Coastal salt marshes provide a wide variety of ecosystem services, including habitat for protected vertebrates and ecologically valuable invertebrate fauna, flood protection, and improvements in water quality for adjacent marine and estuarine environments. Here, we consider the impacts of future sea level rise combined with other anthropogenic stressors to salt marsh sustainability through the implementation of field and laboratory mesocosms, manipulative experiments, correlative studies, and predictive modeling conducted in central California and southern New England salt marshes. We report on measurements of soil respiration, decomposition, sediment accumulation, and marsh elevation, which considered jointly suggest an association between nitrate input and marsh elevation loss resulting from mineralization of soil organic matter. Furthermore, use of imaging techniques (CT scans) has shown differences in belowground root and rhizome structure associated with fertilization, resulting in a loss of sediment cohesion promoted by fine root structure. Additionally, field and greenhouse mesocosm experiments have provided insight into the specific biogeochemical processes responsible for plant mortality at high immersion or salinity levels. In conclusion, we have found that poor water quality (i.e. eutrophication) leads to enhanced respiration and decomposition of soil organic matter, which ultimately contributes to a loss of salt marsh sustainability. However, marsh deterioration studied at field sites (Jamaica Bay, NY and Elkhorn Slough, CA) is associated not only with enhanced nutrient loads, but also increased immersion due to tidal range increases resulting from dredging. To ensure the continuation of the ecosystem services provided by tidal wetlands and to develop sustainable management strategies that provide favorable outcomes under a variety of future sea level rise and land use scenarios, we need to develop a better understanding of the relative impacts of the various stressors leading to salt marsh loss. Without this understanding, costly remediation may unintentionally lead to continued marsh deterioration. More research is needed to carefully document the positive and negative aspects of nutrient loading to coastal marsh sustainability in order to ensure that coastal watersheds are managed in a way that minimizes detrimental impacts to adjacent coastal habitats, while not interfering unnecessarily with important and needed public interest activities such as agriculture and wastewater discharge.