

# **RIDGEFIELD DEER COMMITTEE MINORITY REPORT**

July 29, 2005

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## **INTRODUCTION**

The following Minority Report is submitted by Gwen Thaxter, member of the Ridgefield Deer Committee 2004 to 2005. This Report will document that the Town of Ridgefield must obtain accurate, scientific facts and information before making any recommendations about deer, and deer management. The Committee has failed to do this.

The recommendation of the Committee to allow deer hunting in Ridgefield is based upon inaccurate information, and is prejudiced by the overwhelming pressure of pro-hunting advocates.

We all, as residents of Ridgefield, have a responsibility to ourselves, families, and children, to determine the truth about the deer situation, and not kill innocent creatures simply to provide so-called sport for hunters. Hunting and/or hunters cannot solve the issues raised by the Committee, whether it is deer management, Lyme disease, biodiversity, or vehicle accidents. There is scientific information and non-lethal methods currently available, as documented in this Report, to manage the deer population in Ridgefield.

## **INFORMATION DEFICIENCY**

The procedural and information deficiency objections raised in my Statement dated May 10, 2005 have not been addressed by the Ridgefield Deer Committee, and remain outstanding, including the procedural objections to the conflict of interest created by Co-Chairpersons Pat Sesto and Tom Belote. Specifically, the Committee has not considered the many safety, legal, and financial questions raised by the use of deer hunting in Ridgefield, including but not limited to, the following:

- There has been no objective or scientific survey of the residents of Ridgefield as to their opinion whether there is a deer problem, and if so, what recommendations or solutions they want implemented.
- There has been no objective or scientific survey of the residents of Ridgefield as to whether they would consider or allow deer hunting in their community, and further, if they would permit the use of guns or bows and arrows - and under what conditions and circumstances.
- There has been no objective or scientific survey of landowners in Ridgefield as to whether they a) would allow or permit deer hunting on private property, and b) approve deer hunting on public property - and under what conditions and circumstances.
- There has been no hard data, or consideration of the safety issues and concerns caused by deer hunting to a) adult residents, b) children, in particular, and c) other animals, including dogs, cats and other domestic pets.

## **LEGAL AND FINANCIAL CONSIDERATIONS**

In addition, the Ridgefield Deer Committee has not addressed the legal and financial effects of recommending and/or allowing deer hunting, including:

- The legal liability of the Town of Ridgefield if there were a serious injury or death from a town sponsored deer hunt.
- The legal liability of the Town of Ridgefield if someone was injured by a deer hunter or sharpshooter during a town sponsored deer hunt.
- The legal liability of the Town of Ridgefield, and the question of indemnification of the members of the Ridgefield Deer Committee, if sued for their role in approving and/or recommending deer hunting.
- The financial costs to the Town of Ridgefield for allowing or sponsoring a deer hunt, and how much such deer hunting might cost each year it is allowed.
- The financial costs to the Town of Ridgefield in connection with a town sponsored deer hunt, including related accidents, claims for damage to person and property, and insurance policy/limitation issues.
- The tax burden to the residents and homeowners in Ridgefield, and the possible increase in property taxes as a result of deer hunting.

## LYME DISEASE

- A. The biggest misconception perpetrated by this Committee is that deer are the primary carriers of infectious ticks! Deer cannot pass Lyme disease on to anything or anyone. And, there can be infectious ticks and Lyme disease present on your property even when you don't have deer! Further, this Committee has used fear of Lyme disease to justify the use of so-called sport hunting in Ridgefield. Deer hunting cannot and does not control, determine, or in any other way manage Lyme disease. Killing deer does not control Lyme disease.

In order to recommend a public program in an effort to control Lyme disease, it is first necessary to understand the life cycle of the Black-legged tick. There are 3 stages in the life of this tick:

1. Black-legged tick larvae feed on rodents, primarily white-footed mice, birds, and small mammals. The tick larvae acquire the Lyme disease bacteria from infected rodents and other hosts – not deer.
2. Black-legged tick nymphs are responsible for the majority of Lyme disease cases. Their preferred hosts are small mammals and birds – not deer. Humans and pets are also suitable substitutes.
3. Black-legged tick adults latch onto deer, its preferred host, and other large mammals including humans, dogs, cats, horses, and other domestic animals. Nymph ticks, not adult ticks, pose the biggest risk for transmitting Lyme disease.

- B. The Committee report also has a series of inaccurate citations under Part 2: Deer and Lyme disease:

1. The reference to reported cases in Ridgefield was not complete, e.g., it does not take into account where the alleged Lyme disease was contracted, or account for misdiagnosed cases.
2. The reference to understating the true incidence of Lyme disease by a factor of ten, resulting in a real incidence of 900 cases a year in Ridgefield is completely inaccurate and distorted. Dr. Kirby Stafford on pg. 1 of his Tick Management Handbook references total Lyme disease cases in the entire U.S. reported to the Center for Disease Control and Prevention in 2002 only and makes a hypothetical statement that this “*may*” represent about 10% of physician-diagnosed cases.
3. The study conducted by Wilson M.L., et al., (“Microgeographic distribution of immature Ixodes dammini ticks correlated with that of deer”) has been superseded by more recent scientific information, including the more important role of white-footed mice, who carry the Lyme disease bacteria – not deer. As will be explained below, mice are the single greatest carrier of infectious ticks.
4. In addition, the same M.L. Wilson has noted that deer reduction may temporarily increase the number of questing, unfed nymphal and adult ticks. Humans may experience a Greater Risk Of Tick Bites during the years after deer

population have been reduced. No Simple Formula Can Predict How Changes In Reservoir Density Of Deer And Ticks Will Affect Lyme Disease.

See M.L. Wilson and J.R. Childs "Vertebrate Abundance and Epidemiology of Zoonotic Diseases" cited in The Science of Overabundance – Deer Ecology and Population Management, ed. By William J. McShea, HJ. Brian Underwood, and John H. Rappole, Smithsonian Institution Press, 1997.

5. The reference to the Narragansett Bay study is misleading ("Reduced Abundance of *Ixodes scapularis* (Acari:Ixodidae) and the Tick Parasitoid, Kirby C. Stafford III, et al.). This study involved 4 islands, not a mainland, or suburban environment such as Ridgefield.

6. The references to Bluff Point and Bridgeport are also misleading. The Bluff Point site is a fenced preserve on a coastal peninsula, and the Bridgeport site is a privately owned woodland tract/business park, which was fenced from the surrounding residential and commercial areas. Both sites were isolated areas, similar to the islands in Narragansett Bay, and not the same as Ridgefield. Further, there were discrepancies in the deer/tick densities in Bluff Point. All of the results of these studies were limited to isolated sites, and cannot be applied in Ridgefield. In addition, Dr. Oswald J. Schmitz, Professor & Associate Dean of Academic Affairs, School of Forestry and Environmental Studies, Yale University, pointed out that the enclosures and the results of the data obtained from the enclosures were misrepresented.

7. The Wildlife Society Bulletin citation is unverifiable. There is no volume 311.

8. The reference to the Great Island study is inaccurate, and relies on alleged reference to that study in a report by the Greenwich Conservation Committee. Kirby C. Stafford III, Ph.D., Vice-Director, Department of Entomology, Connecticut Agricultural Experiment Station, clarified the Great Island study, as was set forth in the Statement that I submitted on May 10, 2005:

*"Again, the point is that if you reduce the number of deer, the number of ticks not cases of Lyme disease goes down. While I hear that LD cases acquired on Great Island due to the deer reductions have not only gone down but virtually disappeared, this is hearsay and no data has been published."*

C. Both Laura Simon, a scientist with The Fund for Animals, now the Humane Society of the United States, and Dr. Stafford, made this clear. Specifically, Dr. Stafford confirmed to me what he said in his presentation to the Ridgefield Deer Committee that "you should try to avoid confusing tick reduction with reduction in Lyme cases. No published study has documented reductions in actual incidence in Lyme disease – just ticks and therefore presumably risk of acquiring LD." (conversation on April 28, 2005). Similarly, Laura Simon stated:

*"Although deer are a preferred host for the adult stage of the tick, they are not the only host (the term "deer tick") is a misnomer!). The black-legged tick is carried by 49 birds species and all mammals except bats (Andersen, 1984). Therefore, the removal of one host, the white-tailed deer, does not stop the spread of the disease. In some cases, when deer numbers have been experimentally eradicated from an*

area, the ticks have been noted to switch to other hosts (Duffy et al, Mannelli et al) or occur at higher densities on the remaining deer (Deblinger et al).”

*“The reason that hunting doesn’t control Lyme disease is because hunting does not significantly reduce the tick population. In one study where as many as 70 percent of the deer were removed from an island there was “no marked reduction in the abundance of the tick” (Wilson et al, 1988). In later years, the sub-adult tick numbers declined but the adult tick abundance actually increased.”*

For more supporting data, please see [http://www.fundforanimals.org/uploads/fs\\_co7.pdf](http://www.fundforanimals.org/uploads/fs_co7.pdf), “Coexisting With Wildlife, Fact Sheet #7 - Living With Deer,” page 9 - “DISEASE: Lyme Disease Misconceptions” And “Deer And Lyme Disease.” authored by Laura Simon, formerly with the Fund For Animals, now Field Director, The Humane Society of the United States, previously distributed in my Statement dated May 10, 2005.

- D. Again, it is necessary to refer to Dr. Kirby Stafford to clarify this Committee’s misconceptions about Lyme disease.

The Committee alleges that Dr. Stafford said that if you reduce the deer population to 8 deer per square mile, you can eliminate Lyme disease. This is not true.

Response from Dr. Stafford in my conversation with him on April 28, 2005:

*“This is not my data. This number was taken from Sam Telford, a researcher at Harvard, who contributed a chapter to “Ecology and Environmental Management of Lyme Disease”, edited by Howard Ginsberg, Rutgers 1993. This number is from the Great Island Deer Reduction Experiment.”*

This is an important clarification because a) Dr. Stafford does not take the position that reducing the deer population to 8 deer per square mile eliminates Lyme disease, and b) the Deer Island study was an experiment on a peninsula off Cape Cod, unlike the environment and geography of Ridgefield, among other distinguishing factors.

- E. The Committee decided, without sufficient data and justification, that the deer population should be reduced to 20 deer per square mile in Ridgefield in order to reduce Lyme disease and other factors. This number is not valid or credible because there is no evidence to support this number.

Response from Dr. Stafford in my conversation with him on April 28, 2005:

*“That’s an interesting question, because we just don’t know. That is a general number used by the DEP as to what they consider sustainable - the only place it has been done is on Monhegan Island, Maine, where deer were eliminated. In the Monhegan Island study, it is the only place where total elimination of the deer has been done. There has been near elimination of ticks NOT LD {Lyme disease} on Monhegan Island. Disease incidence I am sure is being followed up, but it is not part of the first published paper.”*

The Committee alleges that when you reduce the number of deer, it will also reduce the number of cases of Lyme disease in Ridgefield. This is not true.

F. In order to have an accurate, science-based understanding of Lyme disease, it is necessary to examine the following evidence:

## 1. MICE

White-footed mice are the single greatest carrier of infectious ticks. Lyme disease bacteria is maintained in the blood system and tissues of white-footed mice. *Borrelia burgdorferi*, which causes Lyme disease, is a spiral-shaped bacterium. Mice transmit this bacteria to Black-legged ticks. Tick larvae become infected after feeding on mice that carry the bacteria. Deer Do Not Carry Or Transmit Lyme Disease Bacteria.

a) Scientists conducted a study in Connecticut in 2004 which confirmed the key role of mice in transmitting Lyme disease. Blood samples from white-footed mice captured at a site in Connecticut were examined for Lyme disease bacteria (*Borrelia burgdorferi*): "Nearly the entire population of *P. leucopus* mice became infected with *B. burgdorferi* by late August, coinciding with the peak activity period of host-seeking larvae uninfected with the spirochete *Ixodes scapularis*, thereby perpetuating the agent through succeeding generations of ticks."

See Abstract: "Borrelia burgdorferi Infection in a Natural Population of *Peromyscus Leucopus* Mice: A Longitudinal Study in an Area Where Lyme Borreliosis is Highly Endemic." Jonas Bunikis, et al., *The Journal of Infectious Diseases*, University of Chicago Press, Vol. 189 (2004), pg. 15. See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=15073690&dopt=Citation](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=15073690&dopt=Citation).

b) In a study directed by Steven Schutzer, MD, a Lyme disease specialist at UMDNJ-New Jersey Medical School, researchers found that ticks were 23 times more likely to be found in habitats favorable for these mice, i.e., areas with dense vegetation that rises above the ankles, where bare ground cannot be seen. ("Reduction of Lyme disease exposure by recognition and avoidance of high risk areas", *The Lancet*, June 7, 1997, Vol. 349:1668, by Schutzer, SE; Brown, Jr. T; Holland, BK).

See <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=Display&DB=pubmed>.

c) In fact, Hunting Or Killing Deer May Actually Increase Lyme Disease! In a separate study conducted by Dr. Rick Ostfeld, an ecologist with the Institute of Ecosystem Studies in Millbrook, NY, examined the relationship between ticks, mice and people. He discovered two factors that have major effects on the number of ticks in the wild:

- Acorn abundance and biodiversity: when oak forests produce large acorn crops in the Fall, the result is a large mouse population the following summer. Dr. Ostfeld determined that a larger acorn and mouse population increased the number of infectious ticks by providing the tick larvae with more opportunities to pick up the Lyme disease bacteria during feeding.
- He also determined that biodiversity reductions – such as carving up forests and woodlands – cause the mice population to increase dramatically. A reduction in biodiversity limits the other animals ticks can feed on. Therefore, If

We Kill Other Wildlife Such As Deer, The Ticks Will Then Feed Mostly On Mice, Increasing Their Chances To Become Infected.

See the studies conducted by Dr. Rick Ostfeld, and related information at the website of the Institute of Ecosystem Studies at [http://www.ecostudies.org/IES\\_lyme\\_disease.html](http://www.ecostudies.org/IES_lyme_disease.html).

- d) A separate study by the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, confirmed that not only are white-footed mice a key animal reservoir for Lyme disease, but demonstrated that the broad-based vaccination of wild mice could help reduce Lyme disease risk in humans.

The NIAID released a "proof-of principle" study in December 2004 which demonstrates that vaccinating a carrier of a vector-borne disease in the wild is a potential method for preventing transmission of that disease to humans. The study was conducted in 12 forested sites in Connecticut. The most logical way to implement the vaccination of large number of wild mice is through targeted food pellets or bait boxes, much like the rabies vaccination program that has met with success in the United States and Europe. Such a program would also be environmentally beneficial because it would not detrimentally affect the ecology of a region.

In addition, the study demonstrated two other benefits: 1) When integrated with other protective measures, a vaccination program could have significant implications, not only for preventing Lyme disease, but for preventing other vector-borne diseases, including West Nile virus, and 2) a targeted vaccination program could offer more far-reaching protection against vector-borne diseases than vaccinating humans.

See Report of NIAID dated December 13, 2004 entitled "Broad-based Vaccination of Wild Mice Could Help Reduce Lyme Disease Risk in Humans."

See <http://www.nih.gov/news/pr/dec2004/niaid-13a.htm>.

- e) There is an effective and safe bait system for controlling mice and ticks which is readily available on the market – the Maxforce Tick Management System. Scientists at the U.S. Center for Disease Control and Prevention and Bayer Environmental Science developed the Maxforce Tick Management System which has been proven effective in drastically reducing the number of ticks present in the landscape. The Maxforce System targets mice. It uses a small, plastic bait box containing the insecticide fipronil. Mice are attracted to the boxes and enter them through a small hole. A small applicator wick lightly brushes the mice with traces of the insecticide. The bait boxes are self-contained and maintenance free once installed. The system is effective for approximately 90 days, and two installations cover a full season. In field tests, it reduced ticks by nearly 80% after one year, and by 97% after two years of treatment.

The Maxforce Tick Management System has been used, for example, by town officials in Croton-on-Hudson, NY. It was installed along the perimeter of Duck Pond Park to protect local residents from ticks.

The insecticide fipronil is safe. It is the active ingredient in flea and tick treatments used by veterinarians. The U.S. Center for Disease Control and Prevention tested

and approved it. In addition, the U.S. Environmental Protection Agency granted a public health exemption for the Maxforce system: "for the use of fibronil in a rodent bait box system to control immature blacklegged ticks which are the vector for Lyme disease." The American Lyme Disease Foundation also recommends the Maxforce Tick Management System.

See <http://www.maxforcetms.com/> for information re: The Maxforce Tick Management System. See also, the website of the American Lyme Disease Foundation, headquartered in Somers, NY, at <http://www.aldf.com>.

## 2. BIRDS

a) A scientific study in Connecticut examined 27 different species of birds, as well as white-footed mice. Although the white-footed mice had significantly more positive Lyme disease bacteria (spirochetes), 8 and 9 different species of birds were infected. In addition, spirochetes grew in a cell-free medium inoculated with bloods from 4 white-footed mice, 1 northern mockingbird, 1 gray catbird, 2 prairie warblers, 1 orchard oriole, 1 common yellowthroat and 1 American robin. With respect to birds, the scientists concluded: "We Suggest That Avian Hosts, Like Mammals, Develop Spirochetemias Of The Causative Agent Of Lyme Disease."

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=6516460&dopt=Citation](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6516460&dopt=Citation) for the Abstract entitled: "Avian and mammalian hosts for spirochete-infected ticks and insects in a Lyme disease focus in Connecticut." Anderson JF, Magnarelli LA.

b) In another study of birds and Lyme disease, 6 species of native North American birds were tested: American robin, gray catbird, brown thrasher, eastern towhee, song sparrow, and northern cardinal. The study concluded that American robins and song sparrows were the most competent reservoirs for Lyme disease bacteria. Northern cardinals had a moderate level of reservoir competence, with lower levels for gray catbirds. There was little evidence of reservoir competence for eastern towhees or brown thrashers. The study also noted that "Engorged larvae drop from birds abundantly during daylight, so the abundance of these bird species in the peridomestic environment suggests that they might contribute infected ticks to lawns and gardens."

See <http://www.ingentaconnect.com/content/esa/jme/2005/00000042/00000003/art00034> for the Abstract: "Reservoir Competence of North American Birds for the Lyme Disease Spirochete, *Borrelia burgdorferi*.", Journal of Medical Entomology, Volume 42 Issue 3, Pages 445-449, Ginsberg, Howard S.; Buckley, P.A.; Balmforth, Maxon G.; Zhioua, Elyes; Mitra, Shaibal; Buckley, Francine G.

## 3. RABBITS

a) A study by the Harvard School of Public Health concluded that "Rabbits Perpetuate The Agent Of Lyme Disease." In addition, the infection/transmission of the Lyme disease bacteria may occasionally be exchanged between Rabbits And Mice.

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=2802026&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2802026&dopt=Abstract). "Enzootic transmission of the agent of Lyme disease in rabbits." Telford SR 3rd, Spielman A. Department of Tropical Public Health, Harvard School of Public Health, Am J Trop Med Hyg, 1989 Oct Vol 41(4):482-90.

- b) In another study of rabbits and Lyme disease by the authors of the above-listed Harvard study, Telford and Spielman concluded that as rabbits "may be extraordinarily abundant in nature, this tick provides potential for a hidden enzootic cycle of natural Lyme disease transmission."

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=2709387&query\\_hl=14](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2709387&query_hl=14). Abstract: "Competence of rabbit-feeding Ixodes (Acari:Ixodidae) as a vector of the Lyme disease spirochete." Telford SR 3rd, Spielman A. J Med Entomology, 1989 March; Vol 26 (2)118-121.

#### 4. CHIPMUNKS

- a) Chipmunks are a reservoir of ticks with Lyme disease bacteria. In a study by the Harvard University School of Public Health, scientists compared white-footed mice, chipmunks, and meadow voles. Mice had the highest rate of infection with the Lyme disease spirochete (90%). Chipmunks Had A 75% Rate Of Infection! Meadow voles had the lowest (5.5%).

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=2787105&query\\_hl=16](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2787105&query_hl=16). "Comparing the relative potential of rodents as reservoirs of the Lyme disease spirochete (*Borrelia burgdorferi*). Mather TN, Wilson, ML, Moore SI, Ribeiro JM, Spielman A. Harvard University School of Public Health, Department of Tropical Public Health, AM J Epidemiol 1989 Jul; Vol 130(1):143-150.

#### 5. SKUNKS AND RACCOONS

- a) Skunks and Raccoons are reservoirs of the Lyme disease bacteria. In a study conducted in Westchester County by the New York Medical College in Valhalla, NY, scientists examined mice, raccoons, skunks, and opossums as reservoirs of Lyme disease spirochetes. 57% of mice, 55% of raccoons, and 33% of skunks produced the Lyme disease spirochete. (Although opossums had engorged tick larvae during initial examination, there was a technical problem, and none of the nymphs from larvae that fed on these particular opossums survived long enough for spirochete examination.)

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=2388356&query\\_hl=18](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2388356&query_hl=18). "The role of medium-sized mammals as reservoirs of *Borrelia burgdorferi* in southern New York." New York Medical College, Dept. of Community and Preventive Medicine, Fish D, Daniels T.J., J Wildl Dis. 1990 Jul; Vol 26(3): 339-345.

#### 6. DOGS

Dogs are reservoirs of Lyme disease bacteria, and can increase human risk of exposure to Lyme disease.

- a) Scientists at the University of Rhode Island tested dogs (Beagles) and larval ticks. Overall, 78% of larval ticks on the dogs were found to be infected with the Lyme disease spirochete.

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=7](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7)

[928571&query hl=20](#), "Competence of dogs as reservoirs for Lyme disease spirochetes (*Borrelia burgorferi*)." University of Rhode Island, Center for Vector-borne Disease, Mather TN, Fish D, Coughlin RT. J Am Vet Med Assoc. 1994 Jul 15; Vol 205(2): 186-188.

## 7. LYME and CLIMATE

- a) In a study involving white-footed mice and climate in seven states in the Northeast US, scientists found positive, significant correlations in all states between early summer Lyme disease incidence and the June humidity index two years prior. This may indicate the enhanced survival of *Ixodes scapularis* tick under wet conditions. And further, significant correlations were observed in some states related to warmer winter weather 1 1/2 years prior to Lyme disease incidence. This may have been due to higher survival and activity levels of the white-footed mouse, an important host for *scapularis* ticks.

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=14570138&query hl=22](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14570138&query hl=22). "Analysis of Weather Effects on Variability of Lyme Disease Incidence in the Northeastern United States." Subak S. Experimental and Applied Acarology, 2002, Vol 28(1-4): 249-256(8).

- b) In another study, scientists have established the significant role of climate and rodents in the enzootic cycle of ticks carrying Lyme disease bacteria, and even the encephalitis virus. The ratio of tick larvae to nymphs feeding on rodents increases with increasing humidity, contributing to the seasonal and geographical variation in disease transmission.

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=10593075&query hl=24](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10593075&query hl=24). "Impact of microclimate on immature tick-rodent host interactions (Acari: Ixodidae) implications for parasite transmission." Randolph SE, Storey K. University of Oxford, Dept. of Zoology, J Med Entomology, 1999, Nov; Vol 36(6): 741-748.

## 8. TREATMENT

- a) As documented in the New England Journal of Medicine, a single 200-mg dose of Doxycycline given within 72 hours after an infected tick bite can prevent the development of Lyme disease.

See

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=11450675&query hl=28](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11450675&query hl=28). Abstract: "Prophylaxis with Single-Dose Doxycycline for the Prevention of Lyme disease after an *Ixodes scapularis* Tick Bite." Robert B. Nadelman, M.D., et al., The New England Journal of Medicine, Vol. 345:79-84, July 12, 2001, Number 2.

## 9. RESEARCH

The Deer Committee has failed to review and consider the latest research in connection with preventing Lyme disease. For example, new research efforts have been announced by the National Institute of Allergy and Infectious Diseases, including:

- a) There is a new, rapid, and extremely sensitive ELISA test (the C6 ELISA) for diagnosing Lyme disease. This is the only diagnostic test for Lyme disease that has been approved by the FDA. It can be used even for those who have been immunized with the licensed OspA-based LYMERix vaccine. This is a major advance since no other laboratory test enables one to obtain such information.  
Source: Lyme Disease Research Efforts, Division of Intramural Research, National Institute of Allergy and Infectious Diseases, <http://www.niaid.nih.gov/dmid/lyme/diagnosis.htm>.
- b) There is no evidence that the Lyme disease bacteria plays a role in the etiology of Alzheimer's disease, as some Committee members have alleged. The results of a recent study, using a very sensitive polymerase chain reaction assay/DNA target sequence, provided no evidence to indicate the presence of Lyme disease bacteria in the brains of deceased patients with Alzheimer's disease.
- c) The complete genome of the Lyme disease bacteria has been sequenced by scientists at The Institute for Genomic Research, and the widespread application of this information will play a significant role in increasing our understanding of the pathogenesis of Lyme disease at the molecular and cellular levels, as well as to accelerate the development of improved diagnostic tests. Researchers already are applying microarray technology to this end.
- d) Two large pharmaceutical companies have devoted considerable effort to developing a vaccine for Lyme disease. Clinical trials have been completed for each of two recombinant OspA vaccines manufactured by GlaxoSmithKline and Pasteur Merieux Connaught. These vaccines were found to be 49 to 68 percent effective in preventing Lyme disease after two injections, and 68 to 92 percent effective in preventing Lyme disease after three injections. Researchers And Health Experts Anticipate The Use Of These Vaccines In Endemic Areas Will Likely Result In Significantly Reducing The Incidence Of Lyme Disease In The Future.
- e) Although the LYMERix vaccine has been licensed for use in people from 15 to 70 years of age, the results of a recently completed study indicate that LYMERix is well tolerated and highly immunogenic in children ages 5 to 15 as well. A larger pediatric study involving more than 3000 children from 4 to 14 years of age, showed that just two doses - rather than the three given to adults - were enough to provide protection, and only minor side effects were observed. The FDA is currently reviewing these promising findings to determine if LYMERix should be approved for use in children 4 years of age and older.
- f) Although GlaxoSmithKline discontinued manufacturing the LYMERix vaccine in 2002 for economic reasons, NIAID is funding preclinical studies on developing other candidate vaccines, e.g., decorin-binding protein A or DbpA for Lyme disease. MedImmune, Inc. and Aventis Pharmaceuticals, Inc. reported that a combination vaccine composed of the DbpA and OspA of the Lyme disease bacteria is more effective than either given alone in preventing the development of the bacteria in experimental animals. On the basis of these encouraging findings, both companies

have entered into an agreement to develop a new, more effective second-generation vaccine to prevent Lyme disease in humans.

## 10. REPELLENTS

There are several effective and safe tick repellents available on the market, including DEET, and:

- a) The Orvis Buzz Off Insect Shield repels ticks that carry Lyme disease. This Insect Shield has been successfully registered with the U.S. Environmental Protection Agency. A natural insect repellent derived from the chrysanthemum plant is bonded to the fabric of clothing.

See information about the Orvis Buzz Off Insect Shield at

[http://www.orvis.com/store/product\\_choice.asp?dir%5Fid=885&group%5Fid=2678&cat%5Fid=8589&subcat%5Fid=8590&pf%5Fid=78PP](http://www.orvis.com/store/product_choice.asp?dir%5Fid=885&group%5Fid=2678&cat%5Fid=8589&subcat%5Fid=8590&pf%5Fid=78PP). Click on the button "Learn How Buzz Off Works."

- b) Ridgefield should consider making available to residents a repellent that was recently distributed in a town in New Jersey (Hanover Township). A repellent called "Deer Out" is being distributed to residents as part of a program recommended by and supervised by the Humane Society of the United States. Bottles of the repellent are made available to individual homeowners. Members of the Humane Society go to individual homes, offering tips on how to apply the repellent, as well as other ideas on how to keep deer off property. It is a part of the township's plan to find an alternative to deer hunting. The repellent is placed on trees, other vegetation, and fences.

See <http://www.deerout.com/news.htm>, "GARDENERS: DEER DETERRENTS 'WORK,'" Daily Record, May 12, 2005. Further information about adopting this program in Ridgefield is available through the Humane Society of the United States.

## **4-Poster Deer Treatment Bait Station**

The 4-Poster Deer Treatment Bait Station was developed by scientists J. Matthew Pound, J. Allen Miller, and Craig A. LeMeilleur of the United States Department of Agriculture (USDA), Agricultural Research Service (ARS) and patented on November 29, 1994 under US Patent No. 5,367,983. The USDA has granted an exclusive license of the 4-Poster system to the American Lyme Disease Foundation, Somers, NY. It is distributed by C.R. Daniels, Inc., the sole manufacturer and distributor of the 4-Poster system.

The 4-Poster system consists of a central bin containing clean whole kernel corn and 2 application/feeding stations located at either end of the device. As deer feed on the corn, the design of the system forces them to rub against the pesticide-impregnated applicator rollers that in turn apply tickicide to their ears, heads, necks, and shoulders where approximately 90% of adult ticks are attached. Through grooming, the deer also transfer the tickicide to other parts of the body.

The U.S. Environmental Protection Agency has approved a specially formulated 10% permethrin based tickicide for use in the 4-Poster system. Permethrin is not dangerous. It is also approved for use on cattle, pigs, horses, poultry, and pets. It is used in shampoos used to treat head lice on humans, as well as in spray form tick repellent. Studies have shown that the use of the 4-poster system has resulted in the control of 92 to 98% of ticks in areas around the devices after 3 years of use.

During the USDA Northeast Area-wide tick control project which included Connecticut and was completed in 2004, the results were up to 94% control of adult blacklegged ticks (Lyme disease ticks) and 82% control of nymphs using a pesticide with amitraz as the active ingredient. In the same study, there was over 99% control of lone star tick nymphs, over 99% control of larvae, and 97% control of adult ticks. The technology is very effective against ticks and is extremely environmentally friendly.

As one of the inventors of the 4-Poster Deer Treatment Bait Station and as a nationally recognized Research Entomologist with the USDA Agricultural Research Service, J. Matthews Pound has provided the following information/answers about the 4-Poster system:

1. Is the 4-Poster Deer Treatment Bait Station effective in killing the Back-Legged Tick? (And also other ticks such as the Long Star Tick recently discovered in Shelter Island, NY.)

The 4-Poster was designed to control ticks feeding on white-tailed deer, and especially those ticks such as the blacklegged ticks and lone star ticks for which deer are hosts for adult ticks. By preventing adult female ticks from feeding on deer, the 4-Poster breaks the life cycle and results in fewer ticks being in the environment. Studies in 6 states and a variety of environments thus far have shown that with proper deployment of 4-Posters free-living nymphal blacklegged ticks have been reduced by 70 to >98% and lone star ticks by 92 to >99%). This is done without spraying or otherwise putting pesticide onto plants or into the soil or the

environment. With this host-targeted technology the pesticide remains on the application rollers or on the deer and nowhere else.

2. Please explain how the 4-Poster is more effective in reducing Lyme disease than any other available method/approach.

What the 4-Poster offers is environmentally friendly reduction of free-living tick populations over relatively large areas (40 to 50 acres) for each unit deployed. By treating the deer for ticks and allowing them to roam freely, they contact and kill ticks that otherwise could attach to people or pets. Thus, we like to think of them as walking through your area and vacuuming up the ticks. In addition, this is done with minimal use of permethrin which is an extremely safe pesticide that is not sprayed or otherwise placed in the environment other than on the rollers or on the deer. Some of our rough estimates indicate that the amount of pesticide used to control ticks with the 4-Poster technology is 1500 times less than using area-wide sprays, and none of the Tickicide is applied to vegetation.

3. Is the 4-Poster safe to have in areas where people and children may be exposed to the pesticide used on the station?

The 4-Poster Tickicide brand of 10% permethrin is the only chemical approved and labeled by the U.S. Environmental Protection Agency for use on deer, it may only be applied with the 4-Poster Deer Treatment Bait Stations, and with proper use adults or children can only be exposed to the pesticide by touching the rollers or the deer. The label from EPA also requires the 4-Posters to be located at least 100 yards from any place where children may be present without adult supervision, and specifies that it may be applied to deer continuously from September 1 through June 30 which includes all of deer hunting season. Therefore EPA considers it safe for hunters to handle and consume venison from treated deer, otherwise they would have specified a withdrawal period to be observed between treatment and slaughter for food. The pesticide contains 10% permethrin which is an extremely safe as is described below.

4. Please explain the pesticide used on the 4-Poster and the toxicity level.

The active ingredient in '4-Poster Tickicide' is 10% permethrin. Permethrin is a category 4 pesticide, which is the least toxic group and therefore is the safest group. Permethrin has a very low mammalian toxicity, with an LD50 (lethal dose to 50% of animals tested in a group) of 3800 mg/kg body weight when administered orally to rats (this is the standard test for mammalian toxicity). This means that a person would have to consume about 3800 mg (=3.8 grams) per kilogram (=2.2 pounds) of body weight to die from toxicity. Fully loaded, a roller on the 4-Poster would have 40 ml of 10% permethrin or about 4 ml (=about 4 grams or 4,000 mg) of AI (active ingredient) on it. All 4 rollers would then have a total of about 16,000 mg (16 gm) of AI on them. A 30 pound child weighs about 13.6 kg, and thus the LD/50 for the child would require about 13.6 x 3,800 mg or 51,680 mg to be lethal. This amount is 3.23 times the amount that the child would get if he/she ate or otherwise contracted all of the permethrin from all four of the rollers immediately after they were charged!! Certainly touching a roller and putting a really bad tasting finger in the mouth would

not be within many thousands enough dose to do any significant harm. Another way to look at it is that regular aspirin has an LD50 of about 200 mg/kg body weight. Therefore aspirin is about 19 times more toxic than 10% permethrin! Also, many people use DEET as a repellent for ticks and insects by covering exposed skin with concentrations usually around 30%. Quite often people get the DEET in their eyes or mouths, and this same material is recommended for use on young children. DEET (28%) has a very low toxicity with an LD50 of about 2000 mg/kg body weight, however this is still almost twice as toxic as permethrin. Permethrin is used to impregnate uniforms of all of our military personnel, it is the active ingredient in Permanone tick repellent that we soak our clothes with, and it is the active ingredient in shampoos used to kill head lice in people including young children. Instructions say to shampoo the hair, wait about 15 minutes then rinse with water only to leave a residue on the hair and scalp.

5. The 4-poster system is available in every state except New York. It is available and approved in Connecticut, but there are restrictions. Please comment on these restrictions and how they might impact the effectiveness of the 4-Poster.

The U.S. Environmental Protection Agency has approved the Tickicide for use on deer as dispensed by the 4-Poster, however, individual states must then grant their own approval. In most states the approval process for the 4-Poster takes 2 steps; approval of the use of Tickicide on deer and approval of feeding corn to the deer. These approvals usually are granted by separate agencies; the state equivalent of the FDA or EPA and the Department of Parks, Fisheries and Wildlife. Currently the Tickicide has been approved in all states in the continental U.S. except New York, and apparently, a single agency is in control of both approvals in New York. Also, each state may add their own restrictions as is the case in Connecticut. The main restriction that CT has added is that the devices are not allowed to be operated during hunting season. Obviously the minute amount of permethrin that could be present on a deer could not be appreciably toxic to a hunter, but we do advise all hunters in areas where treated deer might be present to wear gloves and take precautions not to contaminate the meat by letting the outer hide come into contact with the meat. It certainly makes for an easier and quicker clean-up to wear gloves while cleaning a deer and any experienced hunter already takes precautions to keep hair and dirt from getting onto the hide. The only other reason they may have restricted the use is because they are afraid that hunters might illegally hunt near them. Because most of the adult blacklegged ticks feed on deer from mid-September through mid-December which coincides with hunting season, the effectiveness of the treatments will certainly be reduced for these ticks. However, the rest of the adults and all of the adult lone star ticks feed beginning around the first of March, so the efficacy against these ticks would still give appreciable control.

6. What is the coverage area of the 4-Poster Station?

The objective of 4-Poster placement is to have one available within the normal territory of each deer herd, and each unit is designed to best treat up to 15 or so deer per day. Therefore the actual number needed will depend on numbers of deer in your area. With this said, we recommend about one unit for roughly 40 or 50

acres, realizing that they should not be placed in a strict grid-like pattern but be placed so that they get maximum use by deer. This may require initially moving lesser used units to areas where they get more use, etc.

7. How can Ridgefield, CT get 4-Posters Stations?

After you understand the specific requirements for CT, they can be purchased through C. R. Daniels, Inc. of Ellicott City, MD, the manufacturer.

8. What is the approximate cost of a 4-Poster Station?

Prices are available on the American Lyme Disease Foundation, Inc. website, but units are \$425 each and may be purchased in any numbers (the website says a minimum of 9 units, but this has been changed).

9. If Ridgefield is interested using the 4-Poster Station, would you be available to meet with the Ridgefield Selectmen and perhaps the Ridgefield Lyme Disease Task Force to discuss the 4-Poster and how it can be implemented in Ridgefield?

I would be happy to visit and speak with them when I am in the area, and I usually am up there several times per year.

J. Mathews (Mat) Pound, PhD  
Research Entomologist  
USDA Agricultural Research Service  
Knipling-Bushland U.S. Livestock Insects Research Laboratory  
2700 Fredericksburg Road  
Kerrville, Texas 78028-9184  
Phone: 830-792-0342  
Email: Mat.Pound@ars.usda.gov

It should also be noted that Kirby Stafford of the Connecticut Agricultural Experiment Station has confirmed that the 4-posters are still available and on the market in Connecticut. Use in CT will require a permit from the DEP and there are restrictions on when the rollers with the pesticide can be on the 4-posters (i.e., must be removed one week prior to and during the shotgun/rifle deer season).

See the American Lyme Disease Foundation web site for details of the 4-Poster Deer Treatment Bait and Feed Station - <http://www.aldf.com/FourPosterDeerTreatmentBaitStation.htm>. It is available exclusively from:

C.R. Daniels, Inc.  
Dandux Outdoors  
3451 Ellicott Center Drive  
Ellicott City, Md 21043  
info@dandux.com

Andy Szulinski, Vice President of CR Daniels, has agreed to come to Ridgefield and meet with the Board of Selectmen to discuss the 4-Poster system and how to implement it.

Contact Information:

Andy Szulinski, VP

CR Daniels, Inc.

3451 Ellicott Center Drive

Ellicott City, Md. 21042

Tel: 800-933-2638 ext. 2481

Cell: 410-227-9799

## **BIODIVERSITY**

The Deer Committee has provided no clear definition of “biodiversity” and what is an acceptable level of biodiversity and ecosystem health in Ridgefield. Biodiversity is a complicated subject, and it involves many factors, not just deer. It can not be addressed by simply recommending that we kill deer, or by allowing so-called sport hunters to determine the status and health of the environment in Ridgefield.

In the past century and continuing to the present, scientists have learned an enormous amount about individual species and about ecological processes at the scale of watersheds and landscapes, but there is much we do not understand. Scientists continue to investigate ecological processes and predict changes in the composition, structure and dynamics of ecosystems. Recent advances in analytical instrumentation, computer networking, information management, experimental methods, and computation analysis have set the stage for national, coordinated observations of our biological, physical and chemical world.

See [http://ibr.cs.aibs.org/reports/pdf/IBRCSWhitePaper\\_NEON.pdf](http://ibr.cs.aibs.org/reports/pdf/IBRCSWhitePaper_NEON.pdf). "Rationale, Blueprint, and Expectations for the National Ecological Observatory Network", American Institute of Biological Sciences, Infrastructure for Biology at Regional to Continental Scales Working Group (IBRCS), IBRCS White Paper, March 2003.

The reasons for developing scientific tools to understand biodiversity and ecosystems, include:

- ❖ Identifying reliable indicators of how land and water use histories affect ecosystems.
- ❖ Understanding how physiology, population, and community dynamics of microbes, plants, and animals influence ecosystems.
- ❖ Accurately predicting how microbes, plants, and animals will respond to changes in the structure and functioning of ecosystems.
- ❖ Developing an integrated understanding of the influence of human activities on ecosystems.
- ❖ Predicting how trends in climate and land use affect species invasion and distribution.

### **A. FORESTS**

There is no scientific data or information about the forests and woodlands in Ridgefield.

In general, the composition and structure of forest communities are greatly affected by past land-use practices. In New England, contemporary forests are more homogeneous than those of pre-colonial times because they have been subject to agriculture, logging, and reforestation. Climate, soils, past patterns of water and land use, and evolutionary history have all played an important part in determining the current forest ecosystems. Fires and weather conditions such as floods, hurricanes, and ice storms have also played a part. Superimposed on these factors are human

activities, including water and air pollution, and the elimination of many native plant and animals.

1. Investigators at the Harvard University Forest examined the New England forest and landscape. This forest region has been transformed over four centuries by changes in land use. Individual forests are currently growing rapidly, following 19th century logging and subsequent farm abandonment. The entire region serves as an immense carbon sink that figures into global carbon calculations. The ability of these forests to absorb the high quantities of nitrogen deposited from fossil fuel combustion is determined by soil conditions and forest structure. To attempt to understand these forests in the absence of complete and accurate studies is "folly". See IBRCS White Paper, previously cited.
2. Scientists at the Connecticut Agricultural Experiment Station conducted a 70 year study of Connecticut Hardwood Forests (The Old Series Plots 1927-1997). See <http://www.caes.state.ct.us/Bulletins/1990s/1999/b959.pdf>. As the authors noted, these Connecticut tracts were representative of forests not only in Connecticut, but also in Southern New England. The research includes soil characteristics, tree species, forest seedlings, tree volume, and tree diseases. The study emphasizes that one period of disturbance has had a large influence on changes in Connecticut forests: During the 1960s, gypsy moths, canker worms, and other insects defoliated forests during an extended period of drought. There were also periods of defoliation during the 1970s and 1980s.

In addition, the following factors affected the Connecticut forests, and would need to be examined in a similar fashion in Ridgefield before any statement could be made about the forests and woodlands in Ridgefield:

- a. Disease, for example, nectria canker is the most common stem canker in the forest
- b. Weather, including
  - soil moisture
  - adequate rainfall
- c. Site characteristics, including
  - topography, elevation
  - soil type, depth, internal drainage, stoniness, humus type, and moisture levels
- d. Tree descriptions, including
  - crown class – the qualitative measure of a tree's position in the canopy relative to its neighbors. The upper canopy of a forest is comprised of dominant and co dominant trees. Trees with well-developed crowns receive direct sunlight. Intermediate trees only receive direct sunlight from above and not on the sides. Suppressed trees receive no sunlight.
- e. Density, for example, the period of drought and defoliation during the 1960s and thereafter killed many upper canopy trees. However, the density of minor species of trees, including eastern red cedar, gray birch, flowering dogwood (also

subject to disease), blue-beech, shadbush, and hop horn beam, increased between 1987-1997.

- f. Human disturbance, for example, road and home construction.

In order to better understand the dynamics affecting net change in Connecticut forests, it also necessary to consider three components:

- persistence – the number of trees that survive
- mortality – the number of trees that die
- ingrowth - the number of new stems during a given period

C. A study by nationally recognized ecological researchers demonstrated that Acid Rain Continues To Significantly Damage Forests In The Northeast. The study, entitled: “Acidic Deposition in the Northeastern United States: Sources and Inputs, Ecosystem Effects and Management Strategies” was released in 2001. See <http://docserver.ingentaconnect.com/deliver/cw/aibs/00063568/v51n3/s4/p180.pdf?fmt=dirpdf&tt=479&cl=30&ini=connect&bini=&wis=connect&ac=0&acs=32629,75000325&expires=1134162525&checksum=C49E1522B70524BCA8E7F547A359DA08&cookie=675509312>. It was conducted at long-term monitoring sites in New England, New York and Pennsylvania, and was sponsored and organized by the Hubbard Foundation, with the support of several other groups, including the National Science Foundation.

Sulfuric and nitric acids have acidified soils, forests, lakes, and streams in the Northeast, thereby stressing and killing terrestrial and aquatic biota. On the basis of the existing data, it is clear, among other findings, that in the Northeast that:

- sulfur and nitrogen from atmospheric deposition has accumulated in forest soils across the region.
- acidic deposition has leached cellular Ca from red spruce foliage which has made trees susceptible to injury and led to more than 50% Mortality of Canopy Trees in some areas of the Northeast.
- emissions of air pollutants have important linkages to other large scale environmental problems affecting forests and other cases.  
See Bioscience, March 2001 at <http://www.ingentaconnect.com/content/aibs/bio/2001/00000051/00000003>. Also, the website of the American Institute of Bioscience at [www.aibs.org](http://www.aibs.org).

D. In 1998, Professor Bill Sharpe at Penn State University assembled a blue ribbon international team of acid rain researchers to look at forest health problems. The conclusion was that acid rain leaches aluminum out of soils, is toxic to plants and lowers the availability of calcium and magnesium, which are essential elements for plant growth. Acid rain has also eliminated fish from headwater streams. The following tree species are listed as acid rain sensitive: red oak, sugar maple, pin oak, black oak, quaking aspen, and hickory. Based on this scientific finding, Professor Sharpe maintains that Forest Regeneration Problems Cannot Be Simply

Blamed On White-Tailed Deer. There are many serious environmental stresses to forest regeneration, including acid rain deposition.

See <http://www.psu.edu/ur/2002/20may02newswire.html>, Abstract of "Penn State Expert Blames Forest Problem on Acid Rain, Not Deer" Penn State News, College of Agricultural Sciences, May 17, 2002.

Professor Sharpe also determined that the addition of lime and fertilizer to herbicide significantly improves growing conditions and resulted in taller and more diverse forest regeneration. This separate study was conducted in cooperation with the Pennsylvania Department of Conservation and Natural Resources Bureau of Forestry, and published in the journal Forest Ecology and Management.

See [http://www.environment.psu.edu/news/march\\_2003/lime\\_fert.asp](http://www.environment.psu.edu/news/march_2003/lime_fert.asp) "Penn State Researcher Finds Lime, Fertilizer Aid Forest Regeneration", from Penn State News, College of Agricultural Sciences, March 5, 2003.

- E. Sudden Oak Death, a deadly disease that kills oak trees, has been inadvertently introduced in Connecticut through infected rhododendron plants sold at local nurseries. The United States Department of Agriculture, Animal and Plant Inspection Service (APHIS) confirmed the presence of Sudden Oak Death disease in Connecticut in late November 2004.

See "Threat of Sudden Oak Death Has Come To Connecticut" by Donald H. Smith, Jr., Director/State Forester, Connecticut DEP Forestry Division, Connecticut Wildlife, January/February 2005, pg. 16.

See <http://dep.state.ct.us/burnatr/wildlife/pdf/cwjf05.pdf>.

- F. In a May 2005 report, scientists at Cornell University announced that viburnum leaf beetles are back in the Northeast, invading Connecticut, New York, Maine, Vermont, New Hampshire, Pennsylvania, and Massachusetts. The infestation by this beetle affects native woodland species, such as arrowwood. The fruit of viburnums is an important food source for birds. Viburnum also plays an important role in woodland ecology, providing a niche in the understory where mammals forage and birds nest.

See <http://www.news.cornell.edu/stories/May05/viburnum.ssl.html>. "Viburnum leaf beetles are back in Northeast, hungrier than ever" by Susan S. Lang, Cornell University News Service, May 19, 2005.

- G. Scientists at the National Center for Atmospheric Research (NCAR) and the University of Washington, under sponsorship by the National Science Foundation, determined that forest dieback in the northeastern U.S. and Canada is linked to climate changes. Freeze-thaw episodes, which are known to harm trees, are linked to atmospheric pressure imbalance over the North Atlantic.

See <http://earthobservatory.nasa.gov/Newsroom/MediaAlerts/2002/2002121010979.html>. "Forest Stress Linked to Climate Phenomenon", Earth Observatory-NASA News, December 10, 2002.

## B. BIRDS

There is no scientific information or data about birds in Ridgefield.

The mechanisms regulating populations of resident and migratory birds are not fully understood and are controversial. It should also be noted that migratory birds - not local, resident birds - compose the majority of species and individuals in temperate climates. Bird populations are affected by three basic factors: 1) direct and indirect interactions

among individual birds, e.g., crowding, territoriality, 2) environmental conditions, and 3) intrinsic differences among individual birds.

See

[http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/About\\_us/Sillett/Papers/sillett\\_multiple\\_mechanisms.pdf](http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/About_us/Sillett/Papers/sillett_multiple_mechanisms.pdf), "Multiple density-dependence mechanisms regulate a migratory bird population during the breeding season." Nicholas L. Rodenhouse, T. Scott Sillett, Patrick J. Doran and Richard T. Holmes, Dept. of Biological Sciences, Wellesley College; Smithsonian Migratory Bird Center; Dept. of Biological Sciences, Dartmouth College, The Royal Society Proceedings, August 28, 2003.

In trying to count the local population of birds, it is necessary to consider both resident and migratory birds. Migratory (neotropical) birds enjoy warm weather and plentiful food in the tropics, then fly to sites in North America during the breeding season in the Spring. Resident birds stay in their local environment, and winter weather is the most challenging condition for them. During winter, mortality is high among resident birds. This is due to the cold weather and the fact that there isn't enough food.

During the Spring, resident birds - not deer - push migratory birds to the edges of forests and into regenerating areas. Here there is an abundance of smaller insect prey, which is sufficient for their needs as they are not yet raising families at this time.

See [http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Science\\_Article/default.cfm?id=7](http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Science_Article/default.cfm?id=7), "Competition with the Locals" by Gregory Gough, Science Article, Smithsonian Migratory Bird Center-National Zoo, May 2003.

Declines in the numbers of many migratory birds have been detected over the past several decades. The causes are many, including migration travel itself. It is estimated that half of all migrants heading south for the winter will not return to breed in the Spring. Predators and bad weather are two natural causes of death. Collisions with tall buildings, windows, and other structures; being shot or trapped by hunters; and getting struck by automobiles are a few of the many human-made dangers. The loss and degradation of stopover habitat in Mexico and the Gulf of Mexico coastlands is potentially the greatest threat of all. Bottlenecks of migrating birds occur at Cape May, New Jersey and the Delmarva peninsula. Coastal erosion, rising sea levels, and increased human population creates a monumental conservation challenge.

See [http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Fact\\_Sheets/default.cfm?fxsh=6](http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/Fact_Sheets/default.cfm?fxsh=6), "Travel Alert for Migratory Birds: Stopover Sites in Decline" by Mary Deinlein, Smithsonian Migratory Bird Center-National Zoo.

The Connecticut DEP has acknowledged the affect that development, road building, and suburban sprawl has had on forest fragmentation and bird habitat: "Forest fragmentation opens a path into the forest for nest predators, cowbirds, and human disturbance. Forest interior bird populations cannot withstand being squeezed into smaller, less desirable space without being affected in a negative way. Their habitat needs are only met by maintaining larger blocks of forest unfragmented by development. Long-term use planning that protects intact, large blocks of forest needs to be undertaken to benefit these birds today, and for the future."

See <http://dep.state.ct.us/burnatr/wildlife/pdf/cwja04.pdf>, "Fire in the Forest" by Paul Fusco, Connecticut DEP, Wildlife Outreach Unit, Connecticut Wildlife, July/August 2004, pg. 10.

Acid rain also has a strong, highly significant, negative effect on birds. Scientists at Cornell University, Cornell Laboratory of Ornithology, reported the important role for acid rain in recent declines of some birds breeding in the eastern U.S., and the need to consider this large-scale influence – in addition to habitat fragmentation – when addressing bird population declines.

Acid rain has many negative effects, which can include:

- Loss of needles or leaves resulting in a more open canopy
- Complete die-off of forest tree species
- Thinning of the canopy may result in lowered abundance of preferred prey for insectivorous birds, or in an increase in scanning for predators that decrease time spent actively feeding
- Tree die-off may render an area unsuitable for forest birds owing to the loss of favored nesting, roosting, and foraging sites
- Acid rain may also alter the soil fauna
- Acid rain may also cause changes in the availability of food for birds, like the Wood Thrush, that forages on invertebrates in the soil litter layer

In addition, acid rain causes calcium depletion in soils, affecting birds in a number of ways. For example:

- Quality and quantity of available food such as snail shells, isopods, and millipedes or earthworms
- Toxicity or poisoning
- Insufficient calcium for reproduction
- Insufficient food for growing nestlings which require an extremely high calcium diet

The affect on birds and calcium in the soil is just one example of the profound alteration of the fauna of the soil and leaf litter layer as result of acid rain.

See

[http://www.pnas.org/cgi/reprint/99/17/11235?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=acid+rain&searchid=1134164407943\\_31755&stored\\_search=&FIRSTINDEX=0&journalcode=pnas](http://www.pnas.org/cgi/reprint/99/17/11235?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=acid+rain&searchid=1134164407943_31755&stored_search=&FIRSTINDEX=0&journalcode=pnas),  
“Adverse effects of acid rain on the distribution of the Wood Thrush *Hylocichia Mustelina* in North America” Ralph S. Hames, Kenneth V. Rosenberg, James D. Lowe, Sara E. Barker, and Andre A. Dhondt, Cornell University, Cornell Laboratory of Ornithology, 2002.

### 3. WILDFLOWERS

There is an absence of science behind claims that deer are responsible for the disappearance of wildflowers in Ridgefield. And there is no baseline data in connection with wildflowers in Ridgefield.

Research conducted at Penn State's College of Agricultural Sciences by Professor Bill Sharpe, previously mentioned in this Biodiversity section, revealed that both acidifying soils and deer browsing have an impact, but there was not any baseline data about past wildflower prevalence in Pennsylvania – as is missing in the Town of Ridgefield. Professor Sharpe did a small, sample-size study of three species of the wildflower trillium. Each kind of trillium was affected differently by soil acidity and deer browsing. Painted trillium was affected, but the deer browsing seemed to have the greatest impact only on the number of plants with flowers, not the density of plants in the patch. White trillium was affected, but to a lesser degree. See the article entitled: "Deer munching may not be sealing wildflowers' fates", previously distributed to the Committee and Board of Selectmen in my Statement dated May 10, 2005. This contradicts the allegations contained in the Committee Report in connection with trillium and related wildflowers that "our native wildflowers have been decimated", including footnote #1 - the reference to the Audubon Pennsylvania case study.

Further, there are humane ways of reducing wildlife damage to property and flowers. Consultants have recommended using fences, repellents, scare devices, etc. See [http://www.hsus.org/wildlife/issues\\_facing\\_wildlife/humanely\\_reducing\\_agricultural\\_damage\\_by\\_wildlife/humanely\\_reducing\\_agricultural\\_wildlife\\_damage\\_deer.html](http://www.hsus.org/wildlife/issues_facing_wildlife/humanely_reducing_agricultural_damage_by_wildlife/humanely_reducing_agricultural_wildlife_damage_deer.html), "Humanely Reducing Agricultural Wildlife Damage: Deer" by the Humane Society of the United States.

Dr. Oswald J. Schmitz of Yale University has recommended, among other solutions, altering landscape to make it less desirable to deer. We, as a community, have the responsibility to resolve any deer problem by understanding how our land use practices affect deer, and in turn using this scientific understanding to change the way the landscape is being developed in Ridgefield.

## **MOTOR VEHICLES AND DEER**

In general, and to put this topic in perspective, the main factors that contribute to motor vehicle crashes are:

- Human behavior
- Roadway environment
- Vehicle factors

See <http://www.gao.gov/new.items/d03436.pdf>, "Highway Safety: Research Continues on a Variety of Factors That Contribute To Motor Vehicle Crashes," GAO-03-436, (Washington D.C.: March 31, 2003).

Human behavior is considered the most important factor contributing to crashes. Such human behavior consists of:

- Nonuse of safety belts
- Alcohol impaired driving
- Speeding
- Being distracted or drowsy while driving

For example, a Gallup survey found that drivers involved in a distracted –related crash were influenced by:

- Looking for something outside the car
- Dealing with children or other passengers
- Looking for something inside the car
- Another driver

See

<http://www.nhtsa.gov/people/injury/research/distracted03/Volume103/DD%20Volume%20I%20Final%20032803/Default.htm>, "National Survey of Distracted and Drowsy Driving Attitudes and Behaviors: 2002", The Gallup Organization, March 2003.

Cell-phone use can also be a contributing factor to motor-vehicle crashes.

Roadway environment, or factors include: narrow, or 2-lane roads, limited sight distance due to hills or curves, small or non-existent shoulders, no medians, and trees/utility poles. Road conditions also contribute to crashes, such as snow, ice, standing water, oil, potholes, ruts and lack of lighting.

Vehicle factors are important. The design of a vehicle can contribute to crashes, including the greater rollover rate for SUVs and pickup trucks versus passenger cars.

In general, wildlife-vehicle collisions involve many species and animals – not just deer. Songbirds, raptors, small mammals, amphibians, reptiles and invertebrates are all involved.

Research indicates that wildlife are affected more by traffic speed than volume. For example, one study concluded that rabbits and songbirds experienced higher mortality rates at speeds greater than 40 mph. Wildlife are also subject to the barrier effects of roadside habitat and safe locations for wildlife to cross. For example, a wide, cleared roadside is more of a barrier to forest-dwelling species, such as deer, than a forest habitat adjacent to a road.

See [http://www.vhb.com/mhdGuide/pdf/CH\\_14.pdf](http://www.vhb.com/mhdGuide/pdf/CH_14.pdf), "Wildlife Accommodation", Chapter 14, MassHighway, 2005 Edition.

The statistics used in the Committee Report are not valid, and not based on official records of the Connecticut Department of Transportation (DOT), as verified by personal conversations with officials at the DOT. The Committee apparently talked to Howard Kilpatrick at the CT DEP, but Howard Kilpatrick does not have any authority, responsibility, or accurate knowledge of accident statistics

The Deer Committee does not have hard data on the relationship between deer and motor vehicle accidents. It does not have specific or complete information about the alleged deer related accidents, and still does not know if all these accidents were actually police "investigated accidents". The police in Ridgefield have only conducted alleged "informal surveys".

In addition, the list of insufficient data includes, but is not limited to, the following:

- What are the specific dates, times, and locations of the alleged accidents in the Town of Ridgefield for the years 2005, 2004, 2003, etc., and a representative time period?
- Are the subject drivers residents of Ridgefield? If not, what is the residential address and state listed on the driver's license?
- What percentage of the alleged accidents occurred at dawn and at dusk? And during which months of the year?
- What was the posted speed limit at the location to the alleged accident? What was the recorded speed of the driver of the vehicle?
- Did a police officer find any physical evidence at the scene that a deer, in fact, was involved and/or the cause of the accident? What was the actual damage to the vehicle?
- Was the driver careless, reckless, or otherwise contributorily negligent?
- Was the deer wounded, or killed? Was it a buck, doe, or fawn?
- Was the deer tagged, removed, or disposed of?

The Committee allegation about the cost of repairing a vehicle after a deer collision is totally unsupported by any valid evidence. The only reference it can produce is to list an unknown auto body shop in Groton!

## **STRIETER-LITE WILD ANIMAL WARNING REFLECTOR SYSTEM**

Strieter-Lite (<http://www.strieter-lite.com/>) is a wild animal warning reflector system. New statistical analysis based on road test data proves that Strieter-Lite is 78 to 90% effective in preventing vehicle collisions with deer and other wild animals (it also replaces the old reflector system known as Swareflex). It has been used and tested throughout the United States and Canada in Colorado, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Jersey, New York, Ohio, Oregon, South Dakota, Virginia, Washington, Wisconsin, Alberta, British Columbia, Ontario and Saskatchewan, Canada. It is easy to install and the most cost-effective collision prevention system available.

The Strieter-Lite system directs its light in wide bands both horizontally and vertically making it effective on flat and sloping roads. Headlights from passing vehicles strike the reflectors, sending flashes of light across the road in both directions. The unnatural, moving light patterns deter deer from crossing the roadway in front of a vehicle.

A Study of the Effectiveness of the Strieter-Lite Wild Animal Highway Warning Reflector Systems can be found at [http://www.strieter-lite.com/images/scientific\\_report.pdf](http://www.strieter-lite.com/images/scientific_report.pdf) and was included in my Statement dated May 10, 2005 and distributed to the Committee and the Board of Selectmen.

A list of Traffic Engineers in several states who you may contact personally, and Reports of the successful use of Strieter-Lite in two towns in New Jersey with similar conditions as in Ridgefield, can be found at <http://www.strieter-lite.com/sites.php>.

In addition, John Strieter, the President and Owner of the system/company, is willing to meet with the Board of Selectmen to discuss Strieter-Lite and how to implement the system in Ridgefield.

### Contact Information:

John R. Strieter, President  
Strieter Corporation  
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Rock Island, IL 61201-3611  
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## DEER HUNTING AND SAFETY

1. The Deer Committee has not established any valid, accurate, or honest reason for allowing deer hunting in Ridgefield.

As stated previously in my Statement filed on May 10, 2005, the Committee cannot make any valid recommendations about deer or deer management without accurate, scientific data. The Committee still does not know how many deer there are in Ridgefield. Further, there is still no data on deer density, deer boundaries and map coverage, adult deer segment, age structure, sex ratio, pregnancy rate, fawning rate, mortality, displacement distance of foraging deer, habitat and landscape features, and seasonal values.

The justification and defense of programs that involve some form of hunting, or lethal control to solve problems involving wildlife require a sound understanding of population status and the dynamics of the animal itself before any recommendations about hunting can be made.

Population analysis involves counting the number of animals involved and their characteristics: sex ratio, age distribution, age-specific survival, rate of increase. It is also necessary to understand the animal and its habitat. Factors such as hunting pressure, reproductive success, habitat loss, food availability and abundance all affect animals within the population. It is also necessary to monitor and evaluate the effects of any lethal control upon the animal population and the environment. Clearly, wildlife, humans, and the environment do not exist independently of each other.

See <http://www.aphis.usda.gov/ws/nwrc/is/04pubs/blackwell043.pdf>, "Evaluating Population Management Scenarios: Crunching the Numbers Before Going Into the Field", Bradley F. Blackwell and Brian E. Washburn, United States Department of Agriculture, National Wildlife Research Center, and Michael J. Begier, United States Wildlife Services, Marine Corps Air Station, Proc. 21st Vertebr. Pest Conf, published at University of California, Davis. 2004, pp.306-311.

2. HUNTING IS AN INEFFECTIVE METHOD FOR REDUCING DEER POPULATIONS:

*"The most visible weakness in the assertion that hunting is necessary to control deer populations is that IT HAS LARGELY FAILED TO DO SO OVER THE LAST TWO DECADES...Just because deer are being killed doesn't mean that deer populations are being controlled."*

Allen T. Rutberg, Ph.D. Tufts University, "The Science of Deer Management: An Animal Welfare Perspective" in "The Science of Overabundance – Deer Ecology and Population Management." See also <http://www.rpaforall.org/factsheet4.html>, RPA Fact Sheet #4.

3. The Committee claims that there should be 20 deer per square mile in Ridgefield. This number is totally unsupported by any valid data or measurement. The Committee is apparently still relying on certain numbers or estimates from the Connecticut DEP which 1) do not apply in Ridgefield, and 2) have been recently and

publicly discredited, for example, in the Town of Greenwich, CT. The Greenwich Times newspaper recently reported that Howard Kilpatrick's aerial survey of deer in Greenwich of 120 deer per square mile was in error and the number should be in the 65 deer per square mile range. Howard Kilpatrick, Senior Biologist for the Wildlife Division of the CT DEP, stated publicly that he multiplies whatever number of deer he counts by a factor of 6.8. Therefore, even the adjusted number in the Greenwich incident is faulty.

Further, as documented by the State of Connecticut Office of Fiscal Analysis, the DEP, its activities and staff are largely supported by deer hunters through the purchase of deer permits:

Deer Permits alone constitute the overwhelming majority of receipts for Wildlife license revenue from 1996 to 2003. In 2003, for example, which is similar to the other years, Deer Permits constituted \$855,267.42 out of a total of \$1,331,446.01.

See Exhibit from the State of Connecticut Office of Fiscal Analysis which was attached to my Statement dated May 10, 2005.

4. Deer are being hunted and killed in Connecticut in record numbers, providing so-called sport for hunters and increased revenue for the DEP. Hunters harvested 13,436 deer during Connecticut's 2004 regulated deer hunting seasons, according to the DEP. New regulations regarding the deer hunting season have been approved for 2005, making it even easier for hunters to kill deer. However, these changes are not in the 2005 Connecticut Hunting and Trapping Guide. The changes include:

- Muzzleloader hunters can report harvested deer on kill cards rather than checking deer at vendor check stations, and
- Bow hunters are not required to wear fluorescent orange - a safety requirement that is usually and should be required - while hunting during the firearms season when in a tree stand at least 10 feet above ground.

See <http://www.dep.state.ct.us/burnatr/wildlife/fguide/fg05/regs.htm#BOWS>, and page 14 <http://dep.state.ct.us/burnatr/wildlife/pdf/cwmj05.pdf>, "2004 Deer Hunting Season Results and Changes for 2005."

5. It is also important to note that scientists conducted a study which revealed that deer hunting is not having an impact on deer herds, as some might believe. The 3 year study is ground-breaking. It was conducted by Adjunct Assistant Professor of Wildlife Duane Diefenbach, who is a deer hunter himself, at Penn State University, School of Forest Resources.

There have been studies of hunter movement in the past, but those studies used maps marked by the hunters themselves. The maps were improperly accepted as accurate without independent verification. The Penn State study used GPS technology and it was accurate. Researchers learned that deer hunters are not very

good at judging distances, and very few hunters actually walk more than 1/3 of a mile from roads. So few deer were killed that it had no impact on deer management. See "Penn State Research Reveals That Hunters Not Having An Impact On The Deer Herd In Some Places", Penn State News, College of Agricultural Sciences, March 5, 2004.

6. Dr. Uma Ramakrishnan of the Connecticut Agricultural Experiment Station, who is studying non-lethal methods of controlling deer, mentioned previously in this report, has admitted the limitations of hunting:
  - Hunting is often not feasible or safe in suburban areas, due to high human densities. It is often not socially acceptable.
  - Intermediate to low levels of hunting may result in improved overall deer health and reproductive output, because hunting often reduces competition for the surviving deer, which then have access to more food, resulting in more fawns.
  - Deer learn to avoid areas during hunting season and take refuge in areas where hunting is restricted.
  - Deer can stay bedded during the day and feed after dark, thus avoiding hunting periods – hunting is prohibited after daylight hours.  
See <http://www.caes.state.ct.us/PlantScienceDay/2002PSD/Deer.htm>.
7. Laura Simon explained to the Committee the “rebound” effect of hunting. Hunting is not an effective population reduction method, and it will not significantly reduce the incidence of Lyme disease. In fact, deer hunting actually increases deer population size. When a deer population is hunted, about 20 to 30 percent of the population may be removed. This results in more food being available for the remaining deer. Scientific studies show that better nourished deer have more fawns, lower neonatal rates, and a higher prevalence of pregnancy in yearlings. In Other Words, After Hunting Season, Deer Have More Young And Breed At An Earlier Age. This is why hunting is more of a “temporary fix” rather than a real solution to deer problems.
8. The Deer Committee has utterly failed to review and consider safety factors in allowing hunting in Ridgefield. There has been no hard data, or consideration of the many safety issues and concerns caused by deer hunting to 1) adult residents, 2) children, in particular, and 3) other animals, including dogs, cats and other domestic pets. In addition, there has been:
  - No objective or scientific survey of the residents of Ridgefield as to their opinion whether there is a deer problem, and if so, what recommendations or solutions they want implemented.
  - No objective or scientific survey of the residents of Ridgefield as to whether they would consider or allow deer hunting in their community, and further, if they would permit the use of Guns, Or Bows And Arrows, and under what conditions and circumstances
  - No objective or scientific survey of landowners in Ridgefield as to whether they 1) would allow or permit deer hunting on private property, and 2) approve deer hunting on public property, and under what conditions and circumstances.

- No consideration of delineating no-hunt zones around private homes, schools, etc.
- No consideration of restricting hunting methods, months, days, and hours
- No consideration of requiring shooting-proficiency tests and interviews for both gun and bow-hunting
- No review of trespassing, and poaching issues
- No consideration of the possibility of hunting accidents
- No review of or necessity of firearm discharge ordinances
- No review of or necessity of firearm safety issues
- No review of hunter density, season length, bag limit, and site characteristics
- No consideration of minimum property size and minimum distance requirements.

9. The State of Connecticut itself has recognized the problem of hunting and public safety, including the continuing problem of alcohol and hunting – which has not been addressed by the Committee. Indeed, the Committee rudely ignored a member of the public who tried to speak about this issue and the fact that she smelled a strong alcohol odor on bow hunters from White Tail Solutions during a meeting on April 25, 2005 bow hunters from White Tail Solutions. It is somewhat ironic to note that these same bow hunters attended subsequent meetings carrying water bottles! And Yet We Should Trust These Same Bowhunters Who Have Advertised In The Ridgefield Press Offering Their Services To The Community?

See <http://homestudy.ihea.com/hsafety/12alcohol.htm>, International Hunter Education Association admonition that “Hunting while intoxicated is extremely dangerous...”

Bow hunting is ineffective for reducing deer populations. Many scientific studies establish that bow hunting wounds and cripples a large percentage of deer, with an average crippling rate of 50%. It is a cruel and primitive method of killing deer, and it does not reduce deer populations due to this extremely high crippling rate.

See Benke, A., “The Bowhunting Alternative,” B. Todd Press, San Antonio, Texas, 1989 and <http://www.amazon.com/gp/product/9990605408/104-8299488-4036730?v=glance&n=283155>. For a complete list of scientific studies on bowhunting, contact Laura Simon, Field Director, Urban Wildlife, The Humane Society of the United States, [http://www.hsus.org/contact\\_us/](http://www.hsus.org/contact_us/).

9. On a similar note, does the Town of Ridgefield want members of the NRA to have any influence on determining whether there is a deer problem, and how to address it? For those who are not aware of the purpose and intent of the NRA, it will be useful to read an ABC News article about the 2005 annual NRA Conference in Houston, Texas in April 2005. This is the organization who has, among others, TED NUGENT as a spokesperson and a member of the Board of Directors. As reported in ABC news, “With an assault weapon in each hand, rocker and gun rights advocate Ted Nugent urged National Rifle Association members to be “hardcore, radical extremists demanding the right to self-defense.”

See <http://entertainment.msn.com/music/article.aspx?news=188232>.

As to his views on deer hunting, Ted said on CNN News Crossfire:  
CNN NEWS Crossfire Transcripts

NUGENT: Well, you make that decision for your children. But every year, I go to Texas, and Mississippi and Louisiana, where there's been a long tradition of young children, as young as four, going out with their fathers and mothers, having a quality experience. And there's never been an accident. You've never seen a report of four or five or six-year old. My daughter, Sasha, shot her first buck when she was seven-years old. And we called her Lee Harvey Nugent because she was such a good shot. Can I say that?

BEGALA: I wish you hadn't.

NUGENT: But she's a great marksman. And the discipline that goes into that marksmanship is never too young to teach a child discipline, I think.

CARLSON: And she wasn't traumatized by seeing the animal dressed?

NUGENT: Traumatized? She gutted that bugger, man. She loved it. No, she knows that's where food comes from. And it's the purest food known to man. And she appreciates that. So she takes that deep into her heart.

See <http://www.tednugent.com/news/crossfire.shtml>.

11. In 1993, the Connecticut Governor's Task Force on Hunting and Public Safety addressed the issue, noting that while the DEP adopted recommendations mainly pertaining to educational programs, many were not adopted which would have brought about a safer hunting environment. In 1998, the Connecticut legislature passed a law prohibiting the possession of loaded firearms while intoxicated, which was a step forward in realizing one of the Task Force recommendations: a complete or total ban hunting while under the influence of alcohol. However, it still may be legal for someone to hunt with a bow while drunk, or hunt with guns while having alcohol in one's possession.

During the fall hunting season, a tragic incident took the life of DEP Conservation Officer James Spignesi. Officer Spignesi was the first Connecticut Conservation Officer killed in the line of duty. Between 1992 and 1998 alone, 3 other people were slain while enjoying Connecticut's outdoors.

See <http://www.cga.ct.gov/2005/rpt/2005-R-0848.htm>, Office of Legislative Research Report 2005-R-0848.

In addition, the Connecticut DEP police arrested hunters for poaching or jacklighting in Norfolk in 2001, and in Litchfield in 2003. Jacklighting takes place at night. Hunters use an artificial light, usually a spotlight or car headlights, to light up an area. The light is shined in the deer's eyes, causing the deer to stand still and making it a easy target.

See <http://dep.state.ct.us/whatshap/Press/2004/mf121104.htm>, "DEP Environmental Conservation Police Make Arrests for Poaching" CT DEP Press Release, December 11, 2004 and <http://dep.state.ct.us/whatshap/press/2003/cr1118.htm>, "DEP Division of Law Enforcement Arrest

Two Terryville Men for Jacklighting for Deer in Connecticut”, CT DEP Press Release, November 18, 2003.

## 12. HUNTING ACCIDENTS DO OCCUR AND ARE A REAL PROBLEM.

According to the public record of the Ridgefield Board of Selectmen for October 20 2004, the issue of deer management, and safety issues were raised, including:

*“A recent situation occurred on Blue Ridge Road/Old Sib area in which a bleeding deer with an arrow was left on the Cordelli property.” The impact of this incident should not be underestimated on the residents of Ridgefield and the deer themselves. We must not forget that deer hit by an arrow die by bleeding to death, as admitted by Tom Renzulli, State of Connecticut volunteer instructor of new hunters. He also stressed the need to get “right of retrieval” from neighboring properties when invited to hunt on a resident’s property.*

Members of the community and others expressed concerns about safety such as:

- There is no minimum acreage ruling in connection with bow hunting.
- What happens when someone with a license is a bad shot, the deer is injured but not killed?
- Concern about hunter’s qualifications.
- No restrictions as to the number of bow hunters in a given area.
- Problem of deer bleeding in front of children when hit by an arrow. The animal cries out in pain.
- Concern about children playing in the woods.
- “No bows” zones in Ridgefield because the parcels of land are too small.
- The collection of 80 signatures to stop bow hunting.
- Residents are concerned about the safety and sanctity of their property.

13. See <http://www.all-creatures.org/cash/accident-center.html>, an Index entitled “How Safe Is Hunting?” listing hundreds of hunting accidents from in 2004 and 2005, with a Violations Archive for 2003 and prior years.

Here are some highlights:

- A marksman, who was taking part in the town’s bait and shoot program to control deer, fired a shot that ricocheted before hitting a house – landing in the 2<sup>nd</sup> floor guest room. It blew a baseball size hole and lodged in a picture on the wall. See “Amherst Police officer’s errant shot at deer upsets residents” The Buffalo News, 2/8/2005
- At least 11 hunters were shot and two died of their wounds during Ohio’s week long deer-gun season. See “Two Killed During Ohio Deer Hunting Season” Columbus (AP) 2004

- Cathy Burns, 7 months pregnant, received a gunshot wound to the head by a hunter's stray bullet, while waiting in a parked car. The article also notes that the International Hunter Education Association admits that hunters accidentally shoot more than 1000 people in the US and Canada every year! Authorities in Pennsylvania worry that more bystanders will be injured by hunters' stray bullets as more homes are built near wooded areas where hunting is common.

See "Family Pushes for Tougher Hunting Laws" ABC News at <http://abcnews.go.com/GMA/print?id=310814>.

#### 14. DEER MEAT

Bacteria, temperature, and the uncontrolled conditions in which a deer is killed can contribute to food safety problems. Raw deer meat carries bacteria that will increase the longer it is left unrefrigerated. The hunter's bullet will bring bacteria from the skin into the meat as it enters a deer. A shot to the deer's gastrointestinal tract, or gut, will release millions of bacteria onto the carcass.

See "Unseasonable warm temperatures during deer season raise food safety issues for freshly killed deer", Penn State News, College of Agricultural Sciences, December 4, 1998.

A study in Connecticut found that deer can harbor E. coli bacteria. The findings suggest that E. coli may be widespread in venison and it raises concerns about the preparation of wild-game meats. The case of a 7 year old Connecticut boy who had become sick after eating undercooked venison has been well-publicized. See [http://www.findarticles.com/p/articles/mi\\_m0GVK/is\\_5\\_8/ai\\_87104049](http://www.findarticles.com/p/articles/mi_m0GVK/is_5_8/ai_87104049) and Science News report entitled "Venison can contain E. coli bacteria," <http://www.sciencenews.org/articles/20000805/note14ref.asp>.

This also raises dangers and objections to the donation of deer meat to the homeless as a pawn in the campaign of hunting groups and lobbies to gain public acceptance of killing animals. As noted in the World Animal Foundation website, <http://worldanimalfoundation.homestead.com/index.html>, and in an article on Deer, which was distributed in my Statement dated May 10, 2005: "Organizations such as 'Hunters for the Hungry' are nothing more than public relations outfits that try to convince the public that hunting is beneficial to people. If hunters really cared about homeless or low-income families, they could purchase a lot more food for \$20.00 than a pound of deer meat" (i.e., \$20 is the average price of venison calculating all the attendant costs of killing a deer).

## **CONTRACEPTION**

The Deer Committee has not reviewed, or presented any information about the use of immuno-contraceptives in its report.

Scientists have utilized immuno-contraceptives in several case studies of animals, including wild horses and deer. Research indicates that it can be a safe, and more humane way, or reducing animal populations:

1. A field test of immuno-contraception was conducted on white-tailed deer on by The Humane Society, Tufts University, School of Veterinary Medicine, SUNY College of Environmental Science and Forestry, Medical College of Ohio, and the University of California, Davis School of Veterinary Medicine. In the 1<sup>st</sup> phase of the study, it was demonstrated that annual PZP (porcine zona pellucida) vaccinations can be delivered to large numbers of unconfined, white-tailed deer without capturing them, and that such vaccinations significantly and markedly reduced the production of fawns among treated animals.  
See [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=12220154&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12220154&dopt=Abstract), "Field testing of immunocontraception on white-tailed deer (*Odocoileus virginianus*) on Fire Island National Seashore, New York, USA" by R.E. Naugle, A.T. Rutberg, H.B. Underwood, J.W. Turner, Jr., and I. K. M. Liu, Society for Reproduction and Fertility, 2002, Reproduction Supplement 60, 143-153.
2. A study was conducted at the 233 acre campus of the National Institute of Standards and Technology (NIST) at Gaithersburg, Maryland, a division of the U.S. Department of Commerce. The NIST site is, in many ways, a typical suburban habitat for white-tailed deer. A PZP immuno-contraceptive vaccine was administered to female deer. Although some tested PZP preparations proved more effective than others, the number of fawns produced per female declined by an average of 7.8% per year. Population declines were larger following years when a higher proportion of females were treated.  
See [http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6V5X-48XCGWK-5&\\_user=10&\\_coverDate=04%2F30%2F2004&\\_rdoc=1&\\_fmt=summary&\\_orig=browse&\\_sort=d&view=c&\\_acct=C000050221&\\_version=1&\\_urlVersion=0&\\_userid=10&md5=46097af0299a7c01e697c9061d077d8d](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V5X-48XCGWK-5&_user=10&_coverDate=04%2F30%2F2004&_rdoc=1&_fmt=summary&_orig=browse&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=46097af0299a7c01e697c9061d077d8d), "Effects of immunocontraception on a suburban population of white-tailed deer *Odocoileus virginianus*", by Allen T. Rutberg, Ricky E. Naugle, Lori A. Thiele, Irwin K. M. Liu, The Humane Society of the United States, University of Maryland, Marine-Estuarine Environmental Science Program, and University of California, Davis, School of Veterinary Medicine, Biological Conservation,
3. The United States Department of Agriculture, National Wildlife Research Center, has developed an effective, long lasting single-injection contraceptive for white-tailed deer and other animals called GonaCon. It is a hormone (GnRH) immunocontraceptive vaccine which has been tested and shown to provide contraceptive effects lasting 1-3 years in white-tailed deer. The GnRH vaccine controls the reproductive processes in both male and female deer. It reduces breeding behavior in female white-tailed deer and reduces fawning for up to 4 years.  
See [http://www.aphis.usda.gov/lpa/pubs/fsheet\\_faq\\_notice/faq\\_wsgonacondeer.pdf](http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/faq_wsgonacondeer.pdf), APHIS Factsheet " GonaCon™—Birth Control for Deer: Questions and Answers"

3. The Connecticut Agricultural Experiment Station itself is testing non-lethal methods of controlling deer population growth, including sterilizing large males.  
See <http://www.caes.state.ct.us/PlantScienceDay/2002PSD/Deer.htm>.

## **CONCLUSION**

Based on the information presented in this Report, it is clear that the Town of Ridgefield must obtain accurate scientific information before any recommendations can be made about deer, and deer management in Ridgefield. The Committee has not obtained such information, and has “rushed to judgment” without the facts, and at the behest of those members who are pro-hunting.

As further proof of the Committee’s deficiency and prejudice, the record shows that the Committee’s website 1) recommended reducing the deer population in Ridgefield to 20 deer per square mile long before the final report was prepared and voted upon, and 2) there are no links to any non-lethal methods of deer management.

The recommendation to allow “controlled” hunting in Ridgefield is a misnomer. There is no real way to control hunting on private and/or public property. It is also reprehensible for the Committee to endorse the use of bait to kill deer, in any manner or guise. The use of bait to attract and kill deer is a particularly evil act.

As documented in this Report, there are proven effective and non-lethal methods of deer management, including the Maxforce Tick Management System to control mice, the primary carrier of infectious ticks and Lyme disease; the 4-Poster Deer Treatment Bait Station developed by J. Matthew Pound, et al. of the United States Department of Agriculture, and the Strieter-Lite warning reflector system.

In addition, as scientists such as Dr. Oswald Schmitz of Yale University, have explained, effective deer management requires a science-based understanding and approach. The facts about the deer population and environment must be gathered before any decisions are made. Although hunting is viewed by some people as the most expedient way to solve alleged deer problems, this is not true. Despite use of hunting as a management tool, hunting has proven to be inadequate at preventing deer from overpopulating areas. A science-based approach to managing, or co-existing with deer, also requires the support of the community, and I am confident that the residents of Ridgefield will support a science-based program led by Yale University. Ridgefield has the opportunity to become a model community and set a precedent for not only Connecticut, but the entire U.S., for humane and effective deer management.

Gwen Thaxter  
Member of the Ridgefield Deer Committee  
July 29, 2005