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# The Abundance of Soil Microbes in Relationship to Proximity to the Urban Area of Lancer Park in Farmville, Virginia

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## Introduction

- Soil microbes are microorganisms found in soil that serve various critical roles and functions in the environment (Aislabie et al. 2013).
- Natural and human-caused (anthropogenic) factors can have positive and/or negative impacts on soil microbes (Morse et al. 2013).
- There is an apparent lack of in-depth research on the abundance of soil microbes in relationship to proximity to urban/developed areas.
- By conducting this research, there will be a deeper understanding of how soil microbes are impacted by natural and anthropogenic factors, especially in urban/developed areas.

## Research Question

How does proximity to the urban area of Lancer Park in Farmville, Virginia affect the abundance of soil microbes?

## Methods

1. Collected 4 samples in 4 different locations on 4 different days with a soil corer.
2. Soil samples were left out for 48 hours to dry
3. 12g of yeast extract was added to 1L of Deionized water
  - a. 160ml of solution was added to 80g of soil
  - b. stirred in a jar for 10 minutes
4. CO<sub>2</sub> sensors were secured in airtight jar for 4 hours
5. Data was collected and analyzed

## Results

- The Kruskal-Wallis rank sum test comparing microbial biomass and site resulted in a p-value of 0.5947
- At an alpha level of 0.05, there is no statistically significant evidence that microbial biomass is affected by proximity to the urban area of Lancer Park in Farmville, Virginia.

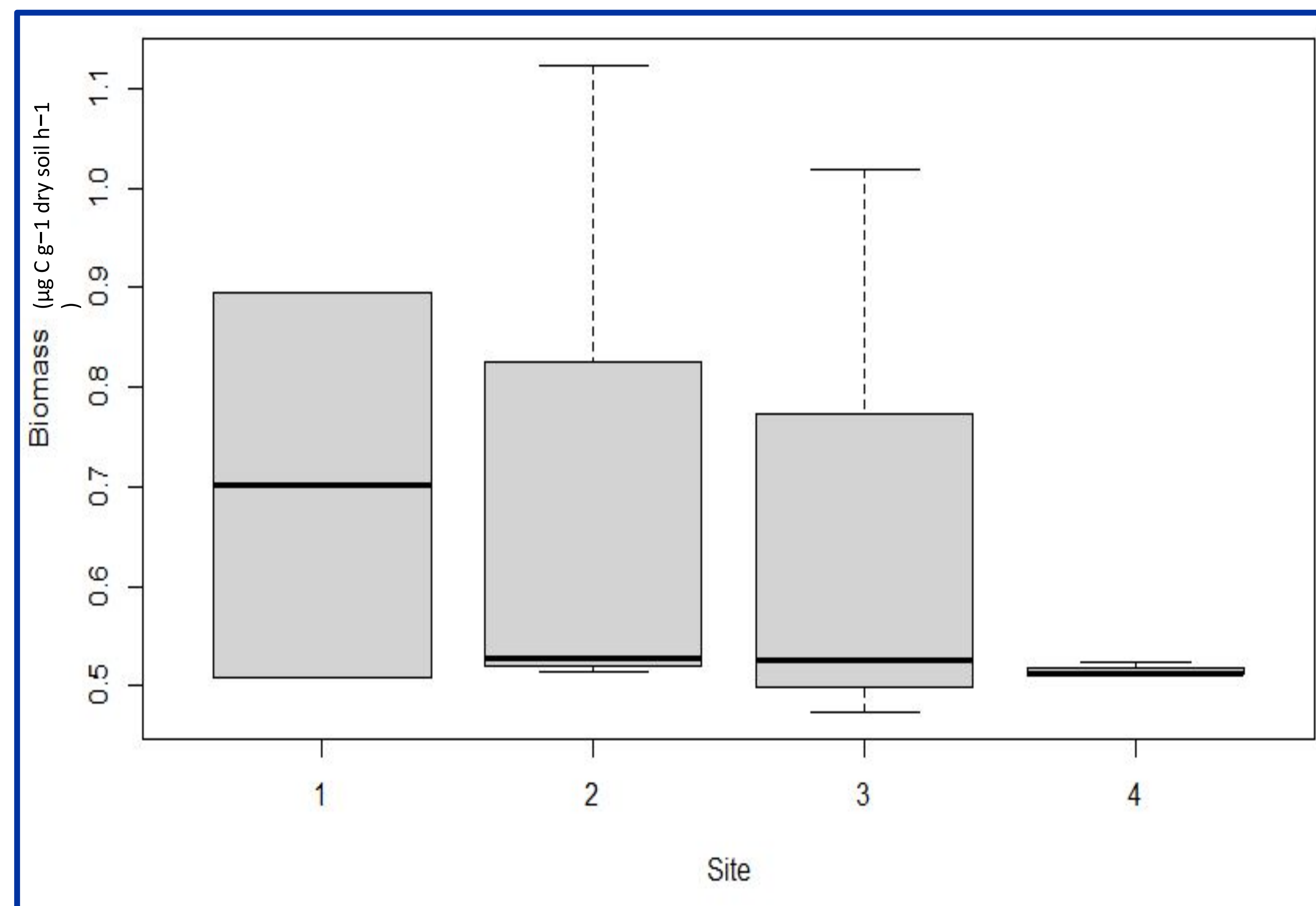
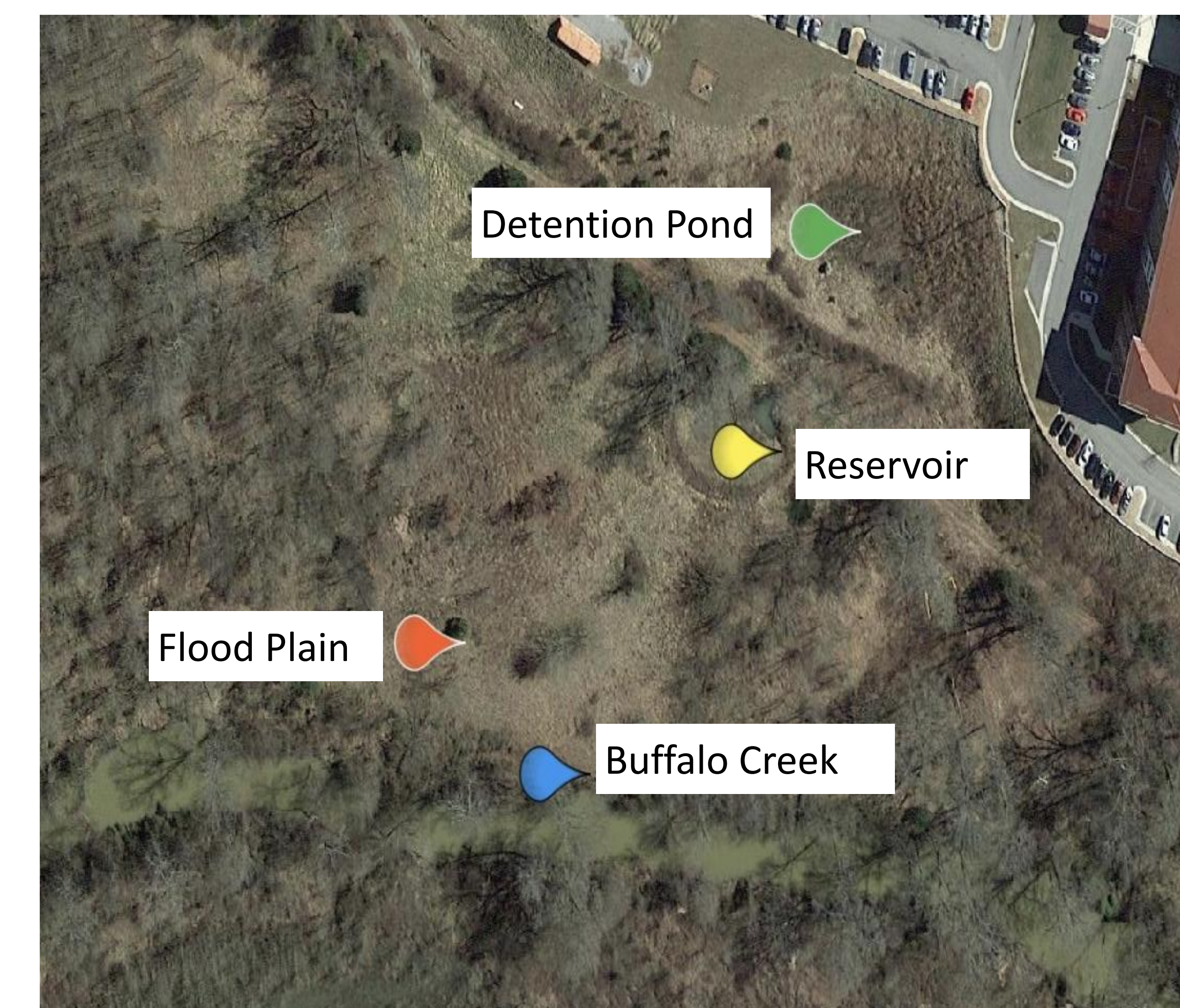


Figure 1. Boxplot of the biomass data from the four sites. Site 1 is Buffalo Creek; Site 2 is Flood Plain; Site 3 is the Detention Pond; Site 4 is the Reservoir



## Conclusions

In conclusion, the proximity to the urban area of Lancer Park in Farmville, Virginia does not affect the microbial biomass of soil microbes in the surrounding area.

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