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To: Mark Moran
From: Laura Simon, Wildlife Ecologist
Date: August 15, 2015
Re: Recommendations re: deer problems in Galena, IL

Hello Mr. Moran,

I am writing on behalf of the Humane Society of the United States to encourage Galena's community leaders and the newly formed deer committee to look into non-lethal ways to resolve its deer issues.

Although many communities assume that deer reduction is necessary, the surprising outcome from deer culls is usually more deer, more expense, continuing problems, and a never-ending cycle of killing. I will outline below some better solutions, and explain why non-lethal and site-specific methods provide more lasting results -- and happily, no controversy.

Preventing Garden and Property Damage

Killing deer will not resolve people's backyard conflicts with deer. Certain plants, like tulips and hostas, are irresistible to deer. Even if the deer population could be brought to a very low level, these top-choice flowers would still be eaten by *any* remaining deer.

That's why effective solutions focus on *detering* deer and *protecting* flowers and ornamentals rather than trying to shoot every deer that may come along and eat them.

We don't have a perfect answer but we do have a good toolbox. Options range from effective repellents (rotten egg-based ones like *Liquid Fence* get high ratings) applied on a regular schedule; to woven-wire mesh fencing around gardens and netting over tasty bushes.

The best approach, however, is to encourage residents to plant more deer-resistant flower and ornamental varieties. There is a wide variety of less tasty yet equally beautiful flower options, such as daffodils, foxglove, bee balm, snapdragons, to name a few. There are many gardening resources which your town website can link to, such as Cornell University and local Cooperative Extension Service lists, and others such as:

- <http://www.gardening.cornell.edu/factsheets/deerdef/>

- <http://www.humanesociety.org/animals/deer/tips/>

Deer-car collisions

It seems counter-intuitive, but reducing the deer population doesn't necessarily result in fewer deer- car collisions. A study was done by the Virginia Department of Transportation (VDOT) which assessed hunting pressure, deer density, and other factors for 228 road segments (each 250 miles in length) to determine which correlated with deer-vehicle collisions. The surprising result was that deer density was a *non-significant* factor and that "there is little evidence that increased deer harvest reduced deer/vehicle collisions (McShea et al. 2007)."

The problem is that many factors contribute to deer car collisions, such as traffic volume and speed, extent to which roads bisect habitat, development patterns, extent of visual barriers, speed limit, etc – which is why merely reducing the deer population does not necessarily result in fewer collisions.

Solutions for lowering the accident rate should start by collecting information on the number and location of deer-car collisions, and assessing what habitat and road features may be contributing to the accident rate and "hotspots."

Solutions should be tailored to particular sites, and include lowered speed limits, removal of visual barriers (such as shrubs and other vegetation which may block driver sight lines), and the use of motion-activated warning devices which alert drivers (and deer) to the oncoming presence of each other. As part of a public education program, drivers should be advised to be vigilant when driving at dawn and dusk, and that when one deer crosses the road others may follow.

A Model Solution for Galena

The City of Rochester Hills, Michigan, created a highly successful program to reduce deer-car collisions and backyard problems. Key components included highly visible deer warning signs at collision hot spots, removal of sightline barriers, along with a well- publicized "Don't Veer for Deer" educational campaign. As part of the campaign, educational materials on avoiding collisions and deer-resistant gardening were put on the city's website and conveyed through strategically placed, changeable (and moveable) message boards.

The result was a 25% decline in deer-vehicle collisions despite a 34% increase in deer numbers over several years.

The Rochester Hills program was not only highly successful in lowering deer-car collisions and deer-related complaints, but it is also extremely cost-effective. This program only costs about \$2,000 a year to run, has enjoyed much community support, and can certainly serve as a model for Galena. There is no need to "reinvent the wheel." More information about Rochester's program can be found on their website: <http://www.rochesterhills.org/index.aspx?NID=569>

The confounding effect of hunting and culling

One of the main problems with trying to manage deer through any kind of hunting is that deer are highly prolific, and their high reproductive rate can quickly compensate for declines in their population. Deer exhibit higher productivity (i.e., more twins and triplets are born, higher survival rates and earlier onset of sexual maturity) when there are fewer deer and more food is available. (McCullough, 1982, 1999). In other words, they “bounce back.”

Any lethal control program must not only significantly reduce the deer herd *but also sustain enough pressure to keep the population at a low level and prevent this bounce-back*, AND prevent deer from the surrounding area from wandering in, all of which usually poses an insurmountable challenge. A glance at Google maps underscores that for Galena, hunted areas are sure to be quickly replenished by deer coming in from the surrounding area.

Trying to keep deer at a certain number can be a futile, resource-draining battle, and diverts attention from practical solutions which can help people reduce both deer presence and browsing on their properties.

Economics of sharp-shooting

Sharp-shoots are often proposed by communities yet they can be quite expensive. Sharp-shoots need to be repeated year after year, or deer numbers bounce back up. Aside from the direct costs of hiring sharp-shooters, there are also other relevant costs such as police overtime, meat transportation and processing, and administration. Community leaders would be well advised to do a thorough examination of all costs – indirect and direct -- before proceeding with any kind of cull.

The bottom line is that trying to keep deer at a certain low level can be an expensive and never-ending battle. This is why The HSUS recommends a more problem-oriented approach rather than trying to manage deer by *numbers*.

Hunting will not reduce Lyme disease risk

Often communities advocate for deer culls in an attempt to reduce the devastating impact of Lyme disease. However, the Black-legged tick has well over 100 hosts, including all mammals, many popular songbirds, and even lizards. Studies have shown that the removal of one host isn't enough to suppress the Lyme-disease causing tick (Ostfeld, 2011, Jordan et al, 2007). Even when a high proportion of deer are removed from a location, the ticks switch to other hosts or congregate in higher densities on the remaining deer.

Hunting may also put the public more at risk by creating disease "hot spots" (S. Perkins et al, 2006; Ostfeld, 2011). That is, mature ticks that normally latch onto large hosts (i.e., deer) are more likely to end up on people and dogs after deer have been reduced.

There's a good reason why the Centers for Disease Control (CDC) and health authorities don't recommend hunting to control Lyme disease - because it doesn't work. A far better solution is for communities to invest in public education campaigns (using information on CDC website) and perhaps utilizing "4-poster" devices which applies an acaricide (ie tick-killing product) to deer when they come to the corn-baited station. This device, in essence, uses the deer to kill ticks.

Immunocontraception: a possibility?

To reduce deer numbers, surgical sterilization and immunocontraception have proven to be viable options for some communities, and provide long lasting solutions by lowering the number of fawns born in a given year. There is one contraceptive vaccine EPA-registered for use in deer currently (Gonacon) with another vaccine (PZP) available under an experimental basis.

Attached are some fliers which outline the cost and labor associated with application of PZP, an immuno-contraceptive vaccine, which can be applied under an experimental basis. If this option is of interest to Galena community leaders, the HSUS can arrange for a site evaluation by one of our experts.

Problem mitigation

Many communities resort to having a deer cull without establishing any baseline data (ie deer density, location and type of complaints, collision numbers and locations, etc). Without a starting point, it is impossible to know what, if anything, a cull has achieved. Anecdote and "eyeballing the landscape" cannot suffice for good, solid baseline data.

We urge your community to do the following:

- Conduct a residents' survey to assess attitudes towards deer and type/ location of any problems
- Compile roadway collision data over past 7-10 years
- Develop comprehensive deer problem mitigation plan:
 - ❖ Educate residents about ways to mitigate garden conflicts, prevent collisions, and why feeding deer is detrimental to them – put information on city website
 - ❖ Use Rochester Hills as model– go to website for program details on how garden & collision issues handled
 - ❖ Set up solid complaint and monitoring system – to better define (and map out) problems and assess success of mitigation
 - ❖ Clearly spell out achievable goals, cost and time-line

In Closing

The bottom line is that backyard and roadway deer problems cannot be "shot out" – it's far better to utilize non-lethal methods which address the problem at its source, are long-lasting, and help residents learn to co-exist with deer.

On behalf of the HSUS, I would be happy to consult with you or other members of the Galena community on an effective plan for resolving problems with deer.

Attached is some key information which should be useful. Please let me know what other assistance you might need!

Sincerely,



Laura Simon
Wildlife Ecologist
Humane Society of the United States
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Deer Problem Management

By Laura Simon, Wildlife Ecologist for HSUS
August 2015

Introduction:

An increasing number of community leaders are grappling with what to do about deer. Complaints abound yet controversy erupts when plans to open up town land for hunting is announced. Protests, angry presentations at town meetings and the pitting of neighbor against neighbor occur. Community leaders want to do something to alleviate complaints, yet a clear solution isn't apparent. Often a hunt is decided upon, ambitious collision and damage reduction goals are announced but no baseline data is collected or monitoring system set up. Community leaders are hard pressed to show what if anything the hunt has achieved and if taxpayer dollars were well spent. The goal of this deer problem management plan is to provide a framework for evaluating community deer issues and taking step-by-step actions which address those deer issues in a comprehensive, holistic, humane, community-supported and defensible manner.

Source of the problem:

- Suburban development created ideal "edge" habitat, suburban landscaping and gardens provide a virtual buffet - there's more food for them in backyards than the deep dark woods where they supposedly "belong". Thus we are essentially enticing deer in.
- Deer adapt easily to human presence, lose fear
- People have different values and attitudes towards deer – hunters, deer watchers, deer feeders – and those values are influenced by their concerns and upbringing

Unintended consequences of hunting/ culling:

It is also assumed that culling deer will decrease the deer population itself, however:

- Increase in reproductive rate
- Immigration of new deer to area
- Requires more hunter effort to take out same number of deer as numbers go down
- Many areas inaccessible to hunters - deer killed in one area may not be those causing problems in other areas
- Public concerns about/ attitudes towards deer influences their perception of how many deer there are (or how many there "should" be)

Other issues with hunting/culling

- High direct and indirect costs: if use sharpshooters, recurring annual cost, if use public hunters, still costs city in terms of enforcement staff and overtime, etc
- Controversy! A divided and angry public, kids and adults traumatized by sight of wounded deer
- Wounded deer often run off huntable property onto private land – will town ask all adjoining landowners to allow trespass for blood trail tracking purposes?
- Set-back restrictions –local ordinances and state regulations often don't allow hunting or firearm discharge within a certain distance of dwellings

- Doing “something” – ie a cull – is not the answer. It may appease those who want to see action but if the problems aren’t solved, then it’s a waste of taxpayer money.
- Need for additional liability insurance – need to explore

Issues with particular types of culls/hunts:

- Bow-hunting: considered safer, but inefficient, high wounding rate. Struck deer may run onto adjacent properties
- Shotgun – more efficient yet safety issues, controversial, wounding rate issues remain
- Sharpshooting – more efficient but needs to be repeated on recurring schedule, expensive, controversial

Designing a Deer Problem Mitigation Plan

- Collect site-specific data to indicate scope of problem
- Set clear, achievable and measurable goals
- Tailored to particular problems
- Long term, not “quick fix”
- Create ongoing monitoring program to assess program’s level of goal achievement
- Clearly spell out the long term-costs and time-line
- Public education pivotal to success & community support

What We See in Most Communities:

- Hunting is often proposed as the best way to manage deer problems, yet:
- Valid baseline data are not collected – so you have no starting point
- Overly-broad, non-measurable goals are set
- A solid monitoring system is not put in place
- Not clear what cull/hunt has achieved, success measured by anecdote and hearsay.

A Better Approach: Focus on managing conflicts, not numbers – ie create Deer Problem Management Plan

- 1) Define Problem at a Community Level
 - Collect Meaningful Data
 - a. Use of resident surveys, not general arguments
 - b. Set up robust accident reporting system
 - c. Set up robust complaint reporting system
 - d. Collect data on deer attractants in town (ex: town floral islands which attract deer)
 - e. Flag locations of sightline barriers along roadway, and ID collision hotspots
- 2) Give Hands-On Solutions to the Public
 - a. Educational materials on resolving backyard problems , deal with source of problem, correct misconceptions

- b. Deer-proof gardening workshops, discounts at local garden stores, “Deer Days”, pilot fencing and deer proof garden sites
- c. Accident reduction program (ex: Rochester Hills template) which has big public education component on defensive driving, ie when one deer crosses road others will follow, don’t veer, etc.

First step: Proper assessment:

- 1) Assess /define scope of deer problems :
 - a. Conduct resident survey
 - b. Assess what kind of damage, severity, number of public complaints and where
 - c. Create accident reporting system (using exact location, time of day, if injuries/ vehicle damage, etc – see Rochester Hills)—assess accident hotspots
 - d. Overlay maps of collisions, deer corridors, areas of high deer density, town green space, where complaints located
 - e. Can do aerial survey to get indices on deer population, but these are just snapshots of one point in time
 - f. Evaluate location and type of deer attractants in town: i.e. public flower exhibits, roadside or roadway divider floral displays, etc – contain deer preferred flower species?

Second step: Create public input channels

- 1) Set up deer advisory committee with balanced composition (not containing one token humane advocate, but rather, a balance --- 2 humane society representatives, 2 advocates for not culling, etc)
- 2) Have open public forums to discuss the deer situation – include speakers on all sides of issue, not just agency rep and hunt proponent
- 3) Present easily accessible information to public: Utilize city website, advertise via local media: be sure any report or information includes long and short term costs (direct, indirect), short and long-term costs, benefits and a specific timeline. (Rochester Hills web site is a great template)

Third step: Utilize range of non-lethal options for site-specific application:

1. Vital: *Have designated person in charge of overseeing deer program*

1. Deer Damage to Gardens:

- 1. Public Education: Put conflict resolution information on town website, (ex: links to local resources, where to find deer-resistant plant lists, etc)
- 2. Have city host deer-resistant gardening workshops (see <http://www.deerproofyourgarden.com/>)
- 3. Prioritize deer-resistant flower and ornamental species in all town landscaping / floral displays – publicize this as a measure to reduce deer attractants and the unintentional luring of deer onto roadways. Collaborate with garden club and local beautification committees.
- 4. Host deer-proofing days – utilize boy scouts and other local groups to put up fencing etc at local parks, have publicized events at local garden stores (ie where deer deterrent products discounted on certain days, etc)

2. Deer-Car Collisions:

1. Use Rochester Hills MI “Don’t Veer for Deer” campaign as a model – see <http://www.rochesterhills.org/index.aspx?NID=569>
 2. Collision hot spots – utilize speed bumps, movable changeable message boards, warning devices (Streiter lites, Deer Deter Wildlife Crossing Guard (<http://strieter-lite.com> ; <http://deerdeter.com>))
 3. Designated city representative - in charge of reducing visual barriers on roadways, coordinating roadway maintenance plan which includes using salt replacement in winter, doing vegetative management/brush removal to increase visibility along roadways, to negotiate with private landowners about reducing visual barriers (roadway brush on private property), evaluate hotspot areas for lower speed limits, collect and compile accident data. This designated person in charge of “Don’t Veer for Deer” campaign – placement of moveable changeable message boards and warning devices, educational outreach etc.
 4. Importance of getting good information in to all new driver education programs (high school, driving school, programs for the elderly, etc)
3. **Deer feeders** – develop educational literature, encourage neighbor-to-neighbor sit-downs and have town personnel conduct diplomatic visits to offenders, publicize (as part of education campaign) how feeding not good *for the deer*
4. **Lyme disease**
1. Public education campaign focusing on personal prevention steps, links on town website to CDC and other expert resources re: disease prevention methods (personal protection measures, landscaping practices, etc), tools and resources
 2. Possible: Draw up community –based plan for strategic placement of 4-*Posters*
5. **Biodiversity issues**
1. Seek out collaboration with local Natural Resource schools / universities to have college students do this necessary field work -Importance of doing valid survey to establish baseline data on deer browsing level in specific areas,
 2. Consider use of forestry methods, fertilizing, temporary or permanent fencing etc to protect valued plant communities, etc
6. **Population Management**
1. Do annual aerial surveys to get indices on local deer population and track changes over time
 2. Consider site viability for surgical sterilization (ovariectomies) or pilot immunocontraception project
7. **Aggressive deer**
1. Have designated person evaluate situation
 2. Educate resident about temporary and rare nature of this, importance of keeping dog and people away from fawn
8. **Orphaned fawns**

1. Include in all educational material and in spring-summer media: how 99% of “orphaned” fawns NOT orphaned and should be left alone
2. How fawn “parked” in grass, relies on camouflage for protection. Mom will nurse fawn 2x but stay away the rest of the time since her odor will attract predator (fawn is odorless)
3. Once fawn a month old, will travel around with mother.
4. Only if fawn wandering and crying all day, a/o dead lactating doe in road, should fawn go to rehabilitator
5. If fawn picked up by resident, needs to be promptly returned to site.

4th Step : Program Assessment

1. Set up robust resident complaint and deer-car collision reporting system -- monitor over time so know if goals achieved and if accidents and “nuisance” complaints decline over time
 - a. Resident complaints: record type, extent, duration , location of complaint
 - b. Collision reporting :accident location (exact), time of day, if injuries, damage to car (s), if just dead deer in road, etc
2. Conduct another resident survey to measure resident satisfaction with program

Public education: pivotal to success & community involvement

- Use city web site and all other outreach/media avenues, emphasize ways to deer proof gardens and yards, avoid collisions, why not to feed deer, etc.

Appendices:

- ✓ Checklist for city managers on how to assess deer problems
- ✓ Sample public survey questions
- ✓ Lyme Disease and deer info sheet
- ✓ Biodiversity and deer info sheet
- ✓ What to do about orphaned fawn sheet
- ✓ Deer problem management model resolution
- ✓ Helpful resources re: a variety of deer-conflict solutions, deer-resistant gardening web links, etc



THE HUMANE SOCIETY
OF THE UNITED STATES

Why Hunting Won't Reduce Human Risk of Lyme Disease

by Laura Simon
Wildlife Ecologist
The Humane Society of the United States (HSUS)
CT Field Office

National health authorities opinion

- The Centers for Disease Control (CDC) and other national and state health authorities do not recommend hunting to control Lyme disease – for the simple reason that it doesn't work! There are many better recommendations for how to prevent Lyme disease; see <http://www.cdc.gov/lyme/>

Leading experts underscore why hunting won't work:

- An interview with Dr. Tamara Awerbuch of the **Harvard School of Public Health**, entitled *Killing Deer Not the Answer to Reducing Lyme Disease, Says HSPH Scientist*, explains in detail why hunting won't reduce Lyme Disease. <http://www.hsph.harvard.edu/news/features/features/kiling-deer-not-answer-reducing-lyme-disease.html>
- As recently reported in the Proceedings of the **National Academy of Sciences**, “*increases in Lyme disease in the northeastern and midwestern United States over the past three decades are frequently uncorrelated with deer abundance and instead coincide with a range-wide decline of a key small-mammal predator, the red fox...*” (Levi et al, 2012)
- A scientific study – and entire book on Lyme disease -- by leading Lyme disease expert Richard Ostfeld confirms that *human risk of exposure to Lyme disease is correlated with the abundance of immature (rodent) hosts and their food resources, not deer numbers* (Ostfeld et al, 2006, 2011).

How Lyme disease works:

The culprit in the spread of Lyme disease is *Ixodes scapularis*, the Black-legged tick which carries a disease-causing bacterium (*Borrelia burgdorferi*) in its bloodstream. The tick transforms from a larvae into a nymph and then an adult over a 2 year span. At each stage, the tick takes a blood meal from a host and then drops off and molts into the next

life stage. While taking a blood meal, infected ticks are able to inject the disease-causing bacterium into a new host.

Lyme disease has proven difficult to control largely because the tick (*Ixodes scapularis*) is carried by many hosts including many bird species, lizards and all mammals. Deer seem to be the preferred host for the *adult* stage of the tick. For unknown reasons, the tick seems to prefer a progressively larger host. Certain small rodent species, namely the white-footed mouse, serve as the primary host for *immature* ticks. In addition, birds can transport the disease to new areas (Anderson, 1988, Battaly and Fish, 1993, Keirans et al, 1996).

At one time, the Black-legged tick was called a “deer tick.” This common name was a misnomer due to tick’s multiple hosts.

Deer Hunting and Lyme Disease

The reason that hunting is not efficacious in controlling Lyme disease is because hunting does not significantly reduce the *tick* population. For example, in one study where as many as 70% of the deer were removed from an island, there was “no marked reduction in the abundance of the tick.” (Wilson et al, 1984, p.697)

Another study conducted at Crane’s Beach in Ipswich, MA found that after gradually reducing the deer population from 350 to 60 deer over a 7 year period, immature tick numbers did decline – but soon increased again to pre-hunt levels, despite the vastly reduced deer density. Interestingly, *adult* tick numbers *increased* the entire time. (Wilson and Deblinger, 1993, Ostfeld, 2011).

When the deer population was reduced as much as 83%, the authors concluded that “the reduction in tick numbers was insufficient to reduce the number of female ticks that reproduced.” (Deblinger et al, 1993, p.148)

Most hunting seasons are also poorly timed to affect tick reproduction. By the time regular hunting season occurs in November, a good portion of adult ticks have already mated and *dropped off* the deer to lay eggs. This issue was discussed by researchers who stated, “deer reduction practices carried out when adults are relatively inactive at the end of fall will have minimal impact on the tick population.” (Falco and Daniels in McShea, 1997)

In addition, the ticks seem to confound deer reduction efforts by taking advantage of other hosts (Duffy et al, 1994) or congregating at higher densities on the remaining deer (Deblinger et al, 1993).

It appears that a deer population level would need to be extremely low, close to zero, to impact the transmission dynamics of Lyme disease. Note that the few cases where Lyme disease was reportedly reduced by hunting were small island or isolated populations where deer could be eradicated or nearly eradicated --- *and there were hardly any deer*

(or none!) in the surrounding community to take their place. In non-island areas, like most of Connecticut, any reduction in deer numbers is quickly offset by an increase in the remaining deer's reproductive rate – and influx of deer from the surrounding area.

Safety issues:

One key study (Perkins et al, 2006) suggests that a local absence of deer may actually *increase* tick feeding on rodents, which can lead to the potential for disease “hot spots.”

In addition, researchers warn that hunting may actually *increase* the public safety risk in the short-term because any remaining ticks who are still “questing” for a large host are more likely to end up on large hosts like humans after deer numbers have been reduced (Ginsberg and Zhioua, 1999).

Deer reduction is not synonymous with disease reduction

The issue of infectivity comes into play when understanding why fewer deer does not mean less human disease.

Research indicates that approximately 50% of ticks are infectious for Lyme disease. If a person is bitten by 12 ticks a year, and half of those ticks are infected, then the probability of that person being bitten by at least one infected tick is 99.98%. An intervention which cuts the number of tick bites by 90% will not lower the probability of transmission by the same factor (90%). This is because even if the person is bitten by only one tick, *half are infected, so that person will still have a 56.5% probability of becoming infected with Lyme disease*. So it is not just the *number* of ticks, but their infectivity rate and probability of being bitten, that comes into play when looking at disease transmission risks (Mather et al, 1996).

Tools for tick control

Some of the best ways to control human Lyme disease involve doing a combination of the following: checking oneself and family members for tick after being outdoors, taking precautions like wearing light-colored clothing, tucking in sleeves and socks, using tick-repelling products on your skin and insecticidal sprays on properties, doing habitat alteration to reduce tick and tick-host habitat, and consulting a doctor immediately when signs of Lyme disease or the characteristic rash occur.

There are three devices on the market that target ticks exclusively and have shown promising results in terms of significantly reducing the tick population.

One is called the *Maxforce* system which is a bait box that attracts mice and applies fipronil (the active ingredient in *Frontline*) to their bodies when they enter. In a study done by Connecticut Agricultural Station, there was an 80% and 96% reduction in nymphs by the first and second years of the study, respectively, and infectivity was

lowered 67% by the second year. They also found a 77% reduction in questing adults on the treated properties and lowered infectivity rates (Dolan et al, 2004). This device is best suited to a property-level approach yet has limited availability right now, so it may not be an option for many communities.

A similar baiting device exists for deer, called the “**4-Poster**.” The 4-Poster is a device that *uses the deer* to kill ticks (Pound, 2000). This device has been tested by the USDA in a 5 state, 7 year research program and has proven extremely effective in reducing tick numbers (McGraw and McBride, 1991). It contains a corn bait, which attracts deer, and when they eat the corn, a chemical (10% permethrin) is applied to their necks and shoulders which kills 95%-98% of the adult ticks. A study done at the Goddard Flight Center found that by using the 4-Poster system, adult ticks were completely eliminated by the 2nd year of the study; all stages were reduced 91-100% by year 3 (Solberg et al, 2003). Results of more field trials in various states were written up in the journal *Vector Borne and Zoonotic Diseases* (vol 9).

One more product is **Damminix Tick Tubes**, which consists of cardboard tubes filled with permethrin-treated cotton balls which mice use for nesting material. Deer ticks that feed on mice in the Spring and the Fall are exposed to permethrin and killed. This product is commercially available and well suited to a property-level approach.

Summary:

The human risk of Lyme disease won't be lessened by reducing deer numbers, based on many scientific studies. There are far better strategies for reducing human risk, improving human safety, and controlling the spread of this devastating multi-host disease.

Citations

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