

# First-Year Research in Earth Sciences: Dunes

**Conference Presentation:** Liu, Chengbi, Lincoln Grevengoed, Matthew Haugh, Megan Koopman, Isla Peterson and Logan Walters (2014). “Investigating the relationship between deer and trails on coastal sand dunes.” Annual Meeting of the Michigan Academy of Science, Arts, and Letters, Oakland University (Rochester, MI), 28 February 2014; poster.

**Abstract:** Although scientists have studied the impacts of deer browsing and trampling on coastal dune vegetation, few studies have been done on the impacts of deer on trails. We investigated the relationship between deer presence and trail characteristics in North Ottawa Dunes, Michigan over a three-week study period. We first recorded deer evidence (i.e. tracks and scat) on both an open dune area and a wooded dune area. At the same sites, we mapped trails and documented their features including width, slope, direction, length and surface condition. In the open dune area, we identified numerous trail segments and evidence of deer, with most of the deer evidence concentrated on the lower windward slope. In the wooded area, we also recorded the most trails and deer evidence on the lower slopes although the observed amounts were much smaller because of the thick leaf litter. The spatial pattern of trails and deer evidence indicates a positive relationship between deer presence and trail location. Our results suggest that deer activity contributes to disturbances such as trails that affect coastal dune dynamics.