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Species Distribution Relative to Soil Characterization in Kalaeloa. This project examined the relationship between plant species distribution and soil characterization in the U.S. Fish and Wildlife Kalaeloa Coastal Preserve. It was hypothesized that the inland soil at Kalaeloa Coastal Preserve will be more nutrient rich (adequate levels of nitrogen, potassium, and phosphate) and have an almost neutral pH compared to the areas of coastal soil will be less nutrient rich and have a more basic pH. It was further hypothesized that the differences in soil would affect plant species distribution. Data was collected in two plots within the preserve, one coastal and one inland. The location of the plots was recorded using handheld GPS units. Plant species distribution data was collected by visually surveying all species within the plots and recording them on graph paper. Dr. Bruce Koebele was present to ensure accurate species identification. Soil characterization was performed on soil samples from each plot collected from the roots of invasive species. Using the LaMotte EL soil testing kit, measurements of nitrogen, phosphorus and potassium were obtained. Soil pH measurements were gathered using an electronic pH meter in slurries made from the soil samples. Significant differences were identified in both the species distribution and soil characterization in the plots studied. These results have implications for the preserve managers as they work to restore native plant species in this preserve.