

Ramsey County Deer Management: The Human Dimension



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Executive Summary

Ramsey County Deer Management: The Human Dimension reviews the current state of deer overpopulation in Ramsey County, Minnesota. Furthermore, we provide strategies on how best to handle the deer overpopulation problem and how to implement a sustained deer management program for the county.

The most cost-effective, safest solution to limit deer overpopulation appears to be “harvesting”, either with cycles of sharpshooting or bow hunting. Because solutions to deer overpopulation are clearly delineated, both in terms of costs and effectiveness, the remaining concern is how to handle and explain the situation to the population in terms it can readily understand, while fostering interest and support for the long-term success of the project.

The objective of this plan is to enhance Ramsey County’s deer management program by creating a holistic management plan that overcomes the sociopolitical barriers dividing the county in order to make one feasible and sustainable program for the whole county.

A survey for each of the 19 cities in Ramsey County was conducted to identify the commonalities, current approaches, and funding sources leveraged for each deer management plan. The survey results highlight a wide-range of responses to deer management policy for the county, emphasizing the need for a unified, cost-savvy approach.

In addition, the survey was aimed at identifying the most common citizen-provided comments on deer management. Both the understanding and the leveraging of public sentiment are invaluable to framing our holistic management plan and its long-term success. To that effect, this report delivers a deer management “best practices” program for Ramsey County and its municipalities; a simple toolkit designed for ease of use.

The authors of this document were undergraduate and graduate students of the University of Minnesota studying Urban Forest Management: Managing Greenspaces for People (Spring 2012) led by Professor Gary Johnson. This project was conceived under the direction and consultation of the Ramsey County Parks and Recreation with the help of John Moriarty, Natural Resources Manager for Ramsey County.

[The F.A.Q. and Fact Sheet]... are *quality information that people in all walks of life can understand... Wildlife management is one of the least understood practices...*

- *Steve Dazenski*
Parks Supervisor,
City of Mounds View

Introduction

Deer management is often a complex issue that results from the confluence of the built and natural environments. These issues require multiple approaches to provide the most appropriate solution. How those issues are handled is a biological, political, economic, and social question that differs from community to community with many different stakeholders needing to compromise on a viable solution.

Nature and human development have collided, in some cases quite literally, in Ramsey County, Minnesota. Urban deer populations in Ramsey County are creating issues of property damage, car collisions, and injury to people. However, the main problem is neither deer nor people; the problem is the interactions of the two in a built landscape.

“In nature there are neither rewards nor punishments – there are consequences.” – Robert G. Ingersoll

General deer biology

The deer species in Minnesota is *Odocoileus virginianus*, better known as the white-tailed deer. White-tailed deer have a range which covers most of the United States, southern Canada, and into Central America and northern South America. In Minnesota, white-tailed deer habitat can be found throughout the state.



Figure 1 Range map of white-tailed deer

White-tailed deer stand on average 2 to 3 feet tall and are 4 to 6 feet in length. Male deer weigh 100 to 300 pounds and female weigh 85 to 130 pounds. During the summer months white-tailed deer have a reddish brown coat which changes to a grayish brown during the winter months (Minnesota Department of Natural Resources, 2012).

All deer have an excellent sense of smell and hearing which they use during mating, warning other deer of potential danger, or marking their territory. Deer also use a series of snorts, grunts, and bleats to communicate with other deer (Minnesota Department of Natural Resources, 2012).

Mating season in Minnesota for white-tailed deer can start as early as late October and can continue as late as early December. Female deer (doe) come to sexual maturity between one and two years of age. Each doe can produce one to three offspring usually in May or June of the following year. The gestation period for white-tailed deer is seven months. Fawns have white-spotted coats and nurse for three to four months. Female offspring will stay with the doe for up to two years, whereas male offspring typically leave after one year. Male deer grow and shed their antlers annually. Antlers are used in fights over mating territories (Minnesota Department of Natural Resources, 2012).

White-tailed deer are herbivores equipped with a four-chambered stomach that allow them to eat a wide variety of vegetation. Deer are known to graze on grasses, leaves, twigs, fruits, nuts, corn, alfalfa, lichens, fungi, and many other commonly planted ornamental plants (National Geographic, 2012). In Minnesota, white-tailed deer are known to favor white pine seedlings and northern white cedar or arborvitae.



Figure 2 Grazing deer

White-tailed deer can be seen during daylight hours, but are most active during dusk and dawn after feeding during the night. Natural deer predators include bobcats, mountain lions, coyotes, and lynx. Deer can sprint at speeds of up to 30 miles per hour, are capable of leaping 10 feet vertically, and horizontally jumping over 30 feet. Their lifespan is 6 to 14 years or age (National Geographic, 2012).

Carrying capacity is the maximum species population that can be supported indefinitely in a specific environment. Carrying capacities vary greatly not only by species, but also by the environment the species inhabits. The biological carrying capacity for white-tailed deer will vary based on available food sources and shelter. Some carrying capacity estimates are 1 deer for every 20 acres, habitat permitting. There are currently estimated between 900,000 and 1,000,000 deer in the state of Minnesota (USDA APHIS, 2012). However, in an urban area the carrying capacity will be considerably less.

<p><u>Carrying Capacity:</u></p> <p>1 deer per every 20 acres</p>

Description of Ramsey County

Ramsey County has a population of approximately 511,000 residents with a density of 3,281 residents per square mile. The following are the 19 communities which are either entirely or partially within Ramsey County:

- Arden Hills
- Blaine
- Falcon Heights
- Gem Lake
- Lauderdale
- Little Canada
- Maplewood
- Mounds View
- New Brighton
- North Oaks
- North St Paul
- Roseville
- Shoreview
- St Anthony
- St Paul
- Spring Lake Park
- Vadnais Heights
- White Bear Lake
- White Bear Lake Township



Figure 3 Ramsey county map

Ramsey County is approximately 156 square miles in area. It contains 9 regional parks, 5 regional trails, and 5 county parks. That said, there are many more parks and open spaces in Ramsey County that are not owned or managed by Ramsey County. There are 4,378 employees currently working for Ramsey County and only part of one person's time is allocated to deer management (Ramsey County, 2012).

Deer in Ramsey County

According to the data collected by the Minnesota Department of Transportation (MNDOT) and Ramsey County Public Works, more than 250 deer were involved in car accidents in 2010. The number is based on the reported number of deer collisions, which is likely lower than the actual number as not every incident is reported. In 2004, the Insurance Federation of Minnesota estimated each automobile and deer-related incident cost between \$2,000 - \$3,500-which means in Ramsey County alone, deer incidents had an economic cost of approximately \$500,000 to \$875,000.

Ramsey County performs a yearly aerial survey of deer within selected portions of the county during the winter months as the snow cover makes spotting deer easier. Aerial surveys are a relatively inexpensive and easy way to survey deer populations. As of the 2011 aerial survey, 1115 deer were counted. However, this is an underestimated number of deer currently in Ramsey County communities, as not all areas of the county are surveyed.

Once the numbers of deer are known, a deer reduction plan can be established. There are two methods of deer reduction currently used: an archery hunt coordinated with the help of Metro Bow Hunters, and a special hunt using contracted sharp shooters.

Survey of Ramsey County Communities

Table 1 Summary of city deer management survey

Community	Deer management contact	Are deer an issue in the community?	Common complaints regarding deer?	Do you have a deer policy?
Arden Hills	Michelle Olson	Deer are not currently an issue	❖ No specific complaints	<ul style="list-style-type: none"> ❖ No deer policy in place ❖ Arden Hills would be open to considering developing a deer management policy ❖ National Guard and Ramsey County do some hunts to control deer
Blaine	Jim Kappelhoff	Occasional road kills which are handled by the police department	❖ Complaints are handled by the police department.	<ul style="list-style-type: none"> ❖ Yes – An Anoka County deer policy ❖ Special permit limited bow hunting season within the city limits
North Saint Paul	Keith Stachowski	Deer are not currently an issue. They get very few calls.	<ul style="list-style-type: none"> ❖ No resident complaints in 14 years ❖ Southwood Park project leaders have mentioned a few deer are eating some of the vegetation and newly planted trees 	<ul style="list-style-type: none"> ❖ No deer policy in place ❖ Average one deer road kill every 5 years which is handled by the Community Services Department
Lauderdale	Heather Butkowski	Deer are not currently an issue	❖ None, turkeys are more of an issue	❖ No deer policy
Maplewood	Ginny Gainer	Yes - a few areas have an overpopulation of deer.	<ul style="list-style-type: none"> ❖ Too many deer gardens ❖ Vegetative damage ❖ Concern with potential auto accidents 	<ul style="list-style-type: none"> ❖ Deer ordinance - people not allowed to feed deer ❖ Specifics about what that means (bird feeders) ❖ People not allowed to interfere with deer management ❖ Also use deer repellants
Little Canada	Joel Hanson	They were. But recently less so because of the hunt. Annual hunt - contract through bull hunters	❖ Complaints of vegetative damage	❖ Yes there is a deer policy
Roseville	Lonnie Brokke	Yes, monitoring the deer population with Ramsey County. Deer counts have stayed constant.	❖ During gardening season complaints of vegetative destruction.	<ul style="list-style-type: none"> ❖ No deer policy ❖ Monitoring deer since 2004 ❖ Deer range is usually 15 – 51 ❖ The last 5 years, the average deer has been 45

Community	Deer management contact	Are deer an issue in the community?	Common complaints regarding deer?	Do you have a deer policy?
Spring Lake Park	Marian Rygwall	Deer are not currently an issue	❖ No complaints	❖ No
Shoreview	Terry Schwerm	Yes, in open spaces. Over population of deer.	<ul style="list-style-type: none"> ❖ None related to lymes disease ❖ Complaints of vegetative damage ❖ Deer roaming in to yards 	<ul style="list-style-type: none"> ❖ Our ordinance works in conjunction with Ramsey County ❖ Utilize archery through Metro Bow-hunters Resource Base (October-November) ❖ Discussed sharpshooting with council, but decided no because of costs ❖ Have done private hunts on apple orchard ❖ No feeding of wildlife! Sometimes hand out citations to those feeding wildlife.
Mounds View	Steve Dzenski	Yes, over population	<ul style="list-style-type: none"> ❖ Two incidents on city streets in the past year ❖ Most concern in centered around wooded areas near airport and nearby Ramsey Park ❖ No formal complaints 	<ul style="list-style-type: none"> ❖ Discourage feeding wildlife ❖ No other plan
Vadnais Heights	Joan Lenzmeier	Yes	<ul style="list-style-type: none"> ❖ Vegetation damage is the most common complaint ❖ Some calls regarding car crashes with deer 	<ul style="list-style-type: none"> ❖ Yes there is a deer policy. ❖ Deer Management Task Force ❖ Work with the DNR to get recommendations for the number of deer that should be in the area. ❖ Archery hunt every year to reduce deer populations ❖ Work with Ramsey County to support the aerial survey of deer
Gem Lake	No specific contact	Deer are not currently an issue	❖ Deer collisions, referred to the Ramsey County Sheriff or Pest Control	<ul style="list-style-type: none"> ❖ No policy in place ❖ Falls under their "No hunting" ordinance.
Falcon Heights	No specific contact	Deer are not currently an issue	❖ Not aware of complaints	<ul style="list-style-type: none"> ❖ No practice in place ❖ Falls under their "No hunting" ordinance.

Community	Deer management contact	Are deer an issue in the community?	Common complaints regarding deer?	Do you have a deer policy?
Saint Paul	Animal Control	Yes - Deer are a public nuisance where the deer exceed the carrying capacity. The Highwood neighborhood of Saint Paul harbors the densest deer population in the city.	<ul style="list-style-type: none"> ❖ The most common complaint is vegetation damage ❖ Personal safety children with respect to 'tame', wild deer ❖ Complaints regarding violating the city's wildlife feeding ordinance. 	<ul style="list-style-type: none"> ❖ Yes deer hunts are organized in parks ❖ Wildlife feeding ordinance http://www.stpaul.gov/index.aspx?NID=1038

Description of the plan

There are three basic components of any good natural resources management plan: monitoring, action, and education of the public. A deer management plan for the communities of Ramsey County is no different. In this section we will briefly describe the importance of each area.

Monitoring/Inventorying

In order to effectively manage a resource of any kind, natural or otherwise, the management entity must first have working knowledge of the size, location, and type of resource to be managed. Inventorying and monitoring a resource allows managers to effectively allocate time and money in areas. To manage deer, managers must first know where the deer are likely to be and approximately how many deer in each area.

While there are several ways to inventory and monitor deer, such as GPS tracking collars or manually identifying and counting deer, one of the most cost-effective ways to get a good approximation of the number of deer in an urban setting is through the use of aerial surveys. Aerial surveys of deer in Minnesota are typically done during the winter months of year where good snow cover and increased visibility through leafless trees provides ideal conditions for spotting deer. Helicopters are flown over an area at between 100 and 200 feet above ground level.

Helicopter aerial surveys provide a quick, accurate, and economically feasible method for counting deer in urban areas. The more area covered the better or more accurate the estimated number of deer will be. Once a baseline deer population is established, fluctuations in deer population from year to year can give managers a better understanding of the effects of management actions (i.e., whether the deer population increasing or decreasing).

Actions

There are many established methods for controlling deer populations: chemical birth control, trap and release, and even introducing natural predators. The method which has proven the most effective and least costly is **control through managed hunts**. In Ramsey County communities, two types of hunts are currently available: a special archery hunt and specially trained sharp shooters.

Through the Metro Bow Hunters Resource Base individual citizens can participate in urban archery hunts. During these hunts, hunters emphasize shooting antlerless deer in the hopes of reducing the number of does in the deer population. Deer populations are more quickly reduced when the number of does is reduced.

Sharp shooting in is another method which has proven successful. Specially-trained deer sharp shooters are hired to come into a community with the purpose of removing a large amount of deer at one time. They are trained to shoot as efficiently and effectively as possible to minimize

the possibility of the herd scattering, and to quickly dispatch deer and maintain safety to surrounding residents.

Frequently Asked Questions (F.A.Q)

How do we know how many deer are in Ramsey County?

The Ramsey County Parks and Recreation Department usually performs an annual aerial survey of selected communities within the county (depending upon weather conditions). Communities can opt in to this survey if they wish.

How many deer are in Ramsey County?

As of the 2011 deer survey, there was a minimum 1,115 deer in Ramsey County.

What are the most common complaints about deer in Ramsey County?

While one of the major concerns with deer in Ramsey County involves the potential for auto collisions, the most common concerns involve vegetative destruction on public and/or private property. This is especially exacerbated during the spring planting season, when deer can be quite common in gardens, wooded areas, and even in backyards! Many residents have also voiced concern about the large presence of deer on their property during the warmer seasons.

Is it safe to approach deer?

Although deer may look cute, they actually are quite skittish. Never corner a deer - they are wild animals and are unpredictable.

Should I feed deer?

Please do not feed the deer. This will only encourage them to continue to seek food on your property, which may lead to continued destruction and/or nuisance. This could also cause deer to lose their natural fear of humans, which could be dangerous to both the animals and your community. In addition, many communities have ordinances against feeding deer (e.g., Saint Paul, Maplewood, Shoreview).

Do deer carry disease that put my family at risk?

Deer can be a host for ticks that may carry Lyme Disease. Deer themselves do not cause Lyme Disease. However, it is best to exercise caution and never touch an immobile or dead deer.

How do I keep deer out of my backyard?

Fencing is one of the most effective ways known to keep deer out of yards and gardens. Special permits may be required from your community in order to erect fences. However, fences are not guaranteed to keep deer out of yards.

Is there a policy in place for deer management?

Deer management policies vary from community to community. Ramsey County has special (by permit) archery hunts in selected parks (9 different parks) in order to manage the urban deer population. Participants need to sign an ethics pledge, take a safety class, and take an accuracy test. Hunting without permission in Ramsey County Parks is prohibited. For more information, contact the Ramsey County Parks and Recreation Department. Several cities allow hunting on private property by permit. Contact your city to check on ordinances.

How do I avoid hitting deer with my car?

The best way to minimize deer-auto collisions is to pay attention and drive at safe speeds. Most deer vehicle crashes occur during dawn and dusk, when visibility is less than ideal. Watch the shoulder for deer silhouettes and the reflection of the eyes of deer. If you see a deer, honk your horn in order to startle the deer away from the road (they should flee away from the noise). Deer frequently travel in groups - if you see one, keep a lookout for more. Don't count on deer whistles and deer deterrents to keep deer off the roads—research has shown that they are ineffective at repelling deer. Never swerve into oncoming traffic to avoid a deer collision.

Did you know?

Minnesota is in the top 10 states for the most deer/car collisions in the nation!

Who should I contact if I have a question about deer in my community?

Deer policies vary from community to community check your cities website for information regarding deer or wildlife policies.

Deer Fact sheet

Basic Deer Biology

- Diet
 - ❖ Eats green plants in spring and summer; corn, acorns, nuts in fall; buds and twigs of woody plants and conifers (especially white cedar and white pine) in winter.
 - ❖ White-tailed deer are ruminants, meaning that they have a four-chambered stomach.
- Reproduction
 - ❖ Mate in November or December.
 - ❖ Does have 1-3 fawns in the spring.
 - Fawns usually hidden in tall grass while doe feeds.
 - ❖ Fawns normally stay with mother for one year.
 - ❖ Bucks re-grow antlers every year.
 - Antlers shed in late winter after breeding season.
 - When new ones grow in spring, they are covered with “velvet” which supplies nutrients to the growing bone.
- Predators
 - ❖ Coyote, dogs (among others such as gray wolf, black bear, and lynx which are usually not present in urban environments).
- Other Facts
 - ❖ Can run up to 30 miles per hour, leap as high as 10 feet and as far as 30 feet in a single bound; they are also good swimmers.
 - ❖ When alarmed, a deer will raise its tail to show the white underside as a flag. This signals other deer to danger in the area.

Why are deer overpopulated?

Deer thrive on edge habitat. Edge habitats are transitional areas between forests and open spaces. Humans have greatly increased the acreage of edge habitat. Croplands, parks, and urban/suburban landscaping are convenient year-round food sources for deer. Many of these areas were formerly forests or fields. In addition, fertilized vegetation can be more nutrient-rich than vegetation in the forest.

At the same time, landscape changes have reduced the numbers of natural predators of deer, such as wolves and mountain lions.

Problems of Overpopulation

Minnesota is the 10th state in automobile collision risks from deer. About 2,500 deer collisions are reported each year (Minnesota Department of Public Safety, 2011). November is the worst month for collisions with motorists due to the mating season and other factors like hunting.

High deer numbers are changing the composition of forests. Plants that deer prefer (e.g., cedar, white pine, aspen, and dogwoods) are being eaten so much that they can no longer grow to maturity--thus, deer reduce the diversity of plants in the forest, which in turn affects other forest animals.

Buck rubbings in the fall can also injure trees. In August, male deer will rub their antlers against the bark of a tree to get rid of the dead velvet. This can scrape the bark off of the tree which interrupts the tree's transfer of nutrients to the leaves (Gaston, Columbia, Martin, & Sharpe, 2002).

Other Options for Controlling Deer Populations *(Hunting and sharpshooting are the main options)*

Relocation

Relocating deer is costly, impractical, and ineffective. Relocation is also very stressful to deer, and high mortality rates are associated with relocation. The spread of deer diseases is another concern. **The Minnesota Department of Natural Resources does not allow this technique.**

Contraceptives/Sterilization

While effective for the individual deer, contraceptives are not an efficient means of overall deer population control because they must be applied to nearly every female in the herd. A booster would also have to be applied annually. This process is estimated to cost \$800-\$1000 per doe, with \$200-\$300 per year maintenance. **The Minnesota Department of Natural Resources does not allow this technique.**

Introducing Predators

Reintroducing predators would not be feasible in an urban setting for three reasons:

- ❖ There is no suitable habitat for deer predators.
- ❖ There is a potential for these predators to kill non-deer targets.
- ❖ Close proximity to humans would negatively impact public safety.

Options for Repelling Deer from Your Property

- ❖ Organic repellents are marketed across the country, with anecdotal evidence to their efficacy: compounds using garlic, rotten eggs, blood-meal, and capsaicin (the heat in hot peppers) appear to be the most effective.
- ❖ Adequate fences around property or vegetation.
- ❖ Presence of "predatory" animals: e.g., dogs.

Deer and Plants

Plants Deer Avoid

- ❖ Barberry (**invasive – should not be planted**)
- ❖ Common Buckthorn (**invasive – should not be planted**)
- ❖ Russian olive (**invasive – should not be planted**)
- ❖ Anthony Waterer spirea
- ❖ Honeysuckle (**invasive – should not be planted**)
- ❖ Lilac
- ❖ Nannyberry Viburnum
- ❖ Potentilla
- ❖ Ural Falsespirea

Plants Deer Will Sometimes Eat

- | | |
|-------------------------------|---------------------------|
| ❖ American Highbush Cranberry | ❖ Roses |
| ❖ Bush Honeysuckle/Diervilla | ❖ Spruce |
| ❖ Douglas Fir | ❖ Sumac |
| ❖ Forsythia | ❖ Wayfaring Tree Viburnum |
| ❖ Hazelnut | ❖ White Fir |
| ❖ Hemlock | ❖ White pine |
| ❖ Junipers | ❖ Young fruit trees |
| ❖ Maples | |
| ❖ Mountain ash | |

Plants Deer Prefer

- | | |
|--------------------------|-------------------|
| ❖ Apples | ❖ Euonymus |
| ❖ Arborvitae/White cedar | ❖ Garden lilies |
| ❖ Arrowwood Viburnum | ❖ Hostas |
| ❖ Birch | ❖ Hydrangea |
| ❖ Daylilies | ❖ Impatiens |
| ❖ Dogwood | ❖ Linden/basswood |
| | ❖ Yews |

For More Information on Deer Management:

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