

EXECUTIVE SUMMARY

In 2014 the Mobile Bay National Estuary Program (MBNEP) contracted with Goodwyn, Mills and Cawood, Inc. (GMC) to prepare a comprehensive Watershed Management Plan (WMP) for the Fowl River Watershed. The Fowl River Watershed is one of several intertidal watersheds along the Alabama coast identified for restoration. This plan will chart a conceptual course for improving and protecting what people living along the Alabama coast value most (Comprehensive Conservation and Management Plan for Alabama's Estuaries and Coast 2013-2018, MBNEP):

- **Water quality:** Identify actions to reduce point and non-point source pollution (including stormwater runoff and associated trash, nutrients, pathogens, erosion and sedimentation) and remediate past effects of environmental degradation thereby reducing outgoing pollutant loads into Mobile Bay, Mississippi Sound, and the Gulf of Mexico
- **Fish:** Identify actions to reduce the incidence and impacts of invasive flora and fauna and improve habitats necessary to support healthy populations of fish and shellfish.
- **Environmental health and resiliency:** Identify vulnerabilities in the watershed from increased sea level rise, storm surge, temperature increases and precipitation and improve watershed resiliency through adaptation strategies.
- **Access:** Characterize existing opportunities for public access, recreation, and ecotourism and identify potential sites to expand access to open spaces and waters within the watershed.
- **Culture and heritage:** Characterize customary uses of biological resources and identify actions to preserve culture, heritage and traditional ecological knowledge of the watershed
- **Shorelines:** Assess shoreline conditions and identify strategic areas for shoreline stabilization and fishery enhancements.

In addition to the six values identified above, this plan provides a strategy for conserving and restoring coastal habitat types that provide critical ecosystem services and are identified by the MBNEP's Science Advisory Committee as most threatened by anthropogenic stressors. These habitat types—freshwater wetlands; streams, rivers and riparian buffers; and intertidal marshes and flats—were classified as most stressed from dredging and filling, fragmentation, and sedimentation, all related to land use change. These habitats and the ecosystem services they provide are related to many, if not all, of the six identified values.

SUMMARY

The Fowl River Watershed encompasses approximately 39,769 acres in southern Mobile County, Alabama. The headwaters of Fowl River begin near Theodore, Alabama and flow south to Bellingrath Gardens where the split between East Fowl River and West Fowl River occurs. East Fowl River flows northeast directly into Mobile Bay, and West Fowl River flows south into Mississippi Sound. Land use and land cover within the Fowl River Watershed is predominantly undeveloped: the five greatest land uses are forests and vegetative cover (37.1 percent), wetlands (29.6 percent), agriculture (17.4 percent), and urban (13.7 percent). Together these five major land use and land cover classifications comprise 97.8 percent of the Watershed.

Although Fowl River is overall a healthy watershed, there are some issues that need to be addressed and monitored. The Watershed Management Team identified nutrient loading, excessive stormwater runoff, and habitat loss as critical issues. Excessive nitrogen and phosphorous loading could have negative impacts on water quality within the streams, rivers, and estuary of Fowl River. PLOAD modeling identified urbanized and agricultural areas within the Watershed as primary sources of nutrients. In addition to nutrient pollution, stormwater management/flood protection was determined to be a critical issue. The causes of large volume stormwater flows are altered hydrology, intense rainfall events, and to a lesser degree, impervious surfaces created by urban development. The loss of wetlands and the channelization/clearing of streams has altered the natural hydrologic regime of the Watershed, which has increased runoff, stormwater flows, and flooding, and negatively affected the water quality of the Watershed. Unless new urban development is properly managed, stormwater runoff will become a greater concern because urbanized land and impervious surfaces increase stormwater runoff.

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While best management practices are more routinely utilized today, older developments were not built to the same standards. For this reason, retrofits of existing developments utilizing stormwater best management practices is recommended. In addition, excessive stormwater flows have contributed to habitat loss and shoreline erosion in the lower Fowl River Watershed. The islands, spits, marshes, and shorelines in the lower portions of the Watershed where the environment transitions from a fresh water river system to an estuarine system have been especially hard hit.

Residents of the Fowl River Watershed and other stakeholders were engaged in a public outreach and education effort as part of the WMP process. In addition to the generic purpose and specific goals of the WMP, stakeholders identified the following 16 priority issues: (1) habitat management, (2) habitat protection, (3) litter, (4) erosion and sedimentation, (5) ordinances, (6) sustainable development, (7) citizen participation, (8) shorelines, (9) stormwater management, (10) habitat acquisition, (11) islands, (12) chemical management, (13) signage, (14) enforcement, (15) boat wakes, and (16) recreation.

The Watershed Management Team received 43 reviews of the WMP from individual citizens, government agencies, and non-governmental organizations during the public review period. Overall, the WMP was rated as good to excellent by reviewers. Individual reviews are included in Appendix F.

RECOMMENDED INITIAL MANAGEMENT MEASURES:

The Watershed Management Team, working in cooperation with stakeholders, developed the following management measures to address the purpose of the WMP, specific goals, and priority issues.

- 1. Establish a Fowl River Watershed Management Task Force (WMTF)**
- 2. Pursue funding opportunities**
- 3. Advocate for updating subdivision regulations and encourage retrofitting of existing developments**
- 4. Restore and stabilize shorelines in the coastal zone of the Watershed**
- 5. Expand and improve safety signage**
- 6. Advocate for improved household waste management**
- 7. Establish a public outreach and education program**
- 8. Emphasize leveraging of funding sources**
- 9. Establish a Watershed monitoring program**
- 10. Expand habitat conservation**
- 11. Engage farmers in improving water quality**
- 12. Implement habitat restoration and stormwater project opportunities**

Implementation of the recommended management measures should begin immediately after approval of the WMP. Initial implementation should focus on the most critical issues and the prioritized management measures identified in the WMP. Many of the management measures can occur concurrently as soon as the necessary funding is available.

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Successful implementation of the recommended management measures will require the long-term commitment of significant financial resources and community support. The jurisdictional areas of political entities that might provide funding do not follow or encompass the Watershed boundaries; therefore, a public-private partnership may be the most effective way to accomplish the management goals. To acquire the funding necessary to undertake significant restoration, preservation, and/or management projects, political and private entities will have to consider and compare all available funding options. Many financial assistance opportunities, primarily in the form of federal grants and cooperative agreements, are available to help restore, enhance, and preserve the Fowl River Watershed. However, increases in Watershed recovery efforts by communities around the nation have substantially increased the competition for these resources. The following funding sources were identified and discussed in the WMP, and should all be pursued by the Watershed Management Task Force (WMTF):

- **Water use service fees (i.e., stormwater utility fees);**
- **Property, sales, or other taxes paid into general funds;**
- **Federal grants, loans, and revenue sharing;**
- **“Green” stimulus funding;**
- **Non-governmental organizations/other private funding;**
- **Mitigation banks;**
- **Impact fees;**
- **Special assessments;**
- **System development charges;**
- **Environmental tax shifting;**
- **Capital improvement cooperative districts;**
- **Alabama Improvement districts;**
- **Regional collaborative opportunities;**
- **Gulf Coast Restoration Act;**
- **National Fish and Wildlife Foundation (NFWF) Gulf Environmental Benefit Fund (GEBF);**
- **Gulf Coast Conservation Grants Program;**
- **Natural Resources Conservation Service (NRCS) Agricultural Conservation Easement Program (ACEP) and Healthy Forest Reserve Program (HFRP);**
- **Coastal Ecosystem Resiliency Grants Program;**
- **Gulf of Mexico Energy Security Act (GOMESA);**
- **U.S. Environmental Protection Agency (EPA) Healthy Watersheds Consortium Grant; and**
- **U.S. Fish and Wildlife Service (USFWS) National Coastal Wetlands Conservation Grant Program**

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RECOMMENDED PROJECT/PROGRAM PRIORITIZATION:

1. Restore and stabilize shorelines in the lower Watershed. Coastal zone projects were prioritized on the basis of threat to the natural resource, cost benefit analyses, and access. A combination of historical aerial imagery available from the University of Alabama, Google Earth’s timeline feature, Steering Committee imagery provided by Sam St John and others, and community input all indicate that coastal shorelines are the most threatened. Several priority projects in the lower Watershed were selected based on the severity of the threat, the ability to preserve/protect the habitat, ecological value, and cost (Section 8). The top four priority coastal zone projects include the following:

Priority (Zone)	Location Name	Length (feet)/ Area (acres)	Est. Cost	Brief Description	Location Diagram
1 (I)	Lightcap	1800 / 1.7	\$2.1M	Proposed salt marsh enhancement and protection would include structural stabilization, fill, and appropriate vegetation.	
2 (I)	Tapia	2800 / 4.2	\$3.2M	Proposed salt marsh enhancement and protection would include structural stabilization, fill, and appropriate vegetation.	
3 (I)	Strout	1300 / 0.8	\$1.5M	Proposed spit and salt marsh enhancement and protection would include structural stabilization, fill, and appropriate vegetation.	
4 (I)	Closing Hole	1700 / 3.2	\$2.0M	Proposed spit and salt marsh enhancement and protection would include structural stabilization, fill, and appropriate vegetation.	

2. Implement habitat restoration and stormwater project opportunities. Habitat preservation, restoration, and stormwater projects in the upper Watershed are dependent on willing landowners and available funding. Prioritization of these projects in terms of benefit to the Watershed is possible, but cannot be used to determine an order of implementation.

3. Prioritize public outreach and education. Perhaps the most important program will be the public outreach and education initiative. Most of the management measures recommended in the WMP depend on public support and willing participation. Management of any natural resource is enhanced by public understanding, support, and participation of the stakeholders, and the successful implementation of the recommended management measures may not be possible without public education and outreach. A consistent and targeted education and outreach program will raise public awareness and support for the recommended management measures needed to protect and improve the health of the Fowl River Watershed.