

BURNSVILLE DEER MANAGEMENT PROGRAM

Prepared by: City of Burnsville Natural Resources Staff

*2020-2021
Program Year
Annual Report*

Introduction

The City of Burnsville (City) prepared a Natural Resources Master Plan in 1999 which identified the need for a citywide deer management program, especially for areas where woodland restoration or regeneration is a high priority objective. This, along with concerns regarding the biological integrity of the City's natural areas, increasing complaints about nuisance deer, car/deer crashes, and concern over the long-term health of the deer herd, initiated the preparation of a deer management program for Burnsville.

The Burnsville Deer Management Program (Program) was adopted in September 2001 to minimize conflicts between deer, habitat, and residents. The Program provided recommendations in four key areas: education, monitoring, population control, and deer feeding issues. The Program runs from April 1st of one year to March 31st of the following year. This schedule allows Program activities (archery hunts, aerial counts, sharpshooting removals, etc.) to coincide with the appropriate seasons (aerial counts completed with snow cover, archery hunts during the deer rut, sharpshooting completed during the winter to minimize the impact on residents who use the parks).

This annual report has been prepared to document the Program activities during the 2020-2021 Program Year. This report also provides recommendations for the 2021-2022 Program year.

Education

The Program made a number of recommendations regarding education – including use of the City's website, City's newsletter, and a neighborhood workshop. The intent of the education component is to disseminate information to the community regarding the Program, feeding ban, and other deer related topics, and to provide residents with tools to cope with deer on their property.

Program information is available on the City's website (www.burnsvillemn.gov) and can be found in the Wildlife Section of the City's Natural Resources Department webpage. Information regarding the Program and feeding ban is periodically included in the City's newsletter, the *Burnsville Bulletin*.

Monitoring

Annually monitoring the deer population, car/deer crashes, depredation complaints, and habitat diversity are all key components to managing the deer population within the city. The following section presents the monitoring data collected during 2020 through early 2021.

Aerial Counts

Typically, an aerial deer survey is conducted every winter to count the deer population within Burnsville. Due to budget limitations, an aerial survey was not conducted during winter of 2020-2021. In lieu of an aerial count, a winter population estimate for the 2021-2022 program year will be generated based on the estimated fall 2020 population adjusted to account for the deer population control efforts and other documented deer removals during the past program year (Table 1).

Table 1: February 2021 Population Estimation

2020 Estimated Population (November) ^a	Actual Removals in 2020-2021 Program Year ^b		Projected February 2021 Population ^c
300 deer	Crashes	40	228 deer
	Sharpshooting	16	
	Fetuses removed in sharpshooting harvest	8	
	Special hunts (Murphy Hanrehan Park and Kelleher)	8	
	Total removed	72	

^a As reported in 2019-2020 Annual Report.

^b Further information on population control efforts presented later in this report.

^c Based on 2020 projected population minus deer removed through population control efforts.

The projected population for November 2020 was 300 deer. After subtracting deer removed through sharpshooting or special archery hunts, along with deer removed through known deer/vehicle collisions in 2020, the updated projected population for February 2021 is 228 deer. This population count will be used to develop the November 2021 projection given that an aerial count was not conducted during winter of 2020-2021. **Table 2** shows the comparison of the aerial count data per management unit from 2006 through 2017.

Table 2: Comparison of Annual Aerial Count Data for 2011 through 2021

Units	Aerial Counts										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
NW	43	56	14	70	45	1	1	64	12	50	67
WC	4	0	22	7	17	0	0	17	6	0	0
SW	87	98	83	53	49	29	30	70	32	67	68
NE	95	62	72	62	37	12	16	83	34	62	73
EC	13	8	27	20	12	14	12	39	30	19	12
SE	0	0 ^b	8	4	12	0	0	40	21	23	10
Total	242	221^{ab}	226^c	216^c	172^c	56^c	59^{ac}	313^c	135^c	221^c	228^{ab}

^a Represents a population estimation based on previous year's count (as no aerial count was completed due to poor snow conditions).

^b Based on population and actual removal; total reflects 3 deer removed from Southeast Management Unit in 2012 and 2 deer removed from West Central Unit in 2021.

^c Aerial count includes incidentally observed deer within 0.25 miles of the city limits. Deer observed as a part of a systematic search of areas outside the City were not included.

From the beginning of the deer management program through 2018, City staff conducted the aerial deer surveys. Since 2019, Three Rivers Park District staff have conducted surveys for the City. The survey methods used by City staff and the Three Rivers Park District staff are similar and subject to the same limitations. Large differences in aerial deer counts from year to year are often the result of a combination of variables, such as observational bias and the distribution of the local herd at the time the counts were undertaken. In some years, the deer herd may temporarily concentrate in areas adjacent to but outside of the City limits. Combined with other factors such as weather severity and snow depths, these seasonal

movements can impact the aerial deer count numbers. The aerial survey is intended to represent the minimum number of deer present, not provide an exact count of the deer population within the City. The aerial count provides the baseline data from which management decisions can be made.

In some years, other agencies like the U.S. Fish and Wildlife Service (USFWS) conduct deer surveys in areas adjacent to Burnsville. This year, along with completing the aerial deer survey for the City, the Park District conducted surveys at Murphy Hanrehan Park, the City of Bloomington portion of the Minnesota River Valley, and within Fort Snelling Park in Eagan.

Crash Data

The total minimum number of car/deer crashes for each year is determined by combining Police Department records with non-overlapping records from the City's animal control contractor, who retrieves deer carcasses reported along roadways some are from incidents that the Police responded to, others are not). The total deer/car crashes is considered a minimum number due to the likelihood that some accidents go unreported.

In 2020, the total minimum number of car/deer crashes was 40. Thirty car/deer crashes were reported by the City Police Department. The animal control contractor removed 20 deer carcasses from the city, 10 of which appear to be unique and not overlapping with police department crash reports. A summary of the 2020 crash data by management unit is provided in Table 3. Figure 1 shows the distribution of car/deer crashes and/or deer carcass removals within the City.

Table 3: Comparison of Deer/Car Crash Data for 2011 through 2020

Units	Crashes ^a									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
NW	1	1	3	1	0	0	0	3	1	1
WC	5	3	8	11	4	2	1	8	5	2
SW	7	14	9	10	13	9	11	14	14	15
NE	4	4	1	4	4	5	3	6	5	3
EC	9	16	9	6	7	6	7	11	17	8
SE	3	7	2	9	2	12	5	12	13	11
Total	29	45	32	41	30+2^b=32	34+1^b =35^c	27^c	54^c	55^c	40^c

^a Crash numbers include reported crashes and non-overlapping carcass removals.

^b Indicates carcass collection data that could not be identified by location due to incomplete information.

^c Indicates year where State of Minnesota Deer/Car Crash data was not available. State data typically represents a very small portion of the total crash reports in Burnsville.

Monitoring Report Forms

The City created a Deer Monitoring Report Form in October 2001 to provide supplemental information on the deer population. The monitoring form includes four categories for reporting information. The categories are deer depredation (i.e., damage to vegetation), general observation of deer presence and behavior, deer carcass reports or vehicle/deer crash reports, and "other." The "other" category has included past comments regarding the Program, feeding ban violations, offers to provide hunting access, and miscellaneous information related to deer management.

In 2012, the City made the reporting forms available electronically, meaning residents no longer need to come into the City office to fill out a form. The forms are now submitted electronically to City staff through forms available on the City website. City staff also submit monitoring reports on behalf of residents who call or email staff directly with general observations or complaints related to deer.

In 2020-2021, three reports were submitted to or recorded by the City. Two reports were from the East Central Management Unit and one report was from the Southeast Management Unit. Two reports were of landscaping damage due to deer. One report was a general observation. **Table 4** provides a comparison of the total number of depredation complaints or observations from 2011 through early 2021 per management unit.

Table 4: Comparison of Depredation Complaints for 2011 through 2021

Units	Depredation Complaints and Observations									
	2011	2012	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
NW	0	0	0	2	0	0	0	0	0	0
WC	0	1	1	0	0	0	0	0	0	0
SW	0	0	0	0	1	0	0	0	0	0
NE	0	1	3	0	0	0	0	0	0	0
EC	1	0	2	0	2	1	0	2	5	2
SE	0	0	1	0	1	0	2	0	2	1
Total	1	2	7	2	4	1	2	2	7	3

Exclosure Data

Since 2001, The City has conducted a demonstration study on deer impacts to vegetation in Terrace Oaks Park. To look at impacts by deer, some study plots are fenced (exclosed) to prevent deer browse and other study plots are unfenced (non-exclosed) so deer can browse freely. It’s important to note that the deer population was being managed throughout the course of the study. So although the population varied from year to year, the study results do not represent the potential deer impacts that might occur if the deer population was completely unmanaged.

In an analysis of the survey results from 2001 through 2015, the City found that deer were impacting vegetation at the park. The average yearly percent cover of native understory plant species was much higher in the fenced plots versus the unfenced plots, indicating that deer browse may have reduced the native vegetative cover in unfenced plots. Specific plant species also showed differences between fenced and unfenced plots, such as the native gooseberry shrub which showed higher yearly percent cover in the fenced plots compared to the unfenced plots. This may indicate deer are preferentially feeding on some plant species more than others. Plant species preferred by deer are more negatively impacted than those that are less preferred.

During the 2016-2017 Program year, the City modified the study to look at additional factors that impact vegetation growth at the park. An active savanna restoration project has been initiated adjacent to the current study plots. This restoration has involved the removal of fire intolerant weedy tree species (e.g. - box elder, elm), the introduction of controlled burns and the supplemental seeding of a diverse mixture of native wildflowers and grasses. These restoration practices were expanded to the study plots so they can be used to test the impacts of various restoration techniques (e.g. - controlled burns, supplemental native seeding), as well as to continue to test the impacts of deer.

In winter of 2015-2016, fire intolerant trees were removed from the vicinity of the study plots. In fall of 2017, a controlled burn and supplemental native seeding occurred within study plots that have been selected for those treatments. This has been the fourth year of data collection for the re-designed study. The findings so far have been similar to previous results. In general, more overall native plant cover is still being observed in the fenced plots when compared to the unfenced plots. Certain plant species are still more prevalent in unfenced plots. Growth of native tree saplings has increased significantly since fire intolerant trees were removed from the vicinity of the plots. No major difference in woody sapling growth was noticed between fenced and unfenced plots. This may indicate that while deer are impacting tree sapling growth at Terrace Oaks Park, available light may be more of a limiting factor in tree regeneration in some situations than deer browse. As more data is collected over time, the study plots will allow greater insight into how deer and other management activities impact active habitat restoration projects.

Population Control

The Program approved two primary population control strategies: archery hunting and sharpshooting. Based on the projected population for November 2020 (as presented in the 2019-2020 Annual Report), 86-146 deer were recommended to be removed through a combination of methods during fall/winter 2020-2021.

Archery Hunts Organized by the City

In an effort to make the archery hunting program as effective as possible, changes to the City's firearms ordinance were made in 2003 as suggested in the adopted Program. This ordinance modification allows opportunity for more private landowners in the southwestern portion of the city to archery hunt on their property per current DNR hunting regulations. The ordinance states that the discharge of a bow must be 200 feet from a property line, rather than the previous 500 feet.

In the summer of 2012, the City Council adopted the ordinance amending Title 6, Chapter 4 of the Burnsville City Code Establishing a Permit System for Archery Hunting adjacent to City Parks. The ordinance states that "the City Manager may authorize hunting on or within two hundred feet (200') of city park property by permit issued under Section 8-6-4 of this Code, in conjunction with special hunting seasons in closed park areas as specified in paragraph (J), with additional conditions in the discretion of the Manager." This amendment to the City Code was done to encourage landowners with property adjoining to a park with special hunting seasons to participate alongside the hunt. In 2020, one resident applied for a special hunting permit.

At this time, neither the City nor DNR has a method of tracking the number of deer taken within the city by hunters on private property. During a joint informational meeting held in 2012 with the residents of the Southwest Management Unit, the City encouraged hunters in the area to report number of deer taken so the City could track harvest on private properties. For the 2020-2021 Program year, City staff received no feedback from landowners or hunters on private property.

In the fall of 2020, the City sponsored an archery deer hunt on public land within Kelleher Park. The Burnsville archery hunts, coordinated by the Minnesota Bowhunters Resource Base, were conducted over three periods between September 18 and November 21. A total of 5 deer were harvested from the park, as shown in Table 5. Of the 5 deer harvested, 2 were female (adults) and 4 were male (3 adults and 1 juvenile).

Archery Hunts Organized by Other Jurisdictions

Three Rivers Park District held a Special Permit Archery Hunt at Murphy-Hanrehan Park Reserve in fall of 2020. The hunt was conducted October 16-18 and November 20-22 and harvested 34 deer. Much of the regional park is located outside the Burnsville city limits, thus it is likely that only a small portion of the deer taken during the hunt were within the City. For recording purposes, it is estimated that approximately 10% of the Murphy-Hanrehan deer harvest occurred within the Burnsville city limits (3 deer).

Table 5: 2020 Burnsville Archery Hunts

Location	Hunt Period	Adult Female	Female Yearling	Adult Male	Male Yearling	Total
Kelleher Park (Archery Hunt)	9/18 – 9/19	1	0	0	0	1
	10/15 – 10/17	0	0	2	1	3
	11/14 - 11/16	0	0	1	0	1
Murphy-Hanrehan Regional Park (Archery Hunt)	10/16-10/18	2 ^{ab}	0	0 ^{ab}	0	2 ^b
	11/20-11/22	1 ^{ab}	0	0 ^{ab}	0	1 ^b
Total	---	4	0	3	1	8

- ^a Sex and age of deer were based on information provided by Three Rivers Park District (percentage of bucks vs. does taken within the entire park).
- ^b Based on estimate that 10 percent of the Three Rivers Park District harvest occurred within the Burnsville portion of the park. Specific harvest locations are not recorded during the hunt therefore precise data on harvest quantity within City of Burnsville limits is not available.

Winter 2020-2021 Sharpshooting

During some winters, the City of Burnsville Police Department conducts sharpshooting to reduce the deer population, based on goals set by the annual report. During winter 2020-2021, sharpshooting occurred in the East Central, Northeast, and Southeast Management Units. Three deer were removed from the East Central Unit, eight deer were removed from the Northeast Unit, and five deer were removed from the Southeast Unit for a total of 16 deer. It was noted that 8 fetuses were removed along with the harvested does. Due to budget limitations, sharpshooting was suspended after 16 deer had been harvested. No sharpshooting was conducted in the Northwest Unit because the City does not have any accessible property in that area where sharpshooting could be implemented.

Population Control Efforts by Other Jurisdictions

The USFWS periodically performs deer removals within the Minnesota Valley National Wildlife Refuge. No deer removals were conducted in the Burnsville portion of the refuge in 2020.

Population Control Summary

The total number of deer removed from each management unit within the City by archery hunting and sharpshooting is summarized in Table 6, along with the target removal goals that were established for the past program year.

Table 6: 2020/2021 Removal Results

Units	Recommended Fall/Winter 2020/2021 Harvest^a	Fall 2020 Archery Hunting	Winter 2020/2021 Sharpshooting	Total Deer Removed in Fall/Winter 2020/2021
NW	49-57 (No Access)	0	0	0
WC	0	0	0	0
SW	49-66	8	0	8
NE	32-53	0	8	8
EC	6-14	0	3	3
SE	24-27	0	5	5
Total	160-217	8	16 + 8 fetuses	24

^a Based on adjusted 2020 deer counts, projected population for November 2020, and program goal of 15-25 deer per square mile of preferred habitat (as presented in the 2019-2020 Annual Report).

Feeding Ban

A feeding ban ordinance was approved by the City on September 17, 2001. The purpose of the feeding ban is to discourage residents from placing corn or other grains in amounts and locations that would attract deer to the area. One violation to the feeding ban ordinance was reported and followed up on in 2020-2021. Violations are followed up on with a notification letter and further enforcement action if needed. Table 7 identifies the number of feeding ban violations per program year.

Table 7. Feeding Ban Violations for Program years 2011 through 2020-2021

Program Year	Feeding Ban Violations
2011	1
2012-2013	0
2013-2014	2
2014-2015	0
2015-2016	0
2016-2017	2
2017-2018	1
2018-2019	2
2019-2020	2
2020-2021	1

Recommendations for Program Year 2021-2022

Education

The city has hosted deer related workshops in the past; however, based on low workshop turnout in both 2002 and 2003, no further workshops are planned. Deer management information from past workshops can be provided to individual citizens as requested. It is recommended that the City continue to provide information via the website and the *Burnsville Bulletin*. Information regarding the City's monitoring report program and feeding ban, including reasons for the ban, should be a priority.

Monitoring

It is recommended to continue collecting annual aerial counts, crash data, exclosure data monitoring report forms, and to continue generating and exhibiting annual reports. It is also recommended that carcass removal data continue to be collected from the City's animal control contractor on an annual basis. The carcass removal data helps identify car/deer crashes, which are typically under-reported.

The availability of the monitoring report form should be periodically highlighted in the *Burnsville Bulletin* in order to promote resident feedback on the Program and to encourage submission of deer observations. This information is helpful when reviewing aerial counts and crash data. It can also potentially aid in identifying additional access points for sharpshooters during population control efforts.

Population Control

Based on the population estimate for February 2021 (Table 1), a population projection was calculated for November 2021. This population projection accounts for typical reproduction and mortality factors and is similar to methods used by the DNR, and was then used to establish a 2021-2022 Program removal goal. The DNR is currently evaluating the City's deer population projection and removal goals for the 2021-2022 Program year.

Table 8 provides a breakdown (by management unit) of the Program's ongoing deer management density goals, the 2021 estimated population count, the projected 2021 population and the minimum removal recommendations for the 2021-2022 Program.

Table 8: Program Year 2021-2022 Population Control Recommendations

Units	Management Program Goal (15-25 deer/mi ²)	2021 Estimated Population Count (February)	Projected 2021 Population (November)	Fall/Winter 2021-2022 Harvest Range ^a	Recommended Minimum Fall/Winter 2021-2022 Harvest
NW	11-19	67	91	72-80	NO ACCESS
WC	3-6	0	0	0	0
SW	25-42	68	92	50-67	50
NE	31-52	73	99	47-68	47
EC	12-20	12	16	0-4	0
SE	4-7	10	14	7-10	7
Total	86-146	228^b	312	176-229	104

^a Based on the projected population for November 2020, and the program goal of 15-25 deer per square mile of preferred habitat.

^b Based on population and actual removal; total reflects 2 deer removed from West Central Unit via vehicle collisions.

It is recommended that the Program's ongoing archery hunting strategy be continued in the fall of 2021. The focus should be in the Southwest Unit. The guidelines and polices of the hunts should be refined based on the observations and suggestions made during the 2020 archery hunts. The goal for fall/winter 2021-2022 should be to harvest up to 50 deer in the Southwest Management Unit. Archery hunting

activities in the Southwest Management Unit should continue to be coordinated with the Three Rivers Park District.

It is also recommended that sharpshooting be conducted utilizing the Burnsville Police Department in the East Central, Northeast and Southeast Units. Due to no available access in the Northwest Unit, sharpshooting will not occur in this area. Between archery hunting and sharpshooting, the Program goal for fall/winter 2021-2022 should be to harvest a minimum of 104 deer. An additional 45 deer could be removed if funding allows. The additional harvest should be implemented as needed and will not exceed the recommended maximum removal specified for each unit. Although the City will seek to meet the minimum harvest levels in each unit, this goal may be difficult to reach due to a limited number of sites where sharpshooting can be conducted.

Feeding Ban

No changes to the deer feeding ban are recommended. It is recommended to continue to provide information to the public regarding the ban and continue to monitor and follow-up on feeding complaints as they occur.