

# Renfrew County Forest Health Update 2020

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2020 has proven to be a challenge for both the residents and trees of Renfrew County. Several notable forest pests made a mark on the landscape this spring and summer. As is becoming the norm in recent years, invasive species are having the biggest impact on our forests.

## Gypsy Moth

Gypsy moth (GM) is a non-native, invasive pest first detected in Ontario in 1969, but widespread defoliation did not occur until 1981. Since then it has caused major defoliation events every 7 to 10 years in various parts of Ontario. Gypsy moth has over 300 known host plants, but prefers oak, maple, birch, white pine and white spruce. The impacts during a severe defoliation year can be quite startling – a single gypsy moth caterpillar can eat one square metre of leaves in a season. There were areas of severe defoliation observed by the public and County staff in Renfrew County during the spring and early summer of 2020 – Calabogie and area, north and south of Golden Lake, Dacre, Mount Saint Patrick, Springtown, and Burnstown.

Although the immediate impacts of gypsy moth are undesirable – trees stripped of leaves, caterpillars, moths and larvae everywhere – healthy trees can sustain 2-3 years of heavy defoliation and often reflush in the same year. There will be some mortality of already weakened trees, and the increased stress does leave trees more susceptible to other issues, for example, drought. Outbreaks have historically collapsed after a few years when naturally occurring viruses or fungus that target GM put the population back into check.

It is possible that a similar or larger outbreak will occur in 2021 in some areas of Renfrew County. There are measures that home or landowners can take to reduce the impact until the local population decreases such as scraping and destroying egg masses, burlap banding trees to trap caterpillars, picking pupas, or applying pesticides during caterpillar feeding. You can learn more in a [Fact Sheet](#) produced by the Invasive Species Centre, Eastern Ontario Model Forest and Lanark County.



Figure 1. Gypsy moth laying egg masses on an oak in Barnet Park, Calabogie. Photo by CoR.

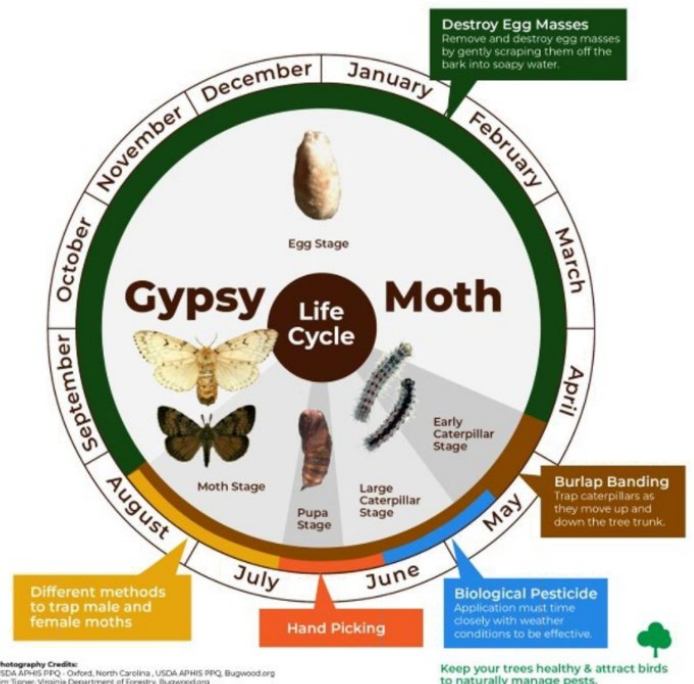


Figure 2. Life cycle of gypsy moth and recommended timing for control actions. Source: Invasive Species Centre

## Emerald Ash Borer

Emerald Ash Borer (EAB) is an invasive, wood-eating beetle that is threatening Ontario's ash trees. Ash is a common street tree in many towns and cities in Central Ontario, since it was frequently planted as a replacement for elm trees killed by Dutch Elm Disease in the 1970s and 1980s. Ash also exists as a minor component in hardwood and mixedwood forests in Renfrew County, is common along roadsides and farmfields, and is the dominant species in black ash swale ecosystems.

EAB was first discovered in North America in 2002, Ottawa in 2008 and Renfrew County in 2013. Arnprior and Renfrew have heavy infestations, and the beetle has been steadily travelling along Highways 17 and 60. County staff have been setting EAB traps since 2016 in locations outside the area mapped as infested by the Ministry of Natural Resources (MNRF) to check for presence. This year, 5 of 6 EAB traps had at least one EAB present. The locations of these positive traps were Cobden, Lake Dore, Cotnam's Island, Shaw Woods and Deacon. A significant amount of EAB (50) were found on the Deacon trap, and nearby declining ash trees indicate that EAB has likely been present for some time now.

The impacts of this insect is evident in cities and towns where street and park tree loss has been significant. Trees typically die within 2-3 years of EAB infestation, and can become hazardous quickly. There is also potential impact to unique ash forest stands, and the unknown of what will happen to these ecosites when the species is removed. Residents of Renfrew County can help slow the spread of EAB and other invasive insects by not moving firewood – it is likely that is how most of the infestations arrived here. If you have ash trees on your lawn, you may consider planting another species now to maintain tree cover once EAB arrives in your area. Treatment options are available for high-value specimens, but are not practical on a large scale. Research is underway for a biocontrol that if successful, should help maintain ash as a species on the landscape. Pre-emptive removal of ash on your property is not recommended.

## Sudden Fir Mortality

Landowners and recreationalists may have noticed the presence of "red and dead" balsam fir trees this summer. A natural phenomenon that has presented itself before, Sudden Fir Mortality (sometimes referred to as Stilwells' Syndrome) appears as scattered, singular, red and dead balsam fir in all types of sites – roadside, overstory, understory, interior forests, along wetlands. The trees die so quickly that the needles are retained, leading to the striking appearance.

Armillaria root rot is a factor in the death, but its presence is exasperated by several factors including drought, hot spring temperatures, fast melts, changes in groundwater levels, and bark beetles. Previous studies have shown that although Sudden Fir Mortality appears widespread on the landscape, often less than 1% of balsam fir are actually affected.

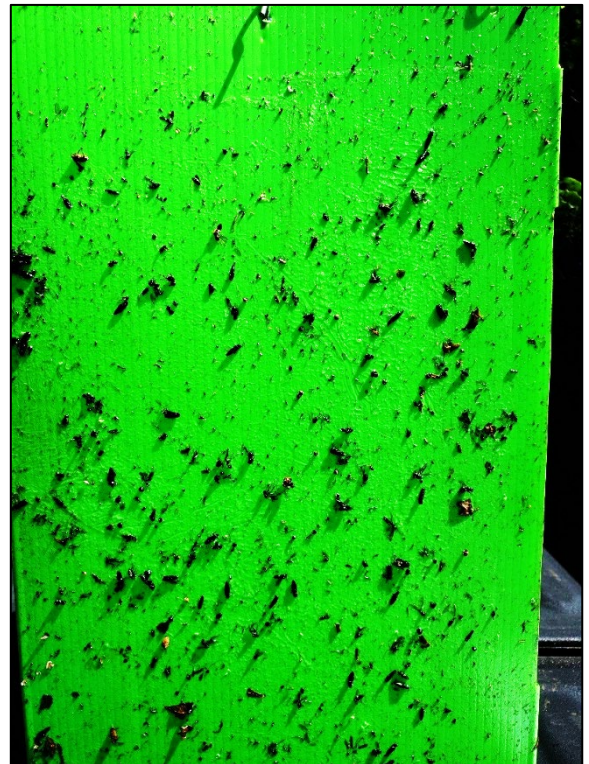


Figure 3. Sticky trap at Deacon showing EAB presence, August 2020. Photo: CoR



Figure 4. Sudden Fir Mortality along Highway 512, July 2020. Photo: CoR

## Beech Bark Disease

Beech Bark Disease (BBD) was first identified in Central Ontario in 2010. It is the result of non-native scale insect infestation (*Cryptococcus fagisuga*) followed by a fungal invasion known as *Neonectria*. Typically, the scale insect infests the tree, causes little noticeable impact, but is followed within a few years by *Neonectria* fungus, and enters the trees through the feeding holes of the scale insect. The fungus kills the inner bark and cambium of the tree, eventually girdling it and preventing the flow of water and nutrients from ground to crown. Tree death usually occurs within 2-5 years of fungal infestation. In addition, trees with BBD are more susceptible to other decay fungi and insects and are often prone to snapping during wind events.

Unfortunately, this disease has been present in Atlantic Canada for more than a century and has been extensively researched, with no solution in sight. Although a very small percentage of beech trees are resistant to the disease and can survive, most infected trees die. Beech nuts are an important food source for many species of wildlife, as evidenced by bear claw marks on many trees. Dead topped trees can present hazardous conditions in parks, towns and around trails and houses. Perhaps almost as problematic as the death of the tree itself is the vigorous sprouting of beech regeneration that occurs after (the “aftermath forest”) that impedes other species from growing. These new trees will, of course, die as well and repeat the cycle.

BBD was first identified on Crown land in Renfrew County in 2013. Since then, more and more beech with the scale insect have been observed, and increasing locations with *Neonectria* fungus. The sad reality is once the disease arrives, there is little that can be done to protect beech in forests. This is another case where limiting the movement of firewood helps slow the spread of invasive species.

Woodlot owners may wish to learn to identify BBD and target removal of infected trees for firewood or wood products in winter – moving logs around in summer and fall may spread the spores faster. Because of the high value for wildlife, retaining the healthiest beech is a good practice, and pre-emptive removal of all healthy beech is not advised. However, when managing your forest, you may choose to preferentially harvest beech over other species without imminent health concerns (e.g. retain basswood over beech in a selective harvest). Controlling regeneration sprouts will help other species succeed.



Figure 5. Fruiting bodies of *Neonectria* fungus, causing Beech bark disease. Photo: CoR.



Figure 6. Heavy infestation of scale insect on beech bark. Photo: CoR.