Forest Preserve District
OF WILL COUNTY
Bringing People and Nature Together

2020-2021 Deer Management Plan

Background

The Forest Preserve District of Will County (FPDWC) was established in 1927 to "acquire… and hold lands containing one or more natural forests or parts thereof or land or lands connecting such forests or parts thereof, or lands capable of being reforested, or capable of being restored to a natural condition, for the purpose of protecting and preserving the flora, fauna, and scenic beauties within such district, and to restore, restock, protect, and preserve the natural forests and such lands together with their flora and fauna, as nearly as my be, in their natural state and condition, for the purpose of the education, pleasure, and recreation of the public" (70ILCS805/5). Beginning in the early 1990s, FPDWC staff began to notice deer browse lines in several forest preserves. In 1993, the FPDWC began documenting the number of deer in the forest preserve system using aerial surveys (Appendix A). Survey crews counted deer between December and March, ideally when the snow was less than three days old, at least three inches deep and in the absence of foliage to allow better visibility. Without these conditions, it is extremely difficult to observe deer that blend into the brown backdrop of winter. Surveys indicated deer densities that exceed the target density of 20 deer per square mile, which is widely considered the maximum density allowable to maintain plant community quality and diversity. The FPDWC also wanted to determine impacts to vegetation within the affected habitats caused by high deer numbers. During the last 20 years, multiple deer browse studies have been conducted on FPDWC properties. Data indicate significant deer browse pressure and very high deer densities in the preserves resulting in negative shifts in species composition, decreases in diversity, and an overall decline in the quality of these natural areas. Where there is a lack of preferred native forage, or native species, likely due to decades of heavy deer browse, the deer are turning to plants from which they get less nutritional value. The winter of 2020/2021 will be the tenth year of the District's deer management program. During the 2019/2020 permitted season, 146 deer were removed. The cumulative number of deer removed from all preserves to date is summarized below (Table 1).

Table 1. Summary of deer taken from each preserve per season and in total

Preserve	**Number Removed each Season**									**Total**
	2010/11	**2011/12**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	
Romeoville Prairie Area	0	5	10	0	20	14	8	14	5	76
Lockport Prairie Nature Preserve	10	8	5	10	15	10	8	15	4	85
McKinley Woods Preserve-Four Rivers Education Center	75	16	63	40	30	25	30	15	35	329
Kankakee Sands Geologic Area	0	21	41	41	45	0	30	28	30	236
Lockport Prairie East	0	0	0	0	0	6	0	0	0	6
Goodenow Grove Nature Preserve	0	39	30	30	20	20	0	35	19	193
Hickory Creek Preserve	0	0	60	60	60	60	35	35	35	345
Raccoon Grove Preserve	0	0	17	20	10	12	19	15	0	93
Thorn Creek Woods Nature Preserve	0	0	0	0	0	33	19	15	18	85
Prairie Bluff Preserve	0	0	0	0	0	20	13	0	0	33
Total	85	89	226	201	200	200	162	172	146	1481

Current regional research and deer management programs use deer densities as a meter to help determine the scale of their deer problem. The damage white-tailed deer do to local ecosystems, specifically plant communities and species populations, is measured to determine the success rate of a program, while deer density numbers provide a guideline for establishing removal targets. Generally, organizations in northeastern Illinois target 10-30 deer per square mile and adjust their plans accordingly over time as recovery in the plant communities occurs and the structure of the deer herds are influenced by removing specific numbers of the animals annually. Current density numbers when looked at in conjunction with floristic surveys and deer browse data indicate that the high numbers of white-tailed deer are major contributors to the altering of ecosystems in Will County Forest Preserves.

During the winter of 2019-2020, there were limited opportunities to do aerial counts due to lack of snow cover. The four preserves that were surveyed for population control are: Lockport Prairie Nature Preserve, Hickory Creek Preserve, Thorn Creek Nature Preserve, and Goodenow Grove Nature Preserve. There was not an opportunity to do an aerial survey at other preserves including McKinley Woods due to inadequate snow cover in the western portion of Will County. Even in the areas that were surveyed during the winter of 2019-2020, the counts should be considered minimum estimates due to the poor snow cover conditions. To maintain the progress being made and to offset the lack of an aerial survey this year, the last three years of aerial surveys were averaged to estimate the current population and density at McKinley Woods. Results from the aerial surveys, as well as proposed numbers for removal are listed in Table 2. FPDWC proposes removing a total of 200 deer from the preserves listed.

Table 2. Surveyed deer populations with densities before and after proposed removal

Permit Area	2020 Surveyed Population Size	2020 Estimated Density (Deer/square mile)	2020-2021 Proposed Removal (# of Deer)	Estimated Density after Removal Completed (Deer/square mile)
Lockport Prairie Nature Preserve	11	22	**10**	2*
Hickory Creek Preserve	225	93	**80**	60
Thorn Creek Nature Preserve	63	40	**25**	24
Goodenow Grove Nature Preserve	92	66	**50**	30
McKinley Woods**	55	67	**35**	24
Total Deer to Remove			**200**	

*IDNR will not issue a culling permit for less than 10 deer at a site

** Data based on average of last 3 years of aerial surveys due to inadequate snow cover this season

Program Goals

The FPDWC deer management program goal is to establish and maintain white-tailed deer populations that allow for a sustainable relationship between biological diversity and habitat structure. Succinctly, the deer population numbers will be reduced to allow vegetation to recover from excessive browse.

Program Objectives

The general objectives are as follows:

1. Conduct deer browse studies to assess the extent of damage caused by white-tailed deer on plant communities.
2. Reduce deer browse damage to allow for recovery of plant species diversity, and community composition and structure.
3. Utilize aerial deer population surveys to regularly monitor the density of deer residing within a given preserve.
4. Reduce deer populations to initial target densities of 20-30 deer per square mile within selected preserves.

Site Descriptions

Lockport Prairie Nature Preserve **(LPN):** *(0.49 square miles counted)****
(Sections 22 & 27: Township 36N. - Range 10E.)

Lockport Prairie Nature Preserve, a unique and critically endangered dolomite prairie and wetland habitat, is located on the west side of the Des Plaines River both north and south of Division Street, east of Route 53 between the cities of Lockport and Crest Hill. There is limited public access to this 320-acre site, and the site is actively managed with prescribed burns, native plant seeding, invasive species removal, and hydrological restoration efforts in order to enhance and restore the entire property. The U.S. Army Corps of Engineers is funding a five-year long Aquatic Ecosystem Restoration Project at LPN, which includes significant invasive species removal and native plantings, and is being undertaken between 2019 and 2023. The area supports many listed species, both federal and state, and is considered one of the highest quality dolomite prairie remnants left in Illinois, also containing calcareous fens and seeps, sedge meadow and wetland communities.

Among the rare species at the site are the Hines emerald dragonfly (*Samatochlora hineana*), leafy prairie clover (*Dalea foliosa*), Blanding's turtle (*Emydoidea blandingii*) and spotted turtle (*Clemmys guttata*). Leafy prairie clover, currently listed as Federally Endangered, is one of the rarest plants in Illinois and is considered globally imperiled. A member of the legume family, it is a perennial found in habitats of cedar glades, limestone barrens and shallow soiled dolomitic prairies. An additional seven other plant species present at the site are listed as state endangered or threatened.

As part of the 2019/2020 DPCP 4 deer were removed from LPN. This season's survey counted 11 deer on site, which is a density of 22 deer per square mile. The IDNR will not issue a culling permit for less than 10 deer per site. Removing the IDNR minimum of 10 deer would result in a calculated density of 2 deer per square mile (Table 2). Even though this site does consistently hold a deer population, it is not prime habitat for deer. However, Prairie Bluff Preserve is adjacent to LPN and holds many deer that use both preserves. This site is also part of the river wildlife corridor, so numbers are likely to replenish very quickly. Given the significant investment in ecosystem restoration at the site by the U.S. Army Corps of Engineers and the planned installation of approximately 88,000 native plants in 2021 and 2022, a lower deer density is needed to reduce browse pressure on the native plantings and facilitate habitat recovery.

Hickory Creek Preserve **(HCP)***: (2.41 square miles counted)****
(Sections 13, 14, 24: Township 35N. - Range 11E. & Sections 16, 17, 18, 19, and 20: Township 35N. - Range 12E.)

Hickory Creek Preserve is a 1,541-acre mosaic of natural communities including woodland, wetland, barrens and prairie around numerous public use amenities, all of which is surrounded by private residential properties. The terrain ranges from flat, to rolling, to steeply sloped areas. This preserve has varying degrees of natural community quality, including some high-quality areas, and provides habitat for several highly conservative species including the savanna blazing star (*Liatris scariosa nieuwlandii*) and small sundrops (*Oenothera perennis*). HCP receives regular management in the form of prescribed burning, invasive species control, selective woody removal and planting to maintain higher quality areas while improving more degraded portions.

This site is a sprawling preserve supporting a large population of deer. Last season, 35 deer were removed from this site. Considering the extent of suitable habitat surrounding this preserve on private residential property, much of which is not included in aerial surveys, it is likely last year's population and density estimates were below the actual number of deer which utilize HCP. The current population estimate is 225 deer, which is a density of 93 deer per square mile. Reducing the population by 80 deer in the 2020/2021 management season will result in a calculated density of approximately 60 deer per square mile (Table 2). The removal of 155 deer would be necessary to reach the target density and is not feasible within a season. Therefore, continued deer management in subsequent years will be necessary to reach density goals.

Thorn Creek Woods Nature Preserve* (TCN)*: (1.56 square miles counted)*
(Sections 1,2,11 & 12: Township 34N. - Range 13E.)

Thorn Creek Woods Nature Preserve is a 1,025-acre preserve in Park Forest and University Park that is managed by the Forest Preserve District of Will County. It is owned by multiple partners including FPDWC, the Village of Park Forest, University Park and the Illinois Department of Natural Resources; all of whom comprise the Thorn Creek Woods Management Commission. It contains upland, bottomland, forested land, glacial potholes, ravines, prairie, and wetlands. The preserve contains over 3 miles of trails. Ecological management activities include limited invasive species control, prescribed burning, and seeding activities.

Deer control at TCN in the 2019/2020 season consisted of 18 animals removed. The most recent aerial counts place the population at approximately 63 animals, with a density of 40 deer per square mile. Reducing the population by 25 deer in the 2020/2021 management season will result in a calculated density of approximately 24 deer per square mile (Table 2). All deer management activity is located on FPDWC property.

Goodenow Grove Nature Preserve* (GGN)*: (1.39 square miles counted)*
(Sections 23, 26, 27, 28, 33 and 34: Township 34N. - Range 14E.)

Goodenow Grove Nature Preserve is an 891-acre site located east of I-394 and north of Goodenow Road. The site is characterized by wooded areas along Plum Creek and its tributaries, as well as barrens (shrubby prairies), savannas and grasslands associated with level areas. Goodenow Grove Nature Preserve contains high quality remnants of a diverse mixture of natural communities including dry-mesic and mesic upland forests, mesic and wet-mesic floodplain forests, forested seeps, savanna, dry-mesic and mesic prairies, wet-mesic prairie/sedge meadow, marshes and vernal pools. The preserve contains habitat for several state threatened or endangered species, including the Kirtland's snake (*Clonophis kirtlandii*), and the spotted coral-root orchid (*Corallorhiza maculata*). In recent years, the site has received extensive management and restoration including invasive species control, prescribed burning, and seeding and planting efforts. The FPDWC's ecological management activities are being assisted by a Habitat Fund grant awarded by the IDNR which contributes funding support for habitat restoration activities (2019-2021).

Last season's efforts resulted in 19 deer removed. Current aerial counts place the population at approximately 92 animals, with a density of 66 deer per square mile. Reducing the population by another 50 deer in the 2020/2021 management season will result in a calculated density of approximately 30 deer per square mile (Table 2). Staff intends to take advantage of natural elevated positions for clear shots and backdrops to minimize the potential flight of the projectiles.

McKinley Woods and Four Rivers Environmental Education Center* (MWP):** (0.82 square miles counted)
(Sections 20, 29, 30 and 31: Township 34N. - Range 9E.)

McKinley Woods is a 447-acre site situated on bluffs above the I&M Canal and the Des Plaines River. The I&M Canal State Trail is located between the river and the canal. The preserve is characterized by steep wooded bluffs and ravines that provide a very safe backdrop for firing stations. McKinley Woods is a high use, high quality area currently receiving multiple large-scale management and restoration efforts. This includes clearing out invasive woody species such as buckthorn and honeysuckle to decrease their dominance in the existing woodlands and re-creating prairie and oak/hickory savanna over former agricultural land on the uplands above the river terrace. The Four Rivers Environmental Education Center is a 78-acre area located essentially on an island in the Des Plaines River. Except for the narrow strip of land connecting it to the mainland, this area is surrounded by water providing good isolation for sharpshooting activities. While the northern half of this site is largely open, the southern half is predominately wooded.

McKinley Woods has been part of the culling program every year. It is important to continue deer management at this site, especially since the restoration projects have been making significant habitat improvement. Postponing deer management this year could lead to devastating browse effects on the restored areas and allow the deer population to grow to a less manageable size for following seasons. The 2019/2020 season removed 35 deer from MWP. The last three seasons have averaged nearly 55 deer in the McKinley Woods area, making removing another 35 deer for an estimated density of 24 deer per square mile a reasonable approximation in order to maintain management progress.

***Actual preserve area may differ slightly from the actual estimated area flown of the preserve

Documentation of Problem

Deer Browse Inventory and Monitoring 2020

In June-July 2020, multiple plots were sampled to illustrate plant damage caused by an overabundance of deer at each of the five proposed deer management sites. The plots are at new points each year and are not replicated within the year. Plots were selected based on historical documentation of known populations of native herbaceous and woody plant species, with special attention given to listed species, species of concern, more conservative species, and native species, in descending order of priority. A plant ecologist identified areas via visual surveys with evidence of native and conservative species being browsed by deer. Within those areas, a plot location was delineated by placing a center post and flagging out a circle with a 10-foot radius. Data collected included GPS location, plant scientific name, number of plants per species, and number of plants browsed by deer per species. Assessment of deer browse was based primarily on vegetation at least 18 inches in height to minimize bias from browse unrelated to deer. In a few instances, vegetation less than 18 inches in height was sampled when the browse damage could be confidently attributed to deer. Plants with damage that could not confidently be identified as deer browse, were included in total number of plants, but not in number browsed. The data recorded was then placed into an Excel spreadsheet, sorted, and assigned C-values as per the Flora of the Chicago Region (Wilhelm and Rericha, 2017). The results varied by site, but at each site browse damage was extensive within the plots.

Table 3. Percent deer browse at each management site by plant type, C-value, and total percent browse

	% Browse Native Vines	% Browse Native Grasses	% Browse Native Trees	% Browse Native Shrubs	% Browse Native Forbs	% Browse Plants C-value 0-3	% Browse Plants C-value 4-6	% Browse Plants C-value 7+	Total % Deer Browse
LPN	N/A	N/A	N/A	95%	67%	92%	94%	58%	76%
HCP	N/A	N/A	100%	94%	74%	84%	87%	63%	79%
TCN	N/A	33%	72%	88%	45%	61%	53%	60%	58%
GGN	100%	N/A	100%	87%	75%	93%	73%	81%	80%
MWP	N/A	N/A	100%	83%	58%	N/A	65%	56%	61%

Lockport Prairie Nature Preserve

In the 8 plots sampled at LPN, 13 species were selected for assessing deer browse levels (Table 4). Of those, 6 species were considered highly conservative (having a C-value of 7 or above), and 2 species were considered moderately conservative (having a C-value of 4-6). Collectively, the highly conservative species showed 58% browse damage, while the moderately conservative species showed 94% browse damage (Table 3). Of the native shrubs, 95% were found to be browsed, as well as 67% of the native forbs. In total, 76% of all plants sampled were browsed.

Table 4. Plant species and browse data recorded in each plot at Lockport Prairie Nature Preserve, sorted by increasing C-value

Plot ID	Scientific Name	Common Name	Plant Type	C Value	# of Plants	# Browsed	% Browsed
LPN-04-2020	Erigeron annuus	Annual Fleabane	Forb	0	7	7	100%
LPN-03-2020	Rudbeckia hirta	Black-eyed Susan	Forb	1	3	1	33%
LPN-02-2020	Apocynum sibiricum	Smooth Indian Hemp	Forb	2	5	5	100%
LPN-08-2020	Salix interior	Sandbar Willow	Shrub	2	43	42	98%
LPN-08-2020	Alisma subcordatum	Common Water Plantai	Forb	3	6	4	67%
LPN-01-2020	Ranunculus sceleratus	Cursed Buttercup	Forb	4	56	55	98%
LPN-07-2020	Ptelea trifoliata	Wafer Ash	Shrub	4	13	10	77%
LPN-05-2020	Sium suave	Tall Water parsnip	Forb	7	5	2	40%
LPN-02-2020	Vernonia fasciculata	Common Ironweed	Forb	8	58	21	36%
LPN-08-2020	Vernonia fasciculata	Common Ironweed	Forb	8	1	1	100%
LPN-02-2020	Rosa palustris	Thorny Swamp Rose	Shrub	8	28	28	100%
LPN-03-2020	Dalea foliosa	Leafy Prairie Clover	Forb	10	9	5	56%
LPN-05-2020	Veronica americana	American Brooklime	Forb	10	15	8	53%
LPN-06-2020	Pedicularis lanceolata	Fen Betony	Forb	10	15	11	73%

Hickory Creek Preserve

Within the 9 plots sampled at Hickory Creek Preserve, 13 species were selected for monitoring deer browse levels (Table 5). Of the 4 highly conservative species, 63% showed deer browse damage (Table 3). Of the 6 moderately conservative species, 87% showed deer browse damage. Native trees were 100% browsed, while native shrub and forb browse levels were documented at 94% and 74% respectively. In total, 79% of the plants sampled showed evidence of deer browse damage.

Table 5. Plant species and browse data recorded in each plot at Hickory Creek Preserve, sorted by increasing C-value

Plot ID	Scientific Name	Common Name	Plant Type	C Value	# of Plants	# Browsed	% Browsed
HCP-4-2020	Urtica gracilis	Tall Nettle	Forb	1	17	14	82%
HCP-6-2020	Agrimonia gryposepala	Tall Agrimony	Forb	2	1	1	100%
HCP-2-2020	Tradescantia ohiensis	Common Spiderwort	Forb	3	7	6	86%
HCP-1-2020	Symphyotrichum lateriflorum	Calico Aster	Forb	4	14	7	50%
HCP-3-2020	Impatiens capensis	Spotted Touch-Me-Not	Forb	4	26	25	96%
HCP-8-2020	Osmorhiza claytonii	Hairy Sweet Cicely	Forb	4	7	6	86%
HCP-5-2020	Ptelea trifoliata	Wafer Ash	Shrub	4	4	4	100%
HCP-1-2020	Viburnum prunifolium	Black Haw	Shrub	5	25	23	92%
HCP-5-2020	Viburnum prunifolium	Black Haw	Shrub	5	3	3	100%
HCP-4-2020	Fraxinus americana	White Ash	Tree	5	6	6	100%
HCP-5-2020	Thalictrum dioicum	Early Meadow Rue	Forb	7	8	6	75%
HCP-6-2020	Baptisia lactea	White Wild Indigo	Forb	8	1	1	100%
HCP-9-2020	Carpinus caroliniana virginiana	Blue Beech	Tree	8	3	3	100%
HCP-7-2020	Pedicularis lanceolata	Fen Betony	Forb	10	34	19	56%

Thorn Creek Woods Nature Preserve

Within the 7 plots sampled at Thorn Creek Woods Nature Preserve (TCN), 16 species were selected for monitoring deer browse levels (Table 6). The 3 highly conservative species were 60% browsed, and the 7 moderately conservative species exhibited 53% browse (Table 3). Across plant types, 88% of native shrubs, 72% of native trees, 45% of native forbs, and 33% of native grasses within the plots exhibited evidence of deer browse. In total, 58% of all plants within the plots were browsed.

Table 6. Plant species and browse data recorded in each plot at Thorn Creek Nature Preserve, sorted by increasing C-value

Plot ID	Scientific Name	Common Name	Plant Type	C Value	# of Plants	# Browsed	% Browsed
TCN-02-2020	Geum canadense	White Avens	Forb	1	2	1	50%
TCN-07-2020	Geum canadense	White Avens	Forb	1	2	2	100%
TCN-02-2020	Fraxinus lanceolata	Green Ash	Tree	1	9	5	56%
TCN-06-2020	Fraxinus lanceolata	Green Ash	Tree	1	7	7	100%
TCN-01-2020	Tradescantia ohiensis	Common Spiderwort	Forb	3	7	6	86%
TCN-04-2020	Viola sororia	Common Blue Violet	Forb	3	15	7	47%
TCN-06-2020	Circaea canadensis	Enchanter's Nightshade	Forb	3	80	27	34%
TCN-05-2020	Ulmus americana	American Elm	Tree	3	179	129	72%
TCN-03-2020	Symphyotrichum lateriflorum	Calico Aster	Forb	4	7	3	43%
TCN-04-2020	Symphyotrichum lateriflorum	Calico Aster	Forb	4	14	10	71%
TCN-04-2020	Cryptotaenia canadensis	Honewort	Forb	4	41	20	49%
TCN-06-2020	Antenoron virginianum	Jumpseed	Forb	4	31	5	16%
TCN-07-2020	Antenoron virginianum	Jumpseed	Forb	4	2	1	50%
TCN-06-2020	Trillium recurvatum	Prairie Trillium	Forb	5	4	4	100%
TCN-07-2020	Prenanthes alba	White Lettuce	Forb	5	31	20	65%
TCN-07-2020	Trillium recurvatum	Prairie Trillium	Forb	5	26	6	23%
TCN-02-2020	Elymus villosus	Silky Wild Rye	Grass	5	9	3	33%
TCN-02-2020	Viburnum prunifolium	Black Haw	Shrub	5	43	38	88%
TCN-04-2020	Lysimachia ciliata	Fringed Loosestrife	Forb	7	4	3	75%
TCN-01-2020	Baptisia lactea	White Wild Indigo	Forb	8	6	6	100%
TCN-03-2020	Veronicastrum virginicum	Culver's Root	Forb	8	25	12	48%

Goodenow Grove Nature Preserve

Within the 8 plots sampled at Goodenow Grove Nature Preserve, 32 species were selected for monitoring deer browse levels (Table 7). Of the 7 highly conservative species, 81% exhibited deer browse, and the 15 moderately conservative species were 73% browsed (Table 3). Overall, 100% of native trees, 100% of native vines, 87% of native shrubs, and 75% of native forbs exhibited browse damage. In total, 80% of all plants sampled were browsed to some degree.

Table 7. Plant species and browse data recorded in each plot at Goodenow Grove Nature Preserve, sorted by increasing C-value

Plot ID	Scientific Name	Common Name	Plant Type	C Value	# of Plants	# Browsed	% Browsed
GGN-03-2020	Prunus serotina	Wild Black Cherry	Tree	0	1	1	100%
GGN-02-2020	Cornus racemosa	Gray Dogwood	Shrub	1	8	7	88%
GGN-04-2020	Fraxinus lanceolata	Green Ash	Tree	1	1	1	100%
GGN-05-2020	Fraxinus lanceolata	Green Ash	Tree	1	1	1	100%
GGN-07-2020	Fraxinus lanceolata	Green Ash	Tree	1	1	1	100%
GGN-04-2020	Vitis riparia	Riverbank Grape	Vine	1	2	2	100%
GGN-08-2020	Vitis riparia	Riverbank Grape	Vine	1	1	1	100%
GGN-01-2020	Ribes missouriense	Missouri Wild Gooseberr	Shrub	2	1	1	100%
GGN-02-2020	Crataegus mollis	Downy Hawthorn	Tree	2	1	1	100%
GGN-01-2020	Symphyotrichum lanceolatum	Panicled Aster	Forb	3	1	1	100%
GGN-04-2020	Symphyotrichum lanceolatum	Panicled Aster	Forb	3	2	2	100%
GGN-05-2020	Symphyotrichum lanceolatum	Panicled Aster	Forb	3	4	4	100%
GGN-06-2020	Tradescantia ohiensis	Common Spiderwort	Forb	3	4	4	100%
GGN-08-2020	Symphyotrichum drummondii	Drummond's Aster	Forb	3	10	10	100%
GGN-05-2020	Rubus allegheniensis	Highbush Blackberry	Shrub	3	6	4	67%
GGN-01-2020	Penstemon digitalis	Foxglove Beard Tongue	Forb	4	2	2	100%
GGN-01-2020	Symphyotrichum lateriflorum	Calico Aster	Forb	4	15	13	87%
GGN-08-2020	Impatiens capensis	Spotted Touch-Me-Not	Forb	4	3	2	67%
GGN-02-2020	Smilax hispida	Bristly Cat Brier	Vine	4	1	1	100%
GGN-08-2020	Zizia aurea	Golden Alexanders	Forb	5	5	4	80%
GGN-05-2020	Viburnum prunifolium	Black Haw	Shrub	5	1	1	100%
GGN-06-2020	Corylus americana	American Hazelnut	Shrub	5	3	3	100%
GGN-06-2020	Rosa setigera	Smooth Illinois Rose	Shrub	5	4	4	100%
GGN-02-2020	Carya ovata	Shagbark Hickory	Tree	5	2	2	100%
GGN-03-2020	Tilia americana	American Linden	Tree	5	1	1	100%
GGN-04-2020	Carya cordiformis	Bitternut Hickory	Tree	5	1	1	100%
GGN-06-2020	Quercus macrocarpa	Bur Oak	Tree	5	2	2	100%
GGN-06-2020	Quercus alba	White Oak	Tree	5	1	1	100%
GGN-06-2020	Carya ovata	Shagbark Hickory	Tree	5	1	1	100%
GGN-01-2020	Phryma leptostachya	Lopseed	Forb	6	2	2	100%
GGN-03-2020	Dodecatheon meadia	Shooting Star	Forb	6	43	23	53%
GGN-05-2020	Dodecatheon meadia	Shooting Star	Forb	6	2	2	100%
GGN-07-2020	Tracaulon sagittatum	Arrow-leaved Tear-thum	Forb	7	7	5	71%
GGN-03-2020	Carpinus caroliniana virginiana	Blue Beech	Tree	8	1	1	100%
GGN-02-2020	Lonicera reticulata	Yellow Honeysuckle	Vine	8	5	5	100%
GGN-07-2020	Symphyotrichum laeve	Smooth Blue Aster	Forb	9	12	12	100%
GGN-02-2020	Viburnum acerifolium	Maple-leaved Arrowwoo	Shrub	9	4	2	50%
GGN-03-2020	Viburnum acerifolium	Maple-leaved Arrowwoo	Shrub	9	2	2	100%
GGN-05-2020	Heuchera richardsonii	Prairie Alum Root	Forb	10	4	2	50%
GGN-07-2020	Oenothera pilosella	Prairie Sundrops	Forb	10	2	1	50%

McKinley Woods Preserve

Within the 8 plots sampled at McKinley Woods Preserve, 14 species were selected for monitoring deer browse levels (Table 8). Of the 7 highly conservative species, 56% exhibited deer browse, and the 7 moderately conservative species were 65% browsed (Table 3). Overall, 100% of native trees, 83% of native shrubs, 58% of native forbs exhibited browse damage. In total, 61% of all plants sampled were browsed.

Table 8. Plant species and browse data recorded in each plot at McKinley Woods Preserve, sorted by increasing C-value

Plot ID	Scientific Name	Common Name	Plant Type	C Value	# of Plants	# Browsed	% Browsed
MWP-2-2020	Penstemon digitalis	Foxglove Beard Tongue	Forb	4	31	14	45%
MWP-3-2020	Polygonatum biflorum	Smooth Solomon's Seal	Forb	4	9	6	67%
MWP-1-2020	Prenanthes alba	White Lettuce	Forb	5	8	5	63%
MWP-3-2020	Cercis canadensis	Redbud	Tree	5	3	3	100%
MWP-8-2020	Viburnum prunifolium	Black Haw	Shrub	5	12	10	83%
MWP-8-2020	Solidago ulmifolia	Elm-leaved Goldenrod	Forb	5	1	1	100%
MWP-4-2020	Eutrochium purpureum	Purple Joe Pye Weed	Forb	6	21	16	76%
MWP-4-2020	Symphyotrichum shortii	Short's Aster	Forb	7	19	8	42%
MWP-5-2020	Fraxinus quadrangulata	Blue Ash	Tree	8	1	1	100%
MWP-6-2020	Hepatica acutiloba	Sharp-lobed Hepatica	Forb	8	17	9	53%
MWP-7-2020	Actaea pachypoda	White Baneberry	Forb	8	1	1	100%
MWP-8-2020	Scutellaria ovata	Heart-leaved Skullcap	Forb	9	1	1	100%
MWP-3-2020	Lithospermum latifolium	American Gromwell	Forb	10	8	6	75%
MWP-5-2020	Hybanthus concolor	Green Violet	Forb	10	14	8	57%

Schedule of Tasks

Activity	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Submission of IDNR Permit Application											
Train and Certify Volunteers											
Update Deer Management Brochure											
Post Deer Management Program Updates on Web Site											
IDNR Review and Approval of Application and Firing Stations											
Sharpshooter Qualification Testing											
Develop and Mail Notification Letter to Adjacent Landowners											
Implementation of Culling Activities											
Complete Aerial Deer Population Surveys											
Prepare Annual Summary and Recommendations Report											

Proposed Methods and Procedures

The FPDWC sharpshooting program will utilize FPDWC police personnel and qualified volunteers as sharpshooters, field dressers, and for coordinating transportation of the deer carcasses to an authorized meat processing facility. Deer will be taken at bait stations by FPDWC sharpshooters, and all bait stations will adhere to the IDNR regulations for safety. All sharpshooter candidates will be tested and seasonally approved by the IDNR prior to deer program implementation. Each volunteer candidate must be an Illinois resident, possess a valid firearm owner's identification (FOID) card, and pass a verbal interview, background check, drug screening, and practice shooting qualification round conducted by FPDWC police before being considered for testing by the IDNR. The program will not authorize the use of archery equipment, handguns, shotguns, muzzle-loading rifles, etc. Only modern rifles firing 0.223 or 0.308 rounds are proposed for use in the sharpshooting program.

Techniques authorized under deer population control permits require that the resulting deer carcasses are suitable for human consumption. The permittee is required to have all usable deer carcasses processed at an IDNR-approved meat processing facility and to donate the processed venison to a bona fide charitable organization. Unusable deer carcasses must be disposed of in accordance with the Illinois Dead Animal Disposal Act. Since deer collected under deer population control permits must be used for human consumption, the FPDWC's permit season would take place during the cooler late fall and winter months (December to March).

The FPDWC must return all unused tags along with a deer removal summary within 30 days after permit expiration. The removal summary must list the tag number, location, sex, age and physical condition of each animal collected, as well as the total amount of processed venison donated and the names of the charities receiving the donated meat. The FPDWC is responsible for all costs associated with the deer control program.

Staff has reviewed and researched current urban deer programs and recommendations extensively. The FPDWC has set goals of 20-30 deer per square mile based on this research (current literature suggests that pre-settlement numbers of white-tailed deer were approximately 9 per square mile). The target number of deer to be removed from each site (Table 2) was determined based on the stated desired density and the estimated deer population based on the most recent aerial population counts as well as being contingent on the resources available to the FPDWC.

Evaluation of Management Program

The FPDWC initiated its deer management program with a requirement for sharpshooters to remove antlerless individuals only to hasten the population reduction at certain preserves and to allow the public time to adjust to the new program. With the removal of many females from some sites but not enough to reach target population sizes, the District sharpshooters began to experience a significant reduction in efficiency at bait stations during the 2011/2012 culling season as the sex ratio in some preserves with two consecutive years of deer management appeared to have been skewed towards males. The District will continue to implement a restriction for subsequent deer culling seasons; sharpshooters will now attempt the preferential, but not exclusive, removal of does, allowing for the removal of younger males if necessary, to achieve target population sizes. Mature males showing ten or more antler points will not be preferentially targeted.

Staff has conducted deer population counts from a helicopter during most years beginning in 1993 (Appendix A). A lack of persistent snow cover completely prevented deer population counts during the 2011/2012 season, and severely limited the aerial counts to four preserves this year. The snow deficiency also means the surveys that were completed this year should be considered minimum population estimates since deer may not have been visible in patchy areas of snow. The densities were calculated based on the aerials at the beginning of each season and plotted (Figure 1). The densities show a decreasing trend overtime.

Evaluation of the deer management program will be based on documenting the changes in aerial population surveys and changes in vegetation browse over time at sites where management has been conducted. Since browse levels and annual deer density estimates remain high, the initial target range should be re-evaluated in the future to reach a more sustainable deer density of 10-20 deer per square mile. However, with current resources, it is only manageable to remove approximately 200 deer per season, which severely limits the ability to quickly reduce and maintain densities at all the high-quality sites.

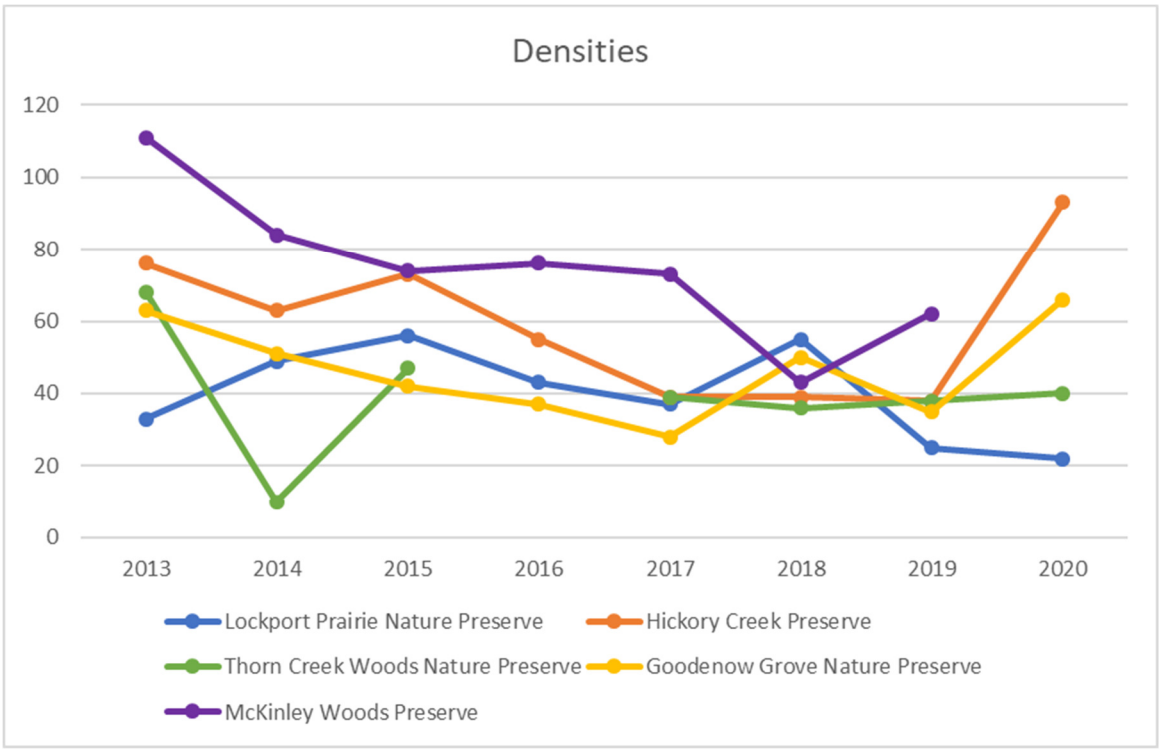

Figure 1. Densities calculated at the beginning of the culling season for each preserve since 2013

Appendix A																								
Area Counted (square miles)*																								
Preserve & Unit	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010/2011**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**	**2019/2020**
Romeoville Prairie Area			0.61			0.61	0.61	0.61	0.66			0.90		0.90		0.90	0.95	0.90	0.90	0.90	0.90	0.90	0.90	
Lockport Prairie Nature Preserve			0.43			0.43	0.43	0.43	0.43			0.56		0.43		0.43	0.43	0.43	0.45	0.49	0.49	0.49	0.49	0.49
McKinley Woods Preserve						0.68	0.68	0.68					0.84	1.11		1.11	1.11	1.11	0.88	0.88	0.88	0.82	0.82	
Hickory Creek Preserve		2.36	2.46	2.36	2.36	2.36	2.36	2.36				3.25		3.25		3.25	3.25	3.25	2.41	2.41	2.41	2.41	2.41	2.41
Raccoon Grove Nature Preserve	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.50		0.50	0.50			0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Thorn Creek Nature Center	4.67	3.52	4.99	4.99	2.67	3.52	3.52	3.52	3.52		4.08		3.52	3.52			2.92	2.92	1.56		1.56	1.56	1.56	1.56
Goodenow Grove Nature Preserve												2.10		1.50		1.50	1.50	1.50	1.39	1.39	1.39	1.39	1.39	1.39
Aerial Count																								
Preserve & Unit	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010/2011**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**	**2019/2020**
Romeoville Prairie Area			18			0	42	30	47			54		28		27	33	8	47	37	31	34	25	
Lockport Prairie Nature Preserve			44			8	25	38	41			29		24		27	14	21	25	21	18	27	12	11
McKinley Woods Preserve						79	66	92					180	122		137	123	93	65	65	64	35	51	
Hickory Creek Preserve		119	159	92	38	94	40	75				155		200		147	248	205	175	132	95	93	91	225
Raccoon Grove Nature Preserve	106	89	60	47	33	44	39	30	54		58		52	0			32	59	20	22	29	34	5	
Thorn Creek Nature Center	237	199	411	320	110	181	174	247	252		327		373	99			200	30	73		59	56	59	63
Goodenow Grove Nature Preserve												169		110		98	94	76	59	52	38	70	49	92
Densities (per square mile)																								
Preserve & Unit	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010/2011**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**	**2019/2020**
Romeoville Prairie Area			30			0	69	49	71			60		31		30	35	9	52	41	34	38	28	
Lockport Prairie Nature Preserve			102			19	58	88	95			52		56		63	33	49	56	43	37	54	25	22
McKinley Woods Preserve						116	97	135					214	110		123	111	84	74	74	73	43	62	
Hickory Creek Preserve		50	65	39	16	40	17	32				48		62		45	76	63	73	55	39	39	38	93
Raccoon Grove Nature Preserve	212	178	120	94	66	88	78	60	108		116		104	0			64	118	40	44	58	68	10	
Thorn Creek Nature Center	51	57	82	64	41	51	49	70	72		80		106	28			68	10	47		39	36	38	40
Goodenow Grove Nature Preserve												80		73		65	63	51	42	37	28	50	35	66