

Diatom Communities of the Savannah and Altamaha River Estuaries

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Abstract. The purpose of this study is to compare the diatom communities of the Savannah and Altamaha River estuaries during different seasons. These rivers are similar in size, but the Altamaha has fewer anthropogenic impacts and has a larger contribution from black water tributaries. A project completed in May 2010 suggested that estuarine diatom community diversity increases going southward from the Savannah area to the Altamaha River estuary. To test these results, surface water samples were collected in October 2011 from three lower estuary stations in both the Savannah and the Altamaha rivers. Diatoms were identified to the genus level in each sample from salinities of 30, 25, and 20 PSU. In the October 2011 samples, diatom standing stocks were similar in the two estuaries ranging from 2280 to 3640 cells/L at all except the outermost (30 PSU) Savannah River station where standing stocks were 7796 cells/L. Standing stocks may have been higher in this lower estuarine Savannah River sample due to higher nutrient concentrations and greater light penetration. Analyses of nutrient concentrations and PAR profiles are underway for the two estuaries. Unlike the May 2010 results, diversity of the Altamaha River diatom samples were not much higher than those in the Savannah River estuary with mean Shannon-Weiner indexes of 1.16 and 1.14, respectively. *Coscinodiscus* was the most common genus in both rivers. The study is being expanded upon with samples collected in July 2010, October 2011, and December 2013.