



**METROPARKS
TOLEDO**

2022 End of Culling Report

SUBMITTED 4-19-2022

A. BACKGROUND / INTRODUCTION

Metroparks Toledo (Metroparks) submitted its 2021-2022 Deer Management Plan and Request for Deer Damage Control Permit to the Ohio Division of Wildlife (ODW) on 10/13/2021 to initiate the seventh season of its lethal deer culling program to continue addressing ongoing negative ecological impacts associated with overabundance of deer across the park district. This request was subsequently approved by the Ohio Division of Wildlife on 10/21/2020 under ODW deer damage control permit # 9434, valid from October 21, 2021 until February 28, 2022. During this period of culling activities, Metroparks law enforcement staff (Ohio Peace Officer Training Academy Certified) served as marksmen. Metroparks staff provided field support to marksmen and conducted all other deer management activities including removal of deer killed in the field, field dressing of deer, collection of biological data, transportation of deer carcasses to venison processing facilities, and disposal of remains not taken for venison processing. Each evening, culling activities commenced after Metroparks law enforcement personnel closed each park and determined that no park visitors remained after normal park hours.

B. ADHERENCE TO STIPULATIONS OF DEER MANAGEMENT CONTROL PERMIT

Metroparks strictly followed the permit conditions mandated by ODW, including:

1. Wildlife Office Michael Ohlrich was notified by phone prior to each night when culling operations were conducted.
2. Wildlife Management Supervisor Bob Ford was notified by phone after the conclusion of each night of culling operations and provided a summary of the results.
3. A copy of Permit # 9434 was in the possession of Metroparks marksmen during the course of operations.
4. Antlered deer made up fewer than 25% of all deer taken. All antlers were removed and destroyed by Metroparks staff following culling operation.
5. A deer damage carcass tag was attached immediately to each deer in the field.
6. Each deer damage carcass tag featured a unique ID number assigned by Metroparks to insure accurate record keeping.
7. Each deer killed was reported online and assigned a permanent ODW tag number.
8. All venison processed as a result of culling operations was donated to charity.

This written report fulfills Metroparks' final obligation under Permit # 9434 and formally concludes all actions under the Metroparks 2021-2022 Deer Management Plan. All future deer management activities to be conducted by Metroparks will occur under a new request for deer damage control permit.

C. DEER MANAGEMENT / RESULTS OF OPERATION

A total of 116 deer were culled over 11 separate nights between December 7th, 2021 and February 28th, 2021. A total of 95 deer culled were antlerless (82%) while 21 deer culled were antlered (18%). Table 1 provides a culling summary for each park area included in the 2020-21 deer management plan.

Table 1. **Culling summary by park area** for 116 deer culled by Metroparks from December 7, 2021 to February 28, 2022.

Park Area	Antlerless	Antlered	Total
Oak Openings Preserve	21	6	27
Swan Creek Preserve & Brookwood Area	26	9	35
Side Cut and associated parklands	41	6	47
Pearson	7	0	7
Toledo Botanical Garden	0	0	0
Middlegrounds	0	0	0
Total All Parklands	95	21	116

D. BIOLOGICAL AND DEMOGRAPHIC DATA

In addition to antlered status, biological data (weight, sex, reproductive status, general condition) were collected for all deer culled during the 2021-22 season. Additionally, Ohio State University personnel collected samples from deer culled on December 7, 8 and 9 to test for the presence of COVID-19 as part of an ongoing study. A summary of biological data collected by Metroparks staff during culling activities is provided as an appendix to this report.

Age and Sex Distribution

Out of 116 deer culled, 65 were females (56%) and 51 were males (44%). A total of 42 deer (37%) were fawns (<1 year of age), including 25% of all females culled and 51% of all males culled. A breakdown of the sex and age class of deer culled is shown in Table 2.

Table 2. **Sex and age distribution** of 116 deer culled by Metroparks from December 7, 2021 to February 28, 2022.

Age	Female	Male	Total
0.5	16	26	42
1.5	13	9	22
2.5	11	8	19
3.5	14	2	16
4.5	5	2	7
5.5	3	3	6
6.5	3	1	4
Total	65	51	116

Weight

Whole body weights of harvested deer ranged from 60 to 175 pounds for females (mean of 117 pounds) and 67 to 226 pounds for males (mean of 117 pounds). A breakdown of the mean weight by sex and age class of deer culled is shown in Table 3.

Table 3. **Mean whole body weights** (pounds) of 131 deer culled by Metroparks from January 5, 2021 to February 25, 2021.

Age (years)	Female	Male
0.5	78.9	88.4
1.5	113.2	125.7
≥2.5	140.1	160.1
All age classes	117.5	117.5

Reproductive Status

Across all age classes, 26 of 32 females evaluated (81%) from January 18, 2022 to February 28, 2022 were pregnant. Across all age classes, 35% of females carried a single fetus, 61% carried twins, and 4% carried triplets. A breakdown of additional reproductive characteristics of female deer culled by Metroparks from January 18, 2022 to February 28, 2022 is shown in Table 4.

Table 4. **Pregnancy rates** (%), mean fetus count per pregnant female, and mean fetus count per female among deer culled by Metroparks from January 5, 2021 to February 25, 2021. Deer culled prior to January 2022 were not included in these totals due to decreased pregnancy detection rates earlier in the season.

Age (years)	pregnancy rate (%)	mean fetus count per pregnant female	mean fetus count per female
All	81.3		
0.5	28.6	1.50	0.43
1.5	70.0	1.43	1.43
≥2.5	97.8	1.82	1.72

E. EVALUATION OF CULLING RESULTS / IDENTIFICATION OF FUTURE MANAGEMENT NEEDS

Culling results: Deer removed through Metroparks culling operations during the 2021-22 season appeared generally to be in good health with no obvious signs of biological stress. Of the 165 tags requested by Metroparks under permit #9434, 116 (70%) were filled. Overall annual reduction goals were considered achieved for Oak Openings Preserve (27 of 50 permits filled, 54%) with an additional 38 deer harvested by hunters within the park during the controlled archery season. For Swan Creek Preserve and the Brookwood Area, 20 permits were originally requested by Metroparks as part of the 2021-22 deer management plan. Following population counts completed on January 26, 2022, Metroparks subsequently requested and received permission from Wildlife Management Supervisor Bob Ford (via email on February 8) to fill up to a maximum of 40 permits within these park areas. Metroparks ultimately filled 35 of 40 permits (88%), largely achieving annual reduction targets for these park areas. For Pearson, only 7 of 20 permits were filled (35%) due to strong avoidance behavior exhibited by deer at this park during culling operations as well as limited access to areas where deer were most active. For Side Cut and associated parklands, 47 of 50 permits were filled (94%). No culling operations were conducted at Toledo Botanical Garden or Middlegrounds during the 2021-22 season. A summary of culling operations from 2015 to 2022 is shown in Table 5.

Table 5. **Summary of culling by park** carried out by Metroparks Toledo between 2015 and 2021.

Culling Summary by Park	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Oak Openings Preserve	165	150	50	71	73	60	27	596
Swan Creek Preserve & Brookwood Area		50	64	58	40	33	35	280
Side Cut and associated parklands			106	54	46	21	47	274
Wildwood Preserve	30		19	13	10	10		82
Pearson					27	7	7	41
Toledo Botanical Garden					7			7
Middlegrounds			1					1
Total All Parklands	195	200	240	196	203	131	116	1281

Deer population status: Annual population reduction goals for each park area (as described above) were set to maintain peak population densities for each park area at ~15 to 25 deer per square mile. Helicopter snow count surveys completed by Metroparks staff on January 26, 2022 provide additional insight into the current status of deer populations at each park area during the 2021-22 culling season (Figure 1). Snow counts completed at Oak Openings Preserve, Wildwood Preserve, and Swan Creek Preserve / Brookwood Area show current population densities are within the acceptable range, although the Brookwood Area when considered by itself, continues to suffer from excessive deer numbers due to a localized deer population that remains inaccessible during culling operations. Substantial progress has been made at reducing deer densities at Side Cut and associated parklands since culling operations began there in 2017-18, however densities remain above the desired target. Deer densities at Pearson also remain above the desired target. For Wildwood Preserve, where no culling was conducted during the 2021-22 season, deer numbers increased by more than double compared to 2021 but remained within the acceptable range (at least prior to the spring fawning season).

Deer browse damage assessment: Following 2021-22 culling operations, overwinter deer browse damage surveys were conducted between March 16 and March 28, 2022. A summary of browse survey results is shown in Figures 2 and 3 below. Overall trends in deer browse damage are consistent with population trends described above, with most park areas having browse damage within acceptable levels (see Figure 2). However, browse damage at Side Cut increased in 2022 compared to 2021 perhaps due to lack of major flooding in 2022 allowing deer to browse areas that are otherwise inaccessible during heavy flooding prior to leaf-out. Browse damage at the Brookwood Area remained higher than desired levels due to a large localized deer population within this park area (20 deer observed within this 149-acre park area during the January 26 snow count). For Oak Openings Preserve and Wildwood Preserve, where oaks are the dominant woodland species, browse damage to oak seedlings remained at very low levels in 2022 (see Figure 3).

Future management needs: The Metroparks long term goal is to maintain deer populations at or below levels that ensure the protection of native plant and animal diversity and the development of high quality habitat for a variety of native wildlife species. As a general rule, Metroparks managers intend to keep peak deer population densities at no greater than 15 to 25 deer per square mile for

parklands throughout the park district wherever possible. However, future population reduction goals will take into account actual browse damage (in established woodlands as well as newly planted sites) along with estimates of population recruitment during the spring fawning season.

F. VENISON DONATION

Deer culled by Metroparks during the 2021-22 season were processed into 4,784 pounds of ground venison donated to charities in the Toledo region who distributed this venison to those in need. Table 6 provides a summary of venison donations since Metroparks initiated its deer culling program during the 2015-16 season.

Table 6. **Pounds of venison donated** by Metroparks Toledo between 2015 and 2022.

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Pounds	6,744	9,940	11,284	9,598	10,332	6,340	4,784	59,022

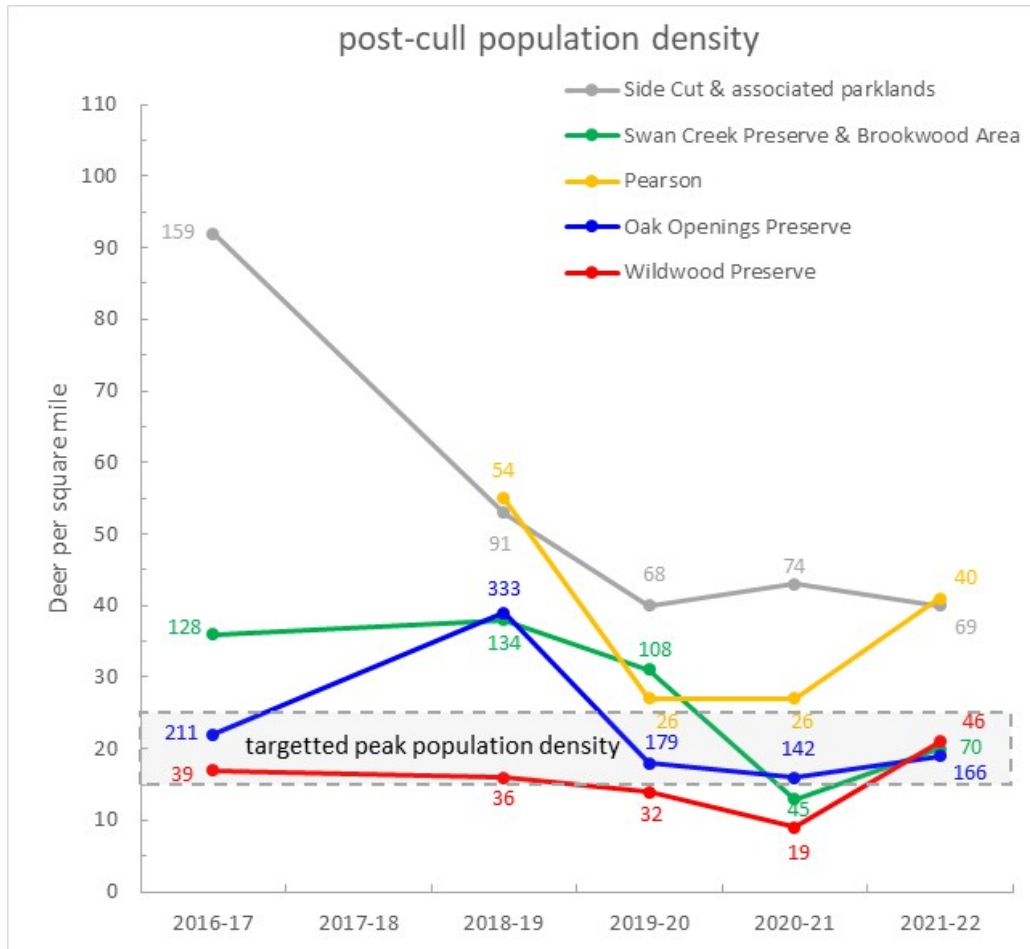


Figure 1. **Post-cull population densities** for five park areas based on population surveys completed between 2016 and 2022. Actual population numbers observed for each park area are shown next to each density data point. Deer culled from the population during the same season, but after counts were completed were subtracted from the count (for example, 3, 12, and 27 deer were culled at Side Cut, Swan Creek Preserve, and Oak Openings Preserve, respectively, following the snow count conducted on January 26, 2022). Note that reported numbers may very slightly from previously submitted reports due to the correction of minor errors found in the previous reports.

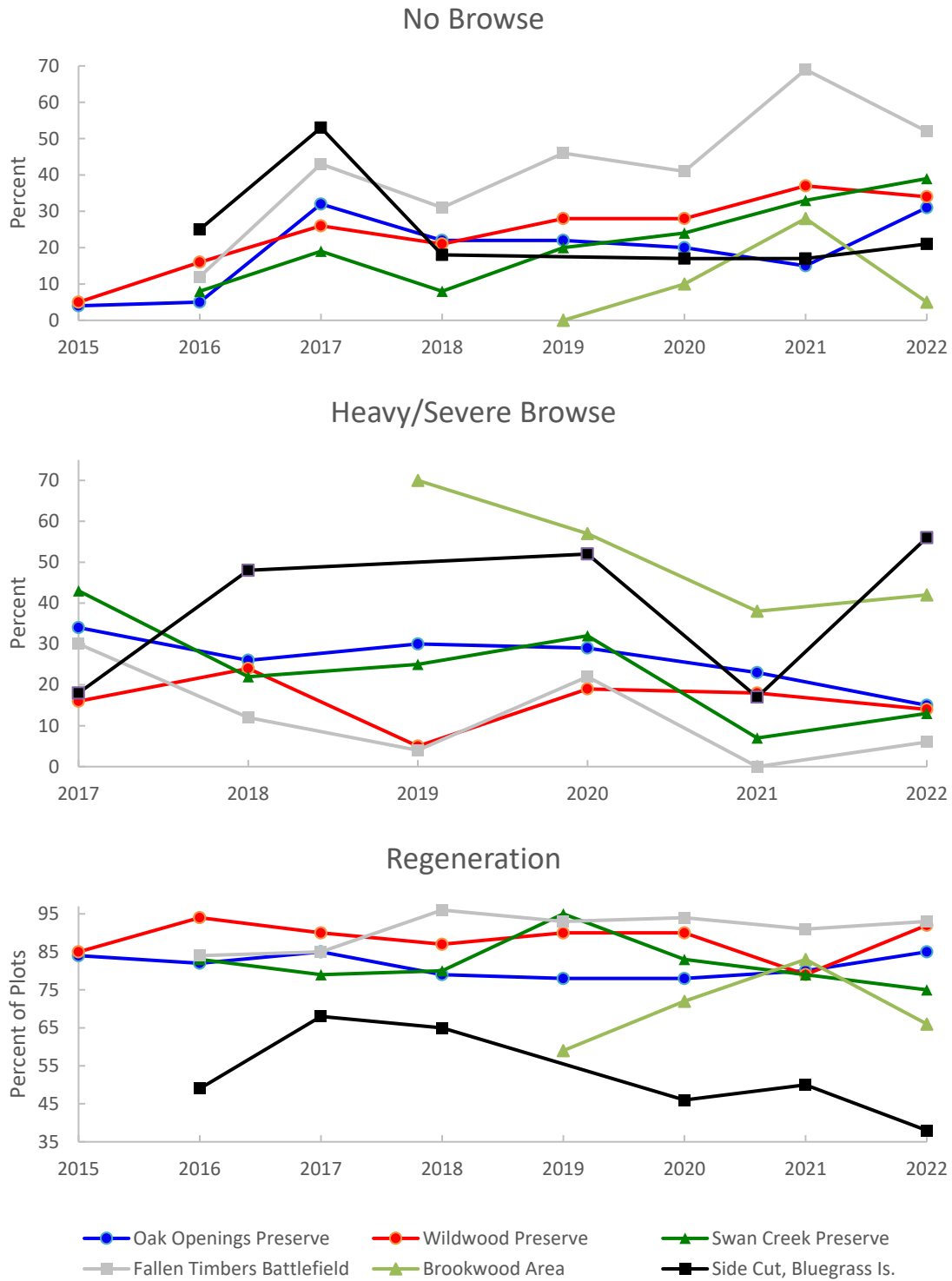


Figure 2. **Overall overwinter deer browse damage** observed between 2015 and 2022 for six park areas. Browse damage surveys were conducted in March/April each year prior to leaf-out. Note that in 2017 persistent overwinter snow cover protected many seedlings from direct browse damage. Data were not collected at Side Cut in 2019 due to persistent spring flooding which likely contributed to the decline in regeneration observed in 2020.

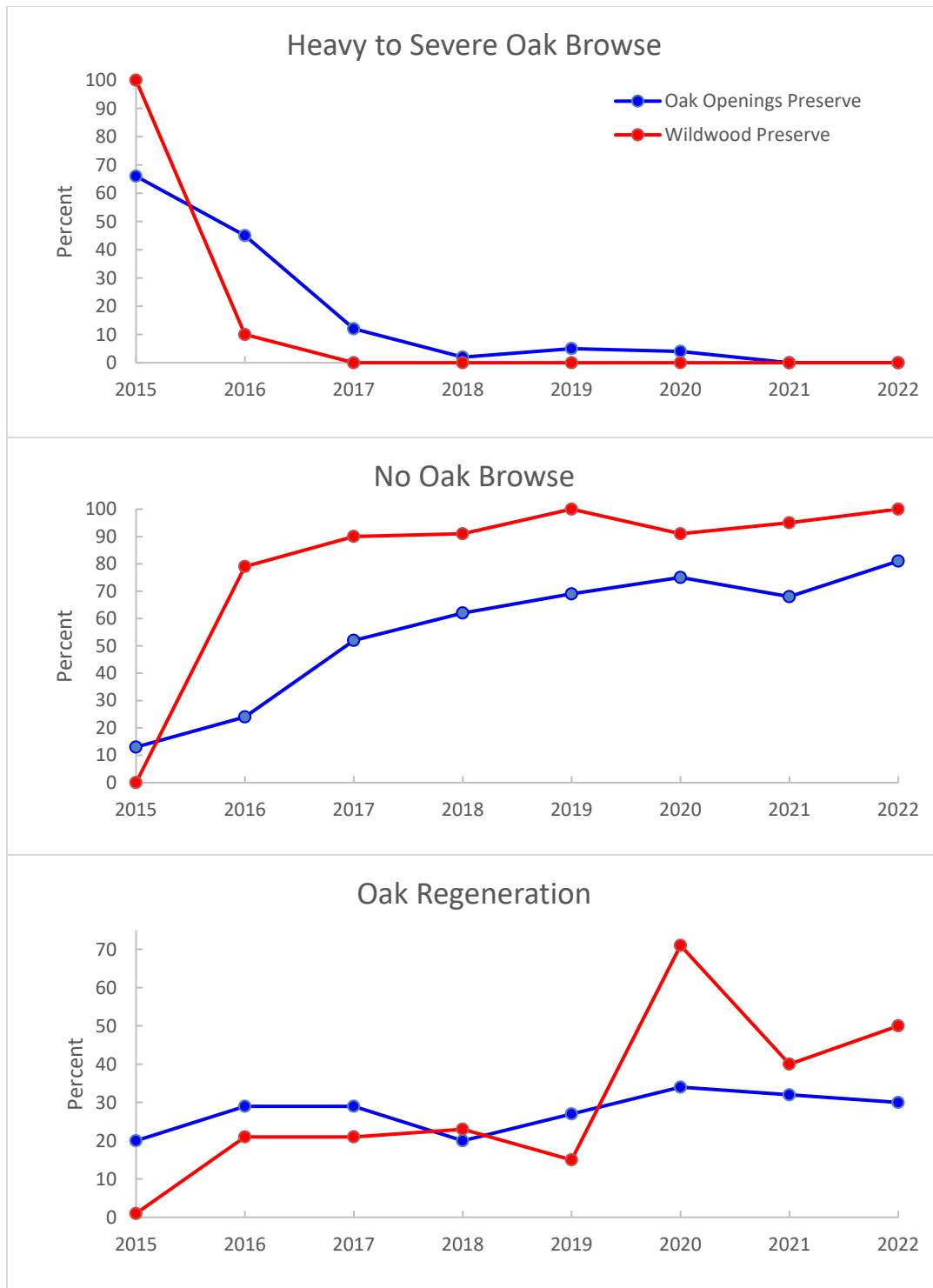


Figure 3. **Overwinter deer browse damage of oak seedlings** observed between 2015 and 2022 for two park areas. Browse damage surveys were conducted in March/April each year prior to leaf-out. Note that heavy acorn production was observed in fall of 2018, likely contributing to increased oak regeneration observed at Wildwood Preserve in 2020.

APPENDIX – SUMMARY OF BIOLOGICAL DATA

ODW Tag #	Date Culled	Time (approx.)	Location ¹	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
1	12/7/2021	1830	SCPM	M	120	1.5	5	
2	12/7/2021	1830	SCPM	M	92	0.5	N	
3	12/7/2021	1830	SCPM	F	138	2.5		2
4	12/7/2021	1900	SCPM	F	134	3.5		0
5	12/7/2021	1900	SCPM	F	91	0.5		0
6	12/7/2021	1900	SCPM	M	98	0.5	N	
7	12/7/2021	1930	SCPM	M	92	0.5	N	
8	12/7/2021	1930	SCPM	F	117	3.5		2
9	12/7/2021	1930	SCPM	F	175	4.5		0
10	12/7/2021	2030	SCPM	M	139	1.5	6	
11	12/7/2021	2030	SCPM	M	147	2.5	4	
12	12/7/2021	2030	SCPM	M	179	5.5	8	
13	12/7/2021	2030	SCPM	M	124	1.5	5	
14	12/7/2021	2030	SCPM	M	119	1.5	2	
15	12/7/2021	2030	SCPM	F	123	2.5		2
16	12/7/2021	2200	SCPM	M	127	1.5	2	
17	12/7/2021	2200	SCPM	F	84	0.5		0
18	12/7/2021	2200	SCPM	F	155	3.5		2
19	12/7/2021	2000	BW	F	128	3.5		0
20	12/7/2021	2030	BW	F	124	1.5		0
21	12/8/2021	1800	SiCu	M	179	4.5	8	
22	12/8/2021	2030	SiCu	M	87	0.5	N	
23	12/8/2021	2030	SiCu	F	89	0.5		0
24	12/8/2021	2030	SiCu	M	94	0.5	N	
25	12/8/2021	2100	SiCu	F	172	4.5		2
26	12/8/2021	2130	SiCu	M	89	0.5	N	
27	12/8/2021	2200	SiCu	F	158	2.5		0
28	12/8/2021	2200	SiCu	M	154	2.5	6	
29	12/8/2021	2200	SiCu	F	111	1.5		2
30	12/8/2021	2200	SiCu	M	73	0.5	N	
31	12/8/2021	2300	SiCu	F	136	2.5		2
32	12/8/2021	2300	SiCu	F	85	0.5		0
33	12/8/2021	2300	SiCu	F	77	0.5		0
34	12/8/2021	2300	SiCu	F	145	3.5		2
35	12/8/2021	2330	SiCu	M	144	2.5	8	
36	12/8/2021	2330	SiCu	M	204	5.5	8	
37	12/9/2021	1830	PM	F	140	3.5		0
38	12/9/2021	1900	PM	F	85	0.5		0
39	12/9/2021	1900	PM	F	150	3.5		0
40	12/9/2021	2030	PM	F	117	1.5		0

ODW Tag #	Date Culled	Time (approx.)	Location ¹	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
41	12/9/2021	2130	PM	F	146	3.5		2
42	12/9/2021	2030	PM	F	130	2.5		0
43	12/9/2021	2130	PM	M	87	0.5	N	
44	12/14/2021	2000	SiCu	F	111	1.5		0
45	12/14/2021	2000	SiCu	F	133	1.5		2
46	12/14/2021	2000	SiCu	F	60	0.5		0
47	12/14/2021	2000	SiCu	M	137	2.5	8	
48	12/14/2021	2100	SiCu	F	76	0.5		0
49	12/14/2021	2130	SiCu	M	102	0.5	N	
50	12/14/2021	2200	SiCu	F	154	2.5		0
51	12/14/2021	2200	SiCu	M	115	0.5	N	
52	12/14/2021	2230	SiCu	M	114	1.5	2	
53	12/14/2021	2230	SiCu	F	70	0.5		0
54	12/14/2021	2300	SiCu	M	81	0.5	N	
55	12/14/2021	2300	SiCu	F	121	6.5		1
56	12/14/2021	2300	SiCu	F	135	2.5		2
57	12/14/2021	1700	BW	M	226	6.5	10	
58	12/14/2021	1730	BW	F	108	1.5		1
59	12/14/2021	1830	BW	M	155	3.5	5	
60	1/18/2022	2000	SiCu	F	108	1.5		2
61	1/18/2022	2030	SiCu	F	75	0.5		0
62	1/18/2022	2100	SiCu	M	72	0.5	N	
63	1/18/2022	2100	SiCu	M	82	0.5	N	
64	1/18/2022	2200	SiCu	F	108	1.5		1
65	1/18/2022	2200	SiCu	F	124	3.5		2
66	1/18/2022	2200	SiCu	F	112	1.5		1
67	1/18/2022	2200	SiCu	F	116	4.5		2
68	1/18/2022	2200	SiCu	F	105	1.5		1
69	1/18/2022	2200	SiCu	M	79	0.5	N	
70	1/18/2022	2200	SiCu	M	80	0.5	N	
71	1/18/2022	2200	SiCu	M	80	0.5	N	
72	1/18/2022	2200	SiCu	F	107	1.5		1
73	1/18/2022	2200	SiCu	F	130	3.5		2
74	1/18/2022	2330	SiCu	M	106	0.5	N	
75	1/27/2022	1900	OO	F	145	3.5		1
76	1/27/2022	1930	OO	F	114	1.5		2
77	1/27/2022	2030	OO	F	134	6.5		2
78	1/27/2022	2030	OO	M	101	0.5	N	
79	1/27/2022	2100	OO	M	76	0.5	N	
80	1/27/2022	2130	OO	F	75	0.5		0
81	1/27/2022	2130	OO	M	98	0.5	N	

ODW Tag #	Date Culled	Time (approx.)	Location ¹	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
82	1/27/2022	2200	OO	F	125	2.5		2
83	1/27/2022	2200	OO	F	130	4.5		2
84	1/27/2022	2230	OO	M	134	2.5	4	
85	1/27/2022	2230	OO	M	138	2.5	6	
86	1/27/2022	2230	OO	M	124	1.5	4	
87	1/27/2022	2300	OO	M	120	1.5	N	
88	1/28/2022	0000	OO	F	129	3.5		2
89	1/31/2022	1900	OO	F	93	0.5		1
90	1/31/2022	1900	OO	F	135	4.5		2
91	1/31/2022	1930	OO	F	129	6.5		2
92	1/31/2022	1930	OO	M	84	0.5	N	
93	1/31/2022	2030	OO	M	177	5.5	N	
94	1/31/2022	2030	OO	M	76	0.5	N	
95	1/31/2022	2130	OO	M	154	4.5	8	
96	1/31/2022	2200	OO	F	126	3.5		1
97	1/31/2022	2200	OO	F	131	5.5		1
98	1/31/2022	2230	OO	F	88	0.5	N	2
99	1/31/2022	2300	OO	M	166	3.5	N	
100	1/31/2022	2300	OO	M	136	2.5	4	
101	1/31/2022	2300	OO	M	144	1.5	4	
102	2/15/2022	2030	SCPM	F	65	0.5		0
103	2/15/2022	2030	SCPM	F	123	2.5		2
104	2/15/2022	2030	SCPM	F	130	2.5		3
105	2/15/2022	2030	SCPM	F	154	5.5		2
106	2/15/2022	2030	SCPM	F	114	1.5		2
107	2/15/2022	2030	SCPM	M	67	0.5	N	
108	2/15/2022	2100	SCPM	F	145	5.5		1
109	2/15/2022	2100	SCPM	M	105	0.5	N	
110	2/15/2022	2130	SCPM	F	76	0.5		0
111	2/15/2022	2130	SCPM	F	74	0.5		0
112	2/15/2022	2130	SCPM	F	111	2.5		0
113	2/15/2022	2130	SCPM	F	131	3.5		2
114	2/28/2022	2100	SiCu	M	107	0.5	N	
115	2/28/2022	2100	SiCu	M	132	2.5	N	
116	2/28/2022	2100	SiCu	M	75	0.5	N	

¹ BW = Brookwood area, FTB = Fallen Timbers Battlefield, OOPM = Oak Openings Preserve, SCPM = Swan Creek Preserve, SiC = Side Cut & Blue Grass Island, PM = Pearson, WWPM = Wildwood Preserve