

Jacob Burke

*Urban Inferno: The Effects of Urbanization on Temperature*

The purpose of this experiment was to determine whether urbanization causes a rise in environmental temperature. I did this by creating three 18 ¾ inch by 9 inch plots. The first plot was designed to represent an urban environment, the second plot was a rural environment, and the third plot represented a mixed environment. The mixed environment was created by using the existing urban plot, then adding plastic cups with potting soil and grass to represent gardens and other natural features. I placed the rural plot in an aquarium and positioned a full-spectrum light over the top to represent sunlight. I then monitored the temperature in fifteen minute increments with the light on for four hours. I turned the light off and continued recording the temperature in fifteen minute increments for another three hours. I repeated this process with the rural plot, and the urban plot with foliage. The data confirmed my hypothesis that as urbanization increases, so does temperature. This is known as the heat island effect. My experiment also shows that the heat island effect can be reduced by incorporating gardens and other foliage in urban environments.