



When will Algonquin's leaf colour be at its peak?

Algonquin colour admirers understandably want to know when the colours will be at their peak but this is difficult to say ahead of time. We have no crystal ball, however, fall leaf colour is usually best from late September through early October. Our graph illustrates the "peak" dates since the 1970s. This may help when you plan your autumn visit to Algonquin.

You can check for regular updates on the Park's leaf-colour status by visiting:

www.algonquinpark.on.ca or www.OntarioParks.com

When in the Park, trails with good views of maple colour include:

Hardwood Lookout

(at km 13.8)

Track & Tower

(at km 25)

Centennial Ridges

(2 km South from km 37.6)

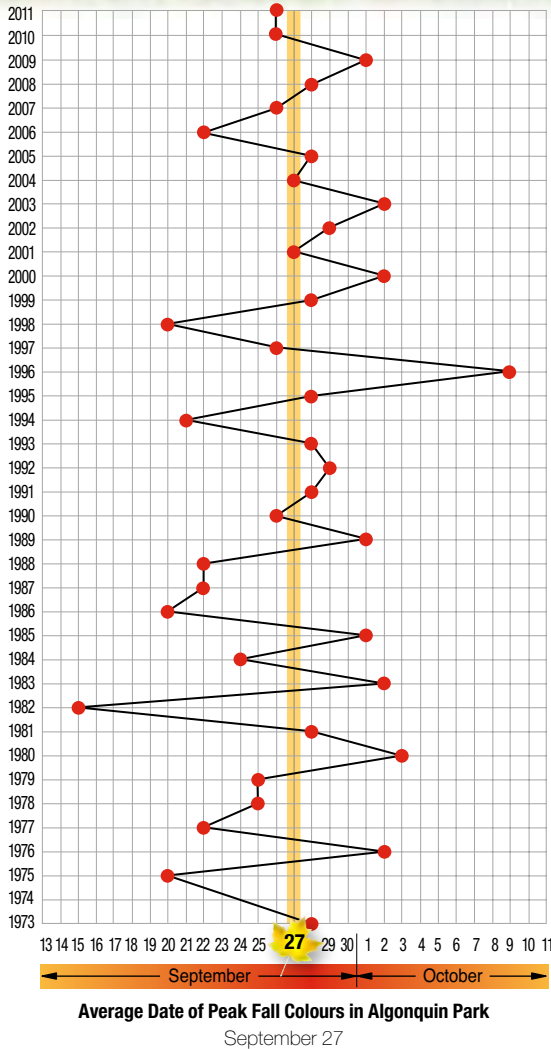
Lookout

(at km 39.7)

Booth's Rock

(9km South from km 40.3)

Enjoy the view!



The Visitor Centre now offers free WiFi internet access... and while there, don't forget to check out The Friends of Algonquin Park bookstore, or enjoy a light snack or meal at the Sunday Creek Café.

A single piece of firewood can destroy millions of trees.



If you bring your own firewood from home, you could spread insect and plant diseases that threaten the health of our forests. The **Asian Long-horned Beetle** and **Emerald Ash Borer (EAB)** are of particular concern right now. Although these invasive insects pose no risk to human health, they threaten the health of our forests.

Prevent the spread of these pests.

Here's how YOU can help to control the spread of invasive species

Leave firewood at home!

A better alternative is to purchase firewood locally around the park; however please check for pest infestation and avoid purchasing ash firewood.

Leave natural items in their natural habitats.

It is unlawful to cut any plants or trees, or collect dead wood, for campfires.



Firewood is sold at your campground office or...

- Pog Lake Woodyard (at km 36.9)
- Mew Lake Woodyard (at km 30.6) *open year-round*
(during winter months, operates on self-serve fee station - cash only)

QUESTIONS? Talk to Park staff, call the Canadian Food Inspection Agency (CFIA) at 1-800-442-2342, or visit www.inspection.gc.ca
FIREWOOD from all areas regulated by the Canadian Food Inspection Agency (CFIA) will be seized and NOT replaced.

Protect our environment and forest resources.

The Raven is available online and a limited number of complete sets of the previous year's Raven are available at the Visitor Centre and the main gates along Highway 60.

www.algonquinpark.on.ca

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Can Algonquin Stand Without Elephant Legs?

By Justin Peter, Park Naturalist



A Park Naturalist admiring one of Algonquin's American Beech.

One of the things that draw us to Algonquin is the sense of timelessness we can experience just by being in the Park: the lakes, forests, hills and wildlife can seem as though they have always been here. And while the rest of the world changes quickly around us, Algonquin appears unchanged. But reality can be very different from perception. The area that is Algonquin has been transformed radically over the years. Loggers cut most of the ancient forests that once grew here before the park was even founded. The animals we find today may be quite different from those that may have been common a few centuries ago. And the hills which form the Park were part of a chain of mountains once taller than any other in geological history! In fairness, these are changes that have taken place over a long time, and so it is not surprising that we relate to them little on the scale of our everyday lives. However, some changes to the Park environment do occur quickly enough for us to notice. In fact, there may soon be an important change that could have significant effects on our Park: the devastation of one of our tree species, the American Beech.

Now, this may sound like a dramatic thing to say about a tree, particularly if you have never heard of the American Beech. And you may not



even be inclined to look very closely at trees at all. But we think that the beech deserves attention for various reasons. As one of our most widespread trees, beech adorns our woodlands with its unique, smooth grey bark, which gives the trunks of older trees the appearance of “elephant legs”. It is difficult to walk by one of these without giving it at least a casual glance of appreciation. If you are not at least convinced of its beauty, let us suggest that beech provides valuable services to wildlife, including many quite noticeable species. Old beech trees provide great habitat for birds that excavate nesting cavities such as the Pileated Woodpecker. Perhaps more importantly, beech trees provide upwards of 40 forms of wildlife with a feeding bonanza in the form of a beechnut crop that is

crowns of beech trees, leaving tell-tale scars in the bark with their claws. At the northern reaches of the beech’s range, beechnuts are one of the most important, high-quality autumn food crops for bears. They are important because they determine the health of bears prior to entering hibernation. This, in turn can determine how well younger bears survive the spring following winter hibernation, and whether the adult female bears that have mated will give birth to any babies at all during the winter. Beechnuts can even determine how many of the babies that are born will survive, since the amount of milk that a mother bear produces can depend on her condition going into hibernation.



The tiny scale insects (one shown in inset) can live in large numbers on beech and conceal themselves with a protective white, waxy substance. Peter J. Smallidge

But we may not be able to rely on these and other benefits that the beech provides for too much longer. A disease called Beech Bark Disease (or BBD) has been spreading westward over the last century from its original, accidental point of introduction in Nova Scotia and harming beech trees in its wake. BBD is caused by the combined effects of a tiny, introduced, bark-eating insect called the beech scale, and an infectious fungus with the poetic-sounding name of *Neonectria faginata*. Together, the insect and fungus can disfigure the beech’s trademark smooth bark and eventually kill the affected tree. The beech itself ironically contributes to the disfiguring as it defends itself against the fungus, which enters the bark through the feeding holes created by the scale insects, and infects small, isolated areas. The tree initially walls off these infected areas. This

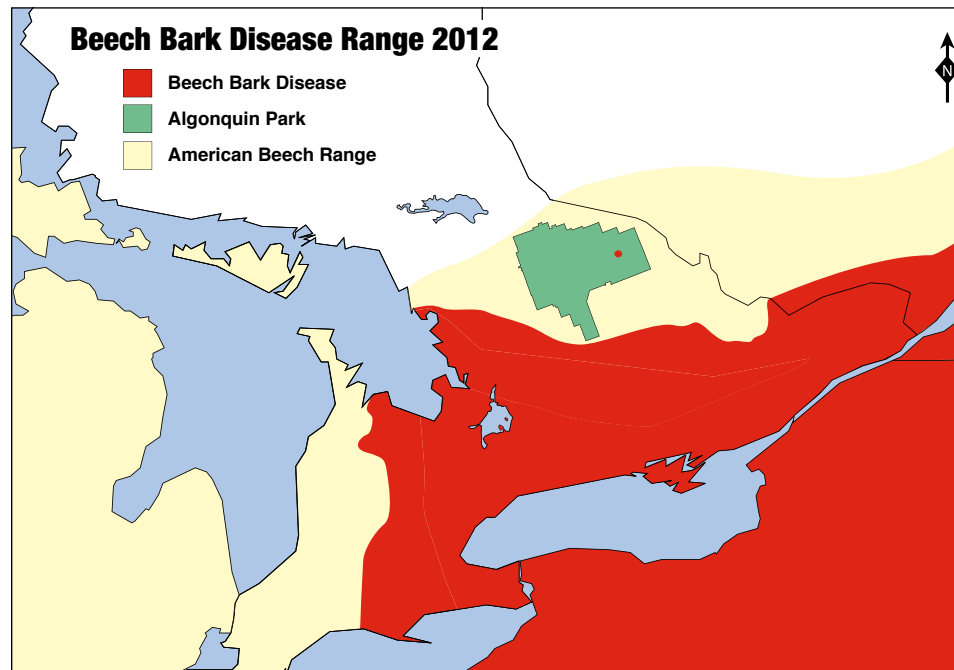


Black Bear feeding on beechnuts. Jeremy Inglis

produced every few autumns. The Black Bear is the best-known beneficiary of these nutritious beechnuts. And bears seem quite determined to get at beechnuts when available; they will climb high into the



Beechnuts and their cases.



The range of beech bark disease in Ontario as of spring 2012. The lone red dot in the upper right is considered a satellite disease centre – an area to which the disease was transported, possibly via movement of firewood.

creates small circular cankers, within which the bark is actually dead. The tree can survive a few cankers, but as the number of points of infection increase, larger areas of bark may die. The movement of nutrients between the crown and roots (something that takes place just below the bark) decreases, and as bark dies and falls off, the wood below can rot. Many of the smaller beeches may actually survive the disease for a time, but they weaken and eventually decline. The situation can be very different with large trees. The disease tends to kill larger beech trees outright over just a few of years. This is how



Infection by the fungus can reveal itself by the fungus’s red fruiting bodies on the bark. Peter J. Smallidge

the effects of BBD could be very significant for wildlife: the larger, older beech trees produce a disproportionate amount of beechnuts. This means that the death of just the largest trees could reduce the crop of nuts significantly. In fact, Todd Noble, a graduate student at Trent University in Peterborough (Ontario), recently studied BBD and found that it could reduce the amount of nuts produced by a stand by over 90%, just by killing large beech trees!

We don’t suggest that wildlife that uses beechnuts will simply starve and disappear because of the death of beech trees. Bears in



Cankers on beech tree. Peter J. Smallidge

particular are highly adaptable in their food habits and will seek out other food sources, settling on the next best one available. They could seek out, even at great distance, the acorns produced by Red Oak trees as an alternate, high-quality autumn food. This is something they might do anyway in years when there is no beechnut crop. But Red Oak, like beech, doesn’t necessarily produce a crop each autumn. Add to this the fact that Red Oak is quite uncommon and local in some areas such as the western uplands of Algonquin Park, and this means that there may be more autumns without any readily-available high-quality food. In the short term, this could mean that bears alive today may enter into hibernation in poorer condition. Younger bears may not have as high a chance of surviving the spring following hibernation. Females would give birth to cubs less often. In the long term, it could mean that Algonquin may not be able to support as many bears as it currently does (we estimate a population of 2,500 based on habitat conditions). We can only speculate that other species of wildlife that depend heavily on beech will face a similar outcome.



Beech bark disfigured and killed by beech bark disease. Peter J. Smallidge

What about beech? Will it ultimately disappear? Obviously, a drastic reduction in production of beechnuts would hamper the regeneration of new beech trees from seeds. But diseased beech trees may – at least for a time – survive in another sense by the fact that even once they die, they can send up a multitude of sprouts (suckers) from their root system, and these can potentially form new trees. Unfortunately, these suckers may

face a big challenge in attaining nut-bearing size since they can grow so densely that they prevent each other from growing to full potential. Add to this the fact that these suckers are genetic clones of their parent, and so they may be just as susceptible to BBD once they get larger. Can they eventually gain resistance to the disease? Will the disease weaken with the passage of time? That could happen, but we don’t know. Where there is a glimmer of hope is the fact that a small number (approximately 1%) of mature beeches appear to be resistant to BBD and continue to stand unaffected alongside their maimed and dead peers. We assume this resistance is due to genetics. It is possible that these trees can give rise to future generations of disease-resistant trees in some way; however, we don’t know exactly if this could happen either.



The canker-free tree on the left is resistant to the disease. The tree on the right is diseased.

So, it may be clear to you that there is much to know and learn about the effects that Beech Bark Disease could have on Algonquin. At this point, BBD has been confirmed at one location in the Park*, and so we watch our beeches with a sense of concern. But we also watch them with a sense of appreciation and gratitude for what they have provided. Change may not always be something we want, but it may just be something that we need to accept.

*Editor’s Note: The location where Beech Bark Disease was confirmed in the Park is at least 100 km from the nearest known infected stand of beech. Because the fungus that causes BBD can usually only spread over a much shorter distance, we suspect strongly that the disease arrived in Algonquin on beech firewood coming from infected trees.