

Assessment of Parasitoid Wasp Diversity and Community Dynamics in Response to Mediterranean Oak Borer (MOB; *Xyleborus monographus*) Infestations in Oregon's Valley Woodlands

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Methods:

- 1) *Trap Log Experiment and Emergence Tube Setup*: A trap log experiment provides valuable insights into insect behavior, population dynamics, and the efficacy of management strategies. By observing colonization patterns, we can understand preferences and timing of insect activity. Monitoring emergence from trap logs informs population dynamics and fluctuations. Additionally, the experiment assesses the effectiveness of trap logs as a management tool and evaluates their environmental impact on both target (*X. monographus*) and non-target species. Overall, trap log experiments offer a comprehensive approach to studying insect ecology and informing pest management practices.
 - a) *Bolt Collection*: Using appropriate cutting tools, oak tree branches and bolts will be collected from selected sites, with a focus on branches showing signs of MOB infestation, such as entrance holes, frass, and galleries.
 - i) Trap logs and controls were cut from Dave's property (4/17/2024) and painted with Bailey's wood sealant (4/18/2024; Mayfield and Hanula, 2012)
 - b) *Trap Bolt Deployment*: There will be 6 replicates of this experiment (including control): Eight trap logs will be placed ~2m from a MOB infested OWO, one at each cardinal and intercardinal direction (Figure 1).
 - i) Trap logs will be treated with 20mL of 95% ethanol to attract and increase colonization and occupancy of ambrosia beetles (Reding and Ranger, 2020; Gugliuzzo et al., 2021).
 - ii) Trap logs were divided into 8 size-classes and each site was randomly assigned one bolt of each size class.

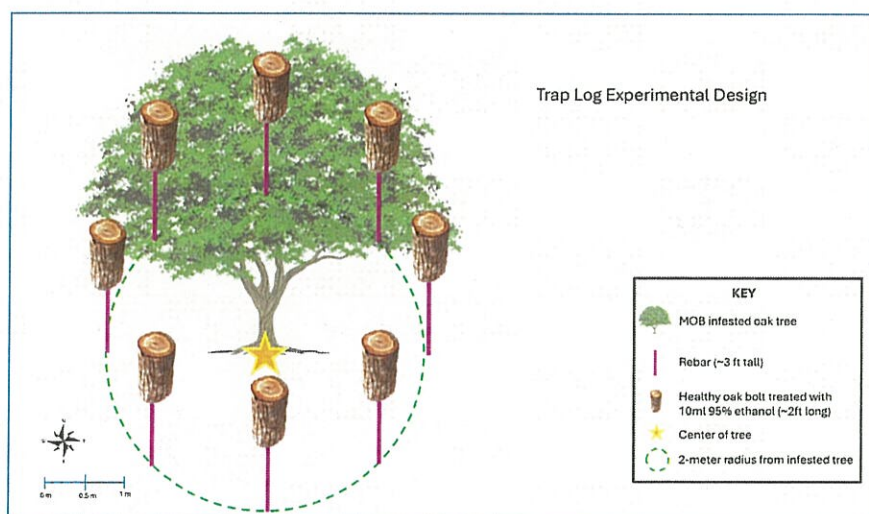


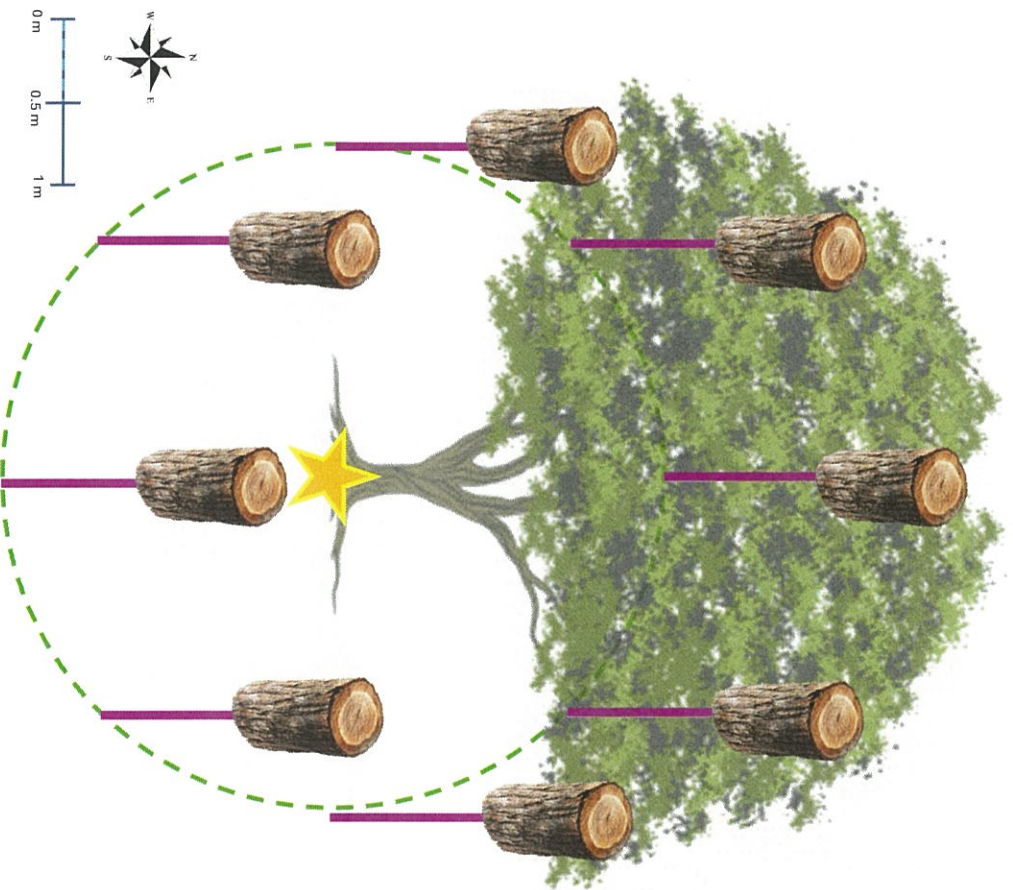
Figure 1. Experimental design of trap log experiment for MOB infested Oregon White Oak trees.

- c) *Trap bolt deployment and collection schedule*:
 - i) Logs will be placed May 17 and collected every 4 weeks:
 - (1) May 17, June 14, July 12, August 9, September 6, October 4, and two logs will be left at the research sites and collected after winter (December 27 and March 21)

Literature Cited:

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Trap Log Experimental Design



ATTENTION: RESEARCH IN PROGRESS



MEDITERRANEAN OAK BORER (MOB) TRAP LOGS PLEASE DO NOT DISTURB

These trap logs are part of a research project on the Mediterranean Oak Borer (MOB), a harmful pest affecting oak trees. **The logs are treated with chemicals and are not safe for public use.**

For Your Safety and the Success of Our Research:

- Do **not** touch or disturb the logs.
- Do **not** remove the logs from their location.
- **Avoid contact** with any chemicals present.
- Keep pets away from the area.

If you have any questions about this research or the trap logs, please contact:

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