BURNSVILLE DEER MANAGEMENT PROGRAM

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2019-2020 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 2019-2020 Program Year. This report also provides recommendations for the 2020-2021 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 with 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 2019 through early 2020.

Aerial Counts

Typically, an aerial deer survey is conducted every winter to count the deer population within Burnsville. This survey requires adequate snow depth to maximize deer visibility. Prior to 2018, the survey was conducted by City staff. Due to staff limitations, the City partnered with Three Rivers Park District (Park District) to complete the survey again this year. In addition to flying aerial deer surveys for their own park system, the wildlife department of the Park District also assists cities throughout the metro area with their deer population counts. The Park District's survey method was similar to the method used for the aerial survey in past years.

Park District staff conducted the Burnsville deer survey on February 14, 2020. There were 204 deer counted within the survey area. The approximate locations of deer seen during the survey are mapped in **Figure 1**. **Table 1** shows a comparison of the aerial count data per management unit from 2010 through early 2020.

Table 1: Comparison of Annual Aerial Count Data for 2010 through 2020

Units	Aerial Counts										
	2010	2011	2012[a]	2013	2014	2015	2016	2017	2018	2019	2020
NW	26	43	56	14	70	45	1	1	64	12	50
WC	12	4	0	22	7	17	0	0	17	6	0
SW	94	87	98	83	53	49	29	30	70	32	67
NE	127	95	62	72	62	37	12	16	83	34	62
EC	2	13	8	27	20	12	14	12	39	30	19
SE	0	0	0[b]	8	4	12	0	0	40	21	23
Total	**261**	**242**	**221[ab]**	**226[c]**	**216[c]**	**172[c]**	**56[c]**	**59[ac]**	**313[c]**	**135[c]**	**221[c]**

[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.
[c] Aerial count including 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.

Prior to this past survey year, the City has applied the same aerial survey methodology since the program began. The survey method used by Park District this year is similar to the City's past survey method and is still 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 records with non-overlapping animal control carcass pickups. The total is considered the minimum number of crashes that occurred due to the likelihood that some car/deer collisions go unreported. In 2019, the total minimum number of car/deer crashes was 55. A summary of the 2019 crash data by management unit is provided in **Table 2**. **Figure 2** shows the distribution of car/deer crashes and/or deer carcass removals within the City.

The minimum car/deer crash total came from several sources. There were 43 car/deer crashes reported by the City Police Department in 2019. In addition to Police Department records, data from the City's animal control contractor was also collected. This data documents each deer carcass retrieved during 2019. The animal control contractor data included 21 deer carcasses removed from the city of which 12 appear to be unique and not overlapping with police department crash reports.

Table 2: Comparison of Deer/Car Crash Data for 2010 through 2019

Units	Crashes[a]									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NW	4	1	1	3	1	0	0	0	3	1
WC	4	5	3	8	11	4	2	1	8	5
SW	10	7	14	9	10	13	9	11	14	14
NE	7	4	4	1	4	4	5	3	6	5
EC	9	9	16	9	6	7	6	7	11	17
SE	10	3	7	2	9	2	12	5	12	13
Total	**44+1[b] =45**	**29**	**45**	**32**	**41**	**30+2[b] =32**	**34+1[b] =35[c]**	**27[c]**	**54[c]**	**55[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.

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 an "other" category. 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 2019-2020, seven reports were submitted to or recorded by the City. Five reports were from the East Central Management Unit and two reports were from the Southeast Management Unit. Six of the reports were of landscaping damage due to deer. One report was a general observation. **Table 3** provides a comparison of the total number of depredation complaints or observations from 2010 through early 2020 per management unit.

Table 3: Comparison of Depredation Complaints for 2010 through 2020

Units	Depredation Complaints and Observations									
	2010	2011	2012	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
NW	0	0	0	0	2	0	0	0	0	0
WC	0	0	1	1	0	0	0	0	0	0
SW	0	0	0	0	0	1	0	0	0	0
NE	0	0	1	3	0	0	0	0	0	0
EC	0	1	0	2	0	2	1	0	2	5
SE	0	0	0	1	0	1	0	2	0	2
Total	**0**	**1**	**2**	**7**	**2**	**4**	**1**	**2**	**2**	**7**

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. In an analysis of the survey results from 2001 through 2015, the City found that deer were having an impact on the 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. Gooseberry, for one, 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. As this was only the third year of data collection for the re-designed study, it is not yet possible to present any findings. As more data is collected over time, the study plots will allow greater insight into how deer 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 2019 (as presented in the 2018-2019 Annual Report), 47-99 deer were recommended to be removed through a combination of methods during fall/winter 2019-2020.

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 2019, 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 2019-2020 Program year, City staff received no feedback from landowners or hunters on private property.

In the fall of 2019, 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 four periods between September 19 and November 16. A total of 11 deer were harvested from the

park, as shown in **Table 4**. Of the 11 deer harvested, 5 were female (2 adults, 3 juvenile) and 6 were male (6 adults and 0 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 2019. The hunt was conducted October 11-13 and November 22-24 and harvested 37 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 (4 deer).

Table 4: 2019 Burnsville Archery Hunts

Location	Hunt Period	Adult Female	Female Yearling	Adult Male	Male Yearling	Total
Kelleher Park (Archery hunts)	9/19 - 9/21	0	2	0	0	2
	10/17 - 10/19	1	1	0	0	2
	10/31 - 11/02	1	0	4	0	5
	11/14 - 11/16	0	0	2	0	2
Murphy-Hanrehan Regional Park (Archery Hunt)	10/11-10/13	1 [ab]	0	1 [ab]	0	2[b]
	11/22-11/24	1 [ab]	0	1 [ab]	0	2[a]
Total	**---**	**4**	**3**	**8**	**0**	**15**

[a] Sex and age of deer was 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 District harvest occurred within the Burnsville portion of the park. Specific harvest locations are not recorded during the hunt therefore data on harvest within City of Burnsville limits is not available.

Winter 2019-2020 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 2019-2020, sharpshooting occurred in the East Central, Northeast, and Southeast Management Unit. Five deer were removed from the East Central Unit, seven deer were removed from the Northeast Unit, and eight deer were removed from the Southeast Unit for a total of 20 deer.

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 2019.

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 5**, along with the target removal goals that were established for the past program year.

Table 5: 2019/2020 Removal Results

Units	Recommended Fall/Winter 2019/2020 Harvest[a]	Fall 2019 Archery Hunting	Winter 2019/2020 Sharpshooting	Total Deer Removed in Fall/Winter 2019/2020
NW	0-5 (No Access)	0	0	0
WC	2-5	0	0	0
SW	2-19	15	0	15
NE	0-16	0	7	7
EC	21-29	0	5	5
SE	22-25	0	8	8
Total	**47-99**	**15**	**20**	**35**

[a] Based on adjusted 2019 deer counts, projected population for November 2019, and program goal of 15-25 deer per square mile of preferred habitat (as presented in the 2018-2019 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. Two violations to the feeding ban ordinance were reported and followed up on in 2019-2020. Violations are followed up on with a notification letter and further enforcement action if needed. **Table 6** identifies the number of feeding ban violations per program year.

Table 6. Feeding Ban Violations for Program years 2010 through 2019-2020

Program Year	Feeding Ban Violations
2010	0
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

Recommendations for Program Year 2020-2021

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 City 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 observations, 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 discussed in the City 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 results of the aerial survey conducted on February 14, 2020, a population projection was calculated for November 2020. The fall projection accounts for typical reproduction and mortality factors and is similar to methods used by the DNR. The population projection was then used to establish a Program Year 2020-2021 harvest goal. The DNR is currently evaluating the City's deer population projection and removal goals for the 2020-2021 Program year.

Table 7 provides a breakdown (by management unit) of the Program's ongoing deer management density goals, the 2020 aerial count results (February), the 2020 fall projected population (November), and the minimum removal recommendations for the 2020-2021 Program.

Table 7: Program Year 2020-2021 Population Control Recommendations

Units	Management Program Goal (15-25 deer/mi^2)	2020 Aerial Population Count (February)	Projected 2020 Population (November)	Potential Fall/Winter 2020-2021 Harvest Range[a]	Recommended Minimum Fall/Winter 2020-2021 Harvest
NW	11-19	50	68	49-57	**NO ACCESS**
WC	3-6	0	0	0	**0**
SW	25-42	67	91	49-66	**49**
NE	31-52	62	84	32-53	**32**
EC	12-20	19	26	6-14	**6**
SE	4-7	23	31	24-27	**24**
Total	**86-146**	**221**	**300**	**160-217**	**111**

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

It is recommended that the Program's ongoing archery hunting strategy be continued in the fall of 2020. 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 2019 archery hunts. The goal for fall/winter 2020-2021 should be to harvest up to 44 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 2020-2021 should be to harvest a minimum of 111 deer. An additional 49 deer could be removed if funding allows. The additional harvest should be implemented as needed and up to 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.