Birdwatcher's Short Field Guide to Holes in Trees

All birdwatchers are encouraged to look for and report any potential signs of new infestations of invasive forest insects. Take a look at the photos below and on the reverse side to learn more about the three general types of holes in trees:

- Typical sapsucker and woodpecker foraging *(not usually a sign of invasive insects)*
- Damage caused by woodpeckers foraging on invasive insect larvae
- Damage from the invasive insects themselves

Typical Foraging: examples of holes made by sapsuckers and woodpeckers

photo credit: R. Anderson, US Forest Service

Holes from sapsuckers, such as Yellow-bellied Sapsucker

- Round and semi-round shallow holes
- Nearly always in a horizontal line or grid pattern

Many sapsuckers found around North America will cause similar damage, making horizontal lines of holes (like this photo) or sometimes full "grids" of holes. These foraging patterns are not considered indicative of potential invasive species infestations.

photo credit: R. Anderson, US Forest Service

Holes from woodpeckers, such as Pileated Woodpecker

- Deep irregular or oval holes with ragged edges
- Holes vary between 1" deep to sometimes leading all the way through to a rotted out interior of trunk

Damage by large (Pileated) and smaller (Downy, Hairy, and many others) woodpeckers can vary greatly. Most will have a hole that narrows or flattens out as the damage goes deeper into the tree. These foraging patterns are not likely indicative of invasive species infestations, with the exception of extensive foraging on ash trees- which can be a sign of emerald ash borer infestation.

Foraging on invasive species: holes and damage caused by woodpeckers

photo credit: D. Cappaert, Michigan State University

Emerald ash borer (EAB) exit hole on left, and **woodpecker** foraging hole on right - likely seeking adjacent EAB larvae

- Emerald ash borer exit holes are D shaped, about 1/8" across, and always in **ash trees**.
- Heavy woodpecker foraging activity on any ash tree should be considered a strong sign of emerald ash borer presence.

For information on reporting this pest and others, see reverse.

photo credit: J. Forman Orth, MDAR

Emerald ash borer "blonding" of ash bark by woodpeckers

- Shallow stripping off of surface of ash tree bark by woodpeckers seeking emerald ash borer larvae.
- May be combined with intermittent larger woodpecker foraging holes as seen in prior image.

The "blonding" foraging pattern on ash trees may be indicative of emerald ash borer.

For information on reporting this pest and others, see reverse.

- please see reverse for more photos and reporting information -

Holes and damage caused directly by invasive species

photo credit: Pennsylvania DCNR

D shaped beetle emergence (exit) hole

- **Emerald ash borer** exit holes are D shaped, about 1/8" across, and found only in **ash trees** and white fringetree.
- **Goldspotted oak borer**, an insect native to Arizona but considered invasive in S. California, may cause similar looking D shaped in **oak trees** throughout the Southwestern states.
- *Two lined chestnut borers are a native insect in the Eastern half of the US and Canada. They may cause similar looking damage in weakened oak trees but will not infest ash trees.*

Suspected emerald ash borer damage should be reported at emeraldashborer.info, as should suspected goldspotted oak borer at GSOB.org. *Two lined chestnut borer does not need to be reported*. When in doubt, use a smartphone or digital camera to take photos of any small D shaped holes in trees, and report them to a state agricultural or forestry official.

photo credit: J. Forman Orth, MDAR

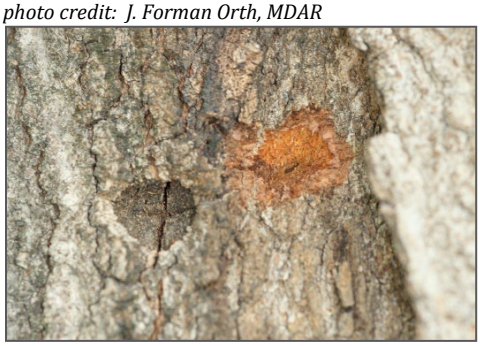

photo credit: M. Bohne, USFS

Asian longhorned beetle exit holes and egg laying sites

- Asian longhorned beetle exit holes are perfectly round, have a clean edge, and are about the size of a dime (between ¼" and ½" across)
- Asian longhorned beetle exit holes go very straight and fairly deep into the tree- they neither turn nor taper as they enter the wood
- Asian longhorned beetle egg laying sites are shallow pits or divots chewed into trees by the egg laying female beetles. They can be orange or reddish when newly chewed, or they can blend into the undamaged bark (as in the two pits pit pictured at bottom- old to the left, new to the right)

Perfectly round holes in deciduous trees are a potential sign of Asian longhorned beetle infestation, and should be reported at asianlonghornedbeetle.com. Take photos of any suspicious round holes in trees- especially holes in maples, elms, birch, and willows- and include them in the report.

How to report potential findings of forest pests:

You can use **pest specific reporting websites** for many pests as listed above, such as emeraldashborer.info, GSOB.org, and asianlonghornedbeetle.com.

Consider downloading the **EDDMapS app at apps.bugwood.org to report any potential pest signs. Be sure to take a photo with your smartphone** of any insects, holes, or signs you may find. If what you can see is too far up in a tree to be visible with your camera, **take a photo of the tree itself**. Use these photo(s) with either your app, phone, or website-based report. Take care to describe the location in detail on the forms whenever feasible.

Find this handout and more at ***https://www.dontmovefirewood.org/build-on-the-power-of-birdwatching/***