Deer Management Plan Recommendations

West Seneca 2022

Background and Process

- 10 member volunteer Task Force named by Town Board, began meeting in May 2021 and had 9 meetings
- Listened to the public – special meeting, letters, attendance at our meetings, survey
- Specialists: Community Deer Management, including Ryan D. Rockefeller, Wildlife Biologist 1 – Big Game, NYS Department of Environmental Conservation and Kristina Ferrare, Forestry Program Specialist, Cornell Cooperative Extension Onondaga County
- Research –
  - local towns,
  - best practices for deer management (Peter will detail this),
  - impacts on deer, human, and environmental health,
  - Information from Town departments
  - survey review of resident and tax payer experience of deer/ human experience (Robin will detail this)
- Compilation of recommendations, FAQ Website, Report on on Survey at http://www.westseneca.net/government/deer-task-force#gsc.tab=0

Thank you

- Each member of the Task Force for countless hours
- Amelia Greenan and Gary Dickson for their support
- Town Departments for their responsiveness
- Town residents and tac payers for sharing your experiences
- Ryan Rockefeller and Kristin Ferrare
- Many sources for information:
  - Area Towns including Amherst, Cheektowaga, Clarence, Lackawanna, North Tonawanda
- Robin Foster, PhD, for her extensive research, creation of our FAQ website, and survey, and report out on the survey

We learned

- Town is evenly divided – this showed up in letters, comments, and the survey which Robin will share
- Deer are negatively impacting both human experience and the environment. (Survey)
- While feeding deer is a favorite activity, doing so is actually illegal in all of the State of New York, and can adversely impact deer health, change their natural patterns of travel through neighborhoods, and cause deer to lose their natural fear of humans.
- Deer consume gardens, shrubs, landscaping, and trees in residents' yards. Some residents have experienced a very significant impact on agriculture.
    - Specific choices about what is planted can have a significant impact on how much attention the plants receive from deer.
    - fencing and the use of other deterrents both impact damage done to gardens and landscaping.

We learned

- Some residents feel the experience of their yards is severely impacted due to substantial fecal droppings they leave.
  - Residents fear ticks and Lyme disease, and that deer feces may impact their domestic animals and families' health.
  - the occurrence of Lyme disease in humans in Erie County is fairly limited
  - Lyme disease is dependent on animals in addition to deer, like field mice, to transmit ticks.
- We learned that residents are concerned that continued development of the Town is impacting available green space for deer to travel without impacting residences and traffic.
- Finally, we learned that there are a significant number of deer related car accidents, and that deceased deer are often found on private property.

Frequently Asked Questions

Purpose of Website

- Address common questions and misconceptions encountered during the process of researching and developing the plan
- Publicize information used to develop the recommended deer management plan

Website Development

- List of questions developed using survey, public emails, and comments from public listening session
- Thorough literature review, with links to sources available on each section of the website
- Sources include academic papers, professional texts, agency documents

Section 1: Deer Ecology and Behavior

1. Are deer in West Seneca overpopulated?
2. Why are there so many deer in urban and suburban areas?
3. Do deer carry diseases that can harm humans or pets?
4. Do deer attract other animals (like coyotes) to my yard?
5. How do deer affect the local ecosystem?

Section 2: Human-Deer Interactions

1. Why is it illegal to feed the deer?
2. Deer like to eat from my bird feeder. Can I still feed the birds?
3. I feed the deer to reduce food waste. Are there other ways I can make environmentally sustainable use of leftover food?

Section 3: Suburban Deer Management

1. Is contraception an effective management tool for deer?
2. What nonlethal options are available for reducing human-deer conflict, and is there evidence that they work?
3. Is culling an effective strategy for deer management?
4. If West Seneca opted to perform lethal management, how could it work?
5. Why can't we just increase natural predators in town to control deer numbers?
6. Is it true that culling deer will cause them to increase their reproductive output, resulting in an increase in deer?
7. Does reducing deer numbers effectively reduce the risk of Lyme Disease and other tick-borne illnesses?
8. Have other regional deer management plans been effective and how has effectiveness been measured?

Why are there so many deer in urban and suburban areas?

White-tailed deer are a common sight in urban and suburban neighborhoods. They are well-known as an "urban-adapted" species - one that is able to exploit resources in human occupied areas, but is not entirely dependent on humans for their survival (Rodewald and Gehrt, 2014). Deer thrive in what are known as "edge" habitats. These are places where natural habitats meet human-dominated landscapes. Common examples of edge habitats are suburban yards, parks or agricultural fields bordered by forest or wetland. Deer are able to utilize resources from both habitat zones, providing them with an abundance of food, water, and shelter. Additionally, hunting is often prohibited in residential areas, resulting in low deer mortality (Bowman, 2011). In areas with hunting permitted nearby, these exclusion zones (where no hunting is permitted) may provide refuge for deer during hunting seasons (Storm et al., 2007).

Many studies on deer have focused on understanding their ecology and behavior in suburban landscapes. Research suggests that deer are most likely to utilize residential areas in winter and spring, when natural food sources may be limited, and often retreat to areas farther from people during the summer when young fawns are present. Food sources found in suburban neighborhoods, such as birdfeeders and garden plants, may increase deer visitation to these areas (Kilpatrick and Spohr, 2000). The presence of supplemental food sources may cause deer (and other wildlife) to congregate, resulting in locally high deer densities (Murray et al., 2016).

References:

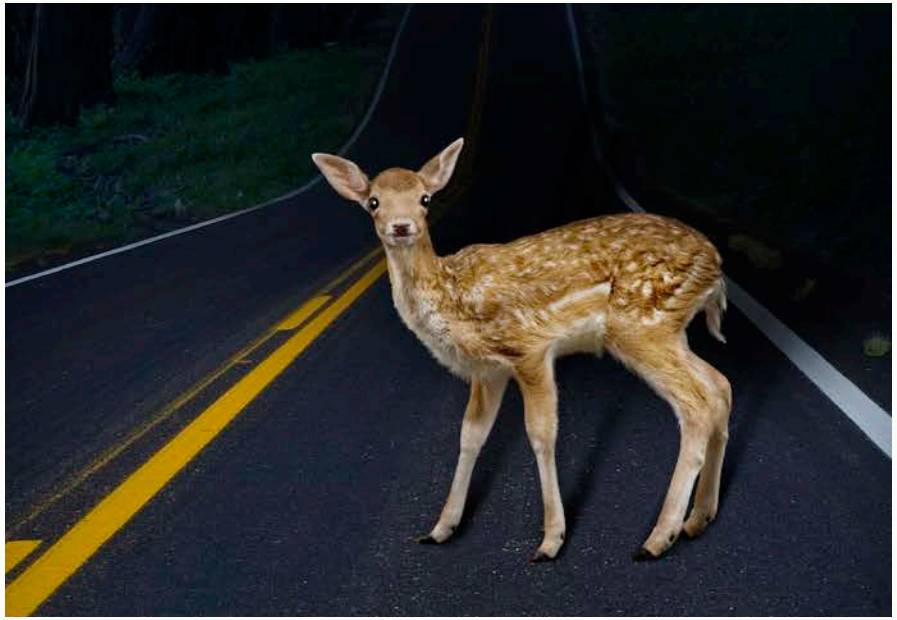
Bowman, J.L. 2011. Managing White-tailed Deer: Exurban, Suburban, and Urban Environments. In, Hewitt, D. G. (ed.), 2011. Biology and Management of White-tailed Deer. CRC Press, Boca Raton, Fl. pp. 599-620

Kilpatrick, H.J., and S.M. Spohr. 2000. Spatial and Temporal Use of a Suburban Landscape by Female White-tailed Deer. Wildlife Society Bulletin 28(4): 1023-1029. Accessed at https://www.jstor.org/stable/pdf/3783862.pdf

Murray, M.H., D.J. Becker, R.J. Hall, and S.M. Hernandez. 2016. Wildlife Health and Supplemental Feeding: A Review and Management Recommendations. Biological Conservation 204: 163-174. Accessed at https://www.sciencedirect.com/science/article/pii/S0006320716306851?casa_token=SCR68e_IrV8AAAAA:XRhH8pHvbDX31F1TcKCnYkI_DvhyykD8wbLvRlGYq9g8HTPbxJfu9zMBaXBxHgXaXAD8bypFDV4

Rodewald, A. D., and S. D. Gehrt. 2014. Wildlife population dynamics in urban landscapes. In: McCleery, R.A., C.E. Moorman, and M.N. Peterson (eds), Urban Wildlife Conservation, Theory and Practice, Chapter 8, pp:132-133. Springer, New York

Storm, D.J., C.K. Nielson, E.M. Schauber, and A. Woolf. 2007. human-Deer Conflict and Hunter Access in an Exurban Landscape. Human-Wildlife Conflicts 1(1): 53-59. Accessed at https://www.jstor.org/stable/24875053



Resident/ Taxpayer Survey

West Seneca Resident/Taxpayer Survey

Purpose:

- Assess resident concerns about deer-related issues
- Understand attitudes towards various deer management options, including education, mitigation strategies, and deer population reduction
- Evaluate the prevalence of deer feeding in the town

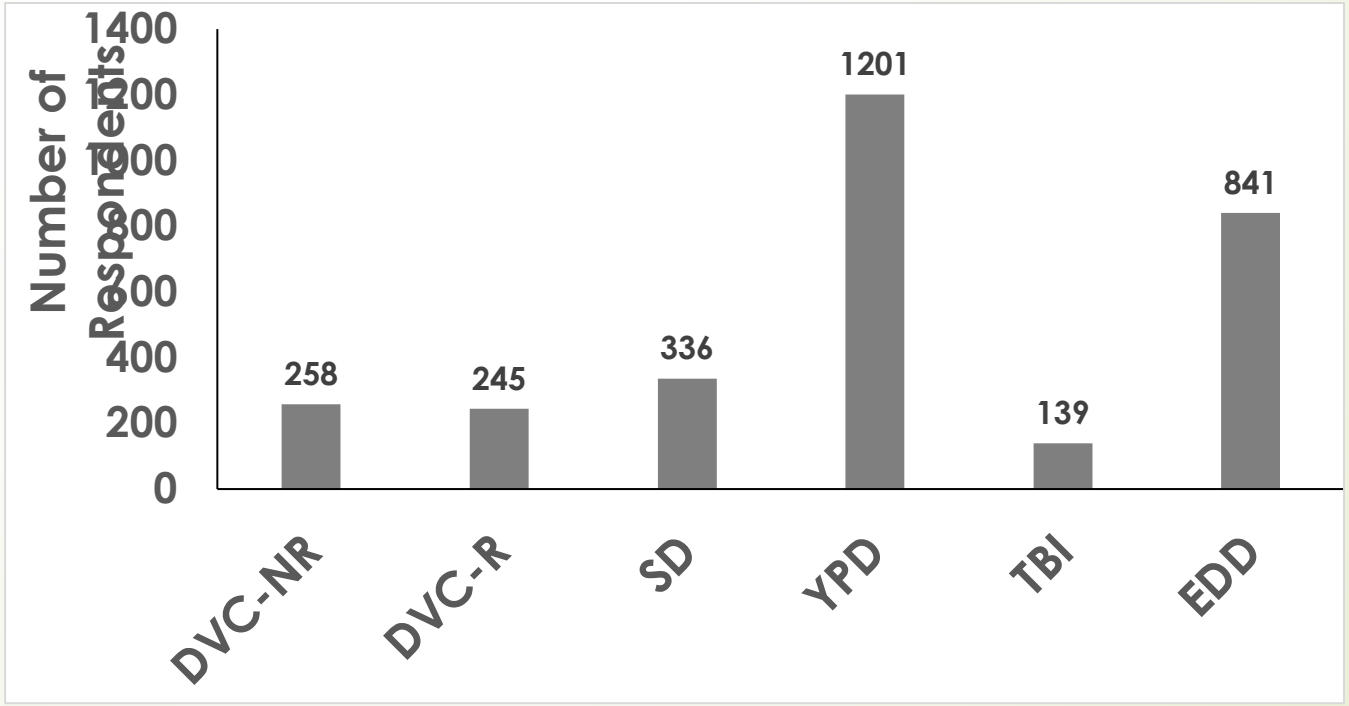
Approach:

- Administered electronically using Qualitics survey software
- Publicized using social media, flyers, and signs
- Open from November 7 to December 14, 2021
- 1899 complete surveys received

**Full report and copy of questions available on WS Deer Task Force Webpage*

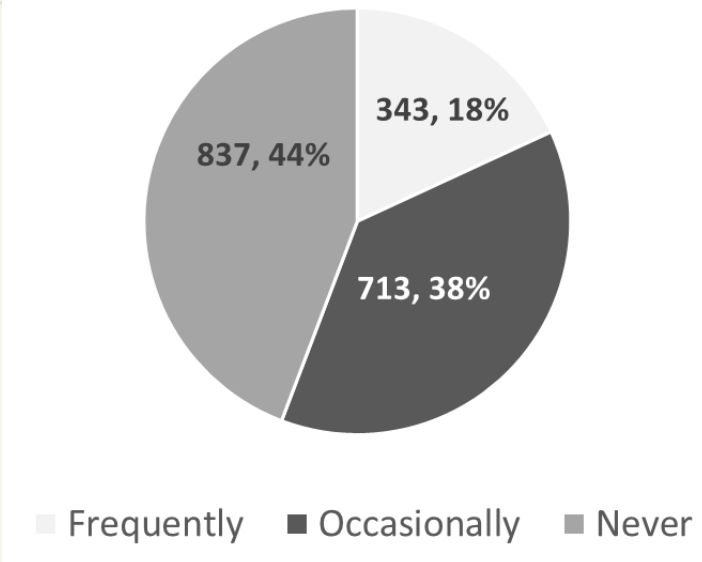
Key Findings

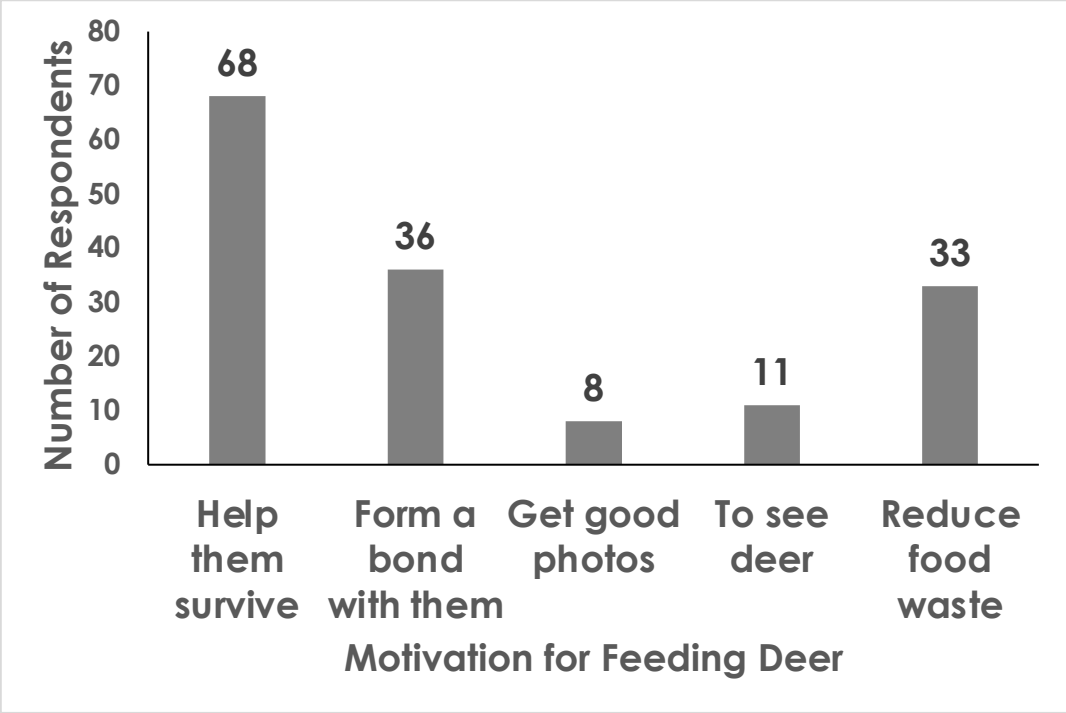
1) Deer-related issues are perceived by residents from all areas of the Town. **More than 70% of respondents indicated that they had personally experienced deer-related issues.**
2) Yard/plant damage, deer-vehicle collisions, tick-borne illnesses, and deer droppings represent the issues of greatest concern.
3) Deer-vehicle collisions are often not reported to authorities.
4) Resident opinions regarding the severity of the problem are mixed: **No Issue (33.5%), Some action should be taken (33.9%), Nuisance (32.2%)**



Key Findings

5) **Deer feeding appears to be a significant issue in the Town**, despite an apparently high level of awareness of issues related to feeding wildlife.



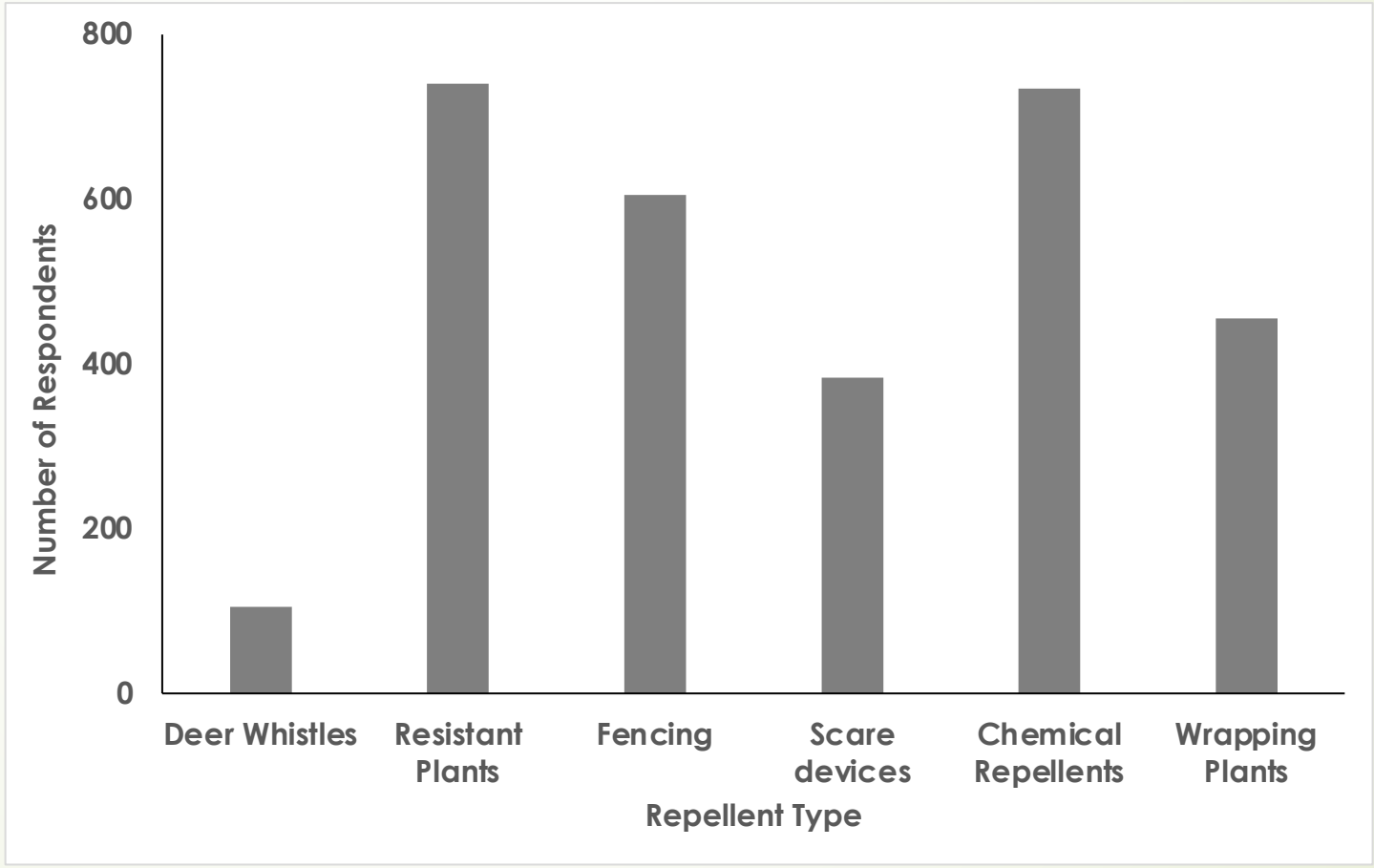


6) Concerns about **overdevelopment, speed limits, zoning restrictions on fencing, and lack of deer crossing signs** are common.

7) Interest in deer-related education is mixed, **with more interest in online learning options, particularly regarding health and safety issues**.

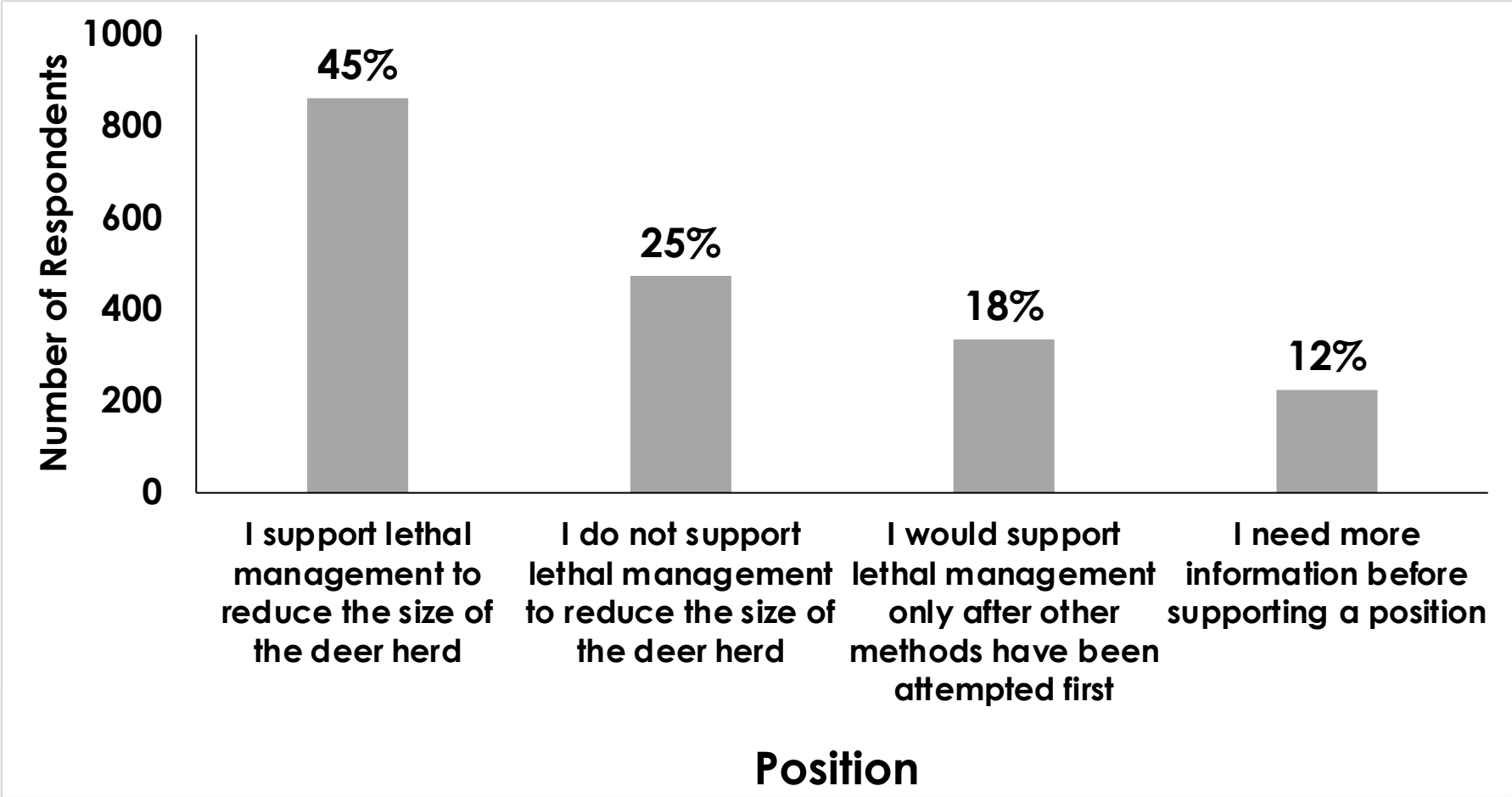
Key Findings

8) Approximately half of respondents have employed deer-deterrent strategies, **with 72% indicating that these methods were ineffective**.



Key Findings

9) Support for deer management is mixed, with 45% of respondents in favor of lethal control, 25% opposing lethal control, and others preferring to learn more about the issue first or attempt nonlethal management before implementing a cull.



Deer Management Options

Non-Lethal	Task Force Findings
Education	Resident surveys reveal a need for more education of many residents, (especially as it relates to the adverse effects of feeding wild deer) however the number of those who acknowledged that they would voluntarily participate in educational outreach was not encouraging. The challenge is devising an educational strategy for a population that thinks it knows enough.
Relocation	Relocation involves the capture of wild deer through trapping or tranquilization, and transport to a partner municipality(ies) for release back into the wild. At the present time, NY Environmental Conservation Law §11-0505 (3) prohibits the trapping of deer except under special permit issued by the DEC for scientific purposes. Permits are not issued to relocate deer to the wild because acceptable release sites are not available and because the poor chances for deer survival do not warrant the risks.
Surgical Sterilization	
Vasectomy	Vasectomy is the surgical sterilization of male deer. It has not been widely attempted because a single buck can impregnate many does. In order for a vasectomy program to be effective, a very high percentage of the bucks would have to be sterilized and that would be expensive and extremely difficult. Even if a large enough number was achieved, the unimpregnated does would re-cycle, thus extending the rut for months and pulling bucks from neighboring communities. Such a scenario would almost certainly increase deer vehicle collisions (DVC's) not to mention the added stress it would place on bucks, many of them surgically sterile yet still biologically driven to travel long distances to attempt to mate.
Tubal Ligation	Tubal Ligation is one of two methods of surgical sterilization of female deer and involves the removal of the pathway (fallopian tubes) that eggs travel to achieve fertilization by sperm. All methods of fertility control are performed by specially trained veterinarians and are the most expensive means of deer population management. Does receiving tubal ligation still enter reproductive estrus repeatedly, thus stimulating local bucks to attempt to mate. This essentially extends the rut through the winter causing increased stress on both bucks and does that typically travel very little at this time of year to conserve energy.

		Ovariectomy	Ovariectomy involves the surgical removal of a female deer's ovaries. It is comparable in cost to tubal ligation and does not have the extended rutting consequence that tubal ligation brings. Does that receive ovariectomies do not enter estrus again in their lives.
	Contraception		
		No oral contraceptives for deer	The Task Force was not able to identify a municipality that is using oral contraceptives on a wild free-ranging deer population. It is our understanding that oral contraceptives are not available for free ranging deer due to the uncertainty of consumption by non-target species and the inability to know which deer have consumed contraceptives or how much.
		PZP injectable	PZP is short for Porzine Zona Pellucida which is an injectable contraceptive that prevents fertilization of an egg. The formulation currently approved for use in NY State requires that the initial dose is followed by a booster 2-6 weeks later. This requires deer to be tranquilized and tagged for future identification purposes. The challenge with injectables is treating a large enough percentage of the population (approximately 75% of does) in order to achieve population reduction over time. Also, it is worth noting that any population decline that can be achieved is done so over a period of several years and will be at least partially offset by inward migration of unsterilized animals from neighboring communities.
		GonaCon injectable	GonaCon is another injectible contraceptive that has shown promise. It must be injected into the muscle for maximum efficacy so hand injection is more successful than darting, but since animals have to be tagged for identification, darting is not an option for West Seneca anyway. The cost of administering GonaCon or PZP ranges from a few hundred dollars per animal to $2000.
Lethal			
	Controlled Hunt		"Hunting" as the NY State DEC defines it is not permitted in Wildlife Management Unit 9C where West Seneca falls. This means a controlled hunt would also not be legal in West Seneca as state law supercedes any local ordinance that might be enacted. Without a change to state law, a controlled hunt is not an option for West Seneca.

	Cull		State law does permit municipalities to execute culls under a nuisance permitting system managed at the state level by the DEC. Municipalities are given flexibility to define certain parameters of the cull, however with very few exceptions, culling is limited to all females since that is how population control is most effectively achieved. Culling can be done by any of the following means:
		Capture and Kill	As implied, deer are captured and then dispatched either by mechanical or chemical means. Animals killed mechanically are suitable for human consumption, however those killed with injectible drugs are not.
		Sharpshooters (Bait & Shoot)	These are paid professionals with special training and licensure who utilize rifles with infrared scopes and noise suppressors typically at night in limited areas of town that would be safely suitable for such activity. Aside from the cost, another problem with this approach is that for most of the year, suburban deer do not usually travel far from the core area where they have enough food and cover. Residents who do not live relatively close to a cull zone are not likely to see much immediate impact on the deer activity near their home.
		Town Employees (typically Police)	Some residents have suggested that since we already pay the police, why not allow them to perform a cull. The answer to that is that our officers are already performing essential services for the community. Culling would take away from those tasks or result in overtime, neither of which is favorable.
		Qualified Volunteers	Qualified volunteers are the most economical option for performing a cull. Archery equipment could be used in many more areas of the town than sharpshooters could safely be deployed. Archery is the most common method used for suburban deer population control programs across the country.

Measures

Measures

The Deer Task Force understands that it would be unreasonable to recommend Management approaches without also recommending measures in order to determine if the Management Plan implementation is being successful. We propose that several of the following **measures be used in order to monitor success**:

- West Seneca Police Department Annual Report on Deer / Car Accidents Including GIS Data 2018-2021. Prepared by Erie Crime Analysis Center (**Attachment D** sample data – 6 Month/ Annual Report establishment plus GIS data)
- NYS Thruway Authority (**E.1**) and NYS Department of Transportation (**E.2**) Report of Animal Crashes Routes 90, 219, 400, and other West Seneca roads 2015-2021 (**Attachment E.1 and E.2** sample data - Annual Report establishment plus GIS data)
- West Seneca Highway Department Annual Report on Deer Calls – (**Attachment F** sample data - 6 Month/ Annual Report including GIS data)

Measures

- NYS DEC Reports on Deer complaints in Town of West Seneca – This data would require a FOIL request by the Town.
- Insurance Companies or AAA annual data report on deer caused incidents leading to insurance claims in West Seneca – Recommended that the Town requests this data.
- Annual survey of West Seneca Residents issued each year in November in order to track resident experience, implemented by Robin L. Foster, PhD, Assistant Professor, Animal Behavior, Ecology and Conservation, Canisius College (**Attachment C**)
- Annual Plant Life survey key contact Brittany Hernon (**Attachment G**)

Approach

Two Phase Plan

Recommend a problem-centered approach based on the mitigation of the four areas of greatest concern to Town residents:

- Deer/vehicle accidents,
- damage to yards,
- agricultural losses, and
- damage to ecosystems

Phase 1 – 18 months

Systems to be set up by Town

- Assign facilitation of data, education, and deer/ human interactions monitoring to a Town staff member.
- Budget a GIS Technician in the Computer Services Department and/or work with Robin Foster, PhD.
- Initiate grant-funding requests to financially support the West Seneca Deer Management Plan.
- Examine the possibility of establishing 4-6 distinct "Deer Habitat Zones" within West Seneca for the purpose of measuring the impact of various mitigation methods on resident perceptions in those areas.
- Consider thresholds for:
  - Damage to private property
  - Damage to crops
  - Acceptable number of deer/car collisions

Education – for the broad West Seneca public

Listening to the majority of town respondents to the survey, we recommend starting with education.

- Policy for handling complaints of residents routinely feeding deer, potentially causing a "hot spot" accident zone.
- Hire consultant or nonprofit partner to develop and provide education programs.
- Adopt a local ordinance to allow West Seneca Police to ticket residents for feeding deer in violation of NYS Law.
- Print and distribute an educational brochure Why deer should not be fed
  - Living with deer in a suburban environment - why they are so numerous
  - Tips on avoiding deer/car collisions
  - Tips on minimizing deer damage to residential/ornamental plants including a list of deterrents and plants not preferred by deer for residents and contractors to use.
  - What is the West Seneca Deer Management Plan?
- Design and put out signage in parks to discourage deer feeding.

Education – for the broad West Seneca public

- Develop an audio-visual presentation available to the community via a link on the town website.
- This plan and its supporting documents will be available for reference in the Town Library.
- Education campaign that is continuous. Small advisory articles and maps every week in the West Seneca Bee or Sun during the rut season and possibly once a month during the rest of the year.
- Develop a presentation format for introducing the Deer Management Plan to the community.
- Implement education efforts with the AAA and WNY State Nursery and Landscape Association.
- Videos that describe deer management methods shared and published by the Town and Library. (**Attachment H**)

Deer habitat zones – focused activities in problem zones

- Divide Town into Deer Habitat Zones for use in signage, monitoring and data collection, and changes in zoning laws.
- Consider the impacts of continued development in the Town on the deer population.
- Cut back roadside vegetation at rights-of-ways (State, County, Town) in habitat zones as identified by the database in the GIS data.
- In January 2023, **define thresholds** at which removal or population reduction in Deer Habitat Zones would be recommended. For example:
  - What is an acceptable number of accidents? What is the acceptable amount of damage?
  - What is the acceptable number of deer the habitat can support in each Deer Habitat Zone?
  - Define methods for achieving deer population size within these Deer Habitat Zones. (**PHASE 2)**

Phase 2

Reduction methods

Implement education and traffic management methods with the identification of Deer habitat Zones and traffic management methods for 18 months – July 2022 – January 2024. In January 2024, the Town will evaluate and determine whether or not to recommend removal of deer to reduce the population.

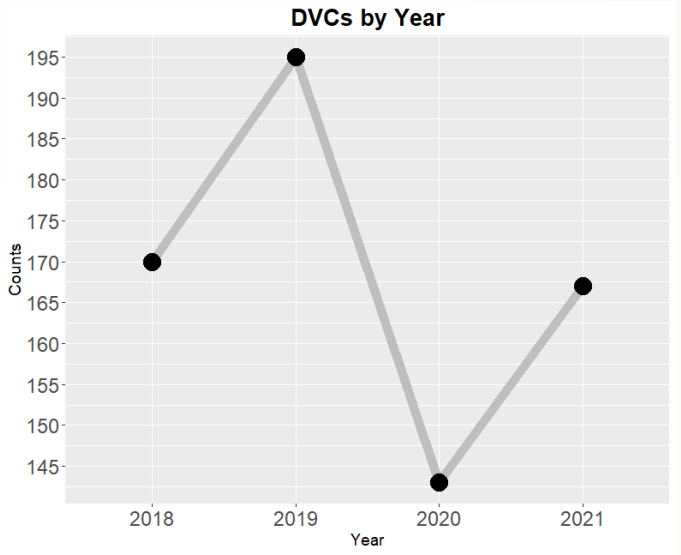
- In response to 2022 and 2023 data compared with previous years, the Town will define thresholds that will trigger such a recommendation.
- We recommend implementation of bait & shoot only in Deer Habitat Zones as identified by GIS gathered data.
- Define a cull program to be implemented by volunteers, with specific trainings required. Specific methodologies to be defined with guidance from the NYS Department of Environmental Conservation.
- Evaluate and monitor the NYS Department of Environmental Conservation nuisance permit program for effectiveness in Deer Habitat Zones.

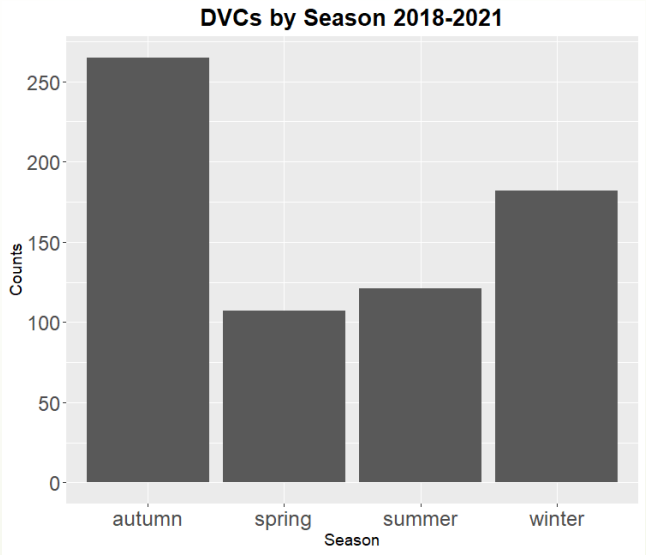
Timeline

- July 2022 – Review 6 month and annual data; implement education and plant management programs
- January 2023 – Review annual data comparisons; implement ordinance, GIS data review, traffic signage
- February 2023 – Begin establishing the methods for a deer cull program in collaboration with NYS Department of Environmental Conservation
- July 2023 – Review 6 month and annual data
- January 2024 – Review annual data and decide actions regarding Phase 1 and Phase 2 of Management

Thank you

6 DVC Graphs


DVCs by Year
Counts
195
190
185
180
175
170
165
160
155
150
145
2018
2019
2020
2021
Year


DVCs by Season 2018-2021
Counts
250
200
150
100
50
0
autumn
spring
summer
winter
Season