

First-Year Research in Earth Sciences: Dunes

Conference Presentation: Jacques, Issac J., Peter Duimstra, Nathan E. Hilbrands, Rachel K.J. Hubka, and Allison Lee (2018). “Evidence of Topographic Steering in a Small Saucer Blowout on Lake Michigan.” Annual Meeting of the Michigan Academy of Science, Arts, and Letters, Central Michigan University (Mount Pleasant, MI), 9 March 2018; poster.

Abstract: Understanding how wind and topography interact to form and develop blowouts is an important topic for both research and management. This study was conducted on a small saucer blowout on the coast of Lake Michigan to understand whether topographic steering of wind occurs and how the blowout responds. The objectives and methods of the study were to 1) Map the topography of the blowout with a total station survey, 2) Measure wind direction and speed inside and outside of the blowout using anemometers and wind vanes, and 3) Measure erosion within the blowout using erosion pins. The saucer blowout has a relief of ten meters and deposition lobes extend to the NNE and ENE. WSW winds within the blowout contrasted with winds measured outside the blowout the WNW, which suggests topographic steering is likely occurring. Erosion measured in the blowout corresponds with several events recorded in the wind data. While other studies have shown topographic steering occurs on large blowouts, our results indicate topographic steering is also possible on small blowouts.