

## Multi-Temporal Analysis of Vegetation Change within High Contaminated Watersheds by Superfund Sites in Wisconsin

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**Abstract :** Superfund site is recognized publicly to be a severe environmental problem to surrounding communities and biodiversity due to its hazardous chemical waste from industrial activities. It contaminates the soil and water but also is a leading potential point-source pollution affecting ecosystem in watershed areas from chemical substances. The risks of Superfund site on watershed can be effectively measured by utilizing publicly available data and geospatial analysis by free and open source application. This study analyzed the vegetation change within high risk contaminated watersheds in Wisconsin. The high risk watersheds were measured by which watershed contained high number Superfund sites. The study identified two potential risk watersheds in Lafayette and analyzed the temporal changes of vegetation within the areas based on Normalized difference vegetation index (NDVI) analysis. The raster statistic was used to compare the change of NDVI value over the period. The analysis results showed that the NDVI value within the Superfund sites' boundary has a significant lower value than nearby surrounding and provides an analogy for environmental hazard affect by the chemical contamination in Superfund site.

**Keywords :** soil contamination, spatial analysis, watershed

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