

## First-Year Research in Earth Sciences: Dunes

**FYRES: Dunes Research Report:** McClellan, Jennifer A., Camilla J. Bjelland, Aidan N. Casillas, Samuel S. Jacobs, Alyssa J. Topping, and Klein D. VerHill. 2018. "Impacts of White-Tailed Deer on a Lake Michigan Parabolic Dune System" FYRES: Dunes Research Report #31. Grand Rapids (MI): Department of Geology, Geography and Environmental Studies, Calvin College. 14 p.

**Abstract:** White-tailed deer, *Odocoileus virginianus*, have a significant impact on environments in North America with many populations over the carry capacity of their habitats. This is the case in PJ Hoffmaster State Park, Michigan, where we investigated a large parabolic dune system to determine where deer have the most impact. We mapped individual tracks, scat and trails with Trimble GPS units, and areas were visually assessed for the impacts of deer. In areas with deer evidence, vegetation quality was noted within quadrats. The foredune had the most presence of deer as shown by scat and tracks going to and from Lake Michigan. Deer tracks on human unmanaged trails suggest that deer use these trails as well as creating their own trails. Vegetation results show deer have not significantly impacted the quality of American beach grass. With the low level of vegetation damage, sand movement has not increased beyond what is characteristic for this type of dune system. While the significant presence of deer is noticed—especially on the foredune—this study suggests no current concern for destabilization of the dune system.