



COMMUNITY SCIENTISTS NEEDED TO PILOT A GARRY OAK MONITORING INITIATIVE



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<https://treehealth.wsu.edu/>

INTRODUCTION

Garry oak trees (*Quercus garryana*) are vital to prairie oak woodlands in the Northwest. Garry oaks provide shelter and food for wildlife.



Figure 1. Garry oak tree (*Quercus garryana*) at Fort Steilacoom Dog Park in Lakewood, WA.

The global movement of goods has introduced new challenges for the conservation of garry oak. Introduced species such as the Mediterranean Oak Borer (MOB, *Xyleborus monographus*) threaten the health of these trees and ecosystems. MOB tunnel into oak trees and spread fungi that cause damage. Often, MOB will target stressed oaks accelerating their dieback.



Figure 2. Female mediterranean oak borer (*Xyleborus monographus*). Photo by Udo Schmidt.

The Mediterranean Oak Borer has yet to be reported in Washington, but have been detected in Oregon. By raising awareness, assisting with monitoring, and advancing research, communities can prepare for the potential introduction of MOB into Washington.

Because of the need for more monitoring of these beetles and their diversity, the WSU Forest Health Lab is interested in piloting a community science project.

Community scientists can contribute by monitoring trees, collecting data, and testing approaches to collect beetles with DIY beetle traps. The feasibility and engagement of the pilot project will shape future monitoring efforts and help conserve prairie oak woodlands.

SIGNS AND SYMPTOMS

Signs

- Small round exit holes (1/16 inch in diameter)
- Light brown/white boring dust (frass) accumulation at the base of the tree (Figure 3).
- Black tunnel-like galleries in sapwood (Figure 4).



Figure 3. Frass accumulation created by MOB at the base of a tree trunk. Photo by Christine Buhl, Oregon Department of Forestry.



Figure 4. Black galleries present on oak sapwood. Photo by Christine Buhl, Oregon Department of Forestry.

Symptoms

- Canopy dieback or thinning
- Branch Flagging
- Leaf browning in large sections (Figure 5)



Figure 5. Canopy dieback resulting in leaf browning on upper left section of branches due to MOB infestation. Photo by Christine Buhl, Oregon Department of Forestry.

METHODS

Preliminary research conducted by the Oregon Department of Agriculture (ODA) and the United States Forest Service have suggested using ethanol lures were more effective than hand sanitizer lures in attracting and capturing ambrosia beetles.



Figure 6. Example of homemade trap consisting of upside-down plastic container, an ethanol lure hanging from the top, cuts made into the side of the container, and soapy water at the bottom. Photo by Mike Haas, Michigan State University.



Figures 7, 8. Ultra high release ethanol lures developed by Alpha Scents, Inc.



Lower photo: Daniel Mix, ODA.

Community scientists are needed to collect beetles with homemade traps in areas with Garry oak trees. Ethanol lures will be provided by the Forest Health Lab at WSU with instructions for trap assembly and sample collection. Captured beetles will be identified by the WSU Forest Health Lab through morphology and DNA analyses. Fungal colonies isolated from a subset of the collected beetles will also be identified.



Figures 9, 10. Authors conducting research in the WSU Forest Health Lab.

GET INVOLVED

Community scientists are needed to build and place homemade traps around Garry oak trees, then periodically collect beetles throughout the flight season. Ultra high release ethanol lures will be provided to interested community scientists.

Visit the below website for more information and to sign up to participate as a community scientist.



treehealth.wsu.edu/mob-monitoring



Figure 10. Female mediterranean oak borer on piece of wood. Photo by Tomasz Klejdysz.

Identifying and monitoring the diversity of beetles around garry oak trees will help manage and conserve this important species into the future. Contact the WSU Forest Health Lab to learn more at <https://treehealth.wsu.edu>.

REFERENCES

Oregon Department of Forestry. (2024, September). Mediterranean Oak Borer. Mediterranean Oak Borer Fact Sheet. <https://www.oregon.gov/odf/Documents/forestbenefits/fact-sheet-mediterranean-oak-borer.pdf>

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