

Averting Disaster: Strategies to Avoid, Respond, and Plan for Major Floods in Coastal South Carolina
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In October 2015, South Carolina experienced unprecedented rainfall that caused major floods. Climate forecasters predict that such extreme high and low conditions will occur more frequently and the range and severity of floods and droughts will increase. South Carolina is vulnerable to flooding, given the damage from the record-setting precipitation. The human costs to the state was severe, with 17 deaths. This paper describes strategies that decrease vulnerability, increase capacity to respond, and reduce vulnerability to droughts and floods in South Carolina with a focus on the Edisto River. These are no-regrets strategies that lead to a more secure future, better human welfare, and resilient landscapes at little cost. The alternative is to suffer the consequences of a failing system.

With flooding identified as a critical vulnerability, the following strategies can help to adapt in South Carolina: 1) Provide incentives to protect flood prone areas and flood plains from development, such as along rivers and in wetlands, 2) De-incentivize living in flood prone areas, 3) Incorporate data and forecasted problem areas into the planning process and development permitting system, 4) Increase warning and evacuation systems, and 5) Increase flood control capabilities.

By incorporating these 5 strategies into the existing planning and permitting process, climate adaptation can be main-streamed into ongoing plans and activities. These strategies work within the existing system and they cost very little in terms of public dollars. They incentivize climate-change friendly development and planning, making it easier to address today's needs and to respond and adapt to future extreme events.

The Clean Water Act and other federal, state and local legislation provides legal tools to implement many of these strategies. This legislation recognized the importance of wetlands in managing the surface and groundwater of our lands, and provides for wetland protection. Wetlands provide natural support for society's water needs by maintaining water quality, levels of groundwater and surface water, and moderating water flows. With the discussion on climate change and wetlands focused on how climate change will affect wetlands, more attention is needed on the effects that wetlands have on climate change.

The Edisto River flows freely with no dams or other structural means to control or prevent flood disasters. Wetland conservation and restoration in the floodplain are efficient mechanisms to prevent flooding while satisfying the water resource needs of the population, agriculture, fisheries, habitat, and other natural resources. The presentation will discuss the ways in which wetland conservation and restoration support climate change adaptation policies in the water management system of the Edisto River.