

Butternut: *Juglans cinerea*



Bark



Leaves



Twig & buds



Fruit

Photos courtesy of:
(ODNR, 2012)

DID YOU KNOW?

Planted Butternut is not protected unless they are planted as a condition under an Endangered Species Act permit.

The Butternut is a small to medium sized tree which is native to eastern Canada. In Ontario it is usually found as scattered individuals, as small groups within hardwood stands, or as remnant trees in fence lines or open fields. This is because of the high levels of canker which have been negatively impacting the population. It was first isolated and reported in Canada in Ontario in 1991, by the Canadian Forest Service, but was assumed to exist for at least 20 years prior there. Inventory efforts by the Committee on the Status of Endangered Wildlife in Canada estimate about 13000 trees existing in Ontario. The result of small population sizes in the presence of canker has designated naturally occurring Butternut trees the protection under the federal Species at Risk Act and Ontario's provincial Endangered Species Act.

BIOLOGY

- Small to medium sized tree that seldom exceeds 30m in height and 90cm in diameter at maturity
- Young bark is light gray and almost smooth
- The bark fissures into distinctly flat topped ridges that are silver in colour with age
- Leaves emerge later in the spring than most other trees
- The leaves are alternate and pinnately compound
- Leaves are 25 to 40 cm in length and consist of 11 to 17 leaflets arranged along a central stalk
 - Their undersurface is densely hairy and sticky
- Branches are stout and hairy with large leaf scars that are elongated with checkered floral buds above them and a large terminal bud
- The centre of the twig, called the pith, is dark brown and filled with chambers
- It flowers from April to June depending on location, and has both male and female flowers on the same tree that mature at different times which reduce inbreeding
- Begins to bear fruit around the age of 20 with peak production from age 30 to 60
- A good seed crop occurs every 2 to 3 years
- Capable of vegetative propagation from stump sprouting
- Seeds require cold stratification for 90 to 120 days to overcome dormancy
- The fruit is an ovoid single seeded edible nut 4-6cm long at maturity, with a green husk covered with a dense layer of short sticky hairs and an inner shell with jagged ridges
- Fruits occur singly or in clusters of 2 to 5 and is sweet, oily and edible
 - It is an important source of food for wildlife
- Nuts usually drop after leaf fall with the first heavy frost

HABITAT

- Shade intolerant
- Thrives in open areas like fence lines, forest edges and fields where they get full sun
- Prefers moist bottomlands and ravines with deep, rich, well drained soils
- Performs reasonably well in dry rocky soils with limestone outcrops in higher pH soils



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THREATS

- The biggest threat to the Butternut tree is the fungal disease *Ophiognomonia clavignenti-juglandacearum*- commonly referred to as Butternut canker
 - Control of the infection is not possible and management of healthy butternut is the best recommendation thus far
- Hybridization
 - Butternut doesn't hybridize with any trees native to Canada but does with trees planted for nut production such as the Heartnut and Japanese Walnut

BUTTERNUT CANKER: SIGNS & SYMPTOMS

- Affects trees of all ages and sizes, and spreads quickly with the ability to kill a tree within a few years
- A newly infected tree will not show any obvious signs until the disease begins to kill the inner bark
- Trees are usually first infected in the lower crown and then downward on the stem and branches as spores from the cankers are washed down
- As the number of infected areas increase, crown die back will accelerate, which reduces the number and quality of seeds the tree will produce
- Following crown die back the canker will spread around branches and the trunk, eventually killing the tree by restricting the flow of water and nutrients
- As time progresses older cankers provide an entrance site for decay and other harmful fungi
- Cankers appear as elongated sunken tissue, which commonly originate at leaf scars, buds or wounds
- Young cankers often have an inky black centre and a white margin
- Older cankers are perennial and found in bark fissures or are covered by shredded bark and bordered by callus layers
- In the spring an inky black fluid exudes from cracks in the canker
- Stress induced branches usually grow from trunk below the dead or infected area
- Some infected butternuts live for many years, and canker free trees have been observed within infected stands but this is a rare occurrence and may represent some level of resistance

HOW CAN I HELP THE BUTTERNUT ?

- Assist seedling survival by removing competing vegetation and shade trees to help maintain their vigor and encourage seed production
- Control of the infection is not possible and management of healthy Butternut is the best recommendation thus far
- Use Good Forestry Practices to reduce impact on trees if logging operations are occurring because damaged trees are more susceptible to the disease
- Contact the Ministry of Natural Resources before removing any naturally-occurring Butternut trees of any age on your property, even if it is dead or dying
- Visit the Forest Gene Conservation Association Website at <http://www.fgca.net> to
- Report any illegal activity related to plants and wildlife to 1-877-TIPS-MNR (847-7667)
- Get to know your woodlot and report your sightings of American Chestnut trees to the Natural Heritage Information Centre at <http://www.mnr.gov.on.ca/en/Business/NHIC/>

Butternut Canker



Photos courtesy of:
(Government of Canada, 2011)

DID YOU KNOW?

Naturally, Butternut of any age and size can only be removed after the tree has been identified as non-retainable by a designated **Butternut Health Assessor**. A non-retainable tree is one so severely affected by canker that it is not of value to recovery efforts.

For a list of Butternut Health Assessors contact your local OMNR office.