

A History and Vascular Flora of Mitchell Glen, Green Lake County, Wisconsin

Abstract Mitchell Glen supports a climax forest "island" that occupies a narrow post-glacial gorge along the Platteville-Galena escarpment three miles southeast of Green Lake in Green Lake County, Wisconsin. Since the time of European settlement in the Green Lake region, circa 1840, and before then by Native Americans, the glen area has been recognized for its high quality natural features and admired for its scenic aesthetic landscape.

Although a modern-day county flora exists (Eddy 1996), no formal study of the Mitchell Glen flora had been previously undertaken. A total of 234 vascular plants were identified from plant collections obtained during 1997 and 1998, representing 75 families and 177 genera. Voucher specimens are deposited in the University of Wisconsin-Oshkosh Herbarium (OSH).

The known distribution ranges were extended for 23 species previously unreported for the county, including plants with boreal affinities (Eddy 1996). Mitchell Glen's shaded cliffs with cold-air drainage and springs at the base of the gorge render a moist, cool microclimate that sustains certain species more typical of northern Wisconsin.

Oak savanna and tallgrass prairie covered most of the immediate area surrounding Mitchell Glen (Finley 1976). Although most of the prairies and oak openings were placed into cultivation during the latter half of the 1800s, original maple-basswood forest occupies Mitchell Glen and represents the only significant tract of climax woodland in Green Lake County.

The main feature of this report is a catalog of vascular plants, supported by vouchers, that grow in Mitchell Glen, Green Lake County, Wisconsin (Figure 1). Despite its noteworthy geology, prominent topographical features, and apparently rich biological diversity, no systematic collecting or formal study

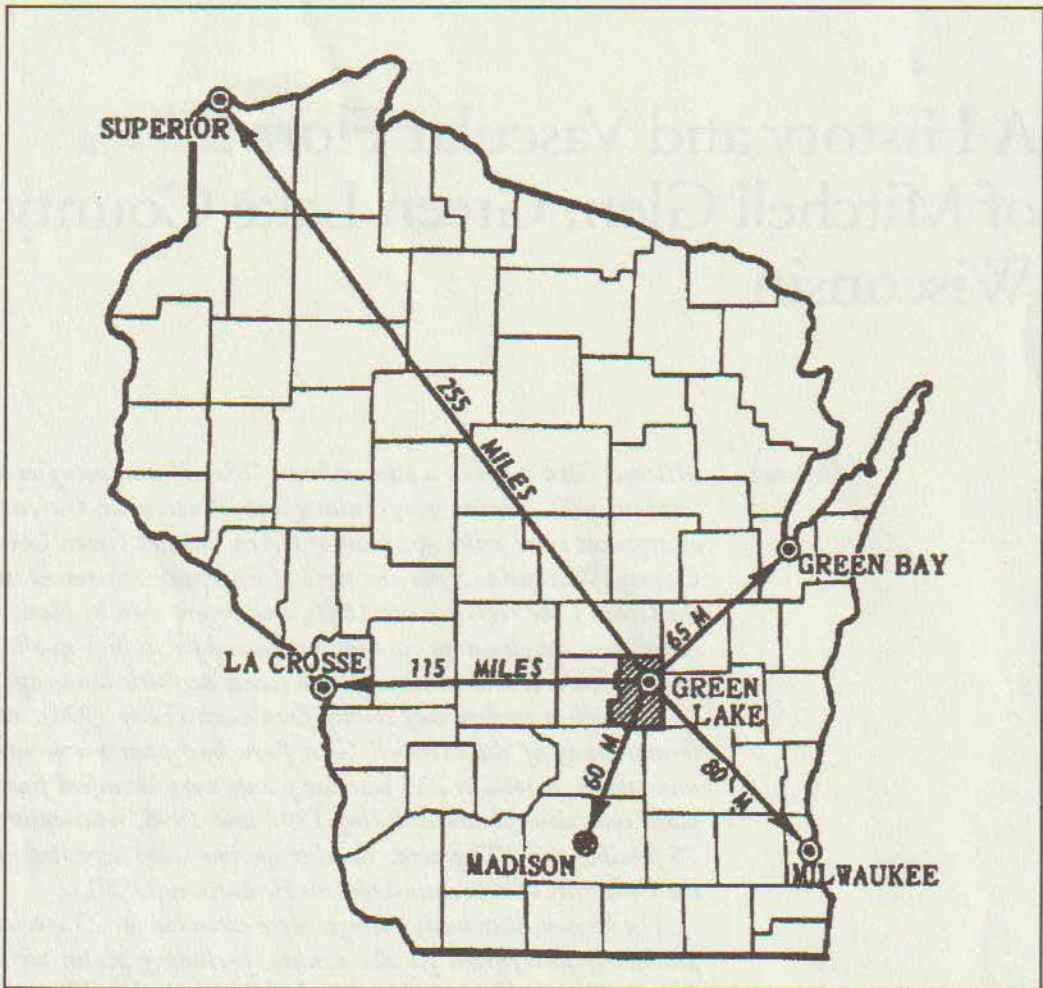


Figure 1. Location of Green Lake County in east central Wisconsin (U.S. Department of Agriculture 1977).

of the Mitchell Glen flora had been previously undertaken. Besides contributing to the broader regional botanical record, the catalog of species serves as a basis of comparison with the flora of the same area in the future and with the flora of similar southern mesic forests in the upper Midwest.

A secondary objective of this study examines the presettlement flora of Mitchell Glen, circa 1834. The names of specific plants, notably trees, and general references to the vegetation that are mentioned in the origi-

nal land survey records, old letters and books, and earlier studies, specifically reports of Indian antiquities, are used to establish a historical record of the local flora. Along with this evidence an examination of the history of land use in and around Mitchell Glen documents the environmental impact of both natural processes and human-related activities on the glen flora.

During this study the known distribution ranges were extended for 23 species that had been previously unreported for the county

(Eddy 1996). New county records are mainly due to the fact that rich mesic climax woodlands are scarce in the county and until recently have not been closely examined and methodically botanized.

In contrast to the surrounding open uplands, Mitchell Glen's shaded cliff habitat with cold-air drainage and springs at the base of the gorge render a moist, cool microclimate that sustains certain plants with boreal affinities. Among the species more typical of northern Wisconsin but which occur at Mitchell Glen are *Acer spicatum*, *Aster macrophyllus*, *Dirca palustris*, *Diervilla lonicera*, *Equisetum pratense*, *Lycopodium lucidulum*, and *Taxus canadensis*.

The oak savannas and tallgrass prairies that once covered most of the immediate area surrounding Mitchell Glen (Finley 1976) were placed into cultivation during the latter half of the 1800s, but original maple-basswood forest survives in Mitchell Glen and represents the only significant tract of climax woodland in Green Lake County. Although the Mitchell Glen flora is comprised of communities representative of the original vegetation cover that include rare species, no state threatened and endangered plants were observed during the study.

Location

Mitchell Glen is located in the town of Brooklyn, Green Lake County, Wisconsin at parallel 43°48'57" north latitude and the meridian 88°54'54" west longitude. It is situated in NW ¼ SE ¼ section 35, Township 16 North and Range 13 East (Figure 2). The study area is comprised of approximately 20 acres.

Two state geographical provinces divide Green Lake County roughly in two (Martin 1965). The northwestern half lies on the western edge of the Central Plain and is

characterized by gently rolling topography. The southeastern half of the county, which includes Mitchell Glen, is part of the Eastern Ridges and Lowlands and is interrupted by numerous escarpments and valleys.

Nearly all of Green Lake County, including the area surrounding Mitchell Glen, is classified as natural division 5c (Hole and Germain 1994). Characteristic of this natural division is undulating to rolling topography that supports oak savannas and prairie growing on silt loams over calcareous till. Land classified as division 5cp, directly south and east of Mitchell Glen, historically supported extensive prairies.

The county is slightly below Wisconsin's tension zone, a region of transition between Wisconsin's northern hardwood province and the prairie-forest province (Curtis 1959). Although oak savanna is the dominant vegetation cover throughout the county, some species that are more typical north of the tension zone are established here.

In a 1977 report by the East Central Wisconsin Regional Planning Commission, Mitchell Glen was one of two sites in the region (from a list of 10 potential locations) that were recommended for development as a regional park. While there are no current plans for developing such a park at or near Mitchell Glen, the fact that the area was recognized for its unique aesthetic and natural features underscores the high quality natural landscape for which Mitchell Glen is renowned.

Geology, Soils, Water Resources

Mitchell Glen occupies a narrow post-glacial gorge that was eroded by glacial meltwater from the Green Bay Lobe approximately 12,500 years before the present. The upper bedrock is Platteville-Galena dolomite; beneath this is St. Peter sandstone, which forms

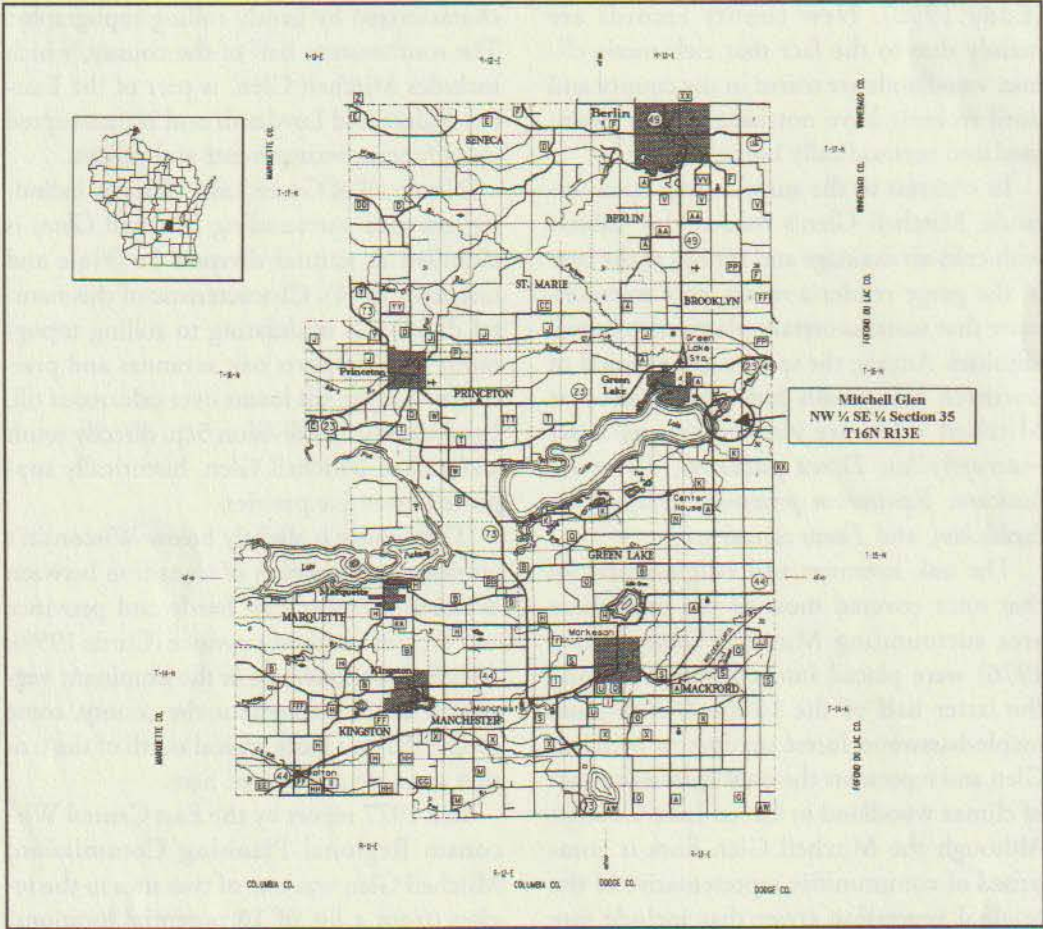


Figure 2. Green Lake County, Wisconsin (Adapted from the Wisconsin Department of Transportation 1988).

the steep-sided walls of the glen. Mitchell Glen, which is approximately 100 ft deep from the floor to the top of the Platteville-Galena escarpment, drains the cultivated uplands that are to the southeast (Figure 3).

Torrential surface runoff that cascades from the crest of the glen empties into Mitchell Glen Creek, a small spring-fed rivulet that begins at the base of the falls. Mitchell Glen Creek is a tributary of Dakin Creek, a minor stream that enters Green Lake's inlet, Silver Creek at NW 1/4 NW 1/4 Section 35, R13E, T16N (Figure 3).

According to the county soil survey (1977), soils of the Kidder-Rotamer-Grellton association that are found at Mitchell Glen vary from moderately well-drained to well-drained loams. The subsoils are mainly of loam, clay loam, and sandy clay loam underlain by calcareous, gravelly sandy loam glacial till.

Three marl pits in the vicinity of Mitchell Glen were excavated in the past and used as a source for "sweetening" acidic soils and as an ingredient for mortar cement and whitewash.

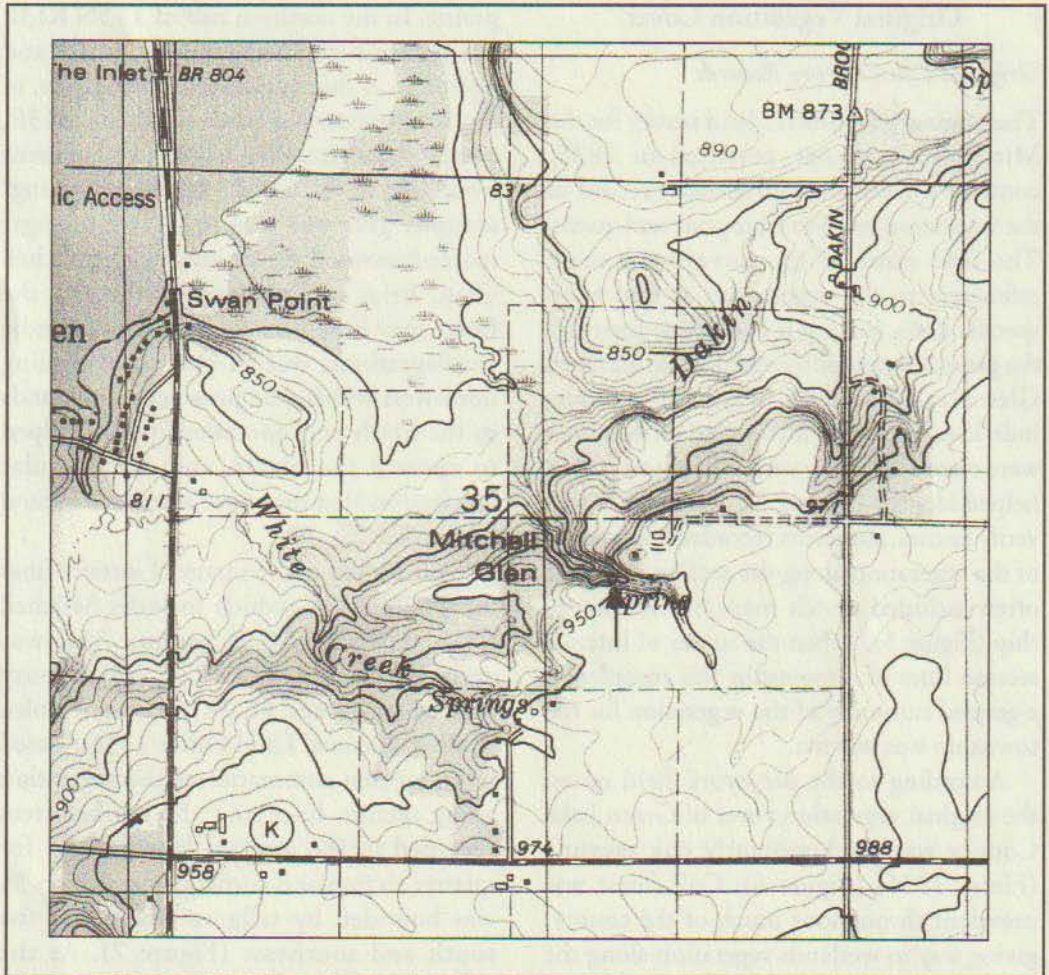


Figure 3. Topographic features of Mitchell Glen and immediate surrounding area. The glen is a post-glacial gorge eroded by glacial meltwater. Note that the elevation at the crest of Mitchell Glen is 950 feet above sea level—the base of the glen is 850 feet. Mitchell Glen Creek (unnamed) begins at the southeast base of the gorge (arrow) and drains into Dakin Creek, a tributary of Silver Creek, Green Lake's inlet (United States Geological Survey 1980).

Original Vegetation Cover

Original Land Survey Records

The original government land survey for the Mitchell Glen area, certified in 1835, contains the most comprehensive record of the vegetation prior to European settlement. The field notes of the surveyors contain references to the vegetation, as well as to specific trees, making it possible to interpret the general vegetation cover for the Mitchell Glen area (Figure 4). Wherever possible, individual trees that intersected section lines were recorded, along with bearing trees that helped identify corners. To supplement and verify entries, surveyors recorded a summary of the vegetation along the section lines and often included sketch maps of each township (Figure 5). When the survey of interior section lines of a township was completed, a general summary of the vegetation for the township was written.

According to the surveyors' field notes, the original vegetation cover of Green Lake County was predominantly oak savanna (Finley 1976) (Figure 6). Oak forest was prevalent throughout much of the county, giving way to wetlands vegetation along the lower Grand River and throughout most of the Fox River Valley and its tributaries. Where the canopy was one-half or more open, surveyors often acknowledged the scattered spacing of trees and recorded the vegetation as oak opening, a transitional community between oak forest and grasslands. Because the field notes fail to consistently mention the spacing between trees, it is possible that areas of what is mapped as oak forest may have actually been oak opening (Finley 1976).

Where the oaks diminished in numbers, notably on the flat uplands in the southeastern townships, the landscape was essentially treeless and covered by tallgrass

prairie. In the northern half of T15N R13E the prairie succeeded into oak forest and openings. A short distance farther north, in the southwestern quarter of T16N R13E, where the Platteville-Galena escarpment overlooks Silver Creek, the oak openings abruptly gave way to a small area of sugar maple-basswood forest known as Mitchell Glen. Prior to European settlement the forest may have been spared from periodic conflagrations, due in part to prevailing northwest winds, the presence of wetlands to the north and northwest, which helped to contain the blazes, and the irregular topography that may have acted as a natural firebreak.

Completion of the survey of interior lines for T16N R13E, which includes Mitchell Glen (NW $\frac{1}{4}$ SW $\frac{1}{4}$ section 35), was certified March 31, 1835, by Deputy Surveyors James H. Mullett and John Mullett (General Land Office 1834). Based upon written summaries of the vegetation along section lines and the marker trees recorded in the original land surveys for quarter section and corner posts, section 35 was bounded by tallgrass prairie on the south and southeast (Figure 7). As the grasslands approached Mitchell Glen they graded into oak openings, which were established up to the rim of the glen. Large tracts of oak opening habitat were reported northeast and southwest of Mitchell Glen, while floodplain forest and other wetlands occupied the lowlands to the northwest.

In short, maple-basswood forest at Mitchell Glen existed then, as now, as an "island" climax woodland. A similar climax forest island, South Woods, occurs three miles northeast along the southeast edge of Ripon. Both tracts of maple-basswood forest are established along the Platteville-Galena escarpment where post-glacial gorges indent the edges of the escarpment.

T 16 N R 13 E 4th mer 12 J		
Var. 7° 38' East		
North	Between sections 35 & 36	Oak
16.50	Trail to NE	39.
23.00	Leave Prairie	50.
40.00	Set quarter section post	
	B. Oak 8 S 18 E .51	
	Aspen 8 N 75 E .21	
44.28	Aspen 15	
61.88	Sugar 18	
80.00	Set post cor. sections 25. 26.	71.
	35 & 36	31
	Elm 15 N 65 W .17	41
	B. Ash 12 N 23 E .14	
	Land rolling second rate	
	First part rolling prairie	4
	Last part woodland - Timbers	8
	with M. B. & B. oak. B. & W.	
	Ash Aspen Elm Ironwood	
	Sugar Maple Lym Rutland	31
	20.	

Figure 4. A copied page from the original land survey field notes for T16N R13E. The entry begins by surveying the section line north between sections 35 (Mitchell Glen) and 36. Note the vegetation changes from prairie to oak opening, then to woodland, all within a mile distance (General Land Office 1834).

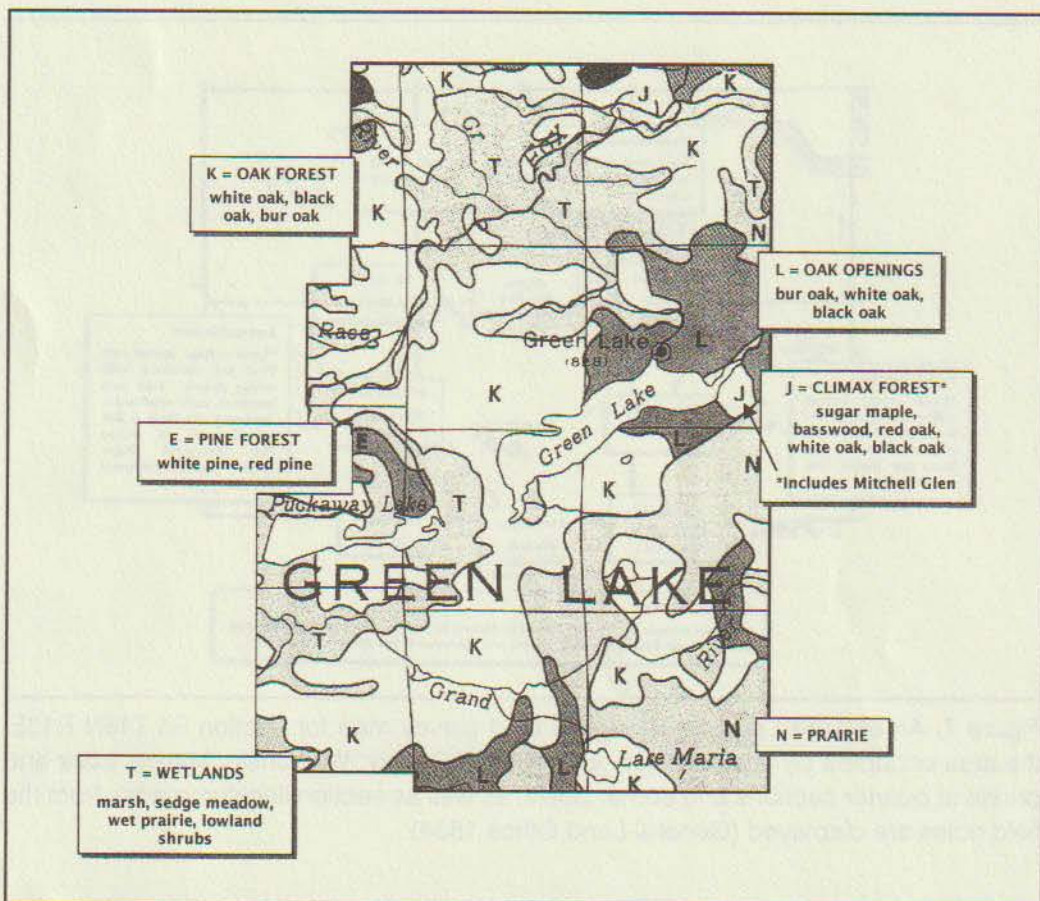


Figure 6. Original vegetation cover of Green Lake County, Wisconsin, circa 1834 (Adapted from Finley 1976).

Surveying north between sections 35 and 36, the land was described as "... rolling second rate First part [southern half] rolling prairie Last part [northern half] woodland—Timbered with W. B & Bur oak [white, black and bur oaks, *Quercus alba*, *Q. velutina*, *Q. macrocarpa*]. B. & W Ash [*Fraxinus nigra* and probably green, not white ash, *F. pennsylvanica*] Aspen [*Populus tremuloides*] Elm [*Ulmus* sp.] Ironwood [*Ostrya virginiana*] Sugar Maple [*Acer saccharum*] Lynn [probably linden, i.e., basswood, *Tilia americana*] Butternut [*Juglans cinerea*] etc."

The field notes confirm that oak openings occupied the area between grassland and forest. South of the north corner post between sections 25 and 36 the "... First 20.00 [20 chains or one-quarter mile] Timbered with sugar Maple Lynn [basswood] W & B Ash Ironwood etc. Last part—Thinly timbered with W. B and Bur oak." Following this same section line one mile south (T15N R13E) the field notes state: "Woodland rolling second rate. Scattering W. B & Bur oak Prairie level second rate—Red root [*Ceanothus americanus*] rosin-weed [*Silphium* sp.] rose-willow [*Salix bebbiana*?] etc."

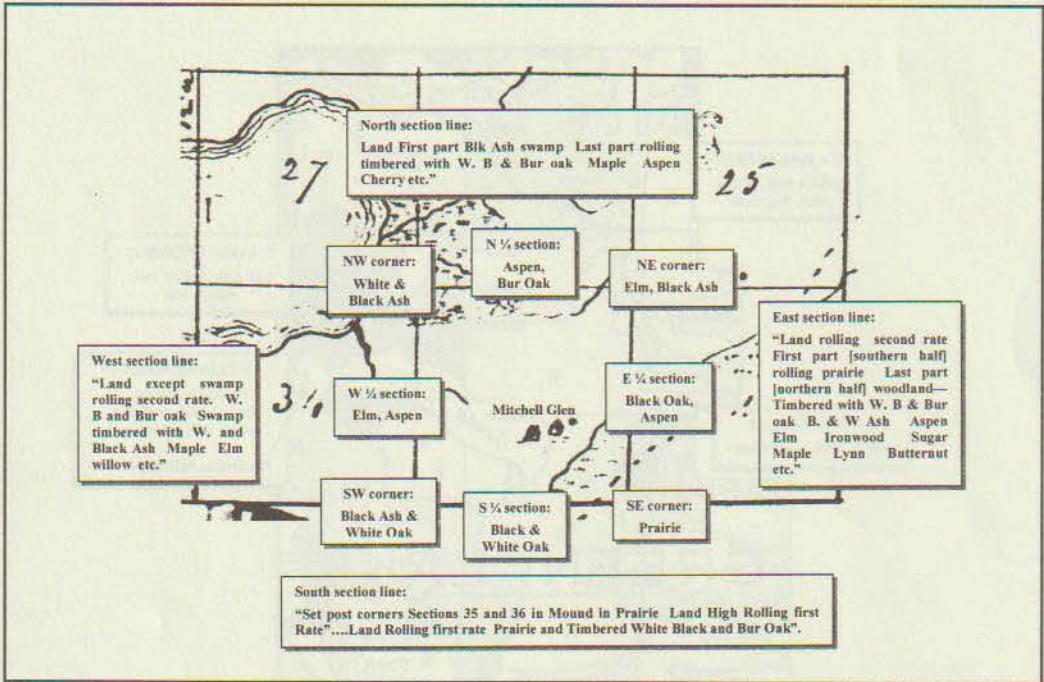


Figure 7. An enlarged portion of original land survey map for section 35 T16N R13E, the area occupied by Mitchell Glen, Green Lake County, Wisconsin. Marker trees and prairie at quarter sections and corner posts, as well as section line summaries from the field notes are displayed (General Land Office 1834).

Floodplain forest was encountered along the north section line between sections 26 and 35. From west to east the surveyors described "Land First part Blk Ash swamp Last part rolling timbered with W. B & Bur oak Maple Aspen Cherry [*Prunus serotina?*] etc." Further evidence of floodplain woodlands was noted at post corner sections 26, 27, 34 and 35: "Land except swamp rolling second rate. W. B and Bur oak Swamp timbered with W. and Black Ash Maple [*Acer saccharinum?*] Elm willow [*Salix sp.*] etc."

Based upon the original land survey records it is apparent that the vegetation cover for most of the immediate area surrounding Mitchell Glen was oak savanna and tallgrass prairie. Upland prairie, which graded into oak opening, flanked the south-

ern margin, while extensive oak openings occupied the areas southwest and northeast of Mitchell Glen. Historically, recurrent fires greatly influenced the vegetation cover by diminishing woody climax succession and favoring oak savanna. Although most of the prairies and oak openings were placed into cultivation during the latter half of the 1800s, the dominant vegetation cover for Mitchell Glen remains maple-basswood forest. It is the only significant tract of climax forest in Green Lake County.

Native Americans and European Settlement

Mitchell Glen and the surrounding lands are noted for having been the site of the largest camp of Winnebago Indians in the Green

Lake area (Heiple and Heiple 1978). There is strong circumstantial evidence that the use of fire by Winnebago Indians, the primary inhabitants of the region, indirectly influenced the vegetation cover (Dorney 1981). The presence of oak savanna and open wetlands throughout Green Lake County, including those surrounding Mitchell Glen, support this view because all of these plant communities originate from recurrent fires and depend on periodic burnings for their continuation.

Among the Indian antiquities in Green Lake County, thirteen Indian campsites, three main planting grounds, and numerous food caches have been discovered within the immediate vicinity of Mitchell Glen (Brown 1917). The Indian planting grounds, which yielded much corn, were found in oak openings and on the prairie where fire may have been utilized to maintain open habitat (Dorney 1981). The nearby oak forests yielded great quantities of acorns, which were ground, dried, and stored in buried caches for use in winter.

In 1840 Anson Dart and his family established the first permanent European settlement on Green Lake. A son, Richard Dart, then twelve years old, later reflected on the resourcefulness of local Native Americans:

The Winnebago used to make small mounds to preserve their provisions. When plentiful, they dried fish in the sun till they were as dry as powder, then put them in big puckawa sacks. The squaws also picked up bushels of acorns. In deep holes, below frost-line, they would bury their fish and acorns together, twenty bushels or so in a place, and cover them over with a mound of earth. When the deer had gone south, and game was scarce they would come and camp on these mounds and dig up fish and acorns for their winter

food, and live on this provender until spring opened or game appeared. (Dart 1910)

Maple sugar was made from *Acer saccharum* in at least two localities west and north of Mitchell Glen, SW $\frac{1}{4}$ section 35 and SW $\frac{1}{4}$ section 26 (Brown 1917). The maple sugar was stored in birch bark baskets that were fashioned from *Betula papyrifera*. ". . . We had no sugar, save maple made by Indians, and this was very dirty. The natives used to pack this sugar in large baskets of birch-bark, and sell it" (Dart 1910).

The area woodlands also supplied wood for fuel, poles and bark for wigwams, and wood for making tools and weapons. Wooden bowls were carved out of ash, *Fraxinus* spp., and American basswood, *Tilia americana* (Heiple and Heiple 1978). Shag-bark hickory, *Carya ovata*, and red cedar, *Juniperus virginiana*, both of which are found at Mitchell Glen, were utilized to make hunting bows (Brown 1917).

In 1835, one year after the township was surveyed, the first European settler to occupy land that included the glen was a trader named James Powell (Heiple and Heiple 1978). Twenty-six years later, Archibald and Laura Mitchell purchased 160 acres of land, which included the glen, NW $\frac{1}{4}$ SE $\frac{1}{4}$ section 35. The Mitchells' third son, Stephan Decatur Mitchell, or S.D. Mitchell, eventually acquired the glen, and this is when the name "Mitchell Glen" became attached to the site.

S.D. Mitchell was an amateur collector and enthusiastic student of Indian antiquities. His letters and reports to Charles E. Brown, then President of the Wisconsin Archaeological Society, were incorporated into Brown's 1917 paper, "The Antiquities of Green Lake." Numerous references to specific trees and the vegetation cover appear in Mitchell's letters to Brown as he related

his findings. In a letter dated February 4, 1903, Mitchell described the forest nearby his home: "About Eighty rods to the North west of my residence on same Section [35] you will observe a conical mound this mound was in the limets [sic] of what at one time was one of the finest shugar [sic] bushes [*Acer saccharum*] that I ever saw . . ." (State Historical Society of Wisconsin 1888).

In 1903 Mitchell posted a draft to Brown entitled "Green Lake Report," which included a list of Indian sites and descriptions of the vegetation cover, as well as specific uses of local plants by the Winnebago tribe in and around Mitchell Glen. Mitchell related how the Native Americans utilized local plants and animals, as explained to him by Richard Dart (then 77 years old):

Before the building of the dam at Dartford there was a bar at the north east portion of the lake to the South and east of where the Plasant [Pleasant] Point Hotell [sic] now stand which was at that time grown up to rushes the watter [sic] about five feet in depth here during the summer the Indians speared thousand and thousands of huge dog fish these they Jurked [sic] or dried over a slow fire and together with acorns they cached or buried these in pits when winter came one [on] and food became scarce [sic] they built their huts or Wigwams over these caches and boiled these fish and acorns together which became a black mass. . . . (State Historical Society of Wisconsin 1888)

Continuing, Mitchell went on to explain the loss of floodplain forest north of Mitchell Glen by the damming of Green Lake:

It might be well to state here that the intire [sic] shoar [sic] line of the lake was changed by the building of a dam across the out let called the Pucyann [Puchyan] River at

Dartford in the year 1844. This dam Raised the level of the lake some Four feet or more flooding a large tract of very heavy timber. . . some years since parties removed the over flowed stumps in the shallow watter [sic] between this [Silver Creek inlet, SW 1/4 section 26] and the Lake. . . . (State Historical Society of Wisconsin 1888)

South from the inlet "This whole tract [NW 1/4 section 35] to the south and west also to the east dureing [sic] the knowlage [sic] of the writer has been one vast tract of heavy timber portions of which has been since removed (from) the land and converted into plowed fields. . ." (State Historical Society of Wisconsin 1888).

Mitchell's references to maple trees further underscored the dependence of Native Americans and early settlers on the tract of climax forest in and around Mitchell Glen. Approximately one mile northwest of Mitchell Glen, a campsite on Silver Creek, SW 1/4 section 26, used by the Winnebago tribe was described as

. . . a small island known as sugar creek island this is surrounded on the north and west by silver creek and on the south and east by swamps this island formerly was covered with heavy maple timber here again was shown the hacking gouging present of the Indians mode of taping [sic] the maple with his rude implements. . . . (State Historical Society of Wisconsin 1888)

About a quarter mile north of Mitchell Glen, SE 1/4 NW 1/4 section 35, Mitchell states that "This site was one of the finest maple groves [*Acer saccharum*] in the state my Father at one time cut one Maple that made 7 1/2 cords of 4 ft wood These trees all showed that they had been taped [sic] for ages by the Indians. . . . (State Historical Society of Wisconsin 1888).

Oak woods and openings bordered edges of the maple-basswood forest. In a letter to Brown on March 4, 1904, Mitchell described five trees around Indian corn hills in SW $\frac{1}{4}$ NW $\frac{1}{4}$ section 35 as "... three of Oak [*Quercus* sp.] and two of Cherry [*Prunus serotina*] the largest oak is four ft eight inches in circumference the other is smaller (State Historical Society of Wisconsin 1888).

As the Green Lake area became more settled, more land surrounding Mitchell Glen was placed into pasture and cultivation. By reporting the date when an Indian site was disturbed or destroyed, Mitchell inadvertently documented destruction of the vegetation cover and changes in land use surrounding Mitchell Glen. In 1904, for example, Mitchell laments that "... the timber has been removed [SE $\frac{1}{4}$ NE $\frac{1}{4}$ section 34] and in the early spring the Octogon [sic] the wolf and part of the cornfield [Indian corn] will be plowed for the first time ... Nearly all the damage [to effigy mounds] ... has been done within the last three years" (State Historical Society of Wisconsin 1888). Mitchell noted even earlier changes to the prairie southeast of Mitchell Glen, NW $\frac{1}{4}$ SW $\frac{1}{4}$ section 36:

1862 first Plowed and yearly since ... The peculiarity about these mounds is their isolation from other mound and distance from watter [sic] they are about one and a half miles east a little south of the lak [sic] on high table land about 400 feet above the lake on the edge of Green Lake Prairie. Alass [sic] there is but little sembalance [sic] to a mound left the distructive [sic] plow has for more than 40 year been accomplishing their ruin. ... (State Historical Society of Wisconsin 1888)

Elsewhere, about a quarter mile northwest of Mitchell Glen, SE $\frac{1}{4}$ NE $\frac{1}{4}$ section 34,

Mitchell reports that "... two of the lizard tails [effigy mounds] were plowed about 1858. More were plowed 1903 and more ... will be Plowed this season."

Post-settlement to Present-day

The earliest known formal study to include the Mitchell Glen flora is from 1889 by Mrs. C.T. Tracy, a Ripon College botany instructor. While many of the plants listed in her Catalogue of Plants Growing Without Cultivation in Ripon and the Near Vicinity are known from Mitchell Glen, Mrs. Tracy specifically cites Mitchell Glen as the location for two species: *Impatiens capensis* Meerb. (*I. fulva* as listed by Tracy) and *Coreopsis tripteris* L. While *I. capensis* is common on wet soils along Mitchell Glen Creek, there are no known vouchers of *C. tripteris* for Green Lake County, or Wisconsin for that matter (Theodore S. Cochrane, personal communication, 2 April 1999). (Other old specimens, e.g., *Carex shortiana*, *Phoradendron serotinum*, and *Silphium asteriscus*, bearing identical Ripon College labels, whether collected by "J. Clark," "Mrs. C. Tracy," or someone else, also must be excluded from the Wisconsin flora for lack of specimen vouchers (Theodore S. Cochrane, personal communication, 2 April 1999).

Although many of the typical woodland ephemerals that grow at Mitchell Glen occur elsewhere in the county, some species are exclusive to the glen. Showy orchis, *Orchis spectabilis*, for example, was "discovered" in 1994 and is known only from Mitchell Glen (Eddy 1996). Similarly, *Hamamelis virginiana*, *Symphoricarpos albus*, and *Symphoricarpos occidentalis* are not rare in the southern half of Wisconsin but are recognized in the county only from Mitchell Glen.

Cold-air drainage along the shaded cliffs and cold springs at the base of the gorge create a boreal micro-habitat for certain

northern plants. Among the species more typical of northern Wisconsin, and which may be viewed as northern relics, are *Acer spicatum*, *Aster macrophyllus*, *Dirca palustris*, *Diervilla lonicera*, *Equisetum pratense*, *Lycopodium lucidulum*, and *Taxus canadensis*. The fact that *T. canadensis* is nearly inaccessible because of the very steep slopes on which it grows may explain why it has not been extirpated by browsing white-tail deer.

Twenty-three species are "new" to the county, in that they were not known from the county prior to 1996. These county records listed below represent 2.4% of the total county flora (currently 951 species) and are based on voucher specimens collected after publication of the county flora (Eddy 1996).

Acer spicatum Lam.
Aster macrophyllus L.
Aster shortii Lindley
Carex amphibola Steudel
Carex blanda Dewey
Carex projecta Mackenzie
Cynoglossum amabile Stapf & Drumm.
Dirca palustris L.
Equisetum pratense Ehrh.
Erysimum cheiranthoides L.
Galium concinnum T. & G.
Hamamelis virginiana L.
Hydrophyllum virginianum L.
Lactuca serriola L.
Laportea canadensis (L.) Wedd.
Panicum boreale Nash
Phlox divaricata L.
Rubus occidentalis L.
Symphoricarpos albus (L.) S. F. Blake
Symphoricarpos occidentalis Hook.
Taxus canadensis Marshall
Ulmus rubra Muhl.
Viburnum rafinesquianum Schultes
 var. *rafinesquianum*

Although the vascular plant diversity of Mitchell Glen compared with similar Wisconsin forests is difficult to measure, the site is evidently richer than average. Based upon plant inventories for southern mesic forests in the State Natural Area system, an average number of vascular plants on a 40-acre tract is roughly 150 species (Thomas Meyer, personal communication, 1 April 1998). According to Meyer, in forests grown on calcareous till or where limestone bedrock nears the surface, which is the case at Mitchell Glen, the number of vascular plants is about 175 species. These data may not be in accord with the 234 species cataloged for the glen and bordering uplands. However, when considering the approximately 40 common weeds that were among the 234 plants collected, as well as several prairie and savanna, not forest species, the variety in Mitchell Glen generally corresponds to the number of species suggested by Meyer.

The origin of Mitchell Glen is similar to that of Parfrey's Glen, a 488-acre state natural area in Sauk County. Parfrey's Glen is a post-glacial gorge cut into Cambrian sandstone conglomerate of the Baraboo Hills and, like Mitchell Glen, receives cold-air drainage that supports a collection of northern plants, as well as shaded cliff plants on steep rock outcrops. Eighty-eight vascular plants are reported in a partial list compiled for Parfrey's Glen (Thomas Meyer, personal communication, 11 November 1998). Of these, 32 species or 36% are common to the Mitchell Glen flora, including plants with northern affinities. Combined with the plants on the Parfrey's list that are identified to genus only, there are 45 species or 51% common to the Mitchell Glen flora. Considering its rich plant diversity, coupled to similarities with other preserved southern mesic forests, Mitchell Glen stands as a high-quality refugium for native biota in east-central Wisconsin.

Past and Present Land Use

Land uses that affect the vegetation cover of Mitchell Glen area are ongoing. Four years ago nearly 30 acres of mature hardwood forest was selectively logged directly northwest of the glen, SE $\frac{1}{4}$ NE $\frac{1}{4}$ section 35. Harvested trees were mainly red and white oak, but included some bur oak, sugar maple, and basswood (John Koerner, personal communication, 7 January 1999). One year earlier area landowners successfully persuaded a local excavator to abandon plans to quarry gravel at a site less than one mile from Mitchell Glen.

Directly south and east of Mitchell Glen is land that has been under cultivation for over a century, an activity that has obviously destroyed the original vegetation cover. Furthermore, because the row-cropped fields fail to slow and contain water during rains and snowmelts, torrents of surface water stream into the southeast corner of Mitchell Glen, further eroding the edges of the soil grade that borders the gorge. The excessive surface runoff causes silting and flooding along Mitchell Glen Creek and intermittently disrupts the bottomland vegetation. Patches of reed canary grass, *Phalaris arundinacea*, and stinging nettle, *Urtica dioica*, have become firmly established on the moist alluvium.

By comparing the present-day vegetation cover of Mitchell Glen with old photographs and postcards it is evident that the edges of the glen and former openings have become more overgrown with woody growth. Alys Gredler, a former resident of the area commented:

The greatest impression I had in going through the glen was how different it was from the pictures I have. It was quite obvious that it was almost ninety years older than it appeared in the pictures. The trees were

much younger and smaller and the glen was very much less crowded with plant life . . . The upper glen where the Mitchell family cemetery is located must have at one time been fairly clear land but is very wooded now. (Alys Gredler, personal communication, 16 November 1998)

Prairie and savanna groundlayer species can still be observed growing along the margins in semi-shade. Along the north and south rims and on gently sloped terraces overlooking Mitchell Glen Creek, pioneer trees are present. The absence of fire and other habitat disturbances that impede woody succession have allowed aspen, black cherry, and boxelder to become established. Ironically, bur, white, and black oaks, trees once common to nearby oak openings, were not observed growing within the study area.

In addition, in oak openings and woodlands that were logged and pastured, European buckthorn, *Rhamnus cathartica*, has become naturalized and at times forming thickets. Left unmanaged, buckthorn develops a dense understory that shades out native species.

Both accidental and deliberate introductions have adversely affected the groundlayer cover. For example, periwinkle, *Vinca minor*, was planted many years ago in the Mitchell family cemetery. It has since spread to the surrounding area, forming large evergreen mats that crowd out native groundlayer species.

The present-day landholders of Mitchell Glen are cognizant of the need for its long-term protection by implementing sustainable land management practices. One option to achieve this aim is to prepare a conservation easement that specifies what land uses are acceptable and unacceptable. When attached to a deed, a conservation easement can assist protecting the land into perpetuity.

Methodology and Catalog Design

Plant collections were obtained during the 1997 and 1998 growing seasons. In addition to the glen, common weeds growing along buildings and lanes, and in lawns and cultivated fields were collected. Voucher specimens were identified and deposited in the University of Wisconsin-Oshkosh Herbarium (OSH). Besides plant collections, numerous 35 mm slide photographs of individual plants and entire communities were taken to further document the Mitchell Glen flora and general vegetation cover.

Plant families in the catalog are alphabetized within the major plant groups, as are the genera and species within a family. Nomenclature strictly follows Gleason and Cronquist (1991). The treatment of narrowly defined species and most infraspecific taxa is avoided, as is the listing of synonyms.

General locations, brief habitat descriptions, and the frequencies are stated for most species. Plants collected during this study that are not included in the Green Lake County flora (Eddy 1996) are noted as county records. Collection numbers cited are my own and correspond to the voucher specimens deposited at OSH.

Summary of Taxa

Presently, the total number of cataloged vascular plants at Mitchell Glen is 234 species (Table 1). A summary of the number of families, genera, and species for the three

largest dicot and three largest monocot families is compiled in Table 2.

A single family, the Asteraceae, represents about one-fifth or 21% of the total number of dicots. The monocots are largely represented by the Poaceae and Cyperaceae, which when combined, account for 67% of the total number of monocots. The combined number of species of the three largest dicot and three largest monocot families accounts for 43% of the total Mitchell Glen flora (Table 2).

Table 1. Summary of Major Plant Taxa at Mitchell Glen.

<i>Plant group</i>	<i>Families</i>	<i>Genera</i>	<i>Species</i>
Pteridophytes	6	9	11
Gymnosperms	3	3	3
Dicotyledons	59	129	169
Monocotyledons	7	36	51
Totals	75	177	234

Table 2. A comparison of the three largest dicot and three largest monocot families.

<i>Dicots</i>	<i>Genera</i>	<i>Species</i>	<i>% of Total Mitchell Glen Flora</i>
Asteraceae	23	35	15%
Rosaceae	9	12	5%
Ranunculaceae	8	11	5%
<i>Monocots</i>			
Poaceae	20	24	10%
Cyperaceae	1	10	4%
Liliaceae	9	10	4%
Totals	70	102	43%

CATALOG OF SPECIES

PTERIDOPHYTES

LYCOPODIACEAE (Clubmoss Family)

Lycopodium lucidulum Michx. Rare, one site; moist shaded sandstone shelf above Glen Creek. (4235, 4531)

EQUISETACEAE (Horsetail Family)

Equisetum hyemale L. var. *affinis* (Engelm.) A. A. Eaton. Rich shaded slope, growing beside *E. pratense*. (4604)

E. pratense Ehrh. Rare, one site; rich shaded slope. COUNTY RECORD. (4312, 4533)

ADIANTACEAE (Maidenhair Family)

Adiantum pedatum L. ssp. *pedatum*. Rich wooded slopes. Locally common. (4346)

ASPLENIACEAE (Spleenwort Family)

Asplenium rhizophyllum L. Local on shaded sandstone cliffs. (4497)

Cystopteris bulbifera (L.) Bernh. Shaded sandstone outcrops. Uncommon. (4336, 4494)

Dryopteris carthusiana (Villars) H.P. Fuchs. Rich woods along Glen Creek. Common. (4361)

D. intermedia (Muhl.) A. Gray. Rich woods along Glen Creek. Common. (4535)

Woodsia obtusa (Sprengel) Torr. Locally abundant on shaded sandstone outcrops. (4335, 4492, 4496, 4534)

OSMUNDACEAE (Royal Fern Family)

Osmunda claytoniana L. Rich woods along Glen Creek. Uncommon. (4530)

POLYPODIACEAE (Polypody Family)

Polypodium virginianum L. Locally common on moist shaded sandstone cliffs. (4234, 4493, 4628)

GYMNOSPERMS

CUPRESSACEAE (Cypress Family)

Juniperus virginiana L. Dry disturbed woods. Common. (4279, 4305)

PINACEAE (Pine Family)

Pinus resinosa Aiton. Local on rocky ledge along north rim of glen; four mature trees. (4639)

TAXACEAE (Yew Family)

Taxus canadensis Marshall. Local on steep wooded rocky slopes along south wall of Mitchell Glen. COUNTY RECORD. (4509)

DICOTYLEDONS

ACERACEAE (Maple Family)

Acer negundo L. Common in disturbed woods, fencerows, clearing. (4295)

A. saccharum Marshall. Throughout rich woods. (4300)

A. spicatum Lam. Local on steep wooded slopes along south wall of Mitchell Glen. COUNTY RECORD. (4338, 4347, 4647)

AMARANTHACEAE (Amaranth Family)

Amaranthus hybridus L. Common weed. (4523, 4553)

ANACARDIACEAE (Cashew Family)

Rhus glabra L. Dry opening along northeast rim of Mitchell Glen. Common. (4633)

Toxicodendron radicans (L.) Kuntze. Occasional in disturbed woods, paths, clearings. (4519, 4656)

APIACEAE (Carrot Family)

- Cryptotaenia canadensis* DC. Rich woods. Uncommon. (4345)
Osmorhiza claytonii (Michx.) C.B. Clarke. Rich woods. Common. (4275)

APOCYNACEAE (Dogbane Family)

- Vinca minor* L. Planted and escaped about shaded pioneer cemetery. (4241)

ARISTOLOCHIACEAE (Birthwort Family)

- Asarum canadense* L. Rich wooded slopes along Glen Creek. (4264)

ASCLEPIADACEAE (Milkweed Family)

- Asclepias incarnata* L. One plant in old field. (4559)
A. syriaca L. Field lanes, old fields. Common. (4478)
A. verticillata L. Field lanes, old fields. (4637, 4660)

ASTERACEAE (Aster Family)

- Achillea millefolium* L. Field lanes, dry wooded openings. Common. (4464)
Ambrosia artemisiifolia L. Common weed. (4582)
A. trifida L. Common weed. (4589)
Antennaria plantaginifolia (L.) Richardson. Dry wooded openings. (4254, 4280)
Aster ericoides L. Dry wooded openings, field lanes. Common. (4626)
A. lateriflorus (L.) Britt. Open woods, oak openings. Common. (4607, 4616)
A. macrophyllus L. Dry wooded opening along northern rim of Mitchell Glen. COUNTY RECORD. (4617)
A. sagittifolius Willd. Oak openings. Common. (4625, 4636)
A. shortii Lindley. Dry wooded opening along northern rim of Mitchell Glen. COUNTY RECORD. (4622, 4631)
Cirsium vulgare (Savi) Tenore. Common weed. (4502, 4579)

Chrysanthemum leucanthemum L. Common weed. (4293)

Erigeron annuus (L.) Pers. Common weed. (4501)

E. pulchellus Michx. Dry open woods. Common. (4314)

Eupatorium rugosum Houtt. Rich woods, thickets. Common. (4595, 4605)

Gnaphalium obtusifolium L. Dry openings. Common (4621)

Helianthus hirsutus Raf. Dry open woods. Common. (4575)

Heliopsis helianthoides (L.) Sweet var. *scabra* (Dunal) Fern. Open fields. Common. (4356, 4527, 4569)

Hieracium aurantiacum L. Common weed. (4325)

H. caespitosum Dumort. Common weed. (4480, 4482, 4651)

H. scabrum Michx. Dry open woods, oak openings. Common. (4598, 4620, 4658)

Krigia biflora (Walt.) S.F. Blake Oak opening above Glen Creek. Locally common. (4349)

Lactuca canadensis L. Common weed. (4600)

L. serriola L. Field lanes, open disturbed soils. COUNTY RECORD. (4583)

Matricaria matricarioides (Less.) Porter. Common weed. (4557)

Prenanthes alba L. Local on semi-shaded sandstone shelf above Glen Creek. (4615)

Rudbeckia hirta L. Oak openings. Common. (4561, 4653)

Senecio pauperculus Michx. One site; oak opening on natural terrace above Glen Creek. (4296)

Solidago canadensis L. Field lanes, old fields. Common. (4558, 4594)

S. flexicaulis L. Dry woods, oak openings. Common. (4606)

S. rigida L. var. *rigida* One site; dry opening along northeast rim above Mitchell Glen waterfalls.

- S. ulmifolia* Muhl. Oak openings. Common. (4608)
Sonchus oleraceus L. Common weed. (4591)
Taraxacum officinale Weber. Common weed. (4273)
Tragopogon pratensis L. Field lanes, open habitats. (4499)
Xanthium strumarium L. Common weed. (4545, 4576, 4577)

BALSAMINACEAE (Touch-me-not Family)
Impatiens capensis Meerb. Damp soils along Mitchell Glen Creek. Common. (s. n.)

BERBERIDACEAE (Barberry Family)
Caulophyllum thalictroides (L.) Michx. Rich woods. Common. (4267)
Podophyllum peltatum L. Throughout woods. (4278)

BETULACEAE (Birch Family)
Betula papyrifera Marshall. Occasional along edges of glen. (s. n.)
Ostrya virginiana (Miller) K. Koch. Throughout rich woods. (4567, 4599)

BORAGINACEAE (Borage Family)
Cynoglossum amabile Stapf & Drumm. Garden escape; waste ground along old building. COUNTY RECORD. (4603)
Hackelia virginiana (L.) I. M. Johnst. Dry woods. Common. (4540, 4580)

BRASSICACEAE (Mustard Family)
Barbarea vulgaris R. Br. Common weed. (4242)
Brassica nigra (L.) Koch. Common weed. (4556)
Cardamine concatenata (Michx.) O. Schwartz. Throughout rich woods. (4245)
Erysimum cheiranthoides L. Disturbed habitats. COUNTY RECORD. (4517)
Hesperis matronalis L. Common garden escape. (4274)

CAMPANULACEAE (Harebell Family)
Campanula rapunculoides L. Garden escape. (4571)
Lobelia siphilitica L. Damp soils along Glen Creek. Common. (4613)
L. spicata Lam. var. *spicata* Oak openings. Common. (4471)

CAPRIFOLIACEAE (Honeysuckle Family)
Diervilla lonicera Mill. Dry and rocky wooded openings. Uncommon. (4510, 4619)
Lonicera x bella Zabel. Woods, thickets. (4281, 4302)
Sambucus canadensis L. Woods, thickets. Common. (4253, 4488)
S. racemosa L. ssp. *pubens* (Michx.) House. Rich shaded slopes. Common (4573)
Symphoricarpos albus (L.) S.F. Blake Rare county-wide; dry wooded opening along northern rim of Mitchell Glen. COUNTY RECORD. (4614, 4629)
S. occidentalis Hook. Rare county-wide; wooded clearing above Glen Creek. COUNTY RECORD. (4624).
Viburnum lentago L. Occasional throughout woods. (4487)
V. rafinesquianum Schultes var. *rafinesquianum*. Dry woods along southern rim of Mitchell Glen. COUNTY RECORD. (4511, 4623).
Lonicera dioica - 4/1/12 Red Honeysuckle

CARYOPHYLLACEAE (Pink Family)
Arenaria lateriflora L. Woods, openings. Common. (4344)
Cerastium vulgatum L. Common weed. (4289)
Silene latifolia Poir. Field lanes, disturbed habitats. Common. (4330, 4505, 4521)

CHENOPODIACEAE (Goosefoot Family)
Chenopodium album L. Common weed. (4518, 4526, 4549)

CLUSIACEAE (Mangosteen Family)

Hypericum punctatum Lam. Field lanes, dry openings. Common. (4568)

CONVOLVULACEAE (Bindweed Family)

Convolvulus arvensis L. Common weed. (4547)

CORNACEAE (Dogwood Family)

Cornus rugosa Lam. Rocky woods. Common. (4532, 4645)

Cornus alternifolia - 4/12

CUCURBITACEAE (Gourd Family)

Echinocystis lobata (Michx.) T. & G. Edges of woods, thickets. Common. (4546)

EUPHORBIACEAE (Spurge Family)

Euphorbia corollata L. var. *corollata*. Dry wooded openings, field lanes. Common. (4592, 4650)

FABACEAE (Bean Family)

Amphicarpaea bracteata (L.) Fern. Throughout woods, openings. (4612)

Coronilla varia L. Roadside. (4515)

Medicago lupulina L. Common weed. (4307, 4525)

M. sativa L. Common along field lanes, old fields. (4481)

Trifolium campestre Schreb. Common weed. (4322)

T. pratense L. Common weed. (4327)

T. repens L. Common weed. (4328)

Vicia sativa L. ssp. *nigra* (L.) Ehrhart. Field lanes. Common. (4483)

FAGACEAE (Beech Family)

Quercus rubra L. Throughout woods. (4564)

FUMARIACEAE (Fumitory Family)

Dicentra cucullaria (L.) Bernh. Rich wooded slopes along Glen Creek. (4262)

GROSSULARIACEAE (Gooseberry Family)

Ribes cynosbati L. Rich woods. (4259, 4339, 4642)

HAMAMELIDACEAE (Witch Hazel Family)

Hamamelis virginiana L. Local on shaded slopes along Glen Creek. COUNTY RECORD. (4529)

HYDROPHYLLACEAE (Waterleaf Family)

Hydrophyllum virginianum L. Rich wooded slopes. Uncommon. COUNTY RECORD. (4308)

JUGLANDACEAE (Walnut Family)

Carya cordiformis (Wangenh.) K. Koch. Rich woods above Glen Creek. Uncommon. (4351, 4528)

Juglans cinerea L. Occasional throughout woods. (4282)

LAMIACEAE (Mint Family)

Leonurus cardiaca L. Common weed. (4465)

Monarda fistulosa L. var. *fistulosa*. Old fields, oak openings. Common. (4550)

Nepeta cataria L. Common weed. (4489)

Prunella vulgaris L. Common weed of damp soils. (4572)

MALVACEAE (Mallow Family)

Abutilon theophrasti Medikus. Common field weed. (4584)

MONOTROPACEAE (Indian Pipe Family)

Monotropa uniflora L. Dry woods, openings. Uncommon. (4562)

OLEACEAE (Olive Family)

Fraxinus pennsylvanica Marshall. Occasional throughout woods. (4472, 4627)

ONAGRACEAE (Evening Primrose Family)

Circaea alpina L. Local on moist shaded sandstone cliff beside waterfalls of Glen Creek. (4491)

C. lutetiana L. Throughout rich woods. (4363)

Oenothera parviflora L. Field lanes, old fields. (4590)

OXALIDACEAE (Oxalis Family)

Oxalis stricta L. Common weed. (4321, 4334)

PAPAVERACEAE (Poppy Family)

Sanguinaria canadensis L. Rich woods. Common. (4266)

PLANTAGINACEAE (Plantain Family)

Plantago major L. Common weed. (4544)

P. rugelii Decne. Common weed. (4504)

POLEMONIACEAE (Phlox Family)

Phlox divaricata L. One site; edge of woods along northeast rim of Mitchell Glen. COUNTY RECORD. (4244)

POLYGONACEAE (Smartweed Family)

Polygonum pennsylvanicum L. Field lanes, open disturbed habitats. Common. (4589)

P. persicaria L. Common weed. (4555)

Rumex acetosella L. Common weed. (4585)

R. crispus L. Common weed of damp waste places. (4323, 4485)

R. obtusifolius L. Damp disturbed soils. (4536)

R. salicifolius J.A. Weinm. Wet soils along Glen Creek. (4467)

PORTULACACEAE (Purslane Family)

Claytonia virginica L. Throughout rich woods. (4250)

Portulaca oleracea L. Common weed. (4581)

PRIMULACEAE (Primrose Family)

Dodecatheon meadia L. Locally abundant in dry openings along southern and northern rims of Mitchell Glen. (4277)

PYROLACEAE (Shinleaf Family)

Pyrola elliptica Nutt. Rare, one site; oak opening on natural terrace above Glen Creek. (4652)

RANUNCULACEAE (Buttercup Family)

Actaea rubra (Aiton) Willd. Throughout rich woods. (4261, 4286, 4287)

Anemone quinquefolia L. Throughout rich woods. (4233)

A. virginiana L. Dry wooded openings. Common. (4343, 4357, 4362)

Caltha palustris L. Wet soils along Glen Creek. (4263)

Hepatica americana (DC.) Ker Gawler. Rich wooded slopes along Glen Creek. (4260)

Isopyrum biternatum (Raf.) T. & G. Rich woods. Uncommon. (4248)

Ranunculus abortivus L. Dry woods. Common. (4238)

R. fascicularis Muhl. Wooded openings. Common. (4284)

R. recurvatus Poir. Rich woods. Uncommon. (4288)

Thalictrum dioicum L. Woods. Common. (4232)

RHAMNACEAE (Buckthorn Family)

Rhamnus cathartica L. Common, generally naturalized in woods and openings. (4297)

ROSACEAE (Rose Family)

Agrimonia gryposepala Wallr. Dry woods, oak openings. Common. (4554)

Amelanchier spicata (Lam.) K. Koch. Dry woods, openings. (4251, 4640, 4644)

Crataegus coccinea L. One site; beside a lane in wooded opening on southwest edge of Mitchell Glen. (4596)

Fragaria virginiana Duchesne. Dry wooded openings. (4237)

Geum canadense Jacq. Throughout dry woods. Common. (4355, 4548)

Potentilla recta L. Common weed. (4484)

- P. simplex* Michx. Field lanes, disturbed habitats. Common. (4350)
Prunus americana Marshall. Wooded openings, thickets. (4240)
P. pensylvanica L. f. Fencerow. (4643)
P. serotina Ehrh. Occasional throughout woods. (4301)
Pyrus ioensis (A. Wood) L. H. Bailey. Woods. Uncommon. (4271)
Rubus occidentalis L. Dry woods along southern rim of Mitchell Glen. COUNTY RECORD. (4337)

RUBIACEAE (Madder Family)

- Galium aparine* L. Woods. Common. (4272)
G. concinnum T. & G. Occasional in dry woods. COUNTY RECORD. (4473)
G. triflorum Michx. Throughout dry woods. (4655)

RUTACEAE (Rue Family)

- Zanthoxylum americanum* Mill. Disturbed woods, openings along northern rim of Mitchell Glen. Common. (4316)

SALICACEAE (Willow Family)

- Populus tremuloides* Michx. Disturbed woods. (4503)
Salix humilis Marshall. One site; beside field lane on eastern border of Mitchell Glen. (4294)

SANTALACEAE (Sandlewood Family)

- Comandra umbellata* (L.) Nutt. var. *umbellata*. Dry wooded openings along southern rim of Mitchell Glen. (4313)

SCROPHULARIACEAE (Figwort Family)

- Aureolaria grandiflora* (Benth.) Pennell var. *pulchra* Pennell. Adjacent to old lane and local in wooded opening along southern rim of Mitchell Glen. (4593)
Pedicularis canadensis L. Oak opening on

- natural terrace above Glen Creek. Uncommon. (4352)
Scrophularia lanceolata Pursh. Edge of woods on eastern border of Mitchell Glen. (4578)
Verbascum thapsus L. Common weed. (4520)
Veronica serpyllifolia L. Common lawn weed. (4276, 4490)

SOLANACEAE (Nightshade Family)

- Physalis longifolia* Nutt. Old field next to field lane. Common. (4479)
Solanum dulcamara L. Field lanes, open woods, thickets. Common. (4160)
S. nigrum L. Open disturbed soils. (4524, 4602)

TILIACEAE (Linden Family)

- Tilia americana* L. Throughout rich woods. (4299)

THYMELAEACEAE (Mezereum Family)

- Dirca palustris* L. Locally common in woods along southern rim of Mitchell Glen. COUNTY RECORD. (4649)

ULMACEAE (Elm Family)

- Ulmus americana* L. Occasional dry woods along southern rim of Mitchell Glen. (4303, 4618)
U. rubra Muhl. Occasional in rich woods. COUNTY RECORD. (4601)

URTICACEAE (Nettle Family)

- Laportea canadensis* (L.) Wedd. Partially shaded wet soils along Glen Creek. COUNTY RECORD. (4348, 4597)
Urtica dioica L. var. *procera* (Muhl.) Wedd. Disturbed damp soils. Common. (s. n.)

VERBENACEAE (Vervain Family)

- Phryma leptostachya* L. Throughout dry woods. (4563)
Verbena hastata L. Damp open habitats. Common. (4560, 4565)

Eastern
Leatherwood

VIOLACEAE (Violet Family)

- Viola pubescens* Aiton. Woods. (4230, 4265)
V. sororia Willd. Woods. (4231, 4239, 4243, 4249)

VITACEAE (Grape Family)

- Parthenocissus vitacea* (Knerr) A. Hitchc.
 Throughout woods. (4304, 4469)

MONOCOTYLEDONS

ARACEAE (Arum Family)

- Symplocarpus foetidus* (L.) Nutt. Wet soils in low woods and openings along Glen Creek. Common. (4258)

CYPERACEAE (Sedge Family)

- Carex amphibola* Steudel. Woods. Uncommon. COUNTY RECORD. (4311)
C. blanda Dewey Throughout rich woods. Common. COUNTY RECORD. (4298, 4332, 4500)
C. cephalophora Muhl. Dry open woods. (4511)
C. gracillima Schwein. Low woods. Uncommon. (4292)
C. pennsylvanica Lam. Throughout woods and openings. (4236, 4246, 4252, 4269, 4270, 4309, 4331)
C. projecta Mackenzie. Low woods. Rare. COUNTY RECORD. (4475)
C. rosea Schk. ex Willd. Low woods. (4310, 4474)
C. sparganioides Willd. Woods, thickets. Common. (4358)
C. sprengei Dewey. Rich woods. Uncommon. (4290)
C. vulpinoidea Michx. Wet soils along Glen Creek. Uncommon. (4486)

JUNCACEAE (Rush Family)

- Juncus tenuis* Willd. Various damp habitats. (4466)
Luzula multiflora (Retz.) Lej. Woods, clearings. Common. (4318)

LILIACEAE (Lily Family)

- Allium canadense* L. Oak opening on natural terrace above Glen Creek. Common. (4353)
A. tricoccum Aiton. Rich woods bordering Glen Creek. (4537)
Asparagus officinalis L. Common garden escape. (4283, 4507)
Erythronium albidum Nutt. Throughout rich woods. (4247)
Hypoxis hirsuta (L.) Cov. Oak opening on natural terrace above Glen Creek. Common. (4315)
Polygonatum biflorum (Walter) Elliott. Open woods, thickets. Common. (4333, 4498)
Scilla sibirica Andr. Planted and spreading about buildings. (4256)
Smilacina racemosa (L.) Desf. Throughout woods, openings. (4317)
Trillium grandiflorum (Michx.) Salisb. Throughout rich woods. (4255)
Uvularia grandiflora Sm. Rich woods along Glen Creek. (4257)

ORCHIDACEAE (Orchid Family)

- Liparis lilifolia* (L.) Rich. Two sites; local in oak openings. (4342)
Orchis spectabilis L. Rare, one site; beside a wooded path along northern rim of Mitchell Glen. (4181, 4285)

POACEAE (Grass Family)

- Agrostis gigantea* Roth. Open woods. Common. (4512, 4514, 4543)
Andropogon gerardii Vitman. Dry opening along northeast rim above Mitchell Glen waterfalls. (4634, 4661)
Bromus inermis Leysser. Field lanes, disturbed sites. Common. (4326, 4506)
Cinna arundinacea L. Low woods, thickets. (4320)
Dactylis glomerata L. Common weed. (4306, 4324)
Danthonia spicata (L.) P. Beauv. Old fields, dry woods. Common. (4470, 4566, 4654)

- Digitaria sanguinalis* (L.) Scop. Common weed. (4587)
- Elymus canadensis* L. Dry opening along northeast rim of Mitchell Glen. (4632)
- E. hystrix* L. Woods, openings. Common. (4539, 4570, 4659)
- Elytrigia repens* (L.) Nevski. Lawns, disturbed habitats. Common. (4508)
- Festuca subverticillata* (Pers.) E. Alexeev. Rich woods. Uncommon. (4477)
- Glyceria striata* (Lam.) A. Hitchc. Damp soils along Glen Creek. Common. (4476, 4495)
- Leersia virginica* Willd. Damp soils along Glen Creek. Common. (4574, 4611)
- Lolium perenne* L. Common weed. (4516, 4588)
- Milium effusum* L. Rich woods along Glen Creek. Uncommon. (4542)
- Muhlenbergia frondosa* (Poirot) Fern. Low woods. Common. (4610)
- Panicum boreale* Nash. Wooded opening. Uncommon. COUNTY RECORD. (4353)
- P. leibergii* (Vasey) Scribn. Dry oak opening. Uncommon. (4340, 4341)
- P. miliaceum* L. ssp. *ruderales* (Kitigawa) Tzvelev. Edge of cultivated field. (4551)
- Phalaris arundinacea* L. Various damp to wet open habitats. Common. (4329)
- Phleum pratense* L. Field lanes, old fields, clearings. (4359)
- Poa compressa* L. Field lanes, wooded openings. Common. (4291, 4319, 4468, 4513)
- Setaria glauca* (L.) P. Beauv. Common weed. (4609)
- S. viridis* (L.) P. Beauv. Common weed. (4552)

SMILACACEAE (Catbrier Family)

- Smilax herbacea* L. Occasional in damp woods. (4635)
- S. lasioneura* Hooker. Dry woods along northern rim of Mitchell Glen. (4360)

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This paper is dedicated to a young man who loved Mitchell Glen like no other 17-year-old could. For those of us who shared time in the glen with him, a walk through Mitchell Glen will never be the same. So, Augie, this Mitchell Glen flora is fondly dedicated to you.

In Memoriam
August DeForest Zebediah Smith
June 16, 1980 – January 20, 1998