

# First-Year Research in Earth Sciences: Dunes

**FYRES: Dunes Research Report:** Hilbrands, Brian D., Jesse L. Damsteegt, Brian P. Hess, Madeline G. Hughey, Jake A. McCusker and Jacob C. Van Wyk (2015). "The Impact of Deer on Unmanaged Trails in North Ottawa Dunes County Park." FYRES: Dunes Research Report #14. Grand Rapids (MI): Department of Geology, Geography and Environmental Studies, Calvin College. 14 p.

**Abstract:** The impacts of mammals such as deer on coastal dune geomorphology has received little attention from the scientific community. This study looked at the relationship between deer and unmanaged trails in a dune environment, including what influence deer might have on human use of unmanaged trails. The study site was a large parabolic dune in North Ottawa Dunes County Park. A main objective of the study was to investigate whether there was any differentiation in characteristics between deer trails and trails used by both humans and deer. At the study area, unmanaged trails were mapped using GPS units. Trail use was determined by observing the kind of tracks found on the trail and looking for litter and other signs of human use. Measurements for each trail segment included width, vegetation cover, and leaf litter. Deer activity such as individual tracks, deer droppings, and bedding areas were also mapped to identify where deer have been active. Results show that deer evidence was found across the dune, but more evidence was found in wooded areas than in the bare dune area. They also show a number of unmanaged trails going across the bottom of the dune and fewer trails on the higher, steeper slopes. Although the trails lacked vegetation, there were no observed local topographic changes. Also, most trails were exclusively used by deer. These results suggest that the creation of unmanaged trails by deer are not encouraging park visitors to leave the managed pathways and use the unmanaged trails.