

Managing a Deer Herd and Strategies in Other States

How Many Deer are Too Many?

Some research indicates that less than 10-12 deer / square mile is a threshold for healthy woodland plant biodiversity and a diminished incidence of Lyme Disease¹. An indicator of deer over-abundance is when deer social groups exceed four in number². This photo suggests there may be a 'deer problem'.



How Other States Manage Deer Connecticut

Since Connecticut was the first place that Lyme Disease showed up, the state quickly got into action to reduce deer density. The Bureau of Natural Resources Wildlife Division's *Managing Urban Deer in Connecticut: A guide for Residents and Communities*³ outlines the history of deer reduction in Connecticut.

Beginning in 1974, legislation allowed for more aggressive hunting of deer. However, the program was unsuccessful until 1988 when unlimited antlerless deer hunting was permitted. Connecticut has also tightened the training needed for a hunting license. The report details impacts caused by inflated deer density such as vehicle accidents, Lyme Disease, the loss of native vegetation and threat to forest re-generation. Connecticut, NJ, NY and other states have used an 'earn-a-buck' program that allows hunters to take a buck only after a certain number of does have been taken. The CT guide also details seven case studies, including the ambitious efforts to control deer in Fairfield County⁴.

The CT *Deer Herd Reduction Program*⁵ implemented in 2003, issues special permits under Public Act 03-192 for problem areas and for nuisance deer, or where recreational hunting has failed to reduce numbers sufficiently. Municipalities, Homeowner Associations or Nonprofit Land Holding Organization (Applicant) approved by the commissioner of DEP, may submit a plan for reducing overabundant deer populations on property they own. The applicant must be experiencing and must document high incidences of deer-vehicle accidents or severe property, agricultural or ecosystem damage from deer. The permits require applicants to provide a plan of action and submit status reports to the state. The rule outlines qualifications for the 'sharpshooter' designation.

In 2015, the CT legislature enabled Sunday hunting for deer. Hunting is organized by county, and in 2014 deer were estimated to be 30 / sq mi. Hunters may take two deer but only one can be a buck. However, in Fairfield County hunters may take four deer with only one buck permitted⁶.

New York

*Cornell Integrated Deer Research and Management Program*⁷: This program started in 2008, using a combination of sterilization and hunting to initiate a density decline in the Ithaca area⁸. After many tweaks to the program, a decline in herd density finally happened after six years of combined efforts in 2014. The program was popular with hunters, and the carefully selected list grew over time. Hunters are required to report on the deer they had seen while

hunting, the condition of various organs; some hunters were removed from the hunting pool since they did not adhere to guidelines. A few experienced and reliable hunters were selected for an intense deer damage control program in certain suburban neighborhoods, described below. Based on the results of this experiment, Cornell researchers assisted in developing the New York 2012 Deer Management Plan, which outlines a major change from previous hunting policies.

New York Deer Management Plan⁹ The NY Deer Plan for 2012 has as its goals:

- 1) Manage deer populations at levels that are appropriate for human and ecological concerns;
- 2) Promote and enhance deer hunting as an important tradition and management tool;
- 3) Reduce negative impacts caused by deer;
- 4) Foster public understanding and communication about deer ecology, deer management, economic aspects and recreational opportunities;
- 5) Manage deer to promote healthy and sustainable forests and enhance habitat conservation efforts to benefit deer and other species; and
- 6) Ensure that the necessary resources are available to support effective management of white-tailed deer in New York.

The NY plan allows aggressive measures for selected regions to achieve steep reductions in density until a balance is returned. Such measures include earn-a-buck requirement, deer damage permits (where hunters can take two antlerless deer per day), night-time hunting, use of bait, and lowering the distance from buildings for archery hunters. Success of the program will be measured using browse measures on several indicator species.

Illinois¹⁰

The website *Living with White-tailed Deer in Illinois*, has many pages about hunting strategy (see below) for reducing a deer herd, and also descriptions of permits available for this purpose, such as Deer Damage Permit for crop damage for an individual landowner. A Deer Population Control Permit (DPC)¹¹ can be issued to agencies, organizations, associations and municipalities, but not to individual landowners. These permits authorize the reduction or control of deer numbers by non-traditional or non-hunting methods such as sharpshooting, for purposes such as damage to native ecosystems or excessive deer-vehicle collisions. The permit is for 90 days and can be extended. The party gaining the permit must first submit a proposal, establish evidence of damage, and meet certain requirements of the Illinois Department of Natural Resources. There is no limit on the number of deer that can be removed, but this must be documented in the permit process.

Pennsylvania¹²

Deer Management Assistance Program (DMAP): In 2003 the Pennsylvania Game Commission (PGC) instituted the DMAP to help landowners who had high deer density and high deer impact, and for whom regular deer season regulations did not reduce deer density and impact to manageable levels. The PCG identifies special DMAP Units. Hunters who apply for and obtain DMAP permits may harvest an antlerless deer during legal deer seasons only *on the lands identified within the DMAP Units*. Landowners submit applications to the PGC to have their lands identified as DMAP Units. The applications must justify the need for additional reduction of deer density, request a specific number of antlerless permits, and include maps that direct hunters to the properties and identify boundary lines.

Example: The Kinzua Quality Deer Cooperative (KQDC)¹³, an on-going demonstration of controlled hunting that started in 2000. A partnership of forest landowners, forest managers,

biologists, hunters, and local businesses developed a program that relies on hunters to manage deer density on a forested area of 74,000 acres in northwestern Pennsylvania where forest revegetation had proved difficult. Using deer science with adaptive management, the KQDC identified and integrated goals that centered on collecting and analyzing monitoring data to determine if the goals are being met. As deer density and impact changed in response to management, hunting regulations were tweaked to adjust deer density and impact to achieve stated goals. Thanks to hunters and hunting, the goals were met after 5 years, and continue to be met.

Wisconsin¹⁴

The Deer Management Assistance Program (DMAP) is a cooperative effort between the Wisconsin Department of Natural Resources (DNR), landowners, managers and hunters to provide habitat and deer herd management assistance to those interested in managing their property for wildlife. A primary goal of DMAP is to find the balance between healthy deer and healthy wildlife habitat, a goal that can be applied to both private and public lands. Using an on-line filing process, a DNR agent *and* a forester then visit the site to complete a browse survey and then discuss options for achieving set goals. The program requires a 3-year time commitment.

Issuance of additional antlerless tags: Based on the site visit, the DNR may issue extra antlerless site-specific tags to hunters, to prevent further browse damage during the regular hunting season. The tags are issued with a license purchase or as bonus tags valid for a particular property. The DNR maintains a list of public lands enrolled in DMAP, property maps and regulations. Tag availability is announced in advance of hunting season, and tags are issued for a small fee up to an appropriate time limit.

Responsibility for public agency: Agents for the public land enrolled in the DMAP must

- Attend a property site-visit with the DNR agent.
- Conduct a local public meeting to discuss site-specific management concerns and review antlerless quotas, if necessary.
- Supply maps and aerial photos to the department, with clearly marked property boundaries, access points and parking areas.
- Provide property-specific regulations.
- Cooperate with the department to collect deer harvest data for the property.

Strategies for Deer Management with Recreational Hunting

From *Living with Whitetailed Deer in Illinois*, posted by the Illinois extension service¹⁵:

“The effective use of the legal hunting season is the best way to control deer populations. Harvesting deer during the regular archery and firearm deer hunting seasons may not solve problems completely, but it will be an important step toward long-term damage control. A very important goal of a hunting program on private land should be to harvest the maximum number of adult female deer (does). Killing male deer (bucks) accomplishes little to control the deer population. In addition to the reduction in deer densities, hunting can cause the dispersal of large, local concentrations of deer.”

The website suggests that reduction of a deer population using recreational hunting entails the following points:

- Recruit safety conscious, dependable hunters who are willing to shoot does.
- If hunters have shown that they are helping to effectively harvest does, allow them to shoot deer with exceptional antlers, but request that hunters pass up "ordinary bucks" in favor of does.
- Try to have one hunter for every 10 to 15 acres of wooded habitat.

- Have all hunters complete their scouting and stand installation activities several weeks *before* the season.
- Hunt from elevated tree stands and refill productive stands. During the firearm seasons, four or five deer may be taken from a single stand in one day.
- Encourage hunters to hunt from their stands throughout the entire day.
- Maintain hunting pressure (number of hunters in the field each day) throughout the season.
- Encourage neighbors to adopt similar hunting techniques on their property.
- Monitor the hunting effort (number of hunters per day for each hunting season), and record the number and sex of the deer harvested as well as the names and addresses of all hunters.

Research about Deer Management

Extra Late Winter Hunting Season – An extra antlerless hunting period in January assists in herd reduction: Permitted in NY, IL, CT and elsewhere.

Measures to improve success of bowhunting in reducing deer herd¹⁶ – An survey of bowhunters determined the following incentives would increase interest in taking doe, to help reduce a deer herd: A special fund to help with processing deer meat, Sunday hunting during the regular hunting season, an extra doe-only hunting period in January, a separate deer season for cross-bows and an extra buck tag for taking a fixed number of doe. Implementation of several of these strategies would be more effective than phasing them in gradually.

Gaining landowner support of hunting¹⁷ – A survey of landowners in suburban/urban settings found that more landowners were supportive of hunting if they were assured of hunter's proficiency. Many states, such as NH, require that hunters take a proficiency and safety course¹⁸ before gaining a hunting license. Further, many landowners were supportive of hunting if hunters discussed with landowner concerns such as the times and location of hunting on their land, and if deer were field dressed off the property.

Use of bait and hunter success¹⁹ – Baiting deer is legal in NH (but not in VT). In CT, the year that baiting was permitted hunters increased success rate by 16.8%, they harvested three times more doe than buck and they harvested four times more deer than before baiting was permitted. Baiting is especially effective in a January hunt, where other food is less available. In NH, all baiting food and containers must be removed before hunting can occur the bait site.

Many hunters will tire of hunt – Hunters may tire of the hunt after several outings, and are often unwilling to take more than three deer. Hunting statistics in NH show many firearm hunters are out on the first few days of a hunting season as compared with the middle of the season²⁰. Further, when deer density drops, hunters may not have enough patience to help cull the herd to desired levels, since much more hunting effort is needed with fewer deer spotted than at higher densities.²¹

Deer can tell if an area has been hunted – A Quality Deer Management Association (QDMA) study reported that it takes about 5 days after a stand is hunted before bucks return to the area near that stand. The more a stand is used, the less likely it is that deer will be nearby²².

How to assess the impacts of hunting – Several approaches exist for determining the impacts of deer browse on forests. One is a browse impact survey from the Quality Deer Management Association (QDMA)²³

What to do with the extra venison – Currently hunters process venison themselves, pay to have deer processed or butchers volunteer their services at no cost or reduced costs. Extra venison is often donated to food banks. Several states (TN, WI, VA, and MD) have established programs where hunters can donate \$2 at the time of permit sale to go towards processing cost associated with donating deer to Hunters For The Hungry (HFTH). Maryland was the first state to charge a mandatory fee for venison donation, which is expected to generate nearly \$100,000 towards processing costs.²⁴ A serious discussion on how to implement a market in venison appeared in 2011 article in Wildlife Society Bulletin²⁵ that outlined an approach for this possibility. It noted a nationwide reduction in hunting, and the detrimental increase of deer. However, there is the federal Lacey Act of 1900, which prohibits the market sale of game, a law that led to the recovery of greatly depleted populations of deer. So this is a discussion that requires a change in many laws before implementation would be possible.

Building Public Support for Deer Management

In *Community-Based Deer Management*²⁶ (2004) researchers at Cornell outline strategies for engaging the public in decision-making for local deer control measures.

¹ *Deer density and the abundance of Ixodes scapularis (Acari: Ixodidae)*. (2003) Rand PW, Lubelczyk C, Lavigne GR, Elias S, Holman MS, Lacombe EH, Smith RP Jr. J Med Entomol. 2003 Mar;40(2):170-84. <http://www.ncbi.nlm.nih.gov/pubmed/12701874>

² *The Relationship between Deer Density, Tick Abundance, and Human Cases of Lyme Disease in a Residential Community* (2014) Kilpatrick, LaBonte and Stafford, J Med Entomology 51:4

³ *Research on the Effect of Deer Population Levels on Natural Regeneration of Allegheny Hardwoods*, a long-term study of deer exclosures in PA forests. <http://www.fs.fed.us/ne/global/litedb/catalogs/cat50.html>

² In spring and summer, white-tailed deer live in social groups consisting of an adult female, her fawns and her yearling female offspring. More deer than this in spring, summer and fall suggest overabundance. Note that in winter deer gather in 'deer yards' and social groups would have greater numbers.

³ *Managing Urban Deer in CT: A guide for Residents and Communities* (2007) outlines many possible measures to help reduce the density of a deer herd. Connecticut Bureau of Natural Resources / Wildlife. LINK: http://www.ct.gov/deep/lib/deep/wildlife/pdf_files/game/urbandeer07.pdf

⁴ Deer Management Alliance. *Case studies of successful community-managed deer control*.

<http://www.deeralliance.com/node/77>

⁵ <http://www.deeralliance.com/node/69>

⁶ Connecticut Deer News (2015) <http://www.deerfriendly.com/deer/connecticut>

⁷ *An Integrated Approach for Managing White-Tailed Deer in Suburban Environments*: The Cornell University Study. 2014 Report on the Cornell deer control experience, experiments and observations. Includes tips called "A Deer Manager's Toolbox" http://wildlifecontrol.info/deer/Documents/IDRM_12-5-2014.pdf

⁸ See part [TWO](#) of this Deer Management and Forest Health website, and the remarks by Todd Bittner at the Sept 8 2014 meeting, for a detailed description of these deer control measures.

⁹ *NY State Deer Management Plan*. 2012. http://www.dec.ny.gov/docs/wildlife_pdf/deerplan2012.pdf

¹⁰ The *Living with Deer* website developed by the Illinois extension service outlines a history of hunting policies and in particular hunting policies to reduce or obtain a balance in the deer herd. Link:

<http://web.extension.illinois.edu/deer/about.cfm>

¹¹ Illinois permits for herd reduction: http://web.extension.illinois.edu/wildlife/permit_deer_special.cfm#dpcp

¹² PA hunting program, see Deer Management Assistance Program (DMAP) under the 'deer hunting' section of <http://www.portal.state.pa.us/portal/server.pt/community/deer/11949>

¹³ *Kinzua Quality Deer Cooperative*: Hunting tips for the Kinzua <http://kqdc.com/hunt-the-kqdc/>

¹⁴ Information about Wisconsin Deer Management Assistance Program.

<http://dnr.wi.gov/topic/wildlifehabitat/DMAP.html>

¹⁵ The Illinois Extension service website devoted to deer is *Living with White-tailed Deer in Illinois*, and covers many issues related to management -- <http://web.extension.illinois.edu/deer/about.cfm> For hunting practices for best results, see Deer Management see the *Guidelines for Landowners Considering Hunting or Leasing for Deer Control* go to <http://web.extension.illinois.edu/deer/yourrole.cfm?SubCat=9118>

¹⁶ A survey of bow-hunters *Assessing Strategies to Improve Bowhunting as an Urban Deer Management Tool* HJ Kilpatrick, AM LaBonte, JS and G Warner. *Wildlife Society Bulletin*, Vol. 32, No. 4 (Winter, 2004), pp. 1177-1184

¹⁷ *Factors Affecting Bowhunter Access in Suburban Areas*. HJ Kilpatrick, AM Labonte and JS Barclay. *The Journal of Wildlife Management*, Vol. 71, No. 6 (Aug., 2007), pp. 2102-2105

¹⁸ Information about NH hunter education classes. <http://www.wildlife.state.nh.us/hunting/hunter-ed.html>

¹⁹ *Use of Bait to Increase Archery Deer Harvest in an Urban-Suburban Landscape*. HJ Kilpatrick, AM Labonte and JS Barclay. *The Journal of Wildlife Management*, Vol. 74, No. 4 (May 2010), pp. 714-718

²⁰ *NH White-Tailed Deer Assessment 2015*. Bergeron, Dan. (December 2014) Figure 11, page 126

²¹ *Effort and the Functional Response of Deer Hunters*. TR VanDeelan, DR Etter. 2003. *Human Dimensions of Wildlife*, 8:97–108.

²² Author Clint McCoy, is a deer biologist with the Ohio Division of Wildlife. <https://www.qdma.com/articles/how-fast-can-a-stand-recover-from-hunting-pressure>

²³ QDMA browse survey. <https://www.qdma.com/uploads/pdf/Browse-Impact-Surveys.pdf>

²⁴ Options for deer processing <http://deeralliance.com/node/68>

²⁵ Market in venison discussion *Regulated Commercial Harvest to Manage Overabundant White-Tailed Deer: An Idea to Consider?* KC VerCauteran, CW Anderson, TR van Deelen et al. 2011 *Wildlife Society Bulletin* 35(3):185–194; 2011; DOI: 10.1002/wsb.36

²⁶ *Community-Based Deer Management* (2004) Daniel J. Decker, Daniela B. Raik, and William F. Siemer Cornell University. <http://wildlifecontrol.info/pubs/Documents/Deer/DeerGuide.pdf>