

Assessing Aquatic Connectivity in the Black River Watershed

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Cape Fear Resource, Conservation, & Development

Bringing together land, water, air and community

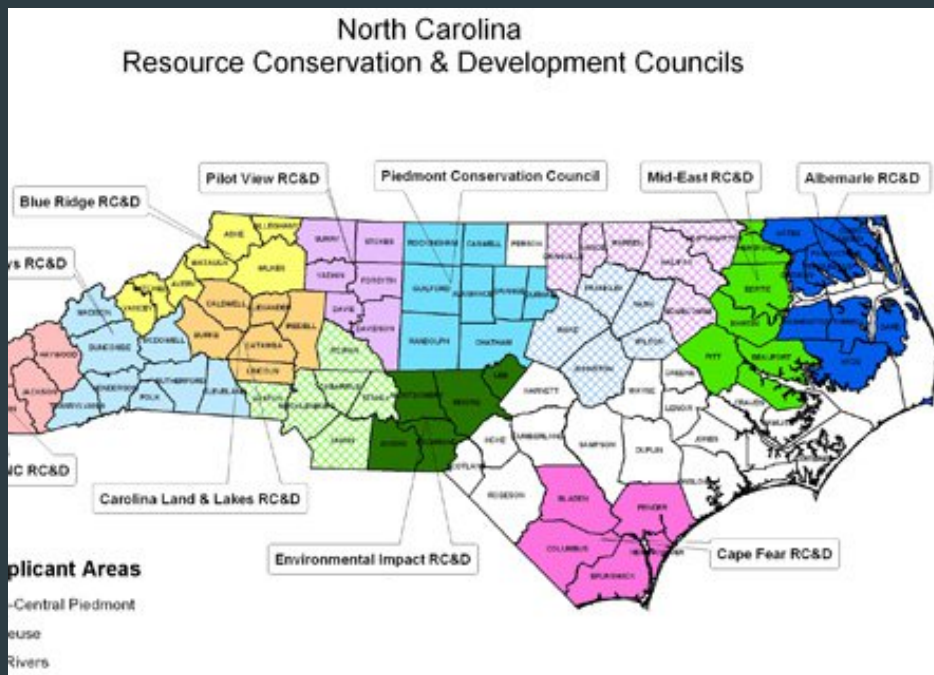
► Mission:

- To conserve natural resources while encouraging sound economic development and community development through project funding and implementation in southeastern North Carolina.

► Vision:

- The regional leader on implementing projects that protect, enhance, and balance our natural resources and our communities' economic development.

Current CFRCD Member Counties



Bladen

Brunswick

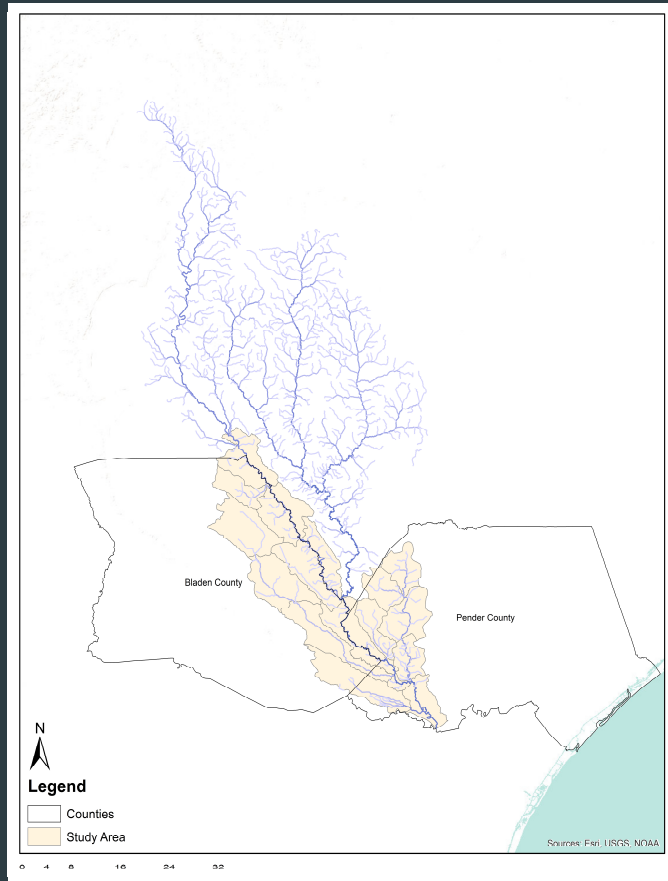
Columbus

Pender

New Hanover

Assessing Aquatic Connectivity in the Cape Fear River Basin

- Long-Term Plan: Assessing Aquatic Connectivity across the Cape Fear River Basin
- Current Project: lower Black River Watershed based on priority by partners
- CFRCD is initializing assessments of culverts specifically within Bladen and Pender Counties





Partners

- Southeast Aquatic Resources Partnership
- Cape Fear River Partnership
- Pender and Bladen Counties
- National Fish and Wildlife Foundation
- Moffat & Nichol
- US Fish and Wildlife Service
- NOAA Fisheries
- NCDOT
- NC Wildlife Resource Commission

Goal 1: Restore access to historic migratory fish habitat

What are the problems?	What will the Partnership do to address the problems?	What will the results of the Partnership's work be?
Problem 1: Obstructions block or impede migratory fish access to historic spawning and nursery habitat.	Strategy 1a: Modify obstructions to fish passage in the Cape Fear River mainstem and monitor passage.	Target 1a: Safe, timely, effective passage for all anadromous species is restored at Lock and Dam 1. Designs for safe, timely, effective passage are completed and initiated at Lock and Dams 2 and 3 within five years.
	Strategy 1b: Modify obstructions to fish passage in tributaries of the Cape Fear River Basin	Target 1b: At least five obstructions on tributaries are removed or modified within five years.

Goals of the project

- ▶ Attend SARP Stream Crossing Protocol Training
- ▶ Hold two public meetings in Pender/Bladen Counties
- ▶ Assess, rank, and prioritize 200 culverts for removal and/or restoration in the lower Black River Basin
- ▶ Score the culverts through the Southeast Aquatic Resources Partnership (SARP) Barrier Prioritization Tool
- ▶ Up to five barriers will be: groundtruthed, evaluated for feasibility, and preliminary engineering design and construction estimates developed
- ▶ Future funding acquisition and implementation



Broadtail Madtom

*A culvert is a structure where a road and a stream meet. A good culvert will let a stream be a stream.

Assessing Aquatic Connectivity in the Black River Watershed Structure Locations Map



Legend

NC Web Viewer Small Barriers

Crossing Type

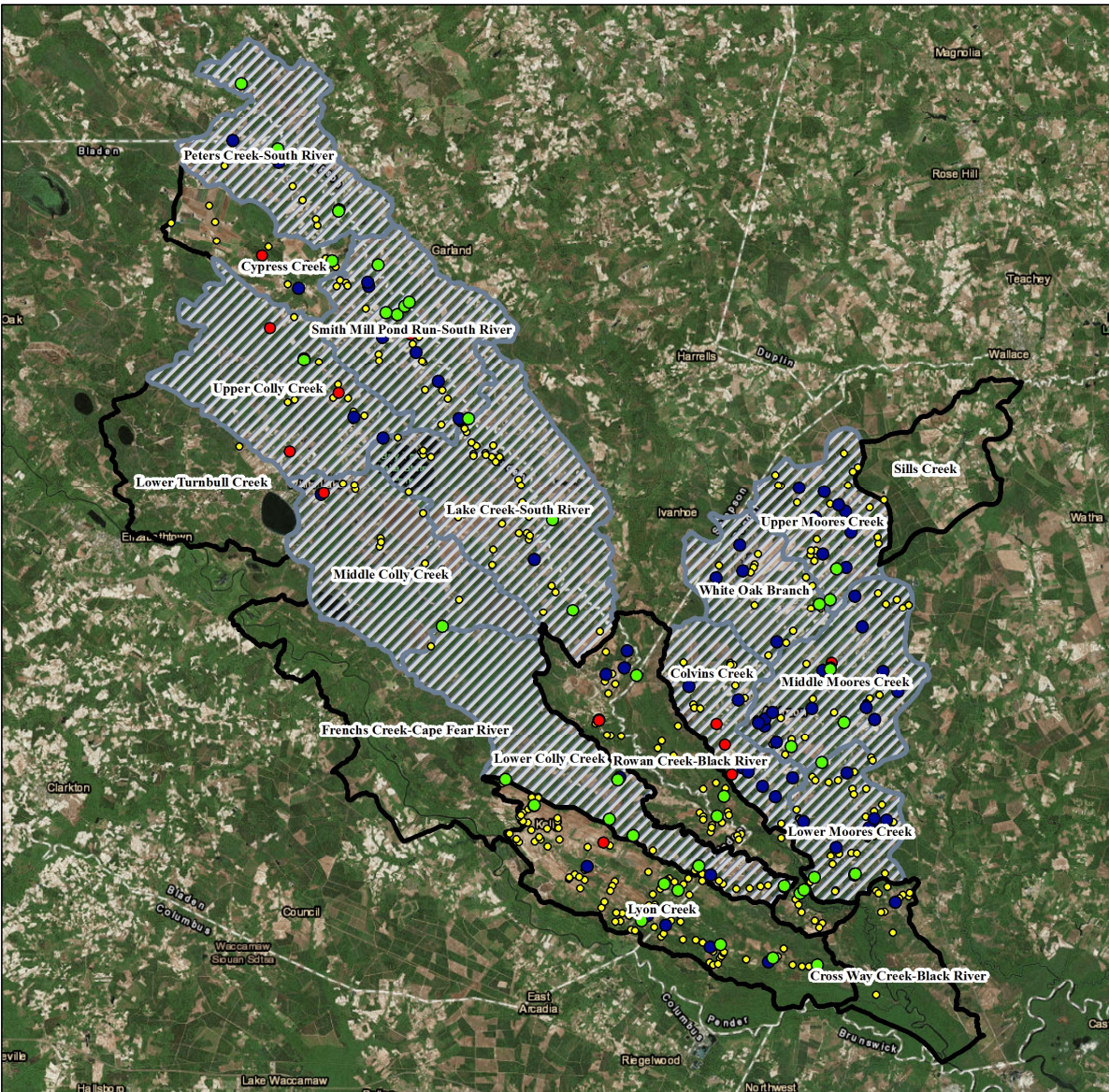
- Bridge
- Culvert
- Bladen and Pender Counties NCDOT Non-NBIS
- High Resolution Road Stream Crossings

HUC 12

Category

- HUCs without Rare Species
- HUCs with Rare Species

0 50,000 100,000 Feet





Barrier Prioritization Tool

Identify important sites for replacement or retrofit.

Prioritization tool uses the results of field assessments to help identify specific locations.

- ▶ Aquatic organism passage field assessment
- ▶ Connectivity metrics include how much stream habitat would be reconnected
- ▶ Ecological criteria

Other criteria of importance include:

- ▶ Structure condition
- ▶ Vulnerability
- ▶ Social criteria
- ▶ Economic criteria

Mutual Benefits to Aquatic Connectivity and Community Resiliency

- ▶ Most culverts were designed with principal objective of moving water across a road alignment.
- ▶ Little consideration was given to ecosystem processes such as the natural hydrology, sediment transport, fish and wildlife passage, or the movement of woody debris.
- ▶ By restoring high priority culverts, aquatic connectivity will be improved along with hydrology and sediment transport.
- ▶ Supports community resiliency!



Funding Opportunities

- SARP In-kind Contributions:
Stream Training and GIS Support
- Member County Contributions:
\$9,000 Each
- Z Smith Reynolds: \$50,000
- Golden Leaf Foundation: \$50,000
- NFWF - Southeastern Aquatics
Program: \$130,000
- DWR - Application to be
submitted June 30 - \$\$\$

