

#### GENERAL

The management we recommend is based on the premise that man is a visitor in a wild area, not the director of events. We think the environment of Wilderness Park should be maintained by nature, but recognize the necessity of using some ecologically sound techniques to neutralize the effects of man's useage of the area.

Management should be directed to the total environment, not to individual features or species. Neither should a single use, e.g. hiking, fishing, or some other form of recreation, be allowed to dominate to the exclusion of other uses. Our plan divides the park into blocks in which certain activities requiring special conditions can be emphasized. Some, e.g. horseback riding, should be confined to these specified areas; others, e.g. hiking, may be conducted throughout the entire area as well as in designated sites. Any activity which detracts from wilderness quality should not be permitted. In case of a conflict of interests, natural values should be preserved first.

As natural areas are used, they become less wild and must be more carefully managed to retain the wildness for which they were originally set aside. As nature is allowed to go free, man's actions must be more rigorously managed. This is why natural areas are such a challenge to their administrators. New skills invariably must be found to deal with new problems. If administrators and users of wilderness have a common objective of preserving wilderness values, all will benefit.

#### PHYSICAL ENVIRONMENT

Since a rich assemblage of plants and animals depends upon a healthy physical environment, management policies should be directed to sustaining a high quality in the physical natural resources. Waters flowing through the park should not be allowed to become contaminated with sewage wastes, biocides applied on the land, or soil erosion residues. Soil erosion should be prevented consistent with operation of a natural area, i.e. visual impact of the control measures should be considered. Ditches or dikes needed in flood control should be concealed where possible.

Refuse should not be allowed to accumulate in the park and all wastes generated in the operation of the park should be disposed of outside of the park in approved waste disposal sites.

No new roads should be constructed and existing ones should be maintained to encourage park visitors to leave their cars and explore the park on foot. Parking areas and turnouts and inviting trails should be constructed in several appropriate sites. Speed limits should be low and rigidly enforced.

Trails are needed to preserve the vegetation and to direct attention to especially interesting places in the park. Only those in high use areas should be hard-surfaced. Motorized vehicles should not be permitted on the trails except for maintenance and emergency uses. Bicycle and horse trails should be separate from hiking trails.

### PLANTS AND ANIMALS

Plants and animals are valuable natural resources which should be protected as carefully as the physical environment. Only those activities consistent with their preservation should be allowed. Prohibited activities in general are: cutting of timber or firewood, picking of wildflowers, berries, fruits, or mushrooms; hunting or fishing or trapping; collecting of any specimens except for approved scientific research programs.

Insect pests should be controlled with their natural predators, not by the use of biocides. If the latter become necessary, e.g. to preserve the population of a plant species in danger of extinction, they should be specific for the target organism and should not be applied in a wholesale manner over the entire area.

Two types of natural processes will have to be controlled because they decimate an area if allowed to go unchecked, i.e. fire and disease outbreaks. Although both are part of the natural scene, each must be controlled in a small area such as Wilderness Park if any park values are to be preserved. Control actions should be minimal to stop the fire or to control the disease outbreak and no more.

### MANAGEMENT PROBLEMS AND THEIR SOLUTION

Natural areas are islands of wildness surrounded by civilization and they soon become refugia for organisms considered detrimental in the surrounding landscape. Weeds, for example, allowed to grow in the natural area, indeed,

an important part in the succession in a natural area, soon spread to adjacent agricultural land. Rabbits and insects and plant diseases increase their populations and migrate from the natural area. It is clear that simple protection of the native biota is not enough in the management of a wild area. The wisdom of Solomon is necessary to resolve the problems which arise.

We believe the solution to most management difficulties is to appoint a Scientific Advisory Board composed of the Park Naturalist, ecologists and other scientists, as well as others from the community expert in the field of natural history. It shall be the duty of this Board to develop guidelines for managing the wildlife and plants of the park and to adjudicate disputes which arise in carrying out these policies.

We believe it is imperative that a Scientific Advisory Board be formed immediately. Decisions are needed at once which will affect Wilderness Park for the next several decades.

It is inevitable that the Administrator of the Park will be subjected to two sets of pressures, i.e. one calling for the greatest preservation of the natural conditions and another demanding greater usage by the public. The two are incompatible and it is unfair to expect the Administrator to bear the brunt of these conflicting demands by being forced to render judgments without the benefit of help from both the Park Board and the Scientific Advisory Committee. Inasmuch as the Park Board is already in existence, we believe that a Scientific Advisory Board should be formed immediately so that decisions on Wilderness Park may be balanced by both viewpoints.

APPENDIX

APPENDIX, EXPLANATION OF VEGETATIONAL SAMPLING  
METHODS EMPLOYED AND METHODS OF CALCULATION OF  
QUANTITATIVE DATA

Belt transects were used in the analysis of the wooded areas, in accordance with standard ecological sampling techniques. A chain graduated in meters was laid on a compass line perpendicular to the woodland, starting at the edge away from the creek and terminating at the creek bank. All trees occurring within 1-meter of this line were recorded as to species and density values calculated. Diameters of the trees at 4½ ft. off the ground (DBH) were recorded, and basal areas of each tree species calculated to determine dominance values. The transect lines were subdivided into 10-meter intervals for the determination of frequency. Relative values for density, dominance, and frequency were calculated and combined into a single Importance Value, which reflects these three somewhat different measures of the importance of the species in the community. The various vegetational measurements are determined according to the following formulas:

$$\text{density} = \frac{\text{number of individuals}}{\text{area sampled}}$$

$$\text{relative density} = \frac{\text{density for a species}}{\text{total density for all species}} \quad \times 100$$

$$\text{dominance} = \frac{\text{total of basal area}}{\text{area sampled}}$$

$$\text{relative dominance} = \frac{\text{dominance for a species}}{\text{total dominance for all species}} \quad \times 100$$

$$\text{frequency} = \frac{\text{number of plots in which species occurs}}{\text{total number of plots sampled}}$$

$$\text{relative frequency} = \frac{\text{frequency value for a species}}{\text{total of frequency values for all species}} \quad \times 100$$

$$\text{Importance Value} = \text{relative density} + \text{relative dominance} + \text{relative frequency}$$

The per cent canopy cover of the different tree species was recorded as a somewhat different assessment of dominance. The length of the chain covered by foliage of trees was measured along each line and the following formulas used in calculation:

dominance or  
cover (as % of ground surface) =  $\frac{\text{total of intercept lengths for a species}}{\text{total transect length}} \times 100$

relative dominance =  $\frac{\text{total for a species}}{\text{total for all species}} \times 100$

At 10-meter intervals along the chain, a 5-meter tape was laid out at right angles. The numbers and kinds of shrubs within 1-meter each side of this line were recorded and densities calculated. Dominance was calculated on the basis of line cover, and frequency on the basis of occurrence within the 5 x 2 meter plots. A 1-meter section of this latter tape was used in the herb calculations. Plants that touched the line (measured at the ground surface) were recorded. Dominance was calculated on the basis of line intercept and frequency on the basis of occurrence. Density was not calculated in this case, since sample plots of known areas were not used.

In the above calculations trees are arbitrarily defined as woody plants greater than 3" in DBH. Shrubs are woody plants less than 3" in DBH or greater than 3' in height. Herbs are all remaining plants whether herbaceous or woody.

Three woodland sites were selected for analysis. They were chosen to exclude unique vegetation types of small extent so that the results would be applicable to many of the other forest areas in Wilderness Park. The data from all transects in particular sample areas were combined. Summations of the vegetational measurements are listed in tables on the following pages. Transect 1-6 passed through both a mixed hardwood and a bur oak stand. The field data was separated so that summary measurements of two different woodland types are reported from this sample area.

Sample Areas:

Mixed Hardwoods: Transects 1-6; NW $\frac{1}{4}$  Sec. 14.  
(large stand)

Mixed Hardwoods: Transects 31-32; NW $\frac{1}{4}$  NE $\frac{1}{4}$  Sec. 36.  
(large stand)

Bur Oak Woodland: Transects 2-5; NW Sec. 14.

Mixed Hardwoods: Transects 7-26; SW Sec. 25, and NE NW Sec. 36.  
(narrow strip along creek bank)

SUMMARY OF TREE DATA<sup>†</sup>  
Mixed Hardwood Stand: Transects 1-6  
(Large Stand)

Species	No. of Indiv.	Density per acre	Relative Density %	* Domin. Sq. Ft. per acre	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Amer. Elm (Living)	27	69.16	35.53	29.57	20.19	0.203	30.25	85.97
Amer. Elm (Dead)	14	35.86	18.42	42.70	29.15	0.139	20.72	68.29
Hackberry	10	25.61	13.16	33.21	22.68	0.114	16.99	52.83
Honey Locust	12	30.74	15.79	11.85	8.09	0.101	15.05	38.93
Black Walnut	8	20.49	10.53	7.72	5.27	0.063	9.39	25.19
Kentucky Coffee Tree	3	7.68	3.95	8.54	5.83	0.025	3.73	13.51
Green Ash	1	2.56	1.31	8.60	5.87	0.013	1.94	9.12
Bur Oak	1	2.56	1.31	4.28	2.92	0.013	1.94	6.17
Totals	76	194.66	100.00%	292.94	100.00%	0.671	100.01%	300.01

\*Based on basal area

†Based on 0.3904 acres

SUMMARY OF TREE CANOPY COVER<sup>†</sup>  
Mixed Hardwood Stand: Transects 1-6  
(Large Stand)

Species	Dominance or cover as % of ground cover	Relative Dominance
American Elm	23.18%	30.52%
Hackberry	12.60%	16.59%
Honey Locust	10.58%	13.93%
Bur Oak	8.21%	10.81%
Black Walnut	7.01%	9.23%
Silver Maple	4.41%	5.80%
White Mulberry	3.37%	4.44%
Green Ash	3.07%	4.04%
Kentucky Coffee Tree	2.39%	3.15%
Boxelder	1.01%	1.33%
Prunus spp.	0.13%	0.17%
Open	24.05%	
Total	100.01%	100.01%

†Based on 790 meters of transect



SUMMARY OF SHRUB DATA<sup>†</sup>  
Mixed Hardwood Stand: Transects 1-6  
(Large Stand)

Species	No. of Indiv. per acre	Density	Relative Density %	* Domin. %	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Snowberry	207	1060.45	57.98	4.66	19.53	0.241	23.16	100.67
Amer. Elm	27	138.32	7.56	7.32	30.68	0.215	20.73	58.97
Gooseberry	55	281.76	15.41	3.62	15.17	0.152	14.63	45.21
Hackberry	37	189.55	10.36	2.99	12.53	0.190	18.30	41.19
White Mulberry	7	35.86	1.96	1.01	4.23	0.063	6.10	12.29
Black Walnut	4	20.49	1.12	1.59	6.66	0.038	3.66	11.44
Green Ash	7	35.86	1.96	0.48	2.01	0.063	6.10	10.07
Prunus spp.	8	40.98	2.24	1.22	5.11	0.013	1.22	8.57
Kentucky Coffee Tree	1	5.12	0.28	0.63	2.64	0.013	1.22	4.14
Elderberry	1	5.12	0.28	0.18	0.75	0.013	1.22	2.25
Silver Maple	1	5.12	0.28	0.13	0.54	0.013	1.22	2.04
Bur Oak	1	5.12	0.28	0.03	0.13	0.013	1.22	1.63
Honey Locust	1	5.12	0.28	0.00	0.00	0.013	1.22	1.50
Totals	357	1828.87	99.99%	23.86	99.98%	1.040	100.00%	299.97

\*Based on % of ground cover

†Based on 0.1952 acres

SUMMARY OF HERB DATA<sup>+</sup>  
Mixed Hardwood Stand: Transects 1-6  
(Large Stand)

Species	Dominance or cover as % of ground surface	Relative Dominance	Frequency	Relative Frequency
Wildrye	0.380	26.62	0.551	27.87
Woodnettle	0.362	25.36	0.500	25.29
Stinging nettle	0.119	8.36	0.167	8.45
Wingstem	0.112	7.82	0.090	4.55
Unidentified sedge	0.106	7.46	0.205	10.37
Black snakeroot	0.085	5.94	0.013	0.66
Smooth brome	0.055	3.87	0.026	1.32
Snowberry	0.045	3.15	0.064	3.24
Muhly	0.036	2.52	0.090	4.55
Unidentified grasses	0.036	2.52	0.064	3.24
Virginia stickseed	0.028	1.98	0.026	1.32
Virginia creeper	0.013	0.90	0.013	0.66
Reed canarygrass	0.013	0.90	0.013	0.66
Violets	0.012	0.81	0.064	3.24
Bur oak seedlings	0.009	0.63	0.013	0.66
Cutleaf coneflower	0.005	0.36	0.013	0.66
Gooseberry seedlings	0.004	0.27	0.013	0.66
American germander	0.004	0.27	0.013	0.66
Tickclover	0.001	0.09	0.013	0.66
Unidentified herb	0.001	0.09	0.013	0.66
Bristly greenbriar	0.001	0.09	0.013	0.66
Totals	1.427%	100.01%	1.977	100.04%

<sup>+</sup>Based on 78 meters of transect

SUMMARY OF TREE DATA<sup>†</sup>  
Mixed Hardwood Stand: Transects 31 & 32  
(Large Stand)

Species	No. of Indiv.	Density per acre	Relative Density %	* Domin. Sq. Ft. per acre	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Amer. Elm (Living)	12	52.79	34.28	54.48	43.60	0.217	34.44	112.32
Hackberry	5	22.00	14.29	35.03	28.04	0.087	13.81	56.14
Amer. Elm (Dead)	3	13.20	8.57	14.53	11.63	0.065	10.32	30.52
White Mulberry	6	26.40	17.14	3.49	2.79	0.065	10.32	30.25
Boxelder	3	13.20	8.57	9.59	7.67	0.065	10.32	26.56
Unknown spp. Dead Trees	3	13.20	8.57	0.97	0.78	0.065	10.32	19.67
Black Walnut	2	8.80	5.71	6.51	5.21	0.043	6.83	17.75
Mulberry (Dead)	1	4.40	2.86	0.36	0.29	0.023	3.65	6.80
Totals	35	153.99	99.99%	249.92	100.01%	0.630	100.01%	300.01

\*Based on basal area  
<sup>†</sup>Based on 0.2273 acres

SUMMARY OF TREE CANOPY COVER<sup>+</sup>  
Mixed Hardwood Stand: Transects 31 & 32  
(Large Stand)

Species	Dominance or cover as % of ground cover	Relative Dominance
American Elm	29.67%	37.46%
Hackberry	12.20%	15.40%
Honey Locust	10.27%	12.97%
Black Walnut	8.88%	11.21%
Boxelder	4.75%	6.00%
Bur Oak	4.60%	5.81%
White Mulberry	4.49%	5.67%
Hickory	2.35%	2.97%
Kentucky Coffee Tree	1.03%	1.30%
Osage Orange	0.78%	0.98%
Hawthorn	0.09%	0.11%
Green Ash	0.08%	0.10%
Open	<u>20.82%</u>	
Total	100.01%	99.98%

<sup>+</sup>Based on 460 meters of transect

SUMMARY OF SHRUB DATA<sup>+</sup>  
Mixed Hardwood Stand: Transects 31 & 32  
(Large Stand)

Species	No. of Indiv.	Density per acre	Relative Density %	* Domin. %	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Boxelder	4	35.18	20.00	1.57	41.98	0.087	30.79	92.77
Snowberry	9	79.16	45.00	0.09	2.41	0.087	30.79	78.20
Amer. Elm	2	17.59	10.00	1.26	33.69	0.044	15.39	59.08
White Mulberry	1	8.80	5.00	0.43	11.50	0.022	7.68	24.18
Gooseberry	3	26.39	15.00	0.00	0.00	0.022	7.68	22.68
Green Ash	1	8.80	5.00	0.13	3.48	0.022	7.68	16.16
Osage Orange	-	0.00	0.00	0.26	6.95	0.000	0.00	6.95
Totals	20	175.92	100.00%	3.74	100.01%	0.284	100.01%	300.02

\*Based on % of ground cover

<sup>+</sup>Based on 0.1137 acres

SUMMARY OF HERB DATA<sup>+</sup>  
Mixed Hardwood Stand: Transects 31 & 32  
(Large Stand)

Species	Dominance or cover as % of ground surface	Relative Dominance %	Frequency	Relative Frequency %
Woodnettle	0.535	61.00	0.913	59.95
Unidentified grass	0.311	35.46	0.457	30.01
Stinging nettle	0.013	1.48	0.022	1.44
Am. Elm seedlings	0.004	0.46	0.043	2.82
Violets	0.004	0.46	0.022	1.44
Unidentified herb	0.004	0.46	0.022	1.44
Lambsquarters	0.004	0.46	0.022	1.44
Virginia creeper	0.002	0.23	0.022	1.44
Totals	0.877%	100.01%	1.523	99.98%

<sup>+</sup>Based on 46 meters of transect

SUMMARY OF TREE DATA<sup>+</sup>  
Mixed Hardwood Stand: Transects 7-26  
(Narrow strip paralleling creek)

Species	No. of Indiv.	Density per acre	Relative Density %	Domin. Sq. Ft. per acre	Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Amer. Elm (Dead)	28	93.83	28.00	66.63	43.81	0.300	27.67	99.48
Amer. Elm (living)	35	117.29	35.00	28.62	18.82	0.350	32.29	86.11
Boxelder	21	70.38	21.00	40.39	26.56	0.167	15.41	62.97
Green Ash (living)	6	20.11	6.00	9.26	6.09	0.100	9.23	21.32
Hackberry White	4	13.40	4.00	2.41	1.59	0.067	6.18	11.77
Mulberry	2	6.70	2.00	1.84	1.21	0.033	3.04	6.25
Green Ash (Dead)	2	6.70	2.00	1.42	0.94	0.033	3.04	5.98
Honey Locust	1	3.35	1.00	1.11	0.73	0.017	1.57	3.30
Bur Oak	1	3.35	1.00	0.39	0.25	0.017	1.57	2.82
Totals	100	335.11	100.00%	152.07	100.00%	1.084	100.00%	300.00

\*Based on basal area

<sup>+</sup>Based on 0.2984 acres

SUMMARY OF TREE CANOPY COVER<sup>+</sup>  
Mixed Hardwood Stand: Transects 7-26  
(Narrow strip paralleling creek)

Species	Dominance or cover as % of ground surface	Relative Dominance
American Elm	29.79%	40.04%
Boxelder	20.26%	27.23%
Green Ash	13.99%	18.80%
Honey Locust	4.85%	6.51%
White Mulberry	2.65%	3.56%
Hackberry	1.68%	2.25%
Bur Oak	0.67%	0.90%
Prunus spp.	0.28%	0.37%
Hawthorn	0.17%	0.22%
Black Walnut	0.05%	0.06%
Open	<u>25.60%</u>	
Totals	99.99%	99.94%

<sup>+</sup>Based on 604 meters of transect

SUMMARY OF SHRUB DATA<sup>+</sup>  
Mixed Hardwood Stand: Transects 7-26  
(Narrow strip paralleling creek)

Species	No. of Indiv.	Density per acre	Relative Density %	* Domin. %	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Boxelder	30	195.82	26.32	4.43	32.51	0.328	33.33	92.16
Amer. Elm	18	117.49	15.80	4.10	30.02	0.197	19.99	65.81
Hackberry	11	71.80	9.65	2.15	15.72	0.115	11.67	37.04
Gooseberry	16	104.44	14.04	0.55	4.02	0.098	10.00	28.06
Green Ash	12	78.33	10.53	0.47	3.43	0.115	11.67	25.63
Prunus spp.	17	110.96	14.91	0.89	6.50	0.016	1.67	23.08
Snowberry	4	26.11	3.51	0.10	0.71	0.049	5.00	9.22
Hawthorn	3	19.58	2.63	0.39	2.84	0.016	1.67	7.14
White Mulberry	1	6.53	0.88	0.39	2.84	0.016	1.67	5.39
Honey Locust	1	6.53	0.88	0.19	1.42	0.016	1.67	3.97
Kentucky Coffee Tree	1	6.53	0.88	0.00	0.00	0.016	1.67	2.55
Totals	114	744.12	100.03%	13.66	100.01%	0.982	100.01%	300.05

\*Based on % of ground cover

<sup>+</sup>Based on 0.1532 acres

SUMMARY OF HERB DATA<sup>+</sup>  
Mixed Hardwood Stand: Transects 7-26  
(Narrow strip paralleling creek)

Species	Dominance or cover as % of ground surface	Relative Dominance %	Frequency	Relative Frequency %
Woodnettle	0.408	44.55	0.597	36.29
Stinging nettle	0.079	8.62	0.081	4.92
Wildrye	0.079	8.62	0.210	12.77
Reed canarygrass	0.077	8.45	0.065	3.95
Unidentified sedge	0.052	5.63	0.129	7.84
Cutleaf coneflower	0.040	4.40	0.032	1.95
Unidentified herbs	0.034	3.70	0.113	6.87
White snakeroot	0.026	2.82	0.065	3.95
Violets	0.021	2.29	0.097	5.90
Unidentified grasses	0.016	1.76	0.016	0.97
Wingstem	0.015	1.58	0.032	1.95
Am. Elm seedlings	0.013	1.41	0.048	2.92
Hackberry seedlings	0.013	1.41	0.016	0.97
Tall bellflower	0.013	1.41	0.016	0.97
Giant ragweed	0.011	1.23	0.016	0.97
Muhly	0.010	1.06	0.048	2.92
Bristly greenbriar	0.005	0.52	0.048	2.92
Gooseberry seedlings	0.005	0.52	0.016	0.97
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Totals	0.917%	99.98%	1.645	100.00%

<sup>+</sup>Based on 62 meters of transect



SUMMARY OF TREE DATA<sup>+</sup>  
Bur Oak Stand: Transects 2-5

Species	No. of Indiv.	Density per acre	Relative Density %	* Domin. Sq. Ft. per acre	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Bur Oak	25	74.96	65.78	148.35	76.97	0.261	58.13	200.88
Amer. Elm (Living)	7	20.99	18.42	23.70	12.30	0.101	22.49	53.21
Amer. Elm (Dead)	3	9.00	7.90	16.85	8.74	0.043	9.58	26.22
Honey Locust	2	6.00	5.27	2.92	1.51	0.029	6.46	13.24
White Mulberry	1	3.00	2.63	0.92	0.48	0.015	3.34	6.45
Totals	38	113.95	100.00%	192.74	100.00%	0.449	100.00%	300.00

\*Based on basal areas  
<sup>+</sup>Based on 0.3335 acres

SUMMARY OF TREE CANOPY COVER<sup>+</sup>  
Bur Oak Stand: Transects 2-5

Species	Dominance or cover as % of ground surface	Relative Dominance
Bur Oak	82.62%	90.93%
American Elm	5.43%	5.98%
Honey Locust	0.96%	1.06%
Osage Orange	0.51%	0.56%
White Mulberry	0.41%	0.45%
Black Walnut	0.39%	0.43%
Hackberry	0.29%	0.32%
Silver Maple	0.25%	0.28%
Open	9.14%	
Total	100.00%	100.01%

<sup>+</sup>Based on 690 meters of transect

SUMMARY OF SHRUB DATA<sup>†</sup>  
Bur Oak Stand: Transects 2-5

Species	No. of Indiv.	Density per acre	Relative Density %	* Domin. %	* Relative Dominance %	Frequency	Relative Frequency %	Importance Value
Snowberry	552	3237.54	57.80	12.09	34.77	0.594	25.64	118.21
Gooseberry	139	815.25	14.55	6.20	17.83	0.507	21.88	54.26
Amer. Elm	49	287.39	5.13	7.88	22.66	0.362	15.62	43.41
Hackberry	35	205.28	3.66	4.32	12.42	0.290	12.52	28.60
Raspberry	132	774.19	13.82	2.74	7.88	0.058	2.50	24.20
Green Ash	37	217.01	3.87	0.41	1.18	0.348	15.02	20.07
Boxelder	4	23.46	0.42	0.17	0.49	0.058	2.50	3.41
White Mulberry	3	17.60	0.31	0.35	1.01	0.043	1.86	3.18
Black Walnut	2	11.73	0.21	0.12	0.35	0.029	1.25	1.81
Prunus spp.	-	0.00	0.00	0.49	1.41	0.000	0.00	1.41
Elderberry	1	5.87	0.10	0.00	0.00	0.014	0.60	0.70
Honey Locust	1	5.87	0.10	0.00	0.00	0.014	0.60	0.70
Totals	955	5601.59	99.97%	34.77	100.00%	2.317	99.99%	299.96

\*Based on % of ground cover

<sup>†</sup>Based on 0.1705 acres

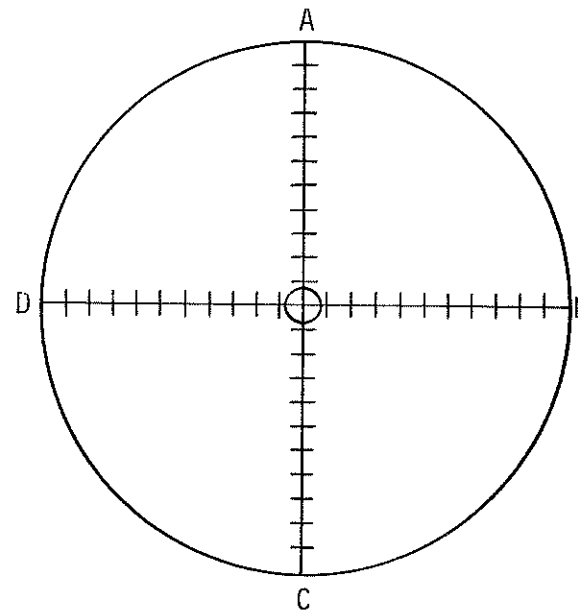
SUMMARY OF HERB DATA<sup>+</sup>  
Bur Oak Stand: Transects 2-5

Species	Dominance or cover as % of ground surface	Relative Dominance %	Frequency	Relative Frequency %
Woodnettle	0.341	31.93	0.449	22.98
Wildrye	0.109	10.19	0.246	12.59
Violets	0.090	8.43	0.203	10.39
Snowberry	0.088	8.29	0.174	8.90
Stinging nettle	0.077	7.20	0.072	3.68
Unidentified sedge	0.074	6.93	0.174	8.90
Wingstem	0.058	5.44	0.072	3.68
Gooseberry Seedlings	0.052	4.89	0.101	5.17
Am. Elm seedlings	0.042	3.94	0.043	2.20
Bur oak seedlings	0.041	3.81	0.118	6.04
Muhly	0.025	2.31	0.058	2.97
Virginia creeper	0.016	1.49	0.029	1.48
Hackberry seedlings	0.015	1.36	0.014	0.72
Tickclover	0.009	0.82	0.058	2.97
Unidentified herbs	0.009	0.82	0.043	2.20
Unidentified grasses	0.007	0.68	0.029	1.48
Wild strawberry	0.006	0.54	0.014	0.72
Woodsorrel	0.004	0.40	0.029	1.48
Raspberry	0.003	0.27	0.014	0.72
Black snakeroot	0.003	0.27	0.014	0.72
Totals	1.069%	100.01%	1.954	99.99%

<sup>+</sup>Based on 69 meters of transect

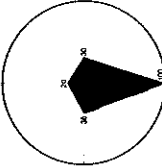
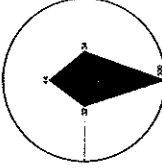
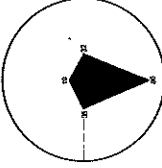
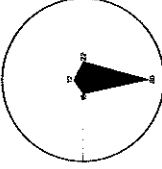
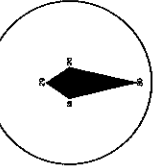
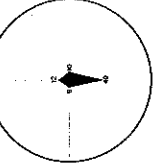
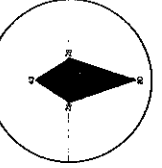
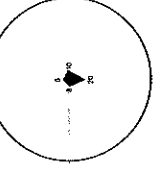
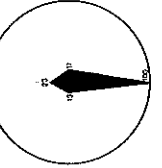
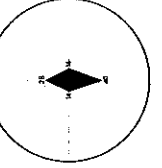
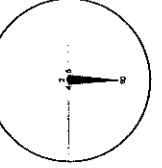

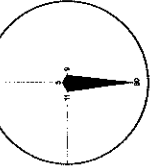
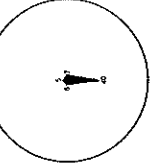


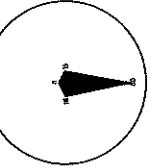


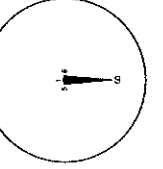

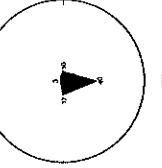
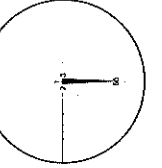


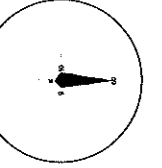
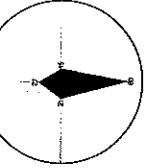

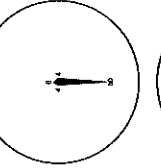


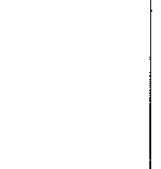
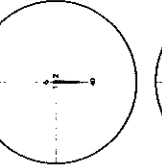

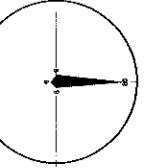

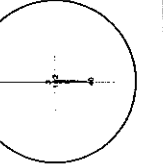


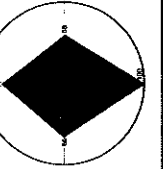
### Phytographs of Tree Species for Forest Types

The data concerning the community attributes of the tree species may be portrayed graphically by means of phytographs in which percentages are plotted on each of four radii as follows:



- OA = % Dominance
- OB = % Frequency
- OC = % Size Classes
- OD = % Density

In the following phytographs, the larger the area of the polygon, the more important the species is in the forest stands. Thus, bur oak is clearly the dominant in the bur oak type and of no importance elsewhere in the park, while American elm is a dominant in all forest types.

Species	Sites		Mixed Creek Bank Forest	Bur Oak Forest
	A	B		
Living American Elm				
Dead American Elm				
Hackberry				
Black Walnut				
Honey Locust				
White Mulberry				
Boxelder				
Kentucky Coffee Tree				
Green Ash				
Bur Oak				

WILDERNESS PARK AMPHIBIANS AND REPTILES

Ambystoma tigrinum  
Scaphiopus bombifrons  
Bufo cognatus  
Bufo woodhousei woodhousei  
Acris crepitans  
Hyla versicolor  
Pseudacris triseriata  
Rana catesbeiana  
Rana pipiens

Tiger salamander  
Plains spadefoot toad  
Great Plains toad  
Rocky Mountain toad  
Cricket frog  
Grey treefrog  
Striped chorus frog  
Bullfrog  
Leopard or meadow frog

Eumeces septentrionalis  
Cnemidophorus sexlineatus

Prairie skink  
Six-lined whiptail (no records for Lancaster County)

Heterodon platyrhinos  
Coluber constrictor  
Pituophis catenifer  
Lampropeltis calligaster  
Lampropeltis getulus  
Lampropeltis triangulum  
Natrix sipedon  
Regina grahamii  
Storeria dekayi  
Thamnophis proximus  
Thamnophis radix  
Thamnophis sirtalis  
Tropidoclonion lineatum  
Sistrurus catenatus

Eastern hog-nosed snake  
Blue racer  
Bull snake  
Prairie kingsnake  
Common kingsnake  
Milksnake  
Northern watersnake  
Graham's watersnake  
Little brown snake (or Dekay's snake)  
Western Ribbon snake  
Plains garter snake  
Common garter snake (Red-sided)  
Lined snake  
Western Massasauga Rattlesnake

Chelydra serpentina  
Trionyx mutica  
Trionyx spinifera  
Chrysemys picta

Snapping turtle  
Smooth softshell turtle  
Spiny softshell turtle  
Painted turtle

Note: *Diadophis punctatus*, Ringneck snake, may have been expatriated in Lancaster County; however, if it has survived, the Wilderness Park would be the sort of place it could survive.

Wilderness Park serves as an essential refugium for the following species (because of habitat requirements):

Hyla versicolor  
Heterodon platyrhinos  
Sistrurus catenatus

CHECK LIST OF BIRDS OF WILDERNESS PARK<sup>1</sup>

Hérons

Great Blue Heron	Common migrant
Green Heron	Common migrant and summer resident

Waterfowl

Mallard	Abundant migrant
Gadwall	Common migrant
Pintail	Abundant migrant
Green-winged Teal	Abundant migrant
Blue-winged Teal	Abundant migrant
American Widgeon (Baldpate)	Common migrant
Shoveller	Common migrant
Wood Duck	Uncommon migrant
Ring-necked Duck	Uncommon migrant
Hooded Merganser	Occasional migrant

Hawks

Sharp-shinned Hawk	Uncommon migrant
Cooper's Hawk	Uncommon resident
Red-tailed Hawk	Common resident
Red-shouldered Hawk	Uncommon resident
Swainson's Hawk	Common migrant
Broad-winged Hawk	Uncommon migrant
Rough-legged Hawk	Uncommon migrant & winter resident
Marsh Hawk	Common resident
Osprey	Uncommon migrant
Peregrine Falcon	Occasional migrant
Pigeon Hawk	Uncommon migrant
Sparrow Hawk	Common resident

Bobwhite	Common resident
Ring-necked Pheasant	Common resident

Shorebirds

Semipalmated Plover	Uncommon migrant
Piping Plover	Uncommon migrant
Killdeer	Abundant migrant & summer resident
American Golden Plover	Uncommon migrant

<sup>1</sup>Based upon sightings in the Lincoln Area within comparable habitats, but not compiled for actual sightings within Wilderness Park.

Black-bellied Plover	Uncommon migrant
Common Snipe	Common migrant
Upland Plover	Uncommon migrant
Spotted Sandpiper	Summer resident
Solitary Sandpiper	Common migrant
Greater Yellow-legs	Common migrant
Lesser Yellow-legs	Common migrant
Pectoral Sandpiper	Abundant migrant
White-rumped Sandpiper	Common migrant
Baird's Sandpiper	Common migrant
Least Sandpiper	Common migrant
Short-billed Dowitcher	Uncommon migrant
Long-billed Dowitcher	Uncommon migrant
Stilt Sandpiper	Common migrant
Semipalmated Sandpiper	Common migrant
Wilson's Phalarope	Common migrant

Gulls

Herring Gull	Uncommon migrant
Ring-billed Gull	Common migrant
Franklin's Gull	Abundant migrant
Forster's Tern	Common migrant
Black Tern	Abundant migrant

Doves

Rock Dove	Abundant Resident
Mourning Dove	Abundant migrant & summer resident

Cuckoos

Yellow-billed Cuckoo	Common migrant & summer resident
Black-billed Cuckoo	Uncommon migrant & summer resident

Owls

Barn Owl	Uncommon resident
Screech Owl	Common resident
Great Horned Owl	Common resident
Barred Owl	Uncommon resident
Long-eared Owl	Uncommon resident
Short-eared Owl	Uncommon resident



Common Nighthawk	Abundant migrant & summer resident
Chimney Swift	Abundant migrant & summer resident
Ruby-throated Hummingbird	Common migrant & summer resident
Belted Kingfisher	Common migrant & summer resident

Woodpeckers

Yellow-shafted Flicker	Common resident
Red-shafted Flicker	Occasional resident
Red-bellied Woodpecker	Common resident
Red-headed Woodpecker	Common resident
Yellow-bellied Sapsucker	Uncommon migrant
Hairy Woodpecker	Common resident
Downy Woodpecker	Common resident

Flycatchers

Eastern Kingbird	Common migrant & summer resident
Western Kingbird	Common migrant & summer resident
Great Crested Flycatcher	Common migrant
Eastern Phoebe	Common migrant & summer resident
Yellow-bellied Flycatcher	Uncommon migrant
Trail's Flycatcher	Common migrant & summer resident
Least Flycatcher	Common migrant & occasional summer resident
Eastern Wood Pewee	Common migrant & summer resident

Horned Lark	Common resident
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Swallows

Tree Swallow	Common migrant & uncommon summer resident
Bank Swallow	Common migrant & summer resident
Rough-winged Swallow	Common migrant & summer resident
Barn Swallow	Common migrant & summer resident
Cliff Swallow	Common migrant & summer resident
Purple Martin	Common migrant & summer resident

Jays

Blue Jay	Common resident
Black-billed Magpie	Occasional resident
Common Crow	Abundant resident

Black-capped Chickadee  
Tufted Titmouse

Common resident  
Uncommon resident

White-breasted Nuthatch  
Red-breasted Nuthatch

Uncommon resident  
Uncommon winter visitor

Brown-Creeper

Common winter visitor

Wrens

House Wren  
Carolina Wren

Common migrant & summer resident  
Uncommon migrant & summer resident

Mockingbird  
Catbird  
Brown Thrasher

Uncommon migrant & summer resident  
Common migrant & summer resident  
Common migrant & summer resident

Thrushes

Robin  
Wood Thrush  
Hermit Thrush  
Swainson's Thrush  
Gray-cheeked Thrush  
Veery  
Eastern Bluebird

Abundant migrant & summer resident  
Common migrant & summer resident  
Uncommon migrant  
Common migrant  
Common migrant  
Uncommon migrant  
Common migrant & summer resident

Blue-gray Gnatcatcher  
Golden-crowned Kinglet  
Ruby-crowned Kinglet

Uncommon migrant & summer resident  
Common migrant  
Uncommon migrant

Pipits

Water Pipit  
Sprague's Pipit

Common migrant  
Uncommon migrant

Bohemian Waxwing  
Cedar Waxwing

Occasional winter visitor  
Common migrant & summer resident

Shrikes

Northern Shrike  
Loggerhead Shrike

Uncommon winter visitor  
Common migrant & summer resident

Starling

Abundant resident

### Vireos

White-eyed Vireo	Uncommon migrant & summer resident
Bell's Vireo	Common migrant & summer resident
Yellow-throated Vireo	Uncommon migrant & summer resident
Solitary Vireo	Uncommon migrant
Red-eyed Vireo	Common migrant & summer resident
Philadelphia Vireo	Uncommon migrant
Warbling Vireo	Common migrant & summer resident

### Warblers

Black & White Warbler	Common migrant
Prothonotary Warbler	Uncommon migrant
Tennessee Warbler	Common migrant
Orange-crowned Warbler	Common migrant
Nashville Warbler	Common migrant
Yellow Warbler	Common migrant & summer resident
Magnolia Warbler	Uncommon migrant
Myrtle Warbler	Common migrant
Black-throated Green Warbler	Uncommon migrant
Cerulean Warbler	Uncommon migrant & summer resident
Blackburnian Warbler	Uncommon migrant
Chestnut-sided Warbler	Uncommon migrant
Bay-breasted Warbler	Uncommon migrant
Blackpoll Warbler	Common migrant
Palm Warbler	Uncommon migrant
Ovenbird	Common migrant & summer resident
Northern Waterthrush	Common migrant
Connecticut Warbler	Uncommon migrant
Mourning Warbler	Uncommon migrant
Yellowthroat	Common migrant & summer resident
Yellow-breasted Chat	Common migrant & summer resident
Wilson's Warbler	Uncommon migrant
American Redstart	Common migrant & summer resident

House Sparrow

Abundant resident

### Icterids

Bobolink	Common migrant & summer resident
Eastern Meadowlark	Common migrant & summer resident
Western Meadowlark	Common migrant & summer resident
Red-winged Blackbird	Abundant migrant & summer resident
Yellow-headed Blackbird	Uncommon migrant

Orchard Oriole	Common migrant & summer resident
Baltimore Oriole	Common migrant & summer resident
Rusty Blackbird	Common migrant
Brewer's Blackbird	Common migrant
Common Grackle	Abundant migrant & summer resident
Brown-headed Cowbird	Common migrant & summer resident

Scarlet Tanager	Common migrant & summer resident
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Finches

Cardinal	Common resident
Rose-breasted Grosbeak	Common migrant & summer resident
Blue Grosbeak	Common migrant & summer resident
Indigo Bunting	Uncommon migrant & summer resident
Dickcissel	Abundant migrant & summer resident
Pine Siskin	Common migrant & winter visitor
American Goldfinch	Common resident
Red Crossbill	Uncommon winter visitor
Rufous-sided Towhee	Common migrant & summer resident
Savannah Sparrow	Common migrant
Grasshopper Sparrow	Common migrant & summer resident
Leconte's Sparrow	Common migrant
Henslow's Sparrow	Uncommon migrant
Vesper Sparrow	Common migrant & summer resident
Lark Sparrow	Common migrant & summer resident
Slate-colored Junco	Common winter resident
Tree Sparrow	Common winter resident
Chipping Sparrow	Common migrant & summer resident
Clay-colored Sparrow	Common migrant
Field Sparrow	Common migrant & summer resident
Harris' Sparrow	Common migrant
White-crowned Sparrow	Common migrant
White-throated Sparrow	Common migrant
Lincoln's Sparrow	Common migrant
Swamp Sparrow	Common migrant
Song Sparrow	Common migrant & summer resident
Lapland Longspur	Common migrant & winter visitor
Chestnut-collared Longspur	Uncommon migrant

SCIENTIFIC AND COMMON NAMES OF MAMMALS  
OF WILDERNESS PARK

<u>SCIENTIFIC</u>	<u>COMMON</u>
<u>Order Marsupialis</u>	
Didelphis marsupialis	Opossum
<u>Order Insectivora</u>	
Sorex cinereus	Masked shrew
Blarina brevicauda	Short-tailed shrew
Cryototis parva	Least shrew
Scalopus aquaticus	Eastern mole
<u>Order Chiroptera</u>	
Myotis lucifugus	Little brown myotis
Myotis keenii	Keen's myotis
Myotis subulatus	Small-footed myotis
Lasionycteris noctivagans	Silver-haired bat
Pipistrellus subflavus	Eastern Pipistrelle
Eptesicus fuscus	Big brown bat
Lasiurus borealis	Red bat
Lasiurus cinereus	Hoary bat
<u>Order Lagomorpha</u>	
Lepus californicus	Black-tailed jackrabbit
Sylvilagus floridanus	Eastern cottontail
<u>Order Rodentia</u>	
Sciurus niger	Fox squirrel
Marmota monax	Woodchuck
Spermophilus tridecemlineatus	Thirteen-lined ground squirrel
Spermophilus franklini	Franklin's ground squirrel
Geomys bursarius	Plains pocket gopher
Perognathus flavescens	Plains pocket mouse
Perognathus hispidus	Hispid pocket mouse
Castor canadensis	Beaver
Reithrodontomys montanus	Plains harvest mouse
Reithrodontomys megalotis	Western harvest mouse
Peromyscus maniculatus	Deer mouse

Peromyscus leucopus  
Onychomys leucogaster  
Synaptomys cooperi  
Ondatra zibethicus  
Microtus pennsylvanicus  
Microtus ochrogaster  
Rattus norvegicus  
Mus musculus  
Zapus hudsonius

White-footed mouse  
Northern grasshopper mouse  
Southern bog lemming  
Muskrat  
Meadow vole  
Prairie vole  
Norway rat  
House mouse  
Meadow jumping mouse

Order Carnivora

Canis latrans  
Vulpes fulva  
Urocyon cinerevargenteus  
Procyon lotor  
Mustela rixosa  
Mustela frenata  
Mustela vison  
Taxidea taxus  
Mephitis mephitis  
Spilogale putorius

Coyote  
Red fox  
Gray fox  
Raccoon  
Least weasel  
Long-tailed weasel  
Mink  
Badger  
Striped skunk  
Eastern spotted skunk

Order Artiodactyla

Odocoileus virginianus

White-tailed deer

CHECK LIST OF COMMON PLANTS OF WILDERNESS PARK

Trees

Acer negundo L.	boxelder
Acer saccharinum L.	silver maple
Celtis occidentalis L.	common hackberry
Fraxinus pensylvanica Marsh.	green ash
Gleditsia triacanthos L.	common honeylocust
Gymnocladus dioica (L.) K. Koch	Kentucky coffeetree
Juglans nigra L.	black walnut
Juniperus virginiana L.	Eastern redcedar
Morus rubra L.	red mulberry
Populus deltoides Bartr.	eastern cottonwood
Quercus macrocarpa Michx.	bur oak
Salix amygdaloides Anderss.	peachleaf willow
Salix nigra Marsh.	black willow
Ulmus americana L.	American elm
Ulmus pumila L.	Siberian elm
Ulmus rubra Muhl.	slippery elm

Shrubs and Vines

Amelanchier arborea Fern.	shadblow serviceberry
Artemisia frigida Willd.	fringed sagewort
Celastrus scandens L.	American bittersweet
Clematis sp.	clematis
Cornus drummondii C.A. Meyer	roughleaf dogwood
Cornus stolonifera Michx.	redosier dogwood
Corylus americana Marsh.	American hazelnut
Lonicera sp.	honeysuckle
Lycium halimifolium Mill.	common matrimony vine
Malus sp.	apple
Parthenocissus quinquefolia (L.) Planch.	Virginia creeper
Prunus americana Marsh.	American plum
Prunus virginiana L.	common chokecherry
Rhamnus cathartica L.	European buckthorn
Rhus typhina L.	staghorn sumac
Rhusradicans L.	poisonivy
Ribes sp.	gooseberry
Rosa sp.	rose

Rubus sp.  
Salix interior Rowlee  
Sambucus canadensis L.  
Smilax hispida Muhl.  
Symphoricarpos albus (L.) Blake  
Symphoricarpos orbiculatus Moench  
Vitis sp.  
Zanthoxylum americanum Mill.

blackberry  
sandbar willow  
American elderberry  
bristly greenbriar  
common snowberry  
buckbrush  
grape  
common pricklyash

HERBS

Grasses

Andropogon gerardi Vitman  
Andropogon scoparius Michx.  
Aristida basiramea Engelm.  
Avena fatua L.  
Bouteloua curtipendula (Michx.)  
Torr.  
Bromus inermis Leyss  
Bromus sp.  
Bromus tectorum L.  
Calamagrostis canadensis (Michx.)  
Beauv.  
Cenchrus pauciflorus Benth.  
Chloris verticillata Nutt.  
Dactylis glomerata L.  
Digitaria sanguinalis (L.) Scop.  
Echinochloa crusgalli (L.) Beauv.  
Elymus canadensis L.  
Eragrostis capillaris (L.) Nees  
Eragrostis sp.  
Eueusine indica (L.) Gaertn.  
Hordeum jubatum L.  
Koeleria cristata (L.) Pers.  
Leptoloma cognatum (Schult.)  
Chase  
Muhlenbergia sp.  
Panicum capillare L.  
Panicum leibergii (Vasey)  
Scribn.  
Panicum sp.  
Phalaris arundinacea L.  
Phleum pratense L.  
Phragmites communis Trin.

big bluestem  
little bluestem  
forktip threeawn  
wild oats  
  
sideoats grama  
smooth brome  
brome  
downy brome  
  
bluejoint reedgrass  
sandbur  
windmillgrass  
orchardgrass  
hairy crabgrass  
barnyardgrass  
Canada wildrye  
lacegrass  
lovegrass  
goosegrass  
foxtail barley  
prairie junegrass  
  
fall witchgrass  
muhly  
common witchgrass  
  
Leiberg panicum  
panicum  
reed canarygrass  
timothy  
common reed



Poa spp.  
Setaria lutescens (Weigel) Hubb.  
Sorghastrum nutans (L.) Nash  
Spartina pectinata Link

bluegrass  
yellow bristlegrass  
Indiangrass  
prairie cordgrass

Other Monocots

Alisma subcordatum Raf.  
Allium sp.  
Asparagus officinalis L.  
Carex spp.  
Eleocharis spp.  
Juncus spp.  
Sagittaria latifolia Willd.  
Scirpus spp.  
Typha latifolia L.

waterplantain  
onion  
asparagus  
sedge  
spikesedge  
rush  
common arrowhead  
bulrush  
common cattail

Dicots

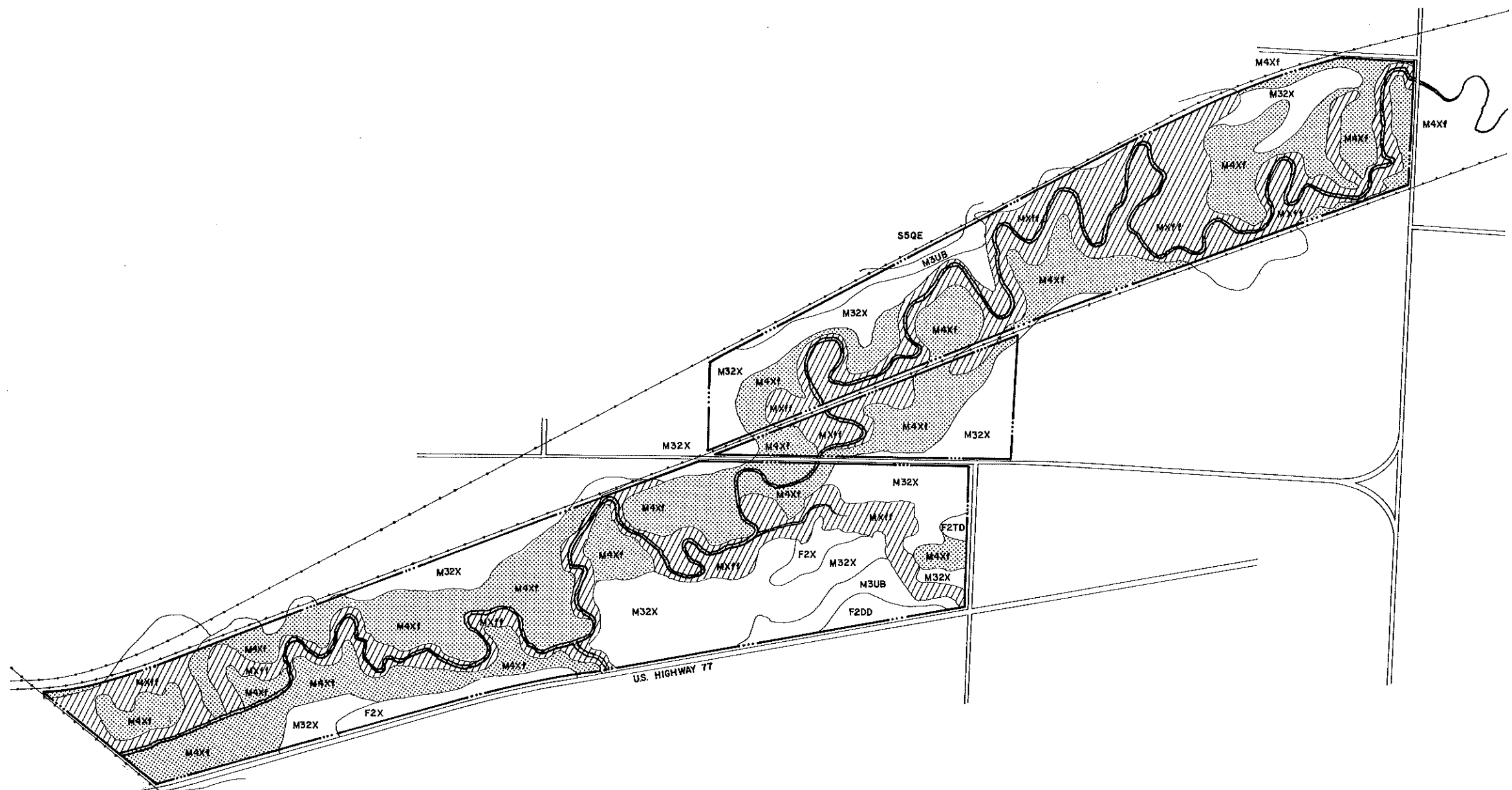
Abutilon theophrasti Medic.  
Achillea millefolium L.  
Agastache nepetoides (L.) Ktze.  
Amaranthus retroflexus L.  
Ambrosia artemisiifolia L.  
Ambrosia trifida L.  
Antennaria neglecta Greene  
Apocynum cannabinum L.  
Arctium lappa L.  
Artemisia spp.  
Asclepias syriaca L.  
Aster spp.  
Barbarea vulgaris R. Br.  
Campanula americana L.  
Cannabis sativa L.  
Capsella bursa-pastoris (L.) Medic.  
Carduus nutans L.  
Cassia fasciculata Michx.  
Chenopodium album L.  
Cicuta maculata L.  
Cirsium arvense (L.) Scop.  
Cirsium sp.  
Convolvulus arvensis L.  
Cynoglossum officinale L.  
Desmodium sp.  
Erigeron philadelphicus L.

velvetleaf  
common yarrow  
catnip giant hyssop  
rough pigweed  
common ragweed  
giant ragweed  
field pussytoes  
hemp dogbane  
great burdock  
sagebrush  
common milkweed  
aster  
bitter wintercress  
American bellflower  
hemp  
shepherdspurse  
musk thistle  
showy partridgepea  
lambquarters  
waterhemlock  
Canada thistle  
thistle  
field bindweed  
common houndstongue  
tickclover  
Philadelphia fleabane

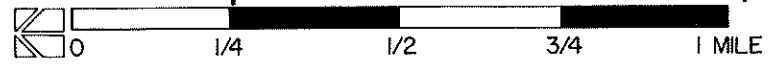
Erigeron sp.	fleabane
Eupatorium rugosum Houtt.	white snakeroot
Euphorbia marginata Pursh	snow-on-the-mountain
Fragaria virginiana Duchesne	wild strawberry
Galinsoga parviflora Cav.	littleflower quickweed
Galium aparine L.	catchweed bedstraw
Gaura giennis L.	biennial gaura
Geum aleppicum Jacq.	aleppo avens
Glechoma hederacea L.	groundivy
Grindelia squarrosa (Pursh) Dunal	curlycup gumweed
Hackelia deflexa (Wahlenb.) Opiz	American stickseed
Helianthus spp.	sunflower
Heracleum maximum Bartr.	common cowparsnip
Hydrophyllum virginianum L.	Virginia waterleaf
Impatiens biflora Walt.	spotted snapweed
Ipomoea purpurea (L.) Lam.	common morningglory
Iva axillaris Pursh	povertyweed
Kochia scoparia (L.) Schrader	kochia
Lactuca canadensis L.	Canada lettuce
Lamium amplexicaule L.	henbit
Laportea canadensis (L.) Wedd.	woodnettle
Lappula echinata Gilib.	European sticktight
Leonurus cardiaca L.	common motherwort
Lepidium virginicum L.	Virginia pepperweed
Lespedeza capitata Michx.	roundhead lespedeza
Lychnis alba Mill.	white cockle
Marrubium vulgare L.	common horsehound
Medicago sativa L.	alfalfa
Melilotus alba Desr.	white sweetclover
Melilotus officinalis (L.) Lam.	yellow sweetclover
Mentha arvensis L.	field mint
Mirabilis hirsuta (Pursh) MacM.	hairy four-o'clock
Mollugo verticillata L.	carpetweed
Oenothera biennis L.	common eveningprimrose
Physalis spp.	groundcherry
Plantago aristata Michx.	bottlebrush plantain
Plantago lanceolata L.	buckhorn
Plantago patagonica Jacq.	woolly plantain
Plantago rugelii Decne.	blackseed plantain
Polygonum spp.	knotweed
Rudbeckia hirta L.	blackeyedSusan
Rumex spp.	dock
Sanicula marilandica L.	black sanicle
Sicyos angulatus L.	burcucumber
Silphium laciniatum L.	compassplant
Solanum rostratum Dunal	buffalobur

Solidago spp.	golderod
Sonchus arvensis L.	perennial sowthistle
Stachys palustris L.	marsh betony
Taraxacum laevigatum (Willd.) DC.	smooth dandelion
Taraxacum officinale Weber	common dandelion
Teucrium canadense L.	American germander
Thalictrum dasycarpum Fisch.	purple meadowrue
Thlaspi arvense L.	pennycress
Tragopogon porrifolius L.	common salsify
Tribulus terrestris L.	puncturevine
Trifolium incarnatum L.	crimson clover
Trifolium pratense L.	red clover
Trifolium repens L.	white clover
Urtica dioica L.	stinging nettle
Verbascum thapsus L.	flannel mullein
Verbena bracteata Lag. & Rodr.	bigbract verbena
Verbesina alternifolia (L.) Britt.	wingstem
Vicia americana Muhl.	American vetch
Vicia villosa Roth	hairy vetch
Viola spp.	violet
Xanthium strumarium L.	cocklebur

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wilderness park ————— soils map



SOIL INTERPRETATIONS FOR WILDERNESS PARK - LANCASTER COUNTY, NEBRASKA  
Prepared by Soil Conservation Service, Lincoln, Nebraska

Degree of Limitation For Use (2)

Symbols	Soil Name (1)	Land Use Capability	Woodland Site	Range Site	Dwellings with Basements	Local Roads & Streets	Septic Tank Filter Fields	Camp Areas	Picnic Areas	Play Grounds	Paths & Trails
F3Xf	Colo silty clay loam	Iiw3	Moderately Wet	Clayey Overflow	Severe f	Moderate tf	Severe tf	Severe fp	Moderate tf	Moderate tp	Moderate t
M2TB	Crete silt loam 0 to 1% slopes	Iie2	Silty to Clayey	Clayey	Moderate t	Severe t	Severe p	Moderate p	Slight	Moderate t	Slight
F2TD	Crete silty clay loam 3 to 9% slopes	IIIe2	Silty to Clayey	Clayey	Moderate t	Severe t	Severe p	Moderate tp	Moderate t	Moderate st	Moderate t
S5QE	Dickinson fine sandy loam 5 to 11% slopes	Ive3	Sandy	Sandy	Moderate s	Slight	Moderate s	Moderate s	Moderate s	Severe s	Slight
M3UB	Judson silt loam 1 to 5% slopes	Iie1	Silty to Clayey	Silty Lowland	Moderate t	Moderate t	Moderate p	Moderate f	Slight	Moderate s	Slight
S4UB	Judson fine sandy loam 1 to 5% slopes	Iie3	Sandy	Silty Lowland	Severe f	Moderate f	Severe f	Severe f	Moderate f	Moderate f	Slight
M4Xf	Kennebec silt loam Occasionally flooded	Iiw3	Moderately Wet	Silty Overflow	Severe f	Moderate tf	Severe f	Severe f	Moderate f	Moderate f	Slight
3M5FE	Lancaster loam 5 to 11% slopes	Ive1	Shallow	Silty	Severe b	Severe b	Severe d	Moderate s	Moderate s	Severe b	Slight
MXff	Silty Alluvial land	VIw	Wet	Silty Overflow	Severe f	Severe f	Severe f	Severe f	Severe f	Severe f	Moderate f
F2X	Wabash silty clay loam	Iiw2	Moderately Wet	Clayey Overflow	Severe f	Severe t	Severe f	Severe f	Moderate tf	Severe pf	Moderate t
H2X	Wabash silty clay	IIIw1	Moderately Wet	Clayey Overflow	Severe f	Severe t	Severe f	Severe f	Severe t	Severe pf	Severe t
F2DD	Wymore silty clay loam 3 to 9% slopes	IIIe2	Silty to Clayey	Clayey	Moderate t	Severe t	Severe t	Moderate tp	Moderate t	Moderate sp	Moderate t
M32X	Zook silt loam	Iiw4	Moderately Wet	Clayey Overflow	Severe f	Moderate tf	Severe t	Severe f	Moderate f	Moderate p	Slight

Brief Description of Kind of Soil (1)

Colo Soils - Silty clay loam surface layer and subsoil developed on alluvium.  
 Crete Soils - Silt loam to silty clay loam surface layer and silty clay subsoil developed in loess.  
 Dickinson Soils - Fine sandy loam surface layer and subsoil developed in fine sandy material.  
 Judson Soils - Silt loam, fine sandy loam and silty clay loam surface layers and subsoils developed in colluvial material.  
 Kennebec Soils - Silt loam surface layers and underlying material developed in alluvial sediments.  
 Lancaster Soil - Loam surface layer and fine sandy loam subsoil developed over sandstone at 20 to 36 inches.  
 Silty Alluvial land - Silty to clayey sediments on bottomlands frequently flooded.  
 Wabash Soils - Silty clay loam and silty clay surface layers and underlying material developed in alluvial sediments.

Wymore Soils - Silty clay loam surface layer and silty clay subsoil developed over loess.  
 Zook Soils - Silt loam to silty clay loam surface layers and silty clay underlying material developed in alluvial sediments.

Degree of Limitations are Based on Soil Features Affecting Use (2)

Ratings are based on three classes of soil limitations:  
 1) Slight - relatively free of limitations or limitations are easy to overcome.  
 2) Moderate - limitations can be overcome with correct planning and design. Maintenance required.  
 3) Severe - limitations are severe enough to make use questionable and are difficult to overcome. Require special planning, special design and intensive maintenance.

Kind of limitations:  
 b - bedrock or gravel depth; e - erosion; f - flooding; s - slope; t - texture; w - wetness; p - permeability

The Statement of Purpose, Definition of Wilderness, History, Ecology, and Management Recommendations were prepared by Patricia J. Rand, Assistant Professor, Department of Botany, University of Nebraska, Lincoln, Nebraska.

The record of activities by the Corps of Engineers was written by Hal L. Schroeder, General Manager, Lower Platte South Natural Resources District.

Field work by John Harter, graduate student, Department of Botany, University of Nebraska, Lincoln, Nebraska.