

LANDSCAPING FOR TICK RESISTENCE

By Pamela Baltzer – Heritage Landscape

<http://heritagelandscape.ca/company.html>

Maintenance Practices

Understanding the tick lifecycle and how ticks are delivered to us is a key factor in mitigating risk. Most of the maintenance techniques below are based around two factors: limiting the variables that create a suitable environment for ticks to inhabit and limiting incursions by their host carriers (deer, rodents, racoon, birds), as ticks move no more than one metre in their lifetime, of their own accord. Ticks are always at risk of desiccation (drying out), so the easiest means of keeping them away is limiting or omitting moist, cool areas on the property.

Wood Piles

Wood piles should be constructed over compacted bases of crushed gravel with the wood itself tiered on either pressure-treated timbers or metal bars to keep it off the ground. The compacted gravel allows rain and snow to filter through and away quickly, reducing trapped moisture. This technique also allows for maximum air circulation, which enables better curing and better burning, by reducing moisture under the pile. It also keeps the wood from wicking moisture up from the ground.

When wood is delivered to your property, the bits and pieces of bark and debris that fall off during the dumping, splitting, and piling stages should be cleaned up and disposed of through municipal composting bins.

Trash

Compost, recycling, and garbage bins should be critter proof. Foraging and nocturnal animals are opportunistic by necessity and poorly stored trash encourages them to come to your property. These animals are the host carriers for the ticks; the more times they show

up for an easy meal the greater the risk of delivering infected ticks.

Bird Feeders

Bird feeders should either be removed entirely from the property (ideal) or pushed to the farthest edges. When birds are eating, many grains and seeds are dropped, and while smaller birds will forage from the ground, the birds are carriers. The fallen food also encourages rodents, raccoons, and deer to visit where food is easily procured.

Lawn Mowing

Lawn mowing is the single biggest area where horticultural health divides from tick-prevention practice.

Summers used to be punctuated by reliable, once-per-week rains which meant lawns stayed in reasonably good condition throughout the summer; the new norm (for the last four seasons) has been four to five months of drought. With the exception of Hurricane Dorian, Lunenburg has little in the way of measurable rain since July 1st, and the rain from Dorian was ineffectual as the ground was extremely hard and the rapidity with which the rains came meant most of the water skated across the surface and away to storm drains and ditches.

This means lawns that are not irrigated are dormant, dry, and brittle - a poor habitat for ticks, but a fantastic environment for chinch bugs. From a horticultural-health POV we would encourage allowing lawns to be a little shaggy to better protect the crowns of each grass plant, however, a short lawn deters ticks. How do we strike a balance? A couple possibilities: high-traffic areas are mowed short and less travelled areas are allowed greater length and/or sowing Dutch white clover into the lawn. Clover is drought tolerant and fixes its own nitrogen in the soil and easily tolerates close cropping. Clover, alone, is not a solution, as it is a sluggish performer in the early spring when grass grows beautifully. Additionally, it has a "running" habit and can easily get into places it is not wanted (gardens and pathways) without a hard barrier.

Natural Lawns/Fields

There is a trend in property maintenance to dedicate a swath of property to natural (read un-mowed) lawn or field. This is a direct response to alarming reports of decreased insect populations and the corollary decreases in bird and bat populations. An unintended consequence is increased habitat for ticks. The balancing of these two factors can be somewhat achieved by taking a blended approach - mow two or three laps around the outer perimeter and along main walking paths to create the dry, no-go zones ticks avoid while simultaneously allowing for the long grass for insects, birds and bats.

Forest Management

It is neither practical nor healthy to scrape forests of their biomass. To create a perimeter barrier between your property and the forest (where tick habitat is ideal) or along walking trails within the forest it is advisable to clear leaf litter, needles, fallen branches, and debris for two to three metres at a forest edge and along the pathways. Limbing and/or removing lower branches in these perimeter areas also reduces ideal habitat.

Compost Heaps

If a compost heap is being kept on the property, it should be as far away from living and travel areas as possible. Compost heaps are an ideal ticks habitat - dark, dense, cool, and moist. Earthworms will help speed the breakdown of organic matter if homeowners opt for compost heaps over compost collection services provided by municipalities.

Spring & Fall Clean-ups & Pruning Habits

Horticultural practices surrounding perennials and shrubs has been evolving with an increased awareness of our ecology and the impacts of climate change at the local level. A couple of these changes include not using leaves to mulch and not cutting back perennials and shrubs in the fall.

Leaf litter has been shown to increase the opportunity for viruses and moulds to attack plants (eg: roses are very susceptible, as are lilacs), and has the subsequent issue for providing an ideal tick habitat in

areas where we are working repeatedly. Pruning habits have changed for several reasons - leaving seed heads, berries, and hips provides natural food for overwintering animals so they are not reliant on feeders, and leaving shrubs intact provides additional protection for crowns and root structures by capturing snow within its structure to act as an insulator. The longer branches and uncut stems also helps keep winter burn further away from crowns and can be pruned out in the spring.

Since we've seen tick activity in Lunenburg as early as February, gardeners and homeowners should assume there is no longer a "safe" window period. Yard and garden cleanups are definitely easier when the weather is cool, and this should reduce exposure, but always err on the side of caution.

These protections are not just against ticks themselves, but against small mammals that rely on soft, insulating masses and cool, shady spots to avoid predators and conserve energy.

Hardscaping & Installation Options

There are a number of physical barriers and/or options that will help decrease the likelihood of ticks penetrating the living areas of your property or will help reduce the incidents of host carriers making incursions into your property.

Drip Lines

Creating a stone barrier around the perimeter of the house, along foundations and abutting steps and walkways in an excellent manner in which to start pushing ticks away from living areas. Typically turf is removed in the area adjacent to the foundation, and landscape fabric and stone is installed to a width of half to one metre.

For homeowners with gardens situated by their foundations, this method can still be employed and either stone or bark mulch is a suitable application. If plants are encroaching on the siding (whether wood, vinyl or stone), care should be taken to prune back or transplant to another area of the garden to increase air circulation; this is better for the structure of the house, better for the plants, and

better for reducing damp areas for ticks to inhabit.

Fencing

Fencing is the single best option for keeping deer from entering a given space. Given, however, that many rural homeowners are dealing with substantially-sized lots, it may be more prudent to select a living area to cordon off rather than undertaking fencing an entire property. Deer fencing typically needs to be roughly two metres high to create a successful barrier. Extending the fencing below the soil level with chicken wire or vinyl mesh is also helpful to ward off small mammals like rodents, but will not deter squirrels, birds or raccoons.

Bark or Stone Mulching

Using high-quality landscape fabric and mulch of either stone or bark is an excellent method for keeping ticks and small mammals out of gardens and away from spaces where we are more apt to come in contact. Particularly in the case of ticks, the heat and dryness in these areas is a deterrent to ticks. It also has the added benefit of reducing weeds and retaining water at the root level through increasingly long, dry summers.

Stone Walls

Not all stone walls are created equal. When we think of traditional field-stone walls made by farmers to loosely pasture sheep and cows while simultaneously clearing their fields of rocks and stones, then yes, these are ideal tick habitats because there are many nooks and crannies for ticks and small mammals to avoid predators and stay cool, and even build nests.

Contemporary hardscape walls built in the northeast, however, are built over structural drainage bases and are often manufactured using engineered block, reducing or eliminating gaps for pests. The bases and the backfills are meant to move water down and away from the structures to insure integrity through long, wet springs and heavy, wet winters. These areas actually become quite inhospitable for ticks and small mammals and are a deterrent to deer as a physical barrier.

Gravel & Stone Paths

Well trod areas of the property - paths to the shed or lakeside, to the vegetable garden or patio - are wise to convert into gravel pathways or with stepping stones and/or paver stones. Again, these areas remain drier and hotter than the surrounding areas and are a less desirable places for ticks to nest.

Raised Planters

Raised planters serve many functions in the garden. If soil quality is poor, building raised planters allows for a custom or high-quality soil mix to be installed. For people with or without mobility issues, it makes tending gardens easier, fencing the garden is easier, and there is better water retention. Raised beds also serve to keep some small mammals out and mulch or stone around the outside perimeter of the gardens makes for increased defence against ticks.

Flora

There are quite a few plants that are beneficial in warding off ticks and/or their host carriers. Plants do this either through their chemical signatures (humans extract them into essential oils) or through salicylic acid (a plant-growth regulator called a phenolic phytohormone) which is known to cause food intolerances in some humans....and deer!

The first part of planning a garden is to know what plants are “deer resistant” and acknowledging that the term “deer proof” is a misnomer. Second, acknowledge a starving deer will eat things that traditionally they would not touch because a sore stomach is better than an empty one. Different herds also have different tastes, so what may work in one area may be less success in another, even just a few kilometres apart. Frequently, in the spring, deer will “taste test” flora they are known to dislike - seems like a backup plan. Deer are not bright, but they are adaptive and have keen instincts, hence planning deer resistant gardens before considering the tick factor. Assume most vegetable and fruit gardens will require rigorous fencing, full stop; deer, chipmunks and squirrels, rabbits, etc.

There are also plants that should be avoided as they are a perfect harbour for ticks. One is *Berberis thunbergii* (Japanese Barberry) and the other is *Rosa multiflora* (many common names, but typified as a wild, rambling rose with long, arching branches, rapid growth and expansion, and simple, five-petal white flowers). Barberry has been a very popular nursery specimen specifically because it is as close to deer proof as any shrub can be in our environment. From a tick perspective, it is an extremely thorny, high-density shield against predators, its globular shape helps retain higher-than-average humidity, it has very high levels of leaf litter, and it is rarely cleaned because it is so thorny. *Rosa multiflora* provides a macrocosm of the same quality - it becomes a thorny, sprawling thicket very quickly, providing ample, safe habitat in its understory.

Most of the tick-repellant plants on the following list are Zone 4 and 5 specific, so they're shown to work in our environment. Several are annuals, but have high-yield benefits which make them worth seeding or purchasing. Some of the plants are noted for warding off rodents and small mammals; again, it's about keeping the host carriers away as much as the ticks themselves.

- Rosemary
- Fleabane
- Mint
- Lemongrass
- Sage
- Lavender
- Garlic
- Pennyroyal
- Perennial geranium
- Basil
- Allium
- Rue
- Catnip
- Rudbeckia
- Juniper
- Annual: Chrysanthemum (contains pyrethrum)

- Annual: Nasturtium (pollinator, trap crop)
- Annual: French marigold (pollinator, ward off bad nematodes, ward off tomato white flies)

Sexy Garden Wear & Non-chemical Chemicals

“Luck favours the prepared.”

Wearing clothing that extends your tick defence adds another layer to the arsenal. Ticks move upward once they make contact, so the best place to start is at the feet. Tall rubber boots or leather boots, pyrethrum clothing (now available in Canada through Mark’s Work Wearhouse), the very stylish pants-tucked-in-socks, and tall white socks make it easier to spot ticks and keep them off the skin.

There are also a number of essential oil sprays that have hit the market, as well as various essential oil pastes. Self testing has shown some of these products to be quite effective in warding off ticks and other insects, but we are not willing to make specific claims as to their efficacy. When applying any of these sprays or creams to the body - provided skin contact is safe - remember to apply around the ankles and lower legs. Ticks crawl up.

Diatomaceous earth (frequently shorted to DE) is a powerful, non-toxic tool in the gardener’s arsenal. It is derived from a soft siliceous rock and in a micronized size is an excellent insecticide. DE does not work in the same way as other insecticides; it is not instant. It works best on insects with hard carapace and functions by abrading the carapace so the insect dehydrates and dies of desiccation. Most of the time we fight ticks one-at-a-time unless we happen upon a nest. With insects like ants, the ants track through the DE and take it back to the nest with them where it first kills them (over time), and leaves behind particles for the next hatchlings. DE should be applied in exterior travel paths every two weeks. It is non-toxic to humans and pets, but is an eye and possibly lung irritant.

Permaculture

Permaculture is an integrated approach based on using natural patterns and resistance found in local ecosystems. Its roots are in agriculture, but over the millennia other fields have study have been integrated to strength and support permaculture outcomes.

Using an adapted permaculture approach may well serve people combating ticks, as there are no silver-bullet solutions to the problem of ticks and Lyme in our environment. A simple example of an applied approach might be a new home purchase - one acre with an old farmhouse, large wild field area, mowed areas around the house, and backed by a stand of trees.

The first step would be to fence off a reasonable section of the property around the house that the homeowners would like to be as tick-free as reasonably possible. The next step would be to add a half dozen guinea fowl to the fenced area. As the guinea fowl expert pointed out - guineas need to live in groups, require training so they don't instantly wander off or fly away, and may very well be hell-bent on getting themselves killed despite best practices or intentions. Guinea fowl can eat thousands of ticks per week, but it will likely take a couple years (minimum) and maybe longer before a property is comfortably "tick free". It's unlikely guineas will get all the nymphs in the first year; adult ticks are easier to find.

Supporting these efforts would be graduated plantings from the flora list. Large junipers to create an outermost boundary with layers or rows (depending on gardening style) of the perennials that hep ward off ticks. Even with these three layers of protection we must assume ticks are still present in the environment as critters are mobile and an effective vaccine is not yet available.