



Results of the 2018 Duluth City Bowhunt

Report prepared by Brian Borkholder on behalf of the Arrowhead Bowhunters Alliance

February 2019

GENERAL 2018 SUMMARY: The Arrowhead Bowhunters Alliance (ABA) placed 285 hunters into the 2018 Duluth City Bowhunt. Those 285 hunters harvested a total of 240 white-tailed deer (182 antlerless & 58 antlered males) (Table 1).

For the fourth consecutive year in the 14-year history of the Duluth Bowhunt, the harvest rate as measured by the number of deer harvested per hunter was less than 1.0 (Tables 1 and 2). Harvest for the 2018 season was 0.84 ± 0.10 deer / hunter (Table 2). This represents the harvest for all registered hunters, including those hunters that failed to harvest any deer. Not knowing whether failing to harvest a deer in 2018 was the result of not spending much time in the woods, or not even getting into the woods, is unknown. All of the hunters not reporting any harvested deer were removed, and the reported harvest / successful hunter statistics are presented in Tables 1 and 2. Harvest for successful hunters averaged 1.53 ± 0.10 deer (Tables 1 & 2), the lowest success rate observed in this Hunt (Tables 1 & 2). Antlerless harvest for the successful hunters averaged 1.16 ± 0.07 antlerless per hunters, also the lowest rate observed in this Hunt (Tables 1 & 2).

The placement of 285 hunters in 2018 continues the decline in participation since the high in 2013 (Blue bars in Figure 1). The percentage of individuals harvesting deer in 2018 was 55.1%, higher than the last two seasons (Table 1). Just over half the hunters participating harvested an animal (Red line in Figure 1, Figure 2). Total harvest was the lowest observed during the 14-year history of the Hunt, even in the first year when far fewer hunters were placed (Blue bars in Figure 3). When standardized for number of participants, hunters in 2018 harvested the lowest number of antlerless deer per hunter, and approximately the same number of total deer per hunter as observed in 2016 (Blue & red lines in Figure 3).

Similar to past seasons and in line with the stated goals of this management Hunt, the 2018 harvest was dominated by antlerless individuals (Table 1, Figure 4). Of the 240 deer harvested, 75.8% (N=182) were antlerless individuals. The breakdown of antlerless was 135 adult does, 22 fawn does, and 25 fawn bucks (Figure 4). These numbers are in line with past years' harvest distribution. This was in spite of the removal of the Earn-a-Buck requirement on Thanksgiving Day, which many feared would lead to a significant bump in antlered male harvest. After the removal of this requirement, only three hunters took advantage of this and harvested an antlered male without having first registered an antlerless individual.

The Duluth City Council has established 42 Designated Hunting Areas (DHAs) throughout the City of Duluth. Harvest among these DHAs is highly variable (Figure 5). DHA 1 once again had the highest harvest in 2018 at 24 deer. Hunters harvested 22 deer from DHA 12B. Hot spots are areas outside of DHAs, which the ABA Board and the Duluth Police Department set up on an ad hoc basis to target localized problem deer populations. In 2018, only 8 deer were harvested from Hot Spots (Table 3). Figure 6 shows a map of the City of Duluth with the 42 various DHAs identified, along with the number of deer harvested for each of the DHAs.

Cumulative harvest throughout the season, by week number, is shown in Figure 7. 2018 data is depicted by the orange diamonds. Lighter markers present data from other seasons, 2008 – 2017. The harvest in 2018 was the lowest observed in the history of the Duluth Hunt (Figure 7, bottom panel).



For the 14 seasons of the Duluth Bowhunt, total harvest by registered bowhunters is 6383 white-tailed deer; of which 5339 were antlerless while 1044 were antlered males (Table 1). Only 16.4% of the harvest has been antlered males, completely in line with the stated goals of this hunt to reduce antlerless individuals, and thus the reproductive potential of the Duluth deer herd.

Total harvest had been somewhat stable from 2006 thru 2012, between 500 and 600 animals (Blue bars in Figure 3). Beginning with the 2013 season, and continuing thru the 2018 season, harvest dropped well below this level (Figure 3), to the frustration of many of the Duluth hunters. The number of deer harvested / hunter was essentially flat at about 1.8 deer / hunter from 2007 – 2010, and dropped to approximately 1.0 deer / hunter in 2013 (Red line in Figure 3). In 2015, it dipped below 1.0 for the first time. During the first season of the hunt, more than 92% of participating hunters harvested a deer. In 2016, that percentage was below 50%, but rose slightly in 2017 and again in 2018 to 55.1% (Figure 8, Table 1).

Raw harvest numbers do not tell a complete story. Effort needs to be accounted for. When standardized by effort (number of hunters) or area (harvest / mile²), harvest trends are pretty clear. Harvest per square mile (mile²) is presented in a map view of the City of Duluth (Figure 9) and by various geographic areas of the City (Figure 10). Figure 11 shows a consistent decline in harvest / mile² throughout the history of the hunt on a city-wide basis. In 2018, harvest / mile² was only about 1/3rd of our first year's harvest (Figure 11), but shows a two-year trend of increasing harvest in 2017 & 2018. Table 4 presents the raw data for the last 13 years. Harvests in excess of 20 deer harvested / mile² were once common (Table 4, 2006 – 2012 seasons), but haven't been observed for several years.

Another way of analyzing harvest is on a per hunter basis. Figure 3 (red line) and figure 8 present data suggesting a decline in hunter success. During the early years of the Hunt, the benchmark for success had been 2 deer / hunter, presumably one antlerless and one antlered deer. Figure 12 presents the percentage of our hunters harvesting 2 or more deer, and illustrates how much has changed between 2005 and the decline beginning in 2013. Between 2005 and 2018, the percentage has dropped from just under 60% of hunters harvesting two or more deer, to less than 25% in 2018. Since 2013, we appear to be in a phase of maintaining the deer herd at a relatively constant level (Figure 12). Figure 13 shows a consistent decline in total harvest / hunter, antlerless harvest / hunter, and antlered buck harvest / hunter, where the slope of all three regressions is negative. The new benchmark for hunter success, and subsequent hunter expectation, may need to be adjusted downward to perhaps only a single deer / hunter.

At the end of the season, our hunters are asked to provide input in a Year End Survey. One of the questions in this survey asked returning hunters about their observations on deer densities in the woods. This is anecdotal information only. Survey participants were asked to rate deer observations relative to just the 2017 season in the Duluth Hunt, on a scale from 1 to 7, with 1 being "a lot fewer deer observed" to 7 being "I saw a whole lot more deer relative to previous seasons". 4 meant "no change in Deer Numbers Observed". In previous surveys, hunters were asked to rate their deer observations relative to "previous seasons". Obviously, many of our hunters remember the "good old days" when it was routine to see 20 – 30 deer per night, and observational data corroborated this with annual mean scores typically in the range of 2.0. Figure 14 presents the data for antlerless and antlered deer observations in 2018 relative to ONLY the 2017 season. Of the 138 returning hunters that responded, mean observational scores for the 2018 season were 2.8 ± 0.2 antlerless deer observed, indicating that hunters reported seeing fewer deer this season relative to 2017. Hunters reported seeing more antlered males (3.4 ± 0.3) relative to antlerless deer (Figure 14), though this was not significantly different. This suggests that the herd, while much lower than when this Hunt Program started in 2005, may have either leveled off to a new equilibrium deer density, or at least isn't being over-harvested.



Overall, the deer harvested / mile² is low (Figures 10). Total harvest / hunter and antlerless harvest / hunter are also at all-time lows (Figure 13). During the early years of the hunt, the white-tailed deer density was high, as was hunter success, which was relatively constant at just under 2.0 deer / hunter (blue line, Figure 19). After several seasons of high harvest, our hunters began to have a noticeable effect on the herd, and it, along with hunter success, began a five-year decline during what may be referred to as the “declining years” of the Duluth. 2018 represents the fourth consecutive year of the “Maintenance Phase” of the hunt, where the deer herd seems to have stabilized (for the time being) as has hunter success at a level just under 1.0 deer per hunter. This pattern is not observed in the buck harvest (Figure 13), likely due to hunters not being able to fulfill the earn-a-buck requirement in order to harvest an antlered male.

Deer populations, by all accounts, are down from levels observed prior to the start of this Hunt Program. Our hunters have been very successful at lowering the Duluth deer herd as promised to the Duluth residents and City Council. While not enjoyable for those hunters that have to sit eight, ten, or even twelve times between deer sightings, it is hard to argue against the successes observed in this Hunt Program. Our hunters are to be commended.

“Success” needs to be redefined as we move from the phase of depressing the deer herd to one of maintaining it at this low level. Bowhunters have never been successful at total deer herd removal in any urban hunt within the United States. Reduction is possible, and Duluth hunters have demonstrated this. But bowhunters will never completely eliminate white-tailed deer from the landscape. Further, Duluth residents do not largely support a complete elimination of the deer herd. A new definition for success should be the continued opportunity for our bowhunters to participate in a sport that is a passion of many, in our own backyard. Continuing this opportunity provides services to our community by keeping the herd at current levels, one seemingly accepted by gardeners, homeowners, and those that drive vehicles and have to dodge darting deer during the autumn months. Eliminating this opportunity will no doubt increase the deer herd back to 2005 population levels in a few short years, a level completely unacceptable by the residents, insurance companies, and the Duluth Police Department.

It is important to note that even though our hunters are largely not satisfied with the success rates in recent seasons, it is still significantly higher than the MN Statewide archery success rate of 18.7% (C. Balzer, MN DNR, personal communication). This statistic is for successful hunters throughout the State. Clearly, when compared to the past success rates in the city hunt, the success rate is down (55.1%, Table 1), but it is still pretty good when compared to the statewide average. Our hunters can be expected to harvest at least one deer every 2.0 years (ABA Data), as opposed to the statewide average of hunters harvesting 1 deer every 5.4 years (C. Balzer, MNDNR, personal communication). There are several hypotheses that may explain this difference in success rates, even given a real or perceived lack of deer in the woods. Duluth hunters jump thru a lot of hoops to get into this Hunt, and thus are likely to invest more time in the woods. Plus, it is very convenient to hunt in your back yard or after work to jump into a stand three blocks away. It is much less convenient to run up to deer shacks 30 miles out of town, or to leave the city after work and still have the daylight time to get in an evening sit. Without this opportunity, many of our hunters would likely spend much less time in the woods, and their hunting success would reflect that lack of effort.



Table 1. Summary Statistics for the Duluth City Bowhunt. Total harvest / hunter for each deer type reports the harvest for all hunters participating in the Hunt. Harvest / successful hunter removes all of the hunters that failed to register a deer during each season. Percentage Donated reports the percentage of harvested deer donated to friends, family, or food shelves. The number of hunters and percentage harvesting two or more deer is also reported, along with the percentage of hunters that were successful in harvesting any deer. Mean (average), maximum and minimum observed values are summarized at the bottom of the table. Total harvest numbers are also presented.

	# Hunters Placed	# Hunters Harvesting	Total Harvest	Total Antlerless	Total Antlered	Total Harvest / Hunter	Total Harvest / Successful Hunter	Buck Harvest / Hunter	Buck Harvest / Successful Hunter	Antlerless Harvest / Hunter	Antlerless Harvest / Successful Hunter	% Donated	% Hunters Harvesting a Deer	No. Hunters Harvesting 2+ Deer	% Hunters Harvesting 2+ deer
2005	192	177	333	265	68	1.73	1.88	0.35	0.38	1.38	1.50		92.2%		
2006	252	196	564	485	79	2.24	2.88	0.31	0.40	1.92	2.47		77.8%	149	59.1%
2007	315	252	568	477	91	1.80	2.25	0.29	0.36	1.51	1.89		80.0%	155	49.2%
2008	289	220	533	458	75	1.84	2.42	0.26	0.34	1.58	2.08		76.1%	141	48.8%
2009	315	247	588	494	94	1.87	2.38	0.30	0.38	1.57	2.00	51.7%	78.4%	153	48.6%
2010	339	272	604	515	89	1.78	2.22	0.26	0.33	1.52	1.89	61.8%	80.2%	159	46.9%
2011	377	268	587	476	111	1.56	2.19	0.29	0.41	1.26	1.78	57.9%	71.1%	168	44.6%
2012	359	274	574	483	91	1.60	2.09	0.25	0.33	1.35	1.76	53.7%	76.3%	162	45.1%
2013	391	231	399	346	53	1.02	1.73	0.14	0.23	0.88	1.50	58.3%	59.1%	98	25.1%
2014	355	208	451	375	76	1.27	2.17	0.21	0.37	1.06	1.80	51.2%	58.6%	107	30.1%
2015	375	209	371	309	62	0.99	1.79	0.16	0.30	0.82	1.48	47.7%	55.7%	102	27.2%
2016	352	174	281	235	46	0.80	2.02	0.13	0.26	0.67	1.35	50.4%	49.4%	70	19.9%
2017	296	160	290	239	51	0.98	1.81	0.17	0.32	0.81	1.85	52.8%	54.1%	74	25.0%
2018	285	157	240	182	58	0.84	1.53	0.20	0.37	0.64	1.16	53.3%	55.1%	70	24.6%
Mean	320.9	217.5	455.9	381.4	74.6	1.45	2.10	0.24	0.34	1.21	1.75	53.9%	68.9%	123.69	38.0%
Min	192	157	240	182	46	0.80	1.53	0.13	0.23	0.64	1.16	47.7%	49.4%	70.00	19.9%
Max	391	274	604	515	111	2.24	2.88	0.35	0.41	1.92	2.47	61.8%	92.2%	168.00	59.1%
Sum			6383	5339	1044										



Table 2. Hunter harvest statistics for the 2018 Duluth Bowhunt, along with 2017 statistics and the long-term averages. As in Table 1, total harvest / hunter for each deer type reports the harvest for all hunters participating in the Hunt. Harvest / successful hunter removes all of the hunters that failed to register a deer during each season.

	2018	2017	Long-term Duluth Average
Total Harvest/Hunter	0.84 ± 0.10	0.98 ± 0.15	1.45 ± 0.26
Buck Harvest / Hunter	0.20 ± 0.05	0.17 ± 0.04	0.24 ± 0.04
Antlerless Harvest / Hunter	0.64 ± 0.08	0.80 ± 0.13	1.21 ± 0.23
Harvest / Successful Hunter	1.53 ± 0.10	1.81 ± 0.21	2.11 ± 0.18
Buck Harvest / Successful Hunter	0.37 ± 0.07	0.32 ± 0.07	0.34 ± 0.03
Antlerless Harvest / Successful Hunter	1.16 ± 0.07	1.49 ± 0.18	1.75 ± 0.19

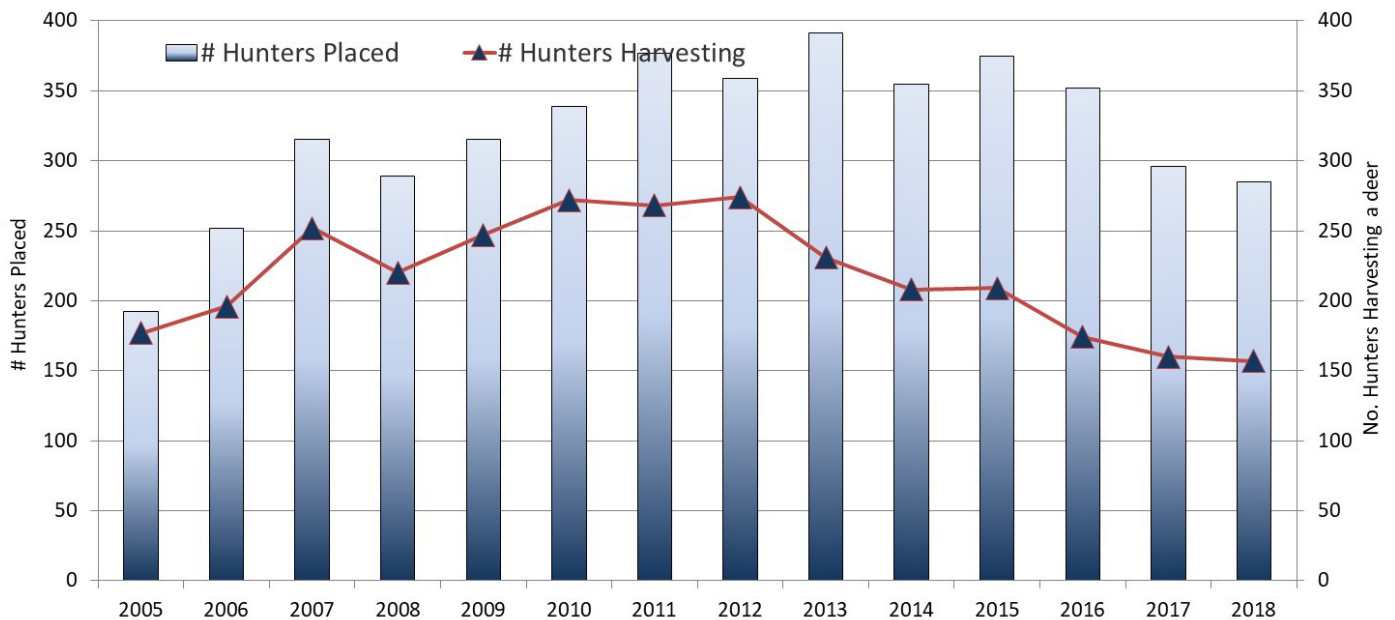


Figure 1. Number of hunters placed (left axis) and the number of those hunters harvesting deer (right axis) in each season of the Duluth City Bowhunt. The placement of 285 hunters in 2018 marks a continuing decline in interest since the high in 2013. The number harvesting deer in 2018 also continues the declining trend since a high in 2012.



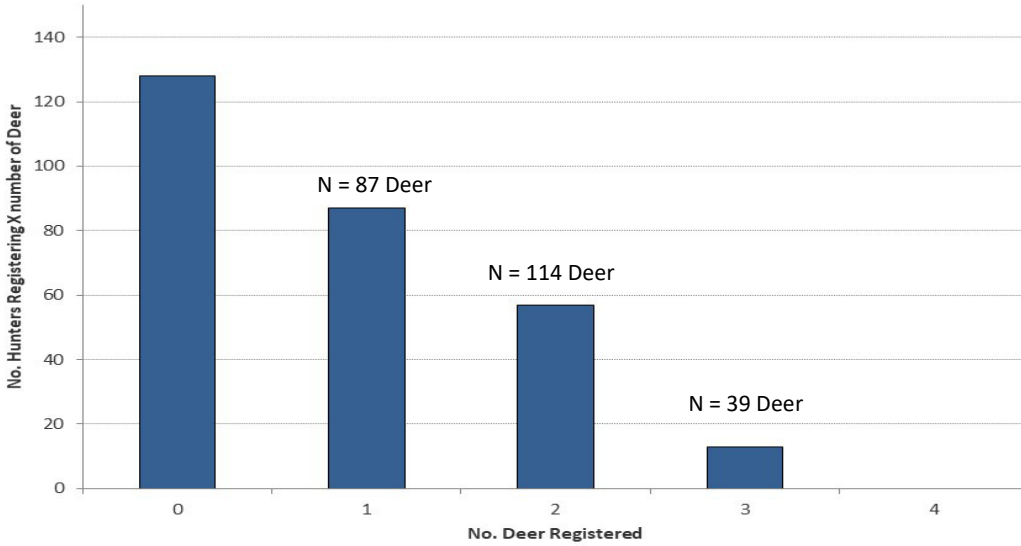


Figure 2. The number of Duluth City bowhunters and the number of deer harvested for the 2018 Duluth City Bowhunt ($N = 285$ hunters). Numbers above indicate the number of deer harvested by each group, e.g. 13 hunters harvested 3 deer for a total of 39 deer.

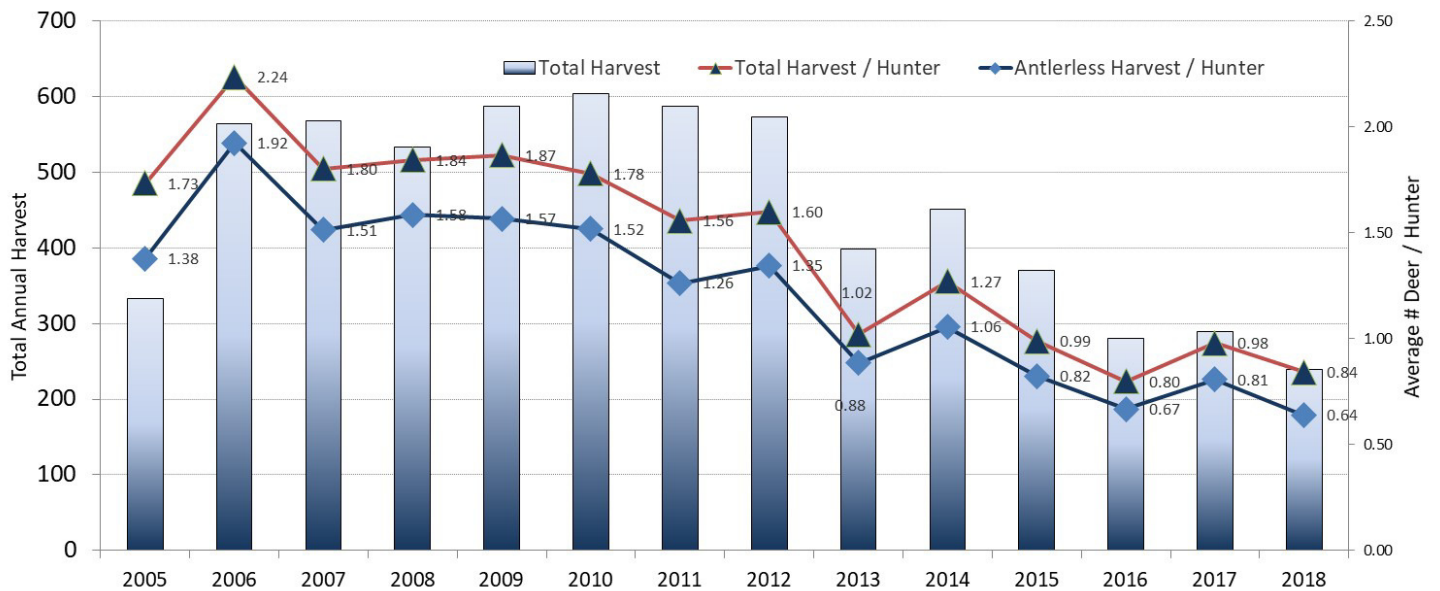


Figure 3. Total harvest, total per hunter, and total antlerless per hunter for the 14 seasons of the Duluth City Bowhunt. Total harvest is lowest ever observed. When standardized for number of participants, hunter harvest rate was slightly higher in 2018 for total harvest than the low observed in 2016, but the lowest for antlerless harvested per hunter ever observed.

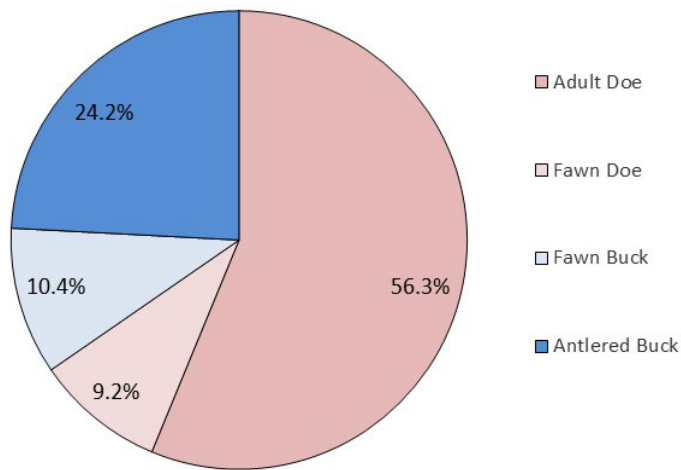


Figure 4. Breakdown of harvest by deer type for the 2018 Duluth Bowhunt.

Table 3. Harvest within Hot Spots during the 2018 Duluth City Bowhunt. Harvest within Hot Spots is limited to antlerless only.

Description	No. Antlerless Harvested
Hartley	1
Lakeside	5
Sneve	1
Wabasha	1
TOTAL	8

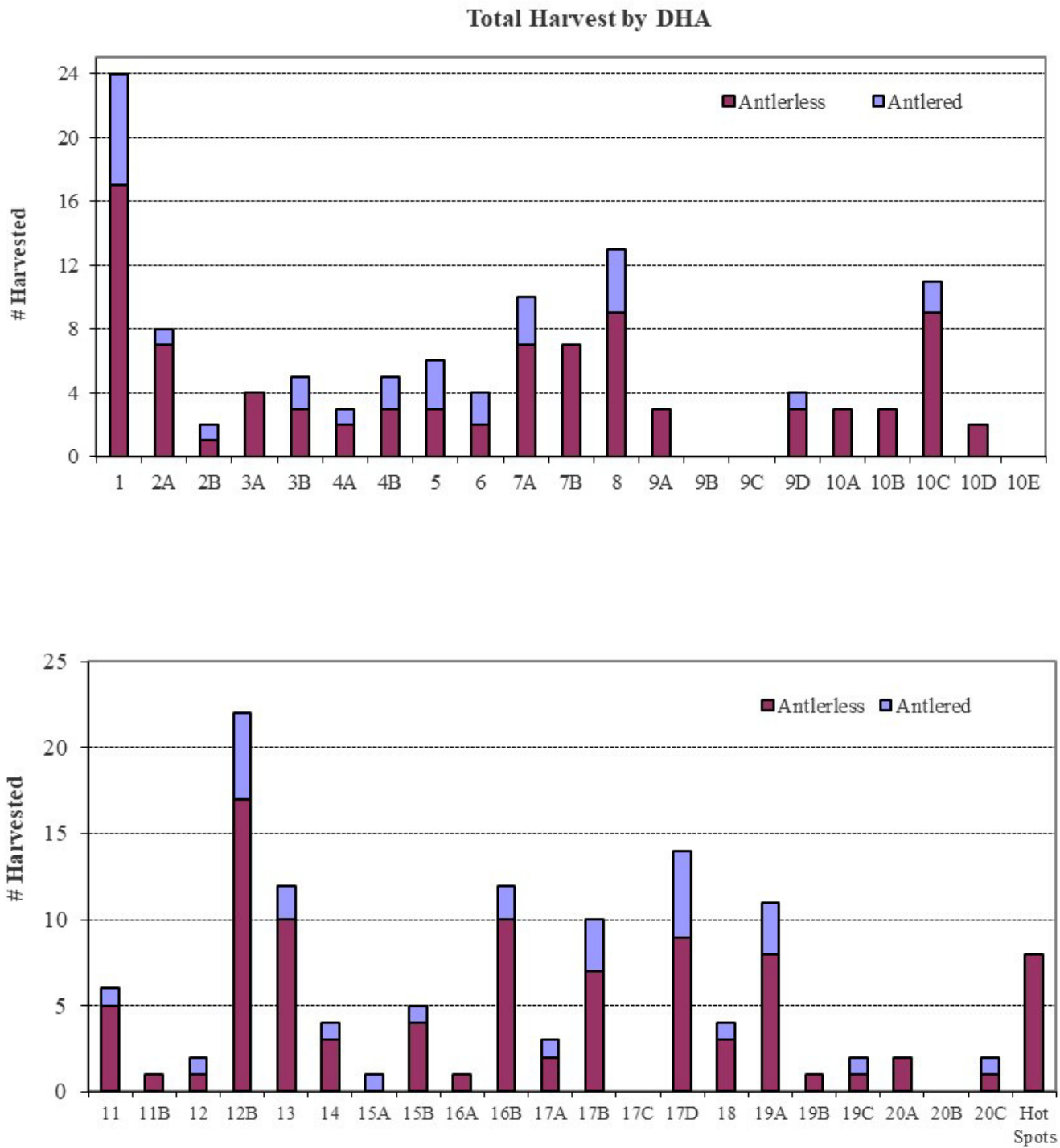


Figure 5. Number of deer harvested by deer type (Antlerless or Antlered) within each of the 42 designated hunting areas (DHAs) within the City of Duluth during the 2018 bowhunt.

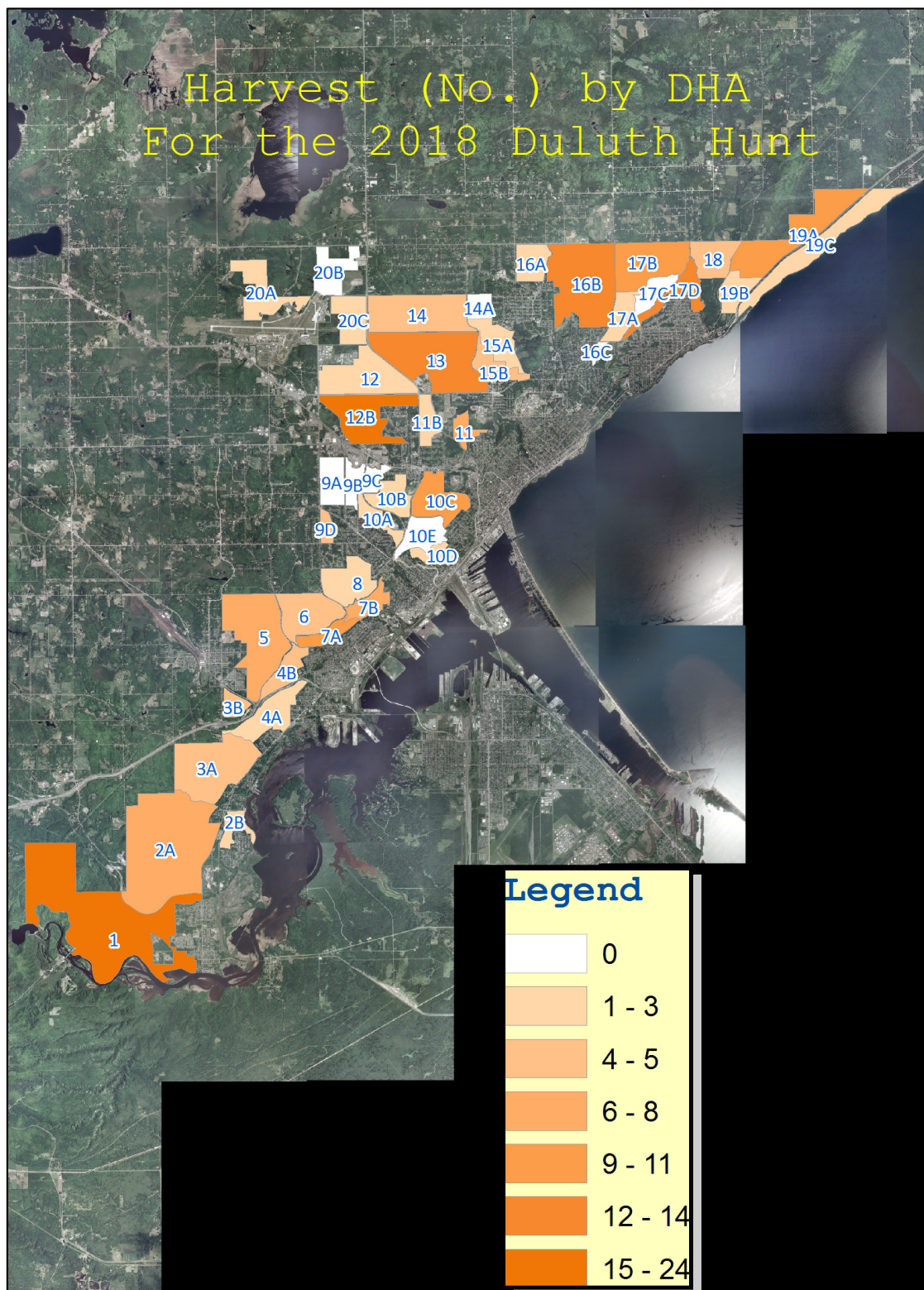


Figure 6. Map of the City of Duluth, along with harvest (number of deer) within each of the 42 Designated Hunting Areas during the 2018 Duluth City Bowhunt. DHAs are labelled on the map. The color of the DHA indicates the number of deer harvested as identified in the legend at the right.

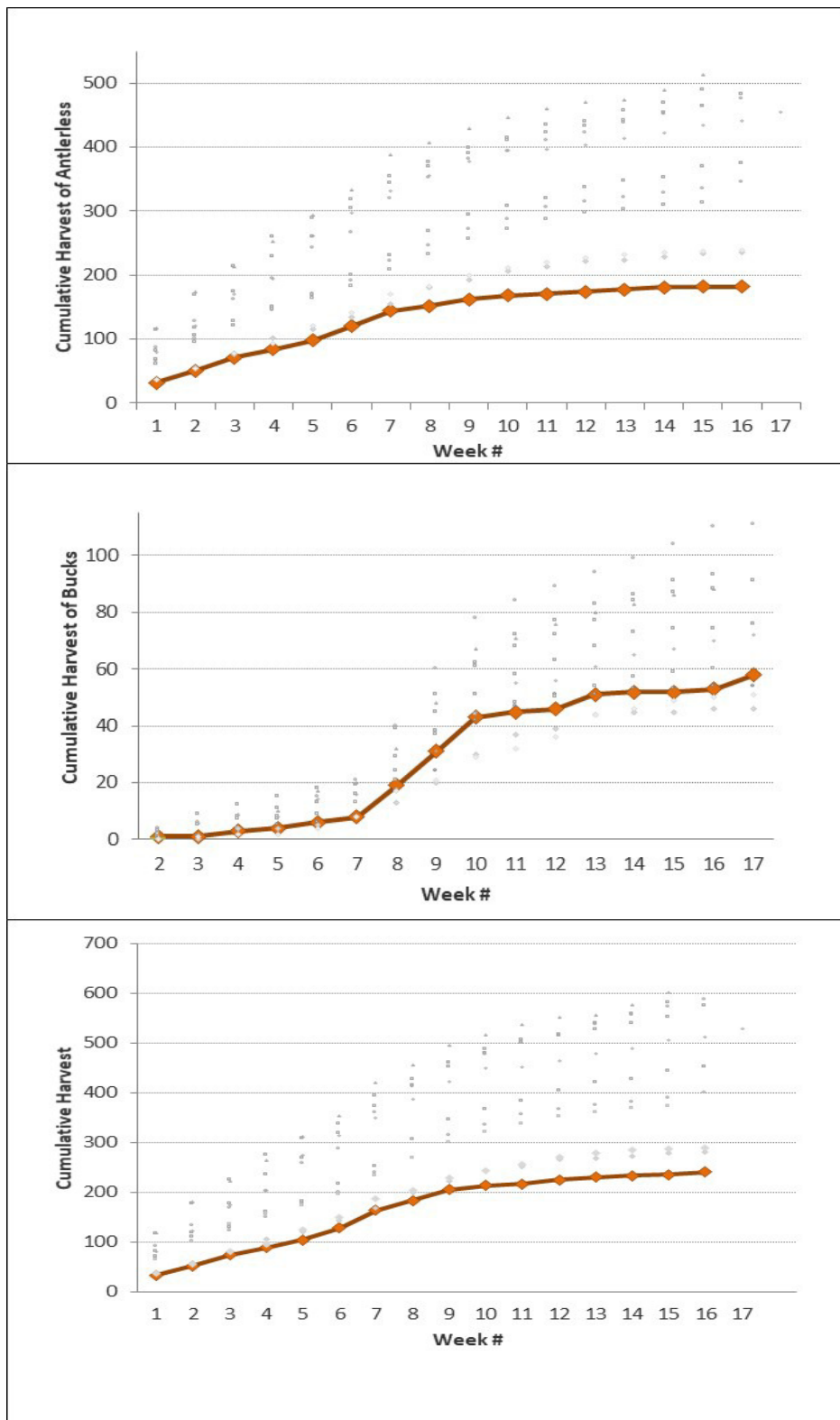


Figure 7. Harvest throughout the season, by week number, for the 2018 Duluth City Bowhunt (orange lines). Top panel shows harvest of antlerless deer; middle panel shows harvest for antlered males; bottom panel is total harvest by week. Weeks are measured Saturday thru Friday, starting on 17 September 2018 thru the end of the season on 31 December 2018. Other seasons are shown for comparison using non-colored markers.

% Hunters Harvesting a Deer

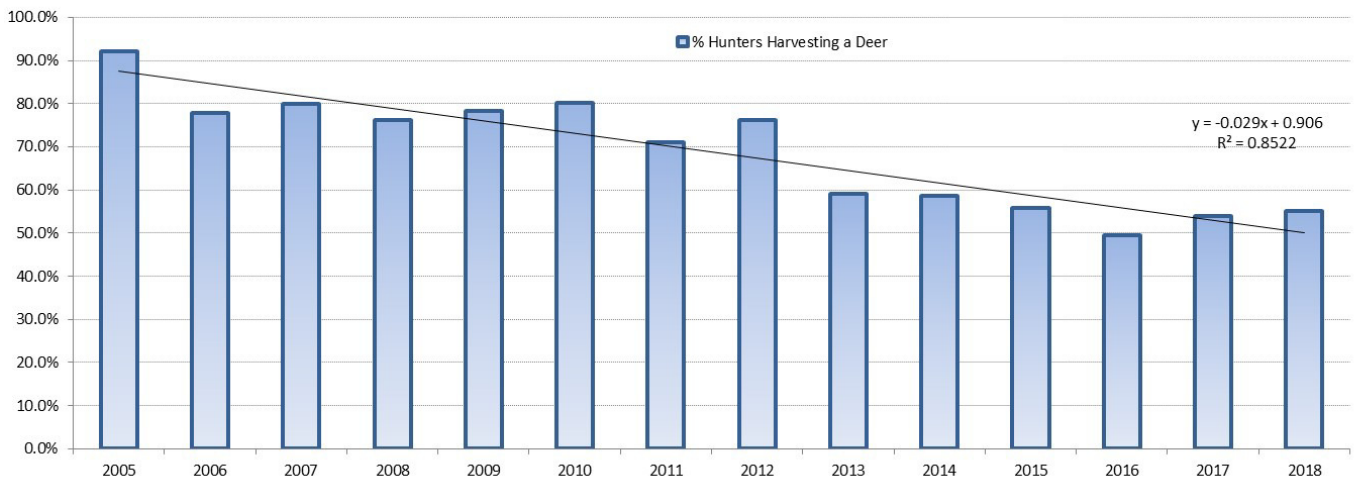


Figure 8. Percentage of hunters harvesting deer while participating in the Duluth City Bowhunt.

In addition, there's hunter selectivity that can't be modeled between the City's opportunities (three deer total) and that of the other bowhunters within Minnesota. Most areas of MN limit hunters to a single deer. Due to the unfortunate perceptions propagated by the modern deer hunting media complex, many hunters have been mistakenly led to believe that a "true" hunter only shoots "trophy" bucks. Many hunters throughout the State hunt patiently for the "perfect" deer. Many shot opportunities are passed, especially in most of the State where a hunter can only harvest a single animal. These hunters may, or may not, end up punching their tag. This may be reflected in the low statewide success of 18.7%. Duluth City hunters are essentially required by the earn-a-buck regulation to take the first legitimate shot opportunity on any antlerless individual. This likely inflates our success rate much higher than it would be in the absence of multiple antlerless tags and the earn-a-buck requirement. Our hunters' relatively high success may not be truly indicative of deer densities within the City, and probably shouldn't be compared to those outside of the City.

Perhaps it is time to reconsider what this hunt is all about. Deer reduction, while a major component of any urban hunt, is not the only benefit to the City and the participants. There's little argument that the reduction of the deer herd has been effectively accomplished. But the Hunt continues to provide a wonderful and safe recreational opportunity in our own backyards. In addition, many participants rely upon the "free range" meat that they can provide to their families. Continuing the Hunt has additional benefits to society in addition to keeping the deer herd at socially acceptable levels.

Politicians, and landowners need to begin adjusting expectations and redefine the definition of "success" for this urban hunt. In 2005, "success" was defined by the hunters as "punching all five tags". Politicians and landowners defined "success" as a harvest of 500 or more deer during those early seasons. Politicians sought to increase hunter participation and recruitment from one year to the next in order to increase harvest and their definition of "success". The ABA believes that the data suggests those days are in the past, as we now have a new deer herd sustained at levels far lower than those observed prior to the start of this hunt in 2005, and far lower than what can sustain a harvest exceeding 500 deer per season.

Bowhunters will need to adjust their expectations in the future. Gone are the days of seeing a dozen deer every evening in the woods. While this Hunt Program continues, those population levels will likely never be seen again. Hunters that don't have the time or patience to wait for just two or three harvest opportunities in a season are encouraged to hunt elsewhere. What the ABA and law enforcement can't tolerate are hunters taking matters into



their own hands, and artificially increasing harvest opportunities at the expense of ethics and the law. Examples include baiting or creating illegal food plots on public lands. Another example is choosing to ignore the DHA boundaries and hunting illegally in areas not approved by the Duluth City Council or the Duluth Police Department. While lower deer numbers and harvest opportunities are a hard reality for hunters that have been with this Program since inception, it's vital that participants consider the future of the Hunt Program and our continued acceptance by the Duluth residents before choosing to break the law. If these lower deer numbers are not acceptable to individual hunters, please pull out a State map and find other areas that may have higher deer densities than what is currently observed within Duluth.

For most readers, this will conclude the 2018 Annual Report by the ABA. On behalf of the Arrowhead Bowhunters Alliance, we thank all of those individuals that participated in the 2018 Duluth Bowhunt, and who made this another successful, albeit difficult, season. See you in the woods in 2019!

Section 2, beginning on page 17, will go into fine details of the 2018 Hunt, our hunters and their successes, and other such seemingly insignificant details that few, if any, will find even remotely interesting. For those brave souls that opt to continue, you may be tempted to interpret the statistics and graphs that follow as “*blah, blah, blah*. . .”. If you have a misbehaving child, make them continue reading until their behavior and attitude improves, or until they fall asleep from sheer boredom.

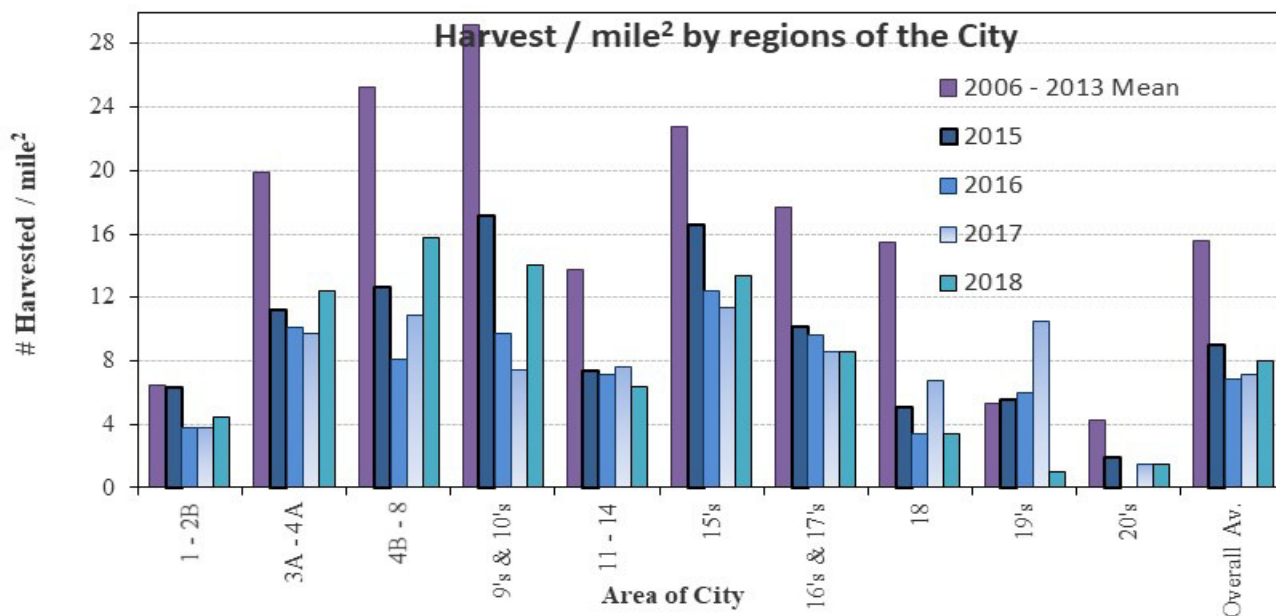


Figure 10. Harvest / mile² in various areas of the City of Duluth. Data presented is for the 2015 – 2018 seasons, and the long-term average (mean).

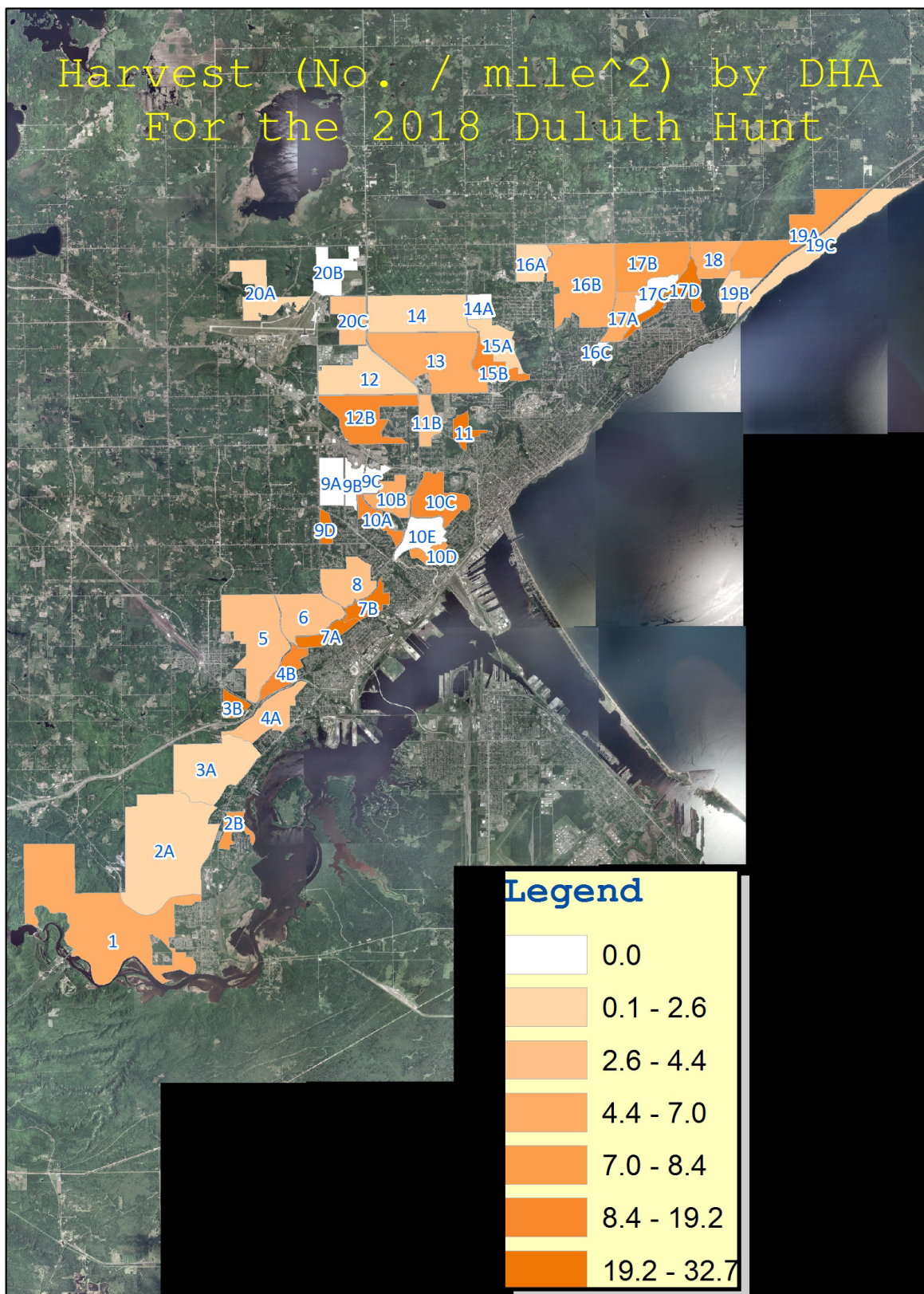


Figure 9. Map of the City of Duluth, along with harvest per mile² within each of the 42 Designated Hunting Areas during the 2018 Duluth City Bowhunt. DHAs are labelled on the map. The color of the DHA indicates the number of deer harvested per mile² as identified in the legend at the right.

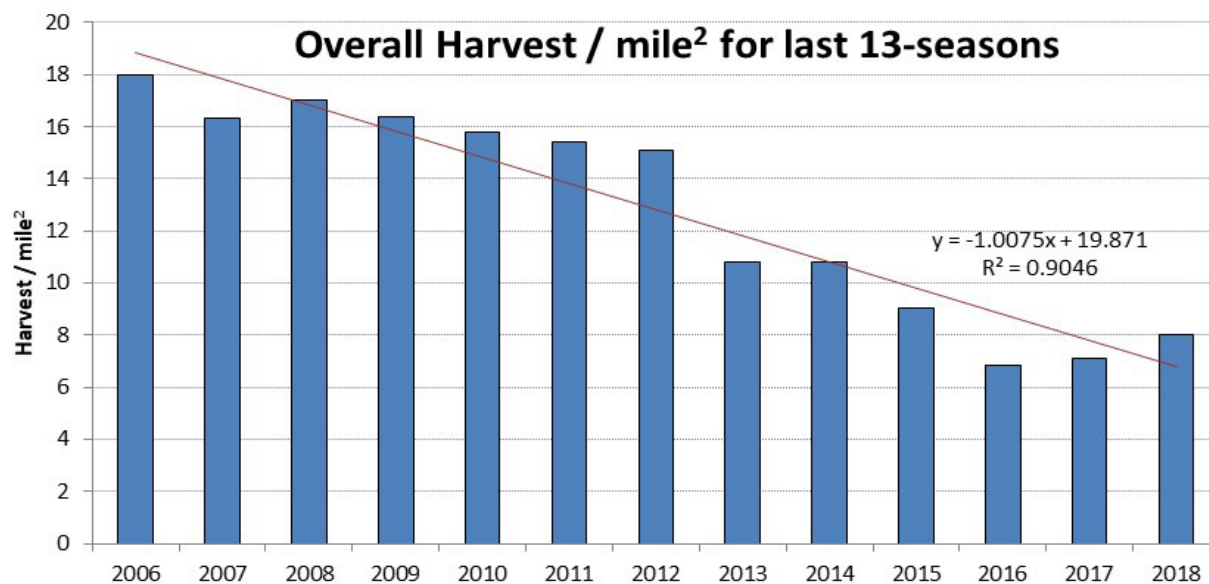


Figure 11. Harvest per mile² over a 13-year time period in the Duluth City Bowhunt. Harvest is not included for 2005, as the DHAs were redrawn and are not the same as during the first season.

Table 4. Harvest / mile² in various areas (DHAs) of the City of Duluth, for the last 13 years where DHA boundaries have not changed.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1 - 2B	4.1	5.6	6.7	7.0	7.8	6.3	8.7	5.4	5.3	6.3	3.8	3.8	4.5
3A - 4A	24.4	18.4	13.6	26.0	21.6	24.8	18.8	11.5	10.9	11.2	10.1	9.7	12.4
4B - 8	29.8	28.2	28.2	25.0	26.6	24.7	25.0	14.3	15.2	12.6	8.1	10.9	15.8
9's & 10's	45.4	33.6	25.4	25.4	27.2	32.7	23.5	20.3	20.6	17.2	9.7	7.4	14.0
11 - 14	15.7	15.8	13.3	16.3	13.8	13.3	11.9	10.0	12.4	7.4	7.1	7.6	6.4
15's	39.7	20.4	25.8	26.9	16.1	17.2	24.7	11.4	13.4	16.5	12.4	11.4	13.4
16's & 17's	16.5	18.2	18.2	19.6	18.6	18.6	19.6	12.2	15.2	10.2	9.6	8.6	8.6
18	8.5	15.2	25.4	13.5	20.3	18.6	16.9	5.1	6.8	5.1	3.4	6.8	3.4
19's	3.6	5.7	2.0	6.1	5.3	3.3	11.8	4.7	4.0	5.5	6.0	10.5	1.0
20's	3.0	5.8	8.4	3.1	4.2	2.6	5.8	1.0	1.5	2.0	0	1.5	1.5
Overall Av.	18.0	16.3	17.0	16.4	15.8	15.4	15.1	10.8	10.8	9.0	6.9	7.1	8.0

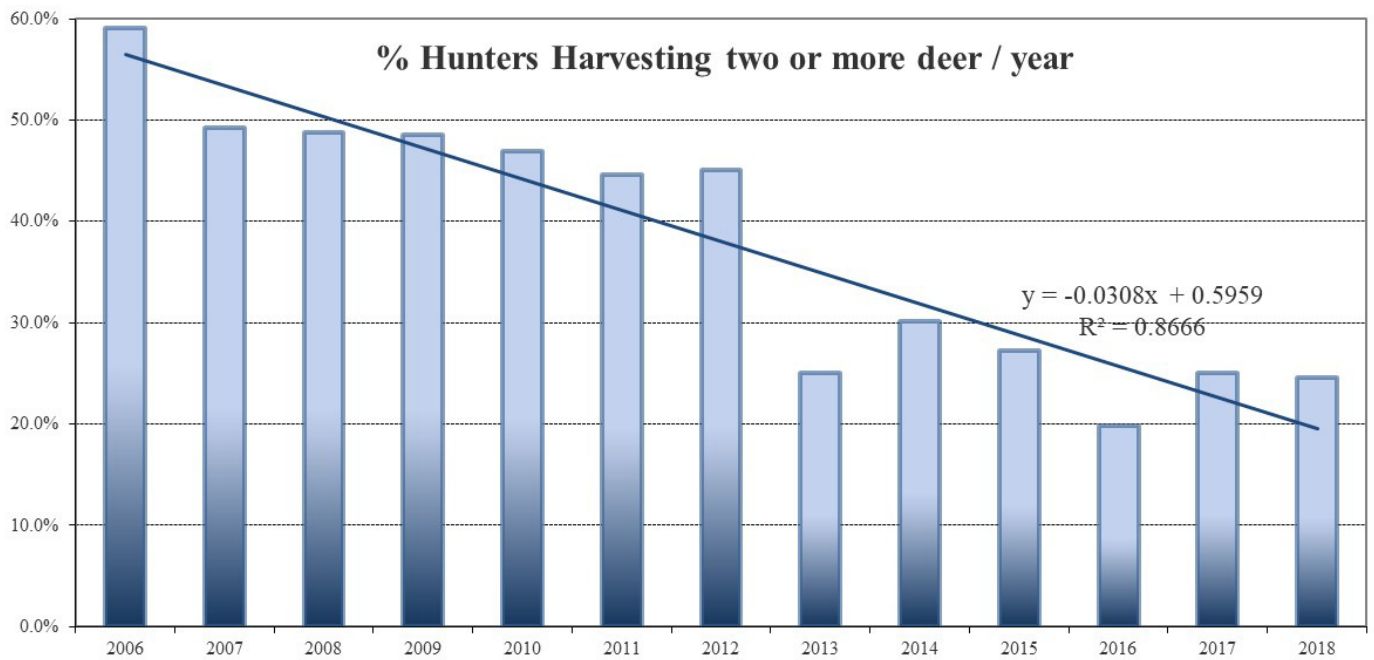


Figure 12. Percentage of hunters harvesting two or more deer per season while participating in the Duluth City Bowhunt.

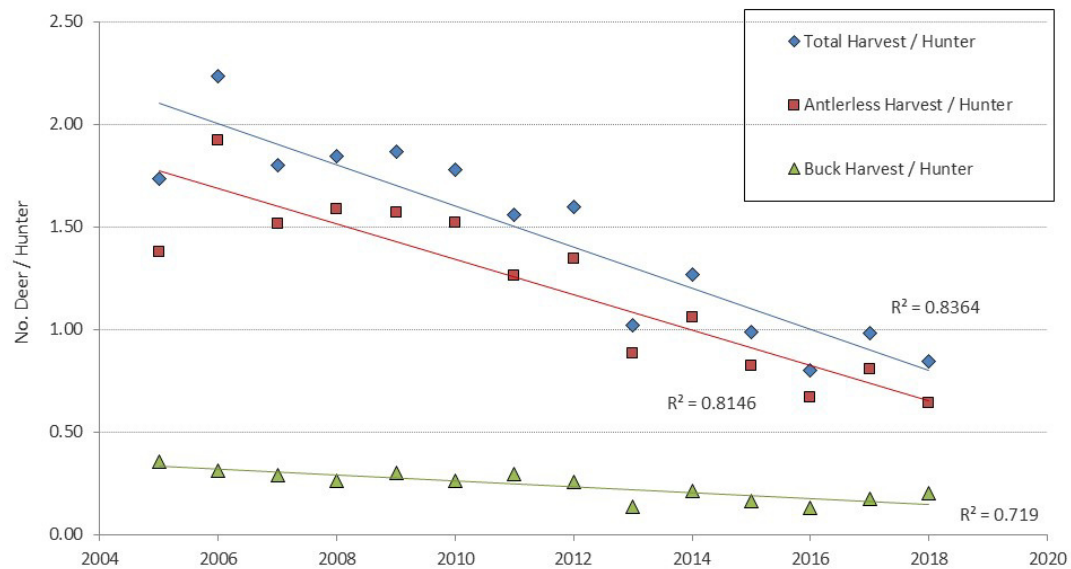


Figure 13. Harvest / hunter statistics for the 14 years of the Duluth City Bowhunt.



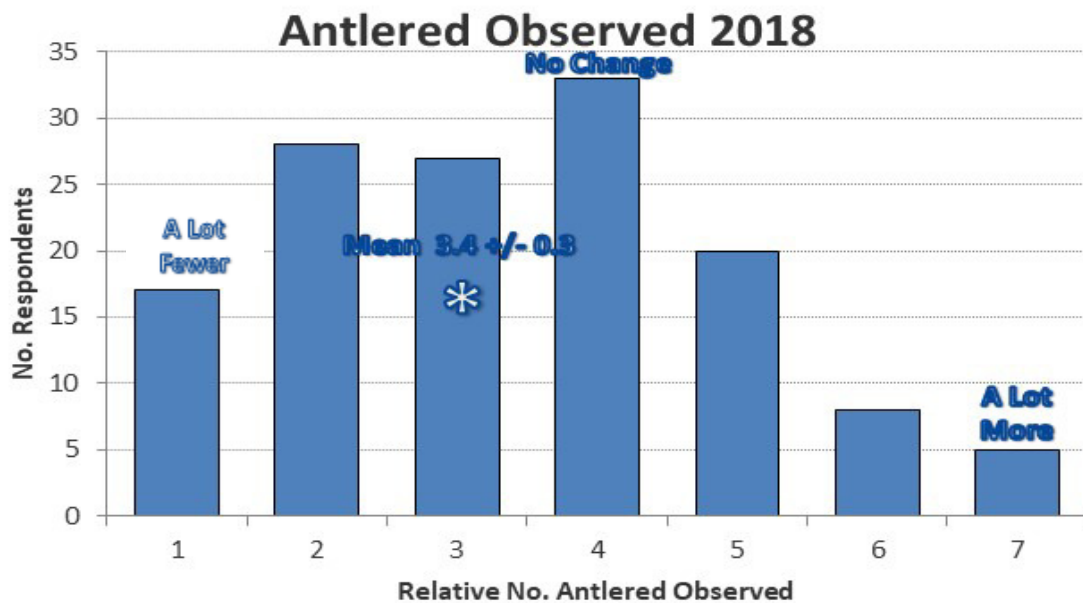
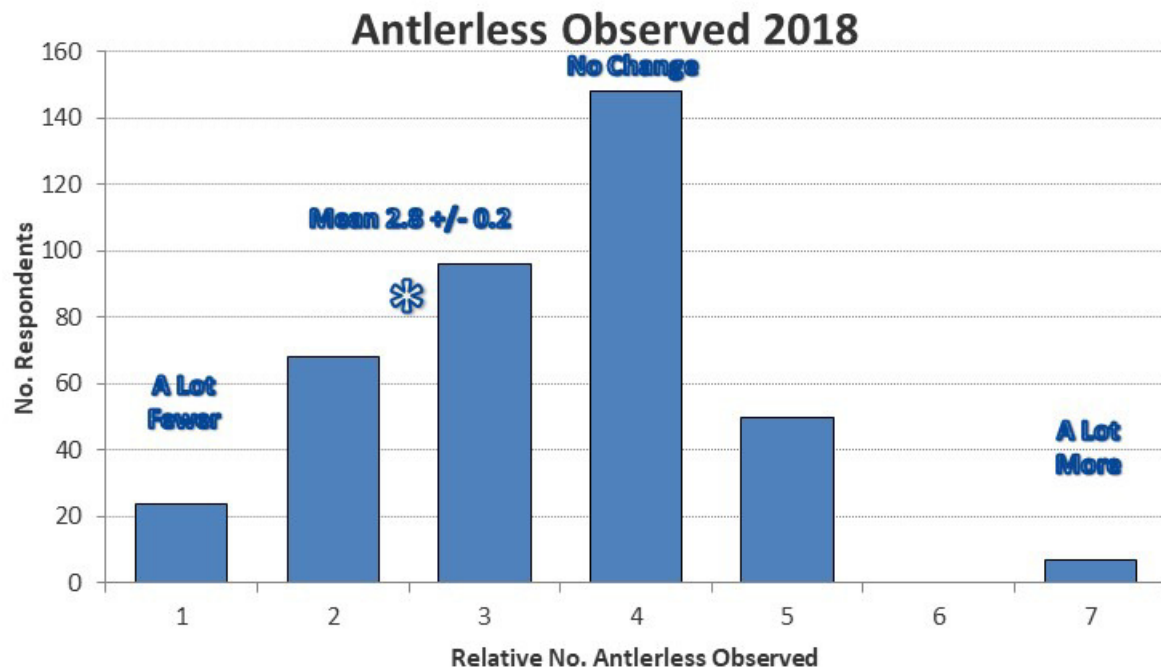


Figure 14. Relative number of deer observed by returning hunters in the 2018 Duluth Bowhunt, as compared to what was observed during the 2017 Hunt. Data presented here came from the Year End Survey.

Section 2: General Hunt details for the 2018 season

Private Lands

Hunters may access and hunt on any private property, with permission, within any of the DHAs. Harvest from private lands accounted for 44.2% of the 2018 harvest (Figure 15). A general misconception among some of the hunters, especially new ones, is that one needs access to private land in order to harvest deer, and specifically antlered males. Figure 16 breaks down harvest on public and private lands by deer type, and demonstrates that deer are still found on the public tracts of land within the City. However, it also demonstrates the importance of continued public support for this hunt, and forging positive relationships with Duluth landowners who continue to allow bowhunters to participate in this sport on their property.

Not all of the DHAs are created equally, in terms of the portion of public and private lands within the boundaries of each DHA. Figure 17 breaks down harvest within the various DHAs by public and private. Clearly DHAs such as DHAs 1, 2A, 2B, 3A, 11, 14, 17B, 18, 19A, & 20A/C are dominated by City-owned public lands, whereas 4B, 7B, 9A/D, 11B, 12, 12B, 13, 15B, & 16A, for example, seem to have more opportunities available on private lands.

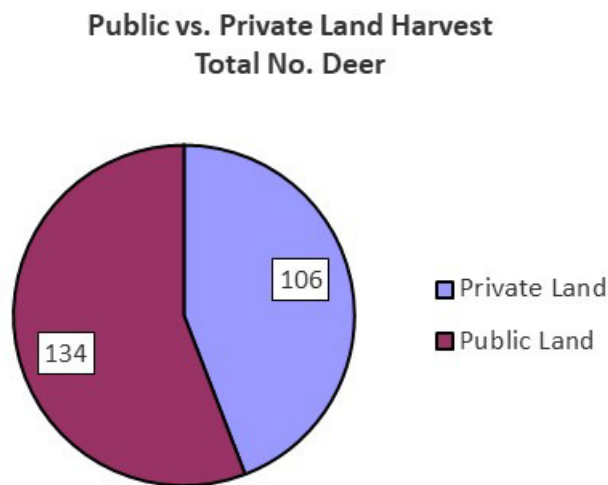


Figure 15. Harvest on public and private lands within the designated hunting areas during the 2018 Duluth City Bowhunt.

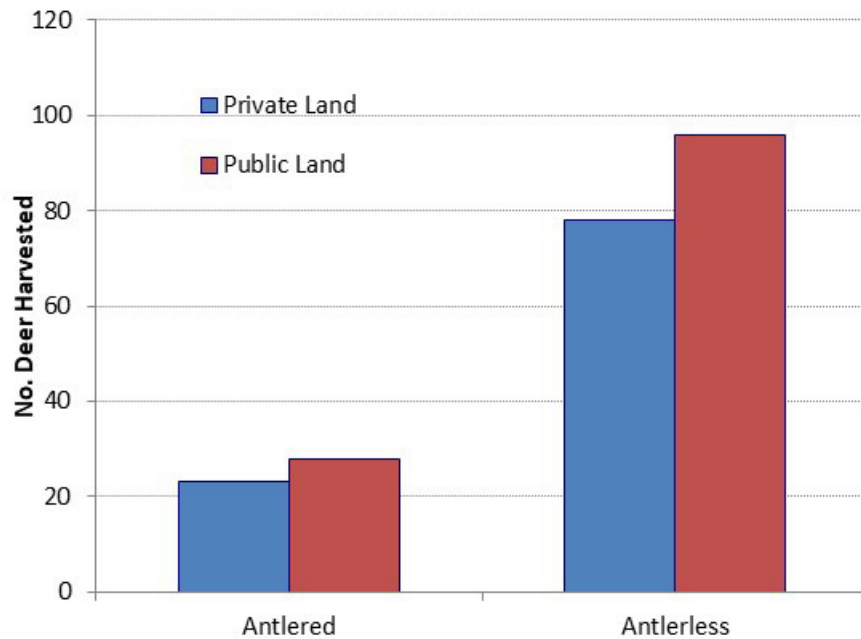


Figure 16. Harvest by deer type on public and private lands within the designated hunting areas during the 2018 Duluth City Bowhunt.

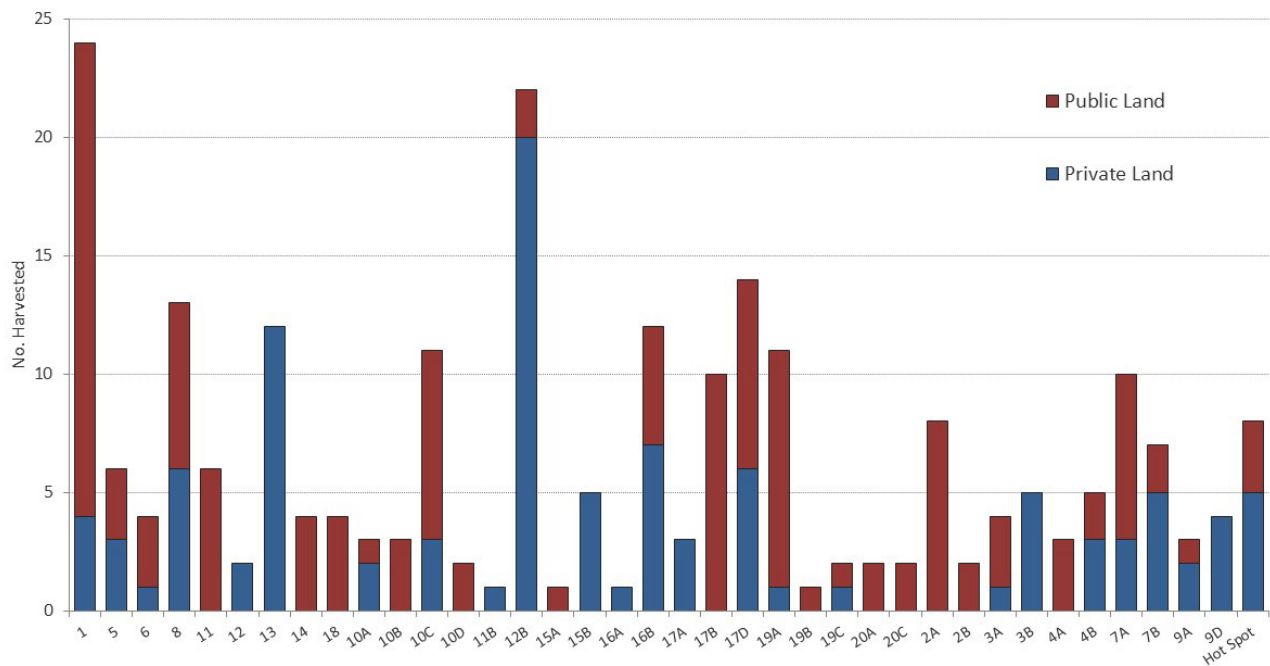


Figure 17. Harvest by Designated Hunting Area on public and private lands during the 2018 Duluth City Bowhunt.



Ground Blinds:

During the first years of the Duluth Hunt, the rules specified that hunters could ONLY hunt from elevated stands. Hunters requested the use of ground blinds to further open up areas within DHAs. The City Council approved, and ground blinds have been allowed by permission only from both the ABA and the respective DHA Hunt Coordinator. Figure 18 shows the results of ground blind use in 2018. Harvest was minimal from ground blinds, with only 7.1% (N = 17) of the deer harvested from ground blinds. However, once again, there were no incidents involving Duluth participants or any accidents resulting from the use of ground blinds. The ABA will continue to advocate for the use of ground blinds as a reasonable opportunity within areas of the City where tree stand setups are simply not feasible.

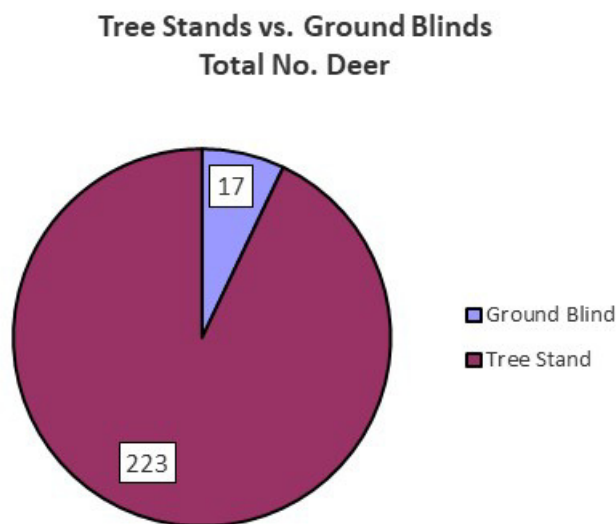


Figure 18. Number of deer harvested from ground blinds and tree stands during the 2018 Duluth City Bowhunt.

Hearts and Livers:

Again in 2018, Duluth hunters were asked to save hearts and livers from their harvested white-tailed deer. Hearts are used by the University of Minnesota – Duluth Medical School for dissection and anatomy. Medical School personnel approached the ABA many years ago, requesting hearts for their future surgeons to learn fine and intricate heart anatomy. Fresh hearts have much finer detail in the of arteries and capillaries than do formalin-preserved ones. Hearts were collected in early November. 42% of our hunters indicated that they participated in this opportunity to give back to the community, while a bit over 1% of our hunters indicated that they simply refused to participate (Figure 19).

A researcher associated with UMD requested livers from harvested deer for the fifth and final year of the study. This individual is examining the occurrence of liver flukes in various white-tailed deer populations. Duluth was included in the study for the opportunity to receive many more samples at little to no cost. Figure 20 shows that Duluth hunters were largely un-supportive of this project, but still contributed 60 samples for this researcher.



Hunter participation in these two programs was in the 26% - 42% range (dark blue pie sections in Figures 19 & 20), well below participation rates of the past, which even in 2016 was as high as 60%. This is a wonderful opportunity for hunters to participate in cutting-edge research as well as give back to the community that has opened up their backyard for our bowhunting recreation. The ABA Board struggles with how to make this Program relevant to our hunters, and to encourage continued / further participation. Results from the 2018 Year End Hunter Survey (Details in Section 3, page 28) suggest that this Program is still important to our hunters (Figure 21), with 76% of survey respondents indicating that they'd participate. However, when it comes down to actually saving hearts and livers, our hunters tend to not bother or simply forget. The ABA will discuss in the near future whether or not to commit once again to UMD to collect these. Please understand that the ABA is immensely grateful to those hunters that went out of their way to collect, store, and ultimately deliver these hearts and livers. Should the ABA opt to continue participation in these programs in the future, the Board would encourage ALL hunters to participate. This is especially important given that harvest is likely to continue to decline, meaning there will be fewer hearts available to collect, and UMD needs approximately 75 hearts each fall. Every heart will be important in 2019!

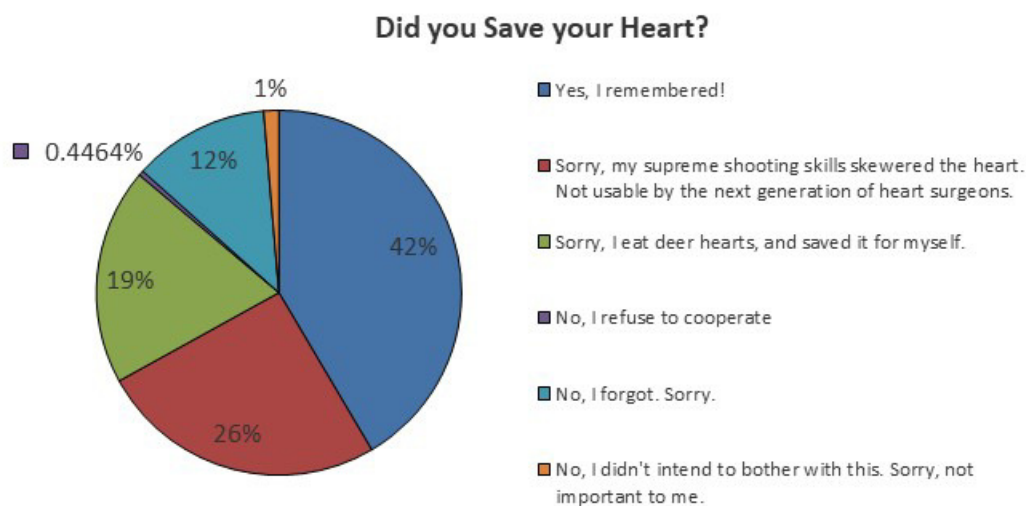


Figure 19. Responses from hunters asked to save deer hearts for the UMD-Medical School during the 2018 Duluth City Bowhunt.

Did you Save your Liver?

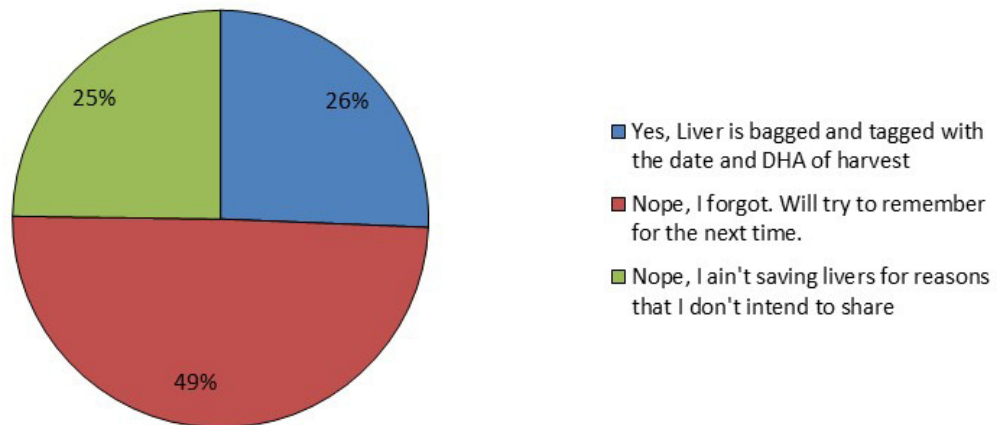


Figure 20. Responses from hunters asked to save deer livers for the UMD liver fluke study during the 2018 Duluth City Bowhunt.

Will You Save a Heart for UMD in 2018?

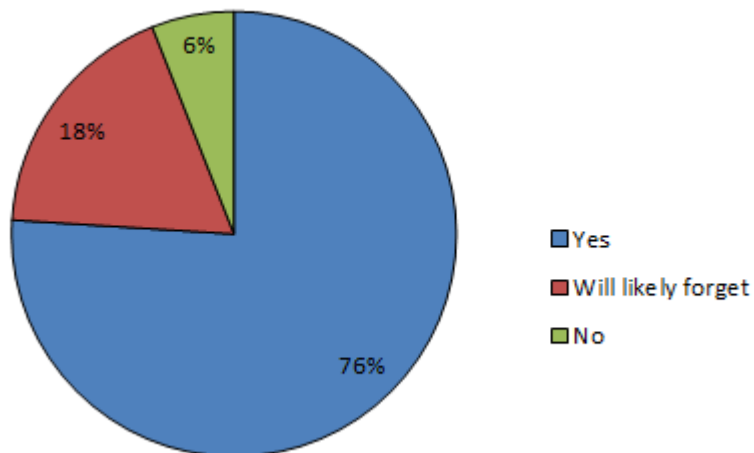


Figure 21. Results from the Year End Hunter Survey when asked whether a hunter would be willing to save a heart for the UMD Medical School in 2018.

Hunter Demographics, Locals vs Non-Local Hunters and the Metro Designation:

So, who participated in the 2018 Duluth City Bowhunt? Local hunters, defined as those living within 30 miles of Duluth (e.g. Cloquet, Hermantown, Saginaw, and Carlton) were obviously the majority (91.2%, Table 5). Local hunters accounted for 91.2% of the antlerless harvest, and 89.6% of the antlered harvest, suggesting that local hunters had no more opportunity to harvest deer than the non-local hunters (Table 5). Duluth residents made up 72.3% of the hunting population, and were responsible for 67.6% of antlerless and 70.0% of antlered harvest, in line with their participation rates (Table 5). Non-local hunters made up only 5.6% of the 2018 hunters, but harvested more than 7% of both the antlerless and antlered animals (Table 5). Out-of-State hunters made up only 3.2% of the 2018 hunter population (Table 5). When standardized by participation rates, we see that the non-local hunters harvested deer at a higher rate than their rate of participation, as evidenced by proportion of harvest levels greater than 1.0 (Figure 22). Out-of-State hunters harvested deer well below their participation rate in the Hunt (harvest ratio = 0.52), suggesting they may not have had the same opportunities as MN residents. Local hunters, which include the Duluth City resident hunters, harvested deer in the same proportion to their participation rate, i.e. harvest ratio = 1.0 (Figure 22). For the first time since the ABA began tracking this statistic, local resident hunters did not demonstrate any “home field advantage” and harvest more animals than did the other hunter types.

The ABA and the City of Duluth routinely receive complaints that out-of-state and non-local hunters are in this hunt solely for the chance to harvest a trophy buck, and then move on. Local hunters harvested 0.84 ± 0.11 total deer per hunter (0.64 ± 0.08 antlerless deer / hunter). Non-locals and out-of-State hunters harvested 0.88 ± 0.34 total deer per hunter (0.64 ± 0.23 antlerless deer / hunter). No difference was observed between local and non-local hunters in total deer harvested ($t = -0.224$, $P = 0.823$), further suggesting that local hunters didn’t possess a “home field advantage” when it came to finding and harvesting deer within Duluth. In previous seasons, this was not the case. The ABA previously hypothesized that differences between local and non-local hunters came down to time constraints and travel. The average non-local or out-of-state hunter likely was not be able to invest the same amount of time and effort required to find deer in our diminishing herd, and to harvest at the same rate as local hunters. Local hunters previously did seem to have this advantage when it came to harvest opportunity. These differences were not observed in 2018.

Time for hunting is likely still an issue. No one can argue that it isn’t far more convenient for a local hunter to participate in any hunt where travel and accommodations aren’t factors or limitations to participation. But new to 2018 was the removal of the unlimited Metro Designation, where the MNDNR previously allowed hunters to harvest as many deer as they personally felt was appropriate. The removal of this designation resulted in hunters only able to harvest a maximum of three deer. The few number of hunters that did harvest more than five deer in the past, while obviously not a significant source of total mortality on the City herd, was perceived as “unfair” and was a major complaint in the 2017 Year End Survey. Several complaints were lodged that there was a need to distribute a limited number of deer among more of the hunters. Upon discussions with the MNDNR, this Metro Designation was removed for the 2018 Hunt, meaning hunters no longer could harvest as many deer as they wanted to or were able to. In the past, hunters, and specifically local hunters, were able to spend as much time as they wanted in the woods. Beginning in 2018, this was no longer the case. Time and the 31 December season closure was no longer the limiting factor, but tag numbers were. Thus, if or when hunters harvested their third and final deer, they were done and left the woods. Having this cap on harvest equalized the playing field, and allowed the limited number of deer to be spread out amongst all of the hunting community. This was exactly the goal of this designation, and seemingly allowed more harvest opportunities for more of the participating hunters. While many of the harvest statistics presented in Table 1 haven’t shown a jump in hunter or harvest success, it will be interesting to see if the percentage of successful hunters and the number of deer harvested per hunter doesn’t



actually increase over the next few seasons, which will be the real barometer of the success of the removal of the Metro Designation.

Table 5. Breakdown of hunter demographics for hunters participating in the 2018 Duluth City Bowhunt. Locals are hunters living within 30 miles of Duluth. Duluth residents are a subset of “locals”. Non-locals are hunters residing within the State of Minnesota outside of the 30-mile radius. Out-of-state hunters in 2018 were all individuals living in Wisconsin. The number and percentage of antlerless and antlered harvest is reported by hunter residency. Harvest numbers have not been adjusted for participation rates.

	# Hunters Participating (%)	# Antlerless Harvested (%)	# Antlered Harvested (%)
Locals	260 (91.2%)	166 (91.2%)	52 (89.6%)
Duluth Residents	206 (72.3%)	123 (67.6%)	40 (70.0%)
Non-Locals	16 (5.6%)	13 (7.1%)	5 (7.5%)
Out-of-State	9 (3.2%)	3 (1.6%)	1 (1.7%)
TOTAL	285	182	58

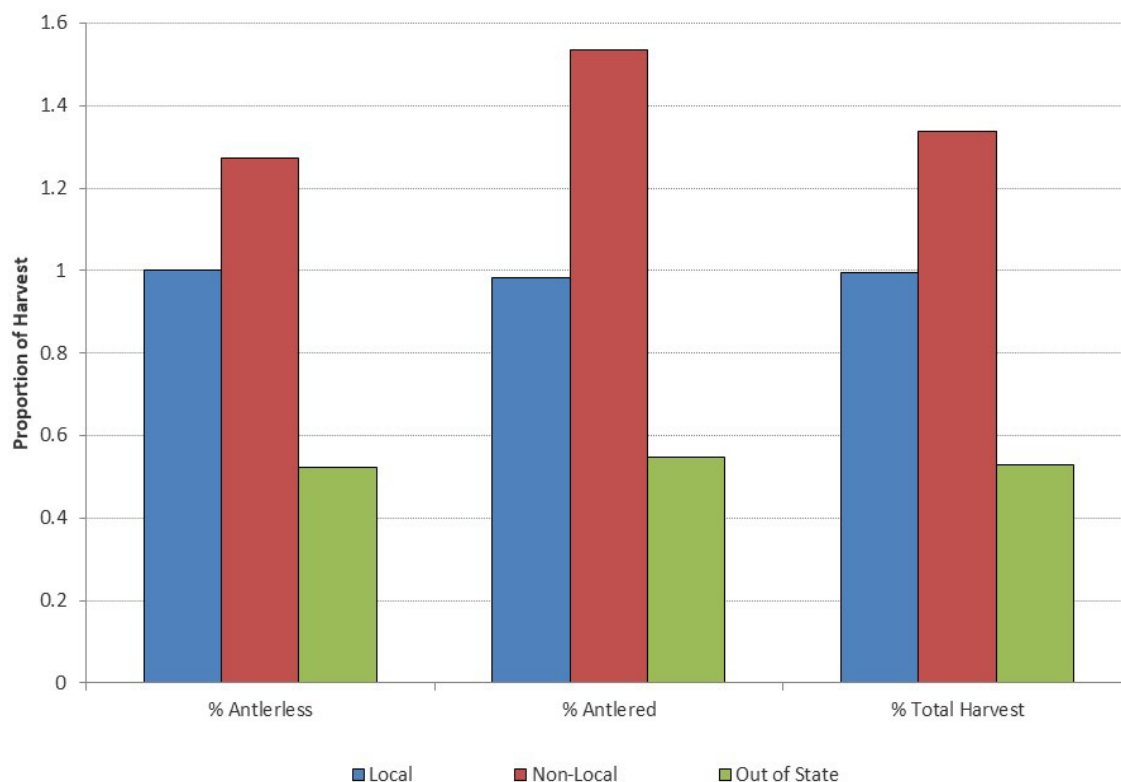


Figure 22. Harvest rates standardized by participation for hunters residing within 30 miles of Duluth (Locals), Minnesota residents outside of the Duluth area (non-locals), and out-of-state hunters for the 2018 Duluth City Bowhunt. Duluth residents are included in the “local” category, are were not separated out.



Hunter Demographics, New vs Returning Hunters:

In 2018, the ABA placed 54 new hunters and 231 returning hunters from the 2017 hunt (Table 6). Returning hunters accounted for a slightly higher percentage of the harvest than did new hunters, when standardized by the number participating (Figure 23). Returning hunters harvested 0.89 ± 0.12 total deer per hunter, significantly different than the new hunters total harvest of 0.63 ± 0.23 ($t = -2.049$, $P = 0.0435$). Returning hunters harvested 0.68 ± 0.09 antlerless deer per hunter, not significantly different than the new hunters' antlerless harvest of 0.44 ± 0.16 ($t = -0.378$, $P = 0.706$).

The observed difference in total harvest between the two hunter groups in 2018 was just barely significant, and entirely due to the harvest of antlered male deer, where new hunters failed to harvest in proportion to their participation. Without knowing for sure, it may be hypothesized that new hunters just didn't see "the buck" that is seemingly legendary here in Duluth, and perhaps waited too long to harvest an antlered male. They may have then simply ran out of time, opportunity, or it just got too cold to sit out any longer.

Table 6. Breakdown of hunter demographics by returning status that participated in the 2018 Duluth City Bowhunt. New hunters are defined as those that did not participate in the 2017 Duluth City Bowhunt. Returning hunters were registered in 2017. The number and percentage of antlerless and antlered harvest is reported by hunter status.

	# Participating	Antlerless (%)	Antlered (%)	Total Harvest (%)
New	54 (18.9%)	24 (13.2%)	10 (17.2%)	34 (14.2%)
Returning	231 (81.1%)	158 (86.8%)	48 (82.7%)	206 (85.8%)
TOTAL	240	182	58	240

Lottery Results, the Application Process, and Subsequent Harvest

By the 30 June deadline, a total of 298 hunters had applied for the 2018 Duluth City Bowhunt, down slightly from the 304 applicants in 2017. Eleven individuals were subsequently removed for either not turning in all of the required paperwork or a check by the 30 June deadline or simply not being eligible to apply due to past disciplinary actions. This left 287 hunters eligible for the Lottery Night to be placed into DHAs.

230 Returning hunters were ultimately placed. 183 (79.6%) of these were placed into their First Choice DHA prior to the Lottery Night, due to requesting DHAs where more spots were available than interested individuals. This is much higher than the 53.2% that received their first choice in 2017. An additional 29 individuals received their First Choice at the Lottery Event, thus placing 212 hunters (92.2%) into their First Choice DHA, again up from 2017 where 80.1% of applicants received their first choice. Another 7 hunters received their second choice DHA, identified during the application process. A total of 219 returning hunters (95.2%) were placed into one of their first two DHA choices, making it hard to argue that the ABA's lottery model is flawed and needs revamping.



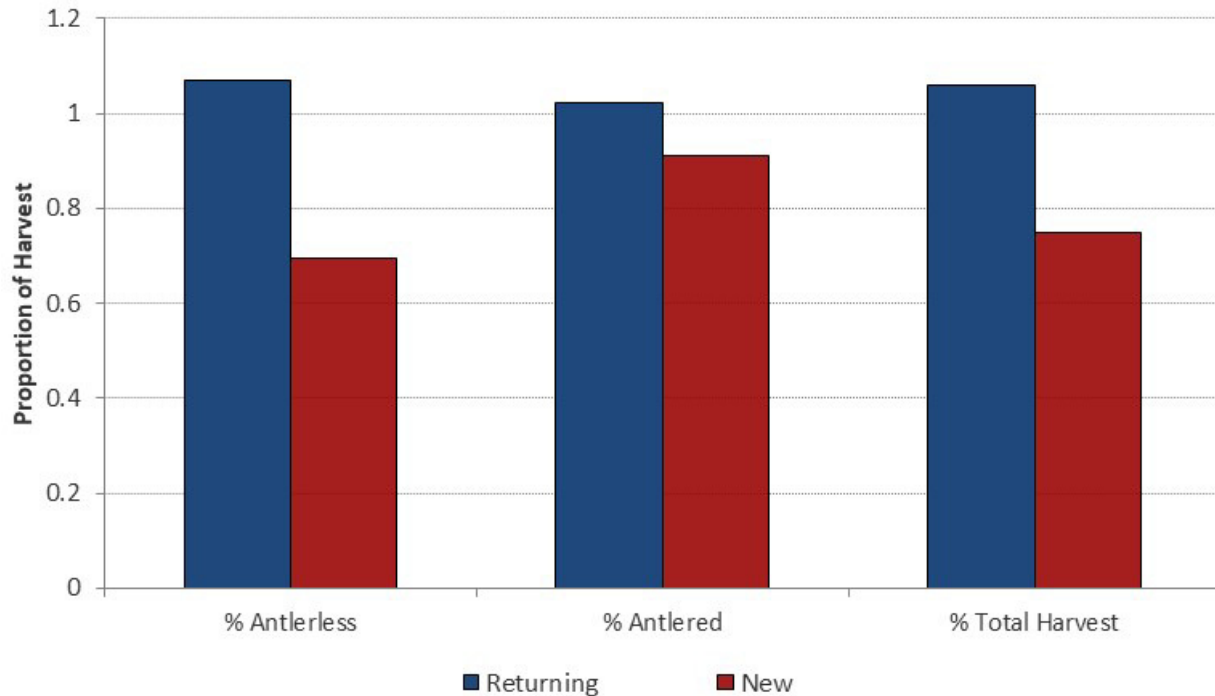


Figure 23. Harvest rates standardized by participation for new and returning hunters for the 2018 Duluth City Bowhunt.

At Lottery night, 57 new hunters were ultimately placed, 18 of whom were actually placed into their first choice DHA identified at the application process (31.6%). Four others were placed into their second choice (7.09%). After Orientation night, two returning hunters were removed due to not attending. Total hunter placement for 2018 was 285 hunters.

Being assigned a public land DHA does not necessarily mean that is where our hunters spend their time or harvest their deer. At the Year End Survey, hunters were asked to indicate where they hunted the most. Figure 24 shows that 53% of the hunters spent the majority of their time hunting on public land assigned during the Lottery Night, down from the 60% of hunters reporting in 2017. An additional 21% of hunters spent most of their time on private land within the DHA assigned.

Actual harvest from the database exactly matched the data provided by hunters in the Year End Survey (Table 7), where 53% of harvest was recorded from the hunter's assigned DHA, public land (Figure 25). Hunters harvesting deer on public land NOT in their assigned DHAs were due to two opportunities: 1) having the opportunity to harvest within a Hot Spot located on public land, and 2) late-season DHAs switches that were not in their originally assigned DHA. The ABA looked at the data, and unlike previous seasons, no hunter was identified as having illegally hunted public land outside of an assigned DHA.

Many folks mistakenly believe that our hunters have their public land "doe" spots and their private land "buck" spots. The data does not support this perception (Table 8; Figure 26). The vast majority of the antlerless harvest did come from public lands, as did the majority of the antlered buck harvest. The ABA is not suggesting that this is not occurring on a case-by-case basis. This is known to occur, based upon the hunter-hunter conflicts that the



Board and Hunt Coordinators have to contend with on an annual basis. But the data suggests that this isn't a widespread or chronic issue.

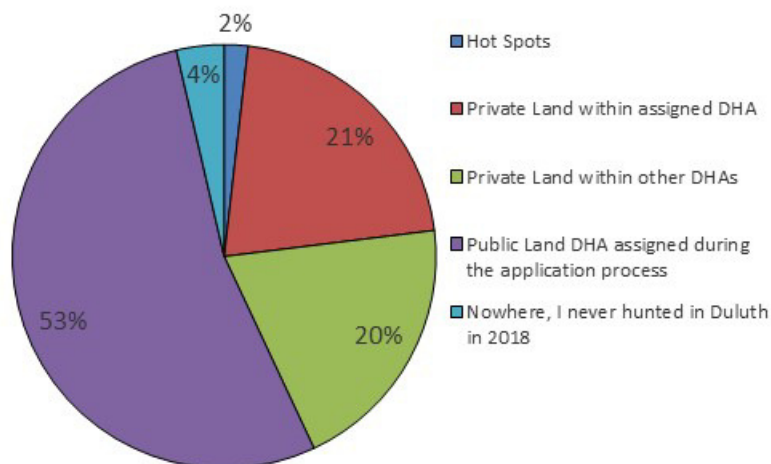


Figure 24. Percentage of hunters identifying in the 2018 Year End Survey where they spent the majority of their time hunting during the 2018 Duluth City Bowhunt.

Table 7. Location of Deer harvested relative to the hunters' assigned DHAs in the 2018 Duluth City Bowhunt. This is not the amount of time spent hunting each spot, as identified in Figure 24.

Count of Harvest = Assigned		
Harvest = Assigned	Public?	Total
Assigned DHA	Private Land	8.3%
	Public Land	53.3%
Assigned DHA Total		61.7%
Not Assigned DHA	Private Land	35.4%
	Public Land	2.5%
Not Assigned DHA Total		37.9%
Opt Out	Private Land	0.4%
Opt Out Total		0.4%
Grand Total		100.0%

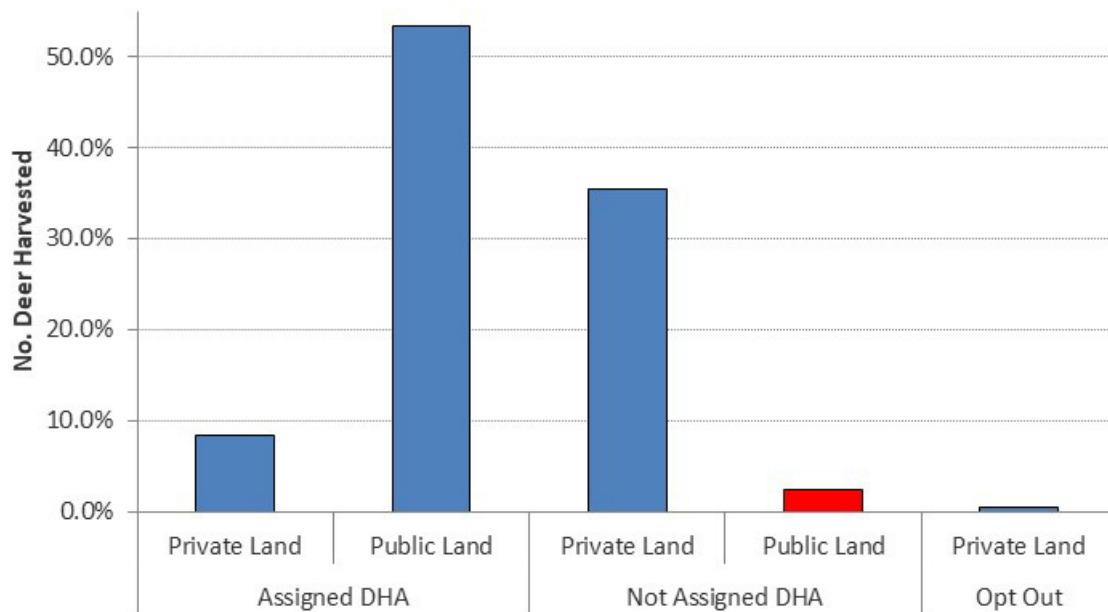


Figure 25. Percentage of deer harvested in public and private lands, and by originally assigned DHAs, for deer harvested in the 2018 Duluth City Bowhunt.

Table 8. Location of Deer harvested by deer type, relative to the hunters' assigned DHAs in the 2018 Duluth City Bowhunt.

Row Labels	Deer Type Generalized	Count of Deer Type Generalized
Assigned DHA		
Private Land	Antlered Buck	2.5%
	Antlerless	5.8%
Public Land	Antlered Buck	12.9%
	Antlerless	40.4%
Not Assigned DHA		
Private Land	Antlered Buck	8.3%
	Antlerless	27.1%
Public Land	Antlered Buck	0.4%
	Antlerless	2.1%
Opt Out		
Private Land	Antlerless	0.4%
Grand Total		100.0%

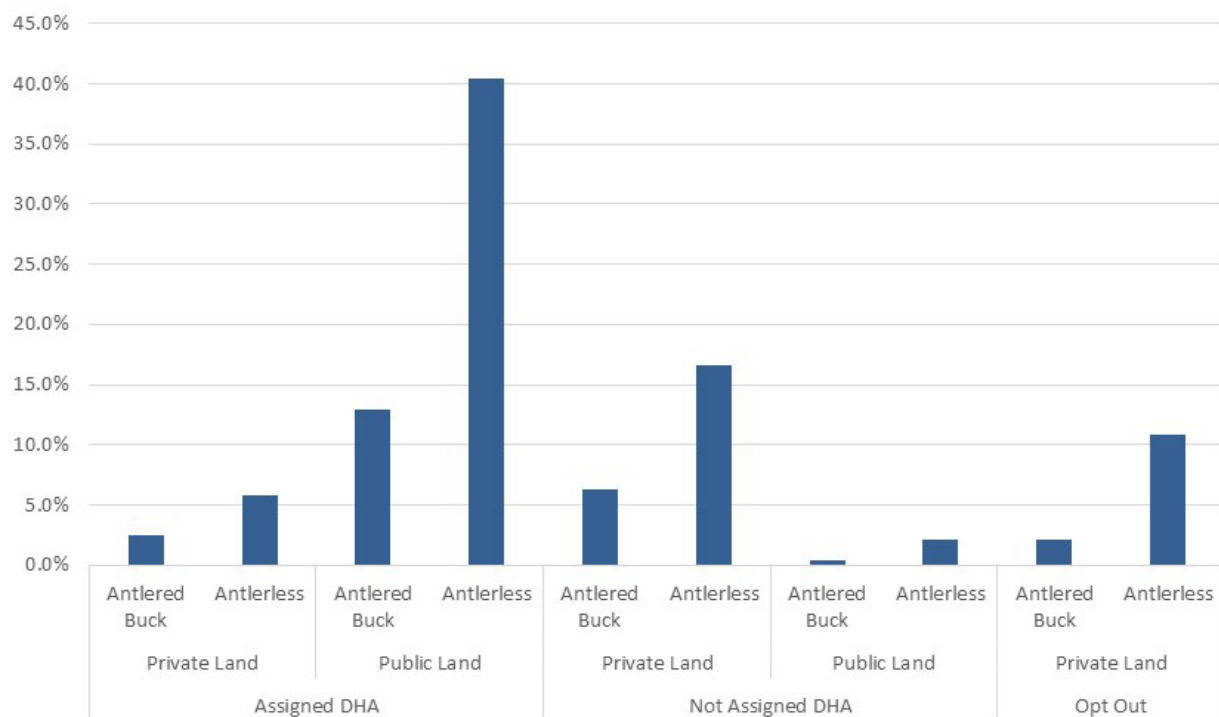


Figure 26. Location of Deer harvested by deer type, relative to the hunters' assigned DHAs in the 2017 Duluth City Bowhunt.

Section 3: Year End Survey:

At the conclusion of every season in the Duluth City Bowhunt, our hunters are asked to complete a Year End Survey. This survey is 100% anonymous. Participants are asked several questions, ranging from wounding deer to observational reports. This year, participation was better than in previous seasons. Only 165 of the 285 hunters (57.9%) took part in the survey. By comparison, survey response rate was 50.7% in 2017, 44.3% in 2016, 34.9% in 2015, and 58.0% in 2014. Our 2018 survey respondents were responsible for a reported 72.5% of the harvest, suggesting that if hunters were successful this season, they were a little more likely to participate in the Year End Survey. The ABA Board is very grateful for those hunters that took the time to provide feedback to the Board and to the City of Duluth. That said, for the 42.1% of the hunters that didn't feel obligated to provide the Board with any feedback, just like if you opt to not vote for politicians, you likewise forfeit your right to complain about what the Board and the City does with respect to the management of this hunt.

Response rate was different between returning hunters (63.0%) and new hunters (37.9%). 143 returning hunters and 22 new hunters filled in this survey. Of these hunters, 96.4% reported that they actually hunted in 2018 after being placed. The ABA understands that life does happen, and not everyone placed into the hunt at Lottery Night will have the opportunity to actually participate. The respondents largely reported that most (93.9%) will likely apply for the 2019 Hunt. Nine individuals indicated that they were still undecided as to whether or not they will apply in 2019.

Respondents reported harvesting 174 of the 240 deer. An additional 26 deer were reported as being wounded, with 13 of these deer reported as being "known to have survived" with nothing more than haircuts or scratches. This gives a reported wounding rate of 13.0% total, or 6.5% if the presumed surviving deer are removed from the analysis.



Experience as a participant in the Duluth hunt averaged 8.3 ± 0.7 years of experience for all hunters, and 9.4 ± 0.7 years for returning hunters (Figure 27). Two of our 2018 “new” hunters are returning from previous seasons. The ABA is encouraged by the large number of returning hunters that have been participating for all 14 seasons (Figure 27).

Hunters were asked about the amount of effort spent in the woods pursuing white-tailed deer. This is to gauge how “serious” our hunters are about their recreation. For the first time since the ABA began reporting this data, the distribution of activity was not significantly different between the two groups of hunters (Figure 28). New hunters hunted an average of 18.3 ± 2.1 days, whereas returning hunters spent 17.5 ± 2.2 days afield ($t = .259$, $P = 0.797$). This is the first time where the estimate of participation was a bit higher for new hunters than for returning ones. Less than twenty days hunting represents relatively low effort compared to past seasons, especially the early years of the hunt. This suggests that our hunters may still be frustrated with the hunting or deer density, and choosing not to spend as much time in the woods. Another reason for this could be the cold and wet weather that our hunters suffered thru this past fall. After so many times of sitting in the rain or freezing in the cold, many hunters may have just said “enough is enough”. But regardless, having this easy and convenient ability to participate in this sport just outside of our front doors is an opportunity that cannot be taken for granted.

By all accounts, 2018 continued the trend of being difficult to put Duluth-raised venison in the freezer. Survey participants were asked whether or not they hunted in other areas. Individuals indicated that they bowhunted in other areas outside of the Duluth City Limits at a rate similar to years past (55.0% in 2018, 48.7% in 2017, 59.4% in 2016, & 58.8% in 2015) (Figure 29). A majority of New hunters (>70%) did bow hunt for white-tailed deer in areas other than Duluth. About 50% of Returning chose to hunt ONLY within Duluth, with the remaining 50% choosing either to not hunt in 2018 or to also hunt elsewhere. Even with harvest rates being lower than the earlier years of this Hunt, it speaks to the importance of the Duluth hunting opportunity to a significant portion (45.0%) of our participating hunters that hunted exclusively within Duluth.

When asked if hunters participated in the MN State Firearms season, 72.7% of new hunters indicated that they had hunted during the firearms season, while only 39.1% of Returning hunters also rifle hunted (Figure 30). There are likely several reasons for this participation. Many individuals identified as being members of deer camps, either with friends or family, which represent important traditions. Other hunters did report that they took advantage of the firearms season in order to put venison into the freezer, as they were either unsuccessful here in Duluth or they expanded outside of 980 to harvest more than the three deer allowed within Duluth. Several respondents indicated that they hunted elsewhere to get away from bikes, crowded hiking trails, dogs, illegal rifle hunters within Duluth, and other distractions. Others reported simply that they love to hunt, and will take advantage of every available opportunity.

The ABA has been asked by City officials on several occasions why our participating hunters don’t harvest more antlered male deer than they do. Obviously there are hunter selectivity patterns that are difficult to model and survey. Many hunters just want meat, and don’t care about antlers. Other hunters will only harvest a mature “trophy”. These reasons are entirely personal choices that our hunters are allowed to make. A third reason may be that our hunters punch their one-and-only “buck” tag during the firearms season. For those participating in the Year End Survey, 9.1% of our hunters reported harvesting a buck with their rifle (Figure 31). If the percentage holds true for the entire Duluth bowhunter population, this could mean as many as 26 of our hunters punched their buck tags during the firearms season.



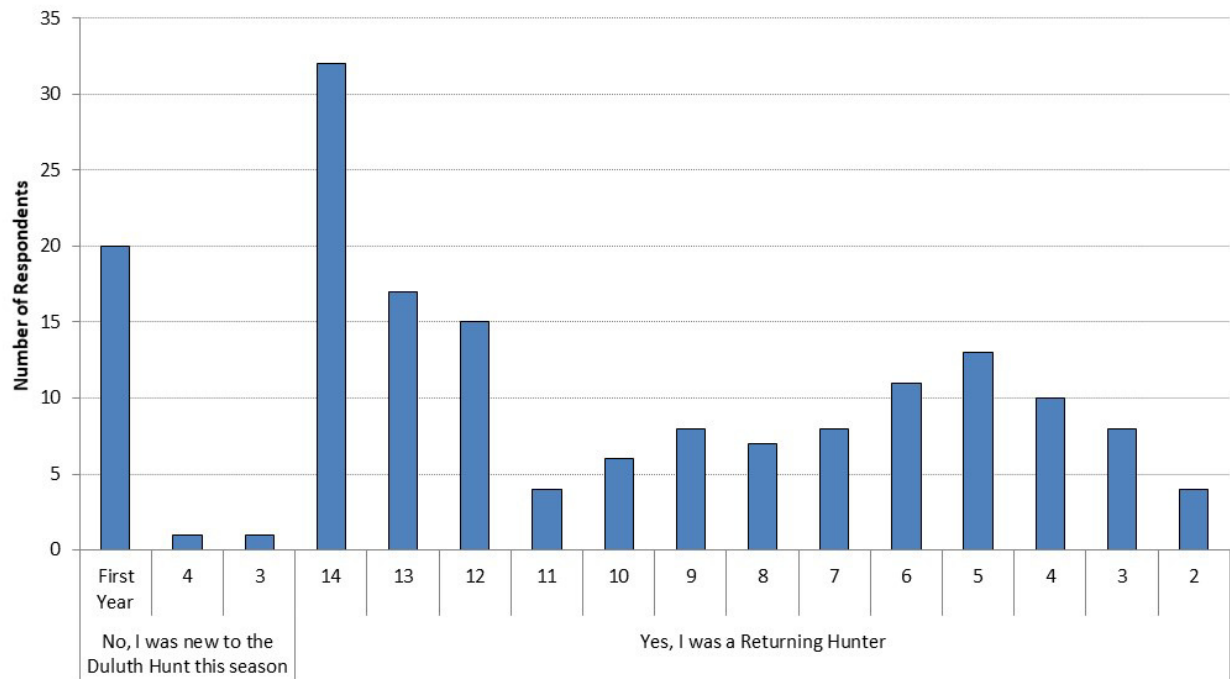


Figure 27. Years of experience in the Duluth City Bowhunt as of the 2018 season, separated by returning hunters and by new hunters that did not participate in 2017. Note that two of these “new” hunters have participated previously, but not in 2017.

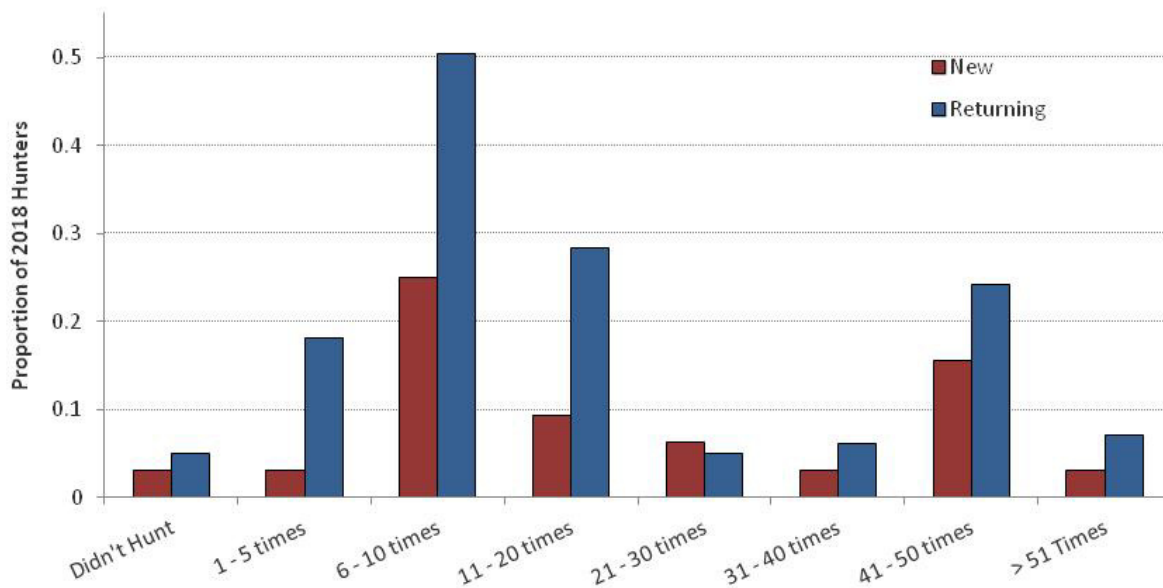


Figure 28. Proportion of new and returning hunters and the effort each group invested in hunting within Duluth during the 2018 Bowhunt Season.

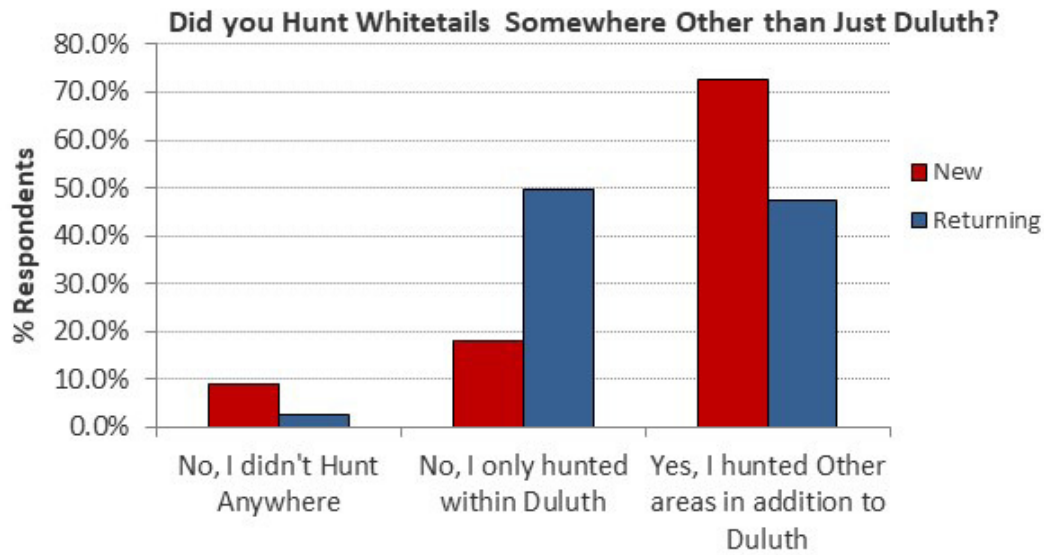


Figure 29. Percentage of year end survey respondents that identified themselves as either new or returning 2018 Duluth hunters, and that indicated whether they bowhunted in areas other than just Duluth.

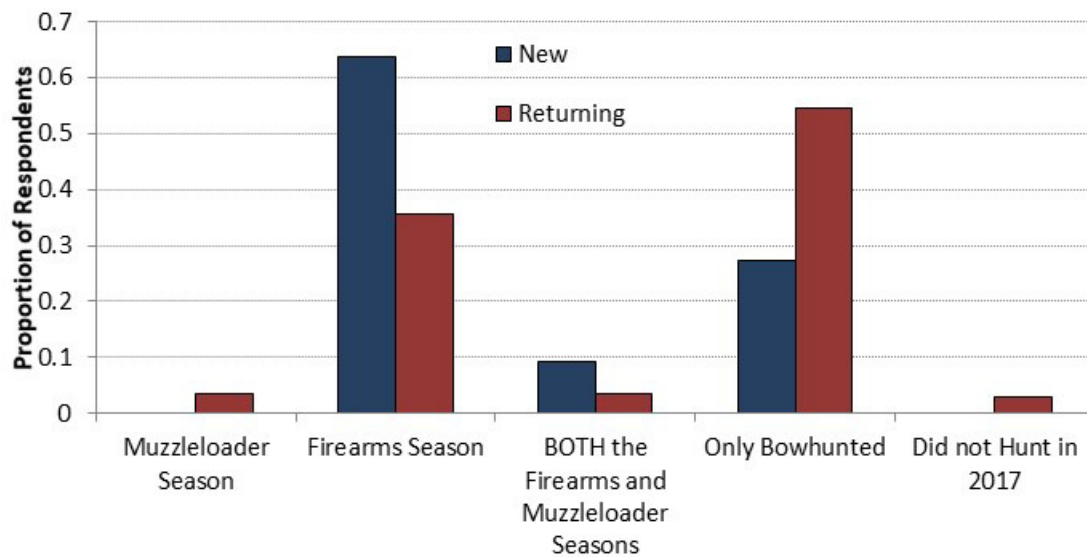


Figure 30. New and returning hunters indicating whether or not they participated in the 2018 Minnesota Firearms Season.

Did you harvest a Buck during the 2018 MN Firearms Season

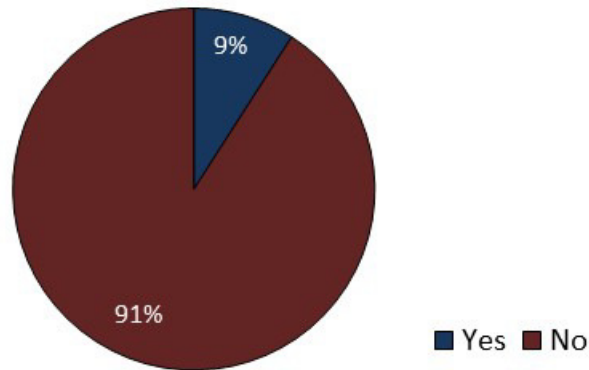


Figure 31. Year End Survey participants indicating whether or not they harvested an antlered male white-tailed deer during the 2018 MN Firearms season.

Metro Designation:

In 2017, no other issue seemed to polarize our hunters as much as did the Metro Designation. This designation allowed our hunters to harvest as many antlerless individuals that they wanted to. While some folks took advantage of this new designation, most of our hunters opposed it. 2017 survey participants were asked to vote on preferences for the 2018 hunt with respect to the Metro Designation. The majority of the survey respondents (59%) recommended that the MNDNR reduce the deer bag limits for 2018, ranging from 15% wanting either a two (2) deer limit or the previous five (5) deer limit, to 29% suggesting a three (3) deer limit (ABA data). MNDNR agreed to remove the Metro Designation for 2018, dropping the limits down to three deer total.

After the 2018 season, our hunters were asked to comment on their support for the lowered 2018 deer limit, with 1 being fully no support and 10 being full support. Again, just at 50% of our hunters expressed complete support for having removed the Metro Designation (score of 10 in Figure 32). When asked about their suggestion for the 2019 Hunt, 51% would like to see the limit remain at three (3), while an additional 23% would like to see the limits dropped even further (Figure 33). Only 18% would like to see the harvest limits raised again, either to five (5) deer (8%) or back to the unlimited Metro Designation (10%). Comments received from survey respondents are included in Appendix 2.

Earn-A-Buck Requirement:

During the last several seasons, many of our hunters complained that they could have harvested an antlered deer, but did not since they had not yet fulfilled the earn-a-buck requirement of first harvesting an antlerless. In 2017, this requirement was removed on 1 December. Only five (5) of our hunters took advantage of this opportunity by harvesting a buck without first harvesting an antlerless individual in 2017. This past season, 2018, the earn-a-buck requirement was suspended on Thanksgiving Day. Only three (3) of our hunters took advantage of this opportunity.

Survey participants were asked for input for the 2019 season. Only 6% of respondents indicated support for keeping the earn-a-buck regulation in place for the entire 2019 (Figure 34). The majority of hunters support either



suspending the earn-a-buck requirement again on Thanksgiving Day 2019 (28%), earlier than Thanksgiving Day (16%), or eliminating the requirement altogether for a one-year trial basis (42%, Figure 34).

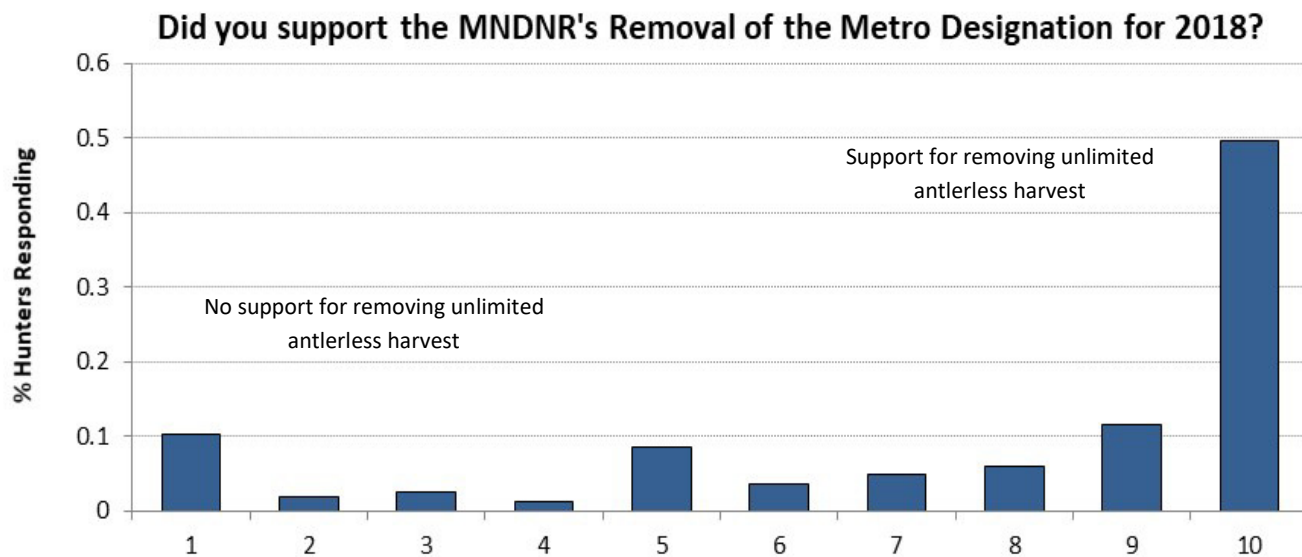


Figure 32. Participants in the 2018 Year End Survey indicating their support or non-support for the removal of the Metro designation for the City of Duluth in 2018. A score of “1” indicates no support for removal of the Metro Designation, i.e. those hunters want unlimited deer. A score of “10” indicates full support for removing the Metro Designation. A “5” or “6” would indicate the survey respondent was indifferent.

Suggestions for 2019 Hunt

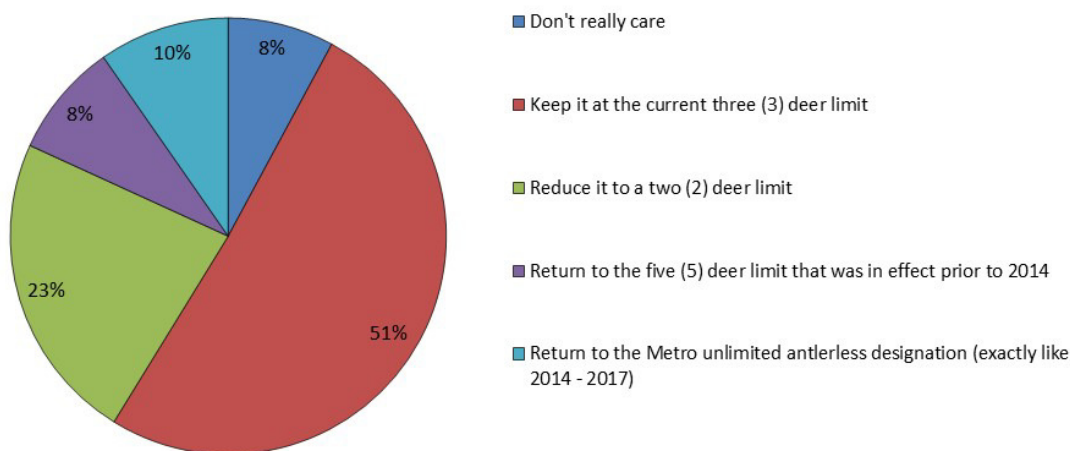


Figure 33. Participants in the 2018 Year End Survey indicating their recommendations for the continued Metro designation for the City of Duluth.

Earn-A-Buck Recommendations for 2019

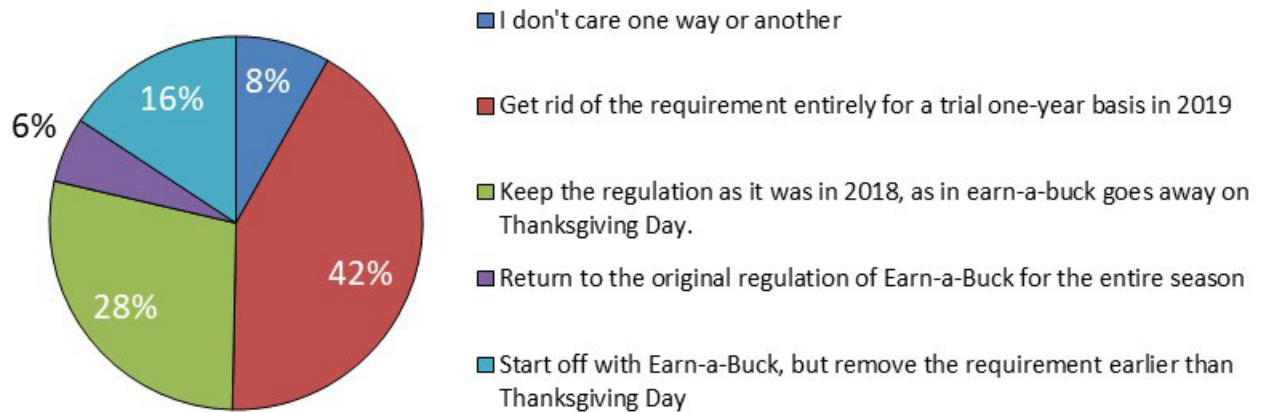


Figure 34. Participants in the 2018 Year End Survey indicating their recommendations for the earn-a-buck requirement for the City of Duluth for the 2019 season.

Official, Unofficial, and Bike Trails

The bike trail system within Duluth is clearly one of the best in the nation. There's no arguing that it certainly attracts tourists into our great City to enjoy the trails, the scenery, and our hotel and restaurant industry. But the trail system seems to be unregulated and somewhat out of hand. Many of the DHAs that have been hunted for more than a decade are now so carved up with the bike trail network as to render them almost unhuntable. Conversations between hunters and ABA Board members and the general public suggest that the extensive bicycle network has even had an impact on the hikers, dog walkers, and the public that values quiet time in the woods.

Our hunters were surveyed for their impression of the trail network. The majority of our hunters (77.6%) indicated that the trail network is more than sufficient to meet the needs of the bicyclists (Table 9, Figure 35). Only a minority of our hunters (N=4) are also bikers (2.4%) and would love to see the trail network expanded.

New this year, the City asked that we survey our hunters on the official and "unofficial" trails within the City. The first question that the City included asked the hunters to rank how their experience has been over the last five years, with respect to the entire network of trails throughout the City. A ranking of "1" indicated that the trail system had impacted their hunting experience, and had led to conflicts with other user groups. A rank of "5" indicated that the hunter had an excellent experience with the trail system, and had not experienced any issues or conflicts. The average response was 2.9 ± 0.2 (median value 3), suggesting a middle-of-the-road reaction for our hunters (Figure 36). 60% of our hunters did report having some conflicts with other users of the trails (Figure 36).

The next set of questions on the trail network asked our hunters about their personal knowledge of the required setbacks. "Unofficial" trails do not have any setback to hunter stand locations, and 71% of our hunters indicated that they were aware of this (Figure 37). When asked if this setback requirement had impacted their hunt, 85% of the hunters indicated that it had not affected them (Figure 38). When asked about the 200-foot setback on "official" trails (not including bike trails), 69% of hunters indicated that this requirement had not impacted their hunts in 2018 (Figure 39). All of the comments provided by the hunters are included in Appendix 3 below.



Table 9. Summary of responses to the 2018 Year End survey asking Duluth hunters about their opinions of the bike trail network in the City of Duluth.

Row Labels	Count of Biking and Hiking Trails
Enough is enough! We have too many trails! It's beginning to affect our ability to pursue our recreational activity.	71
I know nothing about the bike trail system, and it really doesn't concern me in the least.	33
I'm an avid biker (and hunter), and feel that we have enough bike trails in Duluth.	16
I'm an avid biker (and hunter), and would like to see the trail network expanded even more.	4
I'm in favor of expanding the current bike trail system. There's plenty of space for everyone.	3
I'm in favor of the current bike trail system, and feel the woods are large enough to share.	18
I'm an avid biker (and hunter), but feel that COGGS has gone too far in carving up the woods of Duluth for additional, and unnecessary, bike trails, which are having a negative impact on other user groups.	20
Grand Total	165

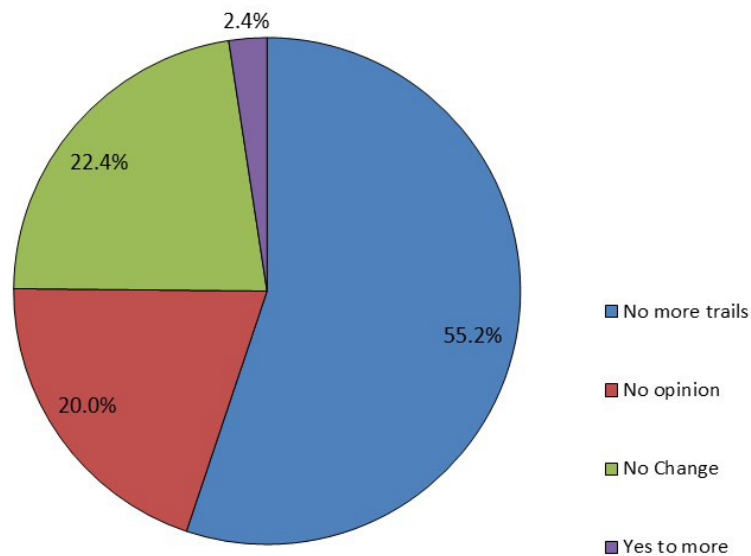


Figure 35. Participants in the 2018 Year End Survey indicating their opinion on the bike trail network within the Duluth City woods. Responses were pooled and simplified from the data presented in Table 9.

Has the City-Wide Trail System Impacted your Hunt Experience?

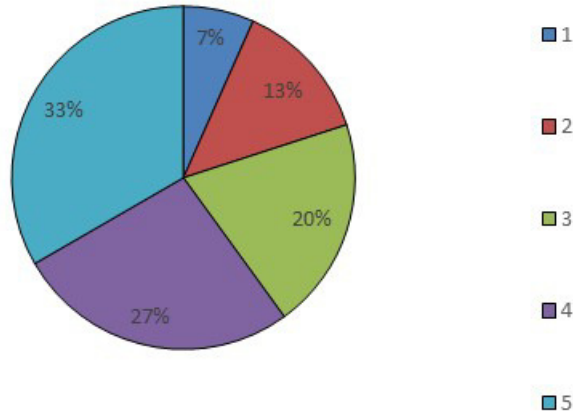


Figure 36. Participants in the 2018 Year End Survey indicating their experience with the city-wide network of trails within the Duluth City woods. Responses ranged from 1 (bad experience, including conflicts with other user groups) to 5 (positive experience with no conflicts).

Are you aware that some trails are unofficial and a setback is not required when hunting?

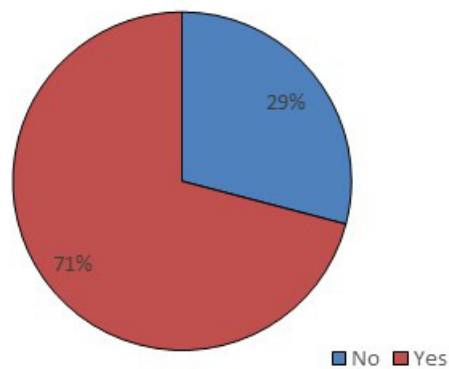


Figure 37. Participants in the 2018 Year End Survey indicating their knowledge of the setbacks required for “unofficial” trails within the Duluth City woods.

"Unofficial" trails do not require a setback. Has this impacted your hunting experience?

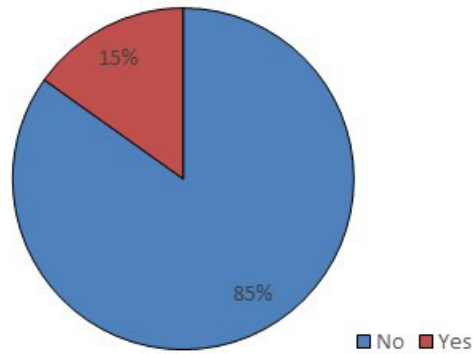


Figure 38. Participants in the 2018 Year End Survey indicating whether they felt the “unofficial” trails within the Duluth City woods had impacted their hunting experience.

There's a 200-foot setback for all "Official" trails except mountain bikes which require a 100-foot setback. Has this impacted your hunting experience?

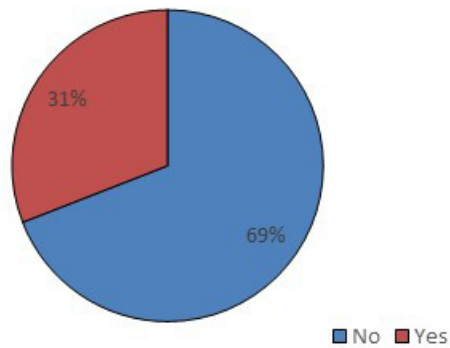


Figure 39. Participants in the 2018 Year End Survey indicating if they felt the setbacks for “official” trails has impacted their hunt.

DHA Crowding and Hunter Density:

A portion of our hunting community continues to advocate for reducing hunter density. Survey respondents don't necessarily agree. When asked about "feeling crowded", the vast majority of respondents indicated that they were not crowded in their hunting areas (Figure 40). For respondents reporting that perhaps some of the DHAs may be over-crowded, only five DHAs received more than a single vote (DHAs 3A, 8, 17B, 17D, & 18), with four DHAs receiving a single vote (2A, 4B, 5, & 19A).

Did you feel crowded where you were hunting?

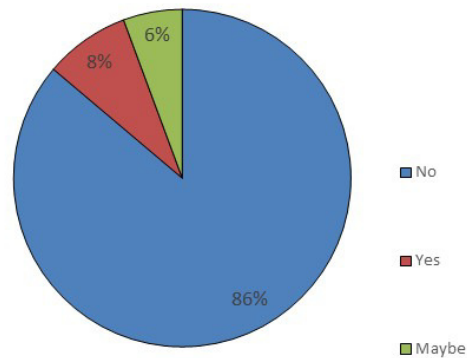


Figure 40. Percentage of Year End survey respondents that reported whether or not they felt there were too many other hunters within the DHA hunt area they were assigned to.

Impressions of the Duluth Deer Herd:

Almost all hunters probably recognize that the deer herd is nowhere near what it was at the start of this hunt. Perhaps landowners may not agree that the herd is at an acceptable level, and that there still may be gains to be made at depressing the herd to even lower levels. Our hunters were asked what they thought about the current deer numbers WITHIN the DHAs that are hunted. Most survey respondents indicated that the herd is near "acceptable" levels from a bowhunter's perspective (Figure 41). Still, many of our hunters believe there's too few deer (Figure 41; Appendix 1). Interestingly, two hunters indicated that there were still too many deer (value of 6 or 7 in Figure 41). One of these hunters is a new hunter, and may not know just how many deer were in the Duluth woods 15 years ago. It would be interesting to know what Duluth residents still think. At any rate, the ABA acknowledges that problem areas do still exist with higher deer densities than what may exist in DHAs hunted for 14 seasons. As landowners report these areas to the ABA, new Hot Spots can be established to address these localized problem areas.



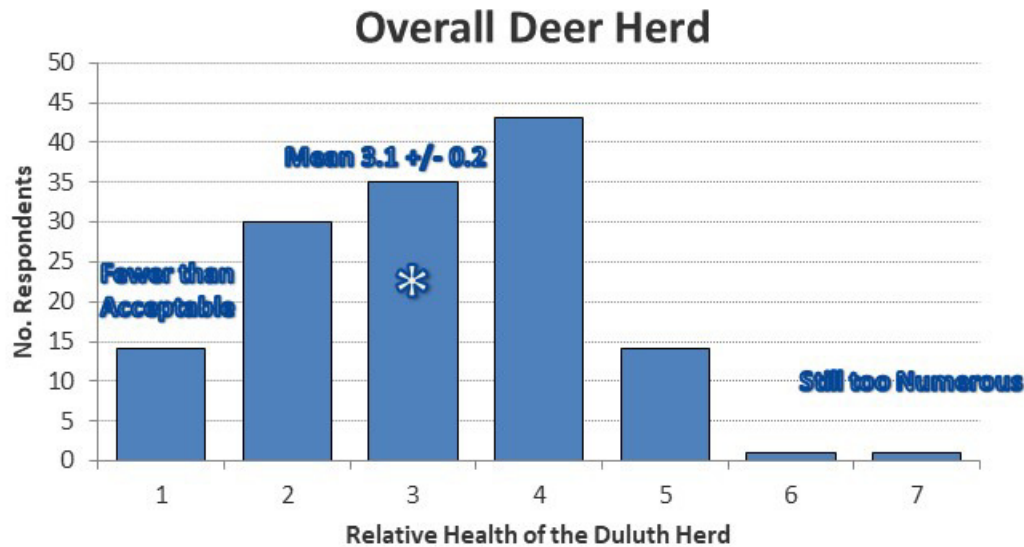


Figure 41. Results from the Year End survey asking respondents to rate the current 2018 white-tailed deer herd within the City of Duluth. Responses could have ranged from 1 (far fewer deer than acceptable) up to 7 (still too many deer on the landscape to be sustainable).

Comments from the Masses:

Hunters were all given the opportunity to comment on whatever they felt important. The question was worded:

“Do you have any ideas or suggestions for improving the Hunt in 2019?”

As expected, the responses were all over the place. Many comments were useful. All comments are included in Appendix 1. A brief summary of the key comments follows:

1) MN DNR sets seasons and bag limits. The ABA can express your concerns to the State, but neither the ABA nor the Duluth City Council can change State limits. Please feel free express your concerns directly to MN DNR, though they will be receiving a copy of all of your comments.

2) Too few deer left in the City. Yes, our hunters have done a fabulous job at decreasing the deer herd. But the ABA does not set limits. This is a MN DNR decision. And perhaps the City residents don’t share this opinion.

3) The ABA proposed elimination of the earn-a-buck requirement for the last three years. It was denied by the Duluth Hunt Review Panel. They did approve of the suspension of this requirement for late in the 2017 & 2018 seasons. This will be evaluated and discussed again. There were many comments in favor of allowing hunters to put venison into the freezer at any point during the season.

4) Baiting is illegal in MN, for a variety of reasons. Don’t understand why this suggestion continues to be made, but the ABA continues to reject this as a viable option for managing the Duluth City deer herd. Do your own research on states that allow for baiting for deer. Largely the bowhunting community rejects this practice, as it very quickly devolves into a competition between landowners to keep the deer on their own properties and it



serves as a vector for disease transmission within the local herd. The ABA will NEVER make this recommendation to the City or to the State of MN. Period.

Board Members for 2018:

Phillip Lockett, President

Tom Florestano

Phillip Mannon, Chairman

James Dexter

Brian Borkholder, Secretary / Treasurer

Katrina Wood

Alan Vorderbruggen



Appendix 1. Suggestions received from hunter filling in the Year End Survey when asked, “Do you have any ideas or suggestions for improving the Hunt in 2019?” Hunter comments are in the left-hand column. Response from the Arrowhead Bowhunters Alliance is in the right-hand column. Comments are as submitted. No attempt was made to correct grammar or spelling.

Do you have any ideas or suggestions for improving the Hunt in 2019?	ABA Response
You guys do a great job! Thanks!	
Why does returning hunt have to keep doing a proficiency? I think the earn a buck should be lifted as soon as rifle season starts.	Because the City requires it per the Council’s Hunt Resolution. It’s in the Ordinance. The ABA doesn’t want to go to this current Council and draw attention to the Hunt. It’s an Ordinance because folks stop practicing. Maybe not you, but lots of folks simply get lazy. Keeping this rule in place is an easy way to limit liability for the ABA and the City. Sorry.
Two deer maximum.	MNDNR Sets the limits
Two deer maximum.	
The ability to hunt from natural ground blinds may make it easier to harvest a doe. They seem to quickly figure out where your tree stands are located and avoid them, also it is not easy to continually change tree stand sites simply because you will be crowding other hunters. Another reason for natural ground blinds is often there are not trees that are suitable for stands that are close to deer activity, or that provide enough cover as does can bust you at 40 yards in a tree where you are backgrounded against the sky.	You are allowed to petition the ABA and your HC for the use of ground blinds. City Rules require that they be manufactured ones, lest hunters begin hunting from the ground, which is illegal and, within the City, downright dangerous.
The ABA does what they can do considering the current city administration.	
Thank you so very much for all your efforts on behalf of bowhunters. I have nothing but thanks and appreciation!	
Thank you for all you do.	
Set fewer limits of antlerless deer and keep earn a buck	MNDNR sets seasons and limits. We can only ask.
Reduce number of rules...I can’t keep up...	Rules almost always increase because humans have a knack of exploiting loopholes. Our goal is to maintain a safe hunt. This requires rules. We are sorry.
Really push to have unlimited antlerless or we can harvest five deer per hunter. We have enough deer in the city to support this and not enough hunters who are actually killing to many deer that the city needs to worry about over-harvest.	Long-term data maintained by the ABA would not agree with you, nor would the majority of your fellow hunters.



Really need to drop the earn a buck for at least a year, and just see how it goes.	We've debated and argued over this. But this is a management hunt, and part of that is harvesting antlerless.
Question above asks if participated in Firearms season- should be an option as a mentor to another individual and not as a direct hunter. Mountain Bikers should have to buy an annual pass to use trails, just like we pay to participate to hunt. Leash laws need to be posted at trail heads, people letting dogs run loose is not courteous to other recreational activities. Too many bike trails, wow they have permanently changed to landscape! ABA got rid of trouble making hunters in the past & it was noted very little trouble this year in many areas, good job. Get rid of earn a buck, let hunters shoot there buck whenever & if they want to take one more deer they can do this whenever-2 deer limit. The zones are small enough and many folks hunting private land that we are all basically hunting many of the same deer so spread the opportunity around with reduced limits.	
Petition the state and city to allow limited baiting during hunting season. No more than 1 gal of feed out any time.	Never! Not going to happen. Go to Wisconsin.
nope	
No, I think the ABA does an excellent job, thank you for all the work you each put in to manage this hunt.	
No restrictions on shooting a buck. If I shoot a buck in the city hunt it shouldn't effect rifle or muzzleloader seasons.	Against MNDNR and State law. Not going to change. Please remember that the Duluth Hunt is not its own entity. It resides under the umbrella of MNDNR laws. We are subject to all State laws.
No	
No	
No	
n/a	



My best opportunities were from small bucks. I gladly would have taken one but it was before the earn-a-buck expired. If there is going to be an earn-a-buck, I think the requirement should end with the beginning of gun season. More and more of the deer activity, in my zone, is centered on the areas where they are being fed. I am torn with hunting closer to these areas to intercept deer movement or just staying far away from those areas altogether and accepting seeing fewer deer. I saw more deer this year. Had deer around but was screened by angle or brush--one of the givens with bowhunting. I don't know how the board can address any of these issues except for the earn-a-buck. I feel confident that I would have killed a deer if it was lifted earlier. As the season progresses, I often opt to hunt off city land where the earn-a-buck is not in place. I shot one doe outside of the city but I hunted with the certainty that I could shoot any deer which gave me an opportunity.	
Keep up the good work ABA!	
Keep up the good work	
keep the hunt open through January	State law, we can't change.
Keep the bag limit at 3 and get rid of earn a buck!	
Just be nice to see more deer. This is the one place I can shoot a doe or two for the freezer	
It is run very well.	
I want to thank the ABA Board members for volunteering their time to make this hunt happen for the rest of us. THANK YOU !!!!	
I think you guys have worked out all the issues and are doing a good job.	
I think there should be something in place that would let someone go in to other zones when there are people who pick the zone and then not even put a stand up all season!!! This happened in 4b the last two years!!!	We can't regulate this. Life happens. Some hunters break bones, get new jobs, have kids make soccer teams, etc. We offer the opportunity to hunt. Communicate with your HC to check on hunter participation.
I like the option of the 1 yr no earn a buck trial..	So does some of the Board, but likely won't change anytime soon.
I appreciate everything you do.	



Have Bork quit the funny guy routine. Simply provide information as necessary ;)	Oh just let him have his fun. He invests 300 hours annually into this hunt. If it was no longer fun, you'd get the opportunity to step up and take over for him.
Hang in there!	
Great job as usual!	
Good as is.	
Give yourselves a pat on the back. You deserve it. Considering you guys are dealing with multiple groups of people that basically want it there way. You get all the flack and hear all the bitching and complaining. Nobody cuts you any slack. They act like you make all the rules, and if something new comes along it's automatically your fault. Those of us who know better and understand that your hands are mostly tied don't speak out, but we do support you, and I thank you for all of your hard and frustrating work. THANK YOU!!!	So far, you're my favorite survey respondent!
Get rid of the proficiency test to returning we already have a enough hoops to jump threw.	Might agree, save that it's a City Ordinance
Get rid of the earn a buck requirement. I typically like to harvest two deer and would have this year without this requirement. This year I had a buck in the slam dunk range and had to pass. I am not trophy hunting. I saw several bucks in September and October but not a single doe or fawn until November. Thanks to all the volunteers that make this hunt a success.	
For hunters that are in a zones, and don't hunt them there should be some kind of penalty, especially when the ones that want the area can't get it.	Life happens. Some hunters break bones, get new jobs, have kids make soccer teams, etc. We offer the opportunity to hunt. Communicate with your HC to check on hunter participation.
eliminate party hunting; seriously consider a 2 deer limit; keep Thanksgiving as the date to relax the earn a buck requirement.	We are looking at the party hunting loophole
Earn a buck gone after mn firearms season. Thanks for your time	
Drop the number of participants, lower the number of antlerless to 2, and do away with the earn a buck and let those shoot what they want to shoot.	



DNR game wardens must always must enforce game laws - even when the offenders are Duluth police officers who are in the hunt. Furthermore, any police officer using their authority to harass other hunters should be eliminated from the hunt.	
Create a blog for each zone on the website so we can talk with hunters in our zone. We can talk about deer activity, thrfts, etc	We tried this once before on our old website platform. Didn't really get used. Can you try this on the ABA FaceBook page
Can we shutdown some trails October through November? Less hunters, less Dogs!	
5 minute meet and greet of hunters and hunt coordinator after orientation. This year as soon as orientation was complete everyone ran out of the building. There were several hunt zones at my table so I wasn't able to differentiate everyone hunting my zone including the hunt coordinator. Most guys I know take a respectful sportsman approach to hunting, I would have liked to understand which parts of my zone others were planning to hunt for safety purposes and to avoid spoiling someone else's hunt.	
2 deer limit	
Reduce the setback from occupied buildings to 200'. 400 feet seems to be excessive for born arrow.	We continue to try this every season. Seems to be some push-back from City Administration
None	
Eliminate Party Hunting. Few are able to reach their limit, so to me this is unnecessary. I also feel that "party hunting" is not applicable to bowhunting in the way it is for rifle hunters doing drives, or hunting in areas where people are only allowed one deer. I also suspect 99% of deer taken in Duluth, registered on another's tag, are just that - taken with another's tag and not taken while legally "party hunting per MN DNR definitions/rules (I would be willing to bet these folks were NOT afield with the people who tagged them.	We've debated the Party Hunting thing. Will be addressing this with law enforcement at the Deer Review Panel. Short of it, if law enforcement won't enforce or investigate party hunting, there's no reason to have yet another rule in our manual. But understand that the majority of the ABA Board would get rid of party hunting immediately if they could.
Push back on all of these unofficial trails, better maps regarding where the official trails actually are. It would help eliminate current and future unnecessary guess work and potentially unfavorable encounters.	
I wish there was some way to officially say thanks to the ABA leadership for all their work.	You just did. Thank you!



<p>Allow disabled hunters especially disabled vets to utilize atv's to remove the animal they harvested from the woods and to waive the requirement of having to remove one's stand from the woods.</p> <p>Change the requirement of being next to a dwelling from 400 feet to 200 feet.</p> <p>Finally, thank you to all the ABA members for their time and effort in making this hunt happen. Very good job.</p>	<p>Duluth City laws prohibit the use of ATV's. This is not a Hunt Rule. We are aware that they get used illegally, but that's an issue for Duluth PD.</p>
N/A	
<p>Reach out to the City for help patrolling rifle hunters in the city. Easy to stop in one or two very common access points opening morning and quickly educate a few big groups. Same parking lots every year.</p>	<p>Would LOVE this to happen!</p>
<p>Can all applications and payments go to online submission? It's 2019!</p>	<p>That would be up to the City. They collect all of the payments. Recall that you mail them in to the ABA, but make your check payable to the City of Duluth. But we'll ask them what is possible.</p>
<p>You guys do a great job. Reinstate the metro designation. Point of the hunt is to reduce the deer population.</p>	
<p>I currently believe this is a good program. I believe COGGS needs to post private property signs where it meets there trails. the bikers think all is public and even remove property pins that are back in the woods a way from streets.</p>	
<p>Thanks for making this possible. I really enjoy my 3 minute commute to my productive hunting spot.</p>	
<p>Keep demanding the very best hunting ethics from all of us! ...or you're out!</p>	
<p>Unlimited anterless, have coordinators contact participating members more frequently regarding if they are done let them know so others can switch dha's</p>	<p>It's the hunter's responsibility to communicate with the HC's. They aren't baby-sitters.</p>
<p>no. Excellent hunt as always. Well done. Thank you very much</p>	
<p>Decreasing setback distance from occupied structures would be nice to free more space to hunt some of the public zones.</p>	
<p>Nope you guys are doing a great job</p>	



Change the 400 foot set back to 300 for occupied buildings. Drop the earn-a-buck requirement after MN rifle season ends.	
I just have a comment about the Bike trails. I feel a nice compromise to expanding the bike trails would be to eliminate the set backs. Once a trail is built that is a total of 400 ft (200 per side) that you can't hang a stand. That is a lot of space. I bike and hunt and I feel Duluth is better place to live the more people get out, but the set back makes it almost impossible to hunt in certain spots.	
End earn a buck. End sex designation in general..deer in town it's down.	State law allows for a single antlered individual per hunter per year. This can't be changed. There is a biological difference between the sexes, and the management of the two sexes.
Allow other private areas to be hunted if hunter can get permission outside a dha	City Council sets the DHAs. Landowners are free to contact the ABA to petition us to add their land as a Hot Spot. But this is NOT a private hunting preserve for a select few hunters.
Earlier harvest date for bucks. As soon as rut is over, which is well before T-day, they seem to go into residential areas or disappear outside the city. I only see bucks during the day before November 1.	
Once you pass proficiency test the first time that should be enough if you continue to hunt the city hunt.If you opt out you need to take the test again.	I might agree with you, but the City currently requires annual testing. See responses above. It comes down to our liability and hunters (some, not you) getting lazy.
Get rid of earn a buck, goal is population hunt. I bet some people can shoot a buck because we've already done a great job at reducing the does. Taking a buck out helps. A page to show photos of what bucks were taken, can hide the DHA and hunters name, but would be nice to know what's out there and if your target buck got shot	The page of photos idea is certainly interesting, but given just how secretive many of our hunters are, I suspect that we'd get very little participation. Even if I blotted out the names and DHAs, folks still aren't likely to share. People are funny that way.



<p>I Have had a great experience with the ABA hunt this year, the organization of this hunt is incredible. It is a little bit intimidating at first, but once you start it and now that I completed 1 season I fully understand the rules and regs. And I am excited to be in the hunt next year.</p> <p>I would like to say one thing about the feelings towards the bike trails, as I answered above, I am an Avid MTN Biker and the trail system that COGGS has come together to build has done a great deal for the economy of our City.</p> <p>People are traveling from all over the state and outside the state to use the trail system and recreation we have in Duluth. This is not to mention the people that have moved to Duluth because it is one of the best Outdoor cities to live in.</p> <p>So I think we need to take the weight of what the MTN bike trails have done for the city before we complain that we are not able to hang a tree stand on a tree because a new trail was established seems kind of minor and selfish when looking at the big picture.....</p>	<p>All very good points. But many of our hunters have been here for 14 years. 14 years ago there wasn't the trail network there is now. Conflicts between hunters, bikers, and hikers weren't at all common. While your points are all well put, many still remember and pine for the good ole days when hunters were the only ones in the woods come Dec 1. Perhaps the bike trail network in and of themselves aren't as problematic as the prevalence of the fat tire bicycle, that extends the biking season well into the snow-season, when bowhunters once were the sole group recreating in the woods.</p>
<p>Let people know that the preferred way to submit hunt lottery picks is by proxy. As a new hunter I would have gladly done it but I thought it was less convenient to have you serve as everyone's proxy. I now know otherwise.</p>	<p>I would LOVE it if everyone went the proxy route! Then the ABA could save \$900 in venue rental to host the Lottery. We did it once in a garage, and were lambasted for our secrecy. City now requires us to do this in a public venue.</p>
<p>Reduce the take limit to 1 or 2 and allow taking a buck earlier than Thanksgiving.</p>	
<p>Remove the earn a buck!</p>	
<p>I think that the 400 foot set back for hunting near someone's residence is a hindrance to the hunt. It makes no sense that I can target practice without my neighbor permission but can't hunt the same property because they think it is morally wrong.</p>	<p>Good point, but are you 100% sure you are legally allowed to target practice in your backyard within the Duluth city limits?</p>
<p>My hat is off to individuals,,,whatever your motivation to continue administering this great opportunity. We as hunters greatly benefit from your continued support,experience and work. Thanks again</p>	<p>Our motivation is that if we don't continue to work at this, no one else may step up. We like this hunt too. We don't want it to disappear on us. So we're actually kind of selfish in that way.</p>
<p>To eliminate earn a buck for a trial run. I was rewarded by eating all my tags because of having to pass bucks early in season. Then once late season came along each day gets harder to harvest</p>	<p>We'll make the suggestion to the City again for 2019</p>
<p>This was my first year participating in the City Hunt and overall it was a very good experience. Good job ABA.</p>	



<p>-Lower the age limit to the same as the state of MN requires. I can take my kid hunting with me on property outside of Duluth years before I can take him on our own property in Duluth. If you haven't noticed hunter numbers are down, and younger hunter recruitment is down. We're up against the ipads, iphones, and vaping... the sooner we can get them more interested in the outdoors the better. My kids want to come home from school and go bowhunting with me, and I want to take them. There is a big difference if they can go right when they get home from school a few nights a week, than trying to travel or find time to take them on weekends when your schedule is booked with other activities. The city should not be able to regulate this. This young hunter meets all of the state requirements (poundage, license, etc..) wears a safety harness, is hunting with an adult, passes and shooting proficiency test, a written test, and still can't hunt in the city limits on property his family owns.</p> <p>-Private land owners should not have the same requirements as the public property hunters. I don't feel the need to tag all of my deer stands when its on my own land. I also don't feel like I need to be wearing an orange arm band when it is on private land.</p>	<p>City sets the age limit. It's all about safe and EXPERIENCED bowhunters within the public woods. It's not about letting children cut their teeth on the sport. We've sold this to the politicians and to the residents as allowing experienced hunters to hunt in the backyards of our residents. This is not likely to change anytime soon. Get your child the experience they need outside of Duluth. Come on back once they come of age.</p> <p>Sure, don't tag your stands on your own land. Then how will law enforcement identify legal vs illegal hunters? This is of utmost importance. Too many illegal hunters are stealing opportunities from our legal hunters, and from you personally. It's not that onerous of a task to slip on a simple piece of plastic onto your stand on private land. I'm sorry. It's just not that hard. Same goes for the arm bands. How will you identify whether your neighbor is a legal or illegal hunter. Trust us. We've been thru this a few times. We aren't perfect, but feel this hunt is pretty well run.</p>
<p>I like how we get weekly updates on deer harvest in the city hunt. Was a fantastic time hunting in Duluth this fall. I can't wait to see what 2019 holds. I honestly can't think of anything to improve the city hunt.</p>	
<p>I appreciate how well it is managed and grateful for the opportunity it provides!</p>	



Appendix 2. Comments concerning the MNDNR's Metro Designation. Support ranges from 1 (No support) to 10 (Full Support). Hunters were asked to justify their level of support, as in why they did or did not support removal of the Metro Designation. These comments are included solely for the public record and for the MNDNR. Comments are as submitted. No attempt was made to correct grammar or spelling.

Did you support the removal of the Metro Designation for Duluth for this 2018 season, thus limiting hunters in the Duluth Hunt to a maximum of three deer, down from the previous unlimited number?	Why did you or did you not support the Metro Designation for this past season?
1	With the goal of the hunt being to manage the number of deer within the city, it is my opinion that if one individual has the time and opportunity to take let's say 10 deer and several other hunters are limited and only take 1 deer their combined efforts would better meet the desired goal.
1	was tagged out in October and could have shot more deer
1	Too many deer are taken
1	There are still too many deer and people who are capable of taking them out should be allowed to do so.
1	There are a lot of deer in the city and we don't have to worry about hunters killing to many in a season when we have any unlimited antlerless or are allowed to harvest a total of five deer per hunter. Many hunters only get one and some get none. 2018 season will likely be the year with the fewest kills. The few hunters who get a number of deer should be allowed to get more and give the deer to family or friends.
1	The ABA was established to bring down the deer population in the City. So why limit to only 3 deer ? Those that can and want to shoot more should. We had a motorcyclist killed in our neighborhood by a deer this last year.
1	Still quite a few deer. Landowners were not happy with the 3 deer limit.
1	Plenty of deer within the city. Go back to unlimited antlerless.
1	I'm in favor of the 5 deer limit. We don't need to be in the same Metro qualification as the cities.
1	I would have hunted more in Duluth if it was unlimited antlerless.
1	I wanted to shoot more does



2	With only 3 tags I had to be more picky on what I was shooting
2	Some areas have an abundance of deer. If a hunter wants to shoot more. That hunter should be able to..
2	Most hunters don't harvest more than two but those who would like to harvest more should be able to
3	I supported removal of the designation but I don't think it matters. I don't know anyone who shoots over 5 deer. I do think the limit should be 5
4	Some people still have overpopulation. Let them stack deer. I do not have that problem. I won't get a chance to kill more than 3 deer.
4	I supported the 3 deer limit for future herd numbers and the need for us Bowhunters in the city. Manage instead of exterminate.
5	removal didn't matter to me
5	Not enough deer to support unlimited
5	I'm not exactly sure whether I support this or not. Depending on how the deer population is (other than where I hunted) would help me come to a conclusion on this.
5	I support what ever is decided on.
5	I hunt for food but you can't have it both ways
5	Herd is getting smaller
5	herd is down and therefore three deer is enough
6	Not opinionated either way
6	It doesn't really matter to me.
7	We get all our meat from the city hunt and if the deer herd increases we have a better chance of filling our freezer
7	People don't need to be killing double digits.
7	Low herd population
7	I don't know that the number makes that much difference to more than a few hunters. Seems reasonable--3, 5, not much difference to me.



7	Exceedingly few people actually shoot more than 2 deer anyway.
8	Three deer is enough for me, however I respect others opinions if they would like to harvest more deer.
8	The goal of hunting is conservation, not to wipe out a herd and remove them from habitat where they can live.
8	It nice to be able to get only what u need
8	I didn't shoot any deer, didn't even get an opportunity until late December, so that tells me the heard is closer to "in-check"
8	Don't care either way.
9	Unlimited designation opens the door for greed and competitiveness which goes against the bowhunters creed and conservation. Unlimited can also lead to wonton waste and lack of respect for the animal. Unless people are donating to the food shelf, which very few Duluth hunters do, I don't feel a person needs that much venison
9	To avoid hunters from harvesting too many deer and basically cleaning out the herd preventing others from harvesting a deer.
9	The population is down.
9	The herd is under control.
9	Not that many deer
9	I supported the removal of unlimited Metro Designation because I don't want hunters to think there are unlimited deer in the Duluth hunt and draw in opportunists who may clog up the application process, take up hunting slots, then hunt elsewhere once they find there are actually low numbers of deer in Duluth.
9	I support the three-deer limit. It allows more bow-hunters an opportunity at filling their tag.
9	I only try to shoot 2 deer
9	Deer numbers are dropping in the city limits
9	City herd didn't support unlimited



9	Because it will give those people with less time or experience a little more opportunity in the heavily hunted areas, and it lessens some of the conflicts. If you have the desire for more game to bag, take up turkey hunting in the spring, hunt bears in September, party season hunt in November out of the city, hunt small game, go over to "Packerville and hunt til February. There's plenty of options. But also believe the herd is in a pretty good balance.
9	3 seems to be enough venison
10	We don't want to kill all of the deer. In the area I hunt its becoming a little more like real hunting
10	we are removing to many deer.
10	Very few deer left
10	Very few deer around anymore
10	Too few deer for a few retirees to shoot a dozen or more each when I couldn't find one to save my life
10	Three deer is enough for one hunter
10	There is so many less deer. I hardly see a deer anymore. We need some limit. It sucks spending so much time, money, and effort with no reward.
10	There is no need for unlimited deer
10	there aren't many antlerless deer left in Duluth. The days of "whack 'em and stack 'em" are gone. Dropping the limit to 3 was the appropriate thing to do in 2018. Dropping the limit to 2 going forward would be a good choice.
10	there are many fewer does available in Duluth to shoot. I saw nothing but bucks for most of my early sits. the DNR is always behind the times - when we really needed the metro des. in the first 5-7 years, they didn't do anything. By the time they finally gave us the metro des., we didn't need it any longer.
10	The population has dropped to a reasonable level for all parties.
10	The herd size is appropriate and now needs to be managed not taken to extinction. This also creates a lot less issues between hunters who are taking a disproportionate number of deer themselves.



10	The herd seems to be in check or maybe even low.
10	The herd has been reduced and we should reduce the limit to 1 or 2.
10	The heard is too small. Between excessive harvest and wolves entering the outer limits of the city.
10	The Duluth herd population is dwindling and three deer per hunter is more than plenty.
10	The deer numbers are very low do to the harsh winters, unlimited tags and number of hunters.
10	The deer numbers are sufficiently reduced
10	Supported removal of unlimited due to the fact I believe this will help re-distribute the resource and quality recreational opportunities more equitably. I also believe this will help minimize conflict between hunters due to greedy behavior from hunters who take more than their fair share when others around them are going empty handed.
10	Supported removal of unlimited due to reduced size of heard..give someone else a chance. Three is still an adequate number for any one hunter.
10	Support providing harvest opportunities for more hunters.
10	Support it - would like to see more deer
10	spread the harvest out among other hunters/may reduce hunting pressure once someone gets their 3 deer and is done hunting the city/the harvest #s are already way down from other years, and i didn't see too many hunters that shot 3 deer anyways.
10	Population seems at a reasonable rate and I don't feel we beeed an unlimited ability to shoot what people want
10	not that many deer around
10	Not enough deer to support unlimited harvest & we are all hunting the same deer to a degree, spreads out the opportunity
10	Not enough deer to support metro
10	Not enough deer to support metro



10	Not enough deer to justify that number taken
10	Not enough deer int the city
10	Not enough deer in most spots by the reports of other hunters
10	Management not exterminate
10	Low deer numbers, the herd population has been brought down to a manageable size
10	It's fun to see more deer
10	It would be nice to see more than one deer every 3-4 days.
10	It seems there aren't the large numbers of deer that once caused problems in Duluth.
10	I think that the deer population is low enough that it is unnecessary to harvest an unlimited number.
10	I think 3 is enough the numbers for harvest are still consistant.
10	I supported the three limited do to the decline in the herd
10	I supported the removal of unlimited antlerless because there is already a lack of deer to hunt and our buck to doe ratio is very unbalanced
10	I support the unlimited removal designation. It's nice to see deer while hunting.
10	I support it because there is not nearly enough deer and there's no reason someone needs more than a couple deer worth of meat
10	I like to see deer, not eradicate every last one of them. Herd has been reduced to a nice size.
10	I feel as though a 3 deer limit is just right for the city of Duluth.
10	I did not see a doe until November
10	Hunt elsewhere if you need more than 3 deer. The point of the hunt isn't to feed other people by donation.



10	feels like the herd is at a nice equilibrium. I'd like to keep hunting the city and keep seeing deer!
10	Deer population is down
10	Deer numbers seem to be down
10	Deer numbers are low in the city
10	Deer numbers are low
10	Deer herd seems to be below average so we don't need everyone shooting as many deer as they want.
10	Deer herd is low enough. Need only maintenance at this point.
10	Deer herd is down, could even lower the limit
10	deer heard does not seem very strong - see less deer year after year
10	Deer densities don't support unlimited. To many hunters not seeing/harvesting deer. Better to share the wealth.
10	Decreased # of deer seen in stand and day to day activities
10	Because in years pas there has been too many deer shot.
10	Because I want to be able to shoot deer also. We cant totally wipe them out. I love eating them. And wtf is [REDACTED] really gonna do with the 13 deer he shot in one dam yr. that's a waste. He being selfish.
10	3 deer is a lot of vennie
10	2 deer are plenty for anyone
10	"Management hunt" not an extermination!



Appendix 3. Comments concerning the City-wide trail network, and the comments as to how the setbacks have impacted participating hunters. Answers across rows are likely not from the same respondent. Answers were sorted to remove blank answers. Again, these are included for the public record.

How has the 200-foot setback to "Official" trails impacted your hunting experience?	How have "Unofficial" trails, which do not require a setback, impacted your hunting experience?
Currently there are no trails in our zone. Let's keep it that way!	I am aware that some trails unofficial; however, it is sometimes hard to tell which ones are unofficial. It would be nice to have a listing or map of all official trails. It would be super awesome if they were incorporated in the DHA maps.
1/2 of the available area of some zones is now off limits	Because they still get enough use & people walking dogs off leash on these trails & others
200 foot setback is excessive, it should be 100 feet for all trails	even though there is no formal setback, one of the key tenets of the hunt is to be discrete/invisible to the public. I don't want to be seen by the non-hunting public and impact their experience/make them feel uncomfortable as they recreate in the woods of Duluth too.
All the trails in zones 1 and 2a which I have hunted over the years significantly reduced the amount of huntable area. If you buffer all the trails in zone 1 200 feet on both side it adds up to hundreds of acres!	How would I know what is an official trail?
Another rule to worry about...no one is going to sit on a hiking trail...I don't want to break the law, especially considering this is enforced by mndnr and would be a game and fish violation...official and unofficial trails exist...I am too busy to research trail designations and potential changes...rules should exist to prevent a problem...has there ever been an issue??	Human traffic affects hunting whether designated or not
Between housing development and network of trails, small parcels are becoming unhunt able. Official-unofficial, what's what. It's all been chopped up. No one builds a trail right next to another one,so they have greatly reduced the area you can even hunt, but the hunter numbers remain the same or increase every year.	I don't want activity on any trail to affect my hunt.
Bikers free roan woods off of trails	I guess it would be nice to know which trails are and aren't official



Due to the re-routing and creation of switchbacks for a multi-use trail I can no longer hunt the area that I've hunted since the beginning of the Duluth Hunt in 2005. In fact, the trail construction crew used the deer trail in front of my stand as part of the new route.	I've found spots close to these unofficial trails that would be great to hunt, but would also conflict with hikers, that's ok though, there is lots of woods to share
Gets pretty tight in spots	NA
Hard to find a spot not crowded with people	People still use the trails and affect hunting
Hard to find the perfect tree when the woods keep getting smaller and smaller	People traffic
Hate to have more trails there. But every one else is just as much entitled to use the woods as I am. Fortunately I've had zero conflicts through my years of city hunt.	Potential harassment
I can't hunt many spots that I would like to.	Regardless of zero setback, the unofficial trails have squeezed us even more due to constant bike traffic
I feel this rule is unnecessary. Hunters don't want to be near well traveled trails anyway as the hunting won't be that good due to the traffic, but the rule does limit where hunters can set up. 200 feet is a long distance in the city hunt. I feel bow hunting is extremely safe, has anyone ever been accidentally shot with an arrow? The odds have to be extremely low, especially in wooded areas.	Same type impact as official trails setback. It's not the setback but the prevalence of trails that impacts the hunting experience. In my experience, these trails tend to be somewhat less disruptive; since many are used by older folks for walking; and they are less boisterous. The unofficial trails, being hand built also tend to be less dense and have a more limited footprint in the woods; so they seem to disrupt deer movement to a lesser degree. However, the combination or increased official trails PLUS unofficial trails still in place, makes it a bit difficult to set up discreetly.
It eliminates certain spots because they are too narrow.	The entire trail system is out of hand
it is not applicable in all areas & situations. Should be on a hunter discretion basis	There are unofficial trails everywhere and i did have a stand close to one this hunting season, no issue between the hikers and bikers and myself.
It limits the area we can hunt. 100 feet is sufficient for all trails	There are way too many people using the trails. Almost every dog out there is off of their leash. Even with setbacks, dogs are running wild all around us trying to hunt in peace.
Just gets tight in a few areas	Too many damn trails! Hunters have to be discreet about shooting lanes! Yet bikers can make small roads across the city!



Just to many people and I have had to move my stand locations.	too many dog walkers walking off leash, especially on spurs connecting to real trails and on makeshift trails running THRU private lands. I have access to hunt private lands, but too many walkers feel that the trails are public and wander right thru. Even had two different grouse hunters hunting over bird dogs and carrying shotguns! Hard to hunt when a german shorthair is busting brush all thru a piece of private land.
Limits hunting setup locations.	Typically I don't like to hunt in places that several people are going to be seen while I'm hunting.
Limits spots to hunt	Why are there unofficial trails ? They seem to show up more and more. Do they mark official vs unofficial ? How is the difference marked ? Do these trails show up on maps we can access to know what setback we as hunters need to abide by ?
limits where hunters can legally hunt	
NA	
No big deal. Just had to move off trail in some areas.	
On private land I hunt it is difficult to hunt deer that is not within 200 ft setback	
Since they crisscross through the middle of large expanses of the zones, it is often difficult to find a location that fits all of the setback requirements and has a decent tree for a stand. Nevermind if there are any deer once you satisfy those requirements. If the intent is to cull deer and make the streets safer we sure have a lot of road blocks that don't have any bearing on safety.	
Small tracts of timber, trail through the middle, less than the required setbacks needed to hunt! Can't hunt!	
Some areas that were small but still huntable in the past are no longer huntable due to the set back requirement.	
Space is limited- we loose more public land each year to land sales, bike trails, ect. With these set back and number if hunters, many times you are not able to hunt where you want or where the deer are traveling.	
The deer move in certain areas not being able to hunt close to some trails makes it difficult at times	



<p>The hiking trails is not that big of an issue. Generally they are built in a relatively straight point to point method. The bike trails are another matter. They are so windy that they impact large areas of our habitat. Why was an ESA not completed when these trails impact 100's of acres of property? Not to mention the lack of silt fencing and runoff protection for our waterways. Do they even have a NPDES permit??</p>	
<p>The setback itself has not impacted my hunting, but the presence and density of the trails has impacted the way deer use these areas and limited the amount of places suitable for setup. I also believe the prevalence of these trails (and lack of quiet areas) moves more deer into residential areas, particularly during the daytime, when we would be able to hunt them.</p> <p>The trails are also very noisy. Not uncommon to hear loud swearing as bikes zoom by. This impacts the outdoor experience for anyone doing quiet activities, not limited to hunting, including nature hikes, foraging, photography, and family time in the woods.</p>	
<p>The setbacks push us away from the natural areas the deer move. Most of the new bike trails were built across and on top of prime deer trails.</p>	
<p>The zone we hunt has superior hiking trail through it. The zone is too narrow in some areas to meet setbacks</p>	
<p>There are many more trails than when we started. The network is to dense.</p>	
<p>There are so many trail it is hard to even set up. I hunt in 3A near Spirit Mountain</p>	
<p>There's to many trails now!!</p>	
<p>They put the dam trail right under my stand while I was in it!!!</p>	
<p>This restricts my hunting space and reduces my chance to kill deer.</p>	
<p>This takes out wide swaths of huntable land</p>	



Too far . Make it 100	
Took away some nice hunting spots	
tooooo many bikes and dogs on the loose	
Tough to get away from trails now days. They are everywhere	
Walking trails and biking trails crowds your area for hunting. Deer are more scared.	
When a trail goes through a 400-500' wide strip of woods, there may not be anyplace to hunt.	
Yes and no. I hunt right under duluth traverse and a lot of times hikers and bikers keep deer on there feet.	
Yes because small wooded areas with a trail running through do not allow hunt access	

