

First-Year Research in Earth Sciences: Dunes

FYRES: Dunes Research Report: Strydhorst, Natasha, Carolina Angulo, Anna Camilleri, Ethan DeVries and Anna Selles (2014). “Dune Environment Influences on a Rare Great Lakes Thistle: An Investigation in Ottawa County Parks’ Rosy Mound Natural Area.” FYRES: Dunes Research Report #9. Grand Rapids (MI): Department of Geology, Geography and Environmental Studies, Calvin College. 20 p.

Abstract: Native to the Great Lakes dunes, *Cirsium pitcheri* is listed as threatened at both the state and federal level and is sensitive to changing environments. This study investigated the *C. pitcheri* population and its environmental conditions in Rosy Mound Natural Area on Lake Michigan’s eastern shore. During the fall of 2013, we mapped selections of the population, unmanaged trails (both deer and human-caused), and the park’s boardwalk using Trimble Juno GPS units. For each plant, we recorded surface conditions, longest leaf length, and whether deer trampling and/or grazing was evident. We also compared four plant population areas characterized by different features: the managed boardwalk, an unmanaged human trail, an unmanaged deer trail, and an open dune area. Significant evidence of deer was visible around the 253 individual plants mapped. Despite the deer presence, few indications of damage to *C. pitcheri* from trampling or grazing were observed. The thistles’ density was similar near the boardwalk and human-caused unmanaged trail, and greater around the deer trail and open dune areas. Our results suggest that the deer population is ideally sized to provide the disturbance required by *C. pitcheri* without exerting undue strain on the population.