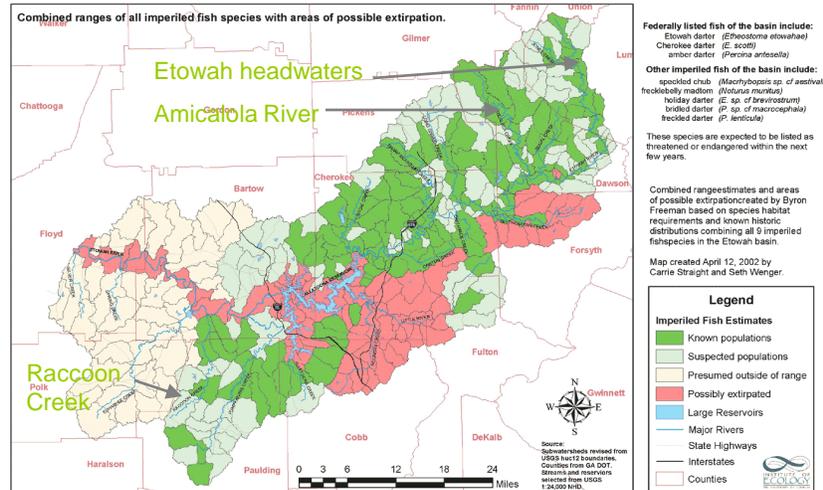
Chattahoochee Mitigation Bank stream restoration, Fulton County. The reach, pre-restoration, was channelized. (Photo by Register-Nelson)

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Developing New Mitigation Guidelines: Georgia ES, at the request of the Savannah District, Corps of Engineers, currently is rewriting stream mitigation guidelines to include a landscape level assessment of potential restoration sites. Mitigation in the Champion Streams, under the new plan, will generate the greatest bank credit. Mitigation in other reaches will be accepted, at significantly lower credit, only where the upstream watershed is largely protected, where the local government has adopted ordinances/land planning measures that limit the impact of upland development on stream health, and where downstream conditions will allow fish and other aquatic species' movement to the reach.



Although listed fish occur throughout the Etowah Basin, we selected only three Champion Streams to help focus preservation and restoration projects in key areas. The three Champion Streams are Raccoon Creek, the Amicalola River, and the Etowah River headwaters.

Developing/Identifying Standardized Evaluation Criteria:

Georgia ES is evaluating different fish, macroinvertebrate, and stream geomorphology survey methodologies to determine which are most efficient in terms of manpower and cost, yet provide adequate data to evaluate a biotic communities and stream stability at restoration projects. We also are assembling a monitoring database to help develop reasonable criteria to assess success at important monitoring milestones for stream restoration projects.



Fish sampling (Photo by UGA)