

Waterbody Management Plan for the May River



June 16, 2008

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May River Waterbody Management Plan

Executive Summary

The May River Waterbody Management Plan is the result of a collaborative planning effort between the Town of Bluffton and South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (DHEC OCRM). The May River runs for about 15 miles through the center of the Town of Bluffton and part of Beaufort County and into the Calibogue Sound. Numerous users are directly affected by the quality of the River and hold certain expectations for the continued use of the waterbody. The Town of Bluffton, Beaufort County and DHEC all recognize the significance of the May River and its importance both to local residents and to the region. Beginning in the late 1990s, the sleepy coastal area began to expand as new development resulted in a larger year-round population. Bluffton also grew from roughly one square mile to almost 55 square miles through the annexation of nearby areas. Recognizing the potential impacts of this sudden change, the Town Council was instrumental in identifying and engaging collaborators to document, study, and analyze the May River to enhance local decision-making.

The May River is a regionally significant waterbody for a number of reasons. First, the River contains numerous natural resource populations that are directly harvested and utilized by local and regional residents. Second, the aesthetics and views of the May River waterbody increase the popularity of the area for continued growth. Third, the economic conditions directly and indirectly generated to the community because of the River are substantial. Finally, the River provides a sense of community character and pride that is locally and regionally recognized. Each of these values is important to different users of the waterbody. The Waterbody Management Plan was designed as a way to identify and address the effects of these potentially competing uses on the River. A major theme of the project was identifying and advancing realistic options that would, first and foremost, preserve the River and its uses into the future.

The project team, comprised of staff from the Town of Bluffton's Department of Environmental Protection and DHEC OCRM, began work in May 2007. Considerable information and data had been collected on and about the environment, ecology, habitats, and physical parameters of the May River and its watershed. However, this information had not been previously consolidated and summarized in one document specific to the manner and extent in which people utilize the River. The Waterbody Management Plan for the May River provided an opportunity for the compilation and review of existing information from a variety of sources, and analysis based on goals and objectives established for the project. This analysis resulted in the identification of potential issues and conflicts between users, user groups, and the environmental conditions that were identified for protection. Ultimately the Waterbody Management Plan identified specific tasks and recommendations that should be implemented over the next five years that would be the most likely to achieve the various Project Goals and Objectives.

The development of the Waterbody Management Plan involved a three-step process beginning in June 2007. First, an Inventory of Existing Conditions within the Study Area was prepared, incorporating information on the ecology, water quality, flora and fauna, boat use, drainages, public access, fishing and bathing, economy, and a range of uses of

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the May River and its upland watershed. The Second phase involved the project team performing an analysis of the information gathered against the Project Goals and Objectives established for the protection of the River. This analysis identified recurring issues, conflicts that currently or is predicted to occur between the uses and the project goals and objectives, and possible options to avoid or minimize the problems identified. The final phase involved the identification of implementation priorities and development of a strategy to advance the goals and objectives of the Waterbody Management Plan. A series of public meetings were held at critical points in the process to garner public input and critique, and drafts of each section of the document were available to the public on the Town's website throughout the process. Considerable public comment and involvement occurred throughout the Inventory and Analysis phases, and three public meetings were held to introduce draft sections of the document.

Overseeing the process was a Project Advisory Committee (PAC) established by the Town Council and comprised of representatives of various stakeholder groups. Representatives included local engineers, boating advocates, developers, environmental researchers, planners, water quality specialists, and informed residents. Other agencies, including Beaufort County, DHEC OCRM and EQC, as well as Sea Grant, were also represented on the Committee. The PAC helped to establish the project goals and objectives, reviewed, helped revise, and approved draft sections of the document. The PAC also provided input from the perspective of the disciplines and groups represented, and perhaps most importantly, maintained open channels of communication with other relevant agencies and organizations. The PAC met eleven times during the course of the project.

The Project Advisory Committee initially helped develop a series of possible goals and objectives that would serve as the intended targets for the Management Plan. After considerable discussion and refinement, the Project Goals and Objectives were refined to six major goals and 38 objectives. The goals include such broad concepts as increasing outreach and education and protecting the existing water quality of the May River. The objectives established measurable actions to implement the goals and included coordinating with other state and federal agencies on stormwater best management practices, and identifying locations for future public access points. The project team and PAC used the Project Goals and Objectives as the benchmarks against which to measure the analysis of the Inventory of Existing Conditions.

The Inventory of Existing Conditions summarized information from both the May River watershed, and also from the smaller Project Study Area delineated around the waterbody itself. Information was organized into chapters including the May River Watershed Characteristics, Characteristics of the May River, Water Use in the May River, Existing Authorities, and Management within the Study Area. In the Watershed Characteristics, discussion included soils, topography, ecosystems and habitats, flora and fauna, population and projected change, and land use within the May River watershed. Details about hydrology, salinity, water quality, in-water habitat and wetlands were discussed in the May River Characteristics section. The Water Use section included investigation of boating and navigation, shellfishing, shrimping and crabbing, swimming and bathing, and

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other uses of the River. The current existing authorities of federal, state and local governments was described under Existing Authorities. Finally, regulation and policies specific to the management of May River are, as well as oil spill response, were summarized in the section titled Management within the Study Area.

The analysis performed by the project team and the PAC over a four-month period identified recurring issues, conflicts, and opportunities. In total, the analysis identified 45 potential issues that were recurring themes. From these issues, 149 existing or potential conflicts between uses or Project Goals and Objectives were identified and inventoried. Finally, the team developed 123 possible options to work around the existing or potential conflicts and attempt to achieve the Project Goals and Objectives set forth at the project commencement. Each of the components of the analysis were reanalyzed, discussed, and vetted by the PAC at a series of meetings to ensure that the project team had not overlooked or inadvertently biased any of the results of the analysis. A public meeting was also held to seek public input into the results of the analysis.

As a final task, the PAC identified eleven of the most relevant and implementable opportunities that had been identified as part of the analysis phase and prepared Implementation Priorities. These priorities represent specific tasks or recommendations that would most efficiently and effectively advance the Project Goals and Objectives. In many cases, the priorities identified would implement more than one goal at the same time. Consistency and clarity in rules, regulations and policies that manage activities along the River is a recurring element to the Implementation Priorities. The most noticeable aspect is the clear necessity for the Town of Bluffton and Beaufort County to collaborate and work jointly on many of the initiatives.

The Implementation Priorities section includes an Issue Background, specific Recommendations, Actions Required for Implementation, Responsible Parties, and Possible Funding Sources. The Priorities were designed to facilitate immediate implementation by identifying the “who, what, why and how” for recommendation. In addition, the Priorities were also designed to enable appropriate parties, such as the Town or County governments, to respond quickly to grant and other funding or scientific research opportunities. Perhaps most importantly, the Priorities were designed to provide a list of recommended, specific actions that are expected to provide the most benefit in protecting the uses of the May River over the next five years.

The Waterbody Management Plan for the May River is a proactive document that was designed and developed to better focus the energies of the various agencies and stakeholders who work to protect the system. The final Plan is the result of tremendous effort, public input, and collaboration among dozens of people, agencies, and organizations. Implementation of the Plan will continue to require the involvement and diligence of all parties involved, working in a consistent and cooperative approach in order to ensure that the May River is protected today and into the future, and that additional proactive steps are taken to avoid adverse impacts on the uses and benefits of this priceless resource.

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Introduction

The May River Waterbody Management Plan is the result of a collaborative planning process between the Town of Bluffton and South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (DHEC OCRM). The May River runs through the center of the Town of Bluffton and into Calibogue Sound. Along the length of the River there are numerous users and user groups that are directly affected by the River all of whom harbor certain expectations for the waterbody. The Town of Bluffton recognizes the significance of the May River and its importance both to local residents and to the region. Beginning in the late 1990s, the sleepy coastal community began to expand as new development resulted in a larger year-round population. Bluffton also grew from roughly one square mile to almost 55 square miles through annexation of nearby areas. The original core of the community is located on one bank of the May River in Old Town Bluffton and the recently annexed Palmetto Bluff development lies on most of the opposite.

The May River is a regionally significant waterbody for a number of reasons. First, the River contains numerous natural resource populations that are directly harvested and utilized by local and regional residents. Second, the aesthetics and views of the May River waterbody increase the popularity of the area for continued growth. Third, the economic conditions directly and indirectly generated to the community because of the River are substantial. Finally, the River provides a sense of community character and pride that is locally and regionally recognized.



Image 1. Typical view along the May River in Bluffton.

Even with the importance of the May River, the Town and DHEC OCRM are very aware of the sensitivity of the resource. The growth and changes in land use patterns within Bluffton and the May River Watershed led the Town Council to partner with South Carolina Department of Natural Resources (DNR), the National Oceanic and Atmospheric Administration (NOAA), and the United States Geological Survey (USGS) to prepare an extensive study of the baseline environmental and biological conditions within the May River between 2002 and 2004. The Town also began substantial revisions to the local Comprehensive Plan which guides land use decisions through zoning and other land use controls.

Water quality within the May River has been historically reported as very high, resulting in the Outstanding Resource Waters (ORW) designation from the DHEC Environmental Quality Control's (EQC) Bureau of Water. Commercial shellfish harvesting, particularly for oysters, remains a significant component of the tradition and community character of the Town of Bluffton and is directly dependent on the preservation of high water quality. Few sources of possible impairments to water quality previously existed within the May River Watershed, and even fewer within close proximity to the River itself. Changes in

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the intensity and types of land use within the watershed and surrounding areas may introduce new and greater concentrations of nutrients and potential contaminants to the system, resulting in undesirable changes.

The effects of land use change are not limited solely to environmental impacts. Some of the most noticeable changes may occur to the types and level of use historically associated with the waterbody and its surrounding land. Increases in the amount of boat traffic, longer waits at public boat launches, and a higher demand for parking at local waterfront parks may all be indicative of change occurring at a human scale. The effects of change on the human dimension may be readily observable, but also tend to occur gradually as different individual land use decisions are implemented. Changes to the natural system, and to the interaction between multiple parameters of those systems, are less observable and require more detailed study in order to be perceived. This subtlety often means that the only time people recognize that things have changed within the environment is when they can no longer use a waterbody in the ways to which they are accustomed. A common indicator of change in a system is the increase in competition for the same space.



Image 2. Example of development in the May River Watershed.

The May River is also a public resource that requires conservation and management in order to effectively meet the current level of use demand and be capable of sustaining future increased levels. The public nature of this waterbody necessitates that multiple agencies, groups, and organizations take responsibility for ensuring that the intended goals and objectives for the River are met. The interactions and relationships between various natural, physical, and social parameters in the River permit and dictate certain responses. Understanding, documenting and ultimately directing these relationships is necessary in order to comprehensively manage the May River system.

The Town of Bluffton and DHEC OCRM and EQC recognize that both Bluffton and the May River Watershed have changed and will continue to change as time passes. These changes are not simply in land use, but include changes in jurisdictions, responsibilities, issues, resource use, and population. Many of these changes are complex in isolation and are cumulatively even more difficult to investigate and understand. The challenge for local governments is to anticipate the likelihood of future changes, identify potential options to protect what is important to the community, and establish a strategy for encouraging the uses of a waterbody that are desirable as well as practical and implementable. The Town of Bluffton and DHEC OCRM are preparing the Waterbody Management Plan for the May River in order to investigate and address the anticipated short-term effects of changes in the area on the uses of the May River.

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Waterbody Management Plan

A Waterbody Management Plan is a comprehensive strategy developed to identify and address the impacts of competing uses within a waterbody. Utilizing a rational planning approach, such as comprehensive land use planning, a waterbody management plan can provide similar benefits for predicting and addressing the cumulative effects of development, social, and environmental changes on the uses of the waterbody. Since waterbodies can have the same types of competing uses as the adjacent uplands, this special management planning technique enables communities to focus comprehensively on the value and importance of these coastal systems. Waterbody planning also allows the community to highlight the effects of certain uses on the surrounding environment by approaching planning through the attributes that people use and value in their waterbody. This approach helps generate greater local support because it shows how potentially competing future uses impact the current and traditional uses of a waterbody.

The purpose of a Waterbody Management Plan is to identify and address the effects of competing uses on a body of water. The Waterbody Management Plan enables the community to identify the potential conflicts and opportunities within a waterbody and address them with a holistic solution. This approach can show how competing future uses can cause direct

impacts to the current and traditional uses of a waterbody. In order to accomplish this, the planning process focuses on the way that people use and value the waterbody, for example, boating, swimming, harvesting shellfish and fishing. The manner in which people use lands around the waterbody is also investigated, as is the impact that these land uses has on the waterbody. This inventory includes identification, whenever possible, of interactions between both natural and anthropogenic elements that produce positive or negative effects. The planning process concludes with the preparation of a series of implementable actions that would address potential impacts to the desired use of the waterbody.

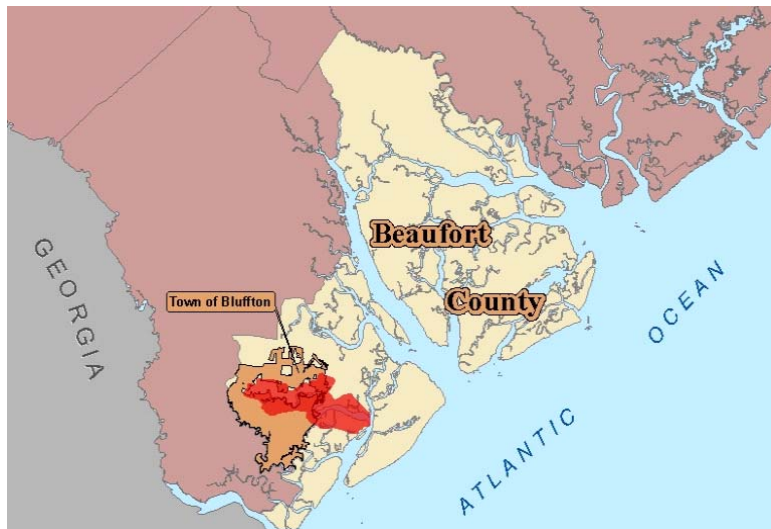


Figure 1. Beaufort County, the Town of Bluffton, and the May River Study Area.

Creation of a Waterbody Management Plan begins with the establishment of a Study Area Boundary that adequately includes the waterbody and the surrounding land areas which interact with the water. Once established, the inventory of existing conditions

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found within the study area boundary is prepared. As a planning tool, the boundary is designed to ensure that areas which most likely impact the waterbody are investigated. Unlike watershed planning, in which the entire drainage area of a waterbody is examined and land use decisions are a primary focus, the intent of a Waterbody Management Plan is to direct the planning focus on uses of the waterbody itself. Careful delineation of the study area ensures that it is not too large or small and results in a focused investigation with a greater likelihood of implementation. Issues including land use, water quality, and historic preservation are discussed in the context of how they affect the ways people use the River.

The uses of the May River vary in type and intensity in different sections. The May River exhibits unique hydrologic and water chemistry characteristics that have resulted in previous investigations studying the River in segments. Adjacent land uses also vary by type and intensity within the system and encourage the dissection of the Study Area into individual segments for the purposes of inventory. The Study Area is broken into the Headwaters, the Middle River, and the Mainstem. The characteristics of each zone are discussed individually.

The Headwaters consists of the upper portion of the River and the western section of the Study Area and includes areas of low-density residential development, lower salinity, a shallow channel, and the greatest sheet flow potential. The Middle River zone includes the area of Old Town Bluffton, numerous tidal shoals, sandbars and marshland, increased intensity of water and land uses, a convoluted channel structure, and higher salinity levels. The Mainstem zone is primarily deep open water with significant tidal flushing, wide channels, the active All Joy Boat Landing, Brighton Beach area and relatively limited land uses, and extensive tidal wetlands.

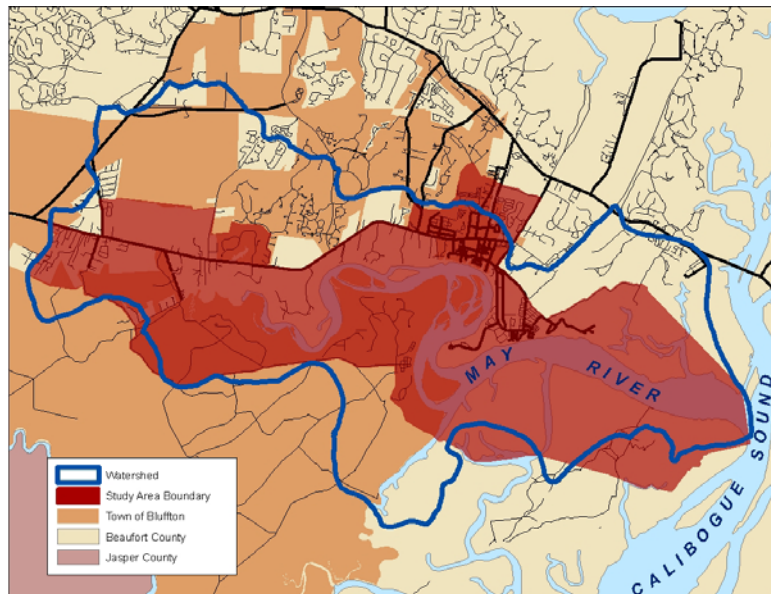


Figure 2. Watershed and May River Study Area Boundary.

The characteristics and uses of the May River are, however, directly related to the land uses, inputs, drainage, and uniqueness of the surrounding watershed. While the Waterbody Management Plan is not intended to be a watershed-based study, it is not possible to adequately describe the uses of the May River without discussing the

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watershed. Relevant discussions of the characteristics and possible impact of the watershed on the May River are introduced at the beginning of this Inventory. The characteristics, uses, and relationships within the May River are discussed in greater detail.

May River Watershed Characteristics

The May River watershed (HUC 03050208-110-030) is located in Beaufort County, South Carolina approximately 17 miles northeast of Savannah and seven miles west of the Town of Hilton Head Island. The May River watershed encompasses an area of approximately 25,582 acres (10,353 hectares) with approximately 85%, or 21,918 acres (8,870 hectares), being upland drainage area that may contribute freshwater inflow¹. The watershed is located in the Coastal Zone of the Atlantic Coastal Plain, geological deposits from the Late Cretaceous to Holocene that extend from New Jersey to Texas. Around Bluffton, this area lies on the geologic Pamlico terrace, a ridge believed to be caused by fluctuations in sea levels during the Pleistocene epoch and generally found below twenty-five feet². Muds, silts and clays settled out atop this layer and became the foundation of much of the soil types in the coastal plain.

Soils

The predominant soil type within the May River Watershed is fine sand, comprising nearly 40% of the upland soil classification (10,123 acres)³. Loamy fine sands comprise approximately 16% of the upland soil types (4,143 acres) and fine sandy loam makes up about 6 % (644 hectares)⁴.

Soil types found in the watershed include Bladen (bd), Cape Fear (Ca), Chisolm (CmB), Deloss (De), Eulonia (Ee), Murad (Mu), Nemours (NeB), Onslow (On), Ridgeland (Rd), Rosedhu (Ro), Santee (Sa), Seabrook (Sk), Sewee (Sw), Tomotley (To), and Yemassee (Ye). Soils types commonly found in the transitional and upland areas adjacent to the May River include

Capers (CE), Bohicket (Bk) Association, Wando (Wd), Coosaw (Cs)

Williman (Wn), Polawana (Po), Baratai (Ba), Nemours (NeA), and Yonges (Yo)⁵. The Bohicket soil (shown in light green), in particular, is associated material found in salt marshes and is predominant in many parts of the Study Area.

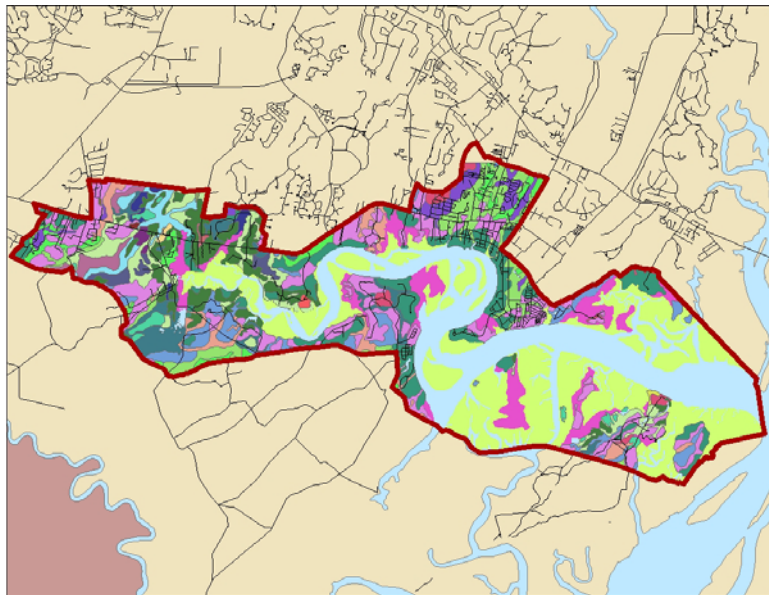


Figure 3. Soils found within the May River the Study Area.

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Topography

The topography within the watershed has elevations averaging around 20-25 feet in most places, which can be considered “high” for the Lowcountry⁶. The majority of the eastern section of the system

averages between 9 and 12 feet in elevation near the River, and the central and western areas average between 18 and 25 feet with some areas of higher ground. These elevations would suggest that a considerable amount of floodplains exist in the eastern half of the May River drainage. A higher ridge runs nearly in line with the Okatie Highway in the northwestern and western area of the watershed. The greatest

variation in elevation appears to occur outside of the project Study Area but within the watershed boundary in this northwestern corner, with large expanses between 15 and 20 feet creating major drains into the headwaters of the May River. Higher ground exists in areas of Palmetto Bluff, in the northwest corner of the Study Area, and in locations within Old Town Bluffton. The maximum elevations within the May River Study Area appear not to exceed 42 feet.

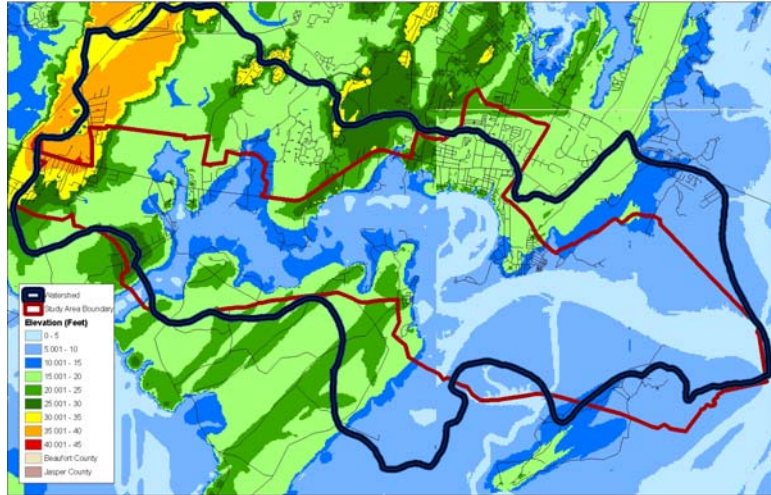


Figure 4. Digital elevation model for the Watershed and Study Area.

Ecosystems and Habitats

The May River Watershed is diverse in the number and types of ecosystems and habitats, and the physiography includes estuaries, tidal marshes, lagoons, and beaches. Bay forest, beech and magnolia hammock, bottomland hardwoods, depression meadows, oak hickory forests, pine flatwoods, pine-saw palmetto flatwoods, pine savannah, shrub pineland, and cypress pond are upland habitat types identified within the watershed⁷. Anthropogenic habitats, including urban and suburban forests, vacant lot meadows and non-native tree and shrub associations also occur within the watershed. Within the Study Area Boundary, significant tidal salt marsh habitats are found in the central and eastern portions, salt flats and sandbars are found in the central portion, and brackish marsh, bay forests and maritime forests are commonly found in the headwater areas. Cordgrass (*Spartina* spp.) and rushes (*Juncus* spp.) are found locally in tidal marshes. Upland habitats include maritime swamp forests with tupelo (*Nyssa* spp.), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and bald cypress (*Taxodium distichum*), and maritime evergreen forests, with slash pine (*Pinus elliottii*), loblolly pine (*P. taeda*), live oak (*Quercus virginiana*) and laurel oak (*Q. laurifolia*). Some of the area’s last remaining intact hardwood and pine forests are located on Palmetto Bluff and were formerly managed for timber and wildlife. Maritime forests exist in areas above high salt

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marshes along Palmetto Bluff, however few contiguous areas of maritime forest still occur on the north shore within Bluffton⁸.

National Wetlands Inventory

The most recent National Wetland Inventory (2002) identified that approximately 14% of the watershed was classified as bay or estuarine waters, 22% was non-forested wetlands, 4% was cropland or pastures, and approximately 28% was planted pine or another form of forested type⁹. Residential classification comprised about 8% of the total watershed area, and commercial uses were less than 1%¹⁰. Population and land use have changed significantly beginning in 1999 with the Town's annexation of 20,660 acres in Palmetto Bluff, and with the annexation of the Buckwalter tract (5,688 acres) and the Jones estate (4,402 acres) in 2000 and Buck Island Simmonsville (1,142 acres) in 2005¹¹. Some part of each of these annexation areas is located within the May River watershed.



Figure 5. National Wetlands Inventory Map indicating forested and non-forested wetlands in the Watershed and Project Area.

Flora and Fauna

Animal groups observed or known to occur within the May River Watershed include worms, amphibians and reptiles, crustaceans, shorebirds, waterfowl, freshwater fish, marine fish, terrestrial mammals, and marine mammals. The Palmetto Bluff Conservancy has undertaken intensive studies documenting the observed and expected flora and fauna at Palmetto Bluff. Field information mainly collected by Kimberly Andrews and Jay Walea indicate that over 700 species of plant and animals may exist within the habitat types identified on the property. Habitat types mapped on Palmetto Bluff also exist within the rest of the watershed, although the segmentation of habitat outside of largely undisturbed tracts such as Palmetto Bluff, may impact the numbers and likelihood of species occurring in similar habitat types.

Based on observations and these studies the watershed is known to contain herpetofauna species including American alligator (*Alligator mississippiensis*), southern toad (*Bufo terrestris*), canebrake rattlesnake (*Crotalus horridus*), cottonmouth (*Agkistrodon contortrix*), green tree frog (*Hyla cinera*), red-spotted newt (*Notophthalmus viridescens*) and yellowbelly slider (*Trachemys scripta*). As many as 170 avian species have been observed in the watershed including some listed as threatened or endangered. Common avian species in the watershed include wild turkey (*Meleagris gallopavo*), American

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bittern (*Botaurus lentiginosus*), blue-winged teal (*Anas discors*), brown-headed cowbird (*Molothus ater*), clapper rail (*Rallus longirostris*), wood stork (*Mycteria americana*), tree swallow (*Tachycineta bicolor*), and downy woodpecker (*Picoidea pubescens*).

Shorebirds in the area include black skimmer (*Rynchops niger*), Forster's tern (*Sterna forsteri*), clapper rail (*Rallus longirostris*), whimbrel (*Numenius phaeopus*), black-bellied plover (*Pluvialis squatarola*), American oystercatcher (*Haematopus palliatus*), brown pelican (*Pelecanus occidentalis*), Bonaparte's gull (*Larus philadelphia*), laughing gull (*Larus atricilla*), ruddy turnstone (*Arenaria interpres*), and spotted sandpiper (*Actitis macularia*). Birds commonly found near salt marshes in the area include white ibis (*Eudocimus albus*), black-crowned night heron (*Nycticorax nycticorax*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and great egret (*Ardea alba*).



Image 3. Shorebirds in a May River marsh near Bass Creek.

Birds of prey identified include northern harrier (*Circus cyaneus*), Mississippi kite (*Ictinia mississippiensis*), osprey (*Panision haliaeetus*), and sharp-shinned hawk (*Accipiter striatus*). Bald eagles (*Haliaeetus leucocephalus*) have also been observed within the watershed and in nearby areas. Ducks and other water birds identified in the watershed include common loon (*Gavia immer*), bufflehead duck (*Bucephala albeola*), and ruddy ducks (*Oxyura jamaicensis*).

Some species commonly found within the watershed are species of special concern including bald eagle, American oystercatcher, black skimmer, and whimbrel. The wood stork is listed as an endangered species.

Mammalian species identified or believed to occur within the watershed include red fox (*Vulpes fulva*), eastern gray squirrel (*Sciurus carolinensis*), mink (*Mustela vison*), raccoon (*Procyon lotor*), beaver (*Castor canadensis*), opossum (*Didelphis marsupialis*), nine-banded armadillo (*Dasyphus novemcinctus*), river otter (*Lutra canadensis*), whitetail deer (*Odocoileus virginianus*), free-tailed bat (*Tadarida brasiliensis*), and eastern cottontail (*Sylvilagus floridanus*). Coyotes (*Canis lastrans*) and bobcat (*Lynx rufus*) have been reported in the vicinity of Palmetto Bluff.

Domestic animals occurring within the watershed primarily include dogs and cats, although horses are kept in a few areas and domestic chickens and goats have also been reported. Feral hogs (*Sus scrofa*) have been observed and reported as nuisance species in sections of this and nearby watersheds. According to the SCDNR 2005 feral hog maps, the May River Watershed was not identified as a significant area for wild hog populations within the State¹².

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Population

Population and demographic statistics are not available on the watershed level. However relevant population information is contained in the Town's Comprehensive Plan update for the Town and adjacent areas.

The 1980 US Census reports that the population of the Town of Bluffton was 598 persons¹³. The population of the Bluffton Planning area, which includes all of the Southern Beaufort area except Hilton Head Island, was reported to be 3,652. The following census in 1990 showed an increase within the Town of 140 people to 738 total, and within the Bluffton Planning Area to 7,084. By the 2000 census, this number had increased again to 1,275 in the Town of Bluffton and 19,044 in the Bluffton Planning Area. Since the 2000 Census, Bluffton continued to grow, and the special census requested in 2005 indicated 4,885 residents in the Town. The annexation of Buck Island/ Simmonville increased that number to the most current Town estimate of 6,377 residents within the Bluffton corporate limits.

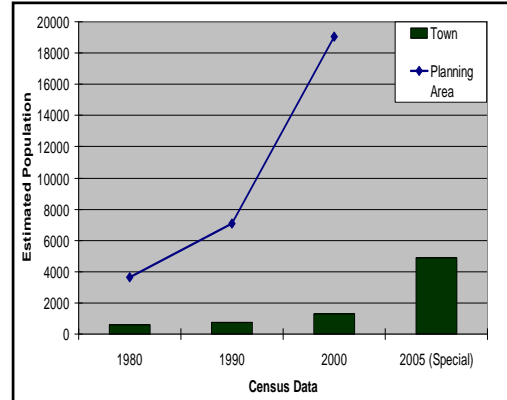


Table 1. Population change in Bluffton and the surrounding area.

Seasonal residence is another planning statistic that is difficult to document. Vacant housing stock used for seasonal, recreational or occasional use in Bluffton was reported to be about 10 housing units in the 2000 census. The mid-decade census in 2005 reported that as many as 169 housing units were being utilized for seasonal, recreational or occasional use. This increase indicates a greater likelihood for part-time residential use within the watershed. In addition, it is likely that many of these seasonal rentals occur within the watershed of the May River, with some likely occurring within the Project Study Area Boundary. The impact of this population on the uses of the May River is unclear.

Population density estimates are available for the Town of Bluffton and other areas within the Southern Beaufort County planning area. The density of the Town of Bluffton in 1990, when it encompassed approximately one square mile, was approximately 1.15 persons per acre. Following the recent annexations, and an increase to roughly 53 square miles, the Town's density decreased to 0.19 persons per acre¹⁴. Based on projected population associated with a Town of Bluffton build-out scenario for its current corporate limits (assuming a population of 47,310 by 2025), the estimated population density within the Town may be 1.38 persons per acre. In comparison, the Town of Hilton Head Island encompasses approximately 36 square miles, and with an estimated population in 2000 of 33,862, the population density was 1.47 persons per acre, which has increased to approximately 1.5 persons per acre in 2005¹⁵.

Demographic information for the population of the Town of Bluffton was documented in the 2000 census and for the special census taken in 2005¹⁶. The figures do not include

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the population changes associated with the later annexation of the Simmonsville/Buck Island tracts. The average age of the population of Bluffton switched between 2000 and 2005 from nearly 36 years old to less than 31 years¹⁷. Age distributions also switched from 22% of the population falling within the range of 35 to 44 years old in 2000 to only 16% between the same range in 2005. The predominant age range in 2005 became 25 to 34 years old (21% of Bluffton's estimated population)¹⁸. Increases were also seen in the Town's population of children under 5 years old (a 430% change between 2000 and 2005) and ages 5 to 9 (a 363% change). These factors show that the Town has a considerable amount of young families with school age children.

The gender distribution within the Town of Bluffton is approximately 48% male and 52% female, according to the Town's Comprehensive Plan. Racial composition and ethnicity data from the 2005 census was predominantly white (69%). The black or African-American population showed a decrease from the 2000 census (32%) to the 2006 estimates (23%). A significant increase was observed between 2000 and 2005 in the population of Hispanic or Latino residents. This population increased 627% between 2000 and 2005 to approximately 11.3% of the population, not including the Simmonsville/Buck Island areas¹⁹. The largest increase was seen in the percent of the population identified as Two or More Races (1.2% of the total 2006 estimated population). The Asian population also rose by the 2006 estimate to approximately 1.1% of the total Town population. At present, approximately 90% of the population of the Town of Bluffton speaks English at some level²⁰.

Population demographics are important factors to consider in the development of a Waterbody Management Plan, particularly in areas of large Asian, Hispanic and Latino populations. Cultural differences among population groups influence the expected and accepted uses of waterbodies and their associated natural resources. Understanding the needs and expectations of coastal resources for these groups will be important to consider. In addition, language barriers between population groups must be recognized in the development and discussion of various coastal management initiatives.

Projected Change

The population within the watershed is expected to increase over the next few decades. While population projections have not been prepared specifically for the watershed area, the Town's Comprehensive Plan indicates that 22,191 dwelling units are permitted for construction in planned developments. Based on the average household size per dwelling unit, the estimated population of the Town of Bluffton is expected to be between 60,800 and 63,000 at buildout²¹. The unincorporated area within the watershed is comprised of relatively stable existing residential communities. The anticipated growth within this area, although currently not estimated, is believed to be marginal.

Land Use

The Town of Bluffton was originally developed as a summer getaway for local wealthy landowners²². Because of this purpose, the original settlement was focused along the May River to maximize access and benefits from the water. Land development patterns did not take a structured form, resulting in series of differing land use patterns occurring

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throughout the watershed. The recent expansion of the Town also resulted in development agreements and planned unit developments which enable more flexible land use design and management than used in traditional Euclidian zoning. As the region grows, land use controls may be forced to evolve in order to achieve the goals and objectives established in the Town's Comprehensive Plan and for the best interest of the May River. Recognition of the difference between traditional land use controls associated with zoning and those established as part of a completed development agreement is important to consider when discussing land use in the May River watershed.



Image 4. Typical land use along the May River indicating elevation.

Land use within the watershed is governed by the Town and County in their respective jurisdictions. In the watershed within Bluffton, the majority of land uses are residential, with some small-scale commercial uses, and a few instances of light industry. Light industry in the watershed includes the junkyard on May River Road, the Bluffton Oyster Factory on Wharf Street, and the Resort Services Incorporated (RSI), which operates an industrial laundry. No heavy industrial activity occurs within the watershed²³.

Approximately 90% of the land within the Town is zoned for Planned Unit Development. Developed areas and housing developments that exist within the watershed include Palmetto Pointe, May River Plantation, Rose Dhu Creek Plantation, Gascoigne Bluff, Barton's Run, Hampton Hall, The Farm, Pine Ridge, Pine Crest, Wellstone, and Bluffton Park. Other developed areas are referred to as the Brighton Beach area and the All Joy area. Housing developments known as Heritage at New Riverside, Allston Park, The Haven, Midpoint, Southern Oaks and Headwaters are located on Palmetto Bluff.

Even within similarly zoned areas, the uses of land within the watershed differ somewhat. Equestrian activities are found at Rose Dhu Creek Plantation, Gascoigne Bluff, and some areas of Palmetto Bluff. A mixed-use commercial and residential development is under construction along Calhoun Street. Greater commercial activity occurs along Burnt Church Road and on Ulmer Road near All Joy Road.

The Town's Comprehensive Plan establishes a desired plan for the community with regard to future land use and development. Within the unincorporated areas of the watershed, large portions are currently undeveloped or used as open space. The Town's Comprehensive Plan identifies these areas as possibly being incorporated into the Town in the future, and rezoned for low-density residential use. The consideration of zoning and other land use controls within the Project Study Boundary is discussed later in this document.

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Parks, Recreation and Open Space

Parks and recreational opportunities within the watershed are mainly associated with Beaufort County Parks and Leisure Services (PALS), with the County Department of Public Works performing maintenance operations²⁴. Five areas are mapped as parks within the Town portion of the watershed, while the County also manages the All Joy Boat Landing, access at Brighton Beach, and jointly manages the park at the Oyster Factory. The five parks within the watershed include a park at Heritage at New Riverside on Palmetto Bluff, Buckwalter Regional Park between The Farm development and Pine Ridge, Bluffton Park in the Shults Tract, an unnamed park south of Bluffton Park off of Dr. Mellichamp Drive. The Town also maintains the Town Dock on Palmetto Bluff and a Town Pier located at the end of Calhoun Street. All Joy Boat Landing, Brighton Beach, the Town Pier and the Town Dock at Palmetto Bluff are all located within the Project Study Area boundary.

The Oyster Factory is an important park for the Town of Bluffton, and for the region, and represents a significant opportunity for the preservation of open space, public access, and water-dependent use. Beaufort County Open Space Land Trust acquired the property in 2002 to protect the property from development for residential use. The Land Trust deeded the property to the County in 2003 and still holds a conservation easement on the property that prohibits significant alteration to the property and requires public access. The oyster factory is discussed in more detail later in this document.



Image 5. The "Old" Oyster Factory in Old Town Bluffton.

Open space in the watershed has been preserved through conservation easements in a number of areas, most notably on Palmetto Bluff as part of the planned unit development. Nearly 600 acres of existing maritime-forested area on Palmetto Bluff has been preserved through easement, and the County and Beaufort County Open Land Trust have preserved the area around the Old Oyster Factory for low impact recreational and commercial maritime use.

Barataria Island, located on the south side of the May River near the confluence with Calibogue Sound, has been under protective easements since the late 1970s. The Nature Conservancy took control of the 194-acre property after 2000 when the owner donated the island. Limited information is available regarding Bull Island.

Transportation

The main road leading to Bluffton and the May River is Route 278, also known as Fording Island Road. Major north-south thoroughfares within the watershed include Route 170 (also known as the Okatie Highway) Old Miller Road, Buckwalter Parkway, Simmonville Road, Buck Island Road, Bluffton Road, and Burnt Church Road. Major east-west roads within the watershed include Route 46, also known as May River Road,

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Bluffton Parkway, and Ulmer Road. On Palmetto Bluff, the main east-west thoroughfare is Old Palmetto Road which becomes Old Palmetto Bluff Road. Within the Study Area in particular, important transportation routes include many of these listed as well as Wharf Street, Church Street, Calhoun Street, and All Joy Road.

Social and Cultural Resources

Numerous resources occur within the watershed that are considered to be of social or cultural value to area residents and visitors. Old Town Bluffton is historic in nature and contributes considerably to the character of the Town. Most notably, Old Town Bluffton is listed on the National Register of Historic Places as a National Register Historic District. The majority of historic register properties are located on Calhoun and Bridge Streets. On Palmetto Bluff, 22 archeological sites were identified and surveyed as part of the development agreements. Many of these areas are now protected by easement or other mechanisms.

Notable historic structures include the Heyward House, built in the 1840s, which is open to the public and serves as the welcome center for the Town. There are nine churches within the Old Town historic district. The Church of the Cross, located on Calhoun Street, is individually listed on the National Register. In addition, there are regionally significant cemeteries located nearby outside of the Town's limits on May River Road.



Image 6. Church of the Cross on Calhoun Street in Old Town Bluffton.

The Oyster Factory is perhaps one of the most important, water-dependent uses in the area. The Oyster Factory, one of at least three which once operated on the May River, is an operational oyster shucking house, commercial wharf, and wholesale fish distribution company. The facility is leased to Larry Toomer. It is the last remaining working oyster factory in South Carolina, and one of the last remaining in the United States. As a water-dependent use, meaning one which cannot operate without being located on the water, it has been recognized as not only a local cultural element, but as a use which must be protected in order to continue the maritime traditions of South Carolina. The Oyster Factory is recognized as a regionally significant feature in Bluffton which warrants special consideration to ensure continued operation²⁵.

May River Characteristics

Located mid-way between Port Royal Sound and the Savannah River, the May River is a tidal slough connected to the Calibogue Sound (HUC 03050208-110)²⁶. The Calibogue Sound and its tributaries form part of the larger Port Royal Sound complex. The Port Royal Sound complex flows into Calibogue Sound through Mackay and Skull Creeks from the north. Calibogue Sound also receives waters from Broad Creek on Hilton Head

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Island to the east, the Cooper, Wright and New Rivers from the southwest near Daufuskie Island, and from the May River and its tributary, Bull Creek.

The May River extends east for approximately 15 miles from the headwaters to the center channel of the Sound. The River runs an irregular course from the headwaters flowing mainly southeast for approximately three miles before turning sharply north around the knob of Palmetto Bluff. The River runs east into the Old Town section of the Town of Bluffton before turning south and then east again around Myrtle Island. After passing the island, the May River continues east and southeast into the Calibogue Sound. The conditions and characteristics of the River differ between these areas leading a natural tendency to analyze the system by segment as done in previous studies.

The May River accepts drainage from major creeks including, from west to east, Stony Creek, Rose Dhu Creek, Cauley Creek, Bull Creek (Savage Creek) and Bass Creek. The average tidal range in the May River is between 6.5 and 9.8 feet (2 and 3 meters)²⁷, while the Port Royal Sound

experiences average tidal amplitude greater than 8 feet²⁸. This significant tidal variation is due to the River's proximity to the center of the curving South Atlantic Bight, the term used to describe the southeastern coast of the United States from North Carolina to Florida. Tidal ranges of more than 11 feet are reported to occur in the May River during fall and spring months while smaller tidal ranges of less than 10 feet are reported in winter months²⁹. Studies of the River's hydrographic features and geometry indicated a slight increase in tidal range as wave energy moves from the confluence towards the headwaters, likely caused by the decline in depth and narrowing of channel widths.



Figure 6. Major creeks draining into the May River.

Sections of the River

The May River has commonly been split into smaller sections to facilitate study and analysis, typically segmenting the headwaters region, mid-river section, and open water located near the mouth of the River. To facilitate the inventory and eventual analysis, and to better enable discussion of the uses, issues and opportunities of the various sections, the River was split into three sections based on changes in bottom topography, depth, salinity, habitats, and observed uses.

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Headwaters: A freshwater impoundment on Palmetto Bluff known locally as the “Duck Pond” drains into the headwaters from the south, directly opposite of Stony Creek. An unnamed creek drains to the River from the north just east of Rose Dhu Creek near Pine View Drive. An impoundment known locally as the “Goose Pond” drains from Palmetto Bluff in a northeasterly direction into the River. The locally named “Palmetto Bluff” Creek flows from Palmetto Bluff near High Hope Way to the west into the River, directly across from the Gascoigne Bluff. Across the River, another unnamed creek drains to the east into the River from inside the marshes located at the end of Gascoigne Bluff.



Figure 7. Headwaters section.

The headwaters area is perhaps the most diverse area of the River. As it winds around mainly vegetated banks with low-density developments, the freshwater influence becomes apparent in this area. The channel depth quickly changes and navigation at low tide becomes considerably restricted. A muddy bottom is always noticeable and the fringing marsh habitat shows increased signs of mixed freshwater and saltwater conditions. The strong meander of the channel ends at the confluence with Stony Creek and the remaining area within the headwater wetlands and upland transitional zone.

Middle River: An unnamed creek drains the wetlands located on the western point of the horn of Palmetto Bluff. The next drainage is the creek that forms the area locally known as Gerrard Cove, located between Buck Point Road and Linden Plantation Road. Next, Verdier Cove drains from the north between Stock Farm Road and Heyward Street followed closely by Huger Cove between Wharf and Calhoun Streets, and then Heyward Cove between Boundary and Pritchard Streets. An unnamed creek



Figure 8. Middle River section.

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separates Myrtle Island from the mainland and drains directly south from Myrtle Island.

The Middle River includes the area around Old Town Bluffton and numerous marsh islands that provide habitat for fish, shellfish, and other wildlife. This area has the greatest concentration of private docks along the River and is believed to experience the most consistent extent of boating use. The channel runs wide and deep, with water exceeding 25 feet in depth nearly up to the banks. The most noticeable limitations on vessel operation in this area are the variable shallow depths among the marsh island creeks and the strongly meandering channel that curves and winds towards the headwaters.

Mainstem: Cauley Creek flows north into the May River from an area near Savage

Island. Immediately to the east of the Cauley Creek confluence is an unnamed creek which drains the wetlands on the southwest shore across from Palmetto Bluff and another unnamed creek drains the wetlands to the west of Potato Island.

On the north shore immediately adjacent to All Joy Boat Landing and almost opposite of Bull Creek is Brighton Beach Creek, a tidal creek that drains from the forested area of All Joy north of

Ulmer Road. East of All Joy is a tidal creek that flows from the north under Pine Island Road. Back on the southern shore, a third unnamed creek drains wetlands between Potato Island and Bull Creek. East of Bull Creek is an unnamed creek that drains the wetlands around the Raccoon Islands. On the north shore, a series of major creeks drain the wetland areas around Jess Island and drain into the May River west of the confluence of Bass Creek.



Figure 9. Mainstem section.

The mainstem of the River is characterized by considerable open water and wide, navigable channels. Few obstructions occur that would impact boating, however the All Joy boat landing and adjacent swimming area at Brighton Beach present possible areas of competing uses. A few moorings occur in this reach and high-tension power lines are stretched above the River with fixed pylons near the center of the River. The majority of this section of River is remarkably picturesque with large, uninterrupted swaths of tidal salt marsh dominating both sides of the River in places. The mainstem terminates at the confluence with Calibogue Sound.

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Hydrology

The May River Baseline Report estimated that average tidal flow within the River may exceed 50,000 cubic feet per second (cfs) and near Brighton Beach, average ebb and flow streamflow rates were

54,900 cfs on an ebb tide and -48,600 on a flood tide³⁰. According to the report, more than 150,000 cfs has been experienced on an ebb tide. Channel geometry upstream from the main channel of the River appears to impact tidal streamflows and may reduce streamflow by as much as 25% from those measured in more open water. Studies showed an average of 14,600 cfs on ebb tides and -12,300 cfs on flood tides. Further



Figure 10. Hydrological data for the May River indicating approximate depth and variability.

upstream, streamflows are reduced significantly further creating a reported average ebb and flood streamflow of 1,950 cfs and -1,840 cfs, respectively³¹.

Salinity

The River is heavily influenced by tidal action as directly indicated by the slight difference in measured salinity between the main stem and the headwaters. Full strength ocean water generally has salinity near 35 parts per thousand (ppt)³². Brackish water can vary from between 10 and 20 ppt while freshwater is generally less than 10 ppt. The mean salinity of the May River was reported as 19.4 ppt however salinities varied significantly within the creeks when studied in 2002 and 2003. During that period, Brighton Beach Creek located along the Mainstem of the River averaged 33.9 ppt and had a relatively small and consistent salinity range of 12.7 ppt³³. Stony Creek, located in the headwaters, averaged a salinity of 24.8 ppt. Altogether, the creeks studied average a salinity of 29.2 ppt. Salinity also varied by season with very low salinities between 9 and 13 ppt recorded in the headwaters during winter months and between 21 and 23 ppt in the fall. Stations monitoring salinity located in the middle sections of the May River documented lower salinity in winter months ranging from approximately 26 to 28 ppt. Throughout the River, salinities appeared most stable during the spring at consistently high numbers, generally above 32 ppt.

Bottom Sediments

Bottom sediments in the May River are primarily sands (86%) with some clays and silts (14%) chiefly found near the Mainstem of the River in clay form³⁴. Stations in the headwater areas of the River varied from between 8 to 12% silt and clay composition, while most stations in the middle of the River were comprised of around 14%. In the

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Mainstem of the River, data indicates that the area east of Bass Creek had 27% silt and clay over the sand base. Toxicity testing in 2002 and 2003 revealed no significant departures from acceptable levels for 24 common contaminants³⁵. Some toxicity was reported in relation to shellfish assay studies in the River.

Water Quality

The water quality of the May River has been extensively studied and analyzed. The River is designated by the State as an Outstanding Resource Water (ORW) which is indicative of the near past and current quality conditions. Water quality in the May River has been a tremendous concern of the community and state and federal agencies as the watershed and neighboring waterbodies experience growth in population and development. In that regard, the Town has enhanced its own water quality monitoring, as have numerous private development firms with properties in the watershed. A major effort is being undertaken at many levels to attempt to understand, evaluate, and preempt any adverse impacts to the water quality in the system. This effort is not occurring under a coordinated approach by any single entity, and as a result only known water quality monitoring programs and studies are discussed.

Monitoring water quality is an issue of great importance to the May River, however there is no single attribute associated with good or bad water quality. Instead, water quality indicators or statistics are used to measure and describe the condition of a waterbody³⁶. Typically, 11 main parameters are studied in order to assess the relative quality of waters in coastal areas of the state, namely dissolved oxygen (DO), biological oxygen demand (BOD), pH, nutrients, chlorophyll-a, turbidity, total suspended solids, macroinvertebrate communities, fish tissue, fecal coliform bacteria, and heavy metals. Each parameter provides important information that when taken individually, and collectively helps to establish the uses that can be supported within a waterbody.

Dissolved oxygen tests indicate the amount of essential oxygen that is available in the water column for use by animals and plants. If the amount of oxygen dissolved in water falls below the minimum necessary for survival, aquatic organisms and their larvae may die. The DO levels in a system can vary significantly because of naturally occurring conditions or because of some forms of pollution and nutrient loading. There may also be naturally occurring seasonal or daily fluctuation in dissolved oxygen levels within a system. Understanding the relative abundance and variation of dissolved oxygen in a system is important because it provides a critical indicator for one of the most important factors impacting survival and reproduction of organisms.

Biological oxygen demand refers to the measure of the amount of dissolved oxygen that is consumed by decomposition in a waterbody. The test indicates the amount of biologically oxidizable carbon or nitrogen that is present in a waterbody or in wastewater. As plants and animals containing carbon or nitrogen decompose in a waterbody, they use up a portion of the existing dissolved oxygen in the system. If there is more demand for dissolved oxygen to be used for decomposition than is available in the living organisms to utilize, then a die-off may be possible.

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The pH of a system is the measure of the concentration of hydrogen ion in the water and indicates the degree of acidity in the system. A neutral pH of 7 is the baseline, with more acidic conditions being observed below 7, and more basic conditions observed above 7. pH can vary in many coastal systems depending on the time of year and conditions in the water. The relationship between daily pH cycles and phytoplankton is well established and can be a predictor of certain changes in the system.

Nutrients are studied because substances discharged into the system by humans from wastewater facilities, industrial, agricultural, residential, and stormwater runoff influence the demand for oxygen in the system. Different forms of nitrogen, including ammonia, ammonium nitrogen, total Kjeldahl nitrogen (TKN), nitrite and nitrate nitrogen, are commonly studied as part of DHEC monitoring. Increases in the levels of many nutrients are often undesirable because of the associated increase in aquatic plant growth, including algal blooms. TKN is a measure of the organic nitrogen and ammonia in a sample, while nitrate is a byproduct of aerobic transformation of ammonia commonly used by aquatic plants. Phosphorus is another important nutrient found and sampled in surface waters and is measured by Total Phosphorus which includes organic, inorganic, dissolved, and particulate phosphorus.

Chlorophyll-a is a photosynthetic pigment found in plants and algae which can be used as an indicator in the density of microscopic phytoplankton in a system. A high level of phytoplankton in certain areas of the water column can cause undesired shifts in pH and dissolved oxygen levels, which can result in adverse impacts to aquatic organisms including fish kills.

Turbidity refers to the measure of the scattering and absorption of light through the water due to the presence of silts, sediments, clays, organic and inorganic matter, and plankton and other microscopic organisms. Increased turbidity can cause declines in the productivity of some filter-feeding organisms and poor productivity in juvenile and larval animals. It can also be an indicator of increases in surface runoff from uplands into a waterbody.

The measure of total suspended solids, or TSS, is the organic and inorganic particulates that are found within the water column. It differs from turbidity in that it is a measure of the amount of material in the water as opposed to a measure of the amount of light transmitted through the water column. TSS can be an important indicator of upland runoff, and high levels of TSS can adversely impact fish and their food sources and have a negative effect on benthic communities.

Macroinvertebrate communities, including aquatic insects and other aquatic invertebrates, are often studied as part of water quality monitoring because of their close link with sediment and substrates of a waterbody. These organisms can be important indicators of water quality because their communities respond to environmental stresses that highlight changes in the benthos. The response of observed communities to organic or toxic pollutants or changes in the sediment can be studied by investigating the diversity and

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tolerance of organisms, and in some cases relative abundance, reproduction, and feeding behavior.

Sampling fish tissue can identify pollutants that occur in such low concentrations within a system that they are undetectable in water column sampling. Typically used to identify chemicals or compounds that accumulate in tissue through absorption or ingestion, fish tissue assays can also help identify the likelihood of danger of consumption by humans.

Fecal coliform bacteria are found in digestive tract and fecal material of all warm-blooded animals including humans, pets, livestock, and wild animal species. While fecal coliform bacteria are typically not harmful themselves, their presence in surface waters may indicate the likelihood of associated pathogenic microbes in the waterbody. Diseases that can be transmitted by improperly treated human waste, or animal wastes, can pose a serious human health risk. It is difficult at present to discern the difference between fecal coliform sources that are of human origin and of animal origin. Significant correlation has been established between fecal coliform counts in surface waters and the risk for adverse human health effects. DHEC monitors for the occurrence and abundance of fecal coliform bacteria in relation to standards that have been established by the state.

Heavy metals in the coastal system are monitored to ensure that public health is protected from harmful exposure to high concentrations. Heavy metals occur naturally in the environment, however some are also associated with atmospheric deposition from the burning of fossil fuels and some waste streams. Some of the common metals evaluated in DHEC sampling include cadmium, copper, lead, mercury, and nickel. While trace amounts of these metals are beneficial to many aquatic plants and organisms, human activities such as land use changes can cause higher concentration to enter the system and may cause adverse impacts to fish and benthic communities.

The May River Baseline Study provides the most complete picture of the water quality conditions prior to major land use change in the system. The findings of the Study highlight some naturally occurring impairment to water quality, such as spikes in hypoxic conditions and a low dissolved oxygen reading in many areas. It also provides considerable information on the pre-development health and abundance of important in-water habitats and associated flora and fauna. During the Study, scientists from NOAA, USGS, and DNR sampled in six headwater creeks, and ten large tidal creeks and open water areas in the River. Over the course of the Study, measurements of DO, pH, specific conductance, turbidity, salinity, suspended solids, nutrient, organic carbon, silica, and BOD were collected in field and in laboratory analysis. The study was designed to measure the common water quality parameters that could affect water quality within an estuary.



Image 7. One of Bluffton's creeks feeding the May River.

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The relationship between these parameters and the various processes which naturally occur in an estuarine environment, including physical, biological, and chemical, is important to recognize in the context of the system as a whole. Changes in the nutrient load can directly affect the assemblage of biota utilizing the habitats. Over time, this change can upset the balance in a system and result in undesirable changes to the use of a waterbody. The May River Study identifies as an example the fact that nutrients such as phosphorus and nitrogen in the system are used by algae and other plants to grow and multiply, as noted earlier. While growing, these waterborne plants photosynthesize during daylight hours and increase the level of dissolved oxygen in the water. Daylight photosynthesis also reduces the level of carbon dioxide in the water which results in an increased level of pH. The plants cease photosynthesizing after sundown and organic carbon in the system is degraded through respiration. The process of respiration utilizes oxygen, thereby reducing the level of dissolved oxygen in the system. If levels of available organic carbon are higher than normal, the respiration process can result in a near total reduction of dissolved oxygen which creates levels of hypoxia that can adversely affect or even kill marine life. Sources of organic carbon include naturally occurring plants and animals, as well as anthropogenic sources such as fertilizer and wastewater. There is recent research that suggests that some natural levels of hypoxia may be favorable for crustacean larvae and juvenile fish as these hypoxic areas create refuge from predators.

Current water quality monitoring programs in the May River are undertaken at multiple levels of government. The South Carolina Department of Health and Environmental Control (DHEC) office of Environmental Quality Control (EQC) has monitoring stations designated throughout the coastal area, including stations that are currently active or have been active on the May River. DHEC monitoring stations include two ambient monitoring stations (MD-173 and MD-016), and 8 shellfish sanitation stations (19-01, 19-12, 19-16, 19-18, 19-19, 19-24, 19-25 and 19-26), although all are not presently used. Stations associated with the South Carolina Estuarine and Coastal Assessment Program (SCECAP) (stations RT-01602, RT-042088, RT-032181, RO-06313, RO-06321) that were established as part of past studies are no longer monitored.

Continual monitoring of water quality parameter, particularly those initially recorded in the May River Baseline Study, occurs at the Town level as well. The Town of Bluffton purchased and installed three data collection sondes that conduct continuous water quality monitoring on the River. One sonde is located near Rose Dhu Creek, a second on Verdier Cove, and the third in the All Joy area on Ulmer Road. Each sonde was voluntarily installed at private docks and monitors pH, turbidity, dissolved oxygen and temperature. The Town also has eight water quality sampling sites in the May River that are routinely sampled by trained volunteers.

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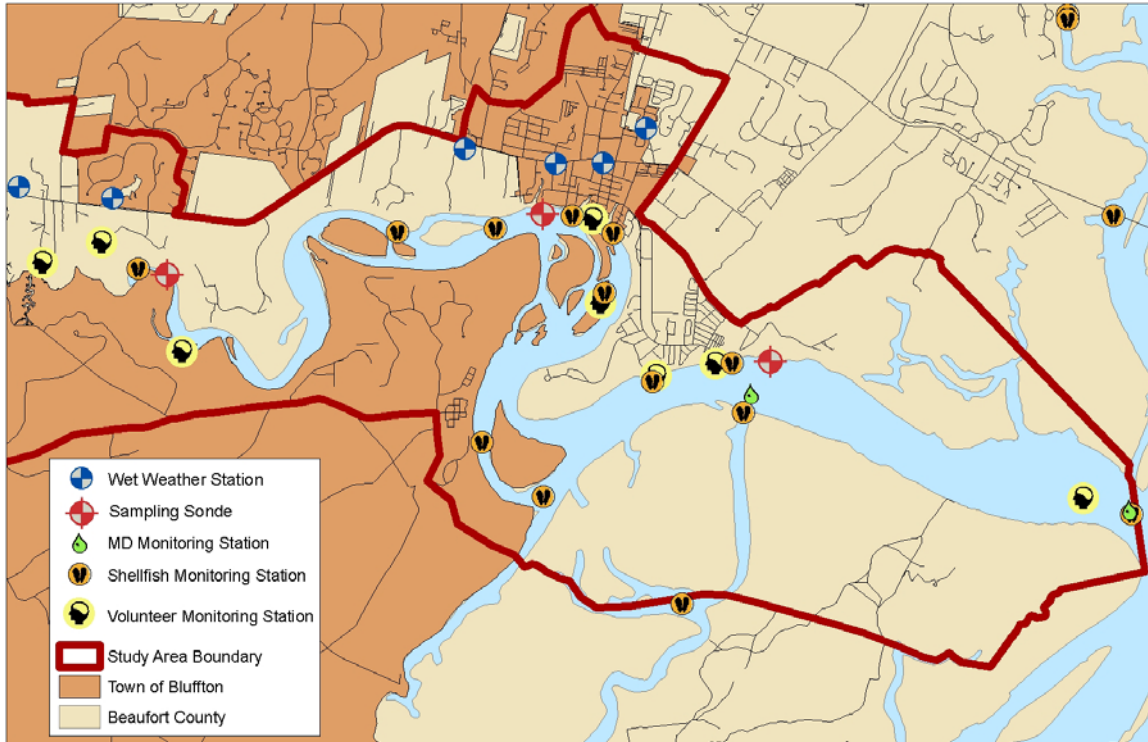


Figure 11. Water quality monitoring stations in the May River.

In 2007, the Town adopted a local Stormwater Management ordinance which, aside from prohibiting illicit discharges into stormwater drainages, requires that all new developments monitor their impact to the water quality in the May River.

Finally, the Town also performs wet weather sampling following storms at six locations to check runoff for levels of nutrients and other water quality parameters. Anecdotal reports of private water quality monitoring efforts being undertaken by local development companies that own property in the watershed cannot be confirmed. Data from these monitoring efforts may help provide greater insight into the conditions of water quality in the system, particularly as land use changes in the area. The parameters under investigation in these studies, and the method and regularity of sampling, are unknown.

The ORW classification designated for the May River refers to criteria and standards established by the DHEC pursuant to the authority contained in the SC Pollution Control Act (SC Code of Laws, Section 48-1-10³⁷) and regulations promulgated in Section 61-68 of the SC Code of Regulation³⁸. In that regulation, Outstanding Resource Waters are “freshwaters or saltwaters which constitute an outstanding recreational or ecological resource...”. Quality standards for ORW areas include the following items: color, dissolved oxygen, fecal coliform, enterococci, pH, temperature, turbidity, or other parameters. The standard states that the water quality condition shall be maintained and protected to the extent of DHEC’s statutory authority, and that numeric criteria will be those that were applicable prior to the waterbody designation as an ORW. The ORW classification also mandates additional standards in order to maintain the existing quality of such waters. These additional standards include the disallowance of any discharge

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from domestic, industrial, or agricultural waste treatment facilities, aquaculture or the open water disposal of dredged material. The dumping or disposal of garbage, cinders, ashes, oils, sludge or refuse is prohibited. Stormwater and other non-point source runoff is allowed if the water quality for existing and classified uses remains protected and consistent with the State's antidegradation rules. Finally, activities or discharges from waste treatment facilities into waters upstream or tributary to the ORW is allowed with the same conditions.

There are no direct discharges into the May River, although treated effluent from area wastewater treatment facilities is often applied as spray irrigation on local golf courses. Palmetto Bluff's golf course is designed to be irrigated partially using treated effluent under strict controls (permit ND0082147). This highly filtered, treated effluent is routinely tested to ensure that the treatment process does not adversely impact or impair surface and groundwater standards. Presently, the irrigation system at Palmetto Bluff's golf course is not utilized due to the limited volume of effluent being processed by the development's wastewater treatment facility. Palmetto Bluff also employs a designated wet weather spray field in an upland area to disperse treated effluent to be absorbed into the ground.

The previous designation for the May River was shellfish harvesting waters (SFH) which has specific numeric criteria for most units established in Regulation 61-68. The standards include prohibition of disposal of garbage, cinders, ashes, oils, sludge or refuse, strict limitation of treated wastes, toxic wastes, deleterious substances and colored or other wastes. The following numeric standards are stated in this section:

| | |
|-------------------------------|---|
| Dissolved Oxygen (DO): | Daily average of not less than 5.0 milligrams per liter (mg/l) with a low of 4 mg/l. |
| Fecal Coliform: | Not to exceed a Most Probable Number geometric mean of 14/100 mg/l; nor shall more than 10% of the samples exceed an MPN of 43/100 mg/l. |
| Enterococci: | Not to exceed a geometric mean of 35/100 ml based on at least four samples collected from a given sampling site over a 30-day period; nor shall samples exceed a single maximum of 104/100 ml. |
| pH: | Shall not vary more than 3/10 of a pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity, and temperature, but not lower than 6.5 or above 8.5. |
| Temperature: | Average temperature shall not exceed 4 degrees Fahrenheit above natural conditions during the fall, winter or spring, and shall not exceed 1.5 degrees |

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Fahrenheit above natural conditions during the summer as a result of the discharge of heated liquids unless a different site-specific temperature standard has been established.

Turbidity: Not to exceed 25 Nephelometric Turbidity Units (NTU) provided existing uses are maintained.

The May River Baseline Study indicates that the system is naturally low in dissolved oxygen, as are numerous coastal estuaries. Dissolved oxygen readings during the study were below the minimum daily mean concentrations established in the State standard and remains so for extended periods. Prior to significant development in the watershed, these causes were attributed to naturally occurring events, including natural loading from upland runoff, respiration and decomposition in the salt marshes, and other existing non-point source inputs. The study indicated that greater inputs of waste and run-off may result in a greater likelihood of hypoxic conditions in these areas of the River.

The Study indicated that the water quality parameters observed in the system were as good as or better than comparable systems in South Carolina. Parameters indicative of environmentally stressful conditions were primarily observed in the headwaters areas, which are naturally stressful places throughout coastal systems. The Study also suggested that the greatest amount of surface runoff potential was identified in these areas, including 1.4 cubic feet per second per square mile ($\text{ft}^3/\text{s}/\text{mi}^2$) at the Pritchardville station³⁹. This indicates that the most significant volume of overland runoff into the May River likely occurs in the headwaters section. Coupled with a long residence time as long as 60 days, the sensitivity and susceptibility of the headwaters to impacts from nearby upland land uses and alterations to the ecosystem was made apparent. The Study designated the majority of the River's headwater areas as good or fair to good in overall water quality assessment. During seasonal studies, nutrient loading at the headwaters spiked above concentrations listed in federal guidelines, although a subsequent increase in phytoplankton biomass was not generally observed. Additional studies have corroborated the environmental sensitivity and significance of the headwaters described in the May River Report, including independent studies undertaken by Palmetto Bluff⁴⁰.

Fecal coliform levels were identified as somewhat high in the headwater creeks. Testing for antibiotic resistance (MAR) indicated that the bacteria was most likely not associated with human activity and was therefore a natural byproduct of animals within the system⁴¹. High counts were observed near Palmetto Bluff, and in Stony and Rose Dhu Creeks. Open water sites showed significantly lower concentrations of fecal coliform bacteria, although antibiotic resistance was identified in the Middle River at two stations near Old Town. Wastewater indicators were observed in samples from Heyward Cove Creek which the Study suggests may be indicative of leaking sewers, failing septic systems, or concentration of wild or domestic animal waste.

While headwater creeks exhibited indications of unfavorable water quality using the criteria associated with the parameters tested, including BOD, turbidity and salinity, the

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Study reported that these reductions were likely naturally occurring. Water quality tests elsewhere in the system were generally very good.

According to the Study, the total PAH concentrations in the May River oyster tissues ranged from 0 to 155.34 ng/g dry weight, however the majority of sites sampled indicated less than 10 ng/g. Two sites were found to have PAH concentrations greater than 10 were (M-01 and U-03). The PAH levels were found to be similar to the ranges observed in North Inlet National Estuarine Research Reserve (NERR). The overall tissue concentrations did not indicate pervasive PAH pollution in the May River.



Image 8. Headwaters of the May River exhibiting turbidity following rainfall.

Regarding water quality for shellfish management, the authority to disallow harvesting in areas due to human health concerns, and regulate the sanitation, processing and handling of shellfish is delegated to DHEC through Section 44-1-140 of the SC Code of Laws (1976 as amended)⁴². DHEC has promulgated regulations which require that all shellfish harvesting areas be examined through sanitary and bacteriological surveys and be classified accordingly to protect human health from the effects of ingesting formerly waterborne pathogens within the tissue of filter-feeding mollusks. The National Shellfish Sanitation Program, administered by US Food and Drug Administration (FDA), is a voluntary State and federal partnership which ensures safe consumption and sale of shellfish. Each area is sampled annually and updated as necessary. Growing areas may be classified as approved when the sanitary survey indicates that fecal material, pathogenic microorganisms and poisonous or deleterious substances are not present in concentrations that would make consumption unsafe for humans. As stated above, concentrations of fecal coliform in an approved area cannot exceed a most probable number (MPN) of 14 per 100 milliliters, and depending on the sampling conditions, not more than 10 % of samples or the estimated ninetieth percentile can exceed 43 per 100 milliliters.

The May River is located in Shellfish Management Area 19 which includes 28,146 acres of shellfish growing habitat in the May, Cooper, New and Wright Rivers and tributaries. According to the EQC Bureau of Water's annual update for Area 19, released in July 2006⁴³, all stations within the Area met the statistical criteria for an "Approved" classification, meaning that all areas within the May River are certified for shellfish harvest. The stations also met bacteriological water quality and shoreline survey data assessments which confirmed that the current classification was correct. DHEC closes all shellfish growing areas for harvest in the event of a rainfall of 4 inches or greater. The results of subsequent water quality tests are used in the evaluation of the decision to reopen the growing areas. This testing information is not, however, used as part of the development of annual average information for the classification of the area.

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Fecal coliform data trends have indicated a slight increase in the number of events of higher counts in the May River. Over the course of approximately five years, fecal coliform samples have shown an increase in bacteria focused particularly around the headwaters and middle River stations. DHEC is investigating the possible causes of this trend utilizing historic data to determine correlations between precipitation, inputs from land runoff, and to determine the best way to track this change.

Erosion and Erosion Control

Bank erosion is evident in numerous sections along the May River, particularly in the Middle River and Headwaters. Erosion occurs when destabilized or unconsolidated sediments are dislodged and slide towards the adjacent water. This is generally due to wave energy, slope subsidence, or the impact of surface water or groundwater flow. Studies prepared investigating erosion in two areas on Palmetto Bluff, the first directly across from Rose Dhu Creek and the second across from Gascoigne Point, identify that erosion was caused by a natural migration of the channel⁴⁴.

In the Middle River and Headwaters, the slope of the channel results in a channel configuration known as a meandering stream. Such meanders are associated with flat stream gradients and can result in migration of the channel due to the influence of the force of the ebb current. The investigation suggests that like the upper reaches of many deltas and estuaries, the May River headwaters are highly meandering sections which may be considerably prone to this type of erosion. In this area, the channel moves closer to land, particularly near the outside of a river bend, and the current undermines the bank causing erosion. In this scenario, the deeper water is generally found adjacent to the cut bank, and the eroded material tends to move down stream.



Image 9. Bank erosion along the May River.

Although no direct information can be found to support anecdotal reporting, another possible influence on bank erosion may be groundwater and surface sheet flow. In some instances, surface sheet flow can cause scour of existing channels, resulting in a deeper channel in places and a destabilization of adjacent banks. Other areas may also experience destabilization due to the underground lateral export of groundwater in areas of moderate or steep slopes. In this scenario, groundwater may flow towards the River through various soils, and the fluctuation of volume and flow rate through the soils weakens the bond that may cause subsidence. Past groundwater studies undertaken in Beaufort County indicate the likelihood of subsurface seeps, and the theory may also be supported by recent thermal imaging aerial photography being evaluated by DHEC EQC. While this has not been verified in the May River, it has been identified as a likely contributor to erosion in the area.

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In other areas of the May River, erosion has been observed along steep banks in the area of Old Town, to the east of Old Town, on the western side of Myrtle Island, and to a lesser extent, near the All Joy section of the community. Local resident Jerry Reeves also noted in a letter to the Town that he has observed erosion occurring within the marsh channel located on the eastern spit of Palmetto Bluff⁴⁵. Erosion control measures have been attempted along the River, both historically and more recently, utilizing a number of erosion control options. In many Riverfront areas, bulkheading and other erosion control devices have been installed composed of various materials, including wood, vinyl, metal and rock or stone. In the high bluff areas of Old Town, a number of retaining walls have been installed near the base of the bluff to protect the integrity of the slope. In most areas where this is this case, development is located back from the crest of the slope. In other areas along the River, the use of bulkheading and riprap occurs at an elevation closer to the water line.



Image 10. An example of bulkheading along the May River.

The number and extent of erosion control structures within the May River is not currently calculated, as no specific study has been undertaken which would provide such data. Some historic erosion controls measures, which would not be permissible today, can be seen in certain areas. The impact of erosion control structures on the system is also not well understood.

In-Water Habitats

In-water habitats include tidal creeks, sandbars, tidal mudflats, oyster reefs and deep and shallow open water. Certain shellfish, fish, and mammal species are commonly associated with these types habitats in the May River. Predominant species collected in seines throughout the Study Area are grass shrimp (*Palaemonetes pugio*) and panaeid (white and brown) shrimp, each useful indicator species for water quality.

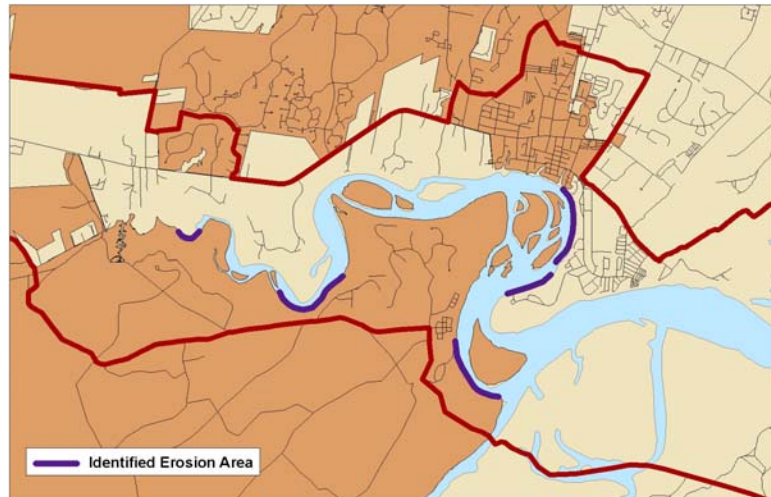


Figure 12. Common erosion areas in the May River identified by the Project Advisory Committee.

Open water habitats, such as found in Middle River and Mainstem, are passages for pelagic and open-water animal species including some mammals. Common open water

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species include red drum (*Sciaenops ocellatus*), sheepshead (*Archosargus probatocephalus*), spotted sea trout (*Cynoscion nebulosus*), southern flounder (*Paralichthys lethostigma*), bay anchovy (*Anchoa mitchilli*), Atlantic bumper (*Chloroscombrus chrysurus*), silver perch (*Bairdiella chrysoura*), Atlantic sharpnose shark (*Rhizoprionodon terraenovae*), croaker (*Micropogonias undulatus*), spot (*Leiostomus xanthurus*), brief squid (*Lolliguncula brevis*), lookdown (*Selene vomer*), white shrimp (*Penaeus setiferus*), brown shrimp (*Penaeus aztecus*), smooth butterfly ray (*Gymnura micrura*), Atlantic stingray (*Dasyatis sabina*), and cobia (*Rachycentron canadum*) seasonally. American eel (*Anguilla rostrata*), various puffers (*Tetradontidae* spp.), rays (*Dasyatidae* spp.) and blacktip sharks (*Carcharhinus limbatus*) are commonly caught on lines in the River. Black sea bass (*Centropristis striata*), Atlantic spadefish (*Chaetodipterus faber*), groupers (*Epinephelinae* spp.), and snapper (*Lutjanus campechanus*) are known to utilize the May River during their juvenile stages prior to entering Calibogue Sound and the Atlantic Ocean upon maturity. Tarpon (*Megalops atlanticus*), bluefish (*Pomatomus saltatrix*), manta rays (*Manta birostris*), and the protected Shortnose sturgeon (*Acipenser brevirostrum*) are believed to enter the River on occasion.

Open water areas are also important for coastal reptiles including the loggerhead sea turtle (*Caretta caretta*) and juvenile green sea turtle (*Chelonia mydas*). American alligator can also be found transiting through the saltwater portions of the River on occasion. State laws protect alligators, and state and federal laws prohibiting harm, harrassment, or interference with the animals protect sea turtles.

Atlantic bottlenose dolphins (*Tursiops truncatus*) are particularly common, and estimates place a year round population of these marine mammals as greater than 150 within the May River area. Feeding behavior exhibited by local dolphins has attracted significant scientific attention. Resident dolphins in Bull Creek have been observed employing a modified foraging behavior known as “strand-feeding” in which groups of dolphins cooperate to simultaneously force schools of fish onto mud banks, beaching themselves in the process. The dolphins then pick up the stranded fish and feed before returning to the water. A 1992 study in Bull Creek identified 67 individual dolphins, 22 of which were confirmed to be resident. Observations since 1988 had suggested that the strand-feeding behavior was limited to long-term or resident pod members⁴⁶. Reports from residents indicate that strand-feeding continues today and can be observed on both the sand bars and throughout marshes in the May River, mainly around Bull Creek.

Oyster reef colonies create a natural habitat type used by many species of fish and crustaceans. Aside from the most common animal, the eastern oyster, common species associated with oyster reef habitat include rock sea bass (*Centropristis philadelphica*), leopard sea robin (*Prionotus scitulus*), oyster toad fish (*Opsanus tau*), tonguefish (*Symphurus plagiusa*), fiddler crabs (*Uca* spp.), Atlantic moon snails (*Neverita duplicate*), hogchoker (*Trinectes maculates*) and butterfly fish (*Gymnura micrura*). The movement of eroded sediment is a potential concern, particularly if it results in fines or silty material washing into areas of productive shellfish or finfish habitat.

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Tidal Wetlands

Tidal wetlands occur in the transitional zone throughout much of the River. Tidal marshes provide numerous benefits to the environment of the May River and its surrounding waterbodies. Such wetlands, which consist of approximately 5,500 acres in the May River Study Area Boundary⁴⁷, provide shelter for juvenile fish and shellfish, food sources for birds and other animals; absorb and sequester contaminants and excess nutrients; reduce the impact of flooding; and in some instances recharge groundwater into the system⁴⁸. The most noticeable indicator species associated with tidal marshes is salt marsh cordgrass (*Spartina alterniflora*) which dominates the lower elevations of the marsh and is routinely inundated by high tides creating interstitial space that is used by many species of finfish, shrimp, and other crustaceans. High marsh areas in the May River occur in areas of elevation just outside of regular tidal inundation, and within the immediate transitional zone between low marsh the adjacent upland communities. High marsh in this area is dominated by species of rush (*Juncus* spp.) and short cordgrass (*Spartina caespitosa*).



Image 11. Oyster reef habitat near Palmetto Bluff.

In many areas of the May River, the leading edge of low marsh is buttressed by intertidal oyster reef communities. These natural structures provide benefits not only to the fish, shellfish, and other species that depend on the habitat type, but also as a natural wave attenuation device at the toe of salt marshes. By absorbing, deflecting and otherwise reducing the impact of wave energy, the marsh retains the structural integrity of the shoreline and reduces the impact of erosion observed in other parts of the country.

Species commonly associated with salt marsh habitat in the May River include plumed worm (*Diopatra* spp.), fiddler crabs (*Uca* spp.), eastern oyster (*Crassostrea virginica*), spot (*Leiostomus xanthurus*), southern flounder (*Paralichthys lethostigm*), Atlantic silverside (*Menidia menidia*) pigfish (*Orthopristis chrysoptera*), blue crabs (*Callinectes sapides*), Atlantic croaker (*Micropogonias undulatus*), spotted seatrout (*Cynoscion nebulosus*), weakfish (*Cynoscion regalis*) white shrimp (*Penaeus setiferus*), oyster toadfish, mummichug (*Fundulus heteroclitus*), striped killifish (*Fundulus majalis*), striped mullet (*Mugil cephalus*) and marsh periwinkle (*Littorina irrorata*).



Image 12. Tidal marsh near Barataria Island.

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Impacts to salt marshes can occur due to illicit dredge and fill activities, subsidence of the marsh, increases in freshwater inputs in areas of tidal salt marsh, increases in tidal flooding height and duration, and other effects associated with increases in average sea level⁴⁹. Excessive boat wakes have been associated with tidal marsh declines in numerous estuarine systems. Natural channel migration can also be a factor in marsh change, although erosion caused by natural forces not exacerbated by anthropogenic activities are generally associated with long-term changes in the environment. Salt marsh die-offs have occurred in Georgia and Louisiana although South Carolina has heretofore been relatively unaffected⁵⁰.

Water Use in the May River

Understanding and documenting current and potential uses, and the intensity of those uses, of the May River is the premise for this Waterbody Management Plan. Uses of the waterbody dictate the social benefits derived from the system, which in turn shape the methods and criteria used for management. As described previously, the May River is designated as an ORW because of the types of human uses that the system supports. Previously, the waterbody was classified as Shellfish Harvest Waters, again due to the natural benefits associated with the system. Both of these classifications were social constructs that were only permissible due to the characteristics and quality of the system, including levels of nutrient input and cycling, habitats and animals which existed, and the social interactions, development and improvements to access which made shellfish harvesting possible.

The classification of the waterbody for certain uses like shellfishing, and the subsequent prohibition of other uses, such as refuse disposal or wastewater discharge, were decisions made by people because of the importance of the resource. A use promoted potentially at the expense of other possible uses of the same system, is known as a desired use. The use that is excluded is known as an undesired use and is phased out in exchange for promotion of the desired use.

Anthropogenic activities that have favorable results are most commonly selected as desired uses in a system. However, some uses are necessary for society to be sustained, grow, and evolve. For example, while not necessarily desirable for the water quality in most systems, the discharge of treated effluent from a wastewater treatment plant is necessary in order to promote sanitary conditions for a community. The use of a waterbody, particularly one which has a low retention time and high flushing rates, for the discharge of treated wastewater is in the best interest of the community and the associated impacts are balanced. This creates a situation in which an acceptable change to the system, and potentially to historic uses of the waterbody, is allowed because the benefits to the most people outweigh the negative impact to a few.

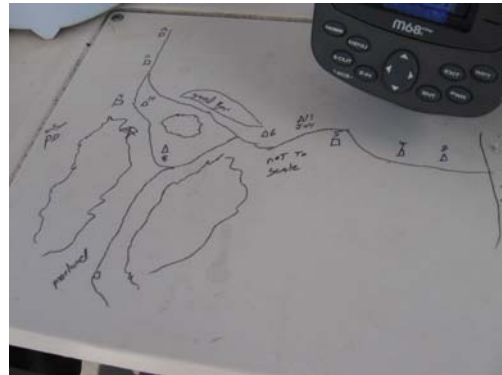


Image 13. An unofficial May River navigation chart.

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Most uses of a waterbody are desirable, however, and are only sustainable if careful consideration is given to understanding the natural and environmental parameters that allow that use to continue. For example, shellfish harvesting requires not only clean water with low counts of fecal coliform bacteria, as they are filter feeding organisms often consumed raw, but also a reproducing population of shellfish. Reproductive success in shellfish is linked to multiple factors, including the relationship between available food sources, water temperature, salinity, nutrient loading, turbidity, population abundance, the distance to other sexually mature specimens, tidal rates, and availability of suitable settling substrate, to name a few. The ability for people to harvest these animals once at an edible size is dependent on availability of suitable access to the water, materials and tools for harvesting, a process for sanitary inspection of the product, and a place to either sell or prepare the animals for consumption.

In many coastal communities in the United States, historically viable shellfish beds have been depleted through intense harvests, reductions in water quality, and a decrease in reproductive success. Often this decline is not caused by a single event, but instead by the culmination of changes in many individual parameters which result in an undesirable change in the use of the waterbody.

Uses in the May River occur in different segments of the system, at varying depths, and in diverse levels of intensity. Uses affect the system at the surface, in the case of boating and navigation, in the water column itself, as in the case of recreational and commercial fishing, and on the River bottom, as in the case of shellfish harvest, driving pilings for docks, and the anchoring of vessels. The effects of these elements of individually desirable uses, and the relationship that they have on the environment and other desirable uses, is documented through a Waterbody Management Plan. Opportunities to achieve a balance between these potentially competing uses are developed following examination of the inventory of existing uses and their impacts on the system.

Boating and Navigation

Surface vessel use and operation in the May River is an important consideration in the planning process. Boaters regularly travel on the May River for recreational and commercial purposes, although no estimates are available to determine the number of trips generated by the various user groups. Additionally, accurate estimates of the number of boats operating within the Beaufort and May River area are difficult to interpret due to a number of factors. Figures made available from SCDNR's Boating Registration Division indicate that

approximately 12,744 vessels are active and currently registered in Beaufort County and another 1,850 in Jasper County (14,594 total), with 2,596 vessels registered within the zip codes of the Town of Bluffton (29909 and 29910). This indicates that approximately



Image 14. Typical boating use on the May River.

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20% of the vessels currently registered in Beaufort County are from within the Town of Bluffton. While these numbers are significant, they likely only represent a portion of the actual number of vessels operating on the waterbody.

These figures are comparable with nearby communities, although the number of active vessels currently registered per population of adjacent communities is slightly higher in Bluffton⁵¹. Approximately 2,612 vessels are registered in the zip codes associated with the Town of Hilton Head Island, which had an estimated population of 33,838 in 2006. In the nearby City of Beaufort, 3,784 vessels are registered and the community had an estimated population of 12,029 in 2006. These estimates indicate that only about 7% of the population of Hilton Head Island had registered vessels compared to approximately 31% of residents of the City of Beaufort. Nearly 40% of the population of Bluffton had currently registered vessels. These statistics, despite incurring some level of error due to the scale and assumptions associated with the analysis, clearly suggest that a significant portion of the Bluffton population is engaged in boating activities.

The number of registered vessels in Beaufort County was predicted as part of the Beaufort county Boating Management Plan prepared in 2002, although the statistics utilized in that exercise vary from the numbers generated today due to data storage and retention issues within DNR. These predications indicated that the number of vessels predicted to be operating in Beaufort County by 2005 was expected to be 16,619, up roughly 2,000 vessels from 2000 (according to their figures)⁵². The prediction for 2010 was 22,589 vessels, and by 2020, more than 27,000 vessels could be expected in the County. The vast majority of these are powered vessels. As part of the Management Plan, a single boat count was taken and of a total of 777 vessels counted in the County, 63 were launched at All Joy Boat Landing on the May River, with majority being motorized vessels 15 feet in length or less.

Additionally, Beaufort County has utilized DNR boating registration data to identify the number of vessels registered within the County and the analysis has presented differing information to that recently received from DNR. The Boating Registration Division explains that the higher numbers identified in the Beaufort County Boating Management Plan likely include vessels that were traded or sold, had voided registrations or unpaid taxes, and were not deemed as “active vessels” as part of the DNR registration inventory. The numbers provided to OCRM (12,744 in Beaufort County) represent the currently active, legally registered vessels in the County. The true figure for vessels may be higher, however, as some boats in the area may be operating without a legal registration and many residents have indicated that vessels operating in the waterbody are actually registered elsewhere, including out-of-state. The difficulty in establishing the actual number of vessels operating on the May River and its adjacent waterbodies is an issue for further investigation.

Navigation channels in the system are not dredged or maintained due primarily to the limited commercial use. The channels are considered safely navigable, particularly in the Mainstem section of the River. The navigable channels near Old Town follow the natural depths of the River and can be navigated during all tide periods, according to local

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mariners. Navigation nearer to and within the headwaters and creeks is more difficult due to the narrow, unmarked channel widths, mudflats, exposed sandbars and varying depths. The headwaters are particularly difficult to navigate during low tide. The considerable naturally occurring depths and widths provide ample space and opportunity for various water uses to occur within most of the May River. Competition for space may occur in areas of channel constriction, such as around the marsh islands and sandbars between Myrtle Island and Gerrard Cove.

Numerous aids to navigation have been established along the Mainstem and middle river sections. These navigational markers include fixed green and red markers indicating channels to assist vessel operators in safe navigation. Local boaters have suggested that the location of some navigational aids, particularly near Palmetto Bluff, should be modified to better reflect the actual channel depths.

Uses of the surface water include operation of various vessels types, including sailboats, small horsepower john boats, medium size center-consoles, sport boats, cabin cruisers or sedan cruisers, commercial trawlers, pontoon boats, and commercial ferries. Typically, larger vessels and ones with extended keels, such as sailboats, only have full operational capability within the navigation channels. Smaller vessels with shallower drafts can operate outside of the main channel lanes and have greater access to tidal creeks, headwaters and shallow marsh island channels. Personal watercrafts (PWC), such as the trade name Jet Skis or Sea Doos, are also classified as vessels, and can often be found in the May River. PWCs, being shallow draft vessels, are often capable of operating in very shallow water at normal operating speeds. Hand powered crafts, such as kayaks and rowboats, are also used in the May River. Although not classified as vessels, these crafts use the surface area and must be considered as part of the planning process.



Image 15. Day beacon in May River.

Specific boating access sites in the May River include:

Wilson's Landing Marina: The Wilson's Landing marina facility is a dry-rack storage facility located on Boathouse Street in the "downtown" area of Palmetto Bluff. The facility is capable of housing 86 vessels which are raised from the water using lifts and then carried by specialized forklifts up to the storage facility. Vessel owners call to schedule a time to have their vessel removed from storage and placed in the water at community docks just north of the Palmetto Bluff Town Dock. Vessels can generally be ready for use in the water within 30 minutes. This is the only such operation on the May River and constitutes the greatest concentration of vessels in one area on the River. However, the majority of these vessels are not in the water at one time.

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The Town Dock at Palmetto Bluff: The Town Dock is a public facility that is open to the public for use, including temporary tie-up of vessels at the single 100-foot long floating dock. Operators are not permitted to tie-up overnight at this location. The dock is frequented by a number of ferry operations, and visitors commonly explore the area of Palmetto Bluff during their visit. The Marine Manager from Palmetto Bluff keeps an estimate of vessel use at the Town Dock and has estimated 1,470 boat trips to and from the dock since the beginning of 2007. Expansion of the docking area to increase public access has been previously investigated, although no plans to expand are currently in discussion.

Oyster Factory Boat Landing: The County Park at the Oyster Facility is accessed via an unpaved, sloping road. Upland parking is not consolidated or structured, and vehicles with trailers commonly park on the road. The launch itself is an unimproved, crushed oyster shell-based beach located on a steeply sloping curve that drivers can back trailered boats down to. No in-water improvements, such as launching or standby docks, exist at the site. Despite the primitive nature of this launch, it is reported to be heavily utilized particularly by experienced boaters such as commercial fishers and shellfish harvesters. Little information on the estimated frequency and intensity of use of this launch is currently available. The Town and County are currently planning for improvements to this park and launch facility.



Image 16. Oyster Factory boat launch.

Town Dock: The Town dock is located at the end of Calhoun Street at a steep drop from the upland bluff. Parking is available on the street in front of the Church of the Cross. A sitting area with benches and trash receptacle is located on the upland section overlooking the dock. A path leads to the metal catwalk that connects to the floating dock platform. The catwalk and dock are both commonly used for fishing and crabbing, and the floating boat dock has cleats that permit vessel operators to temporarily tie-up and visit the nearby Old Town neighborhood. The site has no boat launching capability or vessel discharge system, and is located in a somewhat narrow bend of the River with marsh islands directly across the nearby channel.



Image 17. Town dock on Calhoun Street.

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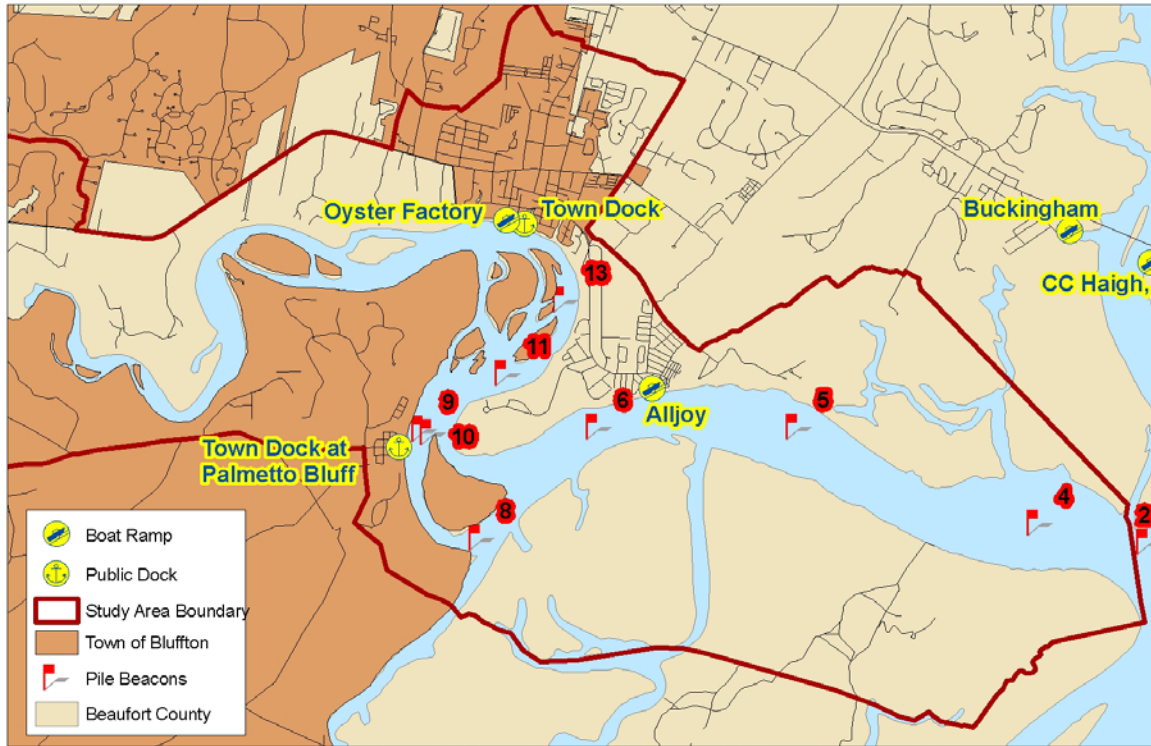


Figure 13. Public boating facilities and navigation aids.

All Joy Boat Landing: The All Joy Boat Landing is a County-run facility located off of Alljoy Road and was last upgraded in 1996. The site is approximately 1 acre in area and has an estimated 24 parking spaces total with 21 spaces available for vehicles with trailers. The facility is bounded on all sides by private property and consists of a two-lane concrete boat launch (concrete barrier separating individual ramp lanes) approximately 26 feet wide and approximately 90 feet long. A 60-foot long floating walkway is located on the west side of the concrete ramp that allows for temporary tie-up while boaters park their vehicle after launching⁵³. The dock is also used for recreational fishing and crabbing and conflicts between boat users and fishing users have been observed. Use estimates are sporadic at this site, although the facility is heavily utilized during summer months, particularly on weekends and holidays. Waits of up to 1 hour for launch have been observed. The parking lot at this facility fills rapidly and is insufficient for the level of use. The lack of parking at this ramp results in significant illegal parking of vehicles with trailers throughout the neighboring Alljoy community. Workers who ferry to Daufuskie Island also use the landing and parking area.

Vessel use in the May River has been reported to increase significantly on weekends and holidays during the summer months. However, verified seasonal boat use trend information is not available for the area.

There are no specific limitations of the speed of vessels in the May River, and no areas have been legally designated as “No Wake Zones” by the General Assembly. Instead of specific speed restrictions, vessel operators are required to operate in a manner as to not

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have undue effect on in-water structures, such as docks or other vessels. Law enforcement officials can stop and cite a vessel operator for reckless operation of their boat.

Numerous ferry operations occur in the River, although many are seasonal or otherwise sporadic. Ferry services identified include:

Harbour Town Water Taxi: leaving from the Town Dock at Palmetto Bluff generally at 10 am and traveling to Harbour Town on Hilton Head Island.

Old Town Merchants Society Ferry: operating seasonally between Old Town Bluffton and Hilton Head Island.

Daufuskie Ferry: sporadic ferry service from Old Town Bluffton and Palmetto Bluff for a \$10 fee.

Other commercial vessel uses in the May River include pontoon boat tours operated by Hampton Lloyd, wine cruises originating from Palmetto Bluff, and other waterborne functions on-board the “Grace”, a 60-foot wood motor yacht built in 1913 and housed at Palmetto Bluff⁵⁴. Dolphin and other boat tours originating from outside of Bluffton regularly bring clients to the River.

The May River is not designated as a no-discharge zone (NDZ), although the Beaufort County Boating Management Plan recommended the establishment of NDZs for all ORW class waters including the May River. State law prohibits the discharge of untreated waste into the River, as well as treated or untreated waste from houseboats. The only vessel pump-out facility is located at Palmetto Bluff’s Wilson’s Landing facility. According to the Marine Manager, this facility operates a land-based pump-out that is connected directly to the sewer system using a 70-foot long hose. Vessels are removed from the water, carried via a cradle and forklift up to the dryrack facility and pumped out on-land. Plans to purchase a mobile pump-out vessel capable of servicing vessels in the New River and May River have been discussed and may require additional investigation.

Boat use and mooring at the sandbar located southeast of Myrtle Island has been identified as in need of additional investigation. At low tide, the sandbar becomes exposed and creates a sandy beach area near the mainstem of the River. The sandbar has long been known as a hotspot for local residents to boat to and meet to swim at low tide. As many as 150 vessels have anecdotally been reported anchored at the sandbar at one time, and reports suggest that the number of people using the area has been increasing in recent years. Similar reports indicate that as many as 200



Image 18. Examples of uses at the Sandbar.

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individuals have been observed on the sandbar during busy weekends. No accidents have been reported at the location, although law enforcement agents have noted questionable practices such as underage drinking and drug use occurring. The majority of the sandbar is located within the County boundary.

Shellfishing

Perhaps the most important in-water habitat in the May River, from the perspective of human use, is that of the eastern oyster (*Crassostrea virginica*). According to reports, the May River supplies nearly 20% of the State's annual harvest of oysters and is well known for the famous Bluffton oyster⁵⁵. Shellfish harvested from the May River and its adjacent areas in Calibogue Sound includes eastern oyster, hard clam (*Mercenaria mercenaria*) and ribbed mussel (*Geukensia demissa*).

Much of the bottomland area in the May River is reported as leased by the State for commercial shellfish culture⁵⁶. The Bluffton Oyster Company holds lease C-004, Carl Dipace holds leases C-002 and C-009, and Neal Cooksey hold C-033. The general public is allowed to harvest on State shellfish grounds S-007 in Bull Creek. Recreational harvesting for clams and oyster is allowed in all areas of the River, and commercial harvest by licensed harvesters is allowed within the DNR shellfish windows. DNR establishes windows for harvest each year, although the season generally runs between September 16 and May 15.

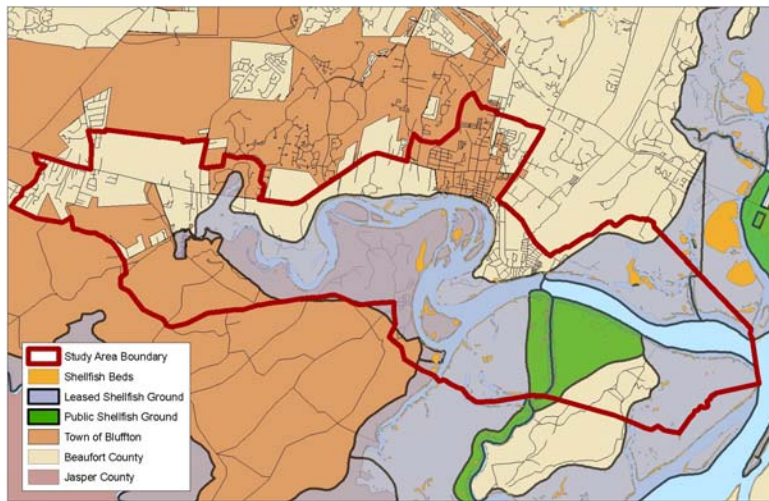


Figure 14. Shellfish beds and lease areas in the May River.

Landing data from the May River area indicates that more than 152,000 individual clams had been harvested between 2003 and 2007, including over 33,000 from public bottomland in Bull Creek⁵⁷. During the same period, nearly 57,000 bushels of oyster had been harvested with the system including approximately 1,400 from public bottomland. Roughly 800 pounds of mussels have been harvested since 2003 from the May River area.

Productive oyster areas are managed by the leaseholders to ensure that cultch which is shucked is returned to the system to encourage future recruitment. The May River Baseline Study investigated the success of oyster recruitment during the study period. The findings suggest that oyster size and growth in the headwaters area is greater than within the rest of the River. The May River oyster population was healthy overall, and

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capable of maintenance using the current husbandry practices undertaken by the stewards of the leased shellfish lands. Dermo (*Perkinsus marinus*), a parasite that infects maturing oysters and can result in growth and reproductive reduction or even death, was found in areas at rates equivalent to most areas of South Carolina. MSX (*Haplosporidium nelsoni*), another parasite common to South Carolina waters were found in lower concentrations in May River oysters than in similar sites elsewhere in the region. Oyster recruitment studies indicated that long-term recruitment occurred below the State average at some stations, although water quality did not appear to be a major factor. As mentioned earlier, a significant number of native and non-native predators occur within the May River's oyster reef communities. Recruitment figures indicated that faster recruitment occurs in the Mainstem of the River with perhaps less survival, but slower recruitment occurs in the headwaters with greater growth.

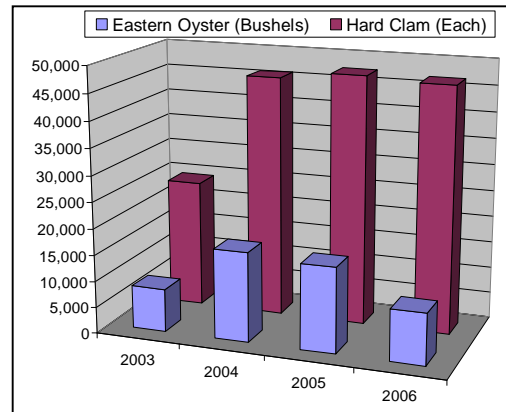


Table 2. Shellfish Harvest 2003-2006

Shrimping and Crabbing

Recreational shrimp harvesters typically use cast nets, a round net made of monofilament, cotton or nylon mesh with weights attached to the outside perimeter, generally between 4 and 8 feet in diameter. The net is tossed into the water from the shore, dock, or boat and allowed to sink through the water column towards the River bottom over the shrimp. The harvester tugs the centerline and the net closes around the animals and can be hauled out. Shrimp harvesting can also include the practice of baiting, in which balls or discs of chopped fish or fishmeal are placed on the bottom to attract shrimp which are then caught in the cast nets. Bait harvesters use poles to mark their bait locations. The shrimp season is May 1 through December 15 for cast net harvesting without baiting, and no permit is required for recreational cast netting⁵⁸. SCDNR restricts baited cast netting to a period between September and November and requires harvesters to apply for and receive a license. The catch limit for both baited and netted shrimp is 48 quarts whole or 29 quarts without heads⁵⁹. Baited shrimping is limited to no more than 10 poles. Deephole shrimping occurs year-round.

Anecdotal reports indicate that roughly 10 people regularly harvest shrimp commercially in the May River with a few additional individuals harvesting on weekends. The majority of these harvesters are local residents using up to 12-foot wide nets. Shrimp are mainly sold to the Bluffton Oyster factory, Cahill's Market on May River Road and local restaurants. Shrimp caught in the May River are also sold at numerous road-side stands around Bluffton.

While crabbing occurs throughout the May River, the majority is for recreational harvest and goes unreported. Less than 10 commercial crabbers work in the area of the May River. Recreation crabbers are permitted to work two pots without a license from the

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State, and harvest generally is best between October and December. Males enter the creeks and channels particularly in colder times of the year while the females tend to remain closer to the ocean, such as in Calibogue Sound⁶⁰.

Finfishing

The May River is used primarily for recreation finfish harvesting, generally through rod and reel fishing. According to DNR, common and significant recreational species caught in the river include red drum, spotted sea trout, southern flounder, black drum, sheepshead, and cobia. Other commonly caught species include toadfish, puffers, rays, and blacktip sharks. Tarpon have been reported to appear seasonally within the area. Recreational crabbing also occurs within the Study Area Boundary. Both recreational fishing and crabbing occur throughout the May River and its tidal creeks from boats, the banks of the River, shallow water, docks and bridges.

DNR requires that individual over the age of 16 who are recreationally harvesting shellfish or recreationally fishing from private boats in salt water areas have a temporary or resident recreational fisheries license⁶¹. This requirement also applies to people over 16 who may be transporting caught saltwater fish by private vessel. Recreational finfish landing data is currently not available for the May River, although it would benefit future planning efforts.

Swimming and Bathing

Swimming and bathing occurs primarily from numerous private docks, at Brighton Beach and at the sandbars located near Myrtle Island and to the west of Gerrard Cove.

Swimming and diving from anchored boats has been observed at the sandbars and in the Mainstem of the River. Recent reports indicate that an increase in the use of the water for SCUBA diving occurs in some areas, although the extent, duration, and location of this activity is not clear. A wreck has been reported in the vicinity of the sandbar near Potato Island which has become a recognized area for

SCUBA diving, although diving has not been identified as a regular occurrence in this area. Anecdotal reports indicate that boats anchored in the Mainstem have been observed releasing SCUBA divers without displaying the “Diver Down” flag indicating divers in the water, causing potentially dangerous conditions for boaters and divers.

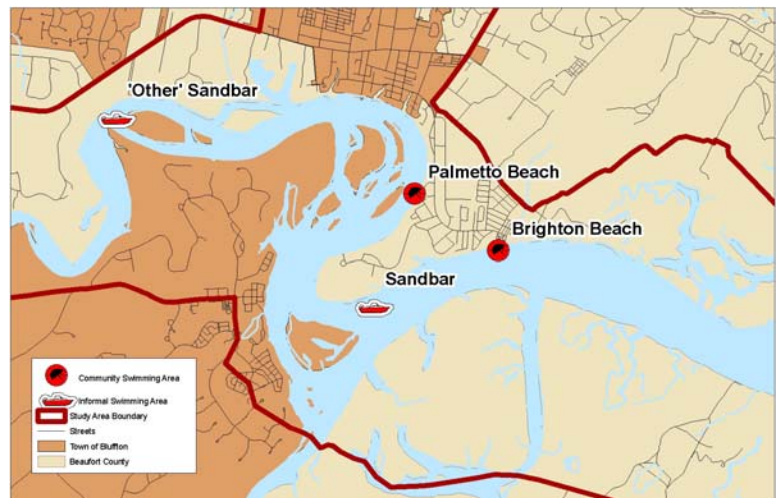


Figure 15. Informal and community swimming areas in the May River.

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Bathing at Brighton Beach (or All Joy Beach as it is locally known) is consistent throughout the summer, despite its location adjacent to a highly active boat launch. The State General Assembly, through Section 50-25-110 of the State Code of Laws, established a prohibition of the use of motorized vessels between the high tide and low tide line of Brighton because of the inherent safety issue of swimmers and motorized boaters utilizing the same space⁶². The beach is managed and owned by the Brighton Beach Homeowners Association and is available for the use by residents of the All Joy community. Estimates of the number of users at Brighton Beach are sporadic, although the upland parking area can accommodate as many as 15 vehicles at one time. Brighton Beach also has some minor amenities including trash receptacles and picnic benches. No restroom facilities are located at Brighton Beach.



Image 19. Brighton Beach walkway.

In addition, a private community bathing area, also available only to residents, is located at Palmetto Beach, locally referred to as “the log”. Palmetto Beach is located west of Myrtle Island and is reported by locals to accommodate as many as twenty swimmers at a time. While not a public beach facility, it is necessary to consider all uses of the water in the development of this Inventory.

Other Uses of the River

Waterskiing or windsurfing has been observed and both activities occur in various areas within the waterbody. Local reports suggest that these uses are not consistently observed, although waterskiing may be common in certain areas of Cauley Creek due to the sheltered nature of the area.

Water tubing is common in the May River, both towed behind boats or personal watercraft and also “inner tubing” on a rising or falling tide. Both types of tubing occur in various points along the River, although “inner tubing” has been more commonly reported near the Old Town and Palmetto Bluff areas.



Image 20. Private swimming access at Palmetto Beach.

Kayaking has increased in popularity in the River and in nearby areas, and groups of visitors have been observed using the River. Local kayaking clubs meet for group paddles in the River. Some local groups include the “River Rats”, the “Swamp Girls” based in Hardeeville, and the Sun City kayak club. Commercial kayak eco-tours commonly launch groups from the Oyster Factory boat landing.

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Additional uses of the River include photography and painting from various points along the shore, from public access points and private docks, and even from boats and kayaks in the River.

Water Access

Different types of water access exist within the May River Study Boundary including direct physical access from both public and private access points and indirect access associated with viewsheds and line of sight to the water. Direct physical access to the water is possible at the Town Dock at Palmetto Bluff, the Town Dock at Calhoun Street, the County Park adjacent to the Old Oyster Factory, at Brighton Beach Bathing Area and at All Joy Boat Launch.

Public access can be defined in various ways depending on the planning circumstances. For the May River Waterbody Management Plan, public access is defined as any location which legally allows members of the community, visitors, or residents of the State the ability to contact the water of the May River. This definition includes locations that permit direct physical access to the water, such as beaches, public docks, or boat launches and indirect physical access, which enables people to view the water, or access it indirectly.

Historically, small bridges known as skids were erected to enable access to the coves in Old Town Bluffton. According the Town's Comprehensive Plan, a 1913 survey map of the Town indicates a crossing over Heyward Cove that extended from Water Street⁶³. The Comprehensive Plan recommends revisiting these types of accesses to increase the ability for residents to access the water.

Water access for private landowners in the May River is mostly associated with private docks. A total of 133 private docks have been mapped in the May River Study Area, and additional inventory work currently underway as part of the Waterbody Management Plan is identifying unmapped or recently permitted dock structures⁶⁴. Dock standards differ within the system as the Town has no specific dock ordinance regulating length, width or construction, while the County has established dock standards for construction within the unincorporated sections of the May River. The Town has, however, sought to limit the number of private docks that could be constructed at the Palmetto Bluff planned unit development as part of the development agreement. As part of this agreement, seven community docks were constructed for the residents of Palmetto Bluff (including the public Town Dock) and no private docks will be permitted at individual development lots.



Image 21. Typical private docks along the May River.

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Viewsheds are considered a component of water access, despite not requiring physical access to the water. The Town's Comprehensive Plan update of 2007 identified scenic resource viewsheds at Huger Cove, Verdier Cove, Heyward Cove, the length of May River Road (Hwy 46), the length of Okatie Highway (Hwy 170), Rose Dhu Creek, Stony Creek, trees and stands of undisturbed forests, and the vegetated steep ridges and bluff along the May River and the Okatie Highway in the Jones Tract. Additional viewsheds exist at multiple road endings. In addition, a public access point exists at the terminus of Picthard Street that includes a small public sitting area.

Existing Authorities

Multiple local, state and federal agencies or divisions have some level of authority over actions made on the May River. The decisions, responsibilities and actions of each of these agencies directly impact the uses of the May River and surrounding communities. A brief explanation of the relevant federal, state and local agencies with authority, jurisdiction or responsibility over some aspect of the conditions or uses of the May River is discussed.

Federal Authorities

At the federal level, the US Army Corps of Engineers (USACE), the Environmental Protection Agency (EPA), and the US Coast Guard (USCG) have some level of jurisdiction or responsibility. Additionally, the National Oceanic and Atmospheric Administration (NOAA), and its National Marine Fisheries Service (NMFS) subagency, as well as the US Geological Survey (USGS) and the US Fish and Wildlife Service (USFWS) provide advisory and scientific expertise.

US Army Corps of Engineers

The US Army Corps of Engineers (USACE) is responsible for providing engineering services to the United States, including a major role in civil works projects in which there is a federal interest. The regulatory mission of the USACE is to protect federal trust resources in their authority. USACE also plays a major regulatory function through section 404 of the Federal Water Pollution Control Act of 1972 (better known as the Clean Water Act), which authorizes the Secretary of the Army to issue permits for the discharge of dredged and fill material in and around wetlands. Under the definitions used in the Clean Water Act, most wetlands are designated as waters of the United States. The Army Corps, as the agency is commonly called, is also responsible for managing and maintaining the navigable waters of the United States under authority granted to the agency through Section 10 of the Rivers and Harbors Act of 1899. This authority, codified in federal Code Chapter 403 Section 33, relates to "those waters that are subject to the ebb and flow of the tide and/or are presently being used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce". Through this authority, the Corps is responsible for maintaining navigation within federally authorized navigaion channels, such as in ports and harbors.

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USACE has three main permitting mechanisms, the general permit (GP), individual permit, or Nationwide permits. The Nationwide permit reportedly represents a significant percentage of the permits issued by the Corps, and are authorizations granted for minor activities within the Corps jurisdiction that will have a minor impact on federal interests and meet the criteria published in the Federal Register. General permits are issued within the Corps regional offices using standards established within each region for impacts associated with commonly occurring or normal activities. Individual permits are typically required for projects impacting an area greater than half an acre of wetlands or other area of federal interest in the Corps jurisdiction.

The Corps permit review process is relatively straightforward. Processing individual permits generally includes a three-step process, usually including a pre-application meeting, formal project review, and decision-making. The pre-application meeting is an informal process that brings together stakeholders from various agencies and interests to discuss the benefits and deficiencies of a proposed action prior to significant commitment of funds and resources. The formal review process commences upon receipt of a complete application and takes place under a “project manager” system, in which one agent is responsible for managing the application from receipt through decision. The review process generally includes public notice of the proposed activity, evaluation of the merits of the project and impacts to the federal interests, and documentation of a recommended decision action.

Permit review follows the general guidelines of reviewing the relevant extent of public and private needs, the practicality of using alternative options to achieve the project purpose if needed, and the extent and permanence of the effects that a project will have on the public and private uses of the area. The Army Corps of Engineers is not able to authorize an activity that is found to be contrary to the public interest. In addition, safeguards are in place to ensure that the federal decision is in keeping with state decision-making through the requirement of state certification of certain USACE decisions, most notably Coastal Consistency Review, administered by the State under the Coastal Zone Management Act, and Section 401 certification under the Clean Water Act, both discussed below. According to the USACE, the average processing time for a permit decision is between two and three months in most cases. When permit applications require the development of an Environmental Impact Statement, the permit review process may take up to three years.

Within the May River, the USACE has authority over the permitting of public and private docks, impacts to tidal wetlands, and requests to dredge or alter the bottom. The Charleston District of the US Army Corps of Engineers is the only District Office in South Carolina and is responsible for all regulatory activity within the State.

Environmental Protection Agency

The Environmental Protection Agency (EPA) is the federal environmental health management agency, whose mission is to “protect human health and the environment”. EPA is responsible for developing and enforcing regulations and programs to implement environmental laws passed by Congress. In addition, EPA performs environmental

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education and outreach, is involved in environmental justice issues, manages the National Estuary Program (NEP), administers most of the responsibilities of the Clean Water Act and Clean Air Act, regulates stormwater, and oversees the National Shellfish Sanitation program. In South Carolina, most of these programs are administered by DHEC EQC with oversight by the EPA.

The EPA is responsible for administering programs including Superfund, to cleanup environmental contamination of federal significance, and regulatory programs to reduce impact to water quality, most notably the National Pollution Discharge Elimination System (NPDES) program. NPDES is the federal program aimed at reducing the impact of point source discharges to waterbodies as implementation of the goals of Clean Water Act. As a program, new permitting requirements commonly referred to as “Phase II” are now in effect in South Carolina, which increases the number of permits associated with stormwater and land disturbance along the coast. The next phase will include the delegation of some of the State’s authority to municipalities with populations to size of that approximated for Bluffton within the next 5 years. This additional scrutiny of stormwater permitting, known as municipal separate storm sewer systems or MS4, will require that the Town permit stormwater activity in accordance with heightened EPA guidelines.

Within the May River, the EPA has delegated its main authority over stormwater permitting, wastewater permitting, and land disturbance to the State which administers those permitting responsibilities through the Department of Health and Environmental Control. The Environmental Protection Agency’s Region 4 is responsible for the area of South Carolina and its offices are located in Atlanta, Georgia.

United States Coast Guard

The United States Coast Guard (USCG) is the federal agency responsible for protecting the nation’s waterways and coastline as part of the Department of Homeland Security. The Guards’ missions include promoting maritime safety, security and mobility, providing for national defense, and protecting natural resources. USCG performs search and rescue operations in coastal areas for missing boaters, lost swimmers, and sinking vessels. In addition, USCG is responsible for ensuring port security through the boarding and inspection of incoming ships and cargo. Coast Guard is also involved in law enforcement on the water, particularly reckless boating, boating while intoxicated and drug interdiction. Coast Guard also has authority over the permitting of bridges. A major responsibility of the Guard is to respond to, investigate, and address oil spills in a waterbody. USCG has developed an Area Contingency Plan for each area of the State for spills and response. USCG is the federal On Scene Coordinator for spills, and DHEC is the State On Scene Coordinator. Public outreach and boater safety is a critical component of the Coast Guard functions and is often undertaken directly by the volunteer Coast Guard Auxiliary.

The May River is located in the USCG District 7 based in Miami, Florida, and Sector Charleston based in Charleston Harbor.

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National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) is an agency housed within the Department of Commerce. The mission of NOAA is to protect federal trust resources, provide mapping of navigation channels, provide weather monitoring and forecasting, monitor coastal dynamics and conditions, and manage the nation's coast. Within NOAA are the National Weather Service, the National Ocean Service and the National Marine Fisheries Service. Each has individual responsibility that can impact on the operations of coastal managers and users of the coastal environment.

The National Weather Service provides the official national weather forecasts, monitors weather patterns and conditions, investigates and maps disturbances, and relays warnings to mariners. The National Ocean Service protects coastal resources from impacts of Superfund sites and brownfields, establishes marine protected areas, monitors coastal processes and conditions, charts coasts and channels, predicts tides, and administers the federal Coastal Zone Management program. The National Marine Fisheries Service implements the Magnuson-Stevens Fishery Management Act policies, monitors and establishes federal catch limits, restores coastal wetlands and shellfish habitat, and assess natural resource damages to federal trust species.

Section 307 of the Coastal Zone Management Act requires that an applicant for a federal permit, grant, license, or approval must certify that the proposed action is consistent to the maximum extent practicable with the policies and purposes of a federally approved State coastal management program. The state must concur with this certification prior to a federal agency undertaking the approval, authorization, licensing or funding of the proposed project.

NOAA does not grant permits as such, however the agency does provide federal advisement to other federal and state agencies on relevant issues.

United States Fish and Wildlife Service

The US Fish and Wildlife Service (USFWS) is the federal agency responsible for the protection of federal fish and wildlife habitats and species, specifically those that are imperiled, threatened, or endangered. Much like NOAA, USFWS does not directly permit or authorize activities but are typically part of a consultation team and can elevate issues that are deemed important. Fish and Wildlife primarily provides guidance, mapping, and assistance to State and federal agencies in decision-making regarding sensitive wildlife and wildlife resources.

South Carolina State Authorities

At the State level, the Department of Health and Environmental Control (DHEC), its offices of Environmental Quality and Control (EQC) and Ocean and Coastal Resource Management (OCRM), the Department of Transportation (DOT), the Department of Natural Resources (DNR), and the State Emergency Management Division (EMD) have some authority over activities within the May River area. The most powerful branch of government is the State's General Assembly.

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State General Assembly

The State General Assembly is the legal legislative body in South Carolina and as such holds significant authority over decisions of the State. The General Assembly has the authority to control public lands, including bottom land, manage public trust resources, such as finfish and shellfish, and regulate the use of waterbodies for various purposes including navigation. The Assembly has delegated responsibility for the management of many public trust resources, however it has maintained certain authorities to enact controls for uses in waterbodies including navigation. All authority and jurisdiction assumed or acted upon by any State agency is through direct delegation of such authority from the State General Assembly.

Department of Health and Environmental Control

DHEC is the state health and environmental management agency comprised of five deputy bureaus including Administration, Health Regulation, Health Services, EQC, and OCRM. The mission of DHEC is to promote and protect the health of the public in South Carolina. As the State's health agency, a considerable amount of resources are directed to the protection of human health. DHEC is led by a Commissioner who is appointed by the General Assembly and a Board of Health and Environmental Control comprised of seven appointed members.

Office of Environmental Quality and Control

DHEC EQC is the State's environmental management and regulatory agency and operates 8 regional offices in the state. EQC manages water and community wastewater permitting, stormwater permitting, septic system, public and private wells and other inspections, manages air emissions, brownfields, solid waste and hazardous waste, mining, beach monitoring, public swimming pools, and permitting activity for numerous environmental program areas. EQC administers the State's shellfish sanitation program and significant water quality monitoring at established stations throughout coastal and upland South Carolina. EQC also permits all stormwater activity outside of the coastal area and all wastewater permitting within the coastal area. In addition, EQC is responsible for maintaining and addressing the federal 303d list of impaired waterbodies and establishing total maximum daily loads (TMDL) limitations for these waterbodies.

Beaufort County is located within EQC Region 8 covers Beaufort, Jasper, Colleton and Hampton counties. The office is located at 104 Parker Drive off Highway 21 in Beaufort.

Office of Ocean and Coastal Resource Management

DHEC OCRM is the State's coastal management agency and administers the federal coastal program, as amended and refined through the state. Formerly known as the South Carolina Coastal Council, DHEC OCRM consists of a regulatory division, a coastal planning division, a science and policy division, communications and technical resources division, and an administrative division. The regulatory program reviews and permits dock activity, beach and dune permits, wetland impacts, marina applications, and coastal stormwater permitting within the eight coastal counties. The Planning Division provides assistance to local communities in identifying and addressing coastal change, prepares

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guidance and policy documents to assist government agencies in understanding coastal issues, and performs public outreach.

OCRM permitting offices are located adjacent to the EQC offices in Beaufort, with a main office in Charleston.

Bureau of Environmental Health

DHEC's Bureau of Environmental Health promotes and protects the health of the public through environmental regulation, inspection, investigation, and education. The Bureau permits individual onsite disposal systems or septic systems for single family residential homes, inspects restaurants and establishments to food safety, analyzes and permits private wells, investigates rabies incidents, and performs vector control activities.

The Bureau of Environmental Health is located in the Region Public Health Offices located in Bluffton at 4819 Bluffton Parkway.

Department of Natural Resources

The South Carolina Department of Natural Resources (DNR) is the principal advocate for and steward of the State's natural resources. This is accomplished through regulating hunting, fishing and boating activities and through conservation and land and water management programs. DNR administers most of the State's authority for the management of surface vessels, including establishing no wake or no discharge zones with the approval of the General Assembly, registering vehicles, and enforcing boating regulations through the DNR Law Enforcement Division. DNR Law Enforcement is the State's only on-water enforcement authority which operates in the coastal zone.

DNR's Marine Resources Division manages saltwater finfish and shellfish harvest, both commercial and recreational, through a licensing program, and size and catch limits. DNR provides a significant resource for marine biological research through its Marine Resources Research Institute based at Fort Johnson in Charleston, and the Waddell Mariculture Center located in Bluffton on the Victoria Bluff Preserve. DNR also provides significant public outreach through its Outreach Division and interpretive centers, such as on Edisto Island, and through the DNR webpage.

DNR offices, facilities and Law Enforcement agents are located in Charleston with main offices in Columbia.

Department of Transportation

The South Carolina Department of Transportation (DOT) is responsible for planning, constructing, and maintaining state roads and bridges, and providing mass transit services in the State. DOT is an Executive branch agency that is overseen by a seven member commission. The Governor appoints the Commission chairperson and the six commission members represent the congressional districts of the State. The Commission is responsible for hiring the Executive Director who then is responsible for hiring division directors. The Department helps plan for hurricane evacuation routes and

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maintains and publishes the current evacuation routes. DOT also provides emergency response during hurricanes to facilitate evacuation.

DOT Engineering District 6 is responsible for projects in Beaufort County and is located in Charleston.

Emergency Management Division

The South Carolina Emergency Management Division (EMD) is responsible for preparing for, responding to, and assisting in recovery after major disasters, storms, and other emergencies. EMD is comprised of six divisions under the supervision of a Division Director. The divisions include the division director's office, public information, preparedness and recovery, response and operations, critical incident management group (CIMG) and administrative services. EMD provides planning assistance for communities prone to emergencies such as storms or hazards, and also provides training to responders. A Regional Emergency Management Program is housed in EMD which provides on-the-ground assistance to communities in the six EMD districts. EMD also works directly with county and local governments following storms to help facilitate rebuilding.

EMD Region 6 is responsible for providing assistance to Beaufort County and is located in Columbia.

Local Authorities

At the municipal level, the County of Beaufort has direct authority and responsibility over the unincorporated areas of the May River, and the Town of Bluffton has authority and jurisdiction over the incorporated areas.

Beaufort County Government

Beaufort County is responsible for providing essential service and governance to citizens within the County corporate limits and unincorporated areas within the County. The County is overseen by an 11-member County Council which is responsible for setting policy for the government. The Council appoints a County Administrator who functions as the Chief Executive Officer and is responsible for implementing the policies established by the Council. In order to administer these policies, the County Administrator manages multiple individual departments. County departments include Planning, Solid Waste and Recycling, Zoning, Parks and Leisure, County Auditor, Assessor and Building Department.

The County also maintains a County Emergency Management Department and County Sheriff. The Sheriff's Department is responsible for enforcing County, State and Federal laws, investigating crimes and keeping the peace within the County. The Sheriff's Office also maintains two police vessels that can patrol the May River area. The County Emergency Management Department is responsible for planning for, making preparations, and ensuring evacuation during hurricanes or other disasters.

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The Study Area is located within County District 4. The County also has offices located in Bluffton at the Beaufort County Government Center on Bluffton Parkway.

Town of Bluffton Government

The Town of Bluffton is responsible for providing essential service and governance to citizens within the Town's corporate limits. The Town operates using a Town Council/Manager approach to local government. The Mayor and a four member Council are the legislative body of the Town. The Council establishes policies that the Town Manager, as the Chief Executive Officer, is responsible for implementing. In order to accomplish this, the Town manages several departments specialized in providing elements of service including Planning and Growth Management, Environmental Protection, Engineering Support Services, Buildings and Grounds, Department of Building Safety, and the Clerk of Courts.

The Town Police Department has headquarters on Persimmons Road. The Town Police is responsible for keeping the peace, investigating crimes, and enforcing local, state and federal laws. The Town Police until recently had maintained a police boat at the Palmetto Bluff marina, and is currently investigating other potential in-water storage options including the construction of a permanent housing at the Town Dock at Calhoun Street. Primary responsibilities of the marine unit are ensuring boater safety, enforcing boating while intoxicated laws, providing vessel assistance, and ensuring that boaters have the required safety devices onboard. The Town of Bluffton has requested and received DNR's permission to enforce state boating laws within the Town's section of the May River.

Management within Study Area

Management of surface vessel uses, land use, public access and other issues relevant to a Waterbody Management Plan occur through various mechanisms along the May River. Jurisdictions and authorities vary throughout the Study Area, with many of the Existing Authorities established and enforced by the federal, state, and local agencies listed above overlapping. In order to fully understand the conditions in which decisions are made by the relevant authorities, some discussion of relevant regulation and enforcement is necessary in the context of this planning effort.

Summary of Existing Regulations

The following is a summary of regulations which may affect the management of uses in the May River. This summary includes discussion of state, county, and town regulations specific to boating, fishing, shellfishing, docks, moorings, emergency response, land disturbance, and zoning. While this discussion identifies the pertinent regulation, it is not intended to provide any legal advice or interpretation and is to be used solely for the benefit of planning. Consult the current regulation for official interpretation.

Relevant State Regulations

Title 50 of the State Code of Laws includes the State regulations for fish, game, and watercraft. The Title includes 14 active chapters including the Forest Management

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Protection Act, South Carolina Marine Resources Act of 2000, rules for the Protection of Game, Aquaculture, and Special Hunting and Fishing Provisions for Certain Counties and Areas. This section of the State Code of Laws also includes rules regulating the Equipment and Operation of Watercraft (Chapter 21), Watercraft and Outboard Motors (Chapter 23) and Boating and Surfing at Particular Localities (Chapter 25).

Chapter 21 of Title 50 is known as the South Carolina Boating and Safety Act of 1999 and declares “it is the policy of the State to promote safety for persons and property in and connected with the use, operation, and equipment of vessels and to promote uniformity of laws relating thereto” (§50-21-20). The administration of this law is designated to the Department of Natural Resources and enforcement is vested in DNR’s Division of Law Enforcement (§50-21-40), although any dedicated police or peace officer in the State may make a request to DNR to be empowered to enforce these regulations (§50-21-80). The law is clear in that DNR or other duly authorized law enforcement personnel have the authority to stop and board any vessel in order to inspect or determine compliance with the provisions of the law, and are empowered to issue summons or make arrests for violations (§50-21-80). The chapter also establishes rules related to the use of blue flashing lights by law enforcement officers, and requires that all vessels hailed by a designated law enforcement officer must stop immediately and lay to in order to permit the officer to come aboard (§50-21-80).

The chapter establishes that no person may operate any water device, craft, or vessel in a “negligent manner” and that doing so is a misdemeanor offense (§50-21-110). Negligent is defined as including, but not being limited to, operating a vessel at more than “idle speed” in a no-wake zone, failing to maintain a proper lookout for other vessels or persons, operating too fast for conditions in the water, racing, or pulling a water skier through a designated swimming area (§50-21-110). A person who operates a water device in a manner that indicates either a “willful or wanton disregard” for public safety is guilty of “reckless operation”, also a misdemeanor (§50-21-111). Reckless operation is described as including, but limited to, weaving through congested traffic at more than idle speed, jumping the wake of another vessel within two hundred feet of that vessel, crossing the path or wake of another vessel when visibility around the other vessel is obstructed, or maintaining a collision course with another vessel or object and swerving away in close proximity (§50-21-111). Persons convicted of reckless operation are required to attend a boating safety course at their own expense and are suspended from operating a vessel until successful completion of the course (§50-21-111).

The chapter establishes rules for divers, the use of diver down flags, and the operation of vessels in proximity to such indicators. A vessel may not be operated within fifty feet of another vessel when a diver down flag is being displayed, and if the water body is too narrow to permit passage of vessel more than fifty feet away, then the passing vessel must stop to a no-wake speed and pass as far away as is safe (§50-21-87). This section also establishes that a person may not dive within fifty feet of a vessel in which someone is fishing (§50-21-87).

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The chapter establishes that it is unlawful for a person to operate a motorized or sail vessel (or other water device) under the influence of alcohol, drugs, or a combination of both to the extent that the operator's "faculties are materially and appreciably impaired" (§50-21-112). A person violating this section is guilty of a misdemeanor offense and punishment escalates with subsequent repeat offenses. Persons convicted of boating while intoxicated are prohibited from operating a water device in the State for a period correlated to the number of offenses (§50-21-112). Persons operating water devices and arrested for boating while intoxicated are "considered to have given consent to chemical tests or analysis of breath, blood or urine" to determine the presence of alcohol or drugs (§50-21-114). If a person operates a water device under the influence of drugs or alcohol and is convicted of causing great bodily injury or death to another person as a result, the operator would be guilty of a felony and serve a mandatory jail sentence (§50-21-113), while damages caused by an intoxicated boater to property other than their own is punishable as a misdemeanor (§50-21-113). In either case, the operator would also receive a suspension of boating privileges in the State by DNR (§50-21-113).

The chapter establishes the authority of DNR, or delegated agency, to tow and store any unattended watercraft, or a watercraft in which the operator is ill, intoxicated, or disabled and incapable to operate the vessel at a suitable facility or commercial marina, (§50-21-105). This section also establishes that DNR or a duly delegated agency can tow and store at a suitable facility or commercial marina any object which constitutes a hazard to navigation that is not located within a Coast Guard approved anchorage area (§50-21-105). The Department may also remove any vessel, vehicle, or other unattended object that is obstructing access to or use of a pier, dock, wharf, boat ramp or access to these facilities (§50-21-146).

The owner, agent, or employees of a boat livery, meaning a business which holds a vessel for rent, lease or charter (§50-21-10), is not allowed to permit any vessel from departing unless it is "in sound and safe operating condition", has valid registration, is properly numbered, meaning the Coast Guard required hull identification number (§50-21-10), and is provided with equipment required by the US Coast Guard, such as life preservers, life rafts, and flares (§50-21-120). The operator of a boat livery is also required to keep a record of the name and address of persons hiring the vessel, the departure time and date, identification number, and expected time of return, and to keep this record for at least six months (§50-21-100).

The chapter establishes that an operator involved in a collision is required to render assistance, if it can be accomplished without serious danger to their own vessel, crew or passengers (§50-21-130). The law also identifies what actions are necessary in the case of a reportable accident. The chapter also establishes rules for the regulation of regattas, races and similar exhibitions (§50-21-1010).

The chapter describes "aids to navigation" as any device designed or intended to assist a navigator in determining the position or best course or to warn of danger or obstruction navigation (§50-21-710). It also describes "regulatory markers" as devices which indicate to an operator the presence of a zone dedicated for a particular use or to provide

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general information or direction. Examples of regulatory markers include markers for bathing areas, speed zones, danger zones, mooring buoys, wharves, docks and other obstructions to navigation (§50-21-710). The operation of a watercraft in a prohibited area is negligent operation, unless the seriousness of the action exhibits reckless operation (§50-21-710). In addition, the section says that no person may moor or fasten a vessel to, tamper with, or interfere with any navigation or regulatory aid, and such action would be determined to be a misdemeanor (§50-21-710).

The chapter establishes that the US Coast Guard Navigational Rules which pertain to watercraft and watercraft safety, equipment, operation and performance of watercraft are the laws of the State and enforceable as such (§50-21-170). It also establishes that any person who discharges a firearm at a public boat landing or launch is guilty of a misdemeanor (§50-21-146).

The law also establishes rules related to the use of waterskis, aquaplanes, surfboards and other similar water devices. The law prohibits the use of waterskis, aquaplanes, surfboards and similar devices after sunset or before sunrise (§50-21-820). The chapter also stipulates that no person shall operate a vessel towing anyone unless there is either a spotter present or a rear-angle mirror enabling the operator to see the persons in tow (§50-21-810). There is an exemption for professional performers engaged in a display or associated with a duly permitted race (§50-21-830).

Personal flotation devices may not be required for windsurfers or sailboarders (§50-21-855), however no person may be towed by a vessel on skis or other devices without wearing a Coast Guard approved flotation device, with certain limited exemptions (§50-21-850).

Personal watercraft, such as those commonly referred to under trademark as Jet-Skis or Sea-Doos, are defined by the chapter as vessels less than 16 feet in length which has an outboard or inboard motor powering a water jet for propulsion, is designed to allow the operator and passengers to ride on the “outside surfaces of the vessel”, and has the probability that the operator or passengers may fall overboard during operation (§50-21-870). A “Specialty Propcraft” is defined as a vessel similar to a personal watercraft but is powered directly by an outboard or propeller-driven motor (§50-21-870). Finally, a “Class A” boat is defined in the section as a motorboat less than 16 feet in length. The chapter also establishes regulations on the use of airboats (§50-21-860).

The chapter requires that all persons onboard an operating personal watercraft or specialty propcraft must be in possession of a Coast Guard approved personal flotation device which must be fastened, “in good serviceable condition”, and the proper size for the wearer (§50-21-870). The chapter also prohibits the operation of personal watercraft or specialty propcraft between sunset and sunrise, requires that such vessels be fitted with either a self-circling device or a lanyard cut-off switch attached to operator, and prohibits alteration of such devices (§50-21-870). The section continues by requiring that such vessels must not be operated at greater than idle speed within 50 feet of a moored or anchored vessel, wharf, dock, bulkhead, pier or person in the water (§50-21-870).

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Further, the regulation states that no person may operate any vessel, including personal watercraft or specialty propcraft, if under the age of 16 unless accompanied by an adult with certain stipulations (§50-21-870). Violation of any of these regulations is designated as a misdemeanor offense (§50-21-870).

Chapter 23 of Title 50 includes regulations for Watercraft and Outboard Motors, focusing on the titling of vessels and motors. In South Carolina, every owner of a vessel or outboard motor (or both) is required to apply to DNR for a certificate of title for the watercraft, and a separate one for the motor (§50-23-20). This title identifies the owner of the vessel and motor and is a requirement of any further sale or transfer (§50-23-50). The chapter specifies that DNR shall send a list of registered motors and watercraft and their owners and addresses to county auditors each year for tax collection purposes (§50-23-260). The chapter also states that boat liveries may not leave their docking premises without a properly registered, titled, and numbered vessel (§50-23-24).

This chapter also addresses the possession, salvaging, and transfer of abandoned, junked, or salvaged watercraft (§50-23-135). According to the regulations, any person coming into possession of an abandoned, adrift, junked, destroyed, or salvaged watercraft or motor must notify DNR within ten days of being acquired. No person is allowed to acquire the right to or sell the vessel or motor without first obtaining a new title. If a person lays claim to such a vessel or motor, the claimant is responsible for submitting an affidavit setting forth the claimant took possession of the property (§50-23-135). A person who salvages a submerged, drifting, or ultimately landed watercraft must attempt to identify the owner and file and notify DNR (§50-23-135). If the salvager is able to identify the owner, notification must be made by registered mail, indicating the vessel has been recovered, a time limit for response from the owning claiming the vessel, and reasonable costs for salvaging, securing, or storing the vessel (§50-23-135). If no response is received, the salvager may request titling from DNR, and accepts any liens against the vessel or motor. Any person who violates the conditions set forth in the chapter is guilty of a misdemeanor (§50-23-135).

The chapter also states that DNR, or a duly authorized law enforcement agency, may seize stolen, junked, adrift, destroyed, or salvaged watercraft or outboard motors (§50-23-205). Law enforcement agents may also seize watercraft or motors for which the true owner's identity is not known, or vessels that have had their hull identification number or serial number destroyed, removed, or altered (§50-23-205). Upon seizure, DNR or the relevant law enforcement agency will notify the person claiming interest in the property, and if none is located or no action taken within 60 days, DNR may use the vessel, transfer it to a public entity, sell it at auction, or destroy it, if deemed unsafe (§50-23-205).

Chapter 25 of Title 50 includes specific rules regarding the operation of motorboats around Brighton Beach (also known as Alljoy Beach) in the Brighton Beach section of the May River. Specifically, this section makes it unlawful for a person to operate an inboard or outboard motorboat between the low and high tide line at Brighton Beach between the two private docks located adjacent to the swimming area (§50-25-110). The

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Assembly recognized that the operation of vessels in such a location posed an undue hazard to swimmers using the bathing area. Beaufort County was ordered to post the area to reflect the law, and the Sheriff and his deputies are ordered to ensure that these provisions are enforced. Offenders are charged with a misdemeanor and fined not to exceed one hundred dollars or a prison sentence of not more than 30 days.

OCRM Regulations

Chapter 30 of the South Carolina Code of Regulations includes the rules and regulations for DHEC OCRM under the authority established in the South Carolina Coastal Zone Management Act. The intent of the Act is to promote the wise, predictable, and appropriate use and development of the coastal zone of South Carolina. OCRM regulations include specific rules for docks, bulkheads and revetments, marinas, and mooring buoys.

Docks and piers are regulated using specific standards for tidelands and coastal waters (R.30.12 (A)) and are limited to one per parcel, and shall not restrict reasonable navigation or public use of the lands and water (R.30.12 (A)). According to the regulations, the size and extension of docks must be reasonable for its intended use and must be within the extended property lines of the upland parcel (R.30.12 (A)). Docks longer than 1,000 feet are prohibited by OCRM (R.30.12 (A)) and may be further reduced at the local level under local dock ordinances. Additional criteria and conditions are contained in the full regulations.

OCRM permission is required to construct a boat ramp, and justification for establishing a boat ramp in an environmentally sensitive area is considered dependent upon the ultimate use, most notably public uses (R.30.12 (B)). Public boat launches are preferred by OCRM to be located in easily accessible areas, such as under bridges and existing, abandoned causeways to minimize the need to impact the environment through new fill.

Bulkheading and rip-rap permits are reviewed and granted by OCRM, and specific standards are applied to the review to avoid undue environmental impact (R.30.12 (C)). Commercial and community docks with more than 250 linear feet of effective docking space are considered by OCRM to be marinas (R.30.12 (E)), and applications require the submittal of an Operations and Maintenance Manual which must be approved in writing by OCRM. Generally, new marinas are not permitted in waters classified for shellfishing, except for dry stack storage, locked harbor, expanded existing marina that does not decertify any additional area (R.30.12 (E)). Additional criteria for review apply, and are described in the regulations.

OCRM is authorized to permit mooring buoys to allow moorage for vessels in open water. Moorings are generally permitted for the upland property owner, only one buoy is allowable per property, and the moorings must be placed within the extended property lines (R.30.12 (P)). Buoys must be a minimum of 18 inches in diameter and display the name, address and permit number of the legal owner (R.30.12 (P)). If the mooring becomes a navigational hazard, it must be removed by the permittee upon request from OCRM (R.30.12 (P)). The regulation recognizes that a cumulative effect of single,

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private moorings may lead to impacts to navigation and effects associated with marinas. Therefore, property owners and communities are encouraged to create and utilize limited mooring fields for use of property owners, and associated with some legal access, such as boat launch (R.30.12 (P)).

Relevant Local Regulations

The Town of Bluffton and County of Beaufort have perhaps the greatest stake in the protection of the River. Decisions made and actions taken about the management of the River have and will have a significant impact on the waterbody. These communities will be the first to be affected by the ramifications of such decisions. Therefore, these communities have taken responsibility for some elements of the management of the system through local ordinances, enforcement, and control established as a lawful extension of their well-defined police powers. The following are relevant ordinances and laws enacted at the County and Town levels related to the management of coastal resources including those in the May River.

County Regulations

Chapter 102 of the Beaufort County Code is entitled Waterways, and includes the County ordinances related to management of waterways within its jurisdictions. Section 106-26 establishes that the regulations apply to all landings and docks owned and maintained by the County. The section explains that county docks and landings are maintained by the county to provide public access for fishing and boating, loading and unloading passengers, supplies, boats and gear, and other similar uses (§102-27). The County's policy is to maintain and regulate these facilities to permit the greatest public use and to avoid congestion, blocking, or continuous occupancy of such facilities. The county prohibits fires and overnight camping at all county landings or docks, or structural alteration to any facility without written permission (§102-29).

In order to minimize congestion at county docks, the public works administrator is authorized to post signs limiting the amount of time that a boat may be docked or a gear may be loaded (§102-30). Emergency vehicles and public carriers operating with county council permission have precedence over use of a public dock (§102-30). At some docks, public carrier vessels may be designated specific docking space and private vessels may be prohibited from utilizing that space. No person shall fuel at any public dock. No person is allowed to obstruct free access to or departure from any public dock, and no person is allowed to drive a vehicle on any public dock unless otherwise posted (§102-30).

The section also includes rules regarding public landings. First, vehicles that are prepared to recover vessels take precedence over those that are launching vessels, on a first-come basis (§102-31). It is also deemed to be unlawful to obstruct any pier, wharf, dock, or boat ramp or the access areas to any public facility by unattended or abandoned watercraft (§102-31). Any vehicle or vessel obstructing a public boat launch or access to one is removed by the county public works department at the owner's risk and expense (§102-31). The director of public works may remove to a location identified by the Sheriff, and may destroy any vessel if permanently abandoned with no salvage value.

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Commercial shellfish, crab, or fish harvesters may use the public boat landings to launch and unload their vessels. However, they are required to ensure that their loading and unloading do not unduly infringe on others' right to use the landing (§102-31).

Recreational fishing is also allowed at public launches as long as it does not interfere with the launching or recovery of vessels (§102-31). The ordinance is clear that boater have priority over use of the launches. Barges, ferries, and landing craft are prohibited from using public boat launches, ramps or piers without the express permission of the county public works director (§102-31).

The county has a specific section of code related to the use of the county dock in Bluffton. The Town police department is authorized to enforce general jurisdiction over any county dock within the Town (§102-62), and any exceptions to the rules or regulations therein are decided by the Town Council (§102-63). Rules state that no vessel shall be moored to the floating dock except for loading and unloading, and not to exceed four hours maximum (§102-64). In addition, vessels requiring repair may not exceed 24 hours at the dock and should be moved to the farthest end (§102-62). Vessel operators may contact the Town if there is a need to remain dock for longer periods, and pay a dockage fee of \$2 per day (§102-62). Littering is prohibited at the Bluffton Dock (§102-66), and any person causing damage to the dock or float shall reimburse the county for the amount of damage (§102-65).

The county has established rules governing the use of public beaches, recognizing that laws are necessary to ensure the public enjoyment of beaches and to protect the safety and cleanliness of these public places (§90-61). Vehicles are prohibited on public beaches except for emergency vehicles, and horses are prohibited on beaches from March 15 through October 15 (§90-62). Sleeping on the beach is prohibited, between midnight and sunrise, and surfboards may not be used in a negligent or hazardous manner (§90-62). Surfing is not permitted within 300 feet of a designated swimming area, littering is unlawful, and shark baiting or shark fishing is prohibited from a public beach (§90-62). Launching fireworks at a public beach without permission is prohibited, negligent or reckless operation of a motorboat, skis or surfboard near a public swimming area is unlawful, as is operating such devices while under the influence (§90-62). Appearing in the nude or dressing or undressing on any public beach is deemed unlawful (§90-62).

All duly authorized law enforcement agents, notably county police officers and duly appointed deputies or constables have authority to maintain peace and order; regulate fishing, swimming and physical activities; and recall swimmers that are determined to be in danger or imperiling the safety of others (§90-64). Any person violating these rules is guilty of a misdemeanor offense (§90-65).

Town Regulations

The Town adopted a local stormwater management ordinance in the summer of 2007 which recognized that uncontrolled stormwater runoff may have a deleterious impact on the uses and integrity of the May River. The Town sought to reduce the effects of these uncontrolled impacts by applying proper design and well-planned controls to manage

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stormwater runoff. It also recognized that public education is necessary as a component of local stormwater management policy. The ordinance specifically prohibits illicit discharges to receiving waters, defines procedures for site plan review, inspection, and enforcement relative to stormwater, requires temporary erosion and sediment controls to protect water quality, develops post-construction monitoring performance standards, and authorizes inspection and enforcement by Town staff.

The Town also developed a Stormwater Design Manual that is incorporated by reference into the ordinance. The design manual includes a list of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice established by the Division of Environmental Protection. It also includes details on how post-development stormwater runoff will be controlled and managed, the design of all stormwater facilities and practices, and how the proposed projects would meet the requirements of the ordinance.

The ordinance requires all new development to disconnect impervious surfaces with vegetative surfaces; to maintain existing land cover and natural drainage features; to control stormwater runoff so as to promote positive drainage, to maximize the use of vegetated conveyance, to minimize runoff velocity and maintain sheet flow, and to limit interaction with pollutant sources. It also requires new development to control the post-development runoff discharge rate for the 2-, 10-, and 25- year, 24-hour design storm to pre-development levels with structural best management practices (BMPs).

New development in type A and B soils is required to infiltrate the first one-inch of stormwater runoff from the entire development using structural BMPs while in areas of type C and D soils, development will be required to store the first one-inch of run-off within the boundaries of the property or development. This run-off would be required to be discharged over a 72-hour period at a constant rate until the difference between pre-development run-off quantity and post-development run-off quantity has been released. For specific requirements related to BMPs, the ordinance directs readers to the Town's Stormwater Design Manual.

The ordinance also establishes an applicant's responsibility to undertake stormwater testing for up to thirty-six months post-development to ensure compliance. Samples are required to be tested by a DHEC certified laboratory and measure fecal coliform, turbidity, total phosphorus, and total nitrogen. Results are submitted to the Town each month from May through September, and then each November, January and March. Half of the samples are to be taken within twenty-four hours of a ½ inch or greater rain event. If twenty percent of samples fail to achieve the pre-development pollutant loading levels, then the BMP operator would be required to submit a corrective action plan. Additionally, quarterly sampling is conducted during a qualifying "wet weather" event, which occurs when 0.1" has fallen after 3 consecutive days of no rain. Incidental testing occurs when a spill or something out of character for the river is detected.

All BMP construction and operation must still comply with the State Sediment and Erosion Control Act, and all development projects that submit monthly reports to the

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State, are also required to copy the Town. The Stormwater Ordinance requires that pre-development water quality levels for turbidity are ascertained and then through the use of a series of Best Management Practices, from pervious and permeable surfaces, bioswales, buffers to retention ponds, those levels remain the same post-development. Additionally, the Town's Department of Environmental Protection conducts site inspections during the construction process to ensure that these BMPs are in place and correctly maintained throughout the length of the development process.

The Town is authorized to inspect any stormwater system within the local jurisdiction and the ordinance includes a section on local enforcement actions and procedures. The Town may issue notice of violations and stop work orders if one or more of a list of violations have been committed. If criminal penalties were warranted, the ordinance enables the Town to charge a violator with a misdemeanor under the Town's Municipal Code. In addition, the ordinance stipulates that if the Town is fined or placed under compliance by a state or federal agency, it may pass through the penalty and responsibility for compliance to an individual violator if they can be shown to be at fault.

The Town's stormwater management ordinance has been recognized by a number of State and federal agencies as a significantly proactive effort to manage and reduce the impact of development on the integrity and water quality of the May River.

The Town of Bluffton does not have specific boating laws, with the exception of rules related to use of the Bluffton Dock which mimics the rules established in the county ordinance section 102-62 (Town Code Chapter 20).

Regarding Town jurisdictions, the code establishes that if any portion of a street is within the boundary of the Town, the remaining width not within, but touching, the boundary shall be considered within the Town's police jurisdiction (§13.110). This concept may also include some sections of the Town's waterways as well.

Oil Spill Response

Multiple agencies including the Town, County, and State coordinated to determine a chain of authority regarding oil spills in the May River and throughout the region. As a result of these discussions, a synopsis of each of the relevant agency authorities regarding this matter was identified.

The U.S. Coast Guard has enforcement and investigative authority for a significant array of potential violations of federal laws and regulations, as well as enforcement actions under applicable international treaties. Federal laws and regulations associated with a discharge or a substantial threat of a discharge of oil include components of the Clean Water Act as amended; the Oil Pollution Act of 1990; the Ports and Waterways Act; The Port and Tanker Safety Act; The Act to Prevent Pollution from Ships (1980), as amended; and, Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78). In addition, authorities pursuant to 46 USC 7701 and 46 USC 6101 relate to personnel actions (licensed mariners), and marine casualties, respectively. The federal regulations

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associated with a potential investigative or enforcement interest under these circumstances include, though are not limited to, applicable sections of 46 CFR with particular attention to Parts 4, 5, 16; 33 CFR Parts 126, 130, 151, 153-160; and 40 CFR Parts 116, and 117. Potential federal enforcement actions associated with a pollution discharge may include, but are not limited to: the collection of statements and evidence to determine the causes of the associated marine casualty, mandatory chemical testing of involved licensed personnel, and the collection of oil samples in the water and on suspect vessels.

Under the National Contingency Plan, EPA is the lead federal response agency for oil spills occurring in inland (zone), and the U.S. Coast Guard is the lead response agency for spills in coastal (zone) and deepwater ports.

The Department of the Interior's Minerals Management Service (MMS) regulatory authority for accident investigation of offshore oil and gas facilities and related operations is based on the provisions in 30 CFR Part 250.19, Accident Reports (see also the OCS Lands Act Amendments, September 18, 1979, 43 USC 1801, Title II, Sec 208, Sec 22 (d) (1)). The MMS Manual states that the agency's principal objectives in conducting accident investigations are: "...to ensure consistent data collection and investigation of accidents in order to gather the information necessary to determine the cause(s) and to make appropriate recommendations for any corrective action needed. The primary goals are to prevent the recurrence of accidents, to enhance the safety of operations, and to protect the environment." (MMS Manual, Program Series, Part 640, Rules and Operations, Chapter 3, Accident Data Collection and Investigation, August 3, 1992). The MMS manual further states in Chapter 3.3.(A.) that "unless otherwise specifically ordered by the Director, all investigations...shall be fact-finding proceedings with no criminal issues and no adverse parties. The purpose of the investigation is to prepare a public report." An August 29, 1989 Memorandum of Understanding (MOU) between the MMS and USCG provides guidelines for convening accident panels and coordinating accident investigations between the two agencies.

The Commissioner of the Department of Health and Environmental Control, or his designee, will coordinate, integrate, and manage the overall state effort to detect, identify, contain, clean up, dispose of, or minimize releases of oil or hazardous substances and minimize the threat of potential releases. The Department will maintain a contingency plan for spills and releases of oil and hazardous substances that will coordinate and establish necessary standard operating procedures for DHEC response work. The Bureau of Land and Waste Management (DHEC) will provide expertise on environmental effects of oil, discharges, or releases of hazardous substances, pollutants, or contaminants and environmental pollution control techniques. It is likely that there will be several releases occurring simultaneously, making heavy demands on response resources. In order to make the best use of limited resources and to ensure the most efficient overall response, damage information must be gathered quickly, analyzed, and response priorities established as soon as possible. The Department's response to oil and hazardous substance spills and releases is mandated and guided by the S.C. Pollution Control Act (PCA), S.C. Hazardous Waste Management Act (HWMA), S.C. Oil and Gas Act

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(O&GA), among others. Under the Federal Clean Water Act (CWA), the Department serves as a member of the Federal Regional Response Team. For inland planning and response, the Department coordinates with the USEPA in implementing the NCP and the Area Plan developed per the Oil Pollution Act of 1990 (OPA90). In the coastal area, the Department ensures that state interests and concerns are addressed and cooperates with the U.S. Coast Guard, who is designated federal on-scene coordinator, in implementing the NCP and the Area Plan developed per OPA90.

Local government has the responsibility for the protection and well being of its citizens. However, owners and shippers are responsible for subsequent cleanup and containment. Consequently, local governments, through the designated response agencies, will respond to hazardous material incidents of all types and sizes; make initial assessments as to the severity and magnitude of the situation; and take appropriate first responder protection measures to prevent or minimize injuries and property damage. Local agencies rely on the authority of the federal and state agencies to investigate respond and penalize for incidents within their respective regulatory jurisdiction.

Analysis and Public Process



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Analysis and Public Process

The second phase of the development of the Waterbody Management Plan required an analysis of current conditions identified by the Inventory of Existing Conditions, and formulation of Project Goals and Objectives. A Project Advisory Committee (PAC) was established by the Town of Bluffton to assist the Project Team development of goals and objectives and to oversee the analysis phase. The Committee consisted of representatives of stakeholder groups from the area and included representatives of the commercial fishing industry, local boating community, residential and commercial development interests, local biologists, scientists, and informed residents. The PAC also included representatives of the Town Watershed Advisory Committee, Friends of Rivers, Town Council, Town Planning Commission, Beaufort County Planning Department, South Carolina Sea Grant, and DHEC-EQC. The Project Team included members of the Town's Department of Environmental Protection and DHEC-OCRM.

The Project Team held an initial kick-off meeting on May 3, 2007 and the PAC met for the first time on July 18, 2007. In total, the PAC met to discuss and review the analysis prepared by the Project Team eleven times through June 2008.

At key junctures in the plan development process, the PAC and Project Team hosted public information meetings to introduce residents and interested parties to the planning efforts and to solicit feedback. Public information meetings were held four times between October 2007 and March 2008. Feedback from the audience was incorporated into the analysis and plan development.

The Project Advisory Committee was responsible for identifying, discussing, and ultimately finalizing Project Goals and Objectives upon which the analysis of the Project Team was based. The Project Team reviewed the Inventory of Existing Conditions to identify potential Issues, Conflicts and Opportunities in the Study Area which were analyzed against the Project Goals and Objectives. The most relevant and readily implementable Opportunities were then further investigated and presented as the Implementation Strategy to attempt to best accomplish the Goals and Objectives set forth for the May River.

Goals and Objectives

Project Goals and Objectives are developed to give guidance to the analysis, and help to document a "vision" for the use of the River. Within these parameters, and attempting to achieve these goals and objectives, the Project Team and PAC determined broad ambitions as goals, and developed objectives to act as more realistic, discrete, and measurable surrogates that would help to advance the larger goals. Based on input from the public, the Waterbody Management Project Advisory Committee, and information generated as part of the analysis phase, Goals and Objectives for the May River Waterbody Management Plan were developed, discussed and revised. The final goals and objectives are as follows:

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Goal# 1: Protect natural resources of the May River.

- a) *Keep oyster beds open for harvest*
- b) *Document the ecology, flora and fauna of the River.*
- c) *Determine if trends are indicating increases or reduction in health of the system.*
- d) *Increase understanding of breeding habitats.*
- e) *Protect and enhance natural buffers and eroding shorelines.*

Goal# 2: Promote safe and responsible operation and use of vessels in the May River.

- a) *Prepare a boating management plan.*
- b) *Facilitate compatible recreational uses of the May River.*
- c) *Educate boaters and dock owners about the tides and character of the May River.*
- d) *Enhance enforcement on River.*
- e) *Establish rules for moorings.*
- f) *Investigate options for managing personal watercraft use.*

Goal #3: Promote appropriate public access to the May River.

- a) *Protect and enhance existing public access points.*
- b) *Identify the likely need and locations for future public access.*
- c) *Document and protect the attributes of significant May River viewsheds.*
- d) *Protect and enhance public right of ways to the May River.*
- e) *Identify funding opportunities to target for potential future access sites.*
- f) *Clearly establish use priorities for public boat landing and docks.*

Goal #4: Protect existing water quality in the May River.

- a) *Maintain the ORW standards for the May River.*
- b) *Investigate waste management practices in the watershed (including failed septic systems and animal waste).*
- c) *Investigate construction and post-construction stormwater controls.*
- d) *Establish a water quality baseline at the sub-watershed level and develop a threshold model for the May River.*
- e) *Coordinate with County on septic system inspection program.*
- f) *Identify potential land acquisition and conservation easement opportunities.*
- g) *Investigate incentive programs for best management practice implementation for existing lots of record.*
- h) *Document and clarify policies and responsibilities for oil spill response.*
- i) *Coordinate with the SCDOT on maintenance of existing best management practices (BMPs), and to enhance BMPs on new public roads.*
- j) *Evaluate land use for consistency with Clean Water Task Force recommendations.*

Goal #5: Increase outreach and education about the May River.

- a) *Establish what type of information users of the May River need.*
- b) *Develop a programmatic approach to education and outreach.*
- c) *Develop a primer for new residents.*

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- d) *Expand outreach to target boat rentals from outside of the May River.*
- e) *Establish a school education program about the May River.*

Goal #6: Enhance and expand local decision-making to protect the May River.

- a) *Document and understand existing jurisdictions.*
- b) *Determine approaches for inter-governmental management of the May River.*
- c) *Explain the impact of the May River on the Bluffton economy and community character.*
- d) *Examine the local stormwater ordinance to ensure that it results in implementation of ordinance goals and objectives.*
- e) *Review and revise the Waterbody Management Plan every five years.*
- f) *Investigate the formation of a May River Stewardship Program.*

Issues, Conflicts, and Opportunities

After establishing the goals and objectives, the Project Team and PAC analyzed them against what was learned from the Inventory of Existing Conditions. The analysis process resulted in the identification of the issues, conflicts and opportunities which become the basis of all recommendations of the waterbody management plan. The Issues, Conflicts and Opportunities identify recurring points of discussion or interest (issues), elements that may create conflict or stand in the way of achieving the goals and objectives (conflicts), and possible, yet realistic options for overcoming the challenges (opportunities).

Issues

An issue is a point or matter of discussion, debate or dispute, and in most cases, is a matter of public concern. Issues tend to be recurring topics, often involving multiple, interlocking layers of problems. The key for planning is to attempt to not only identify the issues, but also to try to understand their composition and why they persist. The issues will inevitably provide the basis for most planning decisions as a result of the analysis. An analysis of the Inventory of Existing Conditions identified the following as potential issues facing the May River for discussion by the Project Advisory Committee:

1. Increase in population.
2. New residents unfamiliar with River, history, and ecology.
3. New residents likely to increase competition for River access.
4. River located within multiple jurisdictions (Town and County).
5. High seasonal demand for public boat launches
6. Sensitive environmental physical conditions in Middle River and Headwaters.
7. Sensitive wildlife populations occurring in Middle River and Headwaters.
8. Limited documentation of boating use, including uncertain estimates.
9. Limited documentation of public boat landing use.
10. Limited on-water enforcement of State boating laws.
11. Increased need for Spanish speaking interpretation

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12. Planned Unit Development agreements in place with differing standards.
13. Limited number of existing public water access points.
14. Limited parking at existing public access points.
15. Increasing trend in fecal coliform counts in headwaters of River.
16. Heavy natural runoff into Headwaters.
17. Low surface water flushing rate in Headwaters.
18. Unconsolidated water quality monitoring throughout River.
19. Inconsistent water quality monitoring parameters throughout River.
20. Erosion hotspots in portions of River.
21. Historic erosion control structures, some requiring repair or replacement.
22. Competition among uses at public launches and docks.
23. Limited vessel pump-out availability on River.
24. Heavy seasonal boat use at local sandbars.
25. Harvest of shellfish resources by Out of State residents.
26. Use of public boat landings by Out of State residents.
27. No local rules regarding tubing, water-skiing, or SCUBA diving.
28. Multiple regulatory authorities operating within waterbody.
29. Land uses and land use controls differ along the River.
30. Historic water-dependent uses exist which require protection.
31. The character of the community may be changing.
32. The economy of the community may be changing.
33. Aging septic systems in some sections of the River.
34. Characteristics of viewsheds are undocumented.
35. Limited prioritization for land acquisition or conservation near Headwaters.
36. Lack of speed signs for boaters.
37. Lack of public restroom facilities at boat landings.
38. Boating speed is not controlled near sensitive environments.
39. Lack of incentives or requirements for existing lots of record in Old Town to implement stormwater BMPs.
40. Lack of local management or regulatory designation over waterbody.
41. Little clarification of dock lighting requirements or regulation.
42. Limited amount of boater education and outreach.
43. No areas designated as no-wake zones.
44. Changes in land use.
45. Increases in stormwater runoff.

Conflicts

Conflicts are a state of disagreement or disharmony between actions and desired outcomes. These competing interests may result in conflict. As with issues, once the underlying causes of conflicts are identified and understood, developing planning solutions is considerably easier. The following are potential or perceived conflicts that may exist currently or in the foreseeable future in the May River:

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Goal # 1: Protect natural resources of the May River.

a. Keep oyster beds open for harvest.

- Increase in stormwater runoff has been identified.
- Increases in fecal coliform may result in negative water quality classification change resulting in closure of oyster beds.
- Assessment of oyster stock is not identified as a priority for any agency or group.
- Limited management or restoration of oyster stocks is occurring.
- Aging septic systems and poor waste management may present a conflict with objective.
- Changes in land use may increase stormwater and fecal coliform loading.

b. Document the ecology, flora and fauna of the River.

- State and federal agencies and local universities are not actively documenting aspects of the flora and fauna, although some private and local groups may be.
- Documentation of past ecological inventories is not consolidated.
- Interaction between ecological niches, particularly benthic habitats and breeding habitat, is not well understood.
- Past studies require replication in order to ensure reliability of baseline data.
- The May River is an ideal laboratory for studying and researching coastal ecology and dynamics but use is limited.
- Funding for documentation is competitive, but potentially available.

c. Determine if trends are indicating increases or reduction in health of the system.

- Lack of data creates a conflict for this objective.
- Monitoring and analysis of trends are sporadic and results are unconsolidated.
- Trends data, particularly for water quality, require consistent monitoring devices, including local weather stations and tide gauges.
- Limited water quality data sharing results in potential for overlooking trends.

d. Increase understanding of breeding habitats.

- Documentation and investigation of in-water breeding habitats for fish, and aerial breeding habitat for birds, is sporadic.
- Food source life cycles and habitat preferences for larvae are not well understood.
- Important in-water habitats have not been mapped.

e. Protect and enhance natural buffers and eroding shorelines.

- Few upland vegetated buffers remain in some areas of the River.
- Limited incentives exist to encourage buffering in already developed areas along River.
- Potential future development in Headwaters drainage may reduce existing buffers.
- Local enforcement of clearing restrictions is relatively new.
- Local guidance on restoration and protection of natural buffers is limited.
- Erosion hotspots are documented to exist throughout the River.
- Aging erosion control devices exist throughout Study Area.

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Goal # 2: Promote safe and responsible operation and use of vessels in the May River.

a. Prepare a boating management plan.

- Boat use estimates are lacking for the May River.
- Boating conflicts have been anecdotally reported to be rising.
- Future residents and visitors will likely increase the potential for conflicts.
- Boating knowledge level and outreach is inconsistent around the River.
- Limited on-water enforcement of State boating laws occurs.
- Boater outreach requires coordination.
- Documentation of boating rules, regulations, and requirements for River is limited.

b. Facilitate compatible recreational uses of the May River.

- Conflicts between recreational fishers and boaters occur at public docks and boat landings.
- Speed of vessels near swimming areas and public boat launches may pose conflicts.
- Increase in population results in increase in demand.
- SCUBA diving and watersport activity are not well documented in the River.
- Use of motorized vessels is increasing in the River.
- Use of non-motorized vessels is increasing in River.

c. Educate boaters and dock owners about the tides and character of the May River.

- Boaters, particularly visitors, are unclear about the boating conditions and tides on the River.
- Visitors renting vessels in nearby communities are unfamiliar with the rules or the waters of the May River.
- Many new boaters and dock owners are unfamiliar with the tidal range.
- Many dock owners are uncertain about maintenance and management of docks.
- Little clarification about dock lighting requirements or regulation.
- Limited amount of boater outreach and education.

d. Enhance enforcement on River.

- Limited on-water enforcement of State boating laws occurs.
- State law enforcement agencies are understaffed to provide full enforcement.
- Jurisdictional boundaries for on-water enforcement are unclear.
- Docking for the Bluffton Police boat is uncertain.
- Multiple regulatory authorities.

e. Establish rules for moorings.

- An increase in population generally increases the number of boats, and moorings are already increasing on the River.
- Limited enforcement of moorings exists in May River.
- Moorings may have adverse impact if inappropriately sited.
- Limited documentation of mooring and boat use.

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- Few vessel pump-out options currently exist in May River.

f. Investigate options for managing personal watercraft use.

- Limited documentation of boating use exists.
- Limited enforcement of boating laws.
- No boating laws are specific to personal watercraft use.
- No restriction on use of vessels in shallow water.
- No areas designated as no wake zone or specific speed control areas.

Goal # 3: Promote appropriate public access to the May River.

a. Protect and enhance existing public access points.

- Increase in population results in increased demand for access.
- Competition exists at some public boat landings and docks.
- There is a limited number of existing public access points.
- Some public access points are co-located with historic water-dependent uses requiring protection.
- Limited parking exists to support additional use at current access points.
- Existing informal access points have not been mapped.

b. Identify the likely need and locations for future public access and improvements.

- Changes in land use may preclude future public access.
- Planned unit development agreements do not necessarily require waterfront public access.
- Future access improvements will require design, permitting and construction considerations.

c. Document and protect the attributes of significant May River viewsheds.

- Existing viewsheds have been sporadically documented.
- The attributes of important viewsheds have not been documented.
- Viewshed protective measures are not necessarily strong.
- Documentation needs to occur prior to considerable alteration of landscape.

d. Protect and enhance public right of ways to the May River.

- Documentation of public rights of way has been limited.
- Future development may impact on existing public rights of way.
- Use standards for rights of way have not been consistently developed.

e. Identify funding opportunities to target for potential future access sites.

- Funding for access acquisition is competitive and scarce.
- Research is needed to develop the list of possible funding sources, and maintenance of the list is essential.
- Documentation of proposed future access sites is not currently available.

f. Clearly establish use priorities for public boat landing and docks.

- Limited education or signage explains rules of use.

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- Potential for increased conflict is present.
- Language barriers may adversely impact understanding.

Goal # 4: Protect existing water quality in the May River.

a. Maintain the ORW standards for the May River.

- Fecal coliform trends data impacts on this objective.
- Lack of data creates a conflict for this objective.
- Monitoring and analysis of trends are sporadic and results are unconsolidated.
- Limited water quality data sharing results in potential for overlooking trends.

b. Investigate waste management practices in the watershed (including failed septic systems and animal waste).

- Waste management practices throughout the River are inconsistent.
- No specific regulation exists for maintaining or inspecting septic systems.
- The impact of failing systems is not quantified.
- The existing waste management infrastructure is not fully mapped.

c. Investigate construction and post-construction stormwater controls.

- Multiple agencies have authority over stormwater management.
- Management approaches, while similar, are not fully complementary throughout River.
- The Town has recently commenced local inspection and management.
- Enhanced coordination is necessary to ensure on-the-ground results.
- Lack of data creates a conflict for this objective.
- Monitoring and analysis is sporadic and results are unconsolidated.

d. Establish a water quality baseline at the sub-watershed level and develop a threshold model for the May River.

- Lack of data creates a conflict for this objective.
- Monitoring and analysis of trends are sporadic and results are unconsolidated.
- Trends data, particularly for water quality, require consistent monitoring devices, including local weather stations and tide gauges.
- Limited water quality data sharing results in potential for overlooking trends.
- Resources to undertake this effort need to be identified.

e. Coordinate with County on septic system inspection program.

- Bluffton currently has no septic system ordinance.
- Management and regulation of septic systems varies between Town and County.
- State manages and permits septic systems and has primary responsibility for installation and safety.

f. Identify potential land acquisition and conservation easement opportunities.

- Land acquisition opportunities have not been well documented.
- Funding for land acquisition is scarce.
- Conservation easement opportunities have not been well documented.
- Planned future land use in headwaters area may present conflicts with objective.

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g. Investigate incentive programs for best management practice implementation for existing lots of record.

- No incentives currently exist to encourage installation of best management practices.
- Additional, targeted outreach and education will be necessary to provide technical advice to homeowners.
- Financial assistance may be necessary to encourage installation of best management practices.

h. Document and clarify policies and responsibilities for oil spill response.

- Multiple jurisdictions and authorities exist within the River to address this issue.
- The chains of command and communication regarding oil spill response is unclear.
- Greater coordination and dissemination of information for response is necessary.

i. Coordinate with the SCDOT on maintenance of existing best management practices (BMPs), and to enhance BMPs on new public roads.

- Documentation of local preferences for BMPs on public roads is limited.
- Coordination between local government and DOT must occur early in planning process.
- Support from other State agencies may be required to encourage and facilitate coordination.

j. Evaluate land use for consistency with Clean Water Task Force recommendations.

- Multiple committees are currently tasked with performing this evaluation.
- Limited coordination is occurring between the committees.

Goal #5: Increase outreach and education about the May River.

a. Establish what type of information users of the May River need.

- The new demographics and population of the May River user groups is relatively undocumented.
- Study to determine the level of knowledge and interest in issues identified as part of this investigation is necessary.
- Prioritization of issues will be necessary to mount an effective education campaign.

b. Develop a programmatic approach to education and outreach.

- Programmatic approach requires consistent branding and format.
- Development of program will require resource allocation.
- Program message may require foreign language translation.

c. Develop a primer for new residents.

- Preparation of outreach material that discusses the May River will require coordination and resources.

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- Distributing information will require coordination and resources.
- d. Expand outreach to target boat rentals from outside of the May River.*
 - Preparation of outreach material that discusses the May River will require coordination and resources.
 - The message for rental boaters would require thoughtful consideration.
 - The regional nature of this issue suggests that a coalition approach be established rather than any individual agency.
- e. Establish a school education program about the May River.*
 - Preparation of outreach material that discusses the May River will require coordination and resources.
 - Coordination with local schools and resources necessary.
 - New programs should not detract or interfere with existing curriculums.

Goal # 6: Enhance and expand local decision-making to protect the May River.

- a. Document and understand existing jurisdictions.*
 - Multiple jurisdictions overlap along the River, many with differing standards and enforcement.
 - The extent of jurisdictional boundaries is not well understood by the agencies.
 - Jurisdictional boundaries are not currently mapped.
 - Consolidation for enforcement and management may be possible.
 - Limited coordination between agencies occurs
- b. Determine approaches for inter-governmental management of the May River.*
 - Multiple jurisdictions, each with different criteria for decision-making.
 - Regulations are not consistent throughout River.
 - Multiple agencies with authority over multiple activities.
 - Processes for modification of rules, regulations and authorizations differ.
- c. Explain the impact of the May River on the Bluffton economy and community character.*
 - The economic impact of the May River on the local and regional economy is not well documented.
 - The impact of the May River on the local community character is somewhat documented, but could be enhanced.
- d. Examine the local stormwater ordinance to ensure that it results in implementation of ordinance goals and objectives.*
 - Pre and post monitoring is necessary to achieve this goal.
 - An impartial organization may be necessary to audit the success of the ordinance and provide feedback to the Town.
- e. Review and revise the Waterbody Management Plan every five years.*
 - Preparation and revisions will require coordination and resources.

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f. Investigate the formation of a May River Stewardship Program.

- No clear framework currently exists for such a program.
- No leadership committee has been identified to accomplish this task.

Opportunities

Opportunities can be seen as advantageous circumstances or a combination of such circumstances, and it can also be a chance for progress or advancement. Opportunities are options available for a community to promote the goals and objectives of the waterbody management plan towards the solution of issues and conflicts. Opportunities are the way to get planning from idea to action. Having followed a rational planning process moving from inventory to analysis of issues, conflicts and objectives, the identification of prospects to make beneficial changes is highly rewarding. The challenge in this section is to seek creative, yet realistic approaches to addressing the issues and conflicts identified earlier using the resources available to the community.

The possible opportunities presented here are intended to provide some of the possible approaches to addressing the issues and conflicts identified as part of the analysis and may be advanced as appropriate. Additional review of these opportunities by the PAC and Project Team resulted in the identification of Implementation Priorities that would be best to advance first. The following opportunities would, if advanced, also advance the Goals and Objectives of the May River Waterbody Management Plan.

Goal #1: Protect natural resources of the May River.

a. Keep oyster beds open for harvest

- Collaborate with DNR, local harvesters, and scientists to promote a regular stock assessment.
- Reinvigorate the SCORE program in Bluffton to restore reefs.
- Encourage oyster gardening by residents, schools, and community groups along the River.
- Include protection of oyster beds as a common theme for protecting water quality in education and outreach.

b. Document the ecology, flora and fauna of the River.

- Determine what would encourage the scientific community to study the May River.
- Create a bibliography and digital database of all past scientific reports related to the May River.
- Identify a list of research information that could be collected and provide the list to universities to foster student projects.
- Determine what local groups are already documenting the flora and fauna, using what methods, how frequently, and where data resides.

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c. Determine if trends are indicating increases or reduction in health of the system.

- Support DHEC in monitoring for fecal coliform trends and establish a joint sampling protocol that results in a local/state partnership for this monitoring effort.
- Seek to collect copies of all sampling activities, utilizing a standard protocol, relevant to water quality monitoring from state, local, and private concerns in the May River.
- Create a digital database of all water quality monitoring data collected that is accessible to all interested parties for analysis that is clear in describing the level data of reliability.
- Determine and implement necessary monitoring devices, including weather gauges and tidal gauges.

d. Increase understanding of breeding habitats.

- Compile all existing information about breeding habitats in the May River from previous studies.
- Encourage scientific investigation of breeding habitats in the River by outside investigators.
- Encourage GIS mapping of all sensitive breeding habitats for incorporation into DNR, DHEC, and Town decision-making databases.

e. Protect and enhance natural buffers and eroding shorelines.

- Establish guidelines or ordinances for restoration or enhancement of natural buffers.
- Create a list of native species to be used in natural buffer projects.
- Prepare a digital inventory of all bulkheads located along the River.
- Establish local guidelines or ordinances regarding replacement or enhancement of bulkheads.

Goal# 2: Promote safe and responsible operation and use of vessels in the May River.

a. Prepare a boating management plan.

- Prepare an outline for a boating management plan for the May River.
- Establish a boating management committee including DNR, DHEC OCRM, Beaufort County, and local non-governmental organizations tasked with preparing a boating management plan for the May River.
- Coordinate with DNR to establish an official record of registered vessels using the May River.
- Prepare a survey protocol and undertake a survey of boat use in the May River collecting seasonal boat counts and trip origin data.
- Coordinate with non-profit groups, including Friends of the River, to undertake surveys.

b. Facilitate compatible recreational uses of the May River.

- Publish boating rules on signs at boat landings, including the rules about priority of use.

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- Work with County to establish a countywide strategy for boating management and compatible water use that each of the Towns can support.
 - Ensure bilingual information is available at or for boat landings.
 - Establish specific areas for recreational fishing and non-motorized vessel launching.
 - The Town and County can consider establishing local dock lighting ordinances to promote safety while stipulating the use of low-watt lights to preserve nighttime darkness.
- c. Educate boaters and dock owners about the tides and character of the May River.***
- The Town, in cooperation with boating NGOs, can prepare a new dock owners flyer which can be put on the Town website and distribute.
 - The Town can work with OCRM to require an information exchange at the time of sale of properties with docks.
 - The Town and County can include dock safety information in local permits for docks construction or repair.
 - The Town and County can work with USCG Auxiliary or local Power Squadrons to hold boater education classes in Town.
 - DHEC OCRM can consider including safety brochures with permits for new docks.
- d. Enhance enforcement on River.***
- The Town and County can partner to fund a seasonal, on-water law enforcement agent for South of the Broad.
 - The Town and County can develop a shared map of the extent of existing jurisdictions.
 - When Town patrol is on-water, perform an approximately hourly check and take a boat count at the sandbars.
 - Find a suitable docking location for Town Police Boat.
 - The Town and County should coordinate with DNR and DHEC OCRM to establish a definition of “boat wake”.
- e. Establish rules for moorings.***
- OCRM should inventory and inspect all existing moorings.
 - The Town and County should coordinate to determine if formal mooring areas are needed.
 - The Town and County can prepare a joint ordinance regulating live-aboard vessels, similar to Beaufort City.
 - The Town can prepare an ordinance prohibiting installation of a mooring without OCRM approval.
- f. Investigate options for managing personal watercraft use.***
- Perform a count and survey of personal watercraft in order to determine embarkation point.

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- Coordinate with DNR and General Assembly to develop specific PWC rules and regulations particularly restricting use of vessels in water less than 24 inches deep.
- Enforce existing boating rules and regulations for PWC and strengthen local enforcement over time.

Goal #3: Promote appropriate public access to the May River.

a. Protect and enhance existing public access points.

- Ensure that existing access sites remain public by establishing specific zoning for such places.
- Undertake a local study to quantify the users of existing public access points and determine their perceptions and needs.
- Seek to establish an official no-wake zone around the All Joy Landing, Old Oyster Factory and approaches.
- Establish specific areas for recreational fishing and non-motorized access throughout the River, even if for limited use.
- Establish a decal system for Town and County resident use of public boat launches and charge non-residents a fee for use.

b. Identify the likely need and locations for future public access.

- Analyze current population and projections to model growth and future access demand.
- Coordinate with County and Regional Plan Committee to identify possible acquisitions for public access.
- Identify areas in places zoned for Planned Unit Development (PUD) to determine if public access can be incorporated into development agreements.
- In headwaters, promote only the establishment of strictly non-motorized vessel launches.

c. Document and protect the attributes of significant May River viewsheds.

- Determine attributes and parameters of viewsheds.
- Perform a visual assessment inventorying scenic resources from land and from water.
- Use information gathered from scenic resource inventory to revise Town and County Comprehensive Plans.
- The Town and County can consider prohibiting the use of strobe lights on docks.
- The Town and County can coordinate with DNR and DHEC OCRM to remove derelict vessels.

d. Protect and enhance public right of ways to the May River.

- The Town and County can map all existing public rights of way.
- The Town and County can incorporate protection of existing public right of way in future PUD development agreements.
- The Town can establish specific rules regarding the use of public right of ways.

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- e. Identify funding opportunities to target for potential future access sites.*
- Coordinate with County and DNR to “package” public access projects for external funding.
 - Develop and update a “wish list” for public access sites and improvements including costs to be prepared for available grant opportunities.
 - Identify possible funding sources, including state and federal grants, private and non-profit grants, and County Water Recreation Funding.
 - Establish partnerships with non-governmental organizations and non-profits to increase eligibility for competitive grants for public access.
- f. Clearly establish use priorities for public boat landing and docks.*
- Post signs indicating the current rules for use at boat launches, ensuring readability by all residents and visitors.
 - Establish specific areas for recreational fishing and non-motorized access throughout the River, even if for limited use.
 - Increase enforcement presence at busy boat launches during peak periods to diffuse potential conflicts.

Goal # 4: Protect existing water quality in the May River.

- a. Maintain the ORW standards for the May River.*
- The maintenance of the existing standards should become the driving factor in decision-making at the Town level.
 - Consolidate monitoring data for analysis to determine trends more systematically and to enhance coordinating and sharing data.
 - Continue to trace and address illicit sources of fecal coliform pollution.
- b. Investigate waste management practices in the watershed (including failed septic systems and animal waste).*
- Determine if pooper-scooper law would be effective and how it would be enforceable through the Town’s stormwater ordinance.
 - Review manure management protocols at each equestrian center located within watershed.
 - Investigate opportunity for establishment of pump-out facility within the River.
 - Prohibit discharge of waste from vessels.
- c. Investigate construction and post-construction stormwater controls.*
- Ensure that existing stormwater control approaches are continuously updated.
 - Enhance the BMP design manual to clarify preferred approaches and additional options for stormwater management.
- d. Establish a water quality baseline at the sub-watershed level and develop a threshold model for the May River.*
- DHEC and the Town should collaborate with other scientists to develop a model directed to maintaining the existing level of water quality.

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- e. Coordinate with County on septic system inspection program.***
- The Town and County should establish a septic system management program that requires routine inspection and maintenance of private septic systems.
 - Train and certify local inspectors.
 - Prepare outreach material to assist residents with self-inspection and maintenance of septic systems.
- f. Identify potential land acquisition and conservation easement opportunities.***
- The Town can independently identify possible areas for acquisition and easements within the local jurisdiction in order to create a list that indicates local priorities.
 - Acquisition and easements should be sought within the headwaters section of the River for water quality protection.
 - Acquisition should be sought throughout the River for future public access and support opportunities.
 - Acquisition to support parking demand near boat launches and public access points should be identified.
- g. Investigate incentive programs for best management practice implementation for existing lots of record.***
- Prepare a list of best management practices that can be installed and the most appropriate place with in the Town and County for their installation.
 - Determine likely cost for installation of proposed best management practices.
 - Investigate Town purchase of rain barrels for residential use.
- h. Document and clarify policies and responsibilities for oil spill response.***
- Prepare and publish a guide to oil spill response for the May River.
 - Include discussion of scenarios, the appropriate agreed-to response and responsible parties.
 - Distribute guide to all local fire departments, and other relevant state and federal agencies.
- i. Coordinate with the SCDOT and Beaufort County on maintenance of existing best management practices (BMPs), and to enhance BMPs on new public roads.***
- Determine what future DOT projects are currently in planning stages within the Town.
 - Begin coordination for future projects as early as possible.
 - Provide DOT with copies of the Town stormwater ordinance and design guide.
- j. Evaluate land use for consistency with Clean Water Task Force recommendations.***
- Coordinate with Regional Plan Committee and Together for Beaufort tasked with reviewing Comprehensive Plans for consistency with the Clean Water Task Force recommendations to ensure that land use is analyzed.
 - Revise local comprehensive plan, as necessary, to incorporate recommendations.

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Goal #5: Increase outreach and education about the May River.

a. Establish what type of information users of the May River need.

- Perform an evaluation survey to determine the level of knowledge residents have about the May River.
- Identify language needs for future outreach activities.

b. Develop a programmatic approach to education and outreach.

- Coordinate with Clemson Extension, Sea Grant, USC Beaufort and DHEC Watershed Managers and Outreach staff to establish consistent branding and material for outreach.

c. Develop a primer for new residents.

- Coordinate with efforts of Together for Beaufort Initiative to refine a countywide primer to the May River.
- Work with realtors and property management agencies to help distribute primer to new residents.

d. Expand outreach to target boat rentals from outside of the May River.

- Prepare boating information pamphlet highlighting the sensitive nature of the May River and distribute to boat rental locations outside of the May River.
- Coordinate with boat rental companies to clarify whether they allow rented vessels to enter May River.

e. Establish a school education program about the May River.

- Support the Bluffton high School May River education course, including arranging for lectures or field trips by government and other organizations.
- Support the Kids in Kayaks program sponsored by Friends of the River.
- Approach private schools about including May River education programming in curriculum.
- Coordinate with South Carolina Aquarium, DNR and DHEC education staff to determine if additional support is needed.

Goal #6: Enhance and expand local decision-making to protect the May River.

a. Document and understand existing jurisdictions.

- Prepare a map indicating the on-water and landside extent of Town and County jurisdictions.

b. Determine approaches for inter-governmental management of the May River.

- Use the May River Waterbody Management Committee as an opportunity for coordination.
- Emphasize that consistent land use and protection across the watershed is necessary.
- Encourage development of consistent regulations between County and Town.
- Formalize agreements between Town and County through Memoranda of Agreement.

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- c. Explain the impact of the May River on the Bluffton economy and community character.***
- Undertake a local survey of social attitudes regarding the May River to quantify residents' perception of the River.
 - Coordinate with Beaufort County, Hilton Head-Bluffton chamber of commerce, State tourism board and businesses to determine the estimated economic impact of the River.
 - Coordinate with USCB Hospitality and Tourism classes to determine the best way to inventory and market the River's importance to the community.
 - If necessary, revise the Town's Comprehensive Plan to reflect the stated importance of the River on the economy and community.
- d. Examine the local stormwater ordinance to ensure that it results in implementation of ordinance goals and objectives.***
- Consolidate existing water quality data into a digital database for analysis and compare to existing water quality data from other scientific sources.
 - Develop an approach for monitoring the success of the local stormwater ordinance in achieving the stated goals and objectives.
 - Perform an independent team review and audit of the process for implementing the local stormwater ordinance and prepare a full report for the Town Council.
- e. Review and revise the Waterbody Management Plan every five years.***
- Task the Waterbody Management Plan Implementation Committee, and Town Planning staff, to review and update the plan every five years utilizing up-to-date information.
- f. Investigate the formation of a May River Stewardship Program.***
- Use the Waterbody Management Plan Implementation Committee to help develop a protocol for a River Stewardship program.

Implementation Priorities



May River Waterbody Management Plan

Implementation Priorities

The purpose of the Waterbody Management Plan for the May River is to attempt to address the impacts of competing uses on the waterbody over the next five years. Through the efforts of the Project Advisory Committee and the Project Team, a review of the analysis of Issues, Conflicts and Opportunities resulted in the identification of eleven actions and focus areas that would most likely advance the project goals and objectives and should be attempted first. These Implementation Priorities are designed to advance multiple goals and objective at the same time. The eleven actions are intended to be implemented programmatically, calling on the resources from various agencies and organizations identified as part of the Inventory and Analysis phases. Consistency and clarity in rules, regulations and policies that manage activities along the River is a recurring element to the Implementation Priorities. The most noticeable aspect is the clear necessity for the Town of Bluffton and Beaufort County to collaborate and work jointly on many of the initiatives.

The Implementation Priorities listed in this section include an Issue Background, specific Recommendations, Actions Required for Implementation, Responsible Parties, and Possible Funding Sources. The Priorities are designed to facilitate immediate implementation by identifying the “who, what, why and how” for recommendation. In addition, the Priorities are also designed to enable appropriate parties, such as the Town or County governments, to respond quickly to grant and other funding or scientific research opportunities. Perhaps most importantly, the Priorities are designed to provide a list of recommended, specific actions that can be expected to provide the most benefit to the protection of the uses of the May River over the next five years.

1. Establish an Implementation Committee comprised of members of the Project Advisory Committee tasked with ensuring coordination and implementation of the May River Waterbody Management Plan.

Issue Background

The Waterbody Management Plan is intended to identify actions to implement for the next five years in the May River. Successful implementation of any plan requires focus, continuity and commitment from a host of parties. In establishing the Project Advisory Committee for the development of the Waterbody Management Plan for the May River, the Town Council has demonstrated its commitment to inventory, assess, and study the River and its myriad uses. Continued commitment will be necessary to take the recommended actions further through to fruition. Involvement of various interest groups, local and regional experts, and stakeholders will be crucial to success.

Most of the members of the Project Advisory Committee are also members of other State, County, and Town committees and organizations, and the knowledge of what other groups are doing was extremely beneficial. Although all are busy, most of the Project

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Advisory Committee members expressed that bringing together the various members to discuss and analyze information specifically in regard to the management of the May River was uniquely productive and enabled considerable cross-pollenization of ideas. The establishment of a single, overarching group that is tasked by and answerable to the Town Council to oversee the implementation of the May River Waterbody Management Plan would establish the continuity and focus needed to achieve the goals and objectives of the plan.

Recommendations

- Mandate the creation of a Waterbody Management Implementation Committee comprised mainly of Project Advisory Committee members tasked with coordinating implementation of the plan, and beholden to the Town Council.
- Ensure routine coordination through the development of subcommittees and holding regular meetings that result in productive and measurable results in implementing the Waterbody Management Plan.
- Task the Waterbody Management Implementation Committee with updating the plan in 2012.

Actions Required for Implementation

The Implementation Committee should be tasked with ensuring the execution of the implementation strategy and should report to the Town Council at least quarterly, or at the direction of the Council.

The Implementation Committee should also include representatives appointed by the County Council to represent them in the implementation.

The Committee should be led by a chairperson who is appointed by the Town Council responsible for overseeing productive execution of the strategy.

The Committee should seek cooperation and buy-in from the relevant agencies and organizations.

The Committee should prepare a schedule and task list for the implementation of these recommendations.

Responsible Parties

Town of Bluffton (lead) and Beaufort County; in coordination with DHEC-OCRM, DHEC-EQC, Sea Grant, and other members of the Project Advisory Committee.

Possible Funding Sources

No significant funding needs are anticipated that could not be covered by existing funding sources.

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2. Develop a Water Quality Database for the May River and ensure that monitoring data is collected and compiled in a consistent manner.

Issue Background

Water quality in the May River has historically been regarded as very high as evidenced by the waterbody being designated as Outstanding Resource Waters (ORW) by the State. The first comprehensive water quality sampling program in the River was undertaken as part of the May River Study between 2002 and 2004 and established a relative baseline for water quality in the system. Official monitoring of water quality continues under the auspices of DHEC-EQC at ambient monitoring stations and by the Town of Bluffton. In addition, local residents perform volunteer water quality monitoring, as do several development companies as a condition of their development approvals.

Since 2004, no consolidated water quality monitoring protocol or program has been consistently undertaken in the May River that is designed to provide a comprehensive picture of water quality. Water quality data is collected by diverse sources, at various locations in the River, and for multiple purposes. A lack of continuity in sampling, analysis, and reporting of the results of this data, coupled with limited accessibility to the information makes system-wide assessment difficult. Analysis of water quality data is also made difficult because staff and financial resources are limited.

Recommendations

- Develop a central water quality database capable of housing all water quality data collected in the May River for independent analysis.
- Use collected information to prepare a current baseline of water quality.
- Establish a monitoring protocol that would test for a consistent suite of water quality parameters that can be utilized within the May River.

Actions Required for Implementation

A water quality monitoring protocol should be established that requires all sampling undertaken as part of local permit or development approval to sample, analyze and report on the following parameters:

- Ammonia
- Chlorophyll-A
- Dissolved Oxygen
- Fecal Coliform
- Nitrate/Nitrite
- pH
- Precipitation
- Salinity/ Specific Conductivity
- TKN
- Total Nitrogen (TKN and NO₃/ NO₂)
- Water/ Air Temperature
- Total Phosphorus
- Total Suspended Solids
- Turbidity.

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Qualified scientists should undertake an initial analysis of existing water quality data and the results should be documented and reported to the Town Council and other interested parties.

All new water quality data collected should be uploaded to the water quality database, and a quarterly analysis of water quality conditions should be prepared and reported.

Efforts should be taken to encourage private entities that are currently sampling water quality in the May River to share the data that they have collected.

Responsible Parties

Town of Bluffton (lead) and Beaufort County; in coordination with the May River Water Quality Technical Advisory Committee.

Possible Funding Sources

EPA Region 4 may be capable of providing funding through a Regional Environmental Priority Project (REPP) grant opportunity (similar to EPAR4OPM0701 from 2007) if available in 2008 and beyond.

EPA Region 4 may be capable of providing funding through a Wetland Program Development Grant (EPA-REG-4-08-02).

DHEC-OCRM may be capable of providing technical assistance and funding through a Community Assistance Grant utilizing Coastal Non-Point Program funding in FY 2008.

The Town and County may be capable of collaborating to provide funds to support long-term, consistent monitoring and data management.

3. Protect and enhance existing public access points along the May River.

Issue Background

The projected population increase within the May River Study Area indicates a pending need for enhanced public access to the River for a variety of uses. An increase in users may result in exacerbation of existing congestion at some public boat landings in the future. Enhancement and improvements in the efficiency of existing public access points would result in local benefits in the short-term. Inefficiency exists at some current boat launches due to multiple uses, such as recreational fishing and motorboat launching, occurring at the same creating conflicts and competition for space. Existing rules and regulations, including prioritization of uses at public landings, are not clearly posted at some landings.

Opportunities for the development of additional large-scale public access points are limited due to few parcels in public ownership along the water that are currently undeveloped. Funding for the development of new public access points is limited and

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smaller access points may be easier to identify and fund. Additionally, small-scale public access points may result in less competition and reduced environmental impacts associated with larger public access points.

Recommendations

- Identify opportunities to separate fishing and boating activities at existing landings, including establishing “fishing only” piers or docks.
- Identify potential future access site opportunities through the County Rural and Critical Lands Program and other groups, and identify possible funding avenues for additional small-scale public River access points.
- Enhance outreach at existing boat landings through kiosks and signage, and specifically include rules, regulations, and priorities for use at public landings.

Actions Required for Implementation

Establishing small piers or docks dedicated for recreational fishing at existing public boat landings and public access points may help to relieve some of the conflicts for space that have been documented.

Action should be taken to identify and attempt to acquire small tracts of waterfront property through purchase or easement that may result in significant additional public access to the River while still limiting adverse impacts on the community and environment. Consideration should be given to parking constraints, security, and access limitations when considering acquisition for small-scale public access.

Kiosks and signage at existing boat landings and other public access points should be updated to explain existing rules and regulations in order to help alleviate conflicts. Bilingual signage may be necessary to ensure that all users are aware of the rules and regulations at public access points and should be considered.

Responsible Parties

Town of Bluffton (lead) and Beaufort County Critical and Rural Lands Program, Beaufort County Public Works Department. Local resident and Homeowner Association participation in agreeing to Riverfront easements.

Possible Funding Sources

USFWS may be capable of providing funding for additional small-scale access points for boating through a Boating Access grant funded as part of the Sport Fish Restoration Act.

County Critical and Rural Lands Program may be capable of providing some funding and technical assistance for the acquisition of waterfront easements or parcels for public access.

The Town may consider establishing a fund with the purpose of acquiring and enhancing small-scale public Riverfront access points.

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4. Document the flora and fauna of the May River.

Issue Background

Considerable ecological inventory and research was undertaken in the May River as part of the May River Report. The report documented a baseline of conditions, habitats, and biological diversity found in the River in the early part of this century. Since completing the studies, limited additional research has been undertaken on assessing the ecological health and diversity in the May River, particularly in response to changes in the surrounding land uses. Additional information needs have been discussed, including investigation of the health of benthic communities that comprise an important food source for higher trophic levels in the River, although no list of specific research priorities yet exists.

In addition, the rare and unique nature of the conditions and ecology of the May River presents a unique opportunity to promote research and investigation by scientists and students from throughout the country. Information that is collected during these studies would benefit local managers and decision-makers and help to keep the level of knowledge about the ecology of the River up-to-date. By consolidating and packaging existing scientific information that has been collected for the May River, and making it readily available for researchers to use, there is a greater likelihood that the local, regional, and national scientific community may be more inclined to perform research in the system. In particular, consistent analysis of benthic and breeding habitats would provide significant indication to decision-makers about the health and stability of the May River ecosystem.

Recommendations

- Identify and publish a list of ecological research needs for the River in order to stimulate needed research and coordinate with local, regional, and national scientists to encourage study of the River.
- Encourage routine benthic analysis to record change in the foundation of the ecosystem.
- Work with DNR and other scientists to establish a consistent protocol for data collection in the May River.

Actions Required for Implementation

A small group of local and regional scientists should be convened to identify specific courses of ecological and benthic research that are needed in the May River, and identifying researchers and institutes that undertake such research would narrow the scope. The group should be tasked with preparing a list for the Town Council's consideration.

All relevant existing research papers should be packaged and made available to the public, as started with the Inventory component of the May River Waterbody Management Plan. This information should be made available in electronic format to any interested researcher.

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Coordination with local and regional universities should be on-going to indicate that the Town would provide reasonable in-kind support to professional researchers, and responsible graduate students associated with primary investigators, would improve the likelihood that consistent research would occur in the system. In addition, requiring scientists utilizing the River to share their data with the Town would provide additional information to decision-makers.

Encouraging local universities to use the May River during hands-on biology, sediment chemistry and other science classes at the undergraduate and graduate levels, and to share the results with the Town, would provide additional, routinely collected data.

A consistent protocol for ecological data collection from the River that can be provided to prospective researchers to ensure that data collected is useable by local decision-makers should be prepared in coordination with DNR.

Responsible Parties

Town of Bluffton (lead), Waterbody Management Plan Implementation Committee. Coordination with DNR, local universities, and DHEC-OCRM.

Possible Funding Sources

US Fish and Wildlife Service may be capable to provide funding through a Coastal Program grant (COASTAL-08).

National Science Foundation may be capable to provide funding through a Geo Education grant award or an Ecosystem Science (grant # PD-04-7381) award.

5. Develop different education and outreach programs specifically targeting schools, boaters, homeowner associations, local decision-makers and staff, and residents.

Issue Background

The need for education about the May River, its natural and cultural resources, human uses, and sensitivity was identified in almost all aspects of the analysis for the Waterbody Management Plan. Specifically, information needs differ between the current and future residents, as well as different user groups, such as boaters, new dock owners, and new upland homeowners. These differences create a need for multiple education and outreach programs targeting the appropriate groups. Outreach is needed to residents, especially new homeowners, to help them understand the “dos and don’ts” of living in a sensitive ecosystem. Other education is needed to ensure that boaters who use the River are aware of and abide by the existing boating regulations. Finally, a programmatic approach is needed to turn the May River into a living classroom for local school children and to incorporate study and understanding of the River into the existing curriculum.

Considerable education and outreach material is already available on the importance of coastal ecosystems. Duplication of existing efforts should be avoided, however

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information should be augmented to focus on the specifics of the May River system wherever possible. Continuity between education and outreach programs should be maintained, including utilizing consistent terms, symbols, and tone. Local outreach needs must first be determined, along with the most effective methods of reaching the target audiences, such as new residents receiving information at their real estate closing, coordination of speakers at Home Owner Association meetings, printed handout materials, or additional sign postings at boat ramps. Education and outreach should be specifically targeted in information and delivery to meet the needs of the boating community on safe and responsible boating in the May River, formal education in the K-12 classrooms, and advice for new and current residents.

Recommendations

- Identify the various educational needs of each of the target audiences.
- Establish a programmatic, inter-relational education curriculum and materials that can be used locally and discuss local information.
- Establish a sub-committee tasked with preparation and implementation of education and outreach material and programming, and avoids duplication of effort among other agencies and organizations.

Actions Required for Implementation

Preparing and administering a standard survey designed to identify the various stakeholder education and outreach needs is necessary in order to ensure the usefulness of outreach information and to avoid duplicity. Assistance in designing and administering the survey should be sought from the University of South Carolina at Beaufort from the Early Childhood Education and Psychology departments, ACE Basin NERR outreach staff, and South Carolina Sea Grant.

Coordination should begin with the Bluffton School District, and engaging environmental education professionals from various state and federal agencies would be beneficial in developing in-school and outdoor classroom activities that promote early and continued understanding of the May River ecosystem and natural history. Activities could include water quality sampling as part of math and science curriculum, and other hands-on activities coupled with classroom programming.

Developing handout and outreach material to be distributed to new homeowners, through local tax bill mailings, presentation at HOA meetings, at boating club meetings, at local fishing spots and tackle stores, and on the Town and County websites.

The Implementation Committee should be responsible for ensuring that the appropriate message and information is reaching the necessary audience. The Committee should be required to specifically report on progress to the Town Council.

Responsible Parties

Town of Bluffton (lead), coordinating with the Bluffton School District, USC Beaufort, Sea Grant, ACE Basin NERR outreach staff, and DNR outreach and education staff.

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Coordination with local non-governmental organizations including Friends of the Rivers to assist with survey data collection.

Possible Funding Sources

Funding may be available to a school to implement innovative curriculum through an NEA Foundation Student Achievement Grants (up to \$5,000 with proposals due in February, June and October).

Funding for outdoor classroom activities may be available through a Lowe's Outdoor Classroom Grant Program award. Specific environmental outreach grants may be available through Captain Planet Foundation funding or a NOAA Formal Environmental Literacy Grant (grant # SEC-OED-2009-2001282).

6. Establish consistent rules and regulations for stormwater management and septic system management at both Town and County levels within the May River study area.

Issue Background

The May River is located partly within the Town of Bluffton's municipal boundary and partly within Beaufort County. While state and federal authorities over natural resources or boating uses are consistent throughout the study area, the differences between management and regulation at the local level is apparent. The resources and uses of the May River are equally important to County residents as they are to residents of the Town, and the desire to use and enjoy these resources responsibly are not bound by corporate limits. Both governing bodies have recently considered reviewing their respective rules and regulations to establish a consistent set of practices that can be administered uniformly along the River. This represents an important and necessary aspect in the protection and enhancement of the May River.

Both Beaufort County and the Town of Bluffton have established stormwater and sediment management rules that are more innovative and protective of water quality than the state. Both agencies have recognized the importance of promoting sensitive use and enjoyment of the River and considered the implementation of a River Protection Overlay zoning district, which enables more careful consideration of impacts from riverfront land use. Both also recognize the importance of managing docks, in-water structures, and boating use in order to protect the use of the resources, human health and safety, and sound management of the system. However, a consistent set of ordinances and environmental protection programs has not been established that crosses the municipal limits. After reviewing the existing regulations, ordinances, and programs for protecting the May River from each government, the Town and County should meet to establish a consistent set of rules for the entire May River system.

Recommendations

- Promote coordination between Town and County governments to develop consistent rules and regulations.

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- Develop model stormwater and septic system ordinances that can be considered by both governments.
- Coordinate to ensure that inspection of septic systems occurs throughout the Study Area.

Actions Required for Implementation

The Implementation Committee should prepare an analysis of the existing Town and County regulations for stormwater management and identify and draft language that both the Town and County can adopt to make the programs consistent.

The Committee should prepare a draft septic ordinance that can be adopted by both the Town and County, including inspection requirements, inspection triggering events, and an appropriate inspection fee structure.

Responsible Parties

Town of Bluffton and Beaufort County (leads); coordinating the Implementation Committee and DHEC-OCRM and DHEC-EQC.

Possible Funding Sources

No significant funding needs are anticipated that could not be covered by existing funding sources.

7. Coordinate with DHEC and other parties to develop a water quality “threshold model” for the May River.

Issue Background

Water quality rules at the federal and state level are based primarily on the federal Clean Water Act. Regulations that implement the Act essentially permit an applicant to have some restricted level of impact to water quality as a condition of their permit. While the process reduces the potential scope of unregulated water quality impacts, it inevitably does allow some level of water quality degradation. One approach to determining a limit to the amount of degradation that would be allowable within a waterbody is through the calculation of a Total Maximum Daily Loading, or TMDL. This calculation helps to determine the maximum amount of nutrient or chemical that can be released into a waterbody each day in order to meet a certain threshold. In brief, a TMDL determines how much degradation is acceptable to a waterbody before water quality impairments occur. A TMDL is typically calculated for waterbodies that already exhibit some type of water quality impairment.

In the May River, no significant water quality impairment exists, and a TMDL would not generally be developed. However, since the certification of shellfish harvesting grounds is dependent upon water quality testing meeting a specific threshold for fecal coliform counts, developing a “reverse TMDL” that could determine how much nutrient loading would result in the de-certification of shellfish grounds would be a valuable exercise. By establishing a water quality threshold that would still enable unconditional shellfish

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harvest, a calculation could be made to determine what quantity of loading would result in exceeding the safe threshold. Using this information, local stormwater ordinances and best management practices could be refined to attempt to keep nutrients from entering the River from upland sources below the threshold.

Recommendations

- Working with NOAA, DHEC EQC and OCRM, coordinate the development of a threshold model to determine the long-term effect of land-based nutrient and fecal coliform inputs on the May River.
- Run the threshold model to identify potential future trends in local water quality.
- Publish a scientific paper describing how the Town and its partners developed the threshold model and its applicability for other areas of the coast.

Actions Required for Implementation

DHEC-OCRM and DHEC-EQC should coordinate to identify the necessary information needed to prepare the threshold model.

Once prepared, the model should be run and results analyzed and verified based on existing conditions.

The Implementation Committee should prepare a report to the Town Council indicating the findings of the threshold model analysis and recommend actions as appropriate.

The Committee should also have a scientific paper prepared and published on the application of the model.

Responsible Parties

DHEC-EQC and DHEC-OCRM, Town of Bluffton, Beaufort County (leads).
Coordination with relevant academic institutions and NOAA scientists.

Possible Funding Sources

Funding may be available through the National Science Foundation.

EPA Region 4 may be capable of providing funding through a Regional Environmental Priority Project (REPP) grant opportunity (similar to EPAR4OPM0701 from 2007) if available in 2008 and beyond.

EPA Region 4 may be capable of providing funding through a Wetland Program Development Grant (EPA-REG-4-08-02).

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8. Accelerate land acquisition and preservation along the May River, particularly in the headwaters section, at the county and town levels.

Issue Background

Analysis performed as part of the development of the Waterbody Management Plan indicated that the headwaters section of the River, coupled with the various tidal creeks, presented the most sensitive ecological conditions in the system. Although some hypoxic conditions may occur naturally during the summer season, significant overland flow into these areas may provide an avenue for future increased nutrient deposition should significant development occur. Acquisition, both fee simple and through conservation and other easement mechanisms, may prove to be the most effective methods of protecting water quality in the headwaters area, and ultimately the rest of the River.

Acquisition is an expensive and time-consuming, yet highly effective means of protecting surface water quality, particularly if undertaken in the appropriate locations. Establishing a clear and focused approach to acquisition is vital to its success. Due to the high potential for overland flow in many areas of the headwaters section, focusing acquisition or conservation easements in the headwaters, coupled with limited development and carefully managed stormwater controls, may provide the most effective land use control for water quality protection.

Recommendations

- Create a priority acquisition list and target land acquisition activities by the County Rural and Critical Lands Program, Town, and other groups.
- Create a priority easement list and coordinate with County Rural and Critical Lands Program, Town, and other groups to secure conservation easements, particularly within the headwaters and other sensitive habitats along the River.
- Use the Waterbody Management Implementation Committee to prepare a map of acquisition and preservation priorities.

Actions Required for Implementation

The Implementation Committee should coordinate the development of a priority acquisition list for natural resource and water quality conservation for both fee simple acquisition and conservation easements.

The Committee should prepare a map for these identified parcels and present the findings, along with justification for inclusion, to the Town Council and County Council.

Acquisition of fee simple or conservation easements should begin, particularly in the headwaters section of the River as a priority.

Responsible Parties

Town of Bluffton (lead) and Beaufort County Critical and Rural Lands Program. Local resident and Homeowner Association participation in agreeing to Riverfront easements.

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Possible Funding Sources

County Critical and Rural Lands Program may be capable of providing some funding and technical assistance for the acquisition of waterfront easements or parcels for public access.

The Town may consider establishing a fund with the purpose of acquiring Riverfront properties and conservation easements.

9. Prepare a boating management plan for the May River.

Issue Background

As the population of Bluffton and the surrounding communities grows, the number of boats using the water will increase. This projected increase is also expected to result in an increase in conflicts on the May River between vessel users, natural resources, and upland property owners. In some areas of the May River, particularly around the Town Dock and further up the River, the waterway becomes narrow and undulating. Congestion in areas like these can result in dangerous boating conditions and challenges to public safety. In addition, the current estimates of boating use on the May River are inadequate for future planning to be locally effective and additional information is necessary.

The immediate boating situation on the May River is generally at an acceptable level, and accidents are rarely reported. There is not a pressing, urgent need for the development of a boating management plan. This is, however, an excellent time to begin the preparation and data collection in anticipation of the projected population increase over the next five years. Data from boating surveys should be collected throughout the River to provide decision-makers with the best available information. Anticipation of future issues, such as congestion at boat landings, managing vessel moorings, and managing vessel waste discharge, should be discussed in the boating management plan.

Recommendations

- Coordinate with DHEC-OCRM, USCG, DNR, Friends of the Rivers and the Waterbody Management Implementation Committee to prepare the boating management plan.
- Perform a survey of boating use in the May River using standard, replicable survey techniques for inclusion in the boating management plan.
- Utilize the boating management plan outline prepared for Beaufort County, and incorporate the boating management plan into the Waterbody Management Plan when completed.

Actions Required for Implementation

A survey of boat and landing users in the May River, including embarkation point, length of trip and purpose of trip, should be prepared and administered to create an accurate estimate of boating use within the May River. This survey should be repeated annually to determine boating trends.

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Regular and routine boat counts should be taken along the May River and at public boat landings during the boating season.

The boating management plan should contain, at a minimum, the following sections:

- Estimate of the number of vessels and trips on the May River;
- Boating facilities inventory including public landings, private docks, and other boating facilities;
- Natural and cultural resources;
- Patterns of boating use, including current and future trends;
- Waterway use conflicts, including natural resource conflicts, upland property owner conflicts, and vessel user conflicts;
- Management of moorings;
- Recommendations for addressing future demand of waterway and water access, waterway restrictions and no-wake zones, post disaster plan, and
- Implementation and revenue source plan.

Data collection for the boating management plan should begin as soon as possible in order to ensure that adequate information is available for off-season analysis.

Responsible Parties

Town of Bluffton and Beaufort County (leads); in coordination with Friends of the Rivers, DHEC-OCRM, Sea Grant, and DNR.

Possible Funding Sources

If coordinated through non-governmental organizations, expense may be limited and include in-kind contributions for office supplies and staff time to assist with plan development.

10. Prepare a petition to establish a no-wake zone for health and safety reasons at both the All Joy boat landing and at the Oyster Factory.

Issue Background

Although not an immediate priority, the congestion around both Alljoy Boat Landing and the public park at the Oyster Factory is projected to increase within the next five years. Currently, reports of boats traveling at high speeds very close to the swimming area at Brighton Beach, near docks around the Alljoy boat landing, and around the Oyster Factory have increased. A no-wake zone designation at these locations is in keeping with the state laws regarding vessel management and public safety and should be considered as part of an overall enhancement of waterbody management in the May River. This activity may be coordinated as a component of the boating management plan.

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Recommendations

- Task the Waterbody Management Implementation Committee with preparing a petition for establishment of a no-wake zone at the boat landings.
- Coordinate with Friends of the Rivers and other groups to undertake a survey of boat users at both boat landings to document trip origin, number, types and sizes of boats, and commercial, recreational uses of landings, to be submitted as supporting information for the petition.
- Coordinate with the local Assembly delegates to sponsor the petition for new no-wake zones.

Actions Required for Implementation

Prepare the survey of boat and landing users at Alljoy and the Oyster Factory during the season and post-season.

Prepare a petition signed by the relevant local authority for submittal to DNR.

Responsible Parties

Town of Bluffton and Beaufort County.

Possible Funding Sources

No significant funding needs are anticipated that could not be covered by existing funding sources.

11. Enhance on-water law enforcement along the May River.

Issue Background

Boating safety is a major concern on any waterbody, and maintaining safe navigation requires adherence to rules, respect for other users of the waterway, and common sense. Most boaters are extremely conscientious and control their wake, maintain a safe speed and distance from other boats and docks, and observe the laws on the water and when docking. As the population around the May River increases, and as more and more people are attracted to the water, congestion is an ever-present problem, both on the land and on the water. Application and enforcement of boating rules is vital to ensuring that visitors and residents enjoy their time on the water in a safe and responsible manner. State boating laws are in place and can be enforced by any certified law enforcement agent in an official capacity. These law enforcement agents can also enforce other laws, such as parking at public boat landings, and respond to emergencies including boating accidents, swimmers in distress, and environmental protection emergencies such as oil spills. Most importantly, the public generally feels safer and acts in a more conscientious manner if they know that a law enforcement presence is nearby.

A consistent, on-water law enforcement presence on the May River is an important component of managing the waterbody. State law enforcement through DNR is highly effective when available for enforcing state boating laws. However, DNR agents cannot

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routinely be assigned to operate on the May River because of DNR's greater responsibility throughout the coastal area of the entire state. However, local law enforcement, either Town or County Sheriff, may have the capability of patrolling the May River area more frequently, particularly on weekends during boating season. One option would be for the Town and County to co-fund an on-water law enforcement position that would be dedicated to area South of the Broad River, including the May River. This position could be augmented and supported by the Town Police as officers become available to patrol using the Town Police boat.

Recommendations

- Ensure the availability of an in-water slip for the Town Police boat.
- Coordinate with the County to jointly fund a seasonal, on-water law enforcement position for South of the Broad to enforce boating laws on the May River.
- Ensure that there is a fully trained Town law enforcement presence on the River regularly during the boating season.

Actions Required for Implementation

A permanent slip should be established for the Town's Police Boat, and should be incorporated into capital improvement plans along the Town waterfront. Consideration may be given to mooring the Police boat at the Oyster Factory Park.

The Town and County may wish to consider joint funding for a seasonal, on-water law enforcement position for South of the Broad River.

Responsible Parties

Town of Bluffton, Beaufort County (leads) and Town Police and Beaufort County Sheriffs office; DNR, DHEC-OCRM.

Possible Funding Sources

Funding may be available through the Department of Homeland Security Grant Program (DHS-08-GDA-067-1795).

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Conclusions

During the preparation of the Waterbody Management Plan for the May River between June 2007 and 2008, several important and positive actions occurred that begin to implement some of the priority recommendations. Beaufort County adopted a stormwater management program for the unincorporated areas of the May River that complements and mirrors that of the Town. This consistency is to be applauded, and had been widely sought after and recommended as part of the planning activities for the May River.

The Town also established a Water Quality Technical Advisory Committee (TAC) comprised of several highly respected water quality scientists working in South Carolina representing federal and state agencies, as well as academia, non-governmental organizations, and private development. This group has been tasked with developing a strategy to best analyze water quality in the May River and provide expert advice on measures to protect and preserve the ORW classification. One of the first recommendations of the TAC was to compile the existing water quality data collected over the years in the May River and perform a rigorous statistical analysis of the results. This recommendation also supports one of the Implementation priorities developed by the PAC and Project Team as part of the analysis.

These events, and many more like them, signal a strong desire by the residents, scientists, and local officials, staff and partners from the Town and County, state and federal government to protect the May River for future generations to safely and responsibly use and enjoy. Perhaps the most recognizable change over the past year has been the increase in communication between many different, and sometimes disparate, groups and organizations all brought together by the same goal of protecting the River. Implementation of the recommendations from this Waterbody Management Plan will not halt any future impacts to the River, however continued communication, learning, and actions by all parties involved may very well.

The Project Team wishes to acknowledge and thank the members of the Project Advisory Committee for their tireless commitment and input, the Town Council, Town Manager and Town staff who were instrumental in the success of this project, and the residents of the May River who provided invaluable information and advice during the development of the plan.

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Endnotes

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