

# Relationship between insect abundance and distance from Eichelberger Crossing at the Waco Wetlands

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## Abstract

Roads are well known to have a negative impact on wildlife through sound pollution, collisions, runoff, and providing a barrier between populations. This experiment investigated the influence of Eichelberger Crossing on insect population at the wetlands. With growing concern for the impact humans have on the environment, a trend would suggest a significant effect on wildlife posed by roads. Insects were quantified at spaced intervals of increasing distance from Eichelberger Crossing. There was no significant relationship between invertebrate population and distance from the road. This would suggest that any impact the road has on insect ecology is overshadowed by environmental factors.



Wesley counting insects gathered from a Burlese funnel.

## Materials & Methods

Twelve equivalent samples of topsoil were collected from three transects at intervals of increasing distance from the road. The intervals were spaced at 0ft, 66ft, 132ft, and 200ft from the edge of the road. Invertebrates were filtered from the samples using Burlese funnels. The total number of invertebrates were counted for each sample and averaged for each interval. ANOVA statistical analysis was used to test for correlation between population and distance.

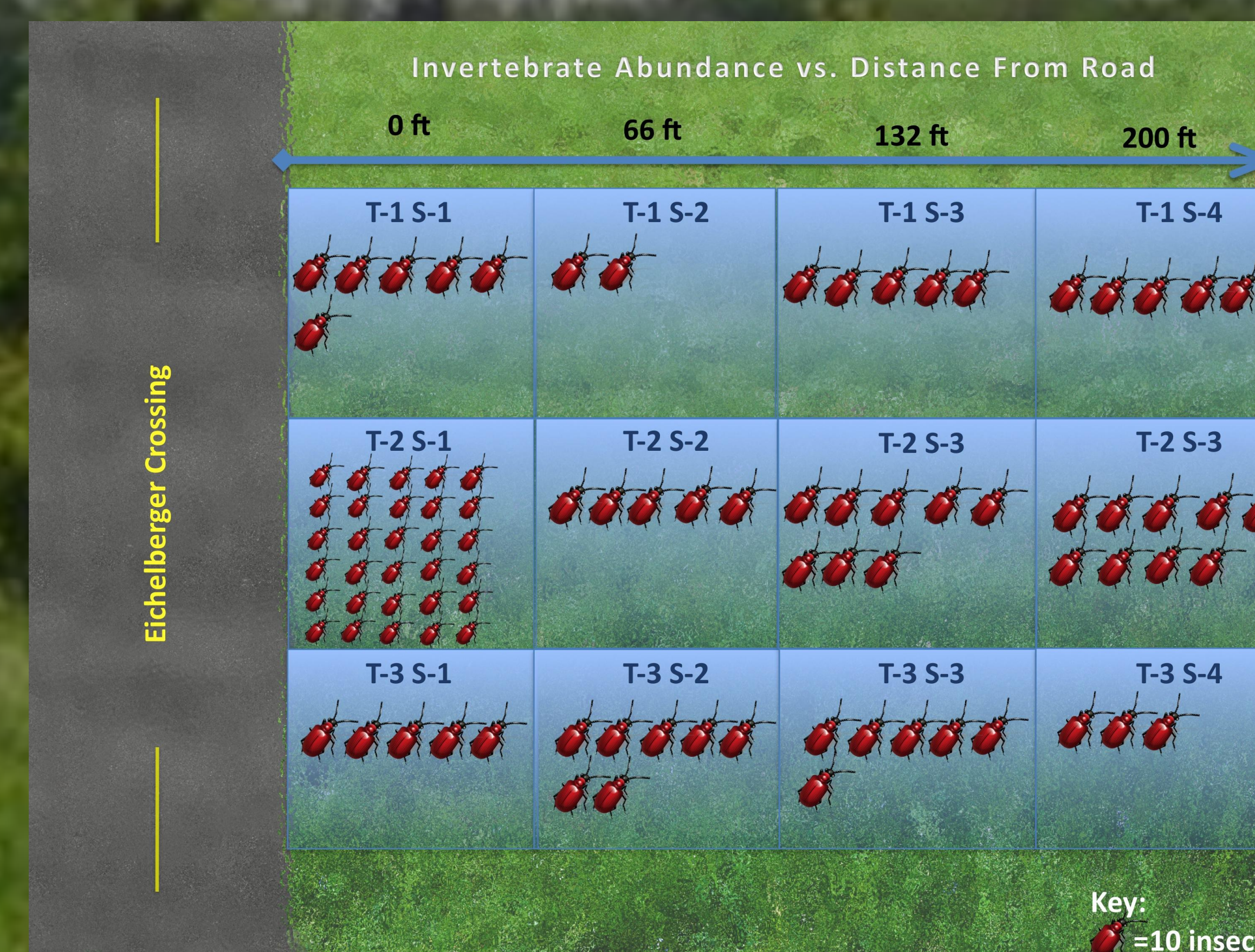
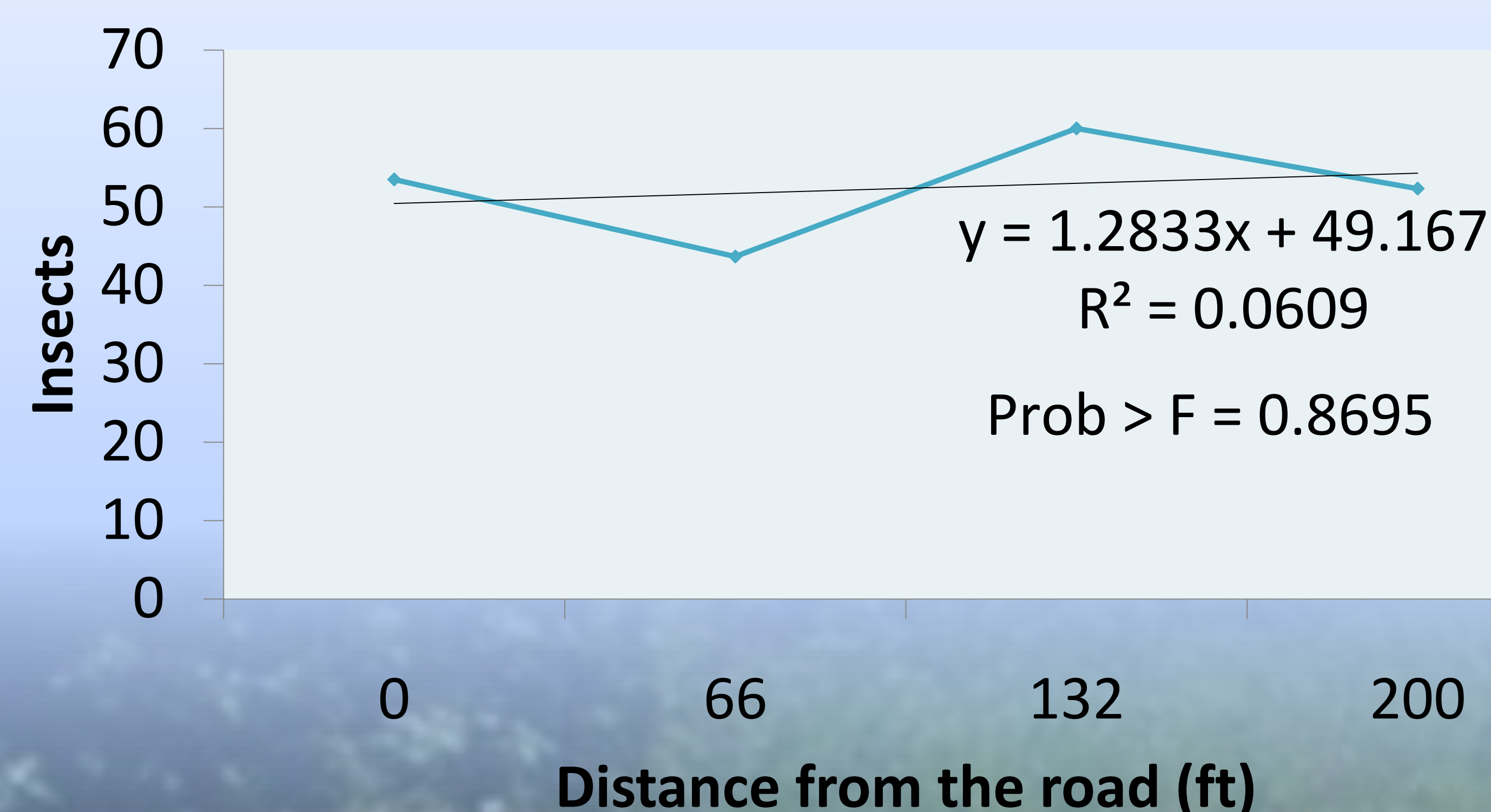
## Introduction

The Waco Wetlands were built to compensate for the environmental impact of Lake Waco's increased water level on the preexisting wetlands that surrounded its shore. In light of this, it would be beneficial to understand the effect roads have on wildlife and allow humans to consider possible means for compensating for this. In previous studies, invertebrate abundance has been used as a measure of an ecosystem's health (Hobbs 2007). Thus, investigation into the abundance of invertebrates along Eichelberger Crossing shall provide insight into the effects of urbanization on wetlands habitats.

## Results

Since Prob > F is large, there is no trend. The quantity for T-2, S-1 is an outlier and can be ignored.

### Average Insect Population vs. Distance



## Conclusions

Statistically there is no significant trend in insect population versus distance. While this does not imply that Eichelberger Crossing has no effect on total invertebrate abundance, this data suggests that such an effect is overshadowed by local environmental factors. Further investigation into abundance of species may reveal the road's potential impact on diversity.

## Literature Cited

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