

A Framework for Tidal Creek Mitigation in Charleston Harbor

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Introduction

- Tidal creeks and salt marshes serve as nursery habitat for commercially and recreationally important species such as penaeid shrimp, snapper, grouper, red drum, and blue crabs
- Coastal development, including proposed large-scale public works projects, has the potential to significantly impact these habitats
- State and federal mandates require mitigation for impacts; NMFS developed a framework to guide resource managers and applicants in identifying and selecting appropriate compensatory mitigation projects for impacts to tidal creeks and salt marshes
- The framework is designed to ensure ecologically meaningful mitigation and facilitate review, approval and implementation of proposed projects

Inventory Development

- We created a spatially mapped inventory and database of potential tidal creek and salt marsh restoration opportunities (n=125) in Charleston Harbor watershed by compiling existing assessments, using Google Earth to identify additional sites, and conducting site visits
- Inventory development revealed many opportunities to restore nursery habitat by restoring hydrologic flow
- We developed a prioritization framework to evaluate existing condition and potential benefits of restoring each site

Prioritization Framework

- Metadata collected for each site:
 - Location (county, latitude and longitude, major river system)
 - Creek name
 - Classification (1st, 2nd, or 3rd order tidal creek)
 - Primary impediment and restoration approach
 - Data source
 - Project complexity (low, medium, high)
 - Salinity regime
 - Potential public use value
 - Partnership potential
- Framework's scored criteria for each site:
 - Potential habitat benefits for fish and shellfish (30 points)
 - Potential acreage (20 points)
 - Potential to improve water quality (20 points)
 - Existing restoration/mitigation investments (20 points)
 - Degree of current impairment (10 points)
- Framework will result in three scored tiers of potential projects
- Other factors need to be considered in making final project selection, such as: habitat function (e.g., landscape position), number of mitigation credits needed, and landowner willingness

Next Steps

- Apply prioritization framework to inventory of potential sites
- Share results with federal and state agencies, NGOs, and potential applicants interested in restoration and mitigation opportunities
- Explore applying approach to other watersheds in South Carolina and Georgia

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