DEVELOPMENT OF A CLIMATE-CHANGE ADAPTATION STRATEGY FOR MANAGEMENT OF COASTAL MARSH SYSTEMS IN SOUTHERN NEW ENGLAND USA

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Sea level rise is accelerating throughout the U.S. Northeast causing shoreline erosion, increased coastal flooding, and marsh vulnerability to the impact of storms. Coastal marshes provide flood abatement, carbon and nutrient sequestration, water quality maintenance, and habitat for fish, shellfish, and wildlife, including species of concern, such as the saltmarsh sparrow (*Ammodramus caudacutus*). A framework and methodology adopted by scientific, management, and policy stakeholders for climate-change adaptation actions to manage coastal marshes in the Narrow River Estuary, RI is described. A traditional adaptive management approach previously used for restoration projects was modified to identify climate-related vulnerabilities and propose climate-change adaptation actions. When possible an experimental BACI (Before-After, Control-Impact) design was incorporated into the implementation plans. Specific climate-change adaptation actions and monitoring plans are described, and include marsh shoreline protection, restoring hydrological drainage patterns, increasing marsh elevation, and enabling upland marsh migration. The Narrow River Estuary climate-change adaptation framework is presented as a demonstration project of climate-change adaptation in a tidal marsh system in southern New England, USA.