

## **The South Carolina Stormwater Ponds Research and Management Collaborative**

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Coastal communities face both immediate and future challenges related to changes in sea level, temperature, and precipitation patterns associated with climate change, which make them particularly vulnerable to flooding. Stormwater ponds are the most common best management practice (BMP) for controlling runoff from developed areas in coastal South Carolina. Engineered primarily to control the quantity of runoff from developed landscapes, stormwater ponds are becoming more prevalent in coastal communities as population and development increases. Many ponds in the coastal areas of the Carolinas are currently influenced by tides and salt water intrusion, and identifying and assessing potential impacts of increased urban runoff in developed areas of coastal communities and the incorporation of climate change and sea level rise into sustainable planning and practice for stormwater runoff is vital. Despite the widespread use of stormwater ponds, many information gaps exist related to their overall effectiveness, long-term functionality, maintenance requirements and costs, and potential impacts on adjacent landscapes particularly in the face of changing climate and sea level. In response to these information needs, the S.C. Sea Grant Consortium has brought together scientists and resource managers to form the S.C. Stormwater Pond Research and Management Collaborative (Collaborative). Created in 2014, the Collaborative's goals are to (1) satisfy the information needs and concerns of existing local communities, homeowners' associations, businesses, and industries surrounding stormwater pond design, ecology, use, efficiency, effectiveness, and management, (2) characterize coastal stormwater ponds to understand their functionality, durability, benefits, and costs, and (3) ultimately develop new and innovative practices to ensure that stormwater ponds serve future needs. A key aspect of this effort is to work with stormwater constituencies to both understand information needs and provide relevant science-based information. To guide the activities of the Collaborative, and help engage the stormwater community, the Consortium has created a Stormwater Pond Advisory Council to provide advice and guidance. This group is comprised of diverse interests including: stormwater managers and consultants, stormwater pond practitioners, realtors, government officials, scientists, and outreach specialists. Scientists and staff from Consortium member institutions have been engaged to help identify further research and stakeholder information needs which can be used to improve overall understanding, design, management and maintenance of stormwater ponds. The Consortium received initial funding from the State of South Carolina and the NOAA National Sea Grant College Program to generate three products: (1) an inventory and classification of existing stormwater ponds in the eight coastal counties of South Carolina; (2) a State of the Knowledge Report, which synthesizes current knowledge regarding stormwater ponds within coastal South Carolina and; (3) a strategy for public awareness and outreach messaging. These products are currently being completed and analyzed to identify and prioritize key needs and applied to information and management requests. The completed products are also being used to prepare a major stormwater pond research and management prospectus for use in securing additional funding support to address the many data and information gaps we have regarding these prominent features of South Carolina's coastal landscape.