



Whenever we are graced with new insect pests that attack our landscape, we often forget to check for those that have been long-standing problems. The only insect to get any press lately has been the dreaded emerald ash borer. As with any emerging issue that impacts either our landscapes or the spending of our tax dollars, it is important to understand the extent of the threat, the host range, and all treatment options. Knowledge is good. But we shouldn't lose sight of those insects that have been around for a while and leaving a trail of death wherever they are allowed to run free and happy. One of those is the bronze birch borer or *Agrilus anxius* Gory. This native wood borer has a documented history of damage dating back to the 1800's. Given that - do not expect it to magically disappear just because there's a new kid on the block - it will continue to be a problem. So let's look at what it is and what can be done about control.

Wood boring insects do as one would expect – they bore through wood. Most have a very specific range of plant material that provides the right environment and the preferred nutrition for optimal survival, growth, and reproduction for the invading insect. In the case of the bronze birch borer, birches are it. All birches are susceptible to attack, infestation, and damage with some more at risk than others. *Betula alleghaniensis* (yellow birch), *Betula Jacquemontii* (Himalayan white birch), *Betula lenta* (sweet birch), *Betula papyrifera* (paper birch), the ever invasive *Betula pendula* (European white birch - which is the most frequently attacked species), and *Betula populifolia* (gray birch) are all susceptible (in varying degrees) to the bronze birch borer. The only species that is not often bothered, when healthy, is *Betula nigra* or the river birch. Does this mean that one should never plant a birch tree? Please be realistic, of course these trees - while not actually optimal for our climate - will continue to be planted. Those that are planted need to be better situated for prolonged health and tree longevity. Most birches prefer cool, moist soils with lower pH levels. Some prefer full sun, others prefer a bit of cool shade – check your species to get it right. The root systems of most birches are shallow and will not tolerate hot and dry soil conditions. Soil disturbance and compaction will also disrupt root development, shorten life expectancy, and increase insect infestations dramatically. Proper placement, adequate moisture provision (and retention with proper mulching), will all help birches achieve the full 50 to 80 years of expected life span. An interesting note for those who love to fertilize everything – you may want to hold off around the birch trees. Research is now showing that high fertility around birch trees actually increases the incidence and severity of borer infestations.

Now – on to those boring critters. In this area, expect to see adult bronze birch borers emerging from the host trees anywhere from the end of May through the end of June. (As with many wood borers, the exit holes will be d-shaped, but are often hard to casually spot unless an infestation is quite advanced.) The adult beetles are about ½" long, olive/black in base color with a lovely bronze shimmer. After the adult females have emerged and snacked on leaves for a couple of weeks, they will find a nice sunny, protected spot to lay eggs. These will hatch in about two weeks, with the tiny white larvae immediately going to work creating criss-crossed galleries throughout the tree system. Larvae complete their one to two year life cycle within the tree's vascular system. The galleries created from this feeding provide areas for the mature larvae to pupate and emerge as adults. They also dramatically disrupt the vascular system of the tree, interrupting nutrient flow, and permanently disrupting the tree's ability to produce food for continued tissue development and growth. Okay so maybe that was a bit long-winded for it kills the tree. If an infestation is left unchecked - could be a slow death, can also be a quick one.

Simple changes in cultural practices, and early, appropriate treatments, can halt the borer damage during the early stages of infestation. Accurately reading those early stage symptoms will help those trees lean more towards survival than sure death. Stunted, damaged, or discolored leaves, and crown or branch dieback are early phase symptoms, but these can also be indicators of other health issues as well. Visual identification of the adult beetles is a bit more positive - but if the trees are not monitored regularly, internal damage may have progressed too far by the time adults are noticed and positively identified. Consider this one of those times that some professional help is warranted. Improving cultural practices (watering, mulching, and pruning) will help the trees to achieve better health which may enable them to repel borer infestations and damage. If chemical treatments are needed, the products and treatment techniques out there will vary according to severity of the infestation and the time of the year when the treatment decision is made. There are some systemic chemical treatments that require early spring application for maximum efficacy. If product is applied during the emergence and egg laying phases, there are some safe and effective organic and synthetic insecticides available. If environmental conditions are really quite intolerable for a birch to do well, quit forcing the issue. Do yourself and the tree a favor - replace it with a species that is better suited to the site.