

THE UNIVERSITY OF CHICAGO

ECOLOGY OF THE GLENVIEW REGION, ILLINOIS

A DISSERTATION

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MASTER OF SCIENCE

DEPARTMENT OF BOTANY

BY

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Glenview Forest Preserve.

This preserve lies east of the village of Glenview along the east fork of the North Branch of the Chicago River. This stream drains the large swamps or marsh area called the Skokie.

The Glenview Forest Preserve is located in the township of Niles. It extends through sections seven, eight, nine and seventeen. This bit of natural beauty has been preserved for future generations as a Forest Preserve by the County. The surrounding country has been commercialized for golf clubs. The Glenview, Westmoreland, and Northwest Golf Clubs are in this vicinity. Our genial friend and neighbor, the late Peter Reinberg, was instrumental in making this region a preserve. He will be remembered for years to come in the hearts of all true nature lovers.

This region lies in the area known as the Chicago Plain which extends from Winnetka on the north, through Galewood and La Grange on the west, to Glenwood and Dyer, Indiana on the southwest and south. Its greatest width is about fifteen miles in a direction southwest from the city.

The rock beneath this plain is limestone. Because of the fossils found in this limestone geologists are of the opinion that it was formed beneath the sea and belongs to the later part of the Silurian period. This limestone is called Niagara limestone because it is thought to be of the same age as the limestone which is found at Niagara Falls.

In the Glenview region this limestone is covered by an unstratified drift. Over this is a mantle of thick rich humus made by decayed vegetation. The drift was exposed to the surface where a one rail

trolley line had been laid for the convenience of the golfers. This drift consisted of a fine yellowish clay. In past geological ages this area evidently was submerged situated as it is between the Rosehill bar and an elevation west of here. The Glenview region was probably submerged during the Teleston stage of Lake Chicago.

The vegetation of this forest preserve expressed in ecological terms belongs to the Inland group. It belongs to the Upland Series under what is known as the Clay Hill Division. It is a typical upland clay (morainic) forest. This is the common forest of our region. A morainic forest represents a transitional stage in mesophytic forests. In the Chicago region they have remained at this oak-hickory stage, but to the east and south of here they have developed into beech-maple forests. In time to come then we may expect Glenview to develop from the present stage to the beech-maple stage which we find at Chesterton, Indiana.

Sections 7, 8 and 17 include the flood plain of this small stream. In section 7 along the river we find well drained soil. The map will show a contour line following the course of the river showing a slight elevation. The vegetation was scattered along the margin of the river. This was typical river bank vegetation. *Salix nigra*, *Populus deltoides*, *Ulmus americana*, with some *Tilia americana* were the principal trees. The under-brush was mostly *Cornus paniculata*, *Cornus stolonifera*, *Ribes floridum* and *Dievilla lonicera*. In this section the land lying southwest of the stream is pasture and farm land. The land lying to the northeast of the stream is higher. Part of it is farm and pasture land and part is

woodland. The wooded area is approaching an oak upland stage.

Sections 8 and 17 were the most interesting sections from an ecological standpoint. The small stream forks in section 17. The eastern fork meanders with many twists and turns through both sections 17 and 8. At one place in section 8 it has formed a miniature oxbow cut off. This stream in the spring is probably four or five feet in depth, but during the dry periods it has not more than a foot or two of water and in some places entirely disappears. There was a marked difference between the height of the water in 1922 and in 1924. During the spring and summer of 1922 the small foot bridge spanning the stream was about three feet above it. In the spring of 1924 this bridge was completely submerged and during the summer it was about one foot from the water surface. This may have been due to the excessive amount of rainfall in 1924 and it may have some connection with the drainage of the Skokie Marsh which lies to the northeast of Glenview.

The west fork of this stream meanders in a northwesterly direction through sections 17, 8, and 7. Between these two forks of the stream is a high well drained area probably twenty or twenty-five feet higher than the stream bed. Part of this area is used as a golf links. To the north of this area where the land is low there are three small ponds. One is an all the year around pond, the other two dry up in the summer.

The large pond was in Section 8, square 24. It made an interesting study. Hundreds of red-winged black birds made their nests there. A small swamp surrounded the pond. Here were the *Salix nigra*, *Fraxinus nigra*, *Quercus bicolor* and *Populus deltoides*.

There was a dense undergrowth of *Sambucus canadensis*, *Cornus stolonifera* and *Ribes floridum* with a tangle of *Celastrus scandens*. A dense growth of *Scirpus lacustris* followed the margin and extended far into the pond itself. There were few aquatics. These were being crowded out by the bulrushes. This pond is a good example of a pond developing into an undrained swamp.

Surrounding the swamp was open woodland with an undergrowth of *Lonicera dioica*, *Cornus paniculata* and *Xanthoxylum americanum*. There were some *Prunus serotina*, *Crataegus* and *Ulmus americana*. The dominant trees were; *Quercus alba*, *Quercus rubra* and *Carya ovata*. The undergrowth was *Ulmus americana* and *Quercus rubra* showing that the region was approaching the characteristic mesophytic forest of the morainic area.

In square 22 we found the same type with the addition of *Quercus macrocarpa*. The area was more moist than that mentioned in the preceding paragraph. It had some depressions which were very moist. Here were *Ulmus americana* and *Fraxinus americana*. These depressions terminated in small ponds. Here we found *Ranunculus delphinifolius* and *Cephalanthus occidentalis*. The trees here were *Quercus bicolor*, *Fraxinus nigra*, *Carya cordiformis* and *Ulmus americana*.

As we proceed eastward the land rises very gently but it is noticeably better drained. Here the dominant tree is *Quercus rubra*. Here were found the two elms *Ulmus americana* and *Ulmus fulva* which was rather odd. They usually prefer more moist soil.

On a knoll in between squares 20 and 21 was a dense thicket of *Crataegus*, *Corylus americana* and *Viburnum dentatum*. The *Crataegus* trees seemed to be of the same variety but upon visiting the same

area in October, I found many different varieties of *Crataegus* fruits. This is a favorite place for the birds to congregate. In the summer the thick foliage provides an ideal nesting place and for those who remain late the thornapples are a tempting morsel.

To the southward in square 28 is open woodland chiefly of *Quercus rubra* and *Fraxinus pennsylvanica*. This is not a common tree in the Chicago region. In Glenview we found it in Section 8, squares 28 and 29, Section 8, squares 34 and 47, and in Section 17, squares 49 and 64. It seems to be quite common here. The *Fraxinus pennsylvanica* prefers wet or moist, rich loam, so perhaps this accounts for it.

In square 20 the land is rather high. Here the dominant tree was *Quercus rubra* with some *Tilia americana* and *Acer saccharum*. The land slopes toward the stream and in square 19 we found that the dominant tree was *Acer saccharinum*. This was a noticeable contrast to the *Acer saccharum* of square 20. Here the *Tilia americana* remained but *Fraxinus americana* had replaced the *Quercus rubra* of the high dry land in square 20.

Following the stream through squares 19 and 30 we found the typical river bank vegetation namely; *Salix nigra*, *Cephalanthus occidentalis* and *Ulmus americana*. The dominant tree was the *Acer saccharinum*. Some of these maples have attained a remarkable growth.

Through squares 35, 46, and 51 the river plainly shows that it is eroding on the west bank and depositing on the east bank. On this flood plain the typical tree was *Quercus bicolor*. In square 51 the river makes an abrupt turn, almost the shape of the letter S. In this place we found both the hard and soft maples and it would be

hard to say which was the dominant one.

To the east of here on the other side of the road is a very dense woods. The land is flat and low and the soil very moist. The two trees which seemed to strive with each other for supremacy were the *Ulmus americana* and the *Quercus macrocarpa*. There were a few *Quercus rubra* but more *Tilia americana* and *Fraxinus americana*. The undergrowth was *Cornus paniculata*. There were many vines in this dense section. This was the first place we found *Menispermum canadense*. The *Rhus toxicodendron* and *Lonicera dioica* were very abundant.

In Section 9 on the other side of the car line in squares 24 and 25 is a cut over area. The most important tree here was the *Populus tremuloides*. When a forest of oak and hickory is cut down it returns after a short interval but the first stages in the clearing are thicket stages just like the thicket stage which replaced the xerophytic vegetation when the forest started. There were some *Quercus rubra*, *Tilia americana*, *Carya glabra* and *Ulmus americana*. In time to come these will be in the majority and the *Populus tremuloides* will disappear. Then we shall have the typical morainic forest of oak-hickory. On each side of this patch of woodland are farms. Before these farms were cleared they were probably oak-hickory forests.

Coming back again across the tracks we find a stretch of open woods. In square 39 the dominant tree is *Quercus macrocarpa*. Sometimes this is the dominant tree in these morainic forests. This is the case where the soil is moist or the drainage imperfect. With the *Quercus macrocarpa* were *Fraxinus americana*, *Ulmus americana* and

Acer saccharinum.

As we proceed farther south in square 41 we find that the dominant tree is *Acer saccharinum*. It is a notable fact that the oak forests about Chicago are being succeeded by beech or maple. Here the maple seems to be ready to succeed the oak forest. We found no seedlings of beech.

Much of this section was farm land. In square 31 a small bit of woods remained. Here we found *Quercus ellipsoidalis*, *Quercus macrocarpa* and *Quercus bicolor* but no *Quercus rubra*. The fact that the farmers left this stretch of timber and the presence of *Quercus macrocarpa* and *Quercus bicolor* leads one to suppose that this area was poorly drained, probably a depression in the clay upland and not good for crops. The undergrowth was typical, *Cornus paniculata* and *Sambucus canadensis*.

The greater part of Section 10 is taken up by the Westmoreland Golf Course and Memorial Park Cemetery. There is a small wooded area in square 10. Here *Prunus serotina* and *Acer saccharinum* are the important trees. The undergrowth was *Corylus americana*, *Sambucus canadensis* and *Rhus glabra*. The *Populus tremuloides* and *Quercus rubra* were here but just as the *Quercus rubra* had replaced the *Populus tremuloides* so the *Acer saccharinum* was replacing both of these.

Part of Section 17 was farms and part woods. Squares 2, 3, 4, 5, 6 and 7 would be characterized as open woodlands. Part of this area has been made into another golf course since we surveyed it. The small stream which drains the Glenview region forks in Section 17, square 11.

The east branch meanders through squares 10, 12, 13 and 4 in

this section. The contour line follows each side of the river very closely in squares 11 and 12 but in 13 and 4 it swings to the east. Here then we have a more densely wooded section. On the flood plain were *Tilia americana* and *Fraxinus americana*. The remaining part of 13, all of 14 and part of 15 is a cut over area of *Quercus rubra*, *Quercus alba*, *Tilia americana* and *Ulmus americana*.

The west fork goes through squares 11, 10 and 7. The contour line does not follow this branch so closely. Between these two branches in squares 5, 6 and 7 are open woods. We starred *Acer saccharinum* as the dominant tree. With this maple along the river were *Quercus bicolor* and *Fraxinus americana*. We also found *Carya laciniata* and *Juglans nigra*.

The main body of the stream flows through squares 22, 23, 26, 39, 40 and 41. In 22, the contour line swings away from the river on each side, thus leaving a wide flood plain. On the flood plain as might be expected we found the dominant tree to be *Acer saccharinum*. With it were the typical flood-plain trees, *Ulmus americana*, *Tilia americana* and *Fraxinus americana*. There were some *Populus deltoides* and *Crataegus*. Then as the ground gradually became higher and dryer we found *Quercus rubra* to be the dominant tree. Here *Ostrya virginiana* was found growing in the shade of the oaks. This tree is of slow growth and often grows in the shade of other trees. Scattered among these trees was *Carpinus caroliniana*. This tree is usually found scattered among other trees and is seldom found in masses. On the high land we found *Quercus ellipsoidalis*. This is a typical tree of well-drained uplands, especially clay upland.

As far down as squares 26 and 27 we found the flood plain vege-

tation, but as soon as we crossed the contour line in square 27, *Acer saccharum* replaced *Acer saccharinum* as the dominant tree. *Acer saccharum* is also called sugar maple and hard maple. It produces the bulk of the maple sugar of the market.

In squares 49 and 64 we found an odd situation. It was a out over area and here were both the red maple, *Acer rubrum* and the red ash, *Fraxinus pennsylvanica*. They both prefer a more moist location.

We surveyed Glenview in 1922 and since then I have made frequent observation trips. I am glad it is a forest preserve for in these two years I have noticed the city eneroaching on the surrounding lands. The farms are being cut up into building lots, cement sidewalks have been laid and the real estate brokers are booming it for building purposes. They can not touch the Glenview Forest Preserve. For this I am thankful and for the many happy days I have spent here. I wish also to thank my friends and co-workers in the surveying, Miss Marguerite Mertz and Mr. Thomas C. Johnson.

Square - 24

The small swamp here was surrounded by:

<i>Salix nigra</i>	Black Willow
<i>Fraxinus nigra</i>	Black Ash
<i>Alnus incana</i>	Swamp White Oak
<i>Populus deltoides</i>	Cottonwood
<i>Ulmus americana</i>	Climbing Bitter-sweet
<i>Quercus bicolor</i>	Common Elder
<i>Thuja occidentalis</i>	Red-barked Dogwood
<i>Amelanchier canadensis</i>	Wild Black Currant

Section - 8

Square - 26

Carya ovata ----- Shagbark Hickory
Ulmus americana (Second growth) ----- American Elm
Quercus rubra ----- Red Oak
**Quercus alba* ----- White Oak
Lonicera dioica ----- Honeysuckle
Cornus paniculata ----- Panicle Dogwood
**Quercus rubra* ----- Red Oak
Crataegus ----- Hawthorn
Prunus virginiana ----- Choke Cherry
Xanthoxylum americanum ----- Prickly Ash
Prunus serotina ----- Black Cherry

The undergrowth was *Ulmus americana* and *Quercus rubra*.

Section - 8

Square - 24

The small swamp here was surrounded by:

Salix nigra ----- Black Willow
Fraxinus nigra ----- Black Ash
**Quercus bicolor* ----- Swamp White Oak
Populus deltoides ----- Cottonwood
Celastrus scandens ----- Climbing Bitter-sweet
Sambucus canadensis ----- Common Elder
Cornus stolonifera ----- Red-osier Dogwood
Ribes floridum ----- Wild Black Currant

Section - 8

Square - 21

Crataegus ----- Hawthorn
Corylus americana ----- Hazelnut
Prunus nigra ----- Canada Plum
*Viburnum dentatum -----
Carya glabra ----- Pignut Hickory
Juglans nigra ----- Black Walnut

Section - 8

South end of Square - 28.

Fraxinus pennsylvanica ----- Red Ash
Open Woods
Quercus rubra ----- Red Oak

Section - 8

Square - 20

Acer saccharum ----- Maple
Tilia americana ----- Basswood
*Quercus rubra ----- Red Oak

Section - 8

Square - 19

*Acer saccharinum ----- Soft Maple
(In contrast to Acer Saccharum in Square 20)
Tilia americana ----- Basswood
Fraxinus americana ----- White Ash

Section - 8

Square - 22

Quercus macrocarpa ----- Bur Oak
Quercus alba ----- White Oak
Quercus rubra ----- Red Oak
Ulmus americana ----- American Elm
Crataegus ----- Hawthorn

On the higher ground was:

Quercus rubra ----- Red Oak

In the low land depression was:

Ulmus americana ----- American Elm
Fraxinus americana ----- White Ash

Section - 8

Square - 27

In a small pond here was:

Ranunculus delphinifolius ----- Water Buttercup
Cephalanthus occidentalis ----- Buttonbush

At the west end of this pond were:

Quercus bicolor ----- Swamp White Oak
Fraxinus nigra ----- Black Ash
Carya cordiformis ----- Bitternut Hickory

Around the pond was:

**Ulmus americana* ----- American Elm

Section - 8

Square - 28

Higher and dryer land

**Quercus rubra* ----- Red Oak
Ostrya virginiana ----- Hornbeam
Tilia americana ----- Basswood
Ulmus americana ----- American Elm
Ulmus fulva ----- Slippery Elm
Quercus ellipsoidalis ----- Hill's Pin Oak

On the line between Square 28 and Square 21

Fraxinus americana ----- White Ash
Ostrya virginiana ----- Hornbeam

An undergrowth of:

Lonicera dioica ----- Honeysuckle
Crataegus ----- Hawthorn
Ulmus americana ----- American Elm
Quercus rubra ----- Red Oak

Seedling of:

Fraxinus americana ----- White Ash

Section - 8

Square - 21

Ostrya virginiana ----- Hornbeam
Quercus rubra ----- Red Oak

Section - 8

Square - 19

Quercus rubra ----- Red Oak

Ostrya virginiana ----- Ironwood

Along the river were:

Salix nigra ----- Black Willow

Cephalanthus occidentalis ----- Button Bush

Ulmus americana ----- American Elm

Section - 8

Square - 29

Ulmus americana ----- American Elm

Carya ovata ----- Hickory

**Quercus rubra* ----- Red Oak

Section - 8

Square - 30

On the south end.

Hamamelis virginiana ----- Witch Hazel

Tilia americana ----- Basswood

Ostrya virginiana ----- Ironwood

Fraxinus americana ----- White Ash

**Quercus rubra* ----- Red Oak

**Acer saccharum* ----- Hard Maple

Section - 8

On line between Squares 19 & 30.

**Acer saccharinum* ----- Soft Maple

Section - 8

On the half section line in Section 8.

<i>Cornus paniculata</i>	Panicoled Dogwood
<i>Carya ovata</i>	Shagbark Hickory
<i>Tilia americana</i>	Basswood
<i>Carpinus caroliniana</i>	Blue Beech
<i>Populus deltoides</i>	Cottonwood
<i>Prunus virginiana</i>	Choke Cherry
<i>Ulmus americana</i>	American Elm
<i>Ulmus fulva</i>	Slippery Elm
<i>Xanthoxylum americanum</i>	Prickly Ash
<i>Salix nigra</i>	Black Willow
<i>Sambucus racemosa</i>	Red-berried Elder
<i>Prunus serotina</i>	Black Cherry
<i>Ostrya virginiana</i>	Hornbeam
<i>Crataegus</i>	Hawthorn
<i>Prunus nigra</i>	Canada Plum
<i>Quercus rubra</i>	Red Oak
<i>Quercus alba</i>	White Oak
<i>Fraxinus americana</i>	White Ash
<i>Quercus macrocarpa</i>	Bur Oak
<i>Pyrus coronaria</i>	American Crab
<i>Rubus idaeus</i> Var <i>aculeatissimus</i>	Wild Red Raspberry

Fraxinus americana is the predominating tree in a new growth of trees here.

Section - 8

Square - 30

Second Growth

<i>Tilia americana</i>	-----	Basswood
<i>Acer saccharum</i>	-----	Hard Maple
<i>Prunus serotina</i>	-----	Black Cherry
<i>Quercus rubra</i>	-----	Red Oak
<i>Quercus bicolor</i>	-----	White Oak
<i>Hamamelis virginiana</i>	-----	Witch Hazel
<i>Ulmus americana</i>	-----	American Elm

Section - 8

On line between Squares 19 & 30.

Quercus rubra ----- Red Oak
Ulmus americana ----- American Elm
Juglans nigra ----- Black Walnut
**Juglans cinerea* ----- Butternut

Section - 8

Middle of Square 30.

Carpinus caroliniana ----- Blue Beech

Section - 8

On line between Squares 29 & 30.

**Acer saccharum* ----- Hard Maple

Section - 8

Southwestern part of Square 29.

Fraxinus pennsylvanica ----- Red Ash

Section - 8

Square - 19

**Acer saccharinum* ----- Soft Maple
Salix nigra ----- Black Willow
Quercus macrocarpa ----- Bur Oak
**Hamamelis virginiana* ----- Witch Hazel
Quercus bicolor ----- Swamp White Oaks
Cephalanthus occidentalis ----- Button Bush
Populus grandidentata ----- Large toothed Aspen

Section - 8

Squares 34 & 47

Carpinus caroliniana ----- Blue Beech
Fraxinus americana ----- White Ash
Fraxinus ----- Red Ash
Ostrya virginiana ----- Ironwood
Quercus rubra ----- Red Oak

Undergrowth of:

Tilia americana ----- Basswood
Hamamelis virginiana ----- Witchhazel
Viburnum acerifolium ----- Arrow-wood

Section - 8

Squares 35 & 46

**Quercus bicolor* ----- Swamp White Oak

Section - 8

Square - 51

Along the river:

**Rhus toxicodendron* ----- Poison Ivy
 **Acer saccharum* ----- Hard Maple
 **Acer saccharinum* ----- Soft Maple
Populus grandidentata ----- Large Toothed Aspen
Carpinus caroliniana ----- Blue Beech
Hamamelis virginiana ----- Witchhazel

Section - 8

Squares 33 & 48

Very dense woods, moist

*Ulmus americana ----- American Elm
*Quercus macrocarpa ----- Bur Oak
Quercus rubra ----- Red Oak
Tilia americana ----- Basswood
Fraxinus americana ----- White Ash
Cornus paniculata ----- Dogwood
Rhus toxicodendron ----- Poison Ivy
Menispermum canadense ----- Moon Vine
Lonicera dioica ----- Honeysuckle

Section - 8

Square - 38

Quercus alba ----- White Oak
Quercus rubra ----- Red Oak
Crataegus ----- Hawthorn
Ulmus americana ----- American Elm
Quercus ellipsoidalis ----- Hill's Pin Oak
Quercus macrocarpa ----- Bur Oak

Section - 9

Squares 24 & 25

Mostly a cut-over region.

Populus tremuloides ----- Quaking Aspen

Section - 9

Square - 39

**Quercus macrocarpa* ----- Bur Oak
Fraxinus americana ----- White Ash
Ulmus americana ----- American Elm
Acer saccharinum ----- Soft Maple

Section - 9

Square - 41

**Acer saccharinum* ----- Soft Maple

Section - 9

Square - 25

Quercus rubra ----- Red Oak
Tilia americana ----- Basswood
Carya glabra ----- Pignut Hickory
Ulmus americana ----- American Elm

Section - 9

Square - 31

Quercus ellipsoidalis ----- Hill's Pin Oak
Quercus macrocarpa ----- Bur Oak
Populus deltoides ----- Cottonwood
Quercus bicolor ----- Swamp White Oak
Populus tremuloides ----- Quaking Aspen
Sambucus canadensis ----- Elderberry
Fraxinus americana ----- White Ash
Ulmus americana ----- American Elm
Cornus paniculata ----- Dogwood

Section - 7

Square - 17

Chains 1 - 2 - 3. Section line 1.

Lonicera dioica ----- Honeysuckle
Quercus rubra ----- Red Oak
Quercus bicolor ----- Swamp White Oak
Populus deltoides ----- Cottonwood

Chains 1 - 2 - 3. Section line 2.

The woods are thinned by dying.

Prunus nigra ----- Canada Plum
Ulmus americana ----- American Elm
Crataegus ----- Hawthorn
Quercus macrocarpa ----- Bur Oak
Fraxinus americana ----- White Ash

Chains 1 - 2 - 3. Section line 3.

Around the pond

Quercus macrocarpa ----- Bur Oak
Fraxinus americana ----- White Ash

Section - 7

Square - 19

Scattered vegetation along the margin of the river.

Quercus ellipsoidalis ----- Hill's Pin Oak
Quercus macrocarpa ----- Bur Oak
Prunus virginiana ----- Choke Cherry

Section - 7

Square - 19

Scattered vegetation along the margin of the river.

Prunus serotina	Black Cherry
Fraxinus americana	White Ash
Salix nigra	Black Willow
Crataegus	Hawthorn
Ulmus americana	American Elm
Tilia americana	Basswood
Populus deltoides	Cottonwood
Prunus nigra	Canada Plum
Pyrus coronaria	Crab Apple
Carya ovata	Shagbark Hickory
Corylus americana	Hazelnut
Cornus paniculata	Panicle Dogwood
Cornus stolonifera	Red-Osier Dogwood
Rubus occidentalis	Blackberry
Ribes floridum	Wild Black Currant
Dievilla lonicera	Bush Honeysuckle
Lonicera dioica	Honeysuckle
Vitis vulpina	Frost Grape

Section - 10

Square - 61

*Prunus serotina	Black Cherry
Prunus virginiana	Choke Cherry
Cornus ^{PANICULATA} florida	Flowering Dogwood

Section - 10

Square - 61

Corylus americana ----- Hazelnut

Populus tremuloides ----- Quaking Aspen

Quercus rubra ----- Red Oak

**Acer saccharinum* ----- Soft Maple

Undergrowth of:

Sambucus canadensis ----- Common Elder

Rhus glabra ----- Sumach

Section - 17

Squares 5 & 6

**Acer saccharinum* ----- Soft Maple

On the low land:

Carya laciniosa ----- Shellbark Hickory

In the bottom-land:

Juglans nigra ----- Black Walnut

Along the river:

Acer saccharinum ----- Soft Maple

Quercus bicolor ----- Swamp White Oak

Fraxinus americana ----- White Ash

On the flood plain of the river in Square 4:

Tilia americana ----- Basswood

Fraxinus americana ----- White Ash

Section - 17

Squares 5 & 6

Acer saccharinum ----- Soft Maple
Ulmus americana ----- American Elm
Crataegus ----- Hawthorn

On the eroding bank:

**Quercus alba* ----- White Oak
Acer saccharum ----- Hard Maple

Section - 17

Squares 22 & 23

**Acer saccharinum* ----- Silver Maple
Ulmus americana ----- American Elm
Tilia americana ----- Basswood
Fraxinus americana ----- White Ash
Populus deltoides ----- Cottonwood
Crataegus ----- Hawthorne

Section - 17

Square - 23

**Quercus rubra* ----- Red Oak
Ostrya virginiana ----- Hornbeam
Carpinus caroliniana ----- Blue Beech
Juglans cinerea ----- Butternut

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Section - 17

Squares 23 & 24

High Land

**Viburnum prunifolium* ----- Black Haw

Quercus ellipsoidalis ----- Pin Oak

Section - 17

Squares 27 & 28

**Acer saccharinum* ----- Silver Maple

Populus deltoides ----- Cottonwood

Fraxinus americana ----- White Ash

As soon as we cross the contour line we find:

Acer saccharum ----- Hard Maple

Section - 17

Square - 40

**Quercus rubra* ----- Red Oak

Quercus ellipsoidalis ----- Pin Oak

Section - 17

Squares 49 & 64

Cut over

**Acer rubrum* ----- Red Maple

**Quercus macrocarpa* ----- Bur Oak

Fraxinus pennsylvanica ----- Red Ash

Corylus americana ----- Hazelnut

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Section - 17

Squares 49 & 64

Ribes gracile ----- Gooseberry
Carya glabra ----- Pignut Hickory
Acer saccharinum ----- Silver Maple
Sambucus canadensis ----- Elder
Fraxinus americana ----- White Ash
Carya ovata ----- Shagbark

Section - 17

Squares 53 & 60

Acer saccharinum ----- Silver Maple
Ulmus americana ----- Water Elm
Quercus Alba ----- White Oak
Quercus macrocarpa ----- Bur Oak
Undergrowth of Ash