

Not Plagued by Locusts

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Sometimes I wonder if the Biblical plagues of ancient Egypt have lingered in one form or another. Blooms of toxic algae, which occasionally turn water a blood-red colour, are on the increase. Gnats and lice have been supplanted by deer ticks, which I'd argue are even worse, and there is no shortage of hail in season. Frog outbreaks may not have occurred since Pharaoh's time, but poisonous cane toads imported to Australia are now running amok there, decimating all manner of native animals. And currently, swarms of locusts are causing great hardship in Somalia, Ethiopia, and Kenya.

Here at home, we are blessedly free of the kind of swarm-feeding grasshoppers that continue to cause suffering in Africa. Nonetheless, locusts have become such a problem that the Ontario Invasive Plant Council declared the locust an invasive species which can have "a wide range of negative impacts on Ontario's native ecosystems."

As usual this is a deceptive opening, for which I sincerely do not apologize. In our neck of the woods, the locusts which trouble conservation groups are black locusts (*Robinia pseudoacacia*), trees having origins in the Appalachian region of the US.

A member of the pea family, the black locust matures at 20-30 metres tall, and makes its own nitrogen supply by "fixing" atmospheric nitrogen via symbiotic soil bacteria on root nodules. This free fertilizer gives locusts an advantage on nutrient-poor sites. Additionally, they are experts at self-cloning through root suckers or sprouts, much like poplars do. Especially in poor soil, this can lead to near-monoculture locust groves. Locust gives itself yet another black eye by having sharp thorns able to slash clothing and skin.

By definition, an invasive species is from another ecosystem (typically overseas), is able to thrive and replace native competitors, and causes significant economic, ecological, or human-health effects. Examples such as the emerald ash borer, Asian longhorned beetle, Japanese knotweed, and dog-strangling vine clearly fit that bill, causing billions in damage, but devoid of redeeming qualities.

I think it's wrong to paint all invasives with the same brush. For one thing, given that there are hundreds of invasive species in Ontario, the bristles would wear out long before you could finish the job. It is curious that black locust, which by some accounts was spread from its native range 500 or more years ago, has only been dubbed invasive in the past decade or so. On prairies, and grassland-bird habitats generally, it can indeed be a problem. However, there are many other locales where it is clearly beneficial, economically as well as ecologically.

Dr. Robert P. Barrett of Michigan State University, who has been researching black locust trees since 1978, writes that "...due to flavonoids in the heartwood, [black locust wood] can endure for over 100 years in the soil." Move over, redwood, which only lasts 30 years. Rot-resistance is what makes the demand for locust fence posts far exceed the supply at this time.

This quality is the reason black locust was imported to Europe in the early 1600s. Over time, European foresters have done a superior job of selecting traits such as straight, uniform trunks, and today the best sources for good locust stock are said to be found in Hungary. European farmers quickly realized locust leaves were a valuable source of protein for ruminant livestock, and to this day it is used as such in Europe as well as in many Asian countries to which black locust was exported.

Writing for the Cornell University Small Farms Program, Extension Specialist Steve Gabriel notes that beekeepers value the black locust. Its flowers are an important source of nectar for bees, and the resultant honey, sometimes called acacia honey, is much sought-after. Gabriel also writes that black locust is used as a “nurse crop” for walnut orchards because it puts nitrogen into the soil, and is not affected by the toxin released from walnut roots.

Another point is that black locust is ideal for reclaiming gravel pits, strip mines and other tough environments. In the conclusion of his 1990 paper “Black Locust: A Multi-purpose Tree Species for Temperate Climates,” Dr. Barrett says “As one of the most adaptable and rapid-growing trees available for temperate climates, it will always be valued for erosion control and reforestation on difficult sites. Vast new forests of rapid-growing species may be needed to slow the accumulation of CO₂ in our atmosphere.”

Not only does black locust grow quickly on impoverished sites, its wood has the highest heat value per volume of any tree out East. Wood-BTU charts seldom agree, probably due to variations in growing conditions from place to place which affect wood quality, but black locust is often rated at between 28 million and 29.7 million BTUs per cord. This puts it on par with, or slightly better than, hickory.

Commercially, black locust is in high demand for mine timbers, railroad ties, boat-building, and for many applications where rot-resistance is important. The International Union for the Conservation of Nature considers it one of the most sustainable and ecologically-friendly sources of timber, and The London Natural History Museum says it is host to 46 species of butterflies and moths. It can be used to quickly reforest sites that would otherwise become long-term habitat more pernicious invaders like buckthorn, dog-strangling vine, and exotic honeysuckle species. All good reasons to strike *Robinia pseudoacacia* from the list of plagues in many locations.

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