First-Year Research in Earth Sciences: Dunes

Conference Presentation: Prom, Grace, Lauren Grantham, Isaac Jeong, John Kelly, Lynda Steen. 2021. “Evaluating new plantings’ effectiveness for management on dunes where human disturbance continues.” Annual Meeting of the Michigan Academy of Science, Arts, and Letters, Virtual Conference hosted by Alma College, Michigan, 12 March 2021; oral presentation.

Abstract: Planting vegetation to encourage sand deposition by wind is a common dune management strategy, but there has been little study of the effectiveness immediately after planting or when visitor trampling occurs. This project investigates the effectiveness of a grass soon after planting and when subjected to human trampling. Four plots of *Calamovilfa longifolia* were established: a plot with *Calamovilfa*, a plot with *Calamovilfa* that was stepped on periodically in the two weeks following planting, a plot with densely planted *Calamovilfa*, and a control plot with no plants. In the weeks following planting, we measured erosion and deposition using erosion pins installed in and around each plot. Moisture content and visual characteristics of each plot were also recorded. Results show a high amount of sand deposition in the dense plot as well as visual differences between it and other plots. The trampled plot had consistently higher amounts of deposition than the non-trampled plot, while the non-trampled plot had higher moisture contents. Our analysis shows that *Calamovilfa* is effective in encouraging deposition on dunes within weeks of planting. Furthermore, *Calamovilfa* was seen to survive mild trampling and still be effective in encouraging sand deposition. These results are promising for dune managers.