

New Research Shows Urban Hunts Reduce Lyme Disease, Control Deer

By Patrick Durkin

A long-running research program in two Connecticut communities found that tightly regulating hunts slashed Lyme disease cases by 80 percent by reducing and controlling white-tailed deer, a primary host for disease-carrying black-legged ticks.

The 13 year study, which ran from 1995 through 2008 in Mumford Cove and Groton Long Point, used hunters to reduce deer densities from a peak of 80 deer per square mile to about 13 per square mile. That decline in deer numbers slashed tick abundance by 76 percent, which resulted in 80 percent fewer cases of Lyme disease reported by the towns' residents, who were surveyed at least six times during the study.

The study was done by Howard Kilpatrick and Andrew LaBonte, who work in the Wildlife Division of the Connecticut Department of Energy and Environmental Protection in North Franklin and Kirby Stafford III of the Connecticut Agricultural Experiment Station in New Haven. The results were published in the July 2014 issue of the *Journal of Medical Entomology*.

The findings are game-changing news for communities trying to reduce Lyme disease risks. "This is a huge shot in the arm for urban deer hunting, especially bowhunting," Jay McAninch, CEO/president of the Archery Trade Association, said. "Howard (Kilpatrick) has been working hard on this project for many years and all those efforts paid off. This is the proof we've long needed to make a strong case for science-based hunting and bowhunting programs to reduce Lyme disease. These programs achieve high payoffs

for public health at little or no cost to the communities."

McAninch was one of the country's first wildlife researchers to study Lyme disease when he worked for the Institute of Ecosystem Studies in New York and later with the Minnesota Department of Natural Resources.

McAninch said the findings won't surprise most wildlife managers and Lyme disease researchers, who have long believed communities beset by Lyme disease could reduce its prevalence simply by reducing deer numbers. The trouble is the biologists also knew long-term research was needed to compile enough data to prove their hypothesis.

"Reducing deer numbers is never easy for a community because it's an

emotional decision that requires leadership and perseverance," McAninch said. "It's tough to carry out multi-year research projects in highly charged settings like those. It's a credit to the researchers and the communities that they had the patience and determination to scientifically document these results. I can't overstate how many people and communities will benefit from this information in the years ahead."

The first step in this groundbreaking program was persuading both communities to eliminate their no-hunting laws, which they did in July of 2000. The towns held their first firearm and archery hunts in November of 2000 and November of 2001 after carefully choosing volunteer hunters who used shotguns, crossbows and compound



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bows to reduce the herd. They had to hunt from treestands in the communities' wooded areas, taking care to direct all shots into the ground.

Once deer numbers were reduced by 82 to 92 percent, the program's directors phased out gun hunting and used bowhunters to keep the herds suppressed. The archery season lasted 4.5 months. There was no bag limit on the number of does and fawns participants could kill. Hunters could keep the venison or donate it to food pantries.

At the herd's peak in the mid-1990s, the two communities reported 20 to 30 Lyme disease cases annually, Kilpatrick reported. Today, the incidence is about two to five cases per year.

Deer mostly carry black-legged ticks during the arachnid's adult cycle, a time when they're unlikely to transmit Lyme disease to humans. But because that's the tick's breeding stage and since deer are the preferred host of adult ticks, the larger the deer herd is, the greater the tick population will be. Adult ticks live off deer blood until they are full and then drop off and lay thousands of eggs.

The research found a direct correlation between high deer numbers and high Lyme disease rates. When deer numbers decline, adult ticks have fewer places to eat and their numbers also decline.

"Without sufficient deer available,

When deer numbers decline, adult ticks have fewer places to eat and their own numbers decline.

tick populations can't be sustained or are sustained at much lower levels," a researcher wrote. "These findings (show) that reduced deer densities should reduce the risk of tick-borne disease in humans."

Black-legged ticks typically transmit Lyme disease during their

preceding cycle, the nymph stage, when their preferred hosts are mice, chipmunks and other small mammals. Researchers found it didn't take long to reduce nymphs, too. "Nymphal tick numbers on lawns and wooded plots declined by the second and third year following initiation of the controlled hunt," a researcher wrote.

Kilpatrick said the success of the towns' hunting programs in reducing Lyme disease generated widespread community support. In fact, recent polling found more than 80 percent of residents support hunting.

The study also notes that without support from community leaders for hunting programs, communities shouldn't expect similar results. "Hunting programs led by an ambitious community leader who is committed to overseeing a deer-tick reduction program is critical to the success of (these) programs," a researcher wrote. "Additionally, good hunter access to deer habitat and (unlimited tags, incentive programs and food attractants) are important components of a successful deer reduction strategy."



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ATA Earns Partnership Award from Oklahoma Fish & Wildlife Agency

One word sums up Oklahoma's programs that engage students in archery: "unparalleled." Even so, the Oklahoma DFW acknowledges the Archery Trade Association's role in jump-starting the state's archery programs.

That's why Richard Hatcher, director of the Oklahoma Department of Fisheries and Wildlife (DFW), presented the Partner in Conservation Award to the ATA during its recent Board of Directors meeting in Tulsa. Colin Berg, the agency's information and education section supervisor, also gave a presentation highlighting the growth of Oklahoma's archery programs.

During the 2014-15 school year, 242 Oklahoma schools will teach Explore Bowhunting, Explore Bowfishing and the National Archery in the Schools Program (NASP) to nearly 14,000 students. That's greater than the programs' reach in any other state and a solid plan for continued growth.

"Archery growth in Oklahoma wouldn't be possible without ATA,"

Berg said. "Our state had the demand for archery and ATA seized the opportunity. Presenting this award to ATA is the least the Department can do to recognize that our state's programs are where they are today because of our strong partnership."

Since 2010, the ATA has donated Explore Bowhunting kits for Oklahoma teachers to use when implementing the program in their classrooms. The Oklahoma DFW now funds Explore Bowhunting kits. ATA offered incentives earlier, which helped Oklahoma leaders recognize the merits of implementing archery education.

"We understand ATA has a limited budget, so we didn't request any of its funds for Explore Bowhunting kits," Berg said. "Now we're down the road of building community archery parks. There is one in Coweta and ATA is funding one in McAllister. Construction should begin in a few weeks."

An Award that Really Matters to the ATA Members

The Partner in Conservation Award is significant because it represents years of vision, work and partnership.

"ATA members always want to know how their membership dues are used," Scott Shultz, president of the ATA Board of Directors, said. "This award recognizes the part ATA members play in improving school curriculums and changing the lives of kids who have never had the opportunity to try archery."

Now that Oklahoma's archery programs have reached epic proportions, some might assume recent media attention inspired that growth. However, Shultz noted the success of school archery programs is the product of creating partnerships years before "Brave," "The Hunger Games" and the London Olympics shone the spotlight on archery.

"Archery caught fire in Oklahoma," Shultz said. "ATA recognized Oklahoma as fertile ground for archery programs and began building a partnership in 2007 to create archery opportunities for students. Now, the state is proving that archery changes lives. Their programs also show that every state can implement archery programs by looking to Oklahoma as an example."

Acknowledging the ATA's partnership in creating and strengthening archery programs matters to ATA members because strong archery programs mean a stronger industry. Every person who gets hooked on the sport is a potential customer for archery retailers and manufacturers.

Jay McAninch wants ATA members to know that the ATA has strict requirements for its state partners. These rules ensure funds are invested, not just awarded.

"We have a process that works," McAninch said. "ATA asks states to take ownership in Explore Bowhunting, Explore Bowfishing and NASP. Then we ask the agency director to get behind the program. Then ATA can and will



During the ATA's most recent Board meeting, Colin Berg, the Oklahoma Department of Fisheries and Wildlife information and education section supervisor, gave a presentation highlighting the growth of Oklahoma's archery programs.

help with training workshops, initial funding for equipment kits and strategizing about how to implement programs to ensure recruitment.”

A Process that Works

With Oklahoma as a benchmark, other states can implement archery programs by getting behind them, finding the right people to shepherd the programs’ growth and seeking ATA help in jump-starting the programs.

Get Behind the Programs:

“The first step to starting archery programs in state schools is recognizing that Explore Bowhunting and Explore Bowfishing don’t just introduce youth to archery,” Shultz said. “Instead, these programs reveal the joys of being outdoors and show young people various paths to enjoy archery, whether it’s competitive target archery, bowhunting or simply shooting targets in their backyard.”

Get a Director’s Help:

State agency directors are crucial to any program’s success because they’re the ones who budget money and staff time. By supporting archery programs, Hatcher set an example for other states.

Get ATA Assistance:

The Oklahoma DFW contacted the ATA and asked for Oklahoma to



From left to right: Scott Shultz, ATA Board of Directors president; Jay McAninch, ATA president/CEO; Richard Hatcher, Oklahoma Department of Fisheries and Wildlife director; Colin Berg, Oklahoma DFW information and education section supervisor (education emphasis) and Mitch King, ATA director of government relations. Photo: Shannon Rikard/ATA.

become a pilot state for archery programs within the school system and during the school day: not after school as a parks-and-recreation offering. The agency has also trained teachers; added fishing, bowfishing and shotgun shooting programs and helped teachers obtain grants for Explore Bowhunting and Explore Bowfishing kits.

Berg advises other state agencies interested in archery programs to

start small, ask the ATA for guidance and remember that archery programs aren’t a one-size-fits-all proposition. Oklahoma provides data proving that states can reap dividends by starting archery programs.

Oklahoma by the Numbers

192 schools teach Explore Bowhunting for an average of six weeks.

770 students participated in Explore Bowhunting in 2010.

13,608 students will participate in Explore Bowhunting and Explore Bowfishing by the end of the 2014 school year.

14,000 students were certified in hunter education programs in 2005.

19,000 students were certified in hunter education programs in 2013.

50 teachers were trained in Explore Bowfishing in 2013.

100 teachers were certified in Explore Bowfishing in 2014.

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