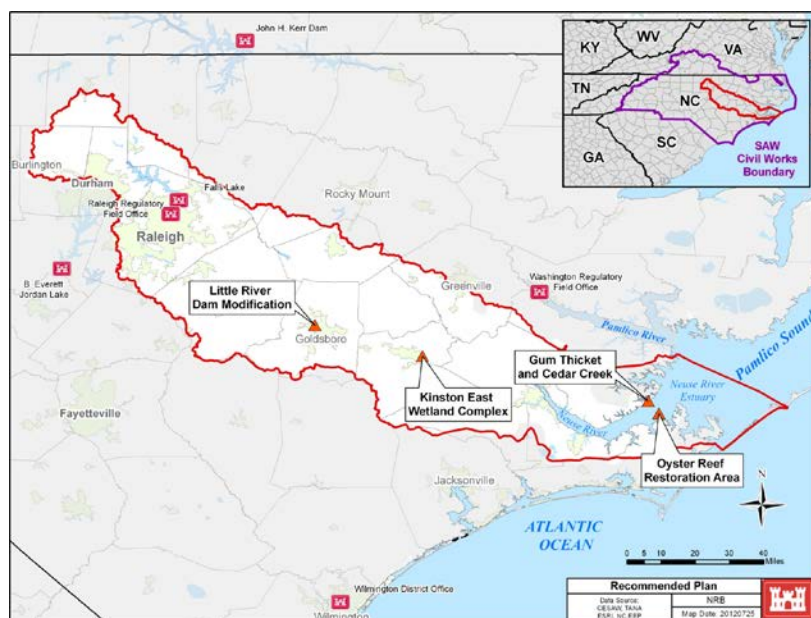


Neuse River Basin, North Carolina Ecosystem Restoration Project

5 October 2012



ABSTRACT: The study area encompasses the Neuse River Basin, the third-largest river basin in North Carolina. The Basin contains a total area of 6,234 square miles (sq mi), and it is one of only four watersheds entirely within the state. The Neuse River originates at the confluence of the Eno and Flat Rivers in north-central North Carolina near the city of Durham and flows southeasterly until reaching tidal waters near State Highway 43, upstream of the city of New Bern, North Carolina. At New Bern the river broadens dramatically and changes from a unidirectional freshwater regime to a mixed tidal regime of the Neuse River Estuary. The Neuse River then flows through

the estuary and out into Pamlico Sound before reaching the Atlantic Ocean.

The study investigated the quality of the overall Neuse River Basin ecosystem and the level of flood risk in the watershed. The study could not identify any opportunities for flood risk reduction at the time of the report and therefore focused on ecosystem restoration opportunities.

Ecosystem restoration opportunities were identified and analyzed within the context of numerous partnerships and initiatives by other Federal agencies, state agencies, local governments, nongovernmental environmental organizations, and others. Study efforts were conducted such that the recommendations would complement ongoing activities, not conflict with or duplicate them. The identified opportunities include: Improve biological integrity; Improve freshwater mussel populations; Improve anadromous fish populations; Restore damaged or eliminated natural riparian buffers; Restore emergent wetlands; and Increase the quantity and quality of oyster reef habitat.

The study focused on sites deemed regionally or nationally significant, highly degraded, and incapable of recovery to a balanced and sustainable condition, and also not being addressed by other entities. Ecosystem-specific models were used to calculate functional values, and also to predict conditions in the future, under both without-, and with-project conditions. This environmental benefits analysis was used to measure the increase in both the quality and quantity of targeted ecosystem components associated with various proposed restoration measures and alternatives at each site. Further screening of critical sites, and use of Cost-Effectiveness / Incremental Cost Analysis (CE/ICA) then resulted in a discrete list of "Best Buy" plans, which are those alternatives that provide the greatest increase in environmental output for the least increase in cost.

The Recommended Plan is also the identified National Ecosystem Restoration Plan. The Recommended Plan would improve biological integrity, improve freshwater mussel populations, improve anadromous fish populations, restore emergent wetlands, and increase the quantity and quality of oyster reef habitat. The specific elements of the Recommended Plan are described below.

Modification of the Low-head Dam on the Little River: This element would restore habitat connectivity for 46 miles of important spawning habitat for anadromous fish species between the Neuse River estuary and upstream freshwater tributaries. Species that rely on habitat structure from the Neuse River Estuary upstream would be allowed access to the Little River. Forty-six miles of in-stream habitat would be made accessible by re-connecting the Little River to the mainstem Neuse River. The estimated cost for this restoration component is \$521,000.

Kinston East Wetland Complex: This element would restore approximately 14.5 ac of damaged or eliminated riparian buffer where a former bottomland hardwood forest adjacent to the Neuse River was filled. Restoration of this area would result in a reconnection to the floodplain. The estimated cost for this restoration component is \$3,836,000.

Restoration of the Estuarine Wetlands at Gum Thicket and Cedar Creek: This element would reduce erosion on approximately 59 ac of existing estuarine wetland at the Gum Thicket and Cedar Creek sub-estuaries and create approximately 42 ac of additional estuarine wetland. Stabilizing 3,500 feet of shoreline at Gum Thicket Creek and 5,200 feet of shoreline at Cedar Creek would restore estuarine shoreline and maintain coastal wetland conservation easement, where no development is allowed, that would otherwise be lost to erosion in the future. The estimated cost for this restoration component is \$13,755,000.

Neuse River Estuary Oyster Reef Restoration: This element would restore approximately 10 ac of new oyster reef top, supporting 80 ac of estuarine habitat that would be managed by the state as oyster reef sanctuary, where oyster harvesting would be prohibited. The estimated cost for this restoration component is \$11,078,000.

The total first cost for the Recommended Plan is \$35,318,000, based on 2012 price levels (October 2011). The cost-sharing for construction of this ecosystem restoration project will be 65 percent Federal and 35 percent non-Federal. The Sponsor (State of North Carolina) will provide all lands, easements, relocations, rights-of-way, and disposal or borrow areas (LERRDs) required for construction and subsequent maintenance.

REPORT DOCUMENTATION: Pertinent documentation on the project, the results of the Civil Works Review Board, and subsequent Washington-Level Review Actions, are linked below:

- [CWRB Agenda](#)
- [Project Summary](#)
- [CWRB Briefing Slides](#)
- [CWRB Lessons Learned](#)
- CWRB Meeting Record
- State & Agency Review Comment Letters
- Documentation of Review Findings
- [Signed Chief of Engineers Report](#)
- Advance Copy to Congressional Committees
- ASA(CW) Memo to OMB
- OMB Response
- ASA(CW) Transmittal to Congress
- Signed Record of Decision
- Authorization

ADDITIONAL INFORMATION:

[South Atlantic Division](#)

[Wilmington District](#)