



# **2023 End of Culling Report**

**SUBMITTED 4-17-2023**

**A. BACKGROUND / INTRODUCTION**

Metroparks Toledo (Metroparks) submitted its 2022-2023 Deer Management Plan and Request for Deer Damage Control Permit to the Ohio Division of Wildlife (ODW) on 11/21/2022 to initiate the eighth 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 1/5/2023 under ODW deer damage control permit # 11708, valid from January 9, 2023 until February 28, 2023. 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 Officer Anthony Lemle 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 # 11708 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 # 11708 and formally concludes all actions under the Metroparks 2022-2023 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 142 deer were culled over 12 separate nights between January 10<sup>th</sup> and February 15<sup>th</sup>, 2023. A total of 118 deer culled were antlerless (83%) while 24 deer culled were antlered (17%). Table 1 provides a culling summary for each park area included in the 2022-23 deer management plan.

Table 1. **Culling summary by park area** for 142 deer culled by Metroparks from January 10 to February 15, 2023.

Park Area	Antlerless	Antlered	Total
Oak Openings Preserve	35	2	37
Swan Creek Preserve & Brookwood Area	27	8	35
Side Cut and associated parklands	30	11	41
Wildwood Preserve	11	1	12
Pearson	11	2	13
Secor	4	0	4
Toledo Botanical Garden	0	0	0
Middlegrounds	0	0	0
<b>Total All Parklands</b>	<b>118</b>	<b>24</b>	<b>142</b>

**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 2022-23 season. 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 142 deer culled, 85 were females (60%) and 57 were males (40%). A total of 44 deer (31%) were fawns (<1 year of age), including 25% of all females culled and 40% 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 142 deer culled by Metroparks from January 10 to February 15, 2023.

Age	Female	Male	Total
0.5	21	23	44
1.5	17	17	34
2.5	19	9	28
3.5	11	4	15
4.5	7	3	10
5.5	6	1	7
6.5	3	0	3
7.5	1	0	1
<b>Total</b>	<b>85</b>	<b>57</b>	<b>142</b>

Weight

Whole body weights of harvested deer ranged from 35 to 169 pounds for females (mean of 118 pounds) and 53 to 204 pounds for males (mean of 120 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 10, 2023 to February 15, 2023.

Age (years)	Female	Male
0.5	77.0	82.8
1.5	114.8	133.6
≥2.5	137.8	155.1
All age classes	118.2	120.0

**Reproductive Status**

Across all age classes, 63 of 85 females (74%) were pregnant. Across all age classes, 25% of pregnant females carried a single fetus, 71% carried twins, and 3% carried triplets. A breakdown of additional reproductive characteristics of female deer culled by Metroparks from January 10 to February 15, 2023 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 10, 2023 to February 15, 2023.

Age (years)	pregnancy rate (%)	mean fetus count per pregnant female	mean fetus count per female
All	74.1		
0.5	9.5	1.50	0.14
1.5	94.1	1.69	1.59
≥2.5	95.7	1.82	1.74

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

**Culling results:** Deer removed through Metroparks culling operations during the 2022-23 season appeared generally to be in good health with no obvious signs of biological stress. Of the 210 tags requested by Metroparks under permit #11708, 142 (68%) were filled. Overall annual reduction goals were considered achieved for Oak Openings Preserve (37 of 40 permits filled, 93%) with an additional 30 deer harvested by hunters within the park during the controlled archery season. At Wildwood, 20 permits were originally requested by Metroparks as part of the 2022-23 deer management plan, and 12 permits were filled (60%). Following population counts completed on January 26, 2023, it was determined that we had already achieved our annual reduction goals for this park so no further permits were filled. Likewise, following population counts it was determined that we had already reached annual reduction goals at Pearson with 13 of 30 permits filled (43%), and Secor with only 4 of 20 permits filled (20%). For Swan Creek Preserve and the Brookwood Area, 30 permits were originally requested by Metroparks as part of the 2022-23 deer management plan. Following the population counts completed on January 26, 2023, Metroparks determined that the population for these parks was higher than anticipated, so 5 of our 10 extra permits were used at Swan Creek. Ultimately Metroparks filled 35 permits at Swan Creek and Brookwood, largely achieving annual reduction targets for these park areas. For Side Cut and associated parklands, 41 of 50 permits were filled (82%). No culling operations were conducted at Toledo Botanical Garden or

Middlegrounds during the 2022-23 season. A summary of culling operations from 2015 to 2023 is shown in Table 5.

Table 5. **Summary of culling by park** carried out by Metroparks Toledo between 2015 and 2023.

Culling Summary by Park	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Oak Openings Preserve	165	150	50	71	73	60	27	37	596
Swan Creek Preserve & Brookwood Area		50	64	58	40	33	35	35	280
Side Cut and associated parklands			106	54	46	21	47	41	274
Wildwood Preserve	30		19	13	10	10		12	82
Pearson					27	7	7	13	41
Toledo Botanical Garden					7				7
Middlegrounds			1						1
<b>Total All Parklands</b>	<b>195</b>	<b>200</b>	<b>240</b>	<b>196</b>	<b>203</b>	<b>131</b>	<b>116</b>	<b>142</b>	<b>1423</b>

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, 2023 provide additional insight into the current status of deer populations at each park area during the 2022-23 culling season (Figure 1). Snow counts completed at Oak Openings Preserve, Wildwood Preserve, Pearson, Secor, 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. One caveat to these population estimates is that the snow count survey this year was more difficult than usual in the Oak Openings region, with a lot of snow sticking to branches making it difficult to see the ground in some parks. These population estimates are based on raw numbers from the snow count and do not take into account detection probability. In next year's deer management plan we will incorporate estimated detection probabilities for each park in our fall population estimate.

Deer browse damage assessment: Following 2022-23 culling operations, overwinter deer browse damage surveys were conducted between March 20 and March 30, 2023. 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 Oak Openings and Wildwood Preserves increased in 2023 after several years of steady declines, perhaps due to somewhat elevated deer populations in 2021-22 (see Figure 1). Browse damage at the Fallen Timbers Battlefield increased this year, reflecting our struggle to bring the Side Cut and associated parklands deer population into desired densities (Figure 1). For Oak Openings and Wildwood Preserve, where oaks are the dominant woodland species, browse damage to oak seedlings remained at very low levels in 2023 (see Figure 3) despite elevated browse damage upon other species.

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. Given our low population estimates resulting from the January 26, 2023 snow count, it is likely that culling operations will not be necessary in the upcoming year for Secor and Wildwood Preserve.

**F. VENISON DONATION**

Deer culled by Metroparks during the 2022-23 season were processed into 9,230 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 2023.

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Total
Pounds	6,744	9,940	11,284	9,598	10,332	6,340	4,784	9,230	68,252

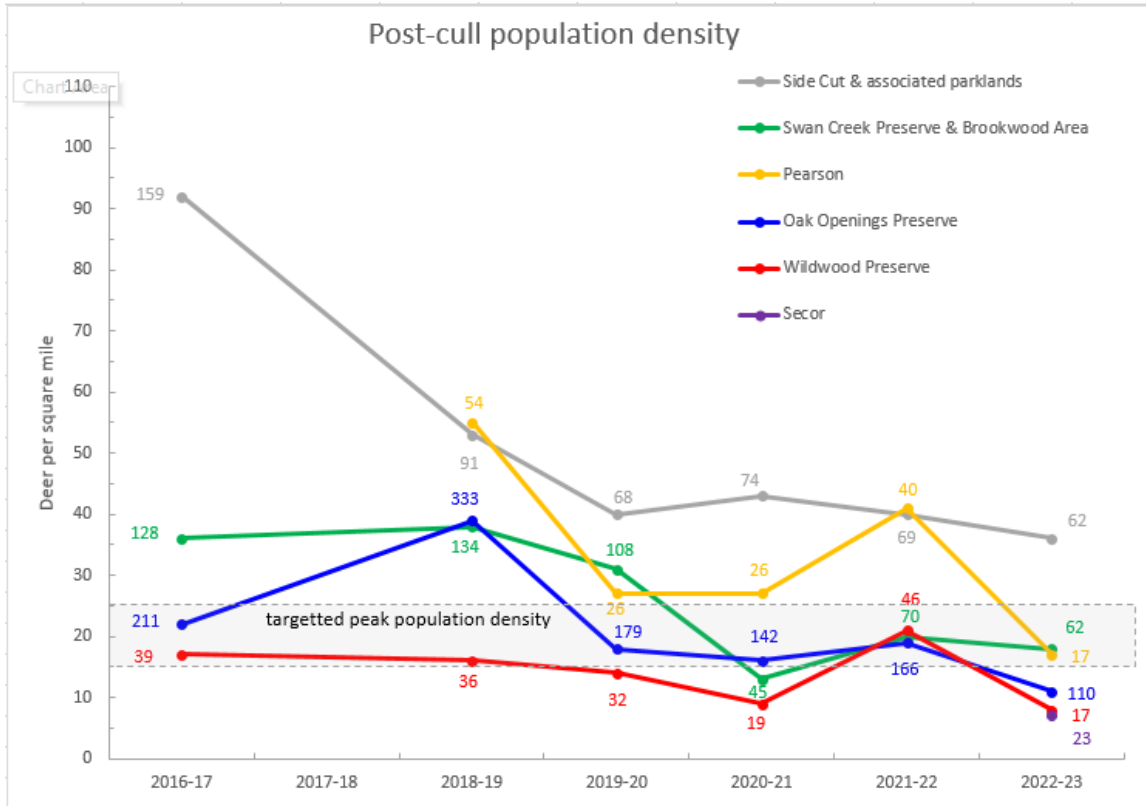


Figure 1. **Post-cull population densities** for five park areas based on population surveys completed between 2016 and 2023. Actual population numbers observed for each park area are shown next to each density data point. Deer culled from the population during the same season, but after counts were completed were subtracted from the count (for example, 12, 14, 12, and 6 deer were culled at Side Cut, Swan Creek Preserve, Oak Openings Preserve, and Pearson respectively, following the snow count conducted on January 26, 2023). This was the first year we implemented culling operations at Secor, so no post-cull population estimates are available prior to 2023. Note that reported numbers may vary slightly from previously submitted reports due to the correction of minor errors found in the previous reports.

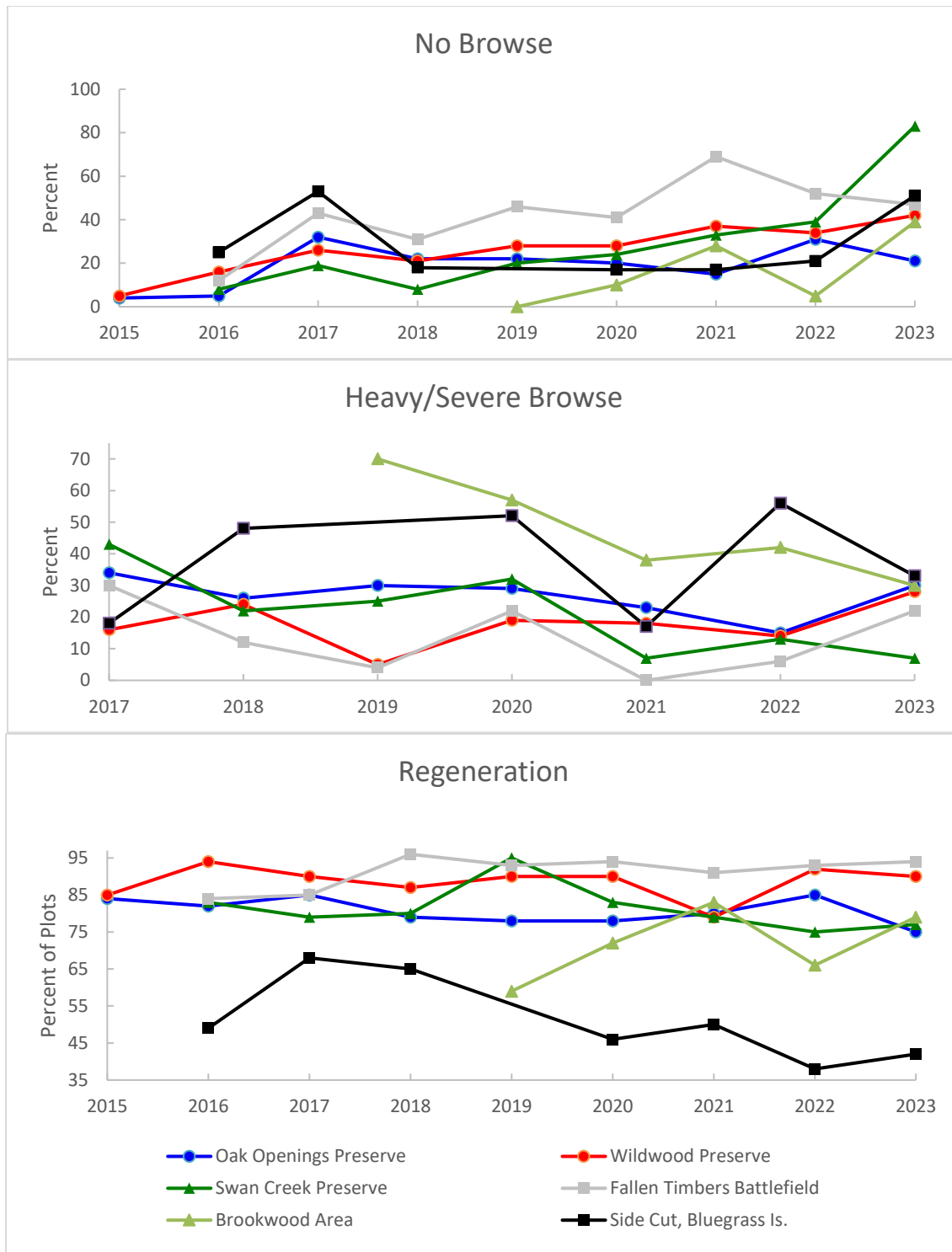


Figure 2. **Overall overwinter deer browse damage** observed between 2015 and 2023 for six park areas. Browse damage surveys were conducted in March/April each year prior to leaf-out. Note that in 2017 persistent overwinter snow cover protected many seedlings from direct browse damage. Data were not collected at Side Cut in 2019 due to persistent spring flooding which likely contributed to the decline in regeneration observed in 2020.



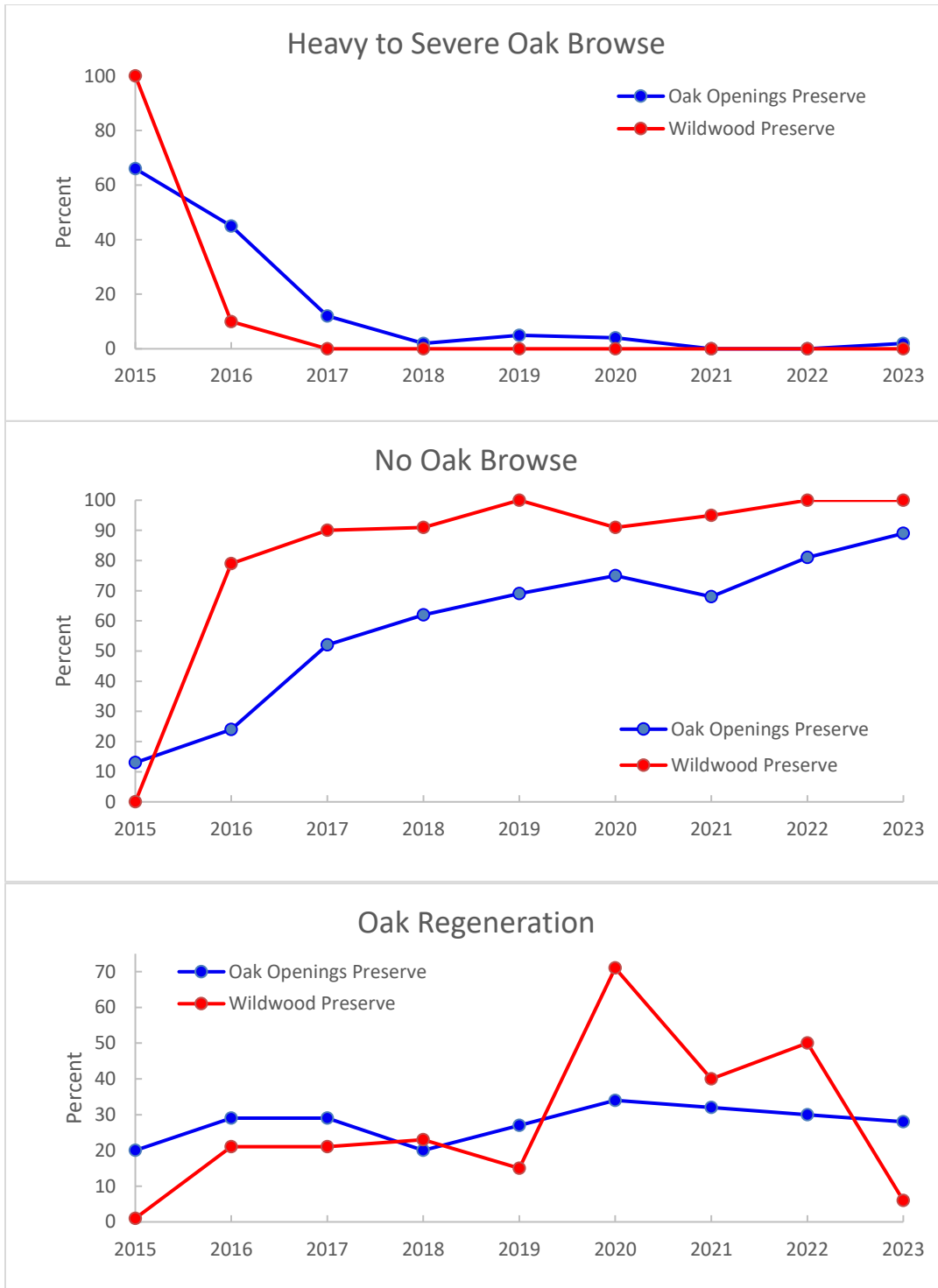


Figure 3. **Overwinter deer browse damage of oak seedlings** observed between 2015 and 2023 for two park areas. Browse damage surveys were conducted in March/April each year prior to leaf-out. Note that heavy acorn production was observed in fall of 2018, likely contributing to increased oak regeneration observed at Wildwood Preserve in 2020.

**APPENDIX – SUMMARY OF BIOLOGICAL DATA**

ODW Tag #	Date Culled	Time (approx.)	Location <sup>1</sup>	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
1	1/10/2023	2030	SE	F	75	0.5		0
2	1/10/2023	2030	SE	F	138	5.5		2
3	1/10/2023	2030	SE	F	158	4.5		2
4	1/10/2023	2130	SE	F	160	3.5		2
5	1/11/2023	2030	SI	F	129	3.5		2
6	1/11/2023	2130	SI	F	109	1.5		1
7	1/11/2023	2130	SI	M	148	2.5	7	
8	1/11/2023	2130	SI	F	74	0.5		0
9	1/11/2023	2130	SI	F	110	1.5		2
10	1/11/2023	1900	SI	M	128	1.5	7	
11	1/11/2023	1900	SI	F	67	1.5		0
12	1/11/2023	1900	SI	F	110	2.5		1
13	1/11/2023	1900	SI	F	35	0.5		0
14	1/11/2023	1900	SI	F	113	2.5		2
15	1/11/2023	1900	SI	M	53	0.5	N	
16	1/11/2023	1900	SI	F	108	1.5		1
17	1/11/2023	1930	SI	F	149	7.5		2
18	1/11/2023	1930	SI	F	126	2.5		2
19	1/11/2023	2000	SI	M	150	3.5	8	
20	1/11/2023	2030	SI	M	141	2.5	5	
21	1/11/2023	2030	SI	M	116	1.5	6	
22	1/11/2023	2030	SI	F	132	2.5		2
23	1/11/2023	2100	SI	M	143	1.5	7	
24	1/11/2023	2100	SI	M	147	2.5	4	
25	1/11/2023	2100	SI	F	118	2.5		3
26	1/11/2023	2230	SI	F	132	4.5		3
27	1/11/2023	2230	SI	F	64	0.5		0
28	1/11/2023	2300	SI	M	162	4.5	11	
29	1/11/2023	2300	SI	M	115	1.5	2	
30	1/11/2023	2300	SI	M	130	2.5	6	
31	1/12/2023	1900	SW	M	91	0.5	N	
32	1/12/2023	1900	SW	M	99	0.5	N	
33	1/12/2023	1900	SW	F	136	5.5		1
34	1/12/2023	1930	SW	M	94	0.5	N	
35	1/12/2023	1930	SW	F	141	6.5		2
36	1/12/2023	2000	SW	M	141	4.5	8	
37	1/12/2023	2030	SW	M	130	1.5	1	
38	1/12/2023	2030	SW	M	121	1.5	N	
39	1/12/2023	2030	SW	M	151	2.5	8	
40	1/12/2023	2030	SW	M	150	2.5	5	

ODW Tag #	Date Culled	Time (approx.)	Location <sup>1</sup>	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
41	1/12/2023	2030	SW	M	151	1.5	2	
42	1/12/2023	2130	SW	F	116	1.5		2
43	1/12/2023	2130	SW	M	111	0.5	N	
44	1/12/2023	2130	SW	F	74	0.5		0
45	1/12/2023	2130	SW	F	143	3.5		1
46	1/12/2023	2130	SW	M	89	0.5	N	
47	1/12/2023	2130	SW	F	128	1.5		2
48	1/12/2023	2230	SW	F	148	2.5		2
49	1/12/2023	2230	SW	F	121	1.5		1
50	1/12/2023	2230	SW	F	126	1.5		2
51	1/12/2023	2230	SW	F	87	0.5		0
52	1/17/2023	1830	PE	F	117	1.5		2
53	1/17/2023	1830	PE	M	76	0.5	N	
54	1/17/2023	1900	PE	F	80	0.5		0
55	1/17/2023	2000	PE	F	130	2.5		2
56	1/17/2023	2030	PE	F	143	2.5		2
57	1/17/2023	2100	PE	M	204	5.5	7	
58	1/17/2023	2130	PE	F	140	3.5		2
59	1/18/2023	1930	WW	F	145	2.5		1
60	1/18/2023	2030	WW	F	130	2.5		0
61	1/18/2023	2030	WW	F	67	0.5		0
62	1/18/2023	2100	WW	F	155	4.5		2
63	1/18/2023	2130	WW	M	160	1.5	4	
64	1/18/2023	2200	WW	F	153	3.5		0
65	1/18/2023	2200	WW	F	155	2.5		2
66	1/18/2023	2230	WW	M	114	0.5	N	
67	1/18/2023	2230	WW	F	155	3.5		2
68	1/18/2023	2230	WW	F	132	1.5		1
69	1/18/2023	2230	WW	F	85	0.5		0
70	1/18/2023	2230	WW	F	86	0.5		0
71	1/19/2023	1930	OO	F	143	4.5		2
72	1/19/2023	1930	OO	F	73	0.5		0
73	1/19/2023	1930	OO	F	82	0.5		0
74	1/19/2023	1930	OO	F	128	2.5		2
75	1/19/2023	2030	OO	F	72	0.5		0
76	1/19/2023	2030	OO	F	131	6.5		1
77	1/19/2023	2030	OO	M	75	0.5	N	
78	1/19/2023	2100	OO	F	128	3.5		2
79	1/19/2023	2100	OO	F	140	4.5		2
80	1/19/2023	2100	OO	M	59	0.5	N	
81	1/19/2023	2100	OO	F	107	1.5		2

ODW Tag #	Date Culled	Time (approx.)	Location <sup>1</sup>	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
82	1/19/2023	2130	OO	F	118	1.5		2
83	1/19/2023	2130	OO	F	118	1.5		1
84	1/19/2023	2130	OO	M	71	0.5	N	
85	1/19/2023	2130	OO	F	46	0.5		0
86	1/19/2023	2200	OO	F	138	6.5		1
87	1/19/2023	2230	OO	M	76	0.5	N	
88	1/19/2023	2300	OO	M	78	0.5	N	
89	1/19/2023	2300	OO	F	125	4.5		2
90	1/19/2023	2300	OO	M	75	0.5	N	
91	1/19/2023	2300	OO	F	125	3.5		1
92	1/19/2023	2300	OO	F	111	2.5		2
93	1/19/2023	2300	OO	M	115	1.5	3	
94	1/19/2023	2330	OO	M	85	0.5	N	
95	1/19/2023	2330	OO	M	64	0.5	N	
96	1/24/2023	1930	SI	F	145	2.5		2
97	1/24/2023	1930	SI	F	140	2.5		1
98	1/24/2023	2100	SI	M	89	0.5	N	
99	1/26/2023	1930	SW	M	154	1.5	4	
100	1/26/2023	1930	SW	M	125	1.5	5	
101	1/26/2023	2000	SW	M	146	1.5	N	
102	1/26/2023	2130	SW	F	146	4.5		2
103	1/26/2023	2130	SW	M	84	0.5	N	
104	1/26/2023	2230	SW	M	188	3.5	N	
105	2/1/2023	1930	PE	F	127	1.5		2
106	2/1/2023	2030	PE	F	115	1.5		2
107	2/1/2023	2130	PE	M	88	0.5	N	
108	2/1/2023	2130	PE	M	141	1.5	5	
109	2/1/2023	2200	PE	F	94	0.5		0
110	2/1/2023	2300	PE	F	138	2.5		2
111	2/2/2023	1930	OO	F	121	1.5		2
112	2/2/2023	2000	OO	M	82	0.5	N	
113	2/2/2023	2030	OO	M	149	3.5	N	
114	2/2/2023	2100	OO	M	91	0.5	N	
115	2/2/2023	2130	OO	F	138	5.5		2
116	2/2/2023	2130	OO	M	83	0.5	N	
117	2/2/2023	2200	OO	F	138	3.5		2
118	2/2/2023	2200	OO	F	65	0.5		0
119	2/2/2023	2300	OO	M	126	1.5	3	
120	2/2/2023	2300	OO	F	118	2.5		2
121	2/2/2023	2330	OO	F	125	2.5		2
122	2/3/2023	0000	OO	M	175	4.5	N	

ODW Tag #	Date Culled	Time (approx.)	Location <sup>1</sup>	Sex	Weight (lbs)	Age (years)	Antlers (N=no)	Fetus Count (#)
123	2/7/2023	1900	SI	M	77	0.5	N	
124	2/7/2023	2000	SI	F	169	3.5		1
125	2/7/2023	2000	SI	F	112	1.5		2
126	2/7/2023	2030	SI	F	139	5.5		2
127	2/7/2023	2100	SI	F	129	5.5		1
128	2/7/2023	2130	SI	M	155	3.5	N	
129	2/7/2023	2130	SI	M	138	1.5	N	
130	2/7/2023	2130	SI	M	129	1.5	N	
131	2/7/2023	2030	SI	M	170	2.5	N	
132	2/7/2023	2100	SI	M	143	2.5	6	
133	2/7/2023	2200	SI	F	100	0.5		1
134	2/7/2023	2200	SI	F	122	0.5		2
135	2/15/2023	1900	SW	F	78	0.5		0
136	2/15/2023	1900	SW	F	151	3.5		2
137	2/15/2023	1930	SW	F	139	2.5		2
138	2/15/2023	1930	SW	F	153	5.5		2
139	2/15/2023	2000	SW	F	83	0.5		0
140	2/15/2023	2000	SW	M	134	1.5	2	
141	2/15/2023	2030	SW	M	133	2.5	N	
142	2/15/2023	2100	SW	F	74	0.5		0

<sup>1</sup>SE = Secor, OO = Oak Openings Preserve, SW = Swan Creek Preserve, SI = Side Cut & Blue Grass Island, PE = Pearson, WW = Wildwood Preserve