

## Supporting Materials

The tick management committee met weekly over the course of several weeks at the town hall and the town library. Meeting time and place as well as contact information were posted on the town website. The committee did not consider the issue of mosquito control.

The committee's research found wide acceptance of an integrated approach to tick control which includes 1) public outreach and education; 2) selected habitat alterations; and 3) when deemed necessary, the limited use of pesticides as a targeted treatment.

The committee found no formal town policies regarding tick control in its research, though many towns have information for residents posted on their town websites, which varies.

Note: The cost of implementing tick control guidelines was not determined, therefore the committee cannot offer recommendations at this time regarding the budget implications of adopting such guidelines.

Specific information on an IPM-approach to tick control:

### **Public Outreach and Education**

A recent survey conducted by the NH Dept. of Health showed that while the vast majority of those surveyed had heard of Lyme Disease and how it is spread, only 7-9% indicated that during the past year they had always followed all of the recommended tick-borne illness prevention measures. Another 4-6% never followed any of the prevention measures. (from: DHHS Releases Report on UNH Survey about Vector-borne Diseases)

From the *Tick Management Handbook*: "Personal protection behaviors, including avoidance and reduction of time spent in tick-infested habitats, using protective clothing and tick repellents, checking the entire body for ticks, and promptly removing attached ticks before transmission of *Borrelia* spirochetes can occur, can be very effective in preventing Lyme Disease. While surveys and the continuing incidence of disease suggest that few people practice these methods with sufficient regularity, studies suggest that tick checks are the most effective method for the prevention of tick-associated disease. Preventive measures are often considered inconvenient and, in the summer, uncomfortable. Despite the efficacy of tick repellents, particularly with DEET applied to skin and permethrin applied to clothing, they are under-utilized.

*Checking for ticks and prompt removal of attached ticks is probably the most important and effective method of preventing infection!"*

Opportunities to consider:

- mailings: notify residents of start of high-risk season and preventive measures to take
  - Stratham includes this in their tax mailings

- Signage and informational material:

- post state updates/alerts and fact sheets on town bulletin boards, town park
- provide "tick id" wallet cards at town hall for residents to take
- post warning signs in recommended areas of Sawyer Park (see details of walkthrough).
  - attached is a sample of a sign (these are available to order pre-printed)

- Seek volunteers who will coordinate a few educational programs at the elementary school, library, S.A.L.T., Legion, etc. and/or who will coordinate and post website materials.

- Suggested links to post on town website(s):

## **Comprehensive material:**

Alan Eaton's *Biology and Management of Ticks in New Hampshire*:

[http://extension.unh.edu/resources/files/Resource000528\\_Rep1451.pdf](http://extension.unh.edu/resources/files/Resource000528_Rep1451.pdf)

*Tick Management Handbook*:

<http://www.cdc.gov/ncidod/dvbid/lyme/resources/handbook.pdf>

## **Lyme Disease and Other Tick-Borne Illness Information**

NH Dept of Health:

<http://www.dhhs.state.nh.us/DHHS/CDCS/lymedisease.htm>

Centers for Disease Control:

<http://www.cdc.gov/ncidod/dvbid/lyme/index.htm>

## **Insect Repellents**

UNH Cooperative Extension Fact Sheet on Insect Repellents (including those for use against ticks):

[http://extension.unh.edu/resources/files/Resource000963\\_Rep1073.pdf](http://extension.unh.edu/resources/files/Resource000963_Rep1073.pdf)

The EPA has a website containing a table for tick and/or insect repellents. It includes company name, active ingredient, % of ingredient, hours effective against ticks and/or mosquitoes, and EPA registration number:

<http://www.epa.gov/pesticides/health/mosquitoes/mosquito-tick-company.html>

## Tick Management for Landowners

*Managing Ticks on Your Property*

[http://www.ct.gov/caes/lib/caes/documents/publications/fact\\_sheets/ManagingTicks05.pdf](http://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/ManagingTicks05.pdf)

*How Tick Safe is Your Back Yard?*

[http://www.wwhd.org/downloads/landscape\\_brochure.pdf](http://www.wwhd.org/downloads/landscape_brochure.pdf)

## **Habitat Alterations/Tick-Safe Zones**

From *Assessment and Management of Vector Tick Populations in New Jersey*: "Habitat management refers to rendering existing habitats unattractive, inhospitable, and/or inaccessible to ticks and/or their hosts."

"Many of the principles of habitat management can be applied to recreational areas and parks. The removal of shrub layer vegetation and leaf litter from around campsites, fitness trails, and picnic areas can dramatically reduce potential exposure to ticks. Similarly, widening exercise trails or hiking trails and pruning overhanging vegetation will reduce human-tick encounters. Posting signs in high-risk areas that advise park visitors of potential risk and precautions to use when entering tick-infested areas may also reduce exposure."

We consulted with Ted St. Amand, who walked the town park with us. Ted is owner of Atlantic Pest Solutions and an IPM-certified pesticide applicator (and a speaker at last summer's tick forum). Overall, he was impressed by how well the park is being maintained, which in turn helps with tick control. His comments/recommendations:

Trails: crews should continue to maintain them so they are at least wide enough for two to walk side-by-side (to avoid having to step off trail to allow others to pass) and free of overhanging branches and shrubby vegetation

-signs could be posted to alert people to stay on trails, avoid entering potential tick habitats

Ball fields: Only specific perimeter areas would potentially qualify as high-risk. If there is a maintained walking path beyond the outfield fences, this path should be kept clear. This perimeter is a possible area for warning off with signage or pesticide application if necessary.

Other areas should be assessed to determine if people enter tick habitats (e.g. beyond rock wall on far side of playing field on border of property).

Overall: continue with park maintenance following guidelines for habitat modification: reducing habitat and maintaining "tick-safe zones" wherever possible (keep fields mowed; trim branches, keep shrubby vegetation down; keep public education materials posted (signs, fact sheets).

### Pesticides

The committee reviewed current research and information from a wide variety of sources. The following represent the most relevant sources for public officials and were used extensively to draft Town guidelines:

Eaton, Alan. *Biology and Management of Ticks in New Hampshire*, May 2009

Schulze, T. L. and Jordan, R.A. , *Assessment and Management of Vector Tick Populations in New Jersey: A Guide for Pest Management Professionals, Land Managers, and Public Health Officials*.

Stafford, Kirby C., *Tick Management Handbook*, 2007.

Excerpts from these materials are attached, from which the committee drafted the language for the pesticides section.

From Alan Eaton's *Biology and Management of Ticks in New Hampshire*: "For controlling ticks outdoors, an early June insecticide spray to the leaf litter can be effective to control the nymphs of blacklegged ticks...Treatment in October can be effective on blacklegged tick adults if the lower three feet of brush and shrubs are targeted."

From the *Tick Management Handbook*: "Insecticides, or as termed for ticks, acaricides, are the most effective way to reduce ticks, particularly when combined with the landscaping changes to decrease tick habitat...These measures provide consistent control, are relatively easy to apply, and are relatively inexpensive. Only small amounts of an acaricide applied at the right time of year are necessary. Chemical intervention should focus on early control of nymphal...ticks, the stage most likely to transmit Lyme Disease, by spraying once in May or early June. A fall application in October may be used to control adult blacklegged ticks..."

"A single application of most...insecticides will provide 85-90% or better control with some residual activity, so multiple applications are rarely necessary."

From *Assessment and Management of Vector Tick Populations in New Jersey*: “The ultimate goal of any habitat-targeted control program is to kill the greatest number of ticks, while minimizing adverse environmental effects, by using the least amount of acaricide. In part, this can be achieved by limiting treatment to just those areas with high probability of human-tick encounters.”

“A thorough knowledge of tick biology, behavior and ecology can reduce acaricide use by eliminating unnecessary multiple applications and by targeting only those habitats capable of supporting ticks...A single application made at the right time and location can control 90-100% of nymphs in the target area, thus eliminating the need for repeated applications.”

From the UNH Cooperative Extension: “If tick-vectored disease risk is high, a targeted barrier treatment can reduce tick populations along wooded property edges where human activity is also high. These locations can include along edges of sports fields, along cross-country running trails, at margins of playgrounds. These applications should be timed to coincide with peak nymphal populations.”

To address public concerns, the committee recommends being as “transparent” as possible. Post detailed information on the Town’s pesticide management company’s program, test results, etc. so that interested residents can assess the measures the Town is taking.

### **Conclusion**

Research on control of ticks is ongoing. If the Town adopts guidelines, it should plan to review them at least annually to ensure that they are consistent with the latest research and recommended practices.

Supporting documents are available upon request or can be downloaded using the web addresses listed above.

Please contact a committee member if more information is needed.