

# EMERALD ASH BORER

[*Agrilus planipennis* Fairmaire]



Fig. 1 UGA1241011



Fig. 2 UGA 5016058

**Problem:** A native of Asia,<sup>1,2,4</sup> emerald ash borer (EAB) infests and kills North American ash species (*Fraxinus* sp.) including green, white, black and blue ash. Damage is caused by the larvae, which feed in the cambium between the bark and wood, producing galleries that eventually girdle and kill branches and entire trees.<sup>1,2</sup>

**Identification:** Adults are roughly 7.5 to 13.5 mm long ( $\frac{3}{8}$  to  $\frac{5}{8}$  in)<sup>3,5</sup> with metallic green wing covers (Fig. 1) and a coppery red or purple abdomen (Fig 2).<sup>2,4</sup> Larvae reach a length of 26 to 32 mm long (1 to 1  $\frac{1}{4}$  in),<sup>1</sup> are white to cream-colored and dorso-ventrally flattened.<sup>2</sup>

**Signs and Symptoms:** Irregular holes excavated by woodpeckers feeding on pre-pupal larvae (Fig. 3) may be the first sign of infestation.<sup>1,2</sup> After at least one year of infestation, D-shaped exit holes (3-4 mm in diam.,  $\sim\frac{1}{8}$  in.) in the outer bark of the branches and trunk (Fig. 4) indicate adult emergence.<sup>1,2</sup> Adults may be visible from late May through September,<sup>3</sup> but are most common in June and July.<sup>2,3</sup> Vertical bark fissures (Fig. 5), crown dieback (Fig. 6) and epicormic



Fig. 3 UGA 1372003



Fig. 4 USDA Forest Service, Deborah McCullough, MSU

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Fig. 5

UGA 5016053



Fig. 6

UGA 1301042

sprouting and suckering are also prevalent.<sup>1,2</sup>

When the bark is removed from infested trees, distinct, larval tunnels or galleries that etch the outer sapwood and phloem are readily visible on the trunk and branches (Fig. 7).<sup>2</sup>



Fig. 7

UGA 5147090

**Similar Species:** Adult EAB beetles are generally larger and a brighter green than native North American species' of *Agrilus*,<sup>4</sup> like the bronze birch borer.<sup>3</sup> The six-spotted tiger beetle and caterpillar hunter are larger in size, are both predators of other insects, and are ground dwelling.<sup>3</sup>



Fig. 9

UGA 5016041



Fig. 8

UGA 2133022



Fig. 10

UGA 5022085

**Above (Fig. 8):**  
six-spotted tiger beetle  
*Cicindela sexguttata* Fabricius

**Upper left (Fig. 9):**  
bronze birch borer  
*Agrylus anxius* Gory

**Lower left (Fig. 10):**  
caterpillar hunter  
*Calosoma scrutator* Fabricius