

First-Year Research in Earth Sciences: Dunes

Conference Presentation: Strydhorst, Natasha, Samuel Franklin, Lemuel Ong and Aaron Pemberton (2015). “Characteristics of a natural vegetation population on Lake Michigan foredunes.” Annual Meeting of the Michigan Academy of Science, Arts, and Letters, Andrews University (Berrien Springs, MI), 13 March 2015; poster

Abstract: Although Lake Michigan’s coastal foredunes are predominantly vegetated with *Ammophila breviligulata* (American beachgrass), the natural characteristics of this species have not been documented. This study identified and analyzed the characteristics and environmental conditions of *A. breviligulata* populations in P.J. Hoffmaster State Park. We analyzed three areas of vegetation growth on the foredunes: one in which human influence was present (in the form of unmanaged trails), one in which wave erosion had created a steep scarp, and a control area with a slumped scarp and no significant human influence. In each area, we measured the height and density of *A. breviligulata*, recorded the presence of unmanaged trails and measured scarp characteristics. Density of *A. breviligulata* was consistently greatest on the foredune’s leeward slope. The greatest density was observed in the site of human disturbance, while the greatest height was recorded in the control site. Scarping affects the vegetation near the scarp, but does not influence the vegetation beyond the foredune crest. Understanding *A. breviligulata*’s natural characteristics could provide a model for assessing the success of planting vegetation at managed sites.