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Title: *A geographic analysis of hazardous industries in relation to the Floridian and surficial aquifers to quantify groundwater vulnerability.*

Abstract

This project will analyze the vulnerability of the Floridian and surficial aquifers from hazardous industrial input. Geoprocessing tools will be used to determine a range of distance between the hazardous waste facilities and where the two aquifers are located. This research models the potential for contamination using the DRASTIC index applied to both aquifers. Data used in this research includes the following categories of hazardous waste sites; EPA NPL and non- NPL superfund sites, EPA toxic release sites, industrial wastewater, domestic wastewater, phosphate management wastewater and power plant management wastewater sites (FGDL, 2022). This research identifies hot spot areas of aquifer vulnerability by using the locations of hazardous waste inputs, and geological features such as karst topography and rivers. Preliminary results have shown that most of the vulnerable areas are in southeast Florida, specifically in Miami Dade and Broward counties. These vulnerable sites are important to identify because they are where the pollutants and toxins can potentially infiltrate the aquifers which supply of 90% of the population in northeast Florida (SJRWMD, 2021). In addition, hazardous waste outputs of these industries could potentially affect the public water supply especially because surficial aquifers are shallow underground and close to any potential leaking.