

# First-Year Research in Earth Sciences: Dunes

**Conference Presentation:** Duimstra, Peter, Christopher H. Anderson, Katherine C. Benedict, Haleigh I. Bos, Kees VanDerAa, Lesley Vargas, April Volzer (2019). “Considering Management for a Blowout in Kitchel-Lindquist-Hartger Dunes Preserve.” Annual Meeting of the Michigan Academy of Science, Arts, and Letters, Alma College (Alma, MI), 1 March 2019; poster.

**Abstract:** Active dunes can cause property damage if they move onto developed property. The southernmost blowout in Kitchel-Lindquist-Hartger Dunes Preserve is currently posing a threat to two developments: the preserve outdoor classroom and the North Shore Marina. To advise the management planning, we studied the current state of the blowout, including the dune features, the activity level and current management. We inventoried dune features, gathering data about vegetation coverage and areas of bare sand. We used erosion pins on the windward and leeward slopes of the blowout to measure how much erosion was occurring. We surveyed topography to analyze the shape and structure of the dune. Results from the erosion pin data made it apparent that the dune was active. The presence of early colonizers in the bowl of the blowout and bushes on the slip face suggest that the dune is stabilizing to some degree. A sand fence is stabilizing the midsection of the dune. More sand fences, or the implementation of some barriers with lower porosity, could significantly stabilize the dune and would decrease the likelihood of any future threats to the nearby developments.