

Landscape management

Residential landscapes are designed for a variety of aesthetic or environmental reasons and “tickscape” practices can be a part of the landscape in Lyme disease endemic areas. Landscape modifications can create an environment unattractive to primary tick hosts and may decrease the abundance of ticks that are present in parts of the yard. Fewer ticks have been found on well-maintained lawns, except on areas adjacent to woodlands, stonewalls, or heavy groundcover and ornamental vegetation. Deer-browse resistant exotic-invasive understory vegetation is associated with greater tick abundance. This section provides some ideas on how to incorporate tick management into the landscape. Clearing leaf litter and woodchip barriers have been documented to help reduce ticks on the lawn. However, landscape practices to create a lower risk tick zone will not directly eliminate many ticks and you may need to consider integrating other tick control practices into the overall program. Landscape work may also be expensive, not acceptable to some residents, and must be done by residents on their own property. In computer simulations of a hypothetical community of 10,000 individuals, a 90% habitat reduction on lawns, 80% habitat reduction in ecotone, and 10% reduction in forested areas by nearly half the residents resulted in the prevention of only 94 Lyme disease cases in comparison to 156 with the application of acaricides or 121-272 with the treatment or removal of deer. Landscape management alone may not reduce disease incidence, as the undetected bite of only one infected tick is required for transmission of *B. burgdorferi*.

In most cases, alterations will be made to an existing landscape, although landscape architects and designers should also incorporate tick safe landscaping concepts into major renovations or new construction. There are several basic interrelated concepts in modifying the landscape to create an area with fewer ticks and environmentally acceptable management practices.

- Open up the land to direct solar exposure, and include that part of the landscape used or traveled frequently by family members to reduce tick and small mammal habitat and cover. Bright, sunny areas are less likely to harbor ticks.
- Isolate areas used by the family or public (i.e., lawns, play areas, recreational or ball fields) from tick habitat or tick hot spots (i.e., woods, dense vegetation, groundcover, stonewalls).
- Use hardscape and xeriscape landscaping (i.e., brick, paving, decking, gravel, container plantings, low water requirement plantings) in areas immediately around the house that are frequently used.
- In cases where environmentally acceptable alternatives to large tracts of open lawn or only small lawn areas are desired, consider butterfly gardens, vegetable gardens, formal herb gardens, colonial style gardens, wildflower meadows and hardscapes. Elimination of woodland and all wildlife habitats is not necessary or environmentally desirable. Some evidence suggests a lack of biodiversity and a landscape that specifically favors deer and mice increases tick abundance and transmission of *B. burgdorferi*. **The key factor appears to be the presence and abundance of deer.**
- Avoid invasive plant species and plantings that are inappropriate for where they will be growing. Several guides and listings of invasive plants and native alternatives are available. Some nurseries are helping to assess invasiveness and introducing alternative cultivars.