



Results of the 2019 Duluth City Bowhunt

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

February 2020

GENERAL 2019 SUMMARY: The Arrowhead Bowhunters Alliance (ABA) placed 283 hunters into the 2019 Duluth City Bowhunt. Those 283 hunters harvested a total of 233 white-tailed deer (179 antlerless & 54 antlered males) (Table 1).

For the fifth consecutive year in the 15-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 2019 season was 0.82 ± 0.11 deer / hunter (Table 2). This was the harvest for all registered hunters, including those hunters that failed to harvest any deer. The ABA doesn't know whether failing to harvest a deer in 2019 was the result of not spending much time in the woods, or not even getting into the woods. All of the hunters not reporting any harvested deer were removed, and the reported harvest for successful hunters are presented in Tables 1 and 2. Harvest for successful hunters averaged 1.54 ± 0.10 deer (Tables 1 & 2), essentially equal to the lowest success rate observed in 2018 (Tables 1 & 2). Antlerless harvest for the successful hunters averaged 1.18 ± 0.07 antlerless per hunters, also essentially the same as last year's observed low (Tables 1 & 2).

The placement of 283 hunters in 2019 continues the decline in participation since the high in 2013 (Blue bars in Figure 1). The percentage of individuals harvesting deer in 2019 was 53.4%, slightly higher than the low observed in 2016, but essentially the same as the last three years of the Hunt (Table 1). Just over half the hunters participating harvested an animal (Figures 1 and 2). Total number of harvested deer was the lowest observed during the 15-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 2019 harvested the lowest number of antlerless deer per hunter, and approximately the same number of total deer per hunter as observed in 2016 and 2018 (blue & red lines in Figure 3).

Similar to past seasons and in line with the stated goals of this management Hunt, the 2019 harvest was dominated by antlerless individuals (Table 1, Figure 4). Of the 233 deer harvested, 76.8% (N=179) were antlerless individuals. The breakdown of antlerless was 128 adult does, 28 fawn does, and 23 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, no hunters took advantage of this and harvested an antlered male without having first registered an antlerless individual. This may have been a result of the 30-inch snowfall received on the weekend following Thanksgiving, and the overall cold weather of December, that may have restricted deer and hunter movement within the woods.

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 16B once again had the highest harvest in 2019 at 24 deer. Hunters harvested 18 deer from DHA 1. 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 2019, only 11 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. 2019 data is depicted by the orange diamonds. Lighter markers present data from other seasons, 2008 – 2018. The harvest in 2019 was the lowest observed in the history of the Duluth Hunt (Figure 7, bottom panel).

For the 15 seasons of the Duluth Bowhunt, total harvest by registered bowhunters is 6616 white-tailed deer; of which 5518 were antlerless while 1098 were antlered males (Table 1). Only 16.6% 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 2019 season, harvest dropped well below this level (Figure 3). 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 has remained somewhat stable since at approximately 54% (Figure 8, Table 1).

Raw harvest numbers do not tell a complete story. Effort needs to be accounted for. When standardized by area (harvest / mile²) or effort (number of hunters), 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 2019, harvest / mile² was only about 1/3rd of our first year's harvest (Figure 11), and is the lowest ever observed at 6.0 deer / mi². Table 4 presents the raw data for the last 14 years. Harvests in excess of 20 deer harvested / mile² were once common (Table 4, 2006 – 2012 seasons), but these high levels haven't been observed for many 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 that began in 2013. Between 2005 and 2019, the percentage has dropped from just under 60% of hunters harvesting two or more deer, to less than 25% in 2019. 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 in 2019 relative to just the 2018 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 2019 relative to ONLY the 2018 season. Of the 115 returning hunters that responded, the mean observational score for the 2019 season was 2.8 ± 0.2 antlerless deer observed, indicating that hunters reported seeing fewer deer this season relative to 2018. Hunters reported seeing more antlered



males (3.3 ± 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 and declining even more. Again, this is only anecdotal data only, and caution needs to be exercised when interpreting these data.

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 3). 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. 2019 represents the seventh 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.

This is not new information to us. We've stated before that “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 (53.4%, 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%
2019	283	151	233	179	54	0.82	1.54	0.23	0.36	0.63	1.19	48.9%	53.4%	70.00	24.7%
Mean	318.3	213.1	441.1	367.9	73.2	1.41	2.06	0.24	0.34	1.17	1.71	53.4%	67.8%	119.86	37.1%
Min	192	151	233	179	46	0.80	1.53	0.13	0.23	0.63	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			6616	5518	1098										



Table 2. Hunter harvest statistics for the 2019 Duluth Bowhunt, along with 2017 and 2018 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.

	2019	2018	2017	Long-term Duluth Average
Total Harvest/Hunter	0.82 ± 0.11	0.84 ± 0.10	0.98 ± 0.15	1.41 ± 0.26
Buck Harvest / Hunter	0.19 ± 0.04	0.20 ± 0.05	0.17 ± 0.04	0.24 ± 0.04
Antlerless Harvest / Hunter	0.63 ± 0.08	0.64 ± 0.08	0.80 ± 0.13	1.17 ± 0.23
Harvest / Successful Hunter	1.54 ± 0.10	1.53 ± 0.10	1.81 ± 0.21	2.06 ± 0.20
Buck Harvest / Successful Hunter	0.36 ± 0.07	0.37 ± 0.07	0.32 ± 0.07	0.34 ± 0.03
Antlerless Harvest / Successful Hunter	1.18 ± 0.07	1.16 ± 0.07	1.49 ± 0.18	1.71 ± 0.19

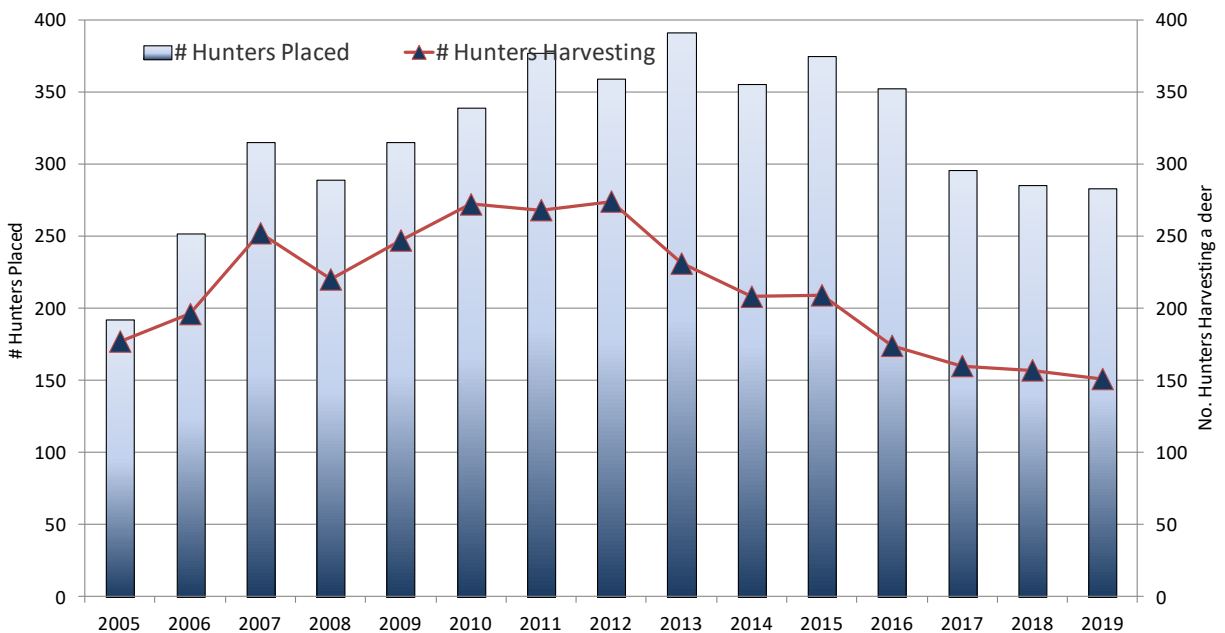


Figure 1. Number of hunters placed (left axis) and the number of those hunters harvesting deer (right axis) in each season of the Duluth City Bowhunt. The placement of 283 hunters in 2019 marks a continuing decline in interest since the high in 2013. The number harvesting deer in 2019 also continues the declining trend since a high in 2012.

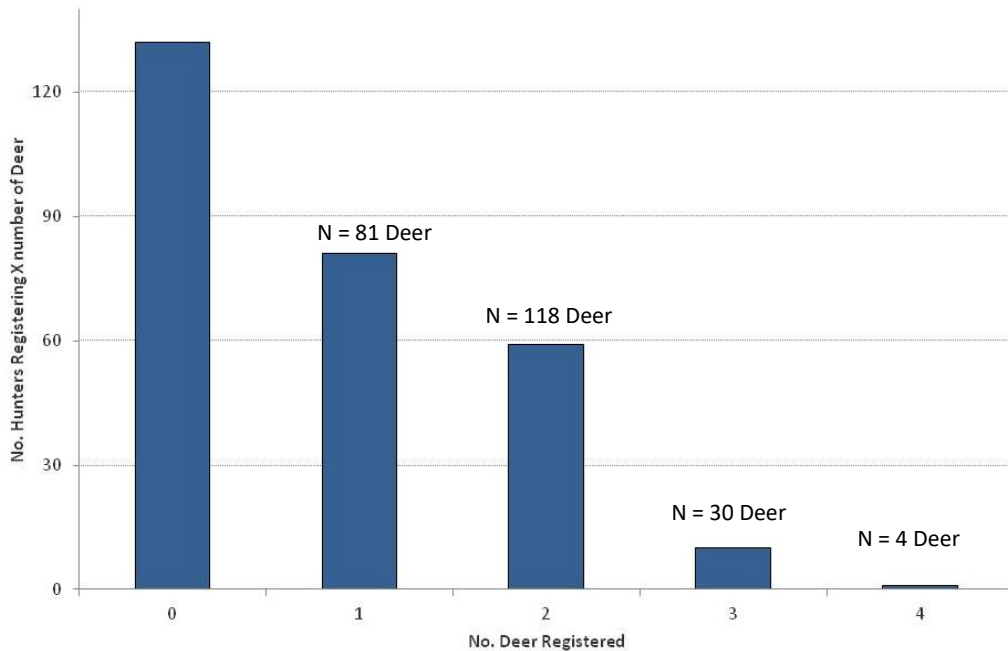


Figure 2. The number of Duluth City bowhunters and the number of deer harvested for the 2019 Duluth City Bowhunt ($N = 283$ hunters). Numbers above indicate the number of deer harvested by each group, e.g. 10 hunters harvested 3 deer for a total of 30 deer. The one hunter that has four deer to his account is due to a bear stealing one of his antlerless from him.

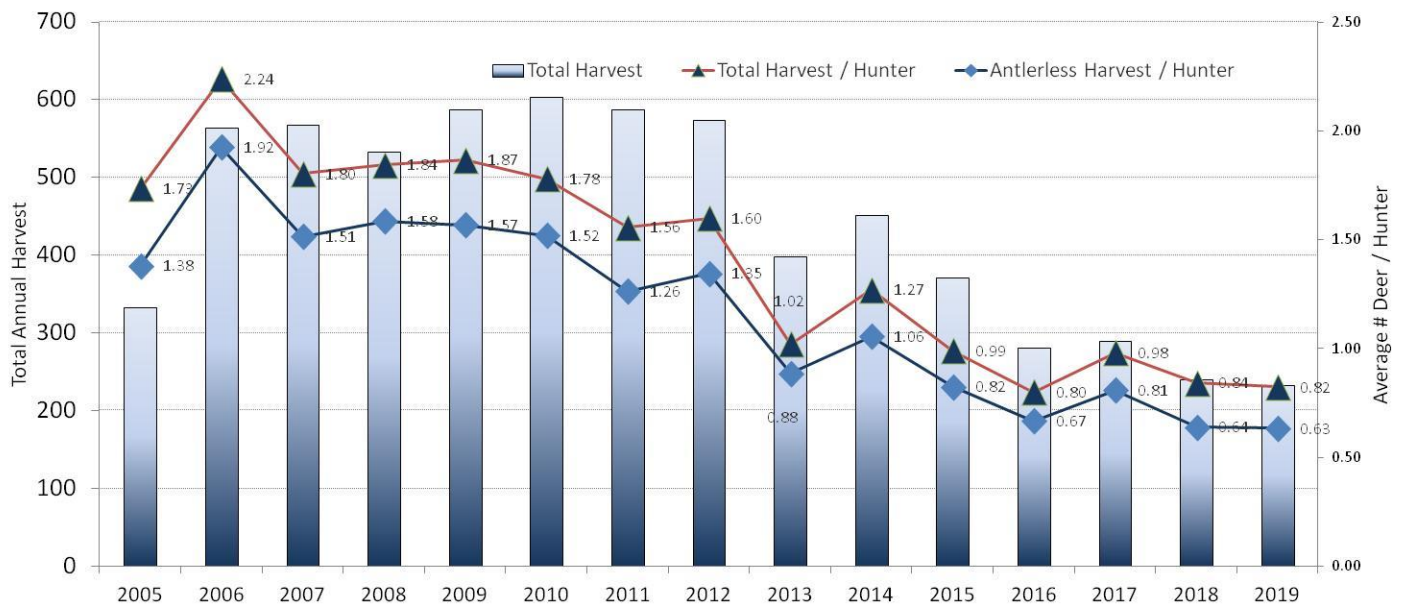


Figure 3. Total harvest, total per hunter, and total antlerless per hunter for the 15 seasons of the Duluth City Bowhunt. Total harvest is lowest ever observed. When standardized for number of participants, hunter harvest rate was slightly lower in 2019 for total harvest than in 2018, but the lowest for antlerless harvested per hunter ever observed.

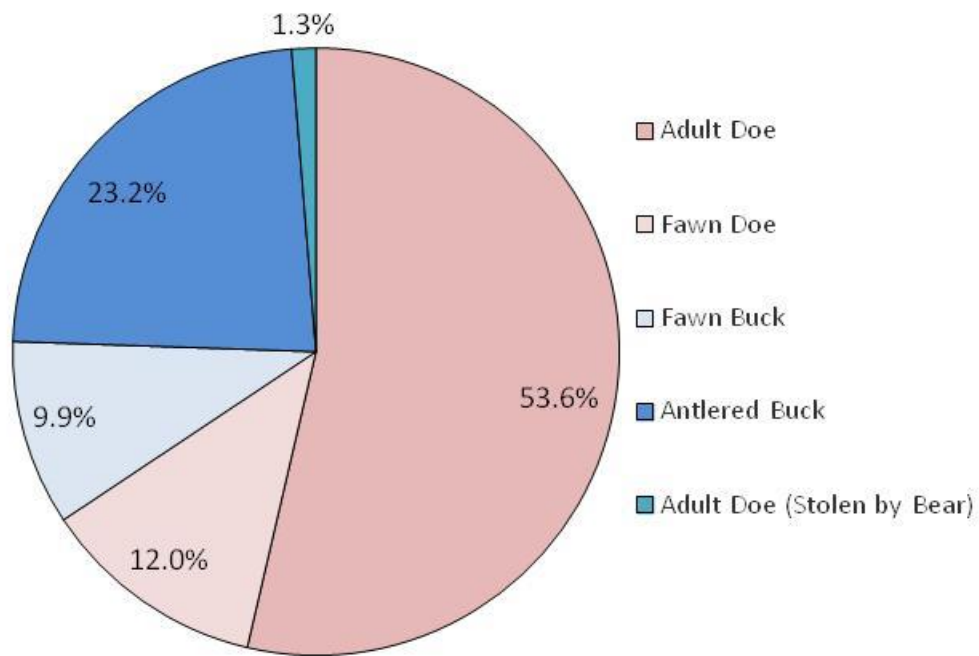


Figure 4. Breakdown of harvest by deer type for the 2019 Duluth Bowhunt.

Table 3. Harvest within Hot Spots during the 2019 Duluth City Bowhunt. Harvest within Hot Spots is limited to antlerless only.

Description	No. Antlerless Harvested
Hartley	1
Lakeside	1
Sneve	1
Wabasha	1
Little Ely	6
Triggs	1
TOTAL	11

Total Harvest by DHA

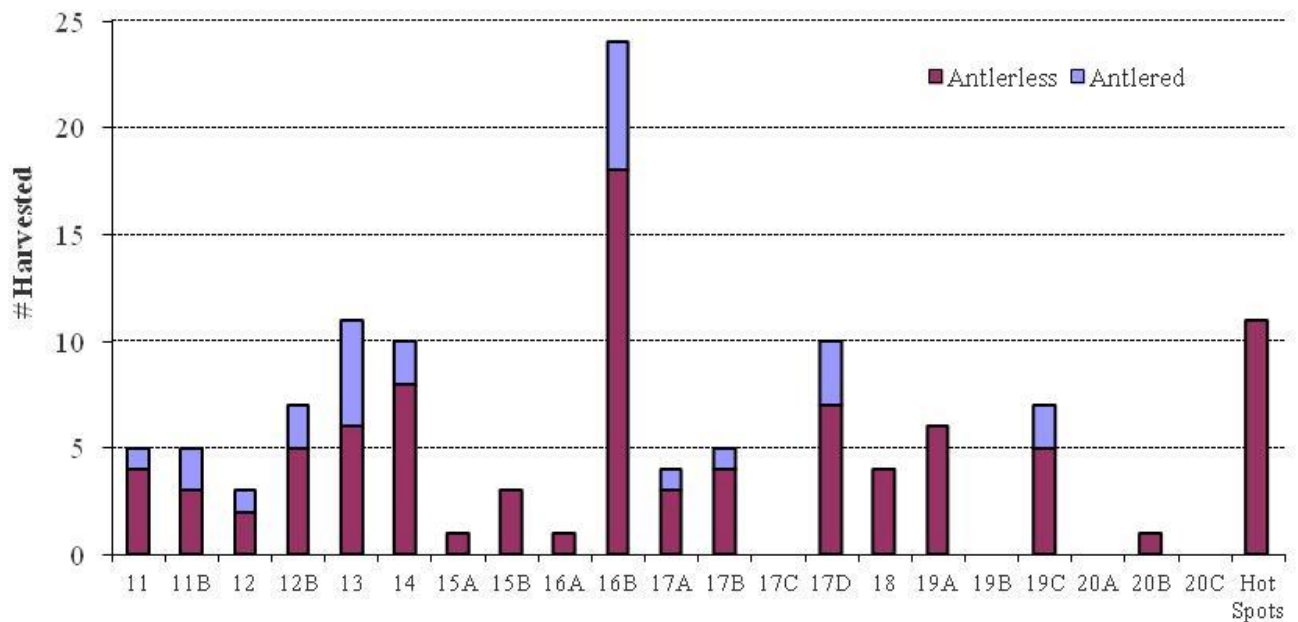
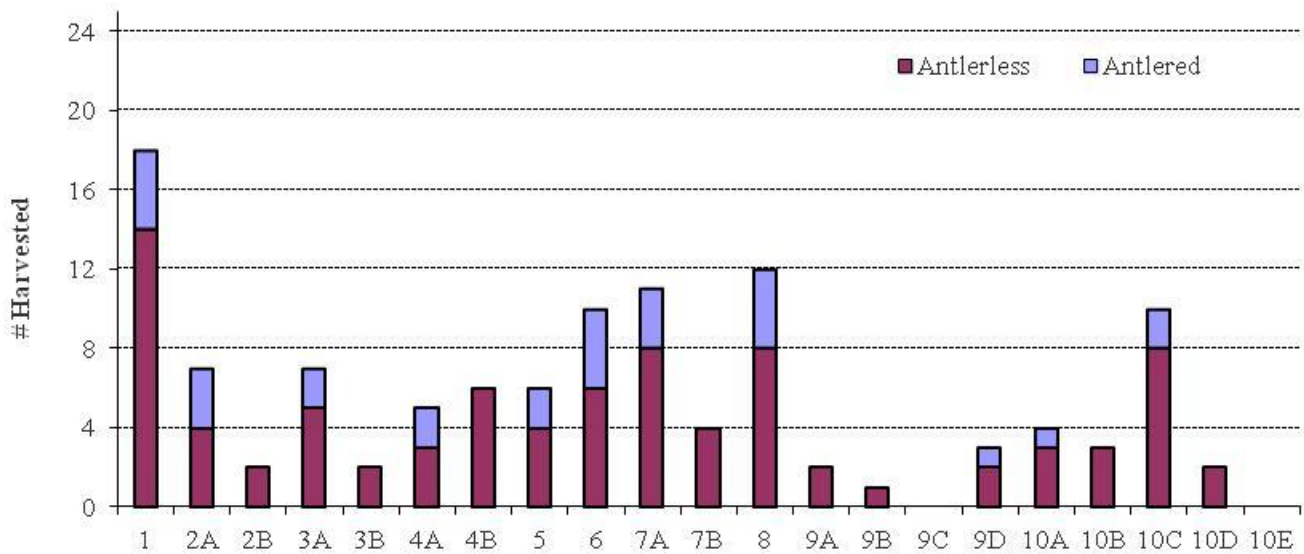


Figure 5. Number of deer harvested by deer type (Antlerless or Antlered) within each of the 42 designated hunting areas (DHAs) within the City of Duluth during the 2018 bowhunt.

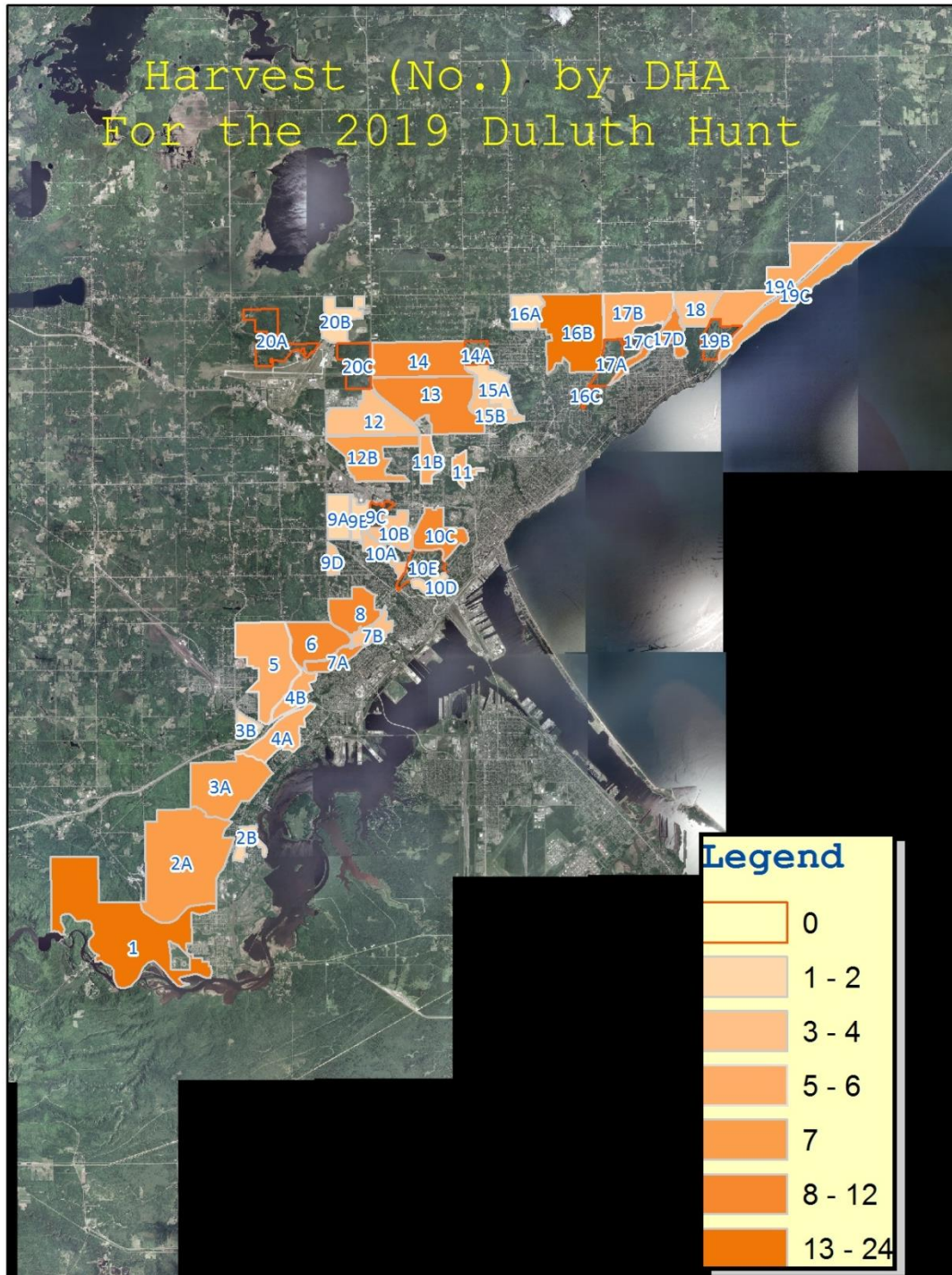


Figure 6. Map of the City of Duluth, along with harvest (number of deer) within each of the 42 Designated Hunting Areas during the 2018 Duluth City Bowhunt. DHAs are labelled on the map. The color of the DHA indicates the number of deer harvested as identified in the legend at the right.

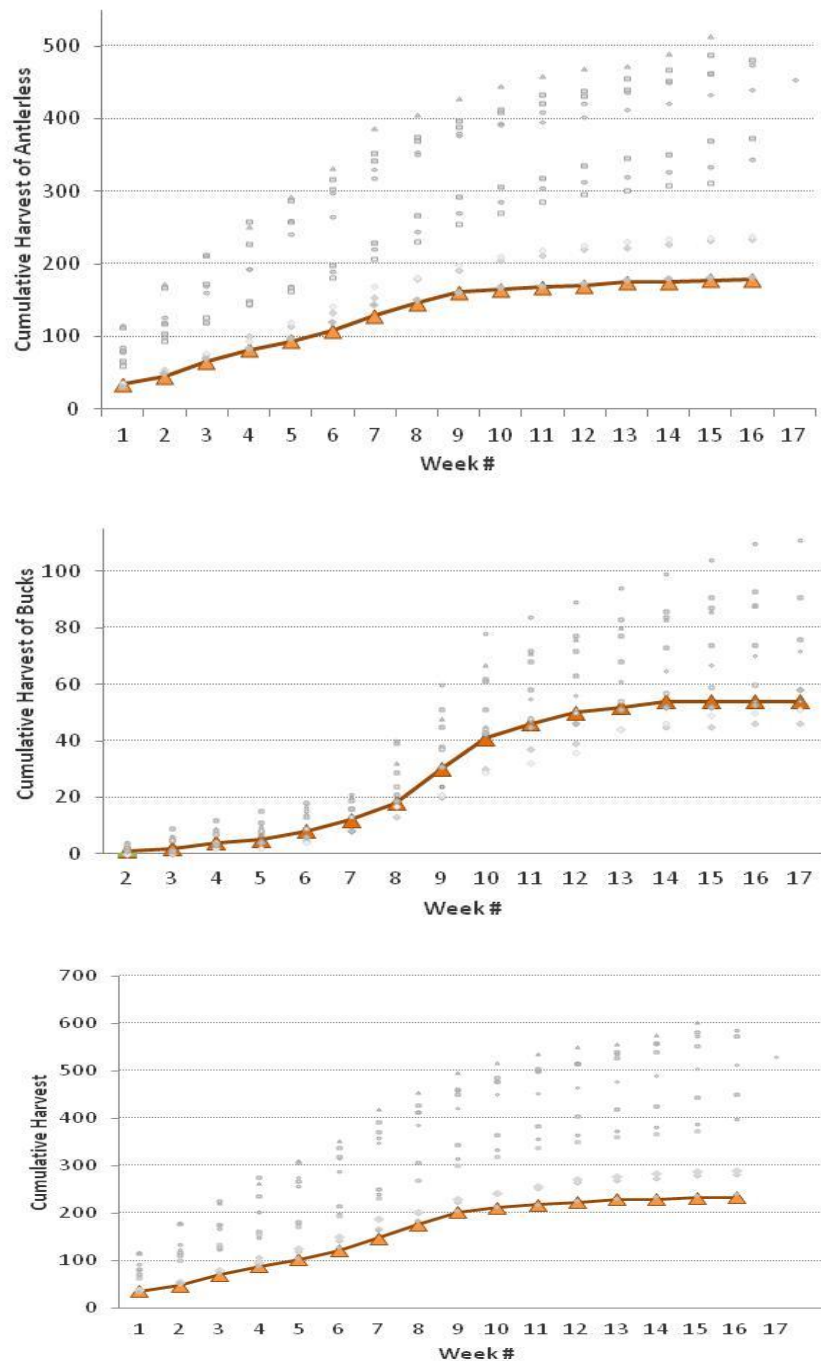


Figure 7. Harvest throughout the season, by week number, for the 2019 Duluth City Bowhunt (orange lines). Top panel shows harvest of antlerless deer; middle panel shows harvest for antlered males; bottom panel is total harvest by week. Weeks are measured Saturday thru Friday, starting on 14 September 2019 thru the end of the season on 31 December 2019. Other seasons are shown for comparison using non-colored markers.

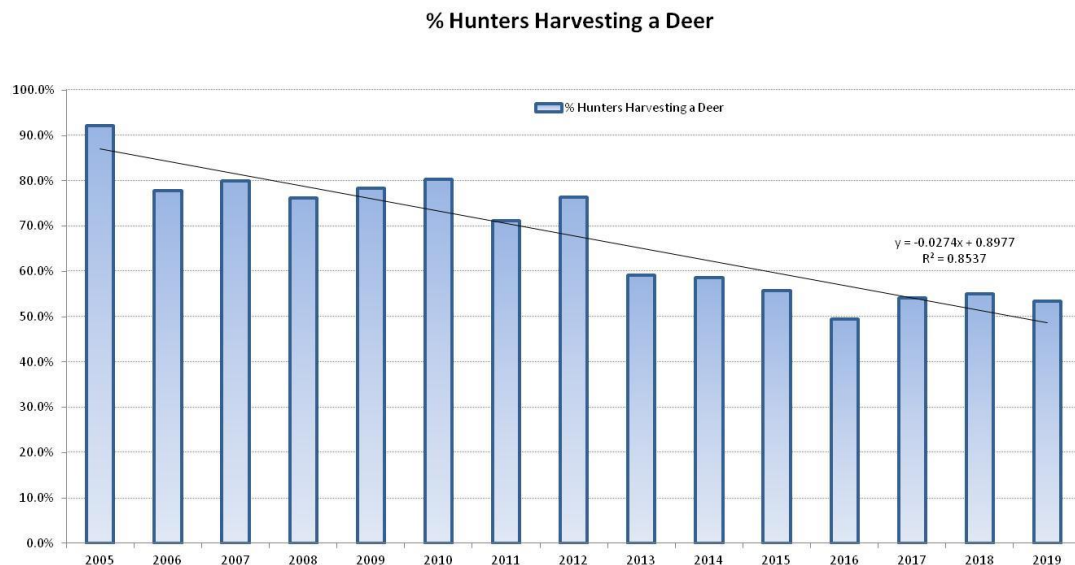


Figure 8. Percentage of hunters harvesting deer while participating in the Duluth City Bowhunt.

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. We'd only be able to test this hypothesis thru the total elimination of the earn-a-buck requirement for a one or two-year trial basis. This would be an interesting experiment.

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.

The ABA has been advising local politicians and landowners to adjust their expectations and redefine the definition of "success" for this urban hunt. In 2005, "success" was defined by our 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". For a few years now, the ABA has pointed out that the data indicates 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. Hindsight demonstrates that the harvest of 500 deer per year was definitely NOT sustainable.

The ABA has been preaching to our bowhunters for a couple years not 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 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 2019 Annual Report by the ABA. On behalf of the Arrowhead Bowhunters Alliance, we thank all of those individuals that participated in the 2019 Duluth Bowhunt, and who made this another successful, albeit difficult, season. See you in the woods in 2020!

Section 2, beginning on page 17, will go into fine details of the 2019 Hunt, details about 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. Thank you.

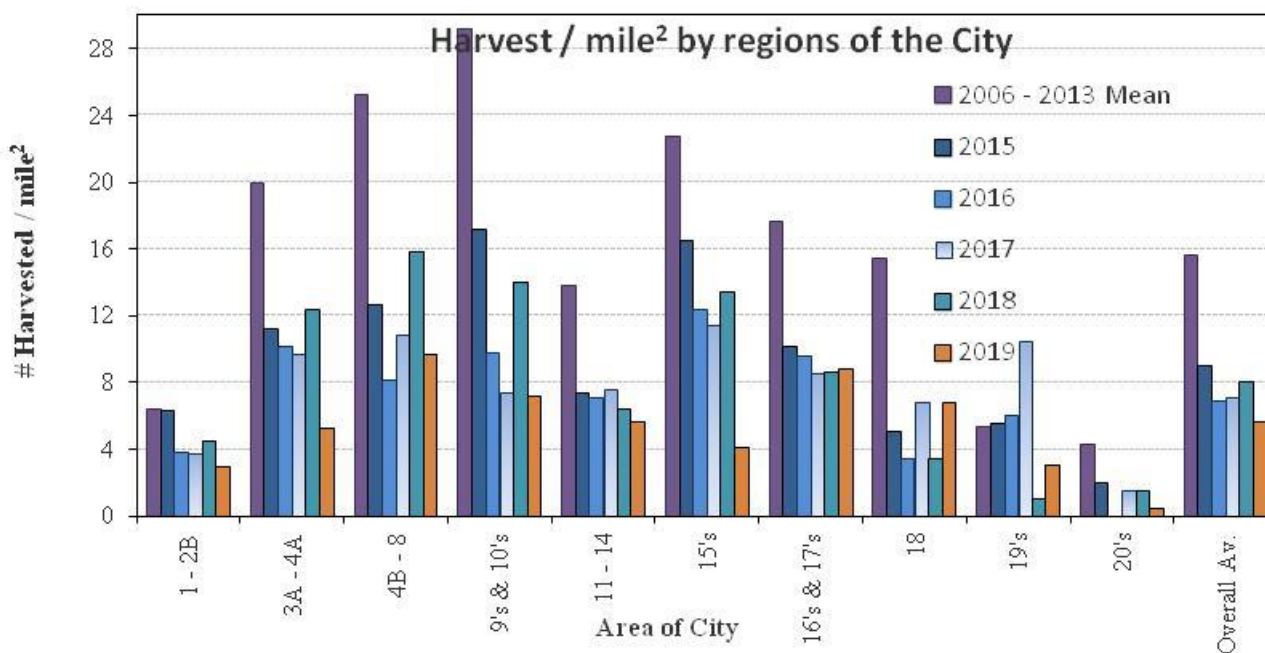


Figure 10. Harvest / mile² in various areas of the City of Duluth. Data presented is for the 2015 – 2019 seasons, and the long-term average (mean).

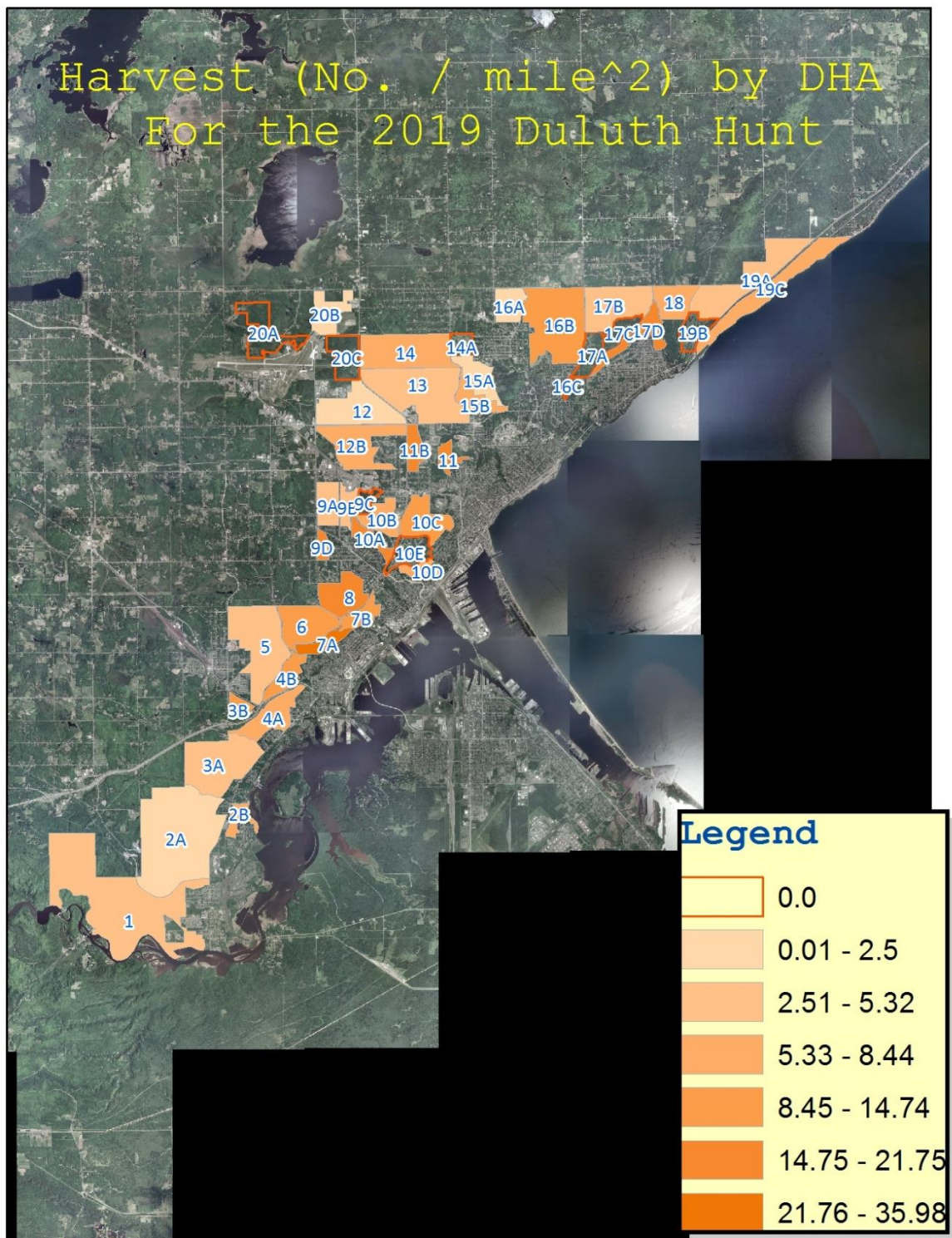


Figure 9. Map of the City of Duluth, along with harvest per mile² within each of the 42 Designated Hunting Areas during the 2018 Duluth City Bowhunt. DHAs are labelled on the map. The color of the DHA indicates the number of deer harvested per mile² as identified in the legend at the right.

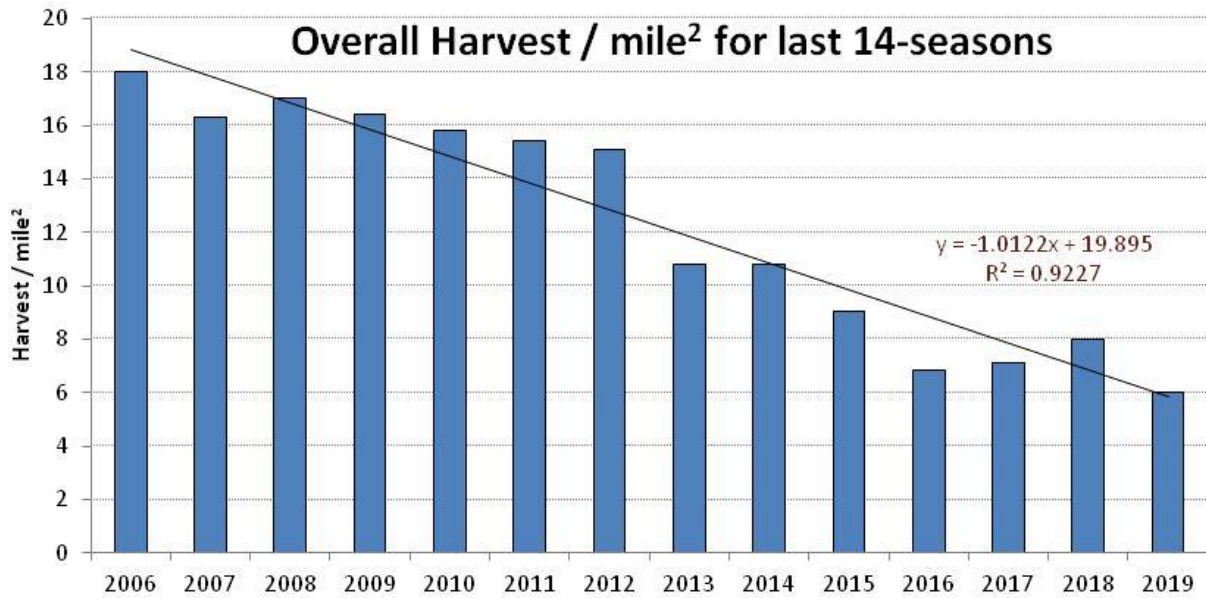


Figure 11. Harvest per mile² over a 14-year time period in the Duluth City Bowhunt. Harvest is not included for 2005, as the DHAs were redrawn and are not the same as during the first season.

Table 4. Harvest / mile² in various areas (DHAs) of the City of Duluth, for the last 14 years where DHA boundaries have not changed.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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	2.9
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	5.2
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	9.7
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	7.1
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	5.6
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	4.1
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	8.8
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	6.8
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	3.0
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	0.5
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	6.0

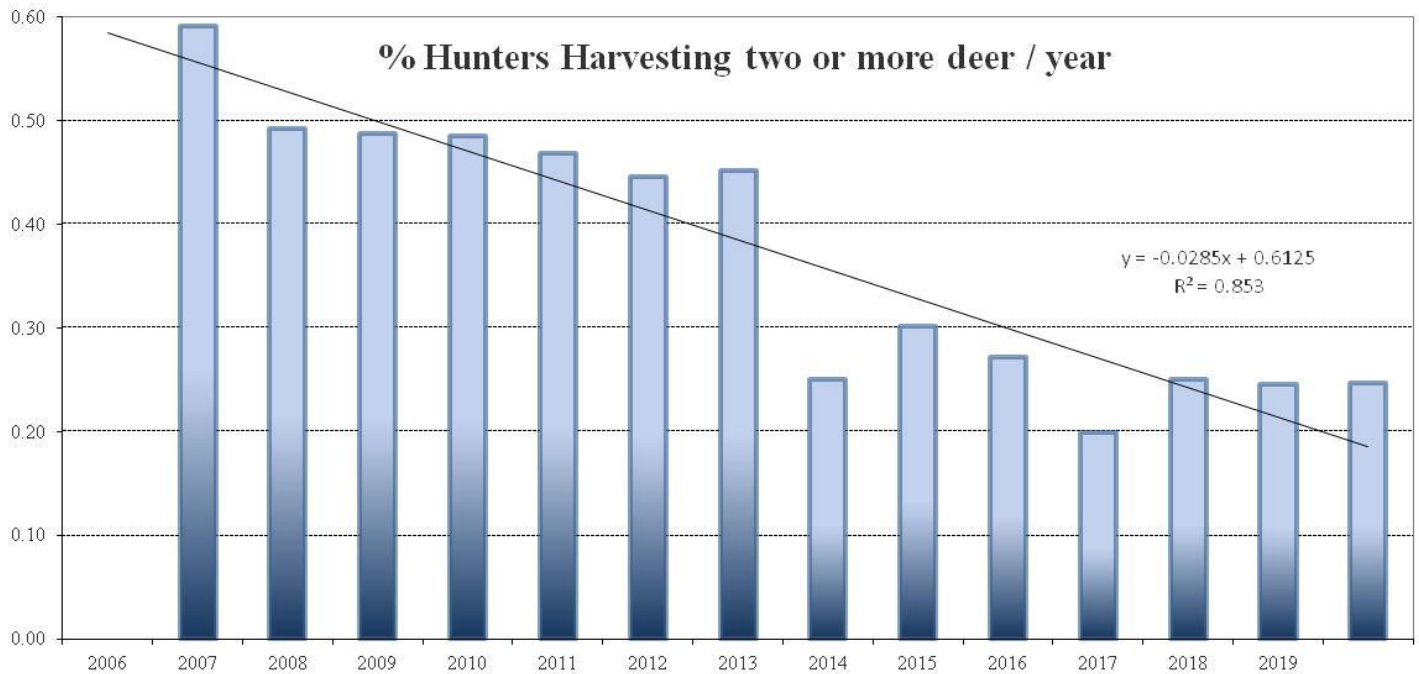


Figure 12. Percentage of hunters harvesting two or more deer per season while participating in the Duluth City Bowhunt.

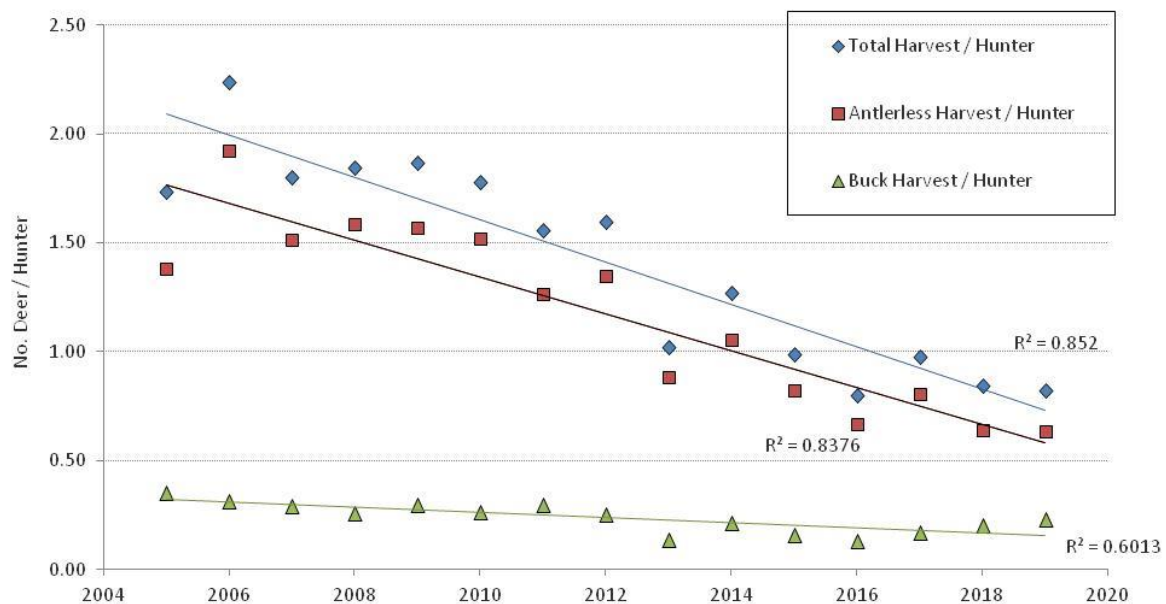


Figure 13. Harvest / hunter statistics for the 15 years of the Duluth City Bowhunt.



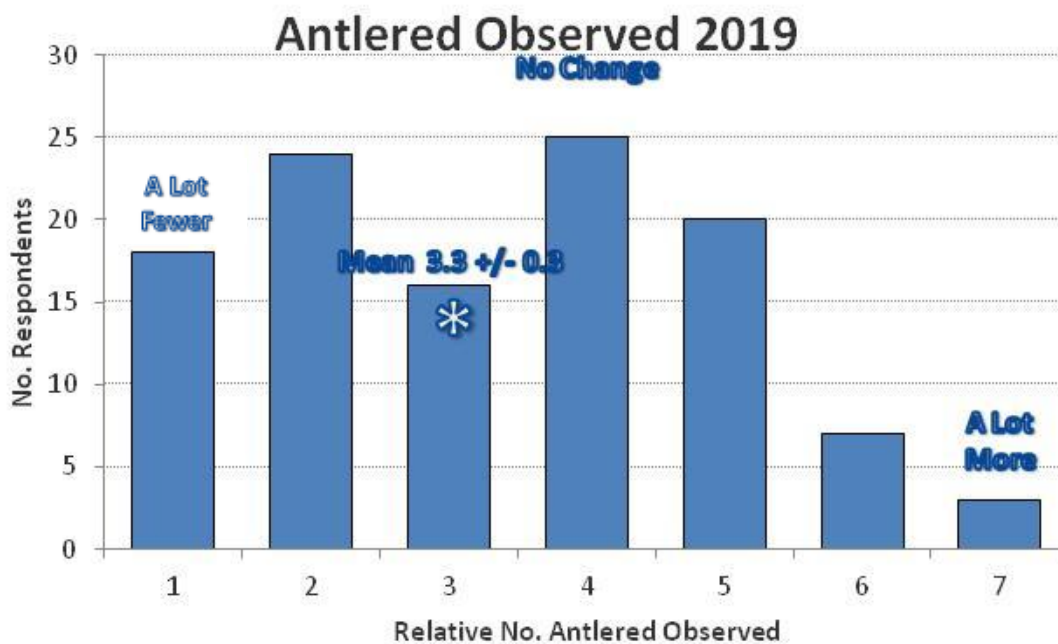
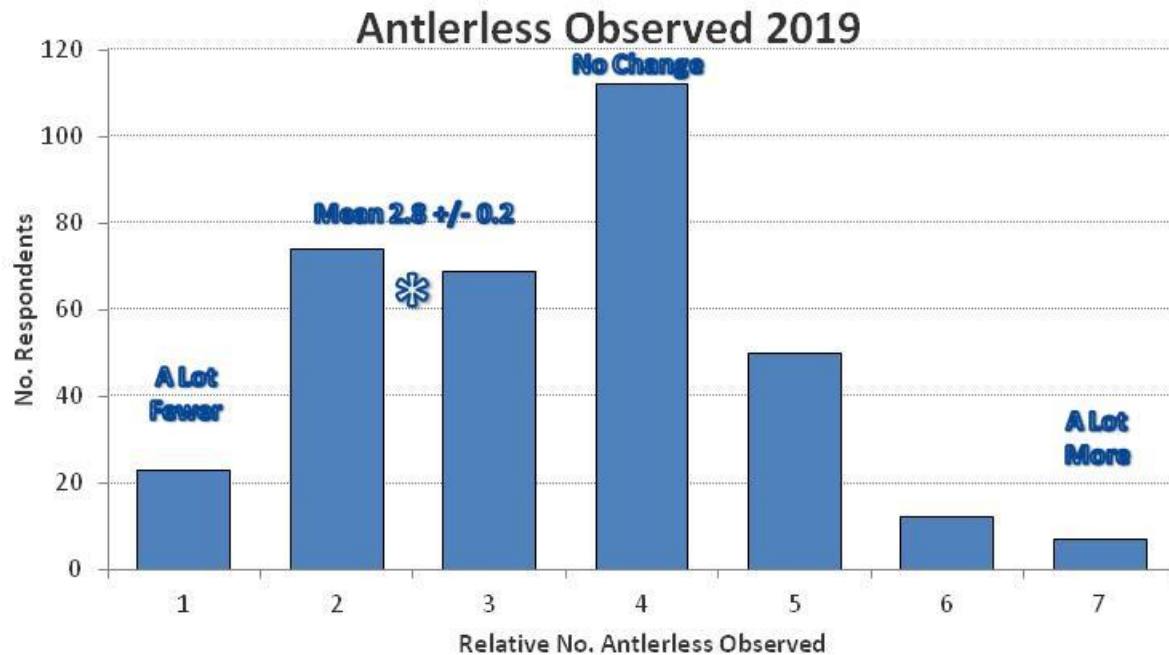


Figure 14. Relative number of deer observed by returning hunters in the 2019 Duluth Bowhunt, as compared to what was observed during the 2018 Hunt. Data presented here came from the Year End Survey.

Section 2: General Hunt details for the 2019 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 47.2% of the 2019 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, 11, 14, 18, 19A, & 20B are dominated by City-owned public lands, whereas 4B, 7B, 9A/D, 11B, 12, 12B, 13, 15A/B, & 16A/B, for example, seem to have more opportunities available on private lands.

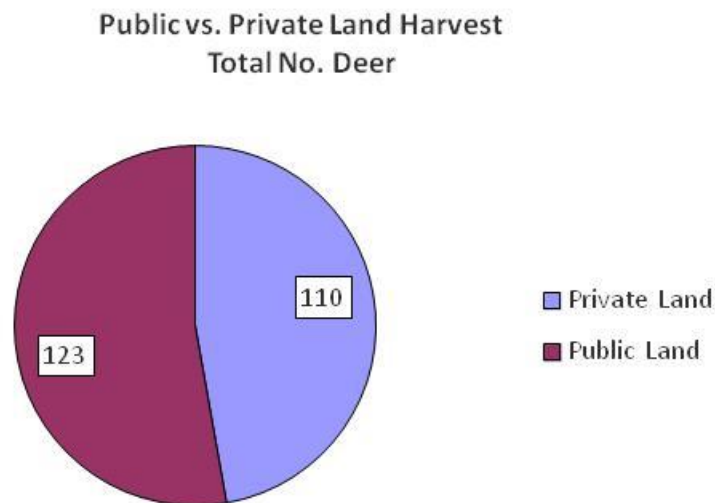


Figure 15. Harvest on public and private lands within the designated hunting areas during the 2019 Duluth City Bowhunt.

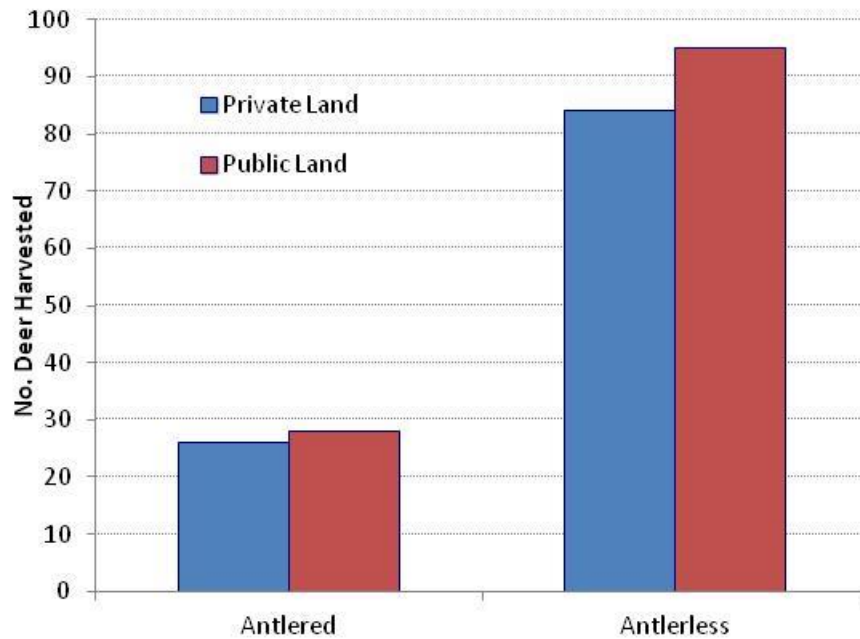


Figure 16. Harvest by deer type on public and private lands within the designated hunting areas during the 2019 Duluth City Bowhunt.

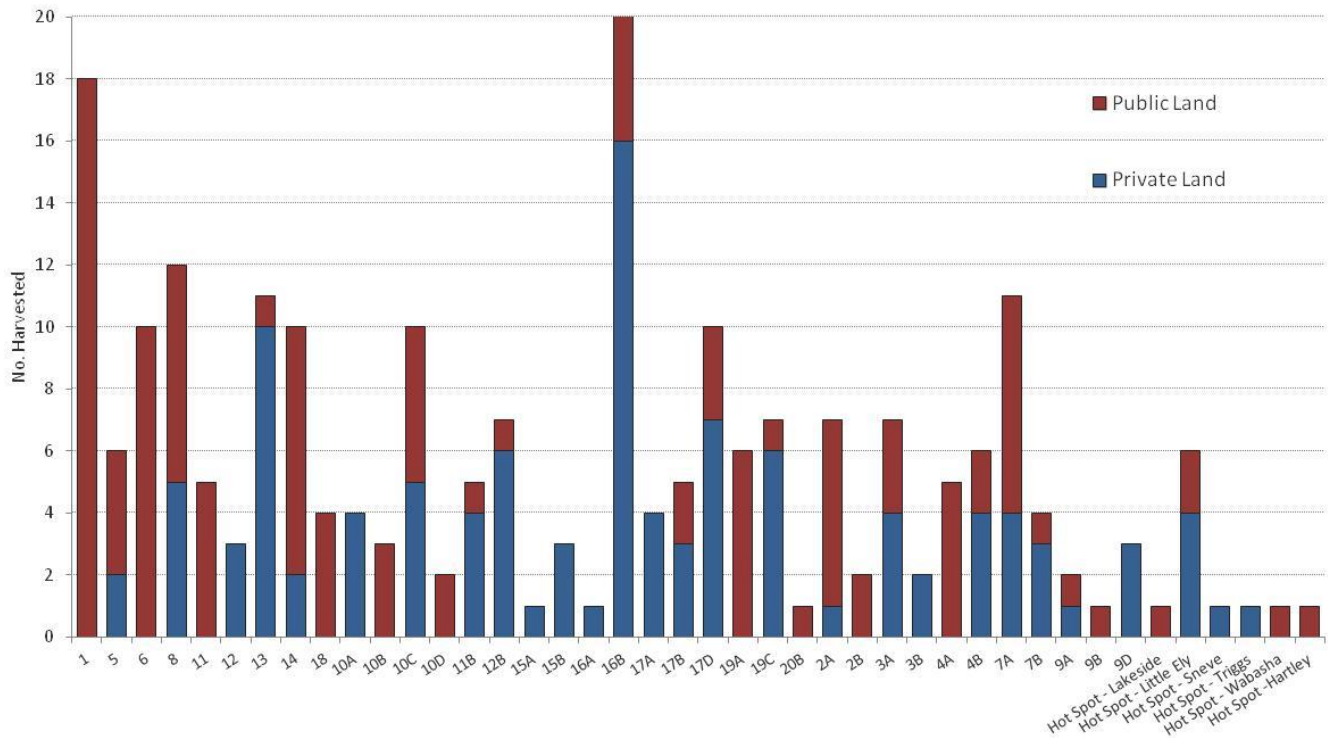


Figure 17. Harvest by Designated Hunting Area on public and private lands during the 2019 Duluth City Bowhunt.



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 2019. Harvest was minimal from ground blinds, with only 2.1% (N = 5) 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.

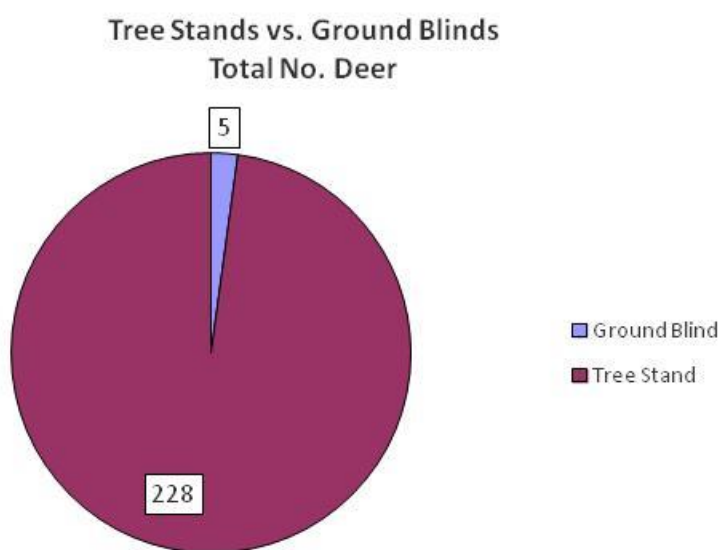


Figure 18. Number of deer harvested from ground blinds and tree stands during the 2019 Duluth City Bowhunt.

Hearts:

Again in 2019, Duluth hunters were asked to save hearts 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 arteries and capillaries than do formalin-preserved ones. Hearts were turned over in early November. 43% of our hunters indicated that they participated in this opportunity to give back to the community (Figure 19), well below participation rates of the past, which even in 2016 was as high as 60%. This is a wonderful opportunity for hunters to 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 2019 Year End Hunter Survey (Details in Section 3, page 28) suggest that this Program is still important to our hunters (Figure 20), with 83% of survey respondents indicating that they'd participate. However, when it comes down to actually saving hearts, 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. 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 2020!

Did you Save your Heart?

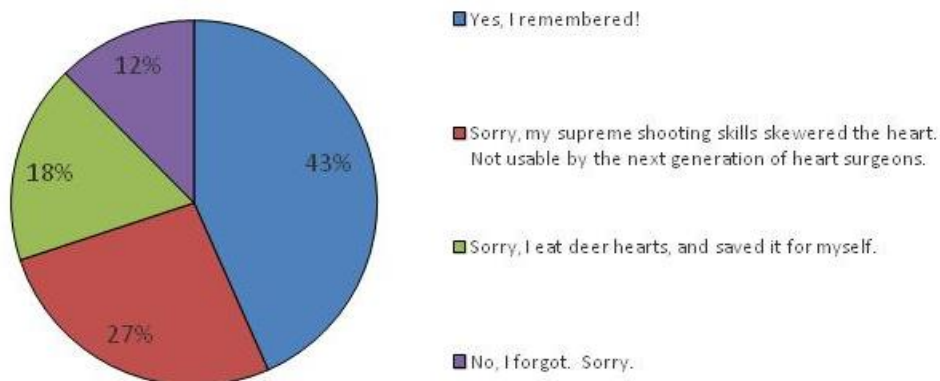


Figure 19. Responses from hunters asked to save deer hearts for the UMD-Medical School during the 2019 Duluth City Bowhunt.

Will You Save a Heart for UMD in 2020?

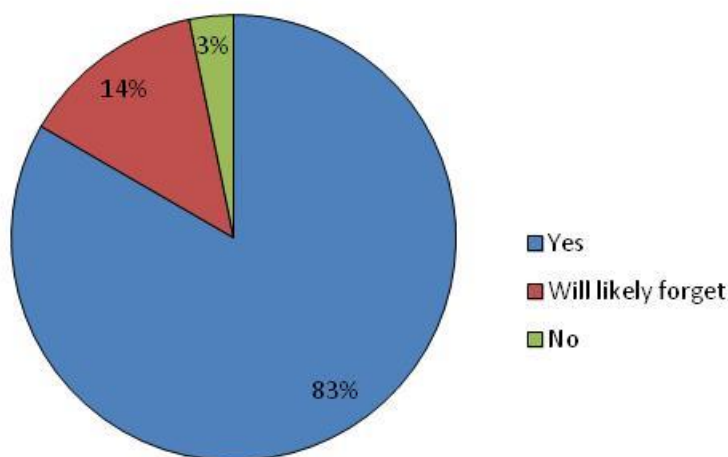


Figure 20. Results from the Year End Hunter Survey when asked whether a hunter would be willing to save a heart for the UMD Medical School in 2020.



Hunter Demographics, Locals vs Non-Local Hunters:

So, who participated in the 2019 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 (91.1%, Table 5). Local hunters accounted for 90.5% of the antlerless harvest, and 92.6% 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 72.8% of the hunting population, and were responsible for 65.9% of antlerless and 67.7% of antlered harvest, in line with their participation rates (Table 5). Non-local hunters made up only 5.3% of the 2019 hunters, but harvested more than 7% of both the antlerless and antlered animals (Table 5). Out-of-State hunters made up only 3.5% of the 2019 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 21). Out-of-State hunters harvested deer well below their participation rate in the Hunt (harvest ratio = 0.48), 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 21). For just the second 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.

Local hunters harvested 0.82 ± 0.11 total deer per hunter (0.63 ± 0.08 antlerless deer / hunter). Non-locals and out-of-State hunters harvested 0.84 ± 0.39 total deer per hunter (0.68 ± 0.33 antlerless deer / hunter). No difference was observed between local and non-local hunters in total deer harvested ($t = -0.092$, $P = 0.926$), 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 nor again in 2019.

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. In the past with higher bag limits and the old Metro Designation, 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 harvested deer to be spread out amongst more of the hunting community. This was exactly the goal of removing the unlimited Metro 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 2019 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 2019 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	258 (91.2%)	162 (90.5%)	50 (92.6%)
Duluth Residents	206 (72.8%)	118 (65.9%)	36 (66.7%)
Non-Locals	15 (5.3%)	13 (7.3%)	4 (7.4%)
Out-of-State	10 (3.5%)	4 (2.2%)	0 (0.0%)
TOTAL	283	179	54

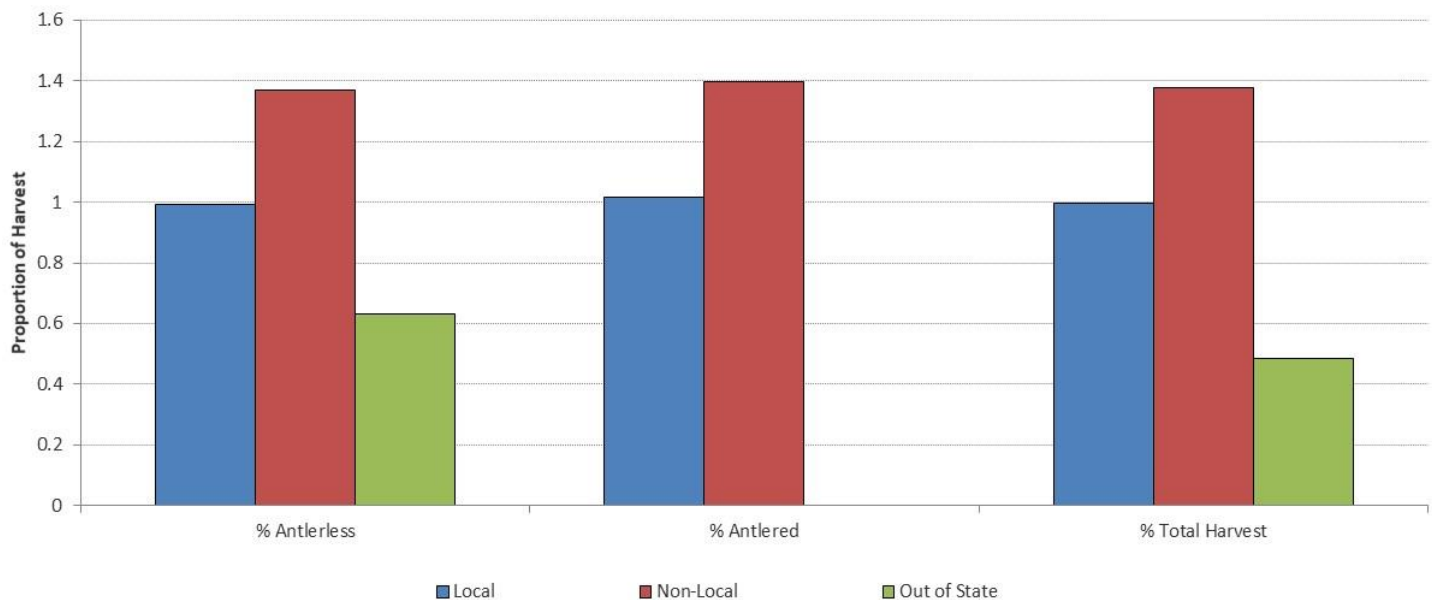


Figure 21. Harvest rates standardized by participation for hunters residing within 30 miles of Duluth (Locals), Minnesota residents outside of the Duluth area (non-locals), and out-of-state hunters for the 2019 Duluth City Bowhunt. Duluth residents are included in the “local” category.

Hunter Demographics, New vs Returning Hunters:

In 2019, the ABA placed 64 new hunters and 219 returning hunters from the 2018 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 0.61 ± 0.20 ($t = 2.326$, $P = 0.0108$). Returning hunters harvested 0.68 ± 0.09 antlerless deer per hunter, significantly different than the new hunters' antlerless harvest of 0.48 ± 0.15 ($t = 2.129$, $P = 0.0177$).

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	64 (22.6%)	31 (17.3%)	8 (14.8%)	39 (16.7%)
Returning	219 (77.4%)	148 (82.7%)	46 (85.2%)	219 (83.3%)
TOTAL	283	179	54	233

Lottery Results, the Application Process, and Subsequent Harvest

By the 30 June deadline, a total of 307 hunters had applied for the 2019 Duluth City Bowhunt, up from the 2018 initial pool of applicants. 17 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 290 hunters eligible for the Lottery Night to be placed into DHAs.

224 Returning hunters were ultimately placed. 187 (83.5%) 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 19 individuals received their First Choice at the Lottery Event, thus placing 206 hunters (92.0%) 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 213 returning hunters (95.1%) 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.



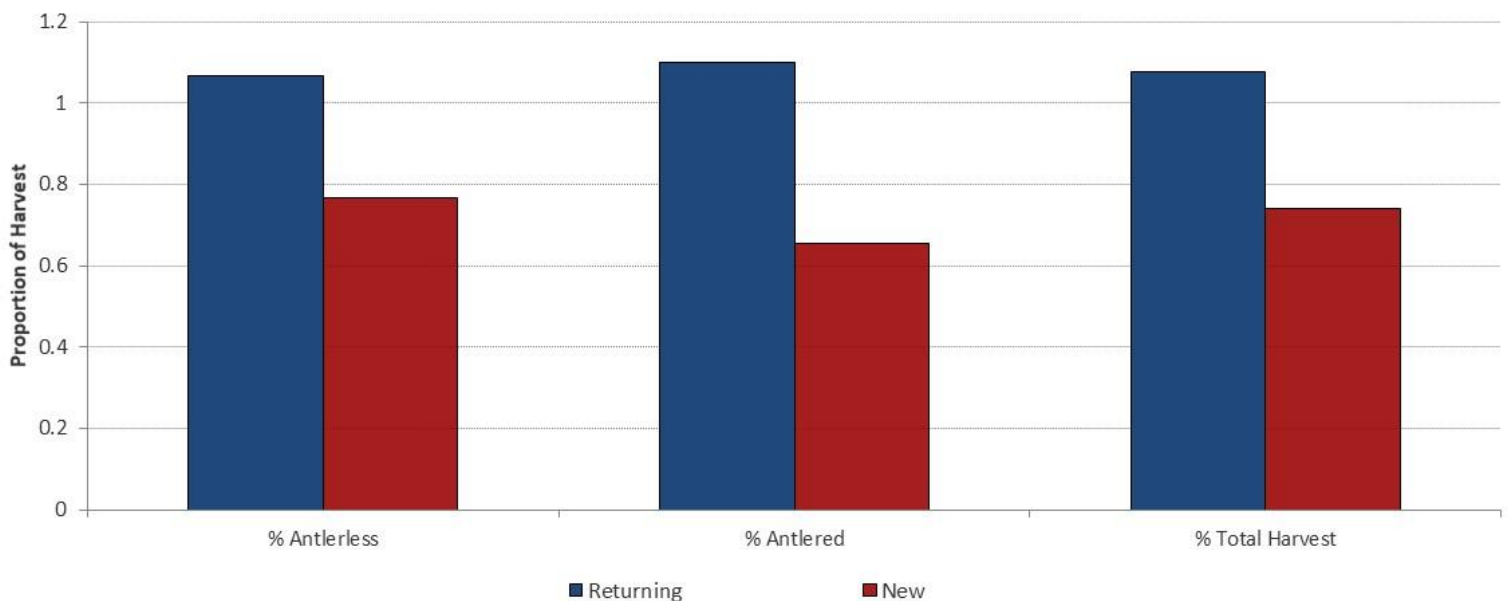


Figure 22. Harvest rates standardized by participation for new and returning hunters for the 2019 Duluth City Bowhunt.

At Lottery night, 66 new hunters were ultimately placed, 23 of whom were actually placed into their first choice DHA identified at the application process (34.8%). Ten others were placed into their second choice (15.2%).

After Orientation night, seven (7) hunters were removed due to not attending. Total hunter placement for 2019 was 283 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 23 shows that 59% of the hunters spent the majority of their time hunting on public land assigned during the Lottery Night. An additional 17% of hunters spent most of their time on private land within the DHA assigned.

Actual harvest from the database did not match the data provided by hunters in the Year End Survey (Table 7), where half of harvest was recorded from the hunter's assigned DHA, public land (Figure 24). Hunters harvesting deer on public land NOT in their assigned DHAs are generally 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. Further, the buck harvested from public land NOT assigned to the hunter was the result of one of our members tracking down that now famous FaceBook buck in the Woodland area that was running around for two weeks with an arrow sticking out of his neck. This individual humanely dispatched this deer, tagged it, and donated it to the Chalstrom's food donation program. The ABA looked at the data, and unlike previous seasons, no hunter was identified as having illegally harvested a deer from 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 25). 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.



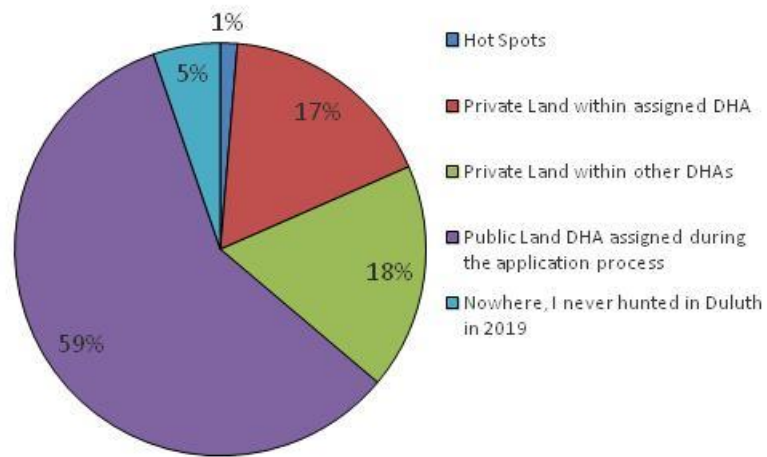


Figure 23. Percentage of hunters identifying in the 2019 Year End Survey where they spent the majority of their time hunting during the 2019 Duluth City Bowhunt.

Table 7. Location of Deer harvested relative to the hunters' assigned DHAs in the 2019 Duluth City Bowhunt. This is not the amount of time spent hunting each spot, as identified in Figure 23.

Count of Harvest = Assigned		
Harvest = Assigned	Public?	Total
Assigned DHA	Private Land	13.7%
	Public Land	50.2%
Assigned DHA Total		63.9%
Not Assigned DHA	Private Land	25.8%
	Public Land	2.1%
Not Assigned DHA Total		27.9%
Opt Out	Private Land	8.2%
Opt Out Total		8.2%
Grand Total		100.0%

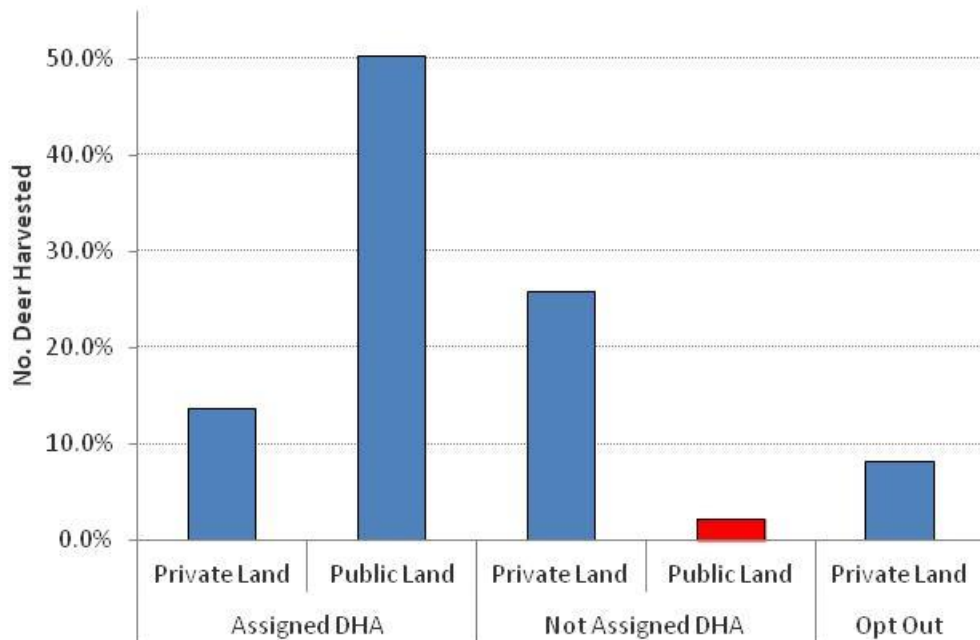


Figure 24. Percentage of deer harvested in public and private lands, and by originally assigned DHAs, for deer harvested in the 2019 Duluth City Bowhunt.

Table 8. Location of Deer harvested by deer type, relative to the hunters' assigned DHAs in the 2019 Duluth City Bowhunt.

Row Labels	Deer Type Generalized	Count of Deer Type Generalized
Assigned DHA		
Private Land	Antlered Buck	3.0%
	Antlerless	10.7%
Public Land	Antlered Buck	11.6%
	Antlerless	38.6%
Not Assigned DHA		
Private Land	Antlered Buck	6.0%
	Antlerless	19.7%
Public Land	Antlered Buck	0.4%
	Antlerless	1.7%
Opt Out		
Private Land	Antlered Buck	2.1%
	Antlerless	6.0%
Grand Total		100.0%

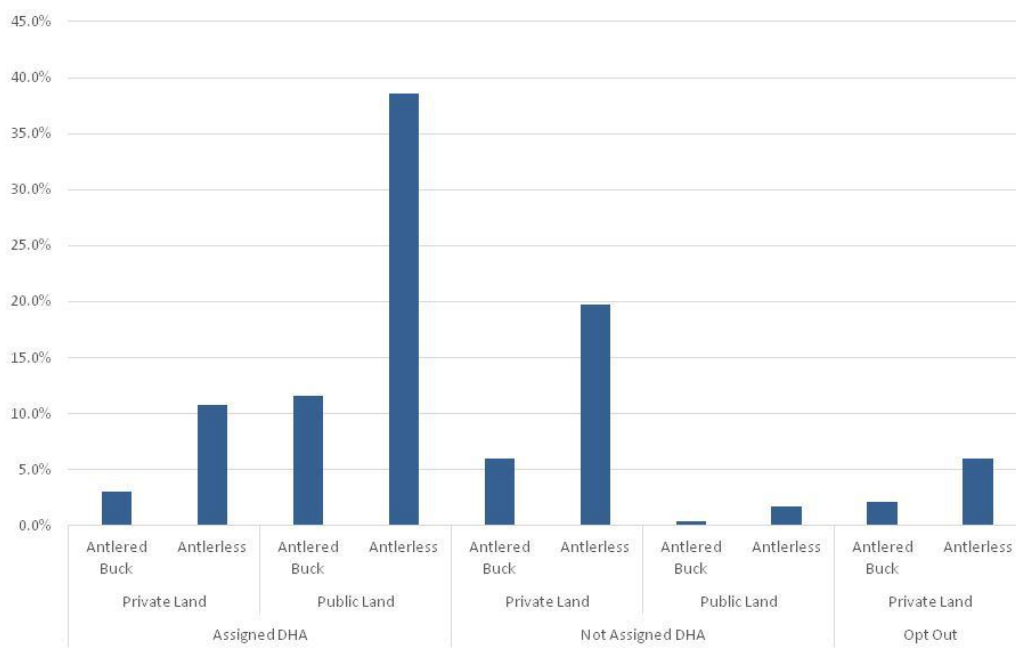


Figure 25. Location of Deer harvested by deer type, relative to the hunters' assigned DHAs in the 2019 Duluth City Bowhunt.

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 157 of the 283 hunters (55.5%) took part in the survey. By comparison, survey response rate was 57.9% in 2018, 50.7% in 2017, 44.3% in 2016, 34.9% in 2015, and 58.0% in 2014. Our 2019 survey respondents were responsible for a reported 68.2% of the harvest, suggesting that if hunters were successful this season, they were slightly 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. All comments were shared with the City. That said, for the 45.5% 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 no different between returning hunters (55.4%) and new hunters (55.8%). 133 returning hunters and 24 new hunters filled in this survey. Of these hunters, 91.7% reported that they actually hunted in 2019 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 (94.3%) will likely apply for the 2020 Hunt. Nine individuals indicated that they were still undecided as to whether or not they will apply in 2020.

Respondents reported harvesting 159 of the 233 deer. An additional 28 deer were reported as being wounded, with 17 of these deer reported as being "known to have survived" with nothing more than haircuts or scratches. This gives a reported wounding rate of 15.0% total, and 5.9% if the presumed surviving deer are removed from the analysis. This 15% is the highest reported wounding rate since the Hunt's inception.



Experience as a participant in the Duluth hunt averaged 8.1 ± 0.8 years of experience for all hunters, and 9.1 ± 0.8 years for returning hunters (Figure 26). Seven of our 2019 “new” hunters are returning from previous seasons, including two individuals reporting 10 and 12 years of experience with Duluth, but having taken a hiatus in 2018. The ABA is encouraged by the large number of returning hunters that have been participating for most of the 15 seasons (Figure 26).

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 just the second time since the ABA began reporting this data, the distribution of activity was not significantly different between the two groups of hunters (Figure 27). New hunters hunted an average of 14.5 ± 6.7 days, whereas returning hunters spent 18.1 ± 2.4 days afield ($t = -0.873$, $P = 0.1952$). 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”. This may be especially true after the record-snowfall event that occurred just after Thanksgiving. 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, 2019 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 (48.4% in 2019, 55.0% in 2018, 48.7% in 2017, 59.4% in 2016, & 58.8% in 2015) (Figure 28). About 50% of Returning chose to hunt ONLY within Duluth, with the remaining 50% choosing either to not hunt in 2019 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, 63.6% of new hunters indicated that they had hunted during the firearms season, while only 35.7% of Returning hunters also rifle hunted (Figure 29). 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, including trips out west for other species.

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 buck”. 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, 11% of our hunters reported harvesting a buck with their rifle (Figure 30). If the percentage holds true for the entire Duluth bowhunter population, this could mean as many as 31 of our hunters may have punched their buck tags during the firearms season.



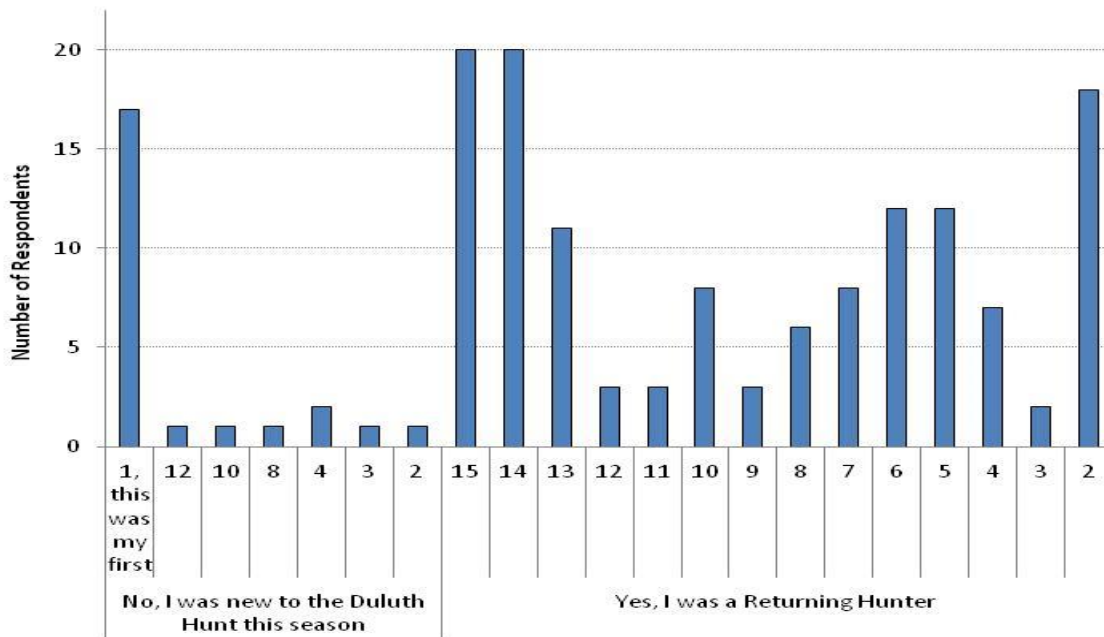


Figure 26. Years of experience in the Duluth City Bowhunt as of the 2019 season, separated by returning hunters and by new hunters that did not participate in 2018. Note that many of these “new” hunters have participated previously, but not in 2017.

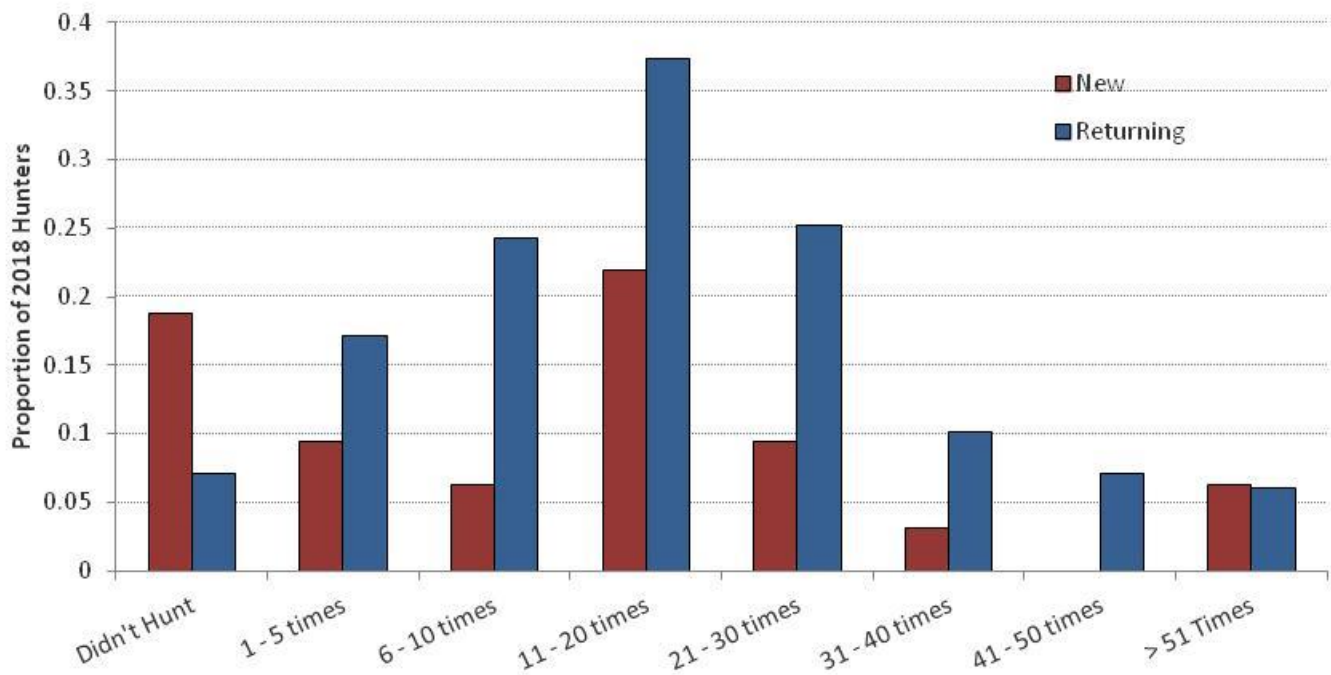


Figure 27. Proportion of new and returning hunters and the effort each group invested in hunting within Duluth during the 2019 Bowhunt Season.

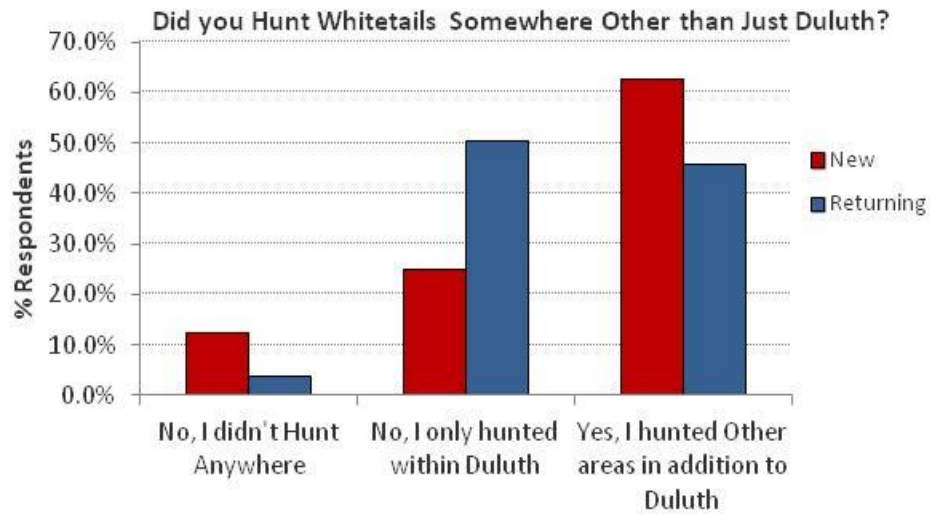


Figure 28. Percentage of year end survey respondents that identified themselves as either new or returning 2019 Duluth hunters, and that indicated whether they bowhunted in areas other than just Duluth.

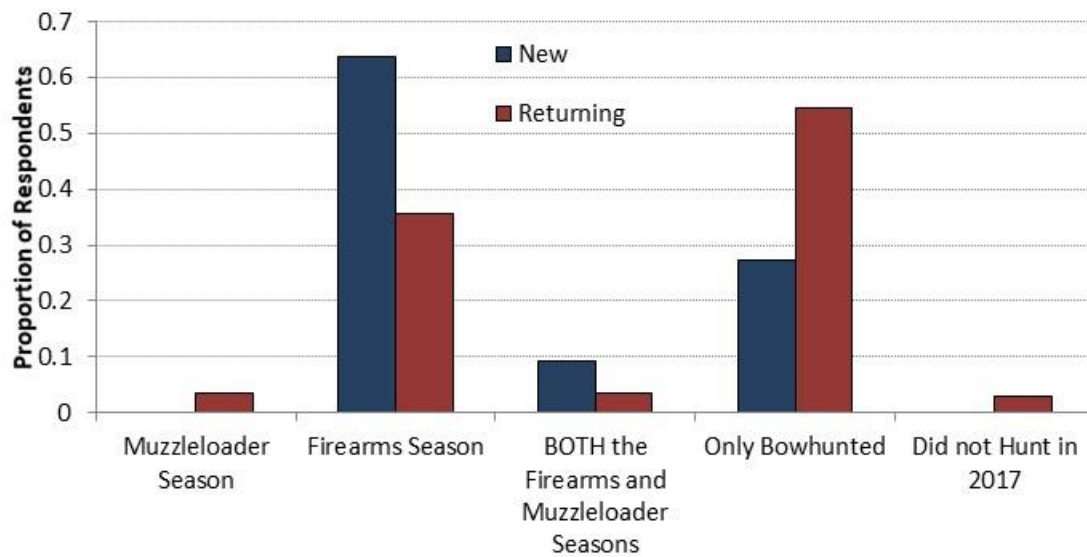


Figure 29. New and returning hunters indicating whether or not they participated in the 2018 Minnesota Firearms Season.

Did you harvest a Buck during the 2019 MN Firearms Season

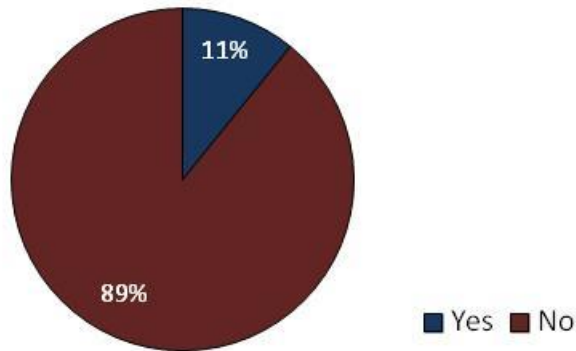


Figure 30. Year End Survey participants indicating whether or not they harvested an antlered male white-tailed deer during the 2019 MN Firearms season.

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. In 2018, the earn-a-buck requirement was suspended on Thanksgiving Day. Only three (3) of our hunters took advantage of this opportunity. In 2019, the requirement also expired on Thanksgiving Day. But unfortunately for our hunters, a near-record snowfall event followed on that weekend, and harvest all but ended for the 2019 season. There were a few animals registered in December, but no one harvested a buck without having first taken an antlerless animal.

Survey participants were asked for input for the 2020 season. Only 6% of respondents indicated support for keeping the earn-a-buck regulation in place for the entire 2020 season (Figure 31). The majority of hunters support either suspending the earn-a-buck requirement again on Thanksgiving Day 2020 (27%), earlier than Thanksgiving Day (17%), or eliminating the requirement altogether for a one-year trial basis (46%, Figure 31). A review of the comments in Appendix 1 further demonstrates our hunters' support for being allowed to put food into the freezer before a late date.

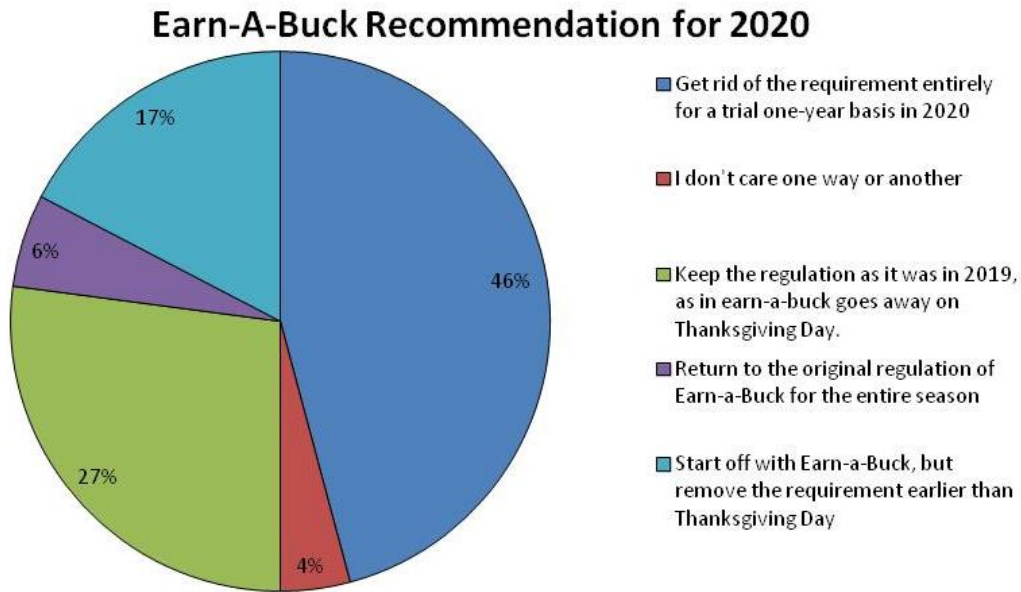


Figure 31. Participants in the 2019 Year End Survey indicating their recommendations for the earn-a-buck requirement for the City of Duluth for the 2020 season.

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 un-huntable. 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. The ABA would encourage the City of Duluth to survey their residents on their feelings towards this bike trail network. The results may be enlightening to politicians.

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 2.8 ± 0.2 (median value 3), suggesting a middle-of-the-road reaction for our hunters (Figure 32).

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 65% of our hunters indicated that they were aware of this (Figure 33). When asked if this setback requirement had impacted their hunt, 66% of the hunters indicated that it had not affected them personally (Figure 34). All of the comments provided by the hunters are included in Appendix 2 below.

The final question in this group intended to gauge whether or not the setbacks could be less confusing if both official and unofficial trails all had the same setback distances. The majority of survey respondents (61%) indicated that the current setbacks are easily understood (Figure 35).

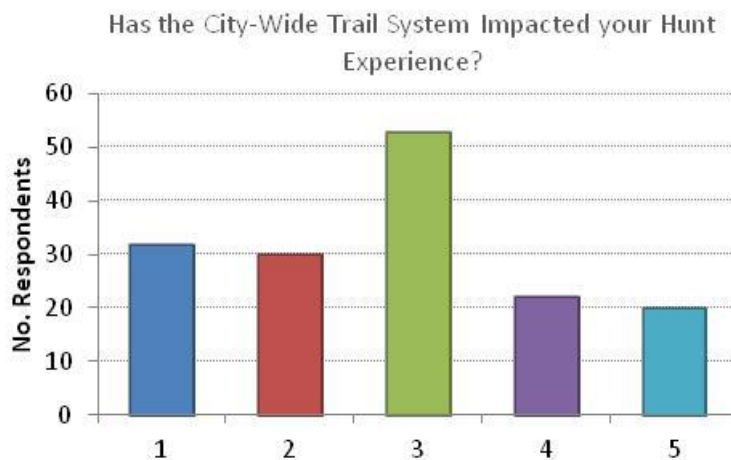


Figure 32. Participants in the 2019 Year End Survey indicating their experience with the city-wide network of trails within the Duluth City woods. Responses ranged from 1 (bad experience, including conflicts with other user groups) to 5 (positive experience with no conflicts).

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

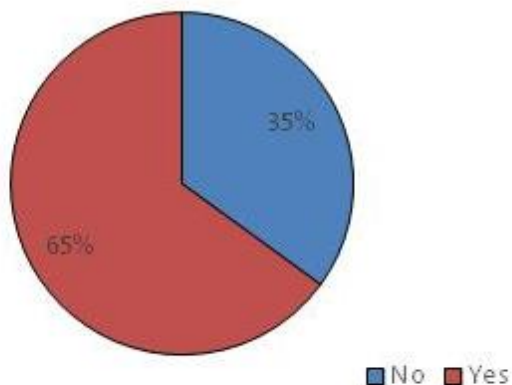


Figure 33. Participants in the 2019 Year End Survey indicating their knowledge of the setbacks required for “unofficial” trails within the Duluth City woods.

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?

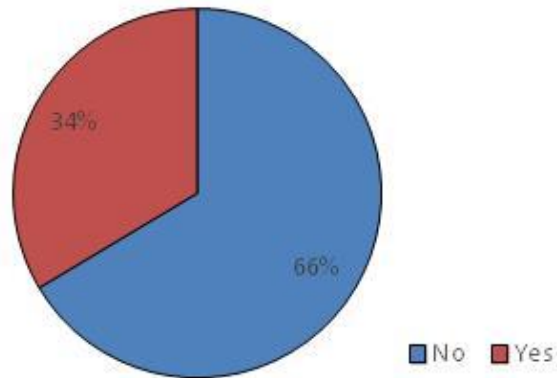


Figure 34. Participants in the 2019 Year End Survey indicating if they felt the setbacks for "official" trails has impacted their hunt.

Would you support a consistent trail setback across all official City recreational trails in accordance with the City's Trail Map, as in hiking and biking trails would all have the same setbacks to avoid confusion?

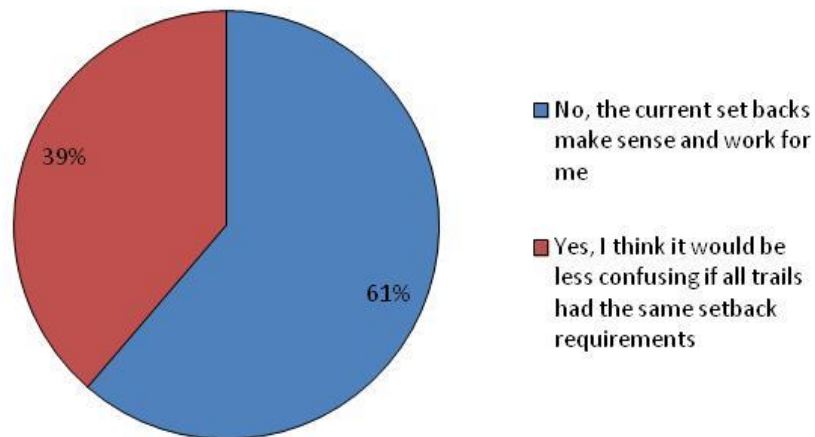


Figure 35. Participants in the 2019 Year End Survey indicating support for consistent setbacks for all official trails within the Duluth City Limits.

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 36). For respondents reporting that perhaps some of the DHAs may be over-crowded, only five DHAs received more than a single vote (DHAs 3A, 7A, 8, 10C, & 16B), with seven DHAs receiving a single vote. This question does not address some of the comments received about reducing the number of hunters in order to reduce deer harvest, which is not the same as DHA crowding (reported in Appendix 1).

Did you feel crowded where you were hunting?

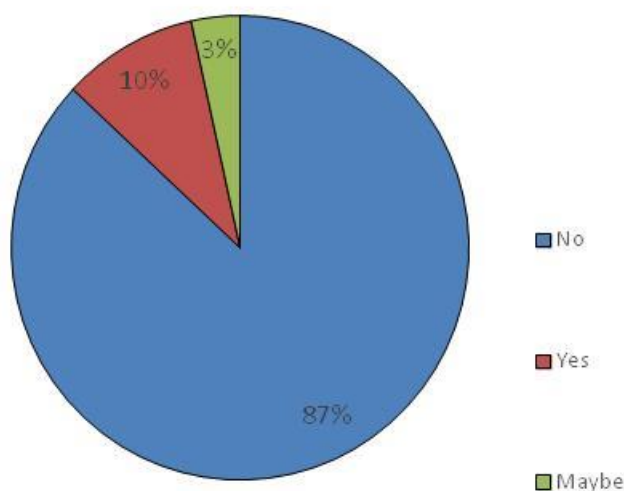


Figure 36. Percentage of Year End survey respondents that reported whether or not they felt there were too many other hunters within the DHA hunt area they were assigned to.

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 in 2005. 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 37). Still, many of our hunters believe there's too few deer (Figure 37; Appendix 1). Interestingly, seven hunters indicated that there were still too many deer (value of 6 or 7 in Figure 37). One of these respondents has been with this Hunt every year. Five of these hunters are two-year veterans. 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 15 seasons. As landowners report these areas to the ABA, new Hot Spots can be established to address these localized problem areas. On the other hand, the ABA also acknowledges that perhaps not every single deer needs to be eradicated within the City, and pockets of deer refuge may be a desirable thing for the herd and the future of this Hunt.



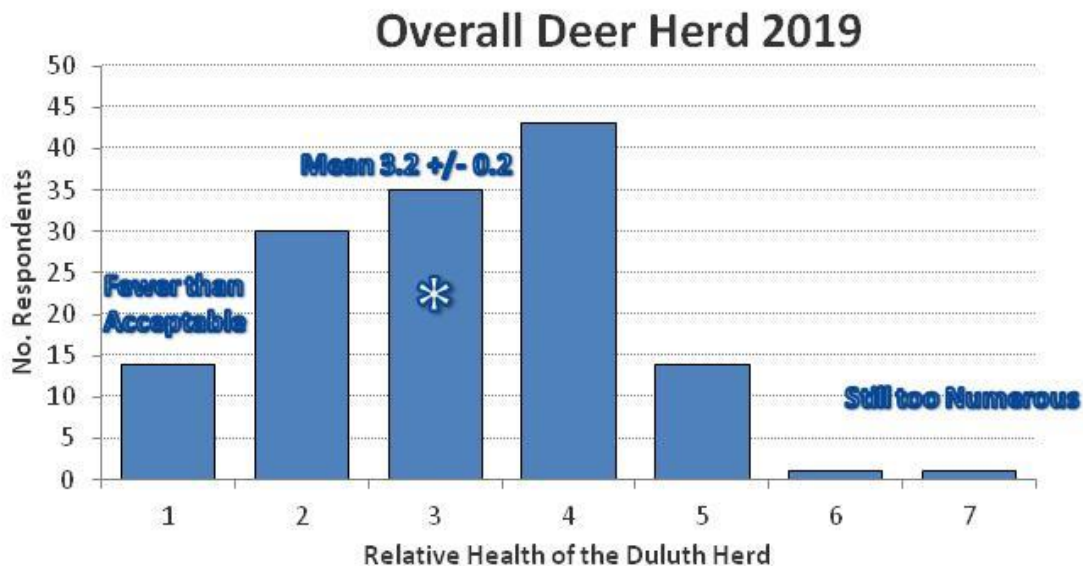


Figure 37. Results from the Year End survey asking respondents to rate the current 2019 white-tailed deer herd within the City of Duluth. Responses could have ranged from 1 (far fewer deer than acceptable) up to 7 (still too many deer on the landscape to be sustainable).

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 2020?”

As expected, the responses were all over the place. Many comments were useful. All comments are included in Appendix 1. For the first time EVER, not one single comment was logged about allowing baiting to improve harvest opportunities. So perhaps a decade of education has yielded results.

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 four years. It was denied by the Duluth Hunt Review Panel. They did approve of the suspension of this requirement for late in the 2017 thru 2019 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.

Finally, the ABA would like to thank these volunteers, without whom we couldn't pull this Hunt off:

Andrew Frieland	Bruce Fehringer
Camron Vollbrecht	Dan Preiner
Dean Danielson	Doug Coda
Gary Rabold	Joe Austin
John Atella	Kerry Lapcinski
Mathew McIsaac	Matt Anderson
Michael Mangan	Mike Dodge
Ron Gullicks	Scott Schafer
Seth Hartman	Tim Key
Tony Marino	

Board Members for 2019:

Phillip Lockett, President	Tom Florestano
Phillip Mannon, Chairman	James Dexter
Brian Borkholder, Secretary / Treasurer	Katrina Wood
Alan Vorderbruggen	

Thank you to all who made it this far in the Report. Your perseverance is applaudable.



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 2020?" 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 2020?	ABA Response
Allow bucks to be taken in hot spots if hunter has already killed a doe in one.	We tried this one season, and it blew up in our face. Because hot spots aren't available to everyone, many complained that the ABA continued to be a "good ole boy's club" when we allowed a couple of bucks to be taken in the Hot Spots.
Allow coyote hunting within the city.	City Ordinance only allows for the taking of white-tailed deer in the City. We don't want to go back to Council and try renegotiating the Ordinance.
Allow natural ground blinds to built with existing vegetation. There are no trees in some areas and putting in a man made ground blind for one day really doesn't work. Leaving it there for enough time for deer to be accustomed to it would result in it being stolen.	Not a bad suggestion. The Board will discuss this.
Allow the use of ghost blinds(mirror blinds) with the same rules of other blinds. Sometimes with strong wind or very cold days, being on the ground is more efficient. As long as you aren't facing a road way or trail.	The Board will discuss this.
Based on deer harvest and that it seems apparent that the deer herd is not what it has been in prior years I think two deer is a reasonable harvest limit unless your shooting for eliminating the deer. It is not all about killing, it is also enjoyable observing deer....kinda sucks watching nothing. I'd be for getting the coyote on the kill list too!	See above for Coyotes. See report about not killing all of the deer. See the comments about the MNDNR setting limits. Thanks!
Be less lenient. Ask City to post signs near City Limit lines to educate others of City Limits (west zones)	When we are lenient, we get burned. When we are strict, we get criticized. City knows about the desire to post, but money is tight.
being able to party hunt for other peoples buck	Not going to happen. Then folks will start getting their wives, and 3-yr old children into the hunt JUST to be able to shoot more bucks. It's not about the antlers. It's about participating in this activity close to home and in a convenient location, while providing a valuable service to the City of Duluth.



<p>Brian's mother has a dorky son. Guess who wrote this one!</p> <p>Remind hunters that when tracking deer, hunters may not have an arrow in their bow. Also, having something that we can give to landowners when our wounded deer goes on their property that would get rid of confusion regarding our rights to track it would be nice. This something should have an official city seal. Our armband numbers are not sufficient identification.</p>	<p>No idea, but everyone knows this! You have a firm command and grasp of the obvious.</p> <p>Your armband and ID # are your official identification that you are a legal hunter within Duluth. Educating the public and Duluth PD is the key</p>
<p>Change the set back from occupied buildings to 300 feet</p>	<p>We will continue to push this issue, but unfortunately this is in the Hunt Ordinance. Right now, the Board isn't too anxious to go back to relook and re-evaluate this Ordinance.</p>
<p>Current structure works. Support of HCs is excellent. Bork does an exceptionally good job and we should do whatever it takes to support and help him.</p>	
<p>Earn a buck requirement should go away when MN rifle season starts. I think this will entice more hunters to hunt the city instead of going to their deer camps elsewhere.</p>	<p>Interesting idea. We can discuss this with the Deer Review Committee and the City liaison.</p>
<p>Eliminate earn a buck...simplify rule book if possible...we don't need more regulation...</p>	<p>We don't like more regulations, that's true. But unfortunately there's an element out there that continues to try to push what's "legal", which requires the tightening and additional rules.</p>
<p>First year, had a great time!</p>	<p>Great! Welcome.</p>
<p>Free Beer at drawing. No. All is good.</p>	<p>Oh, I LOVE that suggestion!!</p>
<p>Get rid of earn a buck, limit the harvest to 2 per person.</p>	
<p>Get rid of the "earn a buck requirement". Allow disabled veterans to keep their deer stand up for the entire year.</p>	<p>What if you don't get drawn in that DHA next year? Then you'll have to take it down. Plus, it's not fair to new hunters if you get to hold your spots forever.</p>
<p>Get rid of the earn a buck because for example, this year I had a good buck patterned on his summer pattern but couldn't shoot a doe in time so wasn't able to kill him. Also less does means less deer population in the future</p>	<p>Less adult females is the goal of this management hunt.</p>
<p>Go with a standard hunt. To take pressure off getting a doe, I'm not a trophy hunter but enjoy eating and providing venison for my family</p>	<p>Unfortunately, this isn't a standard hunt. It is a metro one. I doubt we'll be able to completely eliminate the earn-a-buck requirement, but we'll continue to work to loosen it up a bit.</p>



<p>Gotta reduce the number of does allowed to be shot. There's still a few retired hunters that will shoot and shoot and shoot. So definitely keep the two antler-less limit. Or reduce it to one antler-less. The hunters have effectively reduced the herd. Lets just manage it now. 1 antler-less 1 antlered. If you need more, go outside the city.</p>	<p>Your sentiment is shared by many.</p>
<p>Great job this year! Only suggestion would be to change the date we can put up stands (week or 2 earlier)</p>	
<p>Hear me out... Although this is a "reduction" hunt, I feel that it is time to look at letting the population of deer rebound. Not to the extent it was 10 years ago, but the amount and quality of deer seen were extremely discouraging. Once upon a time in the early years of this hunt, The Duluth Hunt compared to a Kansas/Iowa/Texas like hunt, but these deer have been shot up and those days are long gone. This year when going out into the woods, it was a good day when you were able to see just one or two deer and I'm guessing the number of Large bucks (160+) taken were far and few between. This hunt just isn't the quality as it once was and a serious overhaul should be considered for the sake of anyone looking to hunt it in the future. Some ideas to consider: Reduce the number of people allowed into the huntReduce the amount of deer to be taken within the Duluth hunt to 1 (Doe or Buck) No Doe to be taken After First weekend of MN Rifle Season. Let the Does that have been bred live and reproduce. Have a Discussion or bring in a speaker on Quality Deer Management - Which deer should you be letting go and which ones you should bag for a meat deer. Too many 100-130class bucks being knocked out when they could be Mountable deer in the next season.</p>	<p>You make some good points, but unfortunately this isn't a "managed" hunt. We didn't sell this hunt to the City or the hunters as an opportunity to shoot a 160"+ trophy. It's about controlling the deer herd, which I think we are doing successfully. For most folks, this hunt is about putting meat into the freezer. Many of our hunters are just fine with shooting an 80 - 120" buck because the meat is the real trophy, not the size of the antlers. The ABA will not ever push QDM, nor pay for an "expert" to come tell us how we should be harvesting deer. That comes down to the individual hunter. If you think that 140" deer is too small, let him walk. He may or may not be around next year for you, but as they say, "You'll never shoot a 170 if you always shoot the first 140 you see".</p> <p>We will likely always have some form of earn-a-buck for at least a part of the season. So a minimum bag of two will always be in place. But look at our harvest stats. Half our hunters don't even shoot one deer, so it's really not an issue.</p>



<p>Honestly, you begging for beer is ridiculous. You attempt to shame people for being bothered by them. (ie. stating to bring Cream Ale to turn in applications which aren't even past due). It's very unprofessional. If you don't like heading this program and it's such a burden to you, don't do it. Quit your bitching, and stop trying to make people feel bad for you, or that you are doing everyone here such a grand favor.</p>	<p>Well, if everyone followed the rules and got their stuff turned in on time, I wouldn't have to have folks showing up to my house to be allowed to hunt. I could rescind that offer in the future, and then folks just wouldn't be allowed to hunt (recall that the offer to hand deliver was because the UPS store wasn't open on 30 June this year). Honestly, it really is a nuisance to have 25 folks stopping by on a sunday delivering their almost-late materials. Can you imagine how little I accomplished on that day with a near constant flow of folks stopping by? That's right, I got nothing done! Lots of BS'ing with friendly and appreciative folks, but no walleyes were boated for me. This won't be an issue again for another 7 years, when the UPS store will once again be closed on a sunday on the deadline. And maybe you are right, I just shouldn't allow anyone to hand deliver their materials. Afterall, they've had over 4 months to apply.</p> <p>For the record, I only scored one 6-pack from all of those that stopped by on that Sunday. I tried to return it, but the individual insisted. Cheers!</p>
<p>I am grateful for all of the work that goes into having a bow hunt in Duluth. My time in a deer stand is a primary way I enjoy the urban wilderness that exists in Duluth.</p>	
<p>I feel like the herd is in a good spot in terms of numbers, evidenced by the declining harvest. I feel like it is a good time to remove the earn a buck rule.</p>	
<p>I take back earlier question I answered. Take away the earn a buck. Population is under control now and I think there is less "trophy" hunters than the old days. No fun passing on a buck early season cause you haven't had a chance at a doe</p>	
<p>I think if you own property with-in a DHA you should have some priority points to hunt with-in that DHA?</p>	<p>You are always allowed to hunt your own property if you can meet the required set-backs to occupied dwellings, or get permission from your neighbors.</p>
<p>I would like a blog for each zone once you register into the website so we could communicate with fellow hunters in the zone - for deer activity, stolen property, etc</p>	<p>We tried that early on. It was kind of a pain to monitor and police. Our new website platform doesn't have this capacity. I'm not into FaceBook, but I do know that there is an ABA Facebook page. Can you start some DHA-specific threads on that platform?</p>
<p>I'm not sure at this time</p>	<p>Neither am I.</p>



If hunting private land itd be nice not to have to go through LOP process. Otherwise Great job you guys are doing. I appreciate all the work you go through to put this hunt on! -CP	LOP process is to demonstrate to the City Council the level of support the City residents still have for this hunt. We've got Council Members that question whether this Hunt needs to continue. Showing the support from land owners is important for the future of this Hunt. And we'll continue to require LOPs.
If one is entertaining a thought of a one size fits all trail set back the political atmosphere will more than likely dictate the setback at a distance that would be greater than desired.	You may likely be correct. Which is one reason we don't want to ask the Council to relook at the Ordinance.
If someone wounds a deer and doesn't report it to their hunting coordinator, they should be punished. It's not that hard to report a wounded deer. It makes us look bad and I don't want to have this hunt taken away.	Couldn't agree more!
I'm content, and you folks are doing an excellent job. I will pray for your sanity.	You are kind. Thank you!
Is it possible to lower the 400' minimum from occupied buildings? Thank you.	We will once again try, but there are issues with the City Ordinance and having to go back to the City Council.
It was my first year. I enjoyed the hunt greatly and am excited to gain more experience next year. I don't have a ton of experience in the Duluth hunt but do in the metro environments in general. The bike trail issue I would hope for taxing reasons, also keeping hunting opportunities available and hunting as a viable option I pray the city can be satisfied with the miles upon miles of trails they already have in place. If not they should be..	
Keep up the good work	
Keep up the good work, and Thanks.	
kudos to the board and giving their time for all of us city hunters in order to make this successful	
Less hunters	
Less hunters	
Let people hunt on or near trails. If there is a good spot where a hunter thinks he can see a deer, don't limit him because some dude MIGHT walk by with his dog.	



Let the hunters shoot the deer of choice. Drop the earn a buck requirement. Try it and see the numbers improve over this years poor harvest. I feel this proposal has been presented many times and year after year but no one cares and it will not be taken into consideration anyhow.	Well, the ABA has been pushing this issue over the last five or six years. We've gotten a few mini victories. We may eventually wear down City Administration and get a one-year trial removal.
My hat is off to the ABA board for a continued great job.	
No	
no	
No	
No issues - keep the hunt as-is. This is a very well thought out and managed hunt.	
No, thanks for all the board does	
No. Thank you ABA for all the hard work!!	
None	
Nope. Another great year. Thanks	
Nope. Same as always. Great Job by everyone who makes this happen. Thanks	
Not yet. I loved my first season. Fell in love with the city.	
Nothing I can think of.	
O	
Reduce the number of deer allowed to be shot as populations are quickly declining.	
Reduce trail setbacks, less bike trails, enforce leash laws for dogs, remove earn a buck I think hunters would still kill deer, maybe just in a different order. Thanks ABA. Well run hunt.	



<p>Reducing the 400' setback for occupied buildings to 200' or 300' would open up more options on available public land. Shooting from an elevated stand greatly reduces the chance of over shooting.</p> <p>One other thing would be to increase the number of setups that can be left in the woods from 2 to 3.</p> <p>Thanks for all the work you put into this.</p>	<p>See above for other comments on changing the setbacks, and why this is not as easy as it should be.</p>
remove the earn-a-buck requirement	
Same	Same what?
<p>Some how make sure that when you take spots in a zone that they actually put up a stand and hunt it!!! Other wise leave it alone you guys are doing a fantastic job!!!</p>	<p>Not sure how to address this one. Sometimes job and family issues come up and hunters just don't get out. If it's a recurring problem every year with Tom, Dick, or Harry, perhaps let the ABA Board know and we'll talk with Tom, Dick, and Harry. Because you are right.</p>
<p>Some more designed parking areas more or less for when snow hits the ground later in the season. A lot of spots are inaccessible</p>	
status quo is good	
<p>Stop the trail building around Duluth, other people have to share land with the screaming idiots walking through the woods! How about loosening some of the setbacks? No one is going to shoot anyone if setbacks were reduced. Hikers and bikers have no clue that we are in the trees, hence the two women that have stopped and did there business right in front of me. We need more rights not less! Thanks</p>	<p>Lots of us would LOVE to stop the continued expansion of the trail network. We will once again seek to drop the setbacks, because you are correct, the general trail users rarely notice our presence.</p>
<p>Take fewer deer for harvest, otherwise I thank the ABA for all they do! Great job!</p>	
<p>Thank you ABA for all of your hard work behind the scenes.</p>	
<p>Thank you ABA for all the work you put into organizing this hunt.</p>	
<p>Thank you for all the work the ABA Board does!!</p>	
<p>Thanks for another year. I don't know your mother.</p>	



Thanks for making this hunt happen	
<p>The hunt is ran great. I just feel it is time to start looking at the deer numbers especially with the winter we had last year and how this year is starting out. The deer numbers are low and way out of whack in my opinion. The buck to doe ratio is way out of line much fewer does then bucks which is not healthy. I think a year or two without a earn a buck could be very beneficial to the deer herd. And that is completely different from a trophy hunt mentality. I just think giving the does a break for a couple years and allowing some guys to shoot some more bucks young old it doesn't matter could help the overall health of the herd. If it were up to me I would set it at a two deer limit with no earn a buck. Shoot what you want when you want for a year or two then reevaluate the situation. Just my two cents worth. Thanks again for putting all the time in to making this a great opportunity for us all to enjoy. Much appreciated</p>	<p>The only thing that we would disagree with is allowing folks to shoot two bucks, only because the State of MN law states that an individual hunter can only harvest one buck per calendar year, throughout all of the various seasons (archery, firearms, and muzzleloader). While eliminating earn-a-buck to rebalance the herd is a legitimate request, allowing for hunters to shoot two bucks is not.</p>
<p>The hunt is well run and I have no suggestions to improve it. I offer a huge THANK YOU to the volunteer ABA Board members who manage the Duluth Archery Hunt and make this experience possible for the rest of us.</p>	
<p>The idea of the in-city bowhunt is to control the deer population. The limit should be unlimited or at least 5 and be able to take a Buck from the opener.</p>	<p>Many hunters would disagree with allowing unlimited or even a five-deer limit. Just look at our harvest and trends. There's no reason for unlimited harvest. It would only benefit two or three of our retired hunters. Our goal now is to distribute the harvest out to more of our hunters that jump thru a lot of hoops to participate. It's hardly fair for you to shoot 18 deer each year, give 17 of them away to family, and a few of our hunters end up buying beef during the winter. Don't you think?</p>
<p>Try to remove earn a buck. It's clear that the herd numbers have been reduced greatly</p>	
<p>u r doing a great job keep it up</p>	



Appendix 2. Comments received from hunters filling in the Year End Survey when asked about whether the currently-established 200-foot setback to “official” trails has impacted their hunting. Comments are as submitted. No attempt was made to correct grammar or spelling. These are included for the Board and City Administration to review, and to further the public record on where most of our hunters stand on the trail network.

Please tell the ABA how these setbacks have impacted your hunting.
7a has been taken over by bike trails and disk golfing. It's very hard to find a spot to hunt that's not in eye site of a bike trail, disk golf or another hunter.
Bike trails are unregulated, unlabeled and change frequently.
Bike trails just pop up like crazy
Can't hunt Some of the best spots
Factoring in the setbacks, it makes a lot of the available lands unhuntable.
Finding a tree that will support a treestand, meets the setbacks and has a chance at a deer walking in front of it can take a very long time to locate and I almost didn't find one after dividing the DHA between the other hunters.
Finding the perfect tree can be hard sometimes when you can't use the entire woods.
Hard to find a ridge that doesn't have a mountain bike trail on it
Haven't hurt me yet but could if I wanted to set up in another zone
I am no longer able to set up in my 2 best stand locations any longer. Why must they always have to ruin every old growth oak patch. They go out of their way to punch a trail through the most scenic areas! How about get off your bike and walk in those scenic areas. They ride hard and are focused so much on not wiping out that they don't even appreciate the beauty.
I haven't selected certain DHAs knowing that it will be difficult to find a good spot to hun that is also legal.
Impacts stand location, can't hang stand in best spot
It makes finding quality setups on smaller plots of land more difficult.
Its hard to find a spot as the trails are everywhere. Deer tend to use certain areas to move and the trails have changed where we can setup.



I've have been pushed out of areas where I can get clearer shots and have to hunt in more dense areas
Just have to work harder to find those hidden spots away from trails. Which isnt a huge deal.
Just needed to move around a bit.
Just so many trails have really taken away from natural public land to use
Less enjoyable and less natural
Many of the public land areas have vast hiking/biking trail systems and the setback requirements can greatly reduce the 'hunnable' zones within a DHA.
Many stand sites eliminated. Zone 8 sucks because of trails
Map it out. So many trails with 100ft or 200ft buffer elongates a lot of trees to hang a stand in. Now look at what's left and try to find a tree that deer walk within 30yds of. It's getting harder.
maybe go to smaller setback share the space
More people created less deer activity
Mountain bike riders sometimes have loud conversations in the woods. Can effect deer movement.
Much less hunting opportunities
Setback has limited my stand placement and have missed out on opportunities to harvest a deer.
Several of the trails were built right on top of known deer trails. Also the good deer trails through thick area were the obvious/easy choice to use by the people making the trails. The trail system has changed the opportunity to hunt multiple good areas within the city.
Some areas the MB trails are so numerous that even with a 100' set back it excludes numerous acres.
The constant building of bike trails has wiped out most of the areas we previously could access
the mountain bikers and skiers have taken over our city.
The new trails moved me clear out of my hunting area that I hunted for 10 years. In order to find an area that was not already occupied by other hunters I had to move to a couple of spots from half to one mile away from my original area.



The trail upon trail is crazy.. some trails parallel each other. Then you see flagging where they want to put another in.. then you find a spot where you can put a stand up only to find your nor within the 200ft

The way these poorly designed switch-back trails criss cross the mountainsides are a environmental disaster and were made with no impact study whatsoever

There has been a few trails that went through prior hunting spots

There's so many trails now it's harder to find a spot to even hunt now. Then when you do, you still see glimpses of dozens of hikers bikers and dogs.

They have taken some very good funnel areas and ruined them!!!

They limit the available "hunting spots"

To many trails, tough to hunt around these & increased human activity reduces deer activity

Too many bike trails

Too many trails.

toooooooo many mountain bikes

Trails cut thru funnel areas

Trails in zone 8 intersect so many areas where there are large enough trees to hang a stand with potential to shoot a deer. When did all the hiking and mountain bike trails take over our established hunting zones? This infringement of our land is getting old! What are we chopped liver?

Users of the trails spook a lot of deer.

Way too many trails out there now. People everywhere, dogs unleashed running all over the place. Gets frustrating. Public/private properties, it don't seem to matter. Seems like the only people that are in the woods these days that have to obey the rules and play nice are the aba hunters!

With the increasing amount of trails, set backs, and trying to find mature trees to hang stands in, it limits the available space when trying to find a hunting location.

