Abstract –In the last several decades, many cities in the United States continue to face the menace of environmental pollution at an alarming proportion with little use of geospatial technology and appropriate methods in dealing with the problem. The perverse nature of the problem not only threatens the different life forms in the environment, but it diminishes ecosystem quality and the livability of cities. While society tries to use policy to internalize externalities through taxes or prohibition, pollutants remain the most conspicuous examples of negative externalities. Compounding the matter is the absence of suitable tools such as Geographic Information Systems (GIS) for tracking the spatial dispersion of the quantity of pollutants and their impacts so that cities can have a better insight of the problems posed to their environment. At the same time, many cities lack complete inventory on the state of the environment in their areas. Apart from few studies, very little has been done to address the problem. The purpose of this study is to analyze the state of pollution and mapping of the trends within cities in the Southern Mississippi region of the United States. Emphasis is on the problems of air pollution, the source and the amount of pollutants, the consequences and the remedies. In terms of methodology, the paper uses descriptive statistics, correlation analysis and GIS to analyze the state of the environment and stressors within cities. While the results show that pollution activities have proliferated over the years in the region due to the growing presence of environmental stressors. A temporal spatial analysis using GIS to map the widespread discharge of chemical contaminants revealed a gradual spreading of stressors with risks to the sensitive coastal ecosystem. In the context of the region, GIS provides decision makers the capability for locating the quantity of pollutants and their impacts. The paper suggests the need for governments to enforce air quality standards and the adoption of methods for reaching those standards.

Key Words –GIS, pollution, pollutants, southern Mississippi, region, environment, remedies.