



Arizona Forest Health Alert

MEDITERRANEAN PINE ENGRAVER FOUND IN TUCSON

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Urban forestry specialists in Arizona have been monitoring a non-native bark beetle that has made its way to Arizona. The **Mediterranean pine engraver beetle** (MPE) (*Orthotomicus erosus*) was found in Phoenix in 2018. An expanded trapping program recently discovered MPE in Tucson in May of 2021. MPE are native to Europe, the Middle East, northern Africa, and China. They likely got to the United States by hitching a ride in solid wood packing materials. MPE are tiny, only about 3-3.5mm long, and reddish-brown in color. To date, MPE have only been found on eldarica pines (*Pinus eldarica*) in the Phoenix metro area.

WHY DO WE CARE?

MPE beetles generally attack distressed trees by boring holes in the bark and chewing on the layer just under the bark, called the phloem, where a tree transports sugars and water. Tunnels created by the beetles block the tree's ability to transport water and nutrients, effectively killing the tree.

Healthy pines have a natural defense against bark beetles - they ooze out a thick resin when beetles try to gain entry, pushing the beetles out and trapping them in sticky pitch. Stressed trees, however, produce little or no resin and become susceptible to MPE beetle attack. In addition, even apparently healthy trees may not be able to fend off MPE if beetle populations are abnormally high.

SIGNS OF ACTIVITY

The two most common external signs that an urban tree may have been attacked by MPE are yellowing needles, especially at the top of the tree, and the presence of red boring dust on the bark. Less common signs in an urban setting include pin-sized holes in the bark and resin oozing out of holes in the bark.

WHAT TO LOOK FOR

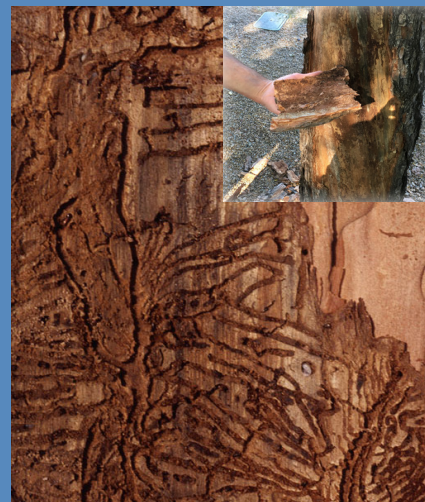
Discolored Needles



Red Boring Dust



Galleries Under Bark



Right to left: Discolored needles on eldarica pine; Steve McKelvey, Department of Forestry and Fire Management. Red boring dust on bark, Bob Celaya, Department of Forestry and Fire Management. Galleries under bark, William Ciesla, Forest Health Management International, Bugwood.org

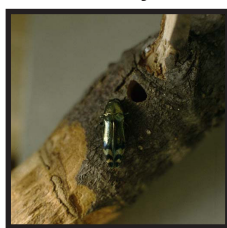
The telltale internal sign of an MPE infestation is the presence of galleries under the bark. Galleries are tunnels carved by the beetles as they reproduce and feed. An arborist or tree care professional will be able to remove a small section of bark to determine if galleries are present.

WHAT ELSE COULD IT BE?

If you don't see the majority of signs listed above, then your tree might be suffering from another look-alike ailment. Yellowing or orange-brown needles alone could be a sign that the tree needs more water.

Other insects can also make holes in the bark of pine trees. The main difference is that non-MPE wood boring beetles are generally found on trees that are already dead. In addition, the holes they make are much bigger and are usually flat on one side rather than perfectly round, like those of MPE.

Woodpeckers and other sapsuckers also make holes in bark, but they will be fairly large and likely in rows or columns. MPE holes are pinhead-sized and spread randomly over the bark.



Flathead borers make large holes with flat tops. Fabio Stergulc, Università di Udine, Bugwood.org



Large woodpecker holes are usually found in rows or columns.

Top: Terry Spivey, USDA Forest Service, Bugwood.org. Bottom: Pompilid, Wikimedia Commons

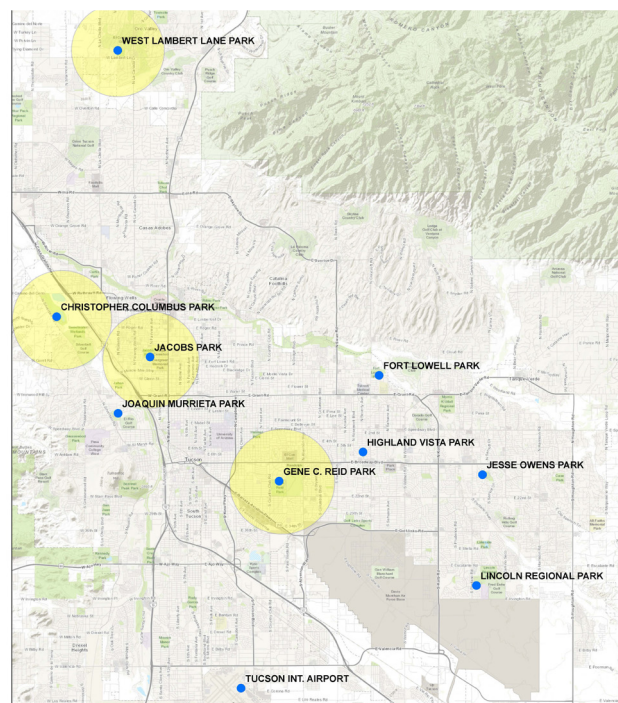
WHAT CAN YOU DO?

If you suspect that a pine may be infested with MPE beetles, contact a certified arborist for an assessment. To find certified tree care professionals in your area, you can use the **Find An Arborist** tool on the International Society of Arboriculture's website: www.treesaregood.org.

The best method to stop the infestation from spreading may be to have the infested tree removed. This will remove beetles from the area before they spread to other trees. All infested green material should be removed from the site, chipped, buried or burned. A certified tree care professional will be able to help you determine the best course of action.

Please contact the Department of Forestry and Fire Management with specific tree location details to help us monitor where MPE is spreading. This information is invaluable in helping us stay ahead of the problem. Information or questions can be emailed to foresthealth@dffm.az.gov.

MPE TRAPS IN TUCSON



Ten traps were placed around Tucson in April 2021 (blue dots) and will be monitored through September 2022. MPE have been detected in four of those traps (blue dots with yellow highlight) as of the writing of this alert.

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