

## **Changes in Indiana Water Usage Rates Related to Population from 1990-2005, Using GIS Analysis**

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Water is arguably our most important resource and the issue of its sustainability arises with our ever expanding population. The U.S. Geological Survey (USGS) has five accessible data sets on their website regarding the water usage rates of each county in Indiana from 1985 to 2005. It does not provide any comparison among these years or display any maps regarding this data. Because this analysis is missing, I will focus on the correlation between water usage rates and population averages in each county of Indiana during the same years. I will then create a series of maps that display this data. My methodology for this research begins with an investigation into the problem, gathering of data records from USGS and the U.S Census Bureau, the creation of the maps, and finally an analysis of the results. The results will then provide information regarding the correlation between water usage rates and population per county for the state of Indiana as well as various maps that can highlight the changes that have occurred.

### *Information about the Author:*

Alexandra Olson is a senior at Valparaiso University majoring in geography, and she is interested in today's environmental issues. She has held an internship at the Indiana Dunes National Lakeshore working with water quality and has increasingly gained interest in water resources. In the future, she would like to work for an environmental organization in the pursuit of conservation and sustainability in our world. She looks forward to advancing her education and knowledge in the field.

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