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SALTY OR SLIGHTLY SALTY: IS FISH SPECIES RICHNESS AFFECTED BY AN OBSOLETE NAVIGATIONAL CUT?

Rebecca Patterson, Loren Mathews, Bruce Saul,
and Jessica Reichmuth

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Salty or Slightly Salty: Is Fish Species Richness Affected by an Obsolete Navigational Cut?

Presenter: Rebecca Patterson (Poster Presentation)

Authors: Rebecca Patterson¹, Loren Mathews², Bruce Saul¹, and Jessica Reichmuth¹

Faculty Sponsor(s): Jessica Reichmuth, PhD

Department Affiliation: ¹Biology Sciences (Augusta University),
²Biology (Georgia Southern University)

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ABSTRACT

As rivers flow toward the coast, freshwater mixes with saltwater in estuaries. The mixing here creates a wide range of environments for many organisms. The Satilla River Estuary has been cut eight times, which has altered the salinity gradients that are a result of natural tidal flow. Altered salinity gradients pose a threat to migratory fish species because they are no longer able to pick up on directional cues that these gradients provide, ultimately affecting species richness in the estuary. The purpose of this study is to determine if Noyes Cut has affected salinity gradients at five collection sites in Umbrella and Dover Creeks. Experimental gill nets were set one hour before max flood tide and soaked for two hours. All fish were identified to species with total and fork lengths measured to the nearest centimeter. Noyes Cut and Parsons Creek had the most species richness while River Marsh Landing and Todd Creek experienced the lowest diversity. We believe these large salinity fluctuations are due to a sediment deposit that blocks water flow as a result of Noyes Cut. When Noyes Cut is closed, we expect fish to redistribute into Umbrella and Dover Creeks as a result of restored salinity gradients.

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Correspondence: Rebecca Patterson, Augusta University, 1120 15th St. Augusta, GA 30912, repatterson@augusta.edu