Benthic Macroinvertebrates Colonizing Leaf Packs in the Ogeechee River Near Rocky Ford: Contrasting Assemblages Between Drought vs. Wet Years

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Reference: McDowell RJ, CA Pruitt, RA Bahn (eds.), *Proceedings of the 2015 Georgia Water Resources Conference*, April 28-29, 2015, University of Georgia, Athens.

Abstract. During the Fall of 2012 approximately 56% of the state of Georgia experienced moderate-to-exceptional drought conditions. During this time, the lower Ogeechee River exhibited abnormally low river stages and reduced flow conditions. During the same time period the following year (2013), river stages and discharge returned to average conditions in part due to a wet summer season. We used packs filled with oak (*Quercus sp.*) or maple (*Acer sp.*) leaves to collect colonizing invertebrates from September to November of 2012 and 2013 as a means for assessing the health and condition of a reach of the Ogeechee River near Rocky Ford (Screven County). We found significant differences in macroinvertebrate assemblages between study years (p=0.001). However, there were no differences in colonizing communities between leaf types (p=0.05). Pleurocerid snails and non-predatory chironomids (85% combined) contributed most to macroinvertebrate assemblages in 2012, while non-predatory chironomids, longhorned caddisflies, and flatheaded mayflies (83%) contributed most to assemblages in 2013. Macroinvertebrate functional feeding group composition also differed between study years with scraper-grazers (61%) and collector-gatherers (28%) being dominant in 2012 and collector-gatherers (79%) as the major contributors in 2013, suggesting differences in organic matter resources from year to year. Biotic index estimates (i.e., NCBI) yielded a slight increase from 2012 (4.81±0.75) to 2013 (5.43±0.61) indicating fairly substantial organic pollution likely at the site. However, %EPT taxa increased from 10% to 33% from 2012-2013. Our study supports a need for multi-year, continuous monitoring to accurately assess the health and biotic integrity of these systems.