

# Beech Bark Disease Resistance



A disease-resistant beech tree stands next to a tree killed by beech bark disease

Beech Bark disease is an insect-fungus complex. The beech scale insect, which was introduced from Europe, creates openings in the bark that are colonized by a *neonectria* fungus. Beech bark disease was first described in Halifax in 1890, it was likely introduced separately to Boston and New York City in the early 1900's, and it has been slowly spreading. The scale insect had reached the Adirondacks by the 1960's, and was first reported in Ontario in 1966. It has now spread through most of the range of beech in Ontario. There is commonly a delay between the arrival of the scale insect, and the associated fungus that causes beech bark disease.

Beech bark disease in North America kills about 80 percent of trees, and leaves most of the remainder severely deformed. About one to six percent of beech trees are truly resistant. These resistant trees are where we need to focus our attention. Most large woodlots or forests will have resistant trees, which can be the parent trees for a new generation of healthy, resistant beech.

## What to look for

Resistant trees will be smooth-barked, with no scale (or very little), and will be growing in a forest where most of the beech are heavily infected, deformed or dead. Examine mature trees that are at least 20-30 cm in diameter - smaller trees may resist infection while young, but later become infected and die. Resistant trees are the best hope for the future of beech.



Beech Scale



Neonectria Fungus



Cankers



Resistant beech tree

## If you find resistant trees

Healthy mature trees in a stand infested with bark disease should be considered resistant, and conserved. They may be seed sources for a new generation of resistant trees. Diseased trees can be removed, and suckers within 1.5 metres of dead or diseased trees could be cut, or even treated with herbicides.

Use the inaturalist project to report disease-resistant trees, so that they may be used for research, seed collection, etc. The inaturalist app allows you to record resistant trees directly from your smart phone.

<https://www.inaturalist.org/projects/bee-bark-disease-resistance>