Deer Concerns and Management across New York State

Results from the 2019 NYS Municipal Deer Survey

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Introduction

White-tailed deer (*Odocoileus virginianus*) populations in New York State and across the Northeastern United States have changed dramatically over the past two centuries. Hunted nearly to extinction during the latter half of the 19th Century (Severinghaus and Brown 1956, McCabe and McCabe 1984), deer populations in New York rebounded and deer are now found throughout the state. In many areas, they are now considered overabundant (NYSDEC 2018). While the recovery of deer populations is a conservation success, deer densities have reached unprecedented levels in many urban and suburban areas and have become a cause for concern for some residents, municipal officials, and wildlife managers (McCabe and McCabe 1997, Urbanek et al. 2012).

State wildlife agencies, such as the New York State Department of Environmental Conservation (NYSDEC), are responsible for the protection and management of deer and other wildlife. Historically, these state wildlife agencies have focused on the preservation and management of wildlife populations in mostly rural regions. The growth of deer populations in suburban and urban environments (where hunting may be limited), however, creates challenges for traditional approaches to wildlife management. The density of buildings and roads, local bylaws, and varying level of public concern all affect the viability of wildlife management strategies in different communities. In this context, decisions by local governments in villages, towns, and cities are increasingly important in deer management in many areas. To improve understanding of the concerns about and responses to deer in municipalities across New York State, a team of researchers from Boston University surveyed city, town, and village officials in 2019. This report describes the results of the NYS Municipal Deer Survey.

Survey design, administration, and analysis

To understand how concerns about deer, responses to deer, and local bylaws vary across the State of New York, we conducted an online survey of village, town and city officials in the 1,529 NYS municipalities in 2019. The survey collected information about the perceived status of deer populations, local concerns about deer, municipal bylaws that restrict hunting, municipal deer management strategies in use or under consideration, and the ways municipalities have learned about deer and deer management.

Contacts were retrieved from municipal websites—in most locations, the survey was first sent to the municipal clerk, who sometimes passed it along to someone more knowledgeable about deer.

We distributed the survey via email (providing paper surveys or the opportunity to complete by telephone upon request) and conducted email and phone follow-ups to increase the number of responding municipalities.

Results

Nine hundred eleven municipalities completed the online survey, yielding a response rate of 60%. The responding municipalities included 537 towns, 349 villages, and 25 cities located in all the NYSDEC regions, except region 2 (Fig. 1). Most respondents reported working in rural municipalities (61%), while 19% reported working in suburban municipalities, 5% in urban municipalities, 2% in exurban municipalities, and 12% did not answer this question (n=911). The majority of respondents held an executive or administrative position within their municipality (i.e. clerk, select board, etc.).

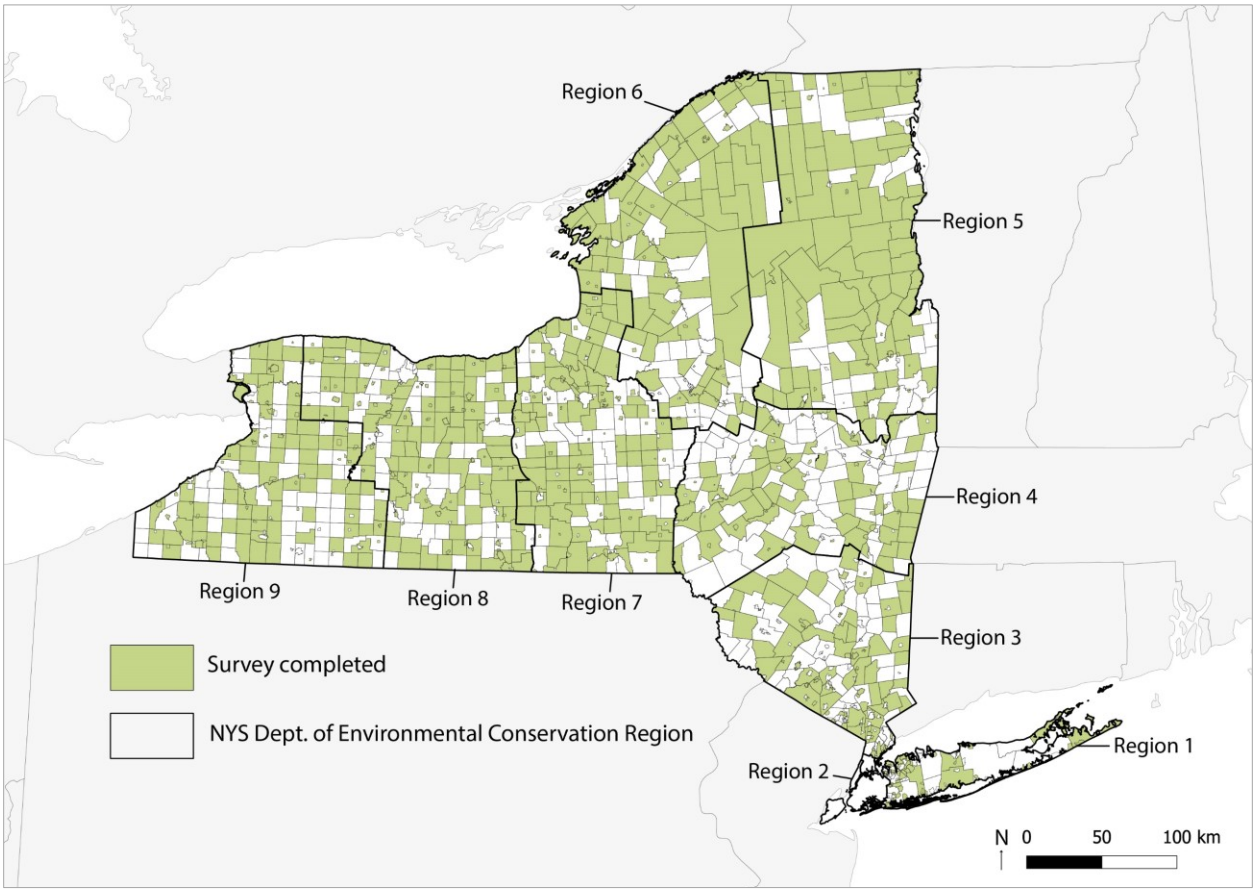

Figure 1. Survey Completion across NYSDEC Regions

Past and Future Changes in Deer Populations

Many town, city and village officials have observed changes in deer populations over the past two decades. A third of the survey respondents (33%) reported that deer populations have increased in the past 20 years, while 23% reported that populations are stable and 17% reported that deer numbers have declined (n=875; Fig. 2). Survey respondents in 195 responding municipalities reported that they did not know how deer populations have changed. The NYSDEC region 3 had the highest proportion of respondents reporting an increase in deer numbers over the past two decades (43%, n=91). Additionally, 4% of respondents—most located in Long Island—reported that there have not been deer in their municipalities within the past two decades (n=875; Fig. 2, upper left box).

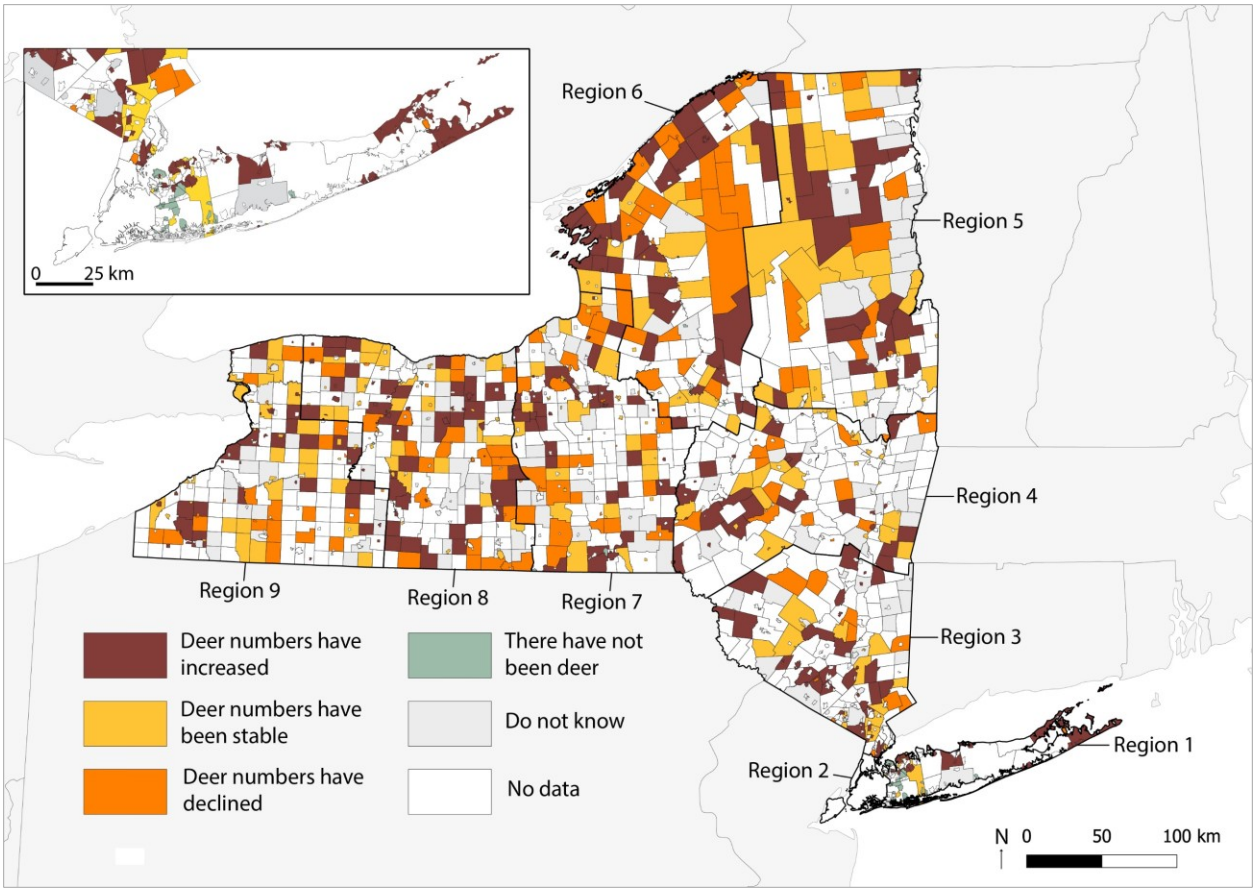

Figure 2. Reported Changes in Deer Populations Over the Past 20 Years

Municipalities that reported declining deer populations were asked to indicate the factors that contributed to the decline in deer numbers in the past 20 years. Development and environmental factors—such as human development and increase in predators (i.e., bears, coyotes)—were mentioned the most by respondents (68%, n=115). Local deer management—such as Deer

Management Assistance Program (DMAP), controlled hunt, deer cull or immunocontraception—were mentioned by 28 respondents (24%), and recreational hunting was mentioned by 27 respondents (23%, n=115).[1]

Many survey respondents did not expect to see future changes in deer numbers. Just over a third (36%) reported that they believe deer populations will remain stable in the next 5-10 years (n=876). Under a fourth of respondents believed deer numbers will increase in their municipality (23%) and 9% believed deer numbers will decline (n=876).[2] The NYSDEC region 1 had the highest proportion of respondents believing deer numbers will increase in the next 5-10 years (35%, n=65), while region 5 had the lowest proportion of survey respondents who believed deer numbers will increase (17%, n=104). Development and environmental factors were the most cited reasons for future decline in deer numbers (65%), followed by implementation of local deer management (22%), and recreational hunting (22%, n=77).[3]

[1] The remaining reasons referred to illegal taking of deer and "overhunting" (mentioned 8 times by respondents).
[2] 22% of respondents did not know how to answer this question.
[3] The remaining responses referred to illegal taking of deer and "overhunting"(mentioned 7 times by respondents).

Municipal Concerns about Deer

Most survey respondents did not believe deer to be a concern in their town, village or city (66%, n=897; Fig. 3).[4] The highest proportions of municipalities considering deer to be a problem are located in the NYSDEC region 1 (37%, n=67) and region 3 (40%, n=90; Fig. 3). The NYSDEC region 4 (19%, n=91) and region 5 (20%, n=106) had the lowest proportions of responding municipalities where deer is seen as a concern (Fig. 3).

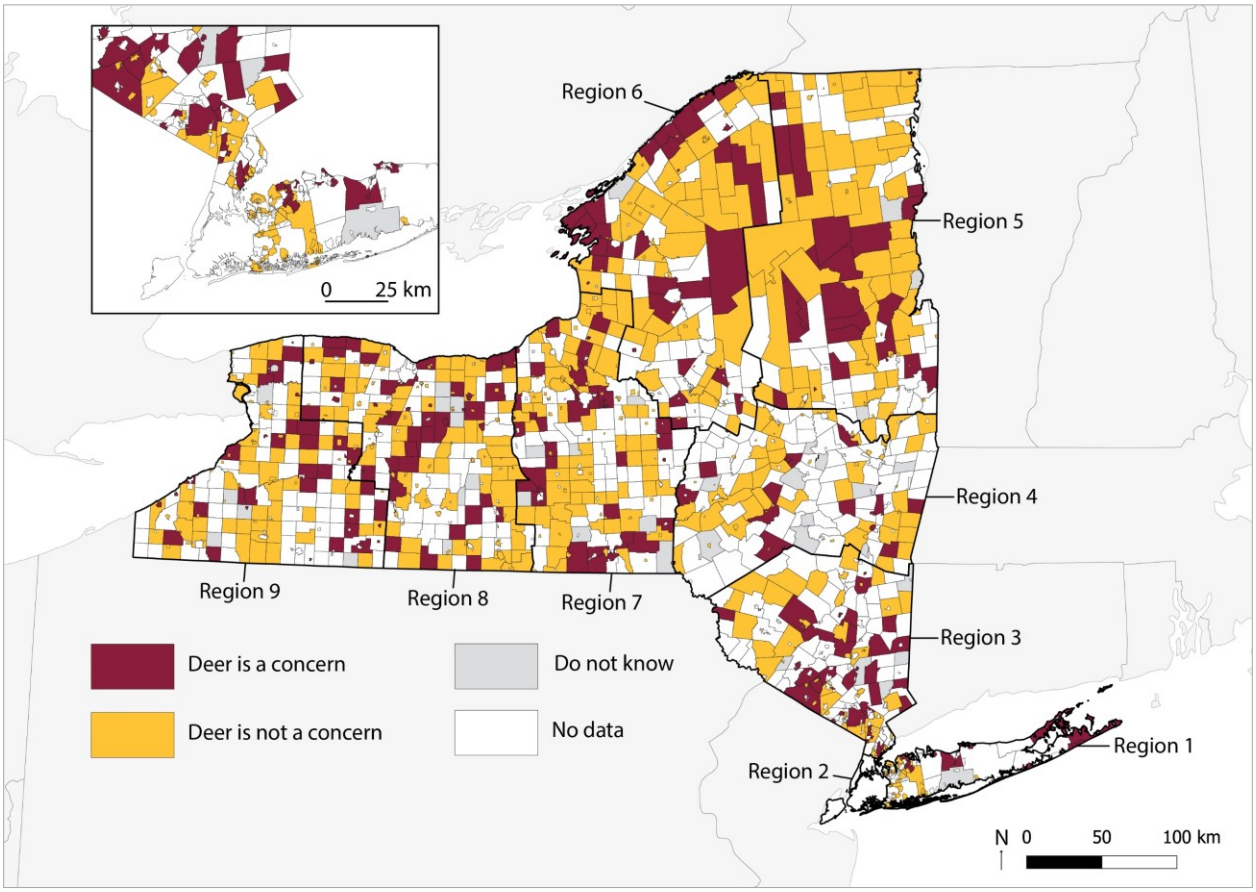

Figure 3. Reported Municipal Concern About Deer by Survey Respondents

Most survey respondents reported that complaints about deer are infrequent in their municipalities. Sixty-one percent of respondents reported that they never receive resident complaints about deer, 29% reported that they "sometimes" receive complaints about deer, and only 6% reported that they "often" receive complaints about deer (n=897).[5] The highest proportions of municipalities that reported receiving complaints "sometimes" and "often" were located in NYSDEC region 9 (46%, n=121) and region 3 (45%, n=90; Fig. 4).

[4] 6% of respondents did not know how to answer this question.
[5] 4% of respondents did not know how to answer this question.

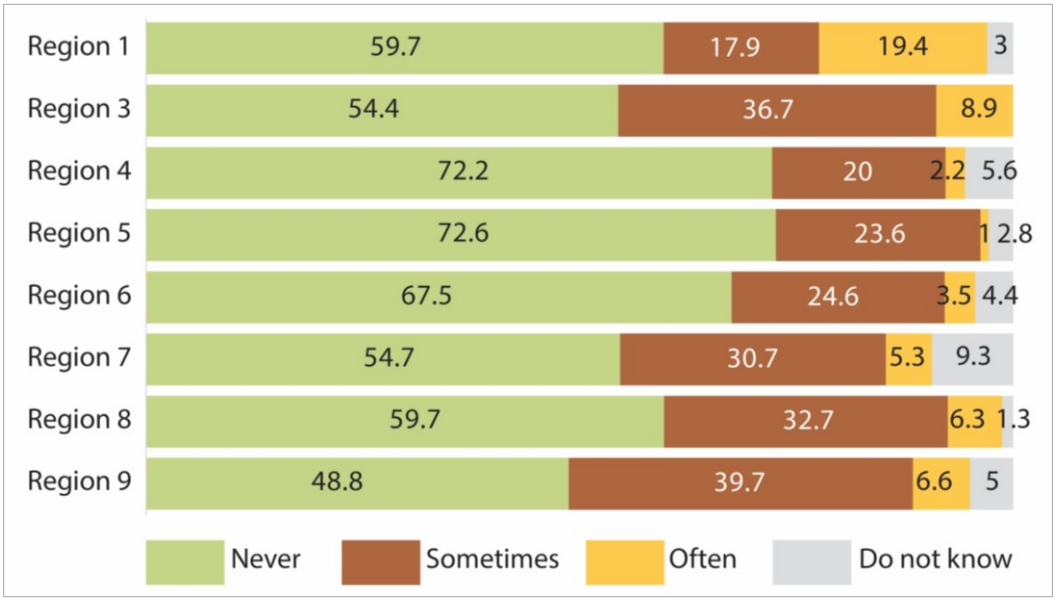

Figure 4. Reported Frequency of Received Resident Complaints across NYSDEC

To better understand the nature of concerns about deer, we asked survey respondents how often residents express concerns to municipal officials about a range of deer-related issues (tick-borne diseases, deer-vehicle collisions, property damage, damage to agricultural crops, and impacts of deer on forests). Under half of survey respondents (43%) reported occasional resident complaints about deer-vehicle collisions and 17% reported frequent complaints (n=815; Fig. 5). About a third of responding municipalities (32%) reported occasional resident complaints about tick-borne diseases and 18% reported frequent complaints (n=754; Fig. 5). Regarding damage to agricultural crops due to deer, 31% of respondents reported occasional complaints from residents and 10% reported frequent complaints (Fig. 5).[6]

We asked similar questions regarding municipal officials' concerns about the same issues. Almost half of the survey respondents considered tick-borne diseases to be of moderate or strong concern to municipal officials (47%, n=752) and 37% of respondents identified deer-vehicle collisions as a moderate or strong concern to municipal officials (n=776; Fig. 6).[7]

[6] Regarding property damage due to deer, 26% of respondents reported occasional resident complaints and 9% reported frequent complaints from residents (n=772). Regarding impacts of deer on forests, 11% reported occasional resident complaints and 2% reported frequent complaints from residents (n=708).

[7] 24% of respondents considered damage to agricultural crops to be of moderate or strong concern to municipal officials (n=707), 21% of respondents identified property damage due to deer as a moderate or strong concern to municipal officials (n=745), and 14% of respondents considered impacts of deer on forests to be of moderate or strong concern to municipal officials (n=686).

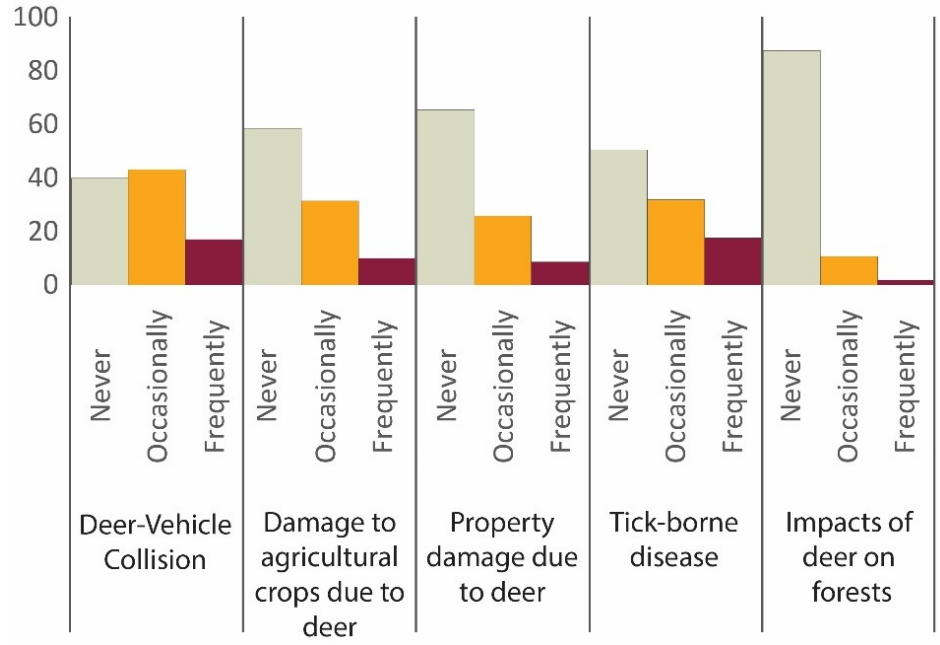

Figure 5. Reported Frequency of Complaints by Residents to Municipal Officials

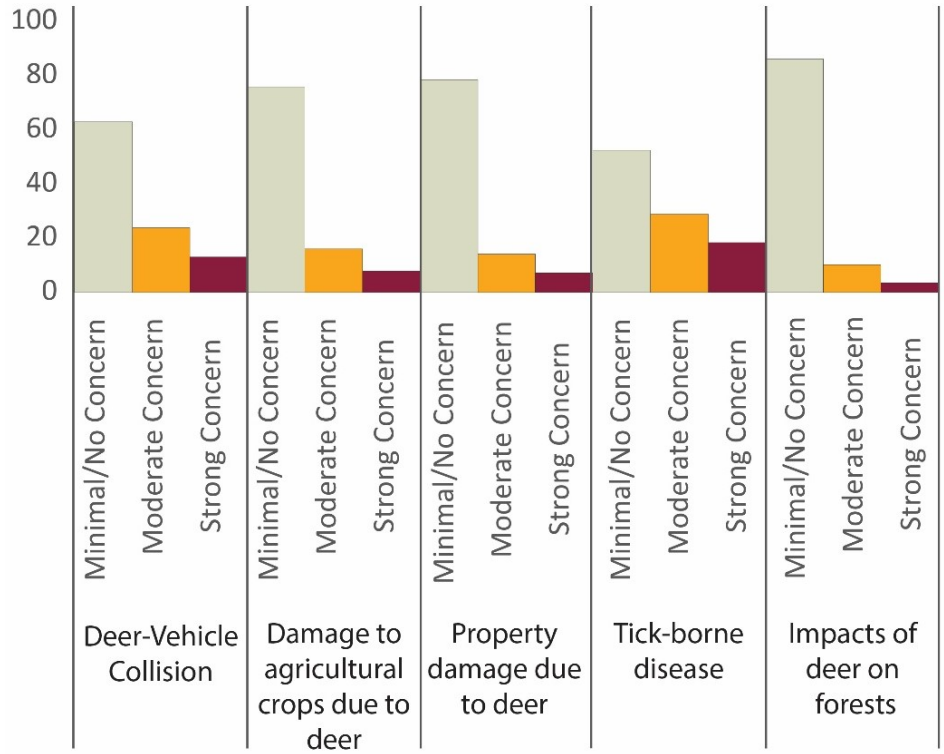

Figure 6. Levels of Concern Held by Municipal Officials

Deer Hunting and Local Deer Management – Access, Constraints, and Changes

The growth of deer populations in suburban and urban areas is often attributed to state and local regulations and cultural factors that limit hunting access in these areas. To understand the ways that local regulations vary and shape hunting opportunities across the state, the survey contained questions about hunting access and local bylaws or ordinances that restrict hunting. The majority of respondents (63%) indicated that hunting is permitted on some private, state, municipal, and/or other land within their municipality (n=705). However, the level and ease of hunting access differ across municipalities. More than half of survey respondents (54%) reported having municipal bylaws or ordinances that restrict hunting beyond state regulations (n=774). Common restrictions include the prohibition of or constraints on the discharge of firearms and/or archery, requiring some form of written permission to hunt on public and/or private property, and/or prohibiting hunting on certain properties.

In the state of New York, municipalities utilize a broad suite of tools to limit deer populations including controlled hunts, deer culls, increased hunting through the Deer Management Assistance Program (DMAP), chemical contraceptives, and sterilization. Efforts to manage deer populations may also include changing local bylaws, and increasing access to public lands for hunting. The public debate about these actions can be contentious and do not always result in policy changes or other forms of deer management. In order to identify municipalities that have considered and/or implemented strategies for local deer management, we asked a series of questions about ongoing and past municipal actions to control and regulate deer. A total of 107 municipalities have implemented a local deer management plan (n=769; Fig. 7).[8] Towns had a higher proportion of implemented deer management actions (19%, n=472), compared to villages (5%, n=316). None of the responding cities had implemented deer management actions. The NYSDEC region 8 had the highest proportion of responding municipalities that have implemented strategies for local deer management (17%, n=145), followed by regions 1 and 3 (16%, n=64 and n=83 respectively; Fig. 7). Region 5 had the lowest proportion of responding municipalities that have taken actions towards deer management (6%, n=95; Fig. 7).

[8] The NYSDEC had gathered similar information on town-, city-, and village- run deer management in urban and suburban New York (NYSDEC 2018). These data can be found on the NYSDEC website.

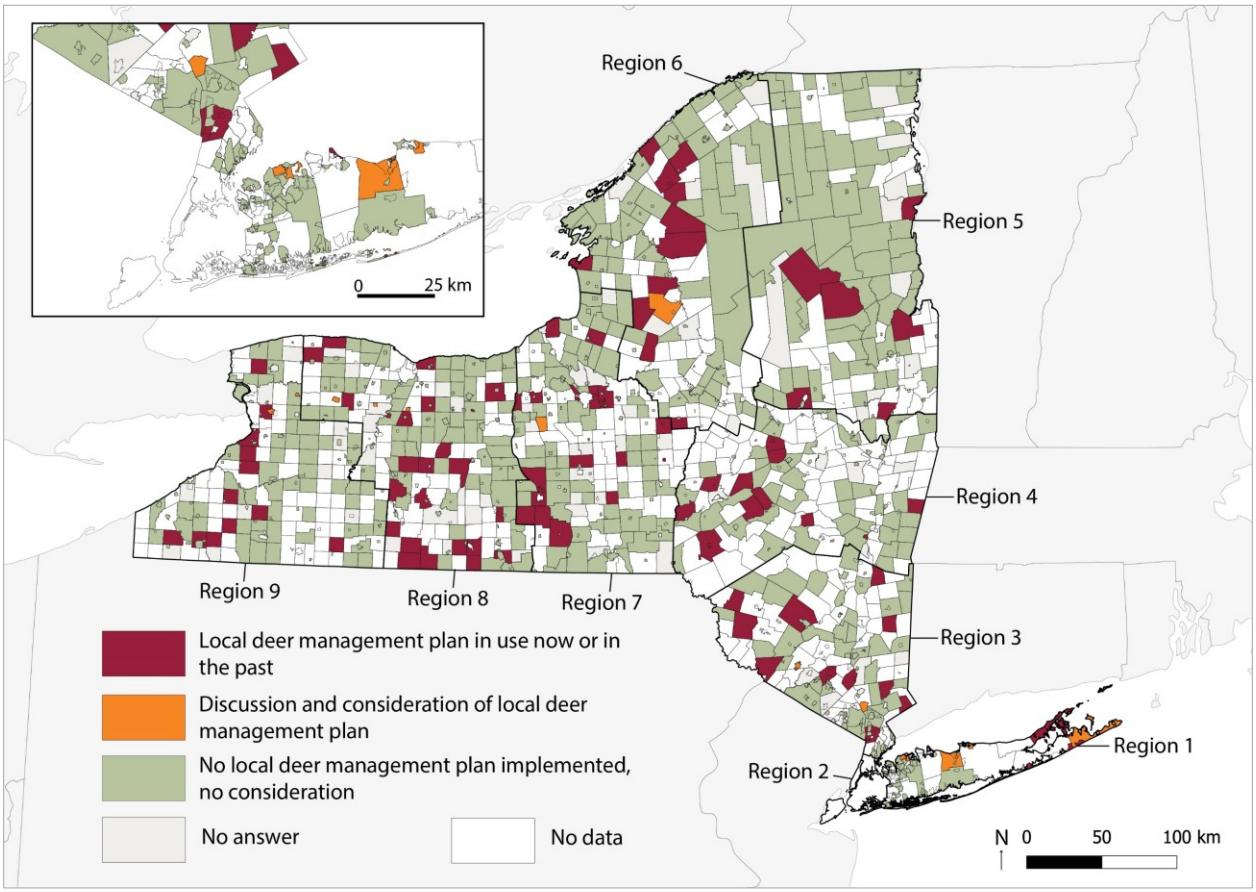

Figure 7. Municipal Actions and Discussions Towards Managing Deer Locally

Among the responding municipalities, 83 engaged in DMAP, 17 implemented controlled hunts with rules imposed by the municipality and 12 implemented culling programs. Immunocontraception and surgical sterilization are viewed as experimental management programs and rarely used in the state (respectively 4 and 1 responding municipalities engaged in these types of program). In the case of a controlled hunt or a DMAP, hunters are selected through a lottery in 39% of responding municipalities; on a first come, first serve basis in 38% of responding municipalities, and based on proficiency in 11% of responding municipalities (n=61).[9] Culling programs are mostly carried out by volunteer agents, USDA Wildlife service, DEC-licensed wildlife control officers, police officers, and municipal employees. Most municipalities use a combination of firearms and archery for deer management (72%), but some use archery only (20%, n=65).

[9] The remaining responses are a combination of these three types of selection.

Survey respondents with management programs were asked to choose from a list of motivations for implementing their programs.[10] They reported various motivations such as deer damage to gardens/landscaping (23%), concerns about tick-borne diseases (21%), deer-vehicle collisions (20%), deer damage to agricultural crops (19%) and impacts of deer on forest health (16%, n=469). Almost half (49%) of these municipalities with management programs reported that deer management actions were somewhat successful and 24% reported that these actions were very successful (n=45).[11] Four respondents reported that deer management actions within their municipality were not at all successful (10%). In eight municipalities, where multiple management strategies were undertaken, the reported success varied across the management approaches (19%).

Thirteen responding municipalities were considering starting a deer management program and/or changing local bylaws at the time of the survey administration (n=745). Of these, five municipalities were considering implementing a controlled hunt and five were considering a deer cull carried out by DEC-licensed wildlife control officers or volunteer agents. Three municipalities were considering DMAP and two were considering immunocontraception. Further, 17 municipalities responded that they considered but ultimately decided not to implement any actions to control deer populations in the past. These communities considered but did not implement controlled hunts (mentioned by 7 responding municipalities), culling (mentioned by 5 responding municipalities), immunocontraception (mentioned by 4 responding municipalities), surgical sterilization (mentioned by 3 responding municipalities), and trap and kill (mentioned by 2 responding municipalities). Respondents explained that these plans were not finalized because of cost, safety, and liability considerations. Some worried the actions would not be successful and would not be accepted by residents.

Although public opposition to hunting is often viewed as a major obstacle to effective wildlife management efforts, only 8% of survey respondents indicated that there was opposition to local deer management in their towns, villages, or cities (n=604). This opposition is mostly voiced by local residents (61%, n=80) through complaints in town meetings and to local officials or expressed during public protests.

[10] Multiple reasons could be selected.

[11] Most respondents defined success as deer population control through measurable metrics such as visible forest regeneration, and reduction in deer sightings, tick population, deer-vehicle collision, and damage to property and agricultural crop.

In addition to debating and implementing strategies for local deer management, some municipalities provide resources regarding deer and their impacts. Among responding municipalities, 17% reported providing resources to help residents minimize deer problems on private property (n=742). One hundred responding municipalities reported providing pamphlets and fact sheets, 34 have information posted on municipal websites, and 21 municipalities reported organizing educational events regarding deer and their impacts (n=742). These resources covered topics on deer-resistant vegetation (22%), habitat management to reduce tick numbers in yards (20%), deer repellents (16%), NYSDEC information (12%), deer exclusion through fencing (12%), pesticide use to reduce tick number in yards (12%), personal protection against ticks and Lyme disease (3%), and information related to deer-vehicle collisions (1%, n=160).

Learning about Deer and Management Strategies

When confronted with deer-related challenges, municipal employees and volunteers often consult outside sources to assess deer populations in their municipalities and to learn about options for management. We asked respondents about the ways that they have learned about deer populations and potential management strategies. Research on impacts of deer was conducted by 32 responding municipalities. These research efforts focused on forest health and/or tick-related concerns. In addition to conducting research on deer and deer impacts, 136 municipalities have consulted or collaborated with different individuals, state agencies, other municipalities, and organizations regarding deer management (15%, n=911). Among reported collaborators and consultants, the NYSDEC was mentioned the most often (46%), followed by hunters (16%), other municipalities (8%), private landowners (8%), university faculty/staff (5%), private consultants (4%), NGO (4%), USDA wildlife services (4%), and White Buffalo Inc. (3%, n=264).

Conclusion

This survey assessed municipal concerns about and responses to changing deer populations across New York State. The survey results reveal variation in municipal concerns about and strategies to management of changing deer populations. By drawing attention to the key role municipalities play in deer management, these results may inform future outreach efforts and support strategies to engage communities based on their specific concerns and goals for deer management.

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