

Abstract Submitted  
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**Modification of boundary layer momentum by the presence and pumping behavior of the bivalve clam, *Mercenaria mercenaria*, in a tidal channel** S.K. DELAVAN, D.R. WEBSTER, Georgia Tech — The presence and activity of biological organisms have the potential to modify turbulent boundary layer characteristics in natural field settings. To determine the effect of the presence and pumping behavior of the bivalve clam, *Mercenaria mercenaria*, on the boundary layer momentum, profiles were collected for flood tides in the tidal rivers adjacent to Wassaw Sound, Georgia, USA. Velocity profiles were collected simultaneously with two adjacent Acoustic Doppler Velocimeters for boundary layer flows above sediments with and without the presence of buried clams. Treatment sites included clams buried in mud sediments, sand sediments, downstream of oyster beds, and downstream of sea grass beds. We hypothesize that the modification of boundary layer momentum is unique to the treatment characteristics. Vertical profiles of mean velocity, turbulent kinetic energy, and Reynolds shear stress are calculated from the collected time records. Preliminary analysis suggests that flows downstream of sea grass and oyster beds are less affected by the presence of clams than flows over sand and mud flats. Clams reduce the horizontal velocity values above mud substrates when compared to adjacent measurements without clams present, particularly close to the substrate. When buried in sand flats, clams tend to increase the horizontal velocity values higher in the water column.

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