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Abstract: *Cirsium pitcheri*, a thistle endemic to Great Lakes dunes, requires a narrow range of sand movement to survive. Because these specific geologic habitats are declining, *C. pitcheri* is designated a threatened species. This project investigates the micro- and meso- ecosystems of *C. pitcheri* to identify the optimal biogeomorphic environment for this rare plant. Our objectives were to investigate the biophysical characteristics of two blowouts, measure the abundance and characteristics of *C. pitcheri* at each site, and analyze the data to identify the optimal conditions for *C. pitcheri* to thrive. We investigated blowout characteristics using GPS and drone mapping, straight-line surveys and surface change measurements with erosion pins. We recorded all *C. pitcheri* plants within the sites and conducted quadrat surveys for plant density and nearest neighbors. The mid-sized blowouts had heights of 2-4 meters and similar low levels of erosion and deposition. The two blowouts had large differences in total number of *C. pitcheri* plants, but all living age categories occurred

within

occurred