

Polk County Controlled Bow-Hunt 2022-2023 Deer Report



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Compiled by the
Polk County Deer Task Force

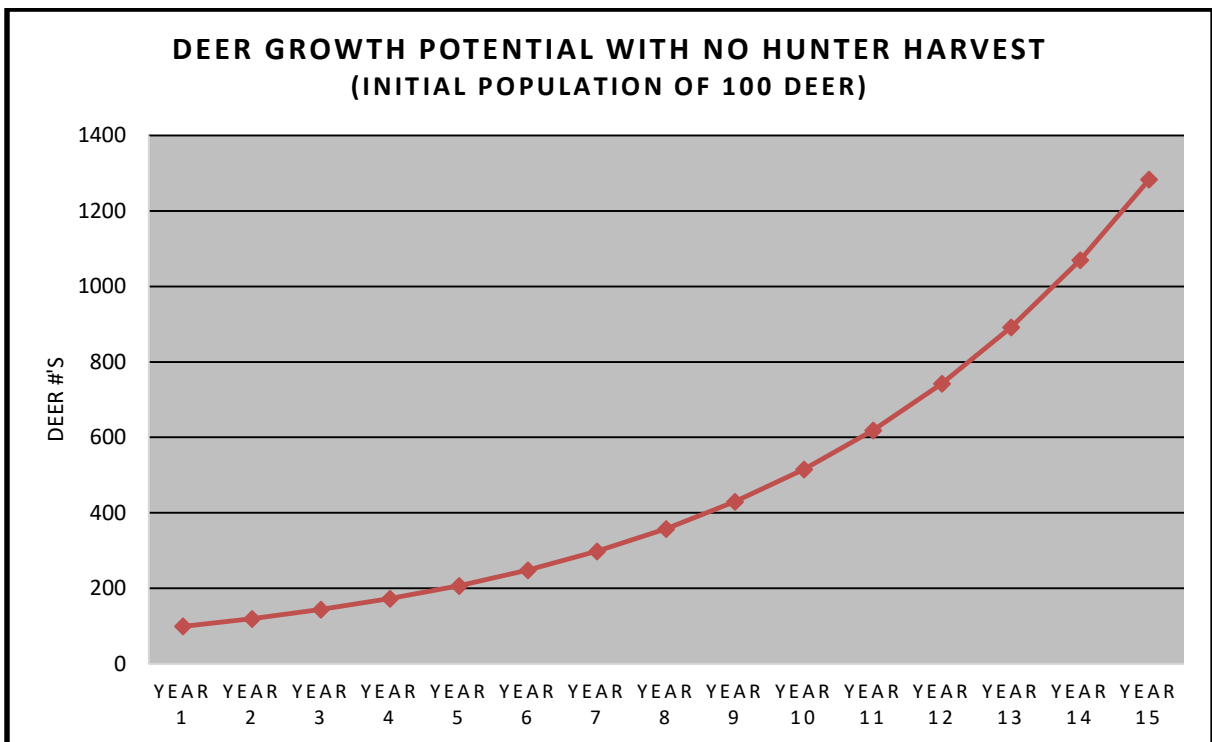
The Polk County Deer Task Force believes that the White-tailed deer is a valuable part of our natural heritage. We support the perpetuation of the deer population in Polk County at ecologically acceptable levels.

-1997 Position Statement of the Polk County Deer Task Force



Executive Summary

Based on harvest records and agency observations, it is recommended that the Polk County Controlled Bow-Hunt should be continued for the 2023-2024 season throughout the Polk County Deer Management Zone. Agencies are encouraged to continue or expand hunting opportunities in their areas of control. Deer population numbers may have been reduced to target goals in some areas but remain higher in neighborhood habitats where hunting may not be a control option. Agencies may need to remember that an uncontrolled deer population can double every three to four years. Continued hunting pressure within the Deer Management Zone has produced remarkable results in managing deer populations across the area.



The graph above depicts potential population growth of a deer herd where no hunting is allowed. The growth considers average population structure based on probable gender and age distribution. Considerations are also given to related fecundity rates. Distribution of these animals over time and as densities increase can vary. A relatively confined population will probably contribute to an increase in deer numbers over an increasingly larger geographical area over time.

Post Season Reports

Hunting Season

This year the IDNR allowed participating entities to use September 17, 2022, through January 22, 2023, for the Polk County Deer Management Zone bow-hunting season. Agencies could choose to use these dates for their season, or tailor their hunt to suit individual needs (as long as the dates were within the allowable season above). Pending approval from the Natural Resource Commission, the proposed hunt dates for the 2023 - 2024 season will be September 16, 2023, through January 21, 2024. 37 deer were harvested before October 1, 2021 (normal start of bow season) and 44 deer were harvested after January 10, 2022 (normal close of bow season). This extra season length accounted for 27% of the harvest (81 of 304).

Deer Harvest

Agencies reported that 283 antlerless deer were harvested during the 2022-2023 bow-hunt, which is a slight increase from 272 in the 2021-2022 season.

A total of 315 antlerless deer harvested in the Polk County Deer Management Zone (including antlerless deer harvested in Camp Dodge with shotgun/muzzle).

21 incentive bucks were harvested during the 2022-2023 bow-hunt.

A total of *353 deer were harvested during the 2022-2023 season.

* Count includes Camp Dodge (shotgun and muzzle any sex-tags)

Several hunters continue to have trouble entering data in the online system and entering data that does not align with the ELSI data. A few hunters reported deer to ELSI that were not reported in the online system and those deer were excluded from consideration for incentive tags. Sincere consideration should be given to removing these repeat offenders from the program – at least for a year to reinforce the importance of proper reporting.

Proficiency Testing

Archery Field and Sports administered proficiency testing to hunt participants. 175 proficiency tests were taken and only 6 failed. 148 passed with a compound bow, 6 with a re-curve bow, and 15 with a crossbow.

Hunter Participation

175 (up from 172) total hunters purchased zone 48 tags

91 (down from 111) hunters tagged at least 1 deer

Total deer tagged	Number of hunters
1	25
2	17
3	14
4	9
5	14
6	3
7	2
8	4
9	1
11	1
12	1

The 35 hunters tagging 4 or more accounted for 67% of the harvest (202 of 303). 84 (up from 61) hunters did not tag a deer. It is suggested entities with limitations on the number of hunters allowed in their program consider removing hunters who harvest no deer.

Safety Record

No injuries were reported by hunters, neighbors, or park visitors.

Licenses Sold

The Polk County Deer Management Zone is divided into two zones.

1000 licenses were available for zone 48 which includes all the cities, Polk County Conservation areas and U.S. Army Corps of Engineers areas.

75 licenses were available in zone 61 which is comprised of mostly rural areas not included in zone 48. Hunters purchased 542 antlerless licenses in zone 48 and 11 antlerless licenses in zone 61 for use in the Polk County Deer Management Zone.

Polk County Deer Surveys: 2023

By Andy Kellner and Dr. Tyler Harms
Iowa DNR

Helicopter surveys were not conducted this year as weather conditions after the hunting season were not optimal and staff time was limited due to additional projects. In lieu of the aerial survey, studying the following graphs of license sales and resulting antlerless harvest as well as hunter success rate in the Polk-Dallas Deer Management Zone (DMZ) provides important insights into the success of the program. Since 2012, antlerless harvest has slightly declined. This may reflect some decreased



opportunity for hunters or signify a reduction in harvest opportunity due to lower overall deer numbers since the inception of this hunt. Anecdotally, hunt administrators have received comments from hunters about decreasing deer numbers within the DMZ. The relatively high success rate is carried in part by the button buck harvest over time but can also be attributed to the more successful hunters remaining a part of this program.

Due to unreliable weather conditions and shifting job duties, aerial surveys may not be the most efficient or reliable survey in future years. Tracking complaints, deer vehicle collision reports, license sales, harvest rate, and camera trap studies may be alternative ways to monitor population trends. Additionally, this last year was the fourth year of collecting bow hunter surveys from hunters participating in the urban program.

An attempt was made at providing an electronic entry option for the bowhunter survey. While this option was popular and allowed for easy entry of data, unfortunately there was an error in retrieving the data at the end of the season. While a fair amount of information was captured, there is data missing from the earliest parts of the hunting season.

Iowa DNR Biometrician, Tyler Harms, produced the below figures comparing bow hunter survey data from the statewide survey for the Central Region (Webster, Hamilton, Hardin, Boone, Story, Marshall, Polk, and Jasper Counties) to the Polk-Dallas Urban Archery bow hunter survey data. Some trends are becoming evident as we continue to collect these data within the DMZ.

For the 2022-23 hunting season, 63 bowhunter surveys for the DMZ were returned. This is a small increase from last year (61). Continued collection of these data annually will yield more reliable trends for hunt administrators.

Figure 1 (appendix) shows a trend in the total hours hunted in the DMZ and Figure 2 (appendix) shows a trend in the number of deer observed per 1,000 hours hunted in the DMZ. These figures combined provide insight into deer abundance as well as hunter effort. Overall, the trend lines should be observed as year-to-year movements in these observations as opposed to raw numbers. Also, the DMZ trend lines will fluctuate more due to the lower number of surveys and reported hours overall. Keeping this in mind, these trends are fairly consistent between the DMZ and the Central Region (Figure 3 appendix) despite a dip in 2020 in the DMZ.

That being said, the DMZ trend lines are definitely among the lower values reported for the Central Region. This speaks to the overall lower number of deer observed per hunting effort. This could be an indicator of the success of the urban bow hunting program at reducing population levels within the metro since its inception. In addition, the somewhat stable trend in deer observations from the bow hunter survey matches that of reported harvest in the DMZ. The correlation of these two trends is a strong indicator of a stable deer population in the DMZ.

Something for hunt administrators and the Polk County Deer Task Force to watch in the future is hunter retention and recruitment. A core group of consistent, committed hunters continue to keep the harvest rate at levels well above the statewide average: harvests rates between 50%-60% for the DMZ and rates closer to 30% statewide. In the last 15 years, while still high, the DMZ harvest rate is slowly declining. As these particular hunters age or move, harvest rates will continue to decrease. Strategies for maintaining the current hunter base or incentivizing other hunters to become more committed will be important for effective deer population management into the future.

Bow-Hunt Administrators

- City of Des Moines: Paul Strome 515-248-6349
-Administers public and private property bow-hunting
- City of Johnston: David Croll 515-727-7780
-Administers public and private property bow-hunting
- Polk County Conservation: Charlie Finch 515-250-1031
- US Army Corps of Engineers (Saylorville Lake): Coty Thompson 515-276-4656 x6514
- City of Urbandale: Holly Pickett 515-278-3910
-Administers public and private property bow-hunting
- Walnut Woods State Park (IDNR): Josh Shipman 515-285-4502
- City of West Des Moines: Marco Alvarez 515-222-3452
-Administers public and private property bow-hunting
- City of Clive: Jeff Theilen 515-238-0648 / Joel Pasco 515-210-7581
-Administers public property bow-hunting
- City of Pleasant Hill: Andrew Minnick 515-868-8177
-Administers public and private property bow-hunting
- City of Polk City: Matt Aswegan 515-689-1388
-Administers private property bow-hunting
- Des Moines Water Works: Jessica Barnett 515-283-8702
-Administers public property bow-hunting

Advisory Organizations

The following organizations serve in an advisory capacity to the Polk County Deer Task Force (in addition to the organizations listed above).

- Iowa Dept. of Natural Resources: Andy Kellner 515-975-8318
- City of Ankeny, City of Des Moines Animal Control, City of Grimes, Dallas County Conservation Board, Des Moines Water Works
- Archery Field and Sports, Des Moines Audubon, Des Moines Founders' Garden Club, Des Moines Izaak Walton League, IDNR Law Enforcement, Iowa Bow Hunters Assoc. (IBA), National Field Archery Association, Polk County Conservation Board, Polk County Board of Supervisors, Sierra Club and Westwood Neighborhood Association.

Deer Harvest 2022 - 2023

POLK-DALLAS URBAN ZONE 48

A. **Polk County Conservation (PCC) Public Areas**

	Incentive Buck	Shed Buck	Button Buck	Doe
Jester Park	0	0	2	17
Sycamore Trail (includes Area C in Johnston)	0	0	0	8
Easter Lake	0	0	0	0
Brown's Woods	2	1	0	15
Thomas Mitchell Park	0	0	0	1
Mally's Weh-Weh-Neh-Kee Park	0	0	0	1
Four Mile Greenbelt	0	0	1	7
Yellow Banks Park	0	0	0	2
Gay Lea Wilson East Trail	0	0	0	0
Polk County Conservation (PCC) Harvest Total	2	1	3	51

B. **City of Clive**

City of Clive Public Areas	Incentive Buck	Shed Buck	Button Buck	Doe
West of I-80	0	0	1	6
Greenbelt Park: East of NW 114th	1	0	0	6
Sub-total	1	0	1	12
City of Clive Private Property				
None at present date	0	0	0	0
Sub-total	0	0	0	0
City of Clive Harvest Total	1	0	1	12

C. City of Des Moines				
City of Des Moines Public Areas	Incentive Buck	Shed Buck	Button Buck	Doe
Cases Lake: Hartford Ave	0	0	3	3
Crocker Woods: Prospect Rd. & Hickman Rd.	0	0	0	0
Ewing Park	1	0	2	4
Laurel Hill Woods	0	0	0	0
MacRae Park	0	0	1	2
Pioneer Park	0	0	0	4
Ashworth Park	1	1	2	6
Sub-total	2	1	8	19
City of Des Moines Private Property				
SW / Airport Area (South of Waterworks Park, West of Fleur to limits)	0	0	0	0
SE / Easter Lake and Ewing Parks Area (SE 14th east, South of DM River to Limit)	0	0	1	4
South of Grand Area (West of Terrace Hill to 63rd, South of University to Waterworks)	3	0	3	16
MacRae Park Area	0	1	0	3
Prospect / Beaverdale Park Area	1	0	1	4
East Area (East and Northeast area of city)	0	0	0	5
Sub-total	4	1	5	32
City of Des Moines	Harvest Total	6	2	13
		51		

D. Des Moines Water Works				
	Incentive Buck	Shed Buck	Button Buck	Doe
2201 George Flagg Parkway	3	0	2	33
Maffitt Reservoir	1	0	0	14
Des Moines Water Works	Harvest Total	4	0	2
				47

E. City of Johnston				
City of Johnston Public Areas	Incentive Buck	Shed Buck	Button Buck	Doe
Area A: Army Corps of Engineers (See USACE Totals)				
Area C: Sycamore Trail (See PCC totals)				
Area E: City of Johnston - 156 Acres	0	0	0	8
Sub-total	0	0	0	8
City of Johnston Private Property				
Private Property	1	0	0	4
Sub-total	1	0	0	4
City of Johnston	Harvest Total	1	0	0
				12

F. City of Pleasant Hill				
	Incentive Buck	Shed Buck	Button Buck	Doe
Polk County Property (See Polk County Totals)				
City Parks	3	0	2	5
Private Property	0	0	0	5
City of Pleasant Hill	Harvest Total	3	0	2
				10

G. City of Urbandale				
	Incentive Buck	Shed Buck	Button Buck	Doe
City of Urbandale Public Areas				
City Parks	1	0	1	2
Sub-total	1	0	0	2
City of Urbandale Private Property				
Living History Farms (LHF) (West of I-35)	0	2	2	10
Other Private Property	1	0	1	26
Sub-total	1	2	3	36
City of Urbandale	Harvest Total	2	2	4
				38

H. City of West Des Moines				
	Incentive Buck	Shed Buck	Button Buck	Doe
City of West Des Moines Public Areas				
South Woods	0	0	0	2
Racoon River Park	1	0	1	3
Sub-total	1	0	1	5
City of West Des Moines Private Property				
Private Property	0	0	0	0
Sub-total	0	0	0	0
City of West Des Moines	Harvest Total	1	0	1
				5

I. USACE: (Corps of Engineers)				
	Incentive Buck	Shed Buck	Button Buck	Doe
Saylorville	1	0	1	23
Polk City Refuge (No Buck Incentive Issued for this area)	0	0	0	0
USACE	Harvest Total	1	0	1
				23

Appendix

Polk DMZ Bow Hunter Survey Summary 2022

Tyler M. Harms and Andy Kellner

April 24, 2023

This document provides a summary of observations from the Bow Hunter Observation Survey conducted within the Polk County Deer Management Zone. The survey was distributed to hunters throughout the DMZ. Where possible, data are summarized by sites described by hunt managers.

Response summary

Total number of hunters who responded in DMZ

[1] 63

Table 1. Total number of hunters who responded by site

Location	# of hunters
Ashworth Park (Des Moines)	2
Clive	6
Des Moines Private East Area	1
Des Moines Private South of Grand	3
Ewing Park (Des Moines)	1
Johnston Park	2
Johnston Private	3
Laurel Hill (Des Moines)	1
MacRae Park (Des Moines)	3
Maffitt Reservoir	3
Pioneer Park (Des Moines)	1
Pleasant Hill Private	1
Pleasant Hill Public	4
Polk County Brown's Woods	2
Polk County Easter Lake Park	1
Polk County Four Mile Green Belt	3
Polk County Jester Park	2
Polk County Mally's Park	1
Polk County Sycamore Bike Trail	4

Location	# of hunters
Polk County Thomas Mitchell Park	4
Polk County Yellow Banks Park	1
Prospect Park (DSM)	1
Urbandale Living History Farms	4
Urbandale Private	8
Urbandale Public	2
USACE Saylorville Lake East	7
USACE Saylorville Lake South	7
USACE Saylorville Lake West	3
Water Works Park	2
WDM Private locations	1
WDM Raccoon River Greenway	2
WDM Southwoods Park	2

Effort summary

Total number of hunting trips in DMZ

[1] 894

Total hours hunted in DMZ

[1] 2632.8

Average hours hunted per hunting trip in DMZ

[1] 2.95

Table 2. Total number of trips, hours hunted, and average hours per hunting trip by location

Location	# of trips	# of hours	Avg. hours per trip
Ashworth Park (Des Moines)	24	45	1.88
Clive	101	287	2.84
Des Moines Private East Area	11	38	3.50
Des Moines Private South of Grand	99	194	1.96
Ewing Park (Des Moines)	26	107	4.12
Johnston Park	6	14	2.25
Johnston Private	13	36	2.79
Laurel Hill (Des Moines)	3	9	3.00
MacRae Park (Des Moines)	19	55	2.89

Location	# of trips	# of hours	Avg. hours per trip
Maffitt Reservoir	32	84	2.63
Pioneer Park (Des Moines)	5	11	2.20
Pleasant Hill Private	9	22	2.44
Pleasant Hill Public	22	72	3.25
Polk County Brown's Woods	20	92	4.62
Polk County Easter Lake Park	2	8	4.00
Polk County Four Mile Green Belt	34	83	2.44
Polk County Jester Park	9	29	3.22
Polk County Mally's Park	1	2	2.00
Polk County Sycamore Bike Trail	73	262	3.59
Polk County Thomas Mitchell Park	7	22	3.21
Polk County Yellow Banks Park	3	6	2.17
Prospect Park (DSM)	21	76	3.62
Urbandale Living History Farms	52	172	3.31
Urbandale Private	42	112	2.66
Urbandale Public	10	28	2.80
USACE Saylorville Lake East	53	157	2.96
USACE Saylorville Lake South	139	424	3.05
USACE Saylorville Lake West	6	13	2.17
Water Works Park	19	66	3.47
WDM Private locations	5	14	2.70
WDM Raccoon River Greenway	12	47	3.92
WDM Southwoods Park	16	45	2.81

Summary of deer observations

Table 3. Total deer observations by site

Location	Total Deer	Antlered Deer	Antlerless Deer	Proportion Antlerless
Ashworth Park (Des Moines)	29	5	24	0.83
Clive	313	71	237	0.76
Des Moines Private East Area	35	7	28	0.80
Des Moines Private South of Grand	122	39	59	0.48
Ewing Park (Des Moines)	31	20	11	0.35

Location	Total Deer	Antlered Deer	Antlerless Deer	Proportion Antlerless
Johnston Park	5	1	4	0.80
Johnston Private	62	25	33	0.53
Laurel Hill (Des Moines)	33	18	15	0.45
MacRae Park (Des Moines)	30	19	11	0.37
Maffitt Reservoir	93	47	40	0.43
Pioneer Park (Des Moines)	50	7	40	0.80
Pleasant Hill Private	24	21	3	0.12
Pleasant Hill Public	41	20	18	0.44
Polk County Brown's Woods	207	85	116	0.56
Polk County Easter Lake Park	2	1	1	0.50
Polk County Four Mile Green Belt	165	38	119	0.72
Polk County Jester Park	21	6	13	0.62
Polk County Mally's Park	1	0	1	1.00
Polk County Sycamore Bike Trail	208	91	92	0.44
Polk County Thomas Mitchell Park	14	1	13	0.93
Polk County Yellow Banks Park	19	0	19	1.00
Prospect Park (DSM)	72	40	31	0.43
Urbandale Living History Farms	160	51	107	0.67
Urbandale Private	226	54	172	0.76
Urbandale Public	11	6	5	0.45
USACE Saylorville Lake East	283	105	168	0.59
USACE Saylorville Lake South	504	186	267	0.53
USACE Saylorville Lake West	9	0	9	1.00
Water Works Park	53	24	26	0.49
WDM Private locations	4	1	2	0.50
WDM Raccoon River Greenway	21	8	13	0.62
WDM Southwoods Park	64	33	27	0.42

Table 4. Deer observations per hours hunted by site

Location	Hours Hunted	Total Deer/Hour	Antlered/Hour	Antlerless/Hour
Ashworth Park (Des Moines)	45	0.64	0.11	0.53
Clive	287	1.09	0.25	0.83
Des Moines Private East Area	38	0.91	0.18	0.73
Des Moines Private South of Grand	194	0.63	0.20	0.30
Ewing Park (Des Moines)	107	0.29	0.19	0.10
Johnston Park	14	0.37	0.07	0.30
Johnston Private	36	1.71	0.69	0.91
Laurel Hill (Des Moines)	9	3.67	2.00	1.67
MacRae Park (Des Moines)	55	0.55	0.35	0.20
Maffitt Reservoir	84	1.11	0.56	0.48
Pioneer Park (Des Moines)	11	4.55	0.64	3.64
Pleasant Hill Private	22	1.09	0.95	0.14
Pleasant Hill Public	72	0.57	0.28	0.25
Polk County Brown's Woods	92	2.24	0.92	1.25
Polk County Easter Lake Park	8	0.25	0.12	0.12
Polk County Four Mile Green Belt	83	1.99	0.46	1.43
Polk County Jester Park	29	0.72	0.21	0.45
Polk County Mally's Park	2	0.50	0.00	0.50
Polk County Sycamore Bike Trail	262	0.79	0.35	0.35
Polk County Thomas Mitchell Park	22	0.62	0.04	0.58
Polk County Yellow Banks Park	6	2.92	0.00	2.92
Prospect Park (DSM)	76	0.95	0.53	0.41
Urbandale Living History Farms	172	0.93	0.30	0.62
Urbandale Private	112	2.02	0.48	1.54

Location	Hours Hunted	Total Deer/Hour	Antlered/Hour	Antlerless/Hour
Urbandale Public	28	0.39	0.21	0.18
USACE Saylorville Lake East	157	1.80	0.67	1.07
USACE Saylorville Lake South	424	1.19	0.44	0.63
USACE Saylorville Lake West	13	0.69	0.00	0.69
Water Works Park	66	0.80	0.36	0.39
WDM Private locations	14	0.30	0.07	0.15
WDM Raccoon River Greenway	47	0.45	0.17	0.28
WDM Southwoods Park	45	1.42	0.73	0.60

Summary of furbearer observations

Table 5. Total observations of each furbearer species by site

Location	BOBC AT	COYO TE	RED.F OX	GRAY.F OX	RACCO ON	OPOSS UM	SKU NK	BADG ER	CA T	OTT ER
Ashworth Park (Des Moines)	0	1	0	0	0	2	0	0	0	0
Clive Des Moines Private East Area	1	15	3	0	11	6	0	0	1	0
Des Moines Private South of Grand	0	0	0	0	2	0	0	0	0	0
Des Moines Private South of Grand	1	3	2	0	18	5	0	0	3	0
Ewing Park (Des Moines)	0	6	0	0	19	1	0	0	0	0
Johnston Park	0	0	0	0	2	0	0	0	0	0

Location	BOBC AT	COYO TE	RED.F OX	GRAY.F OX	RACCO ON	OPOSS UM	SKU NK	BADG ER	CA T	OTT ER
Johnston Private	0	1	0	0	0	0	0	0	0	0
Laurel Hill (Des Moines)	0	0	0	0	2	1	0	0	0	0
MacRae Park (Des Moines)	0	0	1	0	6	0	0	0	0	0
Maffitt Reservoir	0	0	0	0	2	0	0	0	0	0
Pioneer Park (Des Moines)	0	0	0	0	0	0	0	0	0	0
Pleasant Hill Private	0	0	0	0	0	0	0	0	0	0
Pleasant Hill Public	0	5	0	0	0	0	0	0	4	0
Polk County Brown's Woods	0	0	2	1	4	2	0	0	0	0
Polk County Easter Lake Park	0	0	0	0	1	0	0	0	0	0
Polk County Four Mile Green Belt	0	0	1	0	2	7	1	0	3	0
Polk County Jester	0	0	0	0	3	1	0	0	0	0

Location	BOBC AT	COYO TE	RED.F OX	GRAY.F OX	RACCO ON	OPOSS UM	SKU NK	BADG ER	CA T	OTT ER
Park										
Polk County Mally's Park	0	0	0	0	0	0	0	0	0	0
Polk County Sycamor e Bike Trail	1	18	0	0	25	13	0	0	11	0
Polk County Thomas Mitchell Park	0	0	0	0	2	1	0	0	1	0
Polk County Yellow Banks Park	0	0	0	0	0	0	0	0	0	0
Prospect Park (DSM)	0	2	0	0	2	0	0	0	0	0
Urbanda le Living History Farms	2	0	0	0	5	0	0	0	0	0
Urbanda le Private	1	5	0	0	0	1	0	0	0	0
Urbanda le Public	0	0	0	0	0	0	0	0	0	0
USACE Saylorvil le Lake East	0	0	0	0	1	6	0	0	0	0
USACE Saylorvil le Lake South	0	18	0	0	54	24	0	0	1	0

Location	BOBC AT	COYO TE	RED.F OX	GRAY.F OX	RACCO ON	OPOSS UM	SKU NK	BADG ER	CA T	OTT ER
USACE Saylorville Lake West	0	0	0	0	1	1	0	0	0	0
Water Works Park	0	0	0	0	2	0	0	0	0	0
WDM Private locations	0	0	0	0	4	1	0	0	0	0
WDM Raccoon River Greenway	0	2	0	0	0	0	0	0	0	0
WDM Southwoods Park	0	0	0	0	1	0	0	0	0	0

Trends

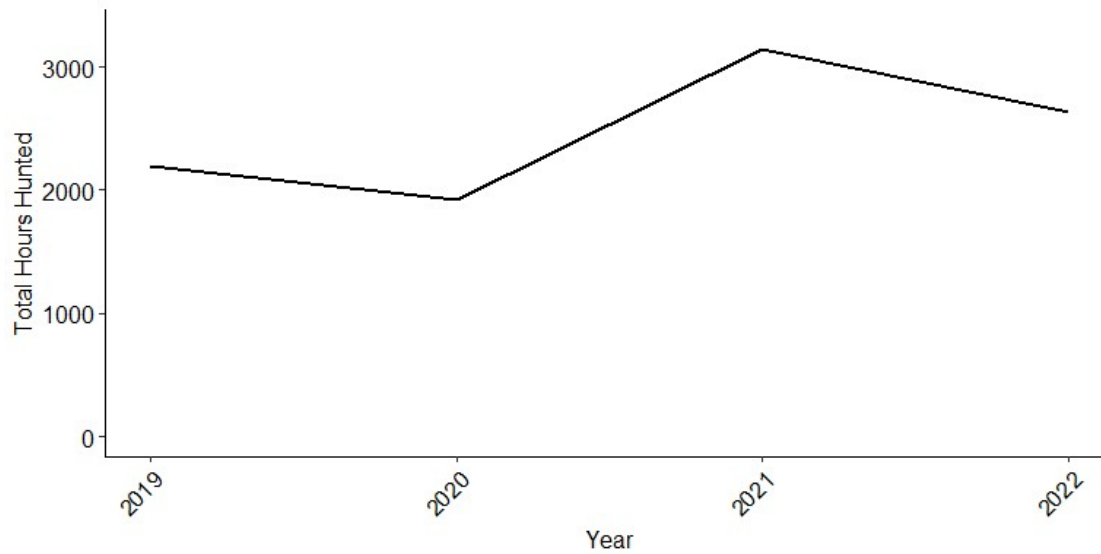


Figure 1. Trend in total hours hunted in the Polk DMZ

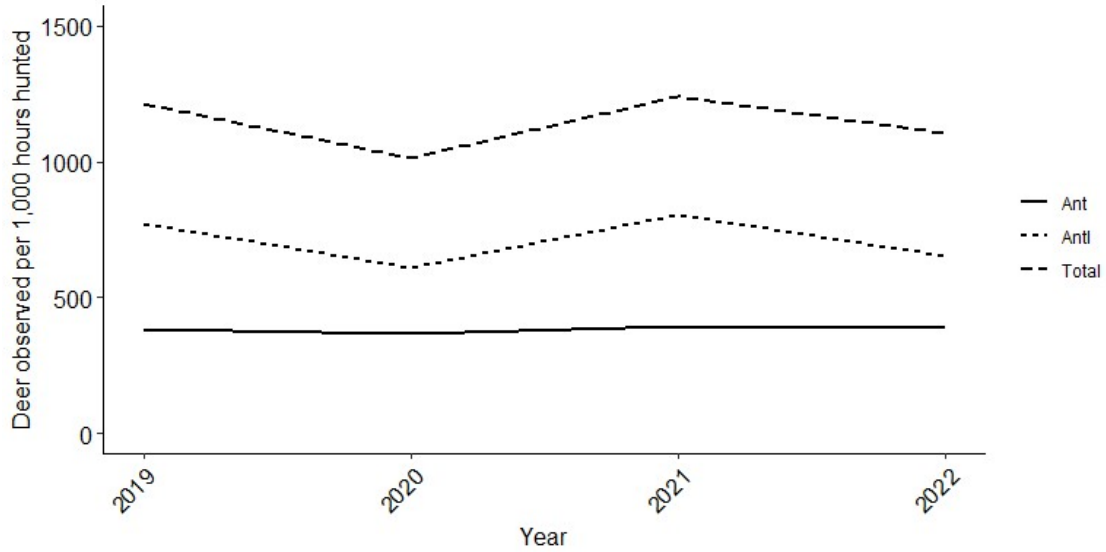


Figure 2. Trends in deer observations in the Polk DMZ

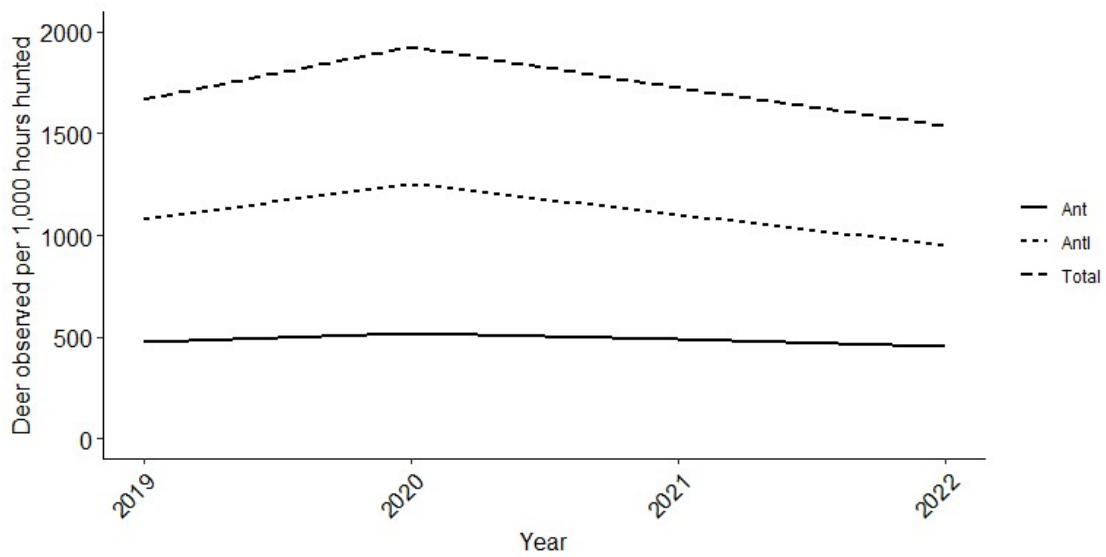


Figure 3. Trends in deer observations in the Central Region

The Central Region includes Webster, Hamilton, Hardin, Boone, Story, Marshall, Dallas, Polk, and Jasper counties

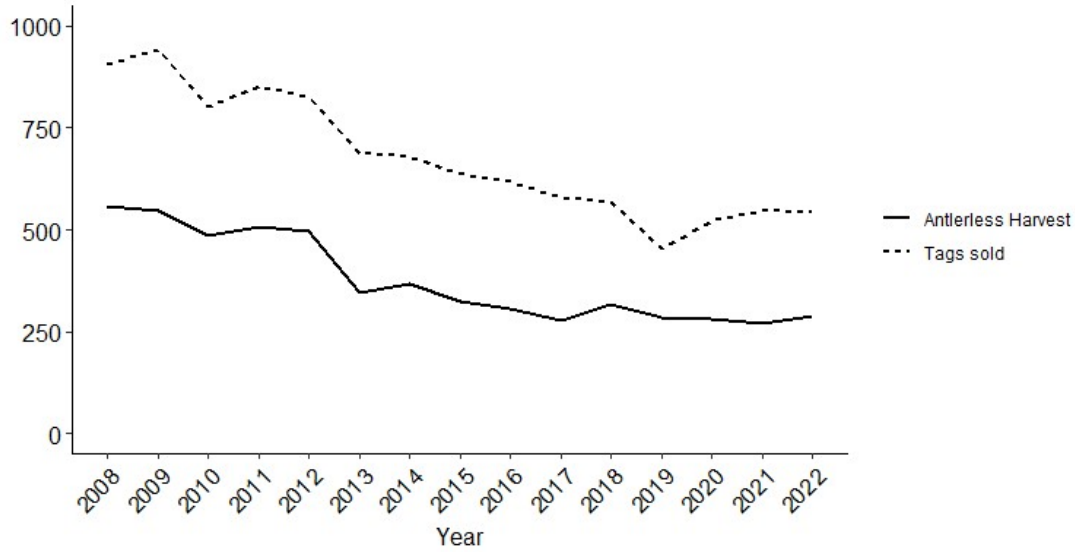


Figure 4. Trends in total antlerless deer harvest and licenses (tags) sold in the Polk DMZ

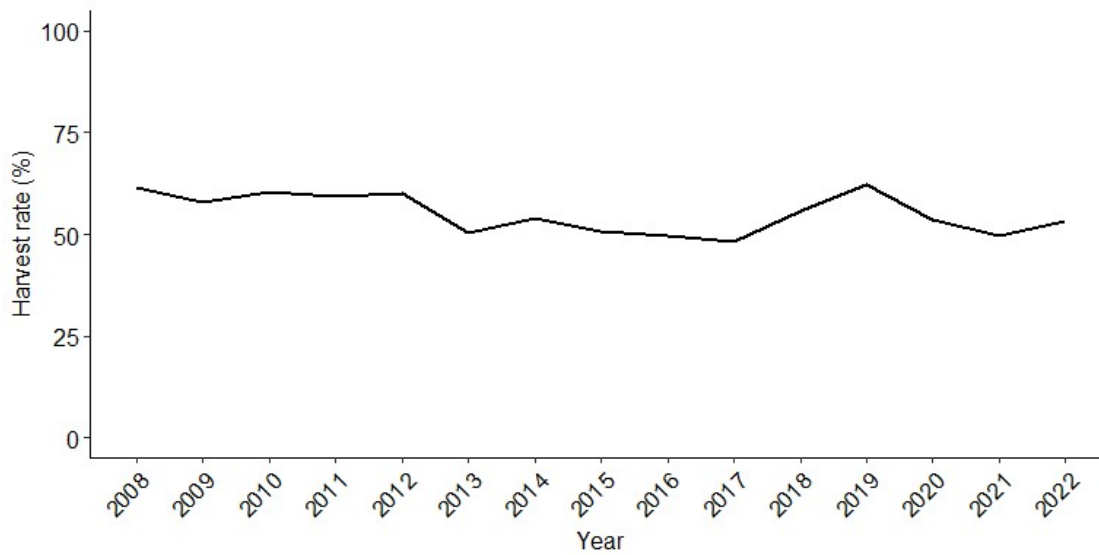


Figure 5. Trend in harvest rate (proportion of sold tags that resulted in a harvest) in the Polk DMZ

Table 1. Results from the helicopter deer surveys in Polk county, 1996 to present.

Urban Areas Surveyed	Area (Square Miles)	Deer Sighted																						
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2018	2019	2021	
Water Works Park Area	3.91	100	159	206	204	136	88	105	102	134	130	37	58	63	51	46	35	21	35	46	91	101	33	
D.M., South of Grand	1.37			56	45	39	50	49	36	63	56	18	53	66	49	55	28	28	29	18	41	60	8	
DSM airport west-63rd*	1.78												150	164	188	103	76	76	74	49				
Browns & Walnut Woods	4.20	43	132	149	106	128	86	91	155	226	167	137	301	216	232	151	189	182	238	165	153	159	57	
Easter Lake & DSM River East	6.74	26	43	58	135	145	110	163	132	146	239	84	418	233	209	254	195	142	174	112	127	93	94	
Yellow Banks & DSM River	1.75	24	52	62	77	67	122	81	98	77	78	29	110	92	77	61	33	19	51	44	40	30	10	
Four Mile Creek:																								
I80 -Des Moines River	5.29	7	41	51	99	79	39	83	87	100	107	118	174	165	179	164	87	113	114	91	50	47	27	
Pleasant Hill west*	0.93												48	71	59	86	63	53	43	70	71	63	128	16
Pleasant Hill east	2.27												25	31	150	162	128	90	71	138	123	126	94	
North of I-80	4.45	58	128	128	158	117	103	86	80	104	127	16	124	202	136	177	125	71	98	167	176	118	113	
Margo Frankel Woods	0.78	15	14	35	4	23	12	6	0	28	15	8	15	15	17	25	18	21	14	12	2	7	10	
Rock Creek	2.91	26	74	38	51	49	79	24	39	44	27	52	66	92	58	47	41	46	34	33	38	23	23	
Des Moines River:																								
Saylorville Dam-Riverview Park	4.66	83	115	83	150	124	122	162	209	296	184	153	278	238	143	155	150	123	193	148	200	170	110	
North of I-80*	2.81													175	122	124	111	82	118	97	138	106	68	
South of I-80*	1.85													63	21	31	39	41	75	51	62	64	42	
Jordan Creek/South Woods	0.26									63	56	38	10	25	35	30	33	15	17	14	18	18	14	
Quail Park- W. DSM	0.90																		101	92			35	
Walnut Creek:																								
Raccoon River to I-80	0.79	0	1	7	5	23	14	14	25	42	19	30	50	19	40	40	27	22	13	11	33	11	11	
Clive Area; west of I-35*	0.30														23	15	10	5	8	6	4	3	9	4
Living History Farms	0.41				20	20	10	42	16	34	26	30	25	43	23	17	24	18	22	29	14	51	16	
West of I-80	1.38	59	229	285	261	270	225	146	203	336	177	227	340	172	147	186	170	127	154	111	152	103	68	
Beaver Creek (Johnston)	0.59													100	74	80	61	27	74	68	68	68	20	
Polk City Barrier Dam Refuge	3.11	41	92	117	133	125	89	113	135	230	135	89	198	150	166	268	142	118	99	81	114	87	117	
Total	53.44	482	1,080	1,275	1,448	1,345	1,149	1,165	1,317	1,923	1,543	1,091	2,401	2,205	1,986	1,987	1,524	1,240	1,678	1,418	1,446	1,190	829	
Rural Areas																								
Saylorville Reservoir																								
Camp Dodge	2.23	55	71	93	105	108	69	73	68	195	165	148	234	148	109	93	107	49	91	101	64	82	43	
Dam to MLB (west side)	1.92		61	62	24	38	34	61	50	109	46	67	98	114	86	136	84	115	94	36	20	36	43	
Dam to MLB (east side) <i>a</i>	2.55		41	72	94	83	85	86	50	137	94	55	66	127	91	90	105	110	67	67	97	83	34	
MLB to Hwy 17 (east side)	4.18		35	33	53	77	80	-	-		142	123	124	208	134	178	179	201	225	184	126	57	25	
Jester Park, MLB to Bridge to Hwy 17	4.82	88	158	161	95	95	132	127	108	189	82	110	133	221	165	187	201	238	132	133	118	56	43	
Total (excluding Barrier Dam Refuge)	16	143	366	421	371	401	400	347	276	630	529	503	655	818	585	684	676	713	609	521	425	314	188	
Chichaqua & Skunk River		96	85		197	109	-	-	187	133	106	181	210	-	154	-	103	-	-	168				
*New survey area, 2007.																								
<i>a</i> - does not include Barrier Dam Refuge area																								

Table 1. Results from the helicopter deer surveys in Polk county, 1996 to present.

	Deer per Square Mile																				Change (2019 to 2021)		
Surveyed	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2018	2019	2021	
Urban Areas																							
Water Works Park Area	26	41	53	52	35	23	27	26	34	33	9	15	16	13	12	9	5	9	12	23	26	8	-69%
D.M., South of Grand	0	0	41	33	28	36	36	26	46	41	13	39	48	36	40	20	20	21	13	30	44	6	-86%
DSM airport west-63rd*												84	92	106	58	43	43	42	28	0	0	0	
Browns & Walnut Woods	10	31	35	25	30	20	22	37	54	40	33	72	51	55	36	45	43	57	39	36	38	14	-63%
Easter Lake & DSM River East	4	6	9	20	22	16	24	20	22	35	12	62	35	31	38	29	21	26	17	19	14	14	0%
Yellow Banks & DSM River	14	30	35	44	38	70	46	56	44	45	17	63	53	44	35	19	11	29	25	23	17	6	-65%
Four Mile Creek:																							
I80 -Des Moines River	1	8	10	19	15	7	16	16	19	20	22	33	31	34	31	16	21	22	17	9	9	5	-44%
Pleasant Hill west*											48	71	63	92	68	57	46	75	76	68	138	17	-88%
Pleasant Hill east											26	31	66	71	56	40	31	61	54	56		41	
North of I-80	13	29	29	36	26	23	19	18	23	29	4	28	45	31	40	28	16	22	38	40	27	25	-7%
Margo Frankel Woods	19	18	45	5	29	15	8	0	36	19	10	19	19	22	32	23	27	18	15	3	9	13	44%
Rock Creek	9	25	13	18	17	27	8	13	15	9	18	23	32	20	16	14	16	12	11	13	8	8	0%
Des Moines River:																							
Saylorville Dam-Riverview Park	18	25	18	32	27	26	35	45	64	39	33	60	51	31	33	32	26	41	32	43	36	24	-33%
North of I-80*													62	43	44	40	29	42	35	49	38	24	-37%
South of I-80*													34	11	17	21	22	41	28	34	35	23	-34%
Jordan Creek/South Woods	0								242	215	146	38	96	135	115	127	58	65	54	69	69	54	-22%
Quail Park- W. DSM																		112	102	0	39	0	-100%
Walnut Creek:																							
Raccoon River to I-80	0	1	9	6	29	18	18	32	53	24	38	63	24	51	51	34	28	16	14	42	14	14	0%
Clive Area: west of I-35*													77	50	33	17	27	20	13	10	30	13	-57%
Living History Farms				49	49	24	102	39	83	63	73	61	105	56	41	59	44	54	71	34	124	39	-69%
West of I-80	43	166	207	189	196	163	106	147	243	128	164	246	125	107	135	123	92	112	80	110	75	49	-35%
Beaver Creek (Johnston)																							
Polk City Barrier Dam Refuge	13	30	38	43	40	29	36	43	74	43	29	64	48	53	86	46	38	32	26	37	28	38	36%
Total	9	20	24	27	25	22	22	25	36	29	20	45	41	37	37	29	23	31	27				-27%
Rural Areas																							
Saylorville Reservoir																							
Camp Dodge	25	32	42	47	48	31	33	30	87	74	66	105	66	49	42	48	22	41	45	29	37	19	-49%
Dam to MLB (west side)	-	32	32	13	20	18	32	26	57	24	35	51	59	45	71	44	60	49	19	10	19	22	16%
Dam to MLB (east side) <i>a</i>	-	16	28	37	33	33	34	20	54	37	22	26	50	36	35	41	43	26	26	38	33	13	-61%
MLB to Hwy 17 (east side)	-	8	8	13	18	19	-	-	-	34	29	30	50	32	43	43	48	54	44	30	14	6	-57%
Jester Park, MLB to Bridge to Hwy 17	18	33	33	20	20	27	26	22	39	17	23	28	46	34	39	42	49	27	28	24	12	9	-25%
Total (excluding Barrier Dam Refuge)	-	23	27	24	26	25	22	18	40	34	32	42	52	37	44	43	45	39	33	27	20	12	-40%
Chichaqua & Skunk River																							
*New survey area, 2007.																							
<i>a</i> - does not include Barrier Dam Refuge area																							