

Emerald Ash Borer's Natural Enemies Are Here – Can They Make a Difference?

by William Davidson and Lynne Rieske-Kinney

Kentucky's forests support many native wood-boring beetles, several of which are closely related to the emerald ash borer (EAB). Populations of these native borers are usually kept in check by natural enemies, host plant resistance, and environmental pressures. Many of these natural enemies could potentially help suppress invading EAB populations if they are attracted to and can successfully attack EAB larvae.

The UK Forest Entomology lab has been releasing parasitoids and monitoring parasitization of EAB at several sites in Kentucky since 2013. The combined efforts of the Forest Entomology Lab and the Kentucky Office of the State Entomologist have resulted in the release of over 150,000 parasitoids across Kentucky's infested counties since 2010, including more than 35,000 *Spathius agrilli*, 101,000 *Tetrastichus planipennisi*, and 13,000 *Oobius agrilli*.

We recovered *T. planipennisi* from EAB-infested logs in the winter of 2014, suggesting that this classical biological control agent is becoming established in Kentucky's forests. In addition, we have discovered several native parasitoid species in association with EAB.

Atanycolus spp. (Figure 1) has been documented in EAB-infested forests in the upper Midwest and has also been found in Kentucky. At least two species in the genus *Heterospilus* spp. (Figure 2), which are known to parasitize native wood-boring beetle larvae, have been found in association with EAB-infested logs, suggesting that this genus may easily transition to EAB.

In addition, several species in the family Ichneumonidae, common parasitoids of a variety of forest pests, have been found in association with EAB, as have additional lesser known families.

Native natural enemies are discovering EAB populations and appear to be learning to use them as a resource, potentially helping to reduce EAB numbers.

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Photo courtesy: Debbie Miller, USDA Forest Service, Bugwood.org



Figure 1. *Atanycolus* spp.
(Family: Braconidae)



Figure 2. *Heterospilus* spp.
(Family: Braconidae)

Photos courtesy: William Davidson