

Planted

on North Beach Dune

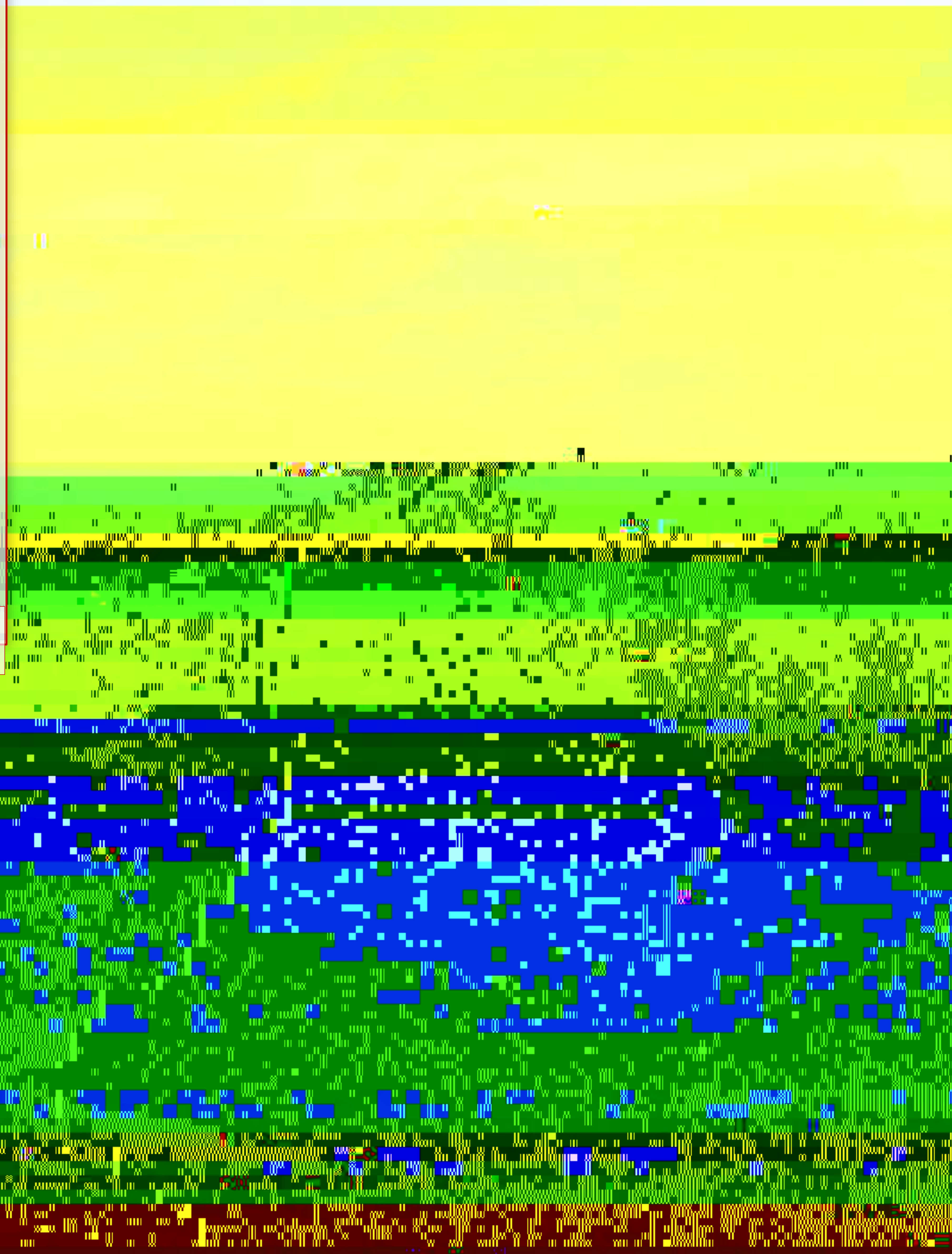
Grant Hoekwater, Issac J. Jacques, Manny L. Schrotenboer and Matt Wierenga
Calvin College

Abstract

On the North Beach dune, adjacent to North Beach Park in Michigan, vegetation was planted in order to stabilize the dune. It is known that planting dune grasses can alter topography, but the survivability and resilience of planted grass is less known.

To determine what relationship dune topography has with these variables, the plant health was determined by visual evaluation and species height was determined by measuring plants found in quadrats. Since the vegetation plantings in 2006 and 2013, plant health is now moderately healthy with some of the healthiest, tallest plants on the steeper slopes in our study area.

Introduction



Our data indicates that there may be a connection between plant health and plant height. The data from various zones provide evidence that connect the different variables.

A positive trend between plant health, plant height, and dune slope can be seen, especially between Zones #4 and #7 (Figure 7).

Conclusions

During our research, we recorded plant health, recorded dune slope, and determined average plant height. We also discovered a positive trend between plant health, plant height, and dune slope.

Acknowledgements

We thank Ottawa County Parks and Recreation Commission and Melanie Manion for her permission to and assistance with research. We would also like to thank the Michigan Space Consortium for their assistance in the form of a grant. Finally we thank Jacob Swineford for his mentoring of the research.

References

- [1] Hertling, U M., and R A. Lubke. 1999. "Use of *Ammophila arenaria* for Dune Stabilization in South Africa and Its Current Distribution—Perceptions and Problems." *Journal of Coastal Research*, 24, no. 4: 467-82
- [2] Maun, M A., and J Lapierre. 1984. "The Effects of Burial by Sand on