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Abstract

Agriculture is the foundation of Indiana's economy, contributing roughly $31.2 billion yearly. Hundreds of thousands of people's livelihoods in the state depend on the agricultural industry, and that industry is heavily dependent on one of the fundamentals of crop growth--soil. The quality of soil when farming heavily influences crop production and crop yield. It's important to note the geologic history of Indiana's landscape because of the influence glaciers had on the soil. The northern half of Indiana's topography was influenced by glaciers, and there is greater agricultural value in glaciated soils that lead to greater productivity and fertility. Glacial land in Indiana has heavily contributed to the state's soil quality, and there are many components to soil quality, including the soil's ability to cycle and store nutrients due to influence from biologic activity, organic matter content, salinity, and acidity. One of the most important components in soil is its organic matter, which impacts the physical, chemical, and biological properties that are favorable to crop production. However, humans are impacting the natural processes that influence the quality of soil due to the increasingly detrimental effects from human-exacerbated climate change. Some of these negative effects include changing precipitation patterns, changing temperature patterns, and increases in floods and droughts, all of which influence the state of soil during crop production. Impacts from climate change are only starting, and farming practices will need to be adjusted to focus on protecting both the composition and the structure of soil to maintain and increase yields in the future.

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