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# Controlling an Invasive Forest Pest, the Asiatic Oak Weevil (*Cyrtopistomus castaneus*), Using Prescribed Fire

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# Controlling an invasive forest pest, the Asiatic oak weevil (*Cyrtopistomus castaneus*), using prescribed fire

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## Introduction

The invasive Asiatic oak weevil is the primary leaf-feeding insect on oak trees in the Missouri Ozarks, with larvae feeding on roots of trees and adults feeding on leaves. **In this study, we tested the hypothesis that prescribed burns will lower the abundance of adult weevils.**

## Methods

- The experiment consisted of eight pairs of 200 m x 200 m plots in the oak-hickory forest at the Tyson Research Station near Eureka, MO.
- One of each paired plot was surface-burned in early Spring 2017.
- In June 2018 mesh emergence traps with jars secured on top were placed under four white and four black oak trees in each plot (see photos) to capture adults as they emerged from the soil.
- From late June-August 2018 emerging adult weevils were collected from each trap on a weekly basis. Weevil data were analyzed to determine effects of sampling date, tree species, and burning on weevil mass and abundance.



Figure 1

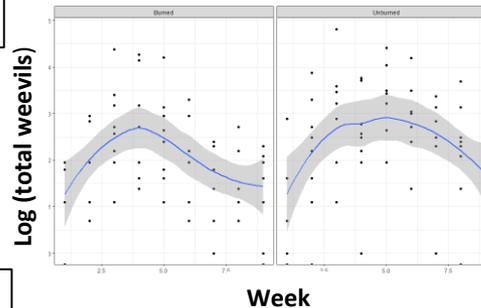


Figure 2

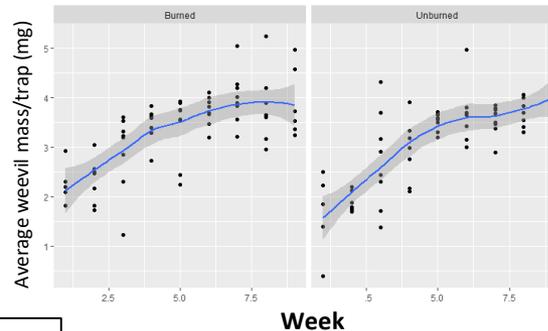
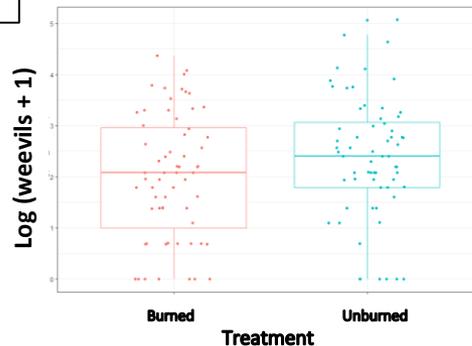


Figure 3



## Results

- Adult weevils began to emerge the second week of June 2018, peaked during July 16-27, and continued to emerge into early September (Fig. 1).
- Controlled burning did not affect weevil mass (Fig. 2) nor did tree species under which the weevils emerged (not shown).
- Fire reduced the number of emerging weevils per treatment by approximately 6.5 weevils per trap ( $p = 0.0578$ ). This effect of burning occurred despite the fact that the actual burn treatment was imposed 17 months previous (Fig. 3).

## Conclusions

These findings support the need for prescribed fire as a means of controlling this invasive species as part of management plans for Missouri's forest ecosystems.

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