

# DROUGHT AND SALINITY ON THE GEORGIA COAST

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**Abstract.** The State of Georgia has experienced three significant, multi-year droughts over the past 15 years. During most of that time period, the Georgia Coastal Ecosystems (GCE) Long Term Ecological Research Program has been monitoring salinity at 9 sites along the Georgia coast. This paper examines the relationships between drought and salinity at these sites and explores the extent to which these changes can be related to potential drivers of salinity. Monthly average salinities at each of the monitoring sites were well related to different combinations of river discharge, coastal meteorological indices, local precipitation, and sea level. Salinity at two stations towards the upstream end of the Altamaha River estuary was best explained by discharge alone, whereas at a third station near the mouth it was explained by a combination of discharge and sea level. Salinities at stations in Doboy and Sapelo Sounds were all related to a combination of discharge and either the Palmer Drought Severity Index or the 6-month Standardized Precipitation Index (SP06) for climate region 9. Local precipitation was a significant factor at only one station upstream in Sapelo Sound near Eulonia. These relationships are useful for understanding the relative importances of the various drivers across the study area and for evaluating how conditions might vary in the face of potential change. The report ends with a discussion of the relationships between salinity and various ecosystem properties and recommendations for potential follow up to these observations.