

Living Resources Assessment
Part of an Environmental Assessment of
Five Parcels of Tribal Lands
Near Peshawbestown, Leelanau County, Michigan

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Introduction

A field identification of the living resources of the five land parcels described below was taken between May 28 and June 27, 1987. The scope of this work considered wildlife, vegetation, ecosystems, agricultural, and wilderness resources and values. The actual field work involved parts of six days varying from 2.5 to 4.5 hours per visit. Most plants were ^{visually} usually identified, and some specimens of unfamiliar ones were taken in order to key later. The twenty plus years of experience, research and publication of the expert were drawn on to evaluate these areas for possible development as tribal housing. This report documents the reasons for classifying the living and natural resources of each parcel according to its environmental sensitivity in relation to their suitability for the construction of housing.

Methods

Both the boundaries and several portions of the interior of each tract were covered by foot. Many of the field-work days had temperatures in the 90's, and rain was encountered during two

visitations. Timing for floristic assessment and identification was less than ideal. That is, several early flowering species, particularly orchids, were done blooming for the year and leafy portions were all that was left for identification. Therefore the short time frame and the phenology should be borne in mind in the case of possible omissions or errors.

A DBH tape was used to record the diameter breast height of many species of trees as a standard measure of size and dominance. Standard field guides were used in identifying plants: Ferns of Michigan - Billington; Michigan Trees - Otis; Michigan Wildflowers - Smith; Spring Flora of Wisconsin - Fassett; and occasionally Gray's Manual of Botany 8th ed. - Fernald. For this reason a critical read of this report may note a discrepancy in the nomenclature depending on the manual used at the time. Again, it was the best effort for the time available.

The animal, ecosystem, agricultural and wilderness assessments are made by my authoritative evaluations.*

Based upon the above described inspection and methodology, a Species List has been prepared, which is found beginning at page 13 of this Report.

*The expert's credentials for this are his many acknowledgements in: Michigan Mammals - Baker; Distributional Checklist of Michigan Birds - Payne; the two books he has published on Great Lakes bird nesting and migration; the extensive fauna surveys he has published; and other pertinent publications (see curriculum vitae of Dr. William Scharf attached hereto).

Results

PARCELS A1 AND A2

(S. 1/2 G.L. 2 - BOUNDED BY MCKEENE AND BOTH SIDES PESHAWBESTOWN RD,
23 ACRES)

Old Field and Graded Area (Parcels A₁ and A₂)

This area has been partially graded for proposed housing with 6 inch wells placed at what are proposed home sites. The area is well drained with porous mineral soils. The vegetation, where present, is mainly what could be classified as old field annuals and perennials. All species present (page 1 of species lists) can be said to be common, and in this early stage of succession could be said to consist of coarse and rank alien species usually classified as weeds.

The housing proposal would virtually eliminate this habitat, except for some trees left for shade. Along with the loss of vegetation the associated wildlife would be displaced, including ground and low nesting birds such as Chipping Sparrows, Vesper Sparrows, and Kildeer. Small mammals displaced by the housing would be the Woodchuck, Marmota monax, Meadow Vole, Microtus pensylvanicus, Prairie Deer Mouse, Peromyscus maniculatus bairdi, and the Short-tailed Shrew, Blarina brevicauda. These creatures are the most common mammals of old fields in this region and are in no danger of losing habitat. The American Toad, Bufo terrestris, an open land amphibian would also lose habitat from the housing development, but its habitat was produced by the human action of

clearing the original forests anyway. This property is well isolated from agricultural orchard lands by the border woodland described below. Not pursuing the housing construction would have little positive influence on the environment. Being bounded by the intersection of two county blacktop roads, this parcel appears to have nil wilderness value.

West Boundary Woods (Parcels A₁ and A₂)

This wooded land is dominated by Sugar Maple and Basswood mostly pole sized or at least under 12 inches DBH. It appears to have been recently logged and possibly grazed because the understory is less rich than that of similar woods at this stage. Since this wooded land is proposed as a buffer zone between the adjacent orchard land and proposed housing, no change in its living resources is anticipated.

PARCEL A₃

(SEC. 3 G.L. 4 WEST BOTH SIDES OF PESHAWBESTOWN RD, 85 ACRES)

Old Field - Open Land (Parcel A₃)

The open land bordering the road which is proposed for housing development is very similar to the preceding open land (parcels A₁ and A₂). It has been vacant slightly longer and is therefore in a more advanced stage of ecological succession; it has no grading or clearing, and conifer plantings over a decade ago are more conspicuously developed. The major difference is that there are some moderate slopes which would need to be considered when planning drainage for the proposed housing. The same impact on living resources as for parcels A₁ and A₂ could be postulated.

Mature Woods Near W. Boundary and Top of E. Hill (Parcel A₃)

There is wooded land to the top of the east hill and in the westerly one-third of this parcel. Both of these are mature woodlands with the easterly portion having a gradation of aspen trees, populus sp., along the borders with clonal patches developing in the old field (See Species List, p. 17).

The proposed housing development might indirectly degrade these woodlands by further human intrusion, but since no direct development in these woodlands is planned, little impact is expected. The edges of these woods are valuable as White-Tailed Deer and Ruffed Grouse, Bonasa umbellus and American Woodcock, Philolela minor, habitat. Not developing the housing in this portion of the parcel would better preserve the present ecosystem which is moving toward a rich climax forest.

Stream Area at N.W. Corner of Boundary (Parcel A₃)

This is an unusual and nearly unique area containing several fern and herbeccous species along with an oligotrophic stream containing Brook Trout and other acquatic species uncommon in this part of Leelanau County (~~See Species List, p. 18~~). Many of the plants listed are protected and have very narrow tolerance limits. The plant community and the area surrounding the stream is on an organic soil with many springs, seeps, and generally water saturated. Any change of drainage patterns by development would be harmful to the living resources of this area. The orchard adjacent to this property relies on this stream for irrigation water. Therefore, a wide berth should be given to this environmentally sensitive area when planning any future developments. The housing development requiring this land in trust status will not be built in or near this area, and therefore not adversely impact it.

PARCEL B - WOODED

(SEC. 3 - BOUNDED BY PUTNAM RD. AND W. BOUNDARY OF PESHAWBESTOWN, 52 ACRES)

This large tract of land is dominated by steep slopes, rocky terrain, and seeping springs forming intermittent streams. It is easy to see why this land was not used for agriculture in the past. The living resources include a wide diversity of habitats characterized by large tracts of merchantable hardwoods, old logging roads, and the aforementioned drainage areas populated by many protected and uncommon species of herbs and ferns (Species List, p. 19). Eleven species of ferns were found along with many protected orchid and lily species. This is one of the finest examples of near climax hardwood forests ever seen by the writer. Development for housing would be difficult because of steep slopes and springs. The rocky substrata would present serious sewage disposal problems. The valuable hardwoods would need to be harvested, many prematurely, thus losing optimal value. Not developing this site would allow for periodic cash-flow through selective cutting of mature hardwoods. Many wildlife species such as Deer mouse, Peromyscus maniculatus gracilis, shrews, both Sorex and Blarina, Wood Frogs, Tree Frogs, White-Tailed Deer, and possible Wild Turkey recently re-introduced into the area could be found here. These species could be present in this tract, and would be lost if development took place. In addition this area has been a popular mushrooming area. This area has the greatest potential for wilderness value of any of the

parcels considered in this report or of any of the land surrounding the Grand Traverse Band area because of its size, remote character, and lack of vehicular trails or roads. Care should be taken to maintain the character of this living resource. It could easily be damaged by motorized vehicles. The adjacent agricultural and residential land use co-exists reasonably well at present. Housing development for this area would have significant adverse impact on the environment, and should be strongly opposed.

PARCELS C₁ AND C₂

(EAST OF LOTS 1-9 TO RR TRACK AND E. OF RR TRACK TO LAKE, UNKNOWN ACRES)

Both of these parcels are shore swamp consisting of a spongy organic layer developed over lacustrian deposits. There is standing water in many stump holes, and running water from many springs and seeps as well as the ditch-stream which runs parallel to the railroad track and empties into Lake Michigan to the east of Lot #9. The wetness and organic substrata determine the vegetation here. The virtual carpet of Crested Shield Fern, Oak Fern (2 species), and Cinnamon Fern is an alerting signal that this is floristically a very special habitat (Species List, p. 21). Two species of protected orchids were identified, and two others which the expert was hesitant to positively identify apart from the remaining green parts were also present. One of these appears to be Cypripedium candidum white lady-slipper a Michigan Threatened Species (Michigan's Special Plants - Mich. DNR - 1986). Developing this area for housing would be nearly impossible, and certainly the unique living resources would be destroyed in the process.

One example of what happens if the Swamp trees are removed is seen to the east of Lots 7 and 8. Here the Stumps of Cedars, Hemlocks and Ash trees are found amid six foot high Cattails and Red Osier Dogwood. The organic soil is now so soft that one sinks to the knees with every other step. This area was probably similar to the rest of the parcel before the trees were cut. It will take many

decades before the trees grow back to the original form, and it would make a very interesting study. Not constructing housing here will allow the environmentally sensitive area to continue, and the uncommon vegetative association to persist. From a wildlife standpoint this area could have been a White-Tailed Deer Yard historically (before the road and houses). Snowshoe Hares, Lepus americanus; Red-backed Voles, Clethrionomys gapperi and possibly certain uncommon species of shrews, Sorex and Weasels Mustella probably are found in this woods. Yellow Warblers, Pileated Woodpeckers and other swamp land birds (see species list) not common in other habitats are also abundant in the present environment;. Reptiles and amphibians are found here as well, but only Gartersnakes, Thamnophis sirtalis, and Green Frogs, Rana Clamatans were seen. Housing construction here would be a mistake, and significantly impact this living resource.

PARCEL F

(WOODED BORDER OF ADMINISTRATIVE PROPERTY, _____ ACRES)

This is a mature woodland from which parking lots and building sites have already been carved. There is a remnant of the woodland left as a border. This border land is somewhat degraded by former construction activities, but the reasonable diversity of species of plants that persist are listed in the Species List (p. 23). This would be an area where further impact on the living resources is unlikely. If this was of adequate size and was available, housing could be built here without further degradation of the environment, provided that the present wooded border is maintained.

SUMMARY

After surveying the living resources of the five parcels considered for housing, it is determined that the old field areas of parcels A1, A2, A3 and vacant areas of parcel F are suitable because of the nature of their common living resources which are abundant in this region. The flora and fauna found in these three parcels are relatively common, mostly introduced weeds and are also indicators of well drained, stable substrata usually a factor in choosing housing sites. Certain portions of these parcels should be reserved because of streams and steep slopes, but these portions have not been included in the present proposal to construct housing. The proposed housing use of these parcels will not significantly affect the living resources or the parcel.

The flora and fauna of parcels B, C, and C2 are less common, or scarce, and many species living there are protected. These are indicators of the fragile, often wet, and often organic substrata, and are native vegetation relatively untouched in a wild, pristine state. They indicate standing or running water which usually requires filling and land changes before building. Steep slopes and rocky areas which harbor large trees and specially developed understory herbs, shrubs, and animals have not been cleared for agriculture or housing in the past because of the difficulties encountered. There seems to be no compelling reason to develop these parcels given the more suitable alternatives. Moreover, development of these parcels for such uses as housing would significantly effect this living resource.

SPECIES LISTS

PARCELS A₁ and A₂

S. 1/2 G.L. 2 - BOUNDED BY MCKEESSE AND BOTH SIDES PESHAWBESTOWN ROADS

Old Field and Graded Area:

Trees:

Red Pine
Black Locust
Quaking Aspen
Pin Cherry
White Spruce
Ash
Basswood
Sugar Maple

Pinus resinosa
Robinia pseudo-acacia
Populus tremuloides
Prunus pensylvanica
Picea canadensis
Fraxinas americanus
Tilia americana
Acer Sacchanum

Shrubs:

Lilac
Autumn Olive
Wild Raspberry
June Berry
Sumac

Syringa vulgaris
Eleagnus sp.
Rubus sp.
Amelanchier humilis
Rhus typhina

Herbs:

Affalfa
Alyssum, Hoary
Asparagus
Blue Grass
Blue Crass, Canada
Bracken Fern
Brome Grass
Campion, Bladder
Campion, White
Carrot, Wild
Chickweed
Clover, Red
Curled Dock
Oxeye Daisy
Goat's Beard
Goldenrod
Grape, Wild
King Devil
Leafy Spurge
Mallow
Milkweed
Orange Hank Weed
Orchard Grass
Plantain, Long Leaf

Medicago sativa
Alyssum alysoides
Asparagus officinalis
Poa praetensis
P. canadensis
Pteridium aquilinum
Bromus inermus
Silene vulgaris
S. alba
Daucus carota
Stellaria media
Trifolium praetense
Rumex crispis
Chrysanthemum leucanthemum
Troqopogon dubius
Solidago sp.
Vitis sp.
Hieracium pilloselloides
Euphorbia esula
Malva neglecta
Aselepias syriaca
Hiepacium aurantiacum
Dactylis glomerata
Plantago lanceolata

Herbs continued

Potentilla
Quack Grass
Ragweed
Sheep Sorrel
St. John's Wort
Star Thistle
Strawberry
Timothy
Vetch
Yarrow

Potentilla recta
Agropyron repens
Ambrosia artemesiifolia
Rumex acetosella
Hypericum perforatum
Centaurea maculosa
Fragaria virginiana
Phleum pratense
Vicia sativa
Achillea millefolium

Birds:

Vesper Sparrow - nest
Bluebirds - many
Kingbirds
Robin
Kildeer
Field Sparrow

Mammals:

Woodchuck

Marmota monax

West Boundary Woods:

Trees:

*Basswood
*Sugar Maple
Sumac
Ash
Slippery Elm

Tilia americana - 8-12-DBH
Acer Saccharum- 6-8-DBH
Rhus typhina
Fraxinus americanus
Ulmus fulva

Shrubs:

Iron Wood
Choke Cherry

Ostrya virginiana
Prunus virginiana

Herbs:

Leeks
Trillium
Sweet Ciciley
Blue Cohosh
Downy Yellow Violet
Solomon's Seal
Wild Licorice
Herb Robert
Squirrel Corn

Allium tricoccum
Rilium grandiflorum
Osmorhiza claytoni
Caullophyllum thalictroide
Viola pubescens
Polygonatum pubescens
Galium lanceolatum
Geranium robertianum
Dicentra canadensis

*Co-dominants

PARCEL A₃
SEC. 3 GL 4 WEST BOTH SIDES PESHAWBESTOWN ROAD

Old Field - Open Land: Includes old field and scattered small trees

Trees: (scattered clumps)

Scotch Pine
Sugar Maple
Red Maple
Pin Cherry
June Berry

Pinus sylvestris
Acer saccharum
Acer rubrum
Prunus pensylvanica
Amelanchier humilis

Shrubs:

Sumac
Autumn Olive

Rhus typhina
Eleagnus sp.

Herbs:

Affalfa
Alyssum, Hoary
Asparagus
Blue Grass
Blue Grass, Canada
Brome Grass
Campion, Bladder
Campion, White
Carrot, Wild
Chickweed
Clover, Red
Daisy
Fleabane
Goat's Beard
Goldenrod
Grape, Wild
King Devil
Mallow
Milkweed
Pearly Everlasting
Orchard Grass
Potentilla
Quack Grass
Ragweed
Sheep Sorrel
St. John's Wort
Star Thistle
Strawberry
Timothy
Vetch

Medicago sativa
Alyssum alysoides
Asparagus officinalis
Poa praetensis
P. canadensis
Bromus inermis
Silene vulgaris
S. alba
Daucus carota
Stellaria media
Trifolium praetense
Chrysanthemum leucanthemum
Erigeron philadelphicus
Trogopogon dubius
Solidago sp.
Vitis sp.
Hieracium pilloselloides
Malva neglecta
Asclepias syriaca
Anaphalis margaritacea
Dactylis glomerata
Potentilla recta
Agropyron repens
Ambrosia artemisiifolia
Rumex acetosella
Hypericum perforatum
Centaurea maculosa
Fragaria virginiana
Phleum pratense
Vicia sativa

Birds:

Chipping Sparrow
Vespen Sparrow
Kingbird
Brown Thrasher
Tree Swallow

PARCEL B
SEC. 3 GL 4 WEST - BOTH SIDES OF PESHAWBESTOWN RD.

Mature Woods Near W. Boundary and Top of E. Hill

Trees:

*Beech	<u>Fagus grandifolia</u>
*Sugar Maple	<u>Acer saccharum</u>
American Elm	<u>Ulmus americana</u>
Ash	<u>Fraxinus americana</u>
Large Tooth Aspen	<u>Populus grandidentata</u>
Quaking Aspen	<u>Populus tremuloides</u>
White Pine	<u>Pinus strobus</u>

Herbs:

Rattlesnake Fern	<u>Botrychium virginianum</u>
Leek	<u>Allium tricoccum</u>
Jack-in-the-Pulpit	<u>Arisaema atrorubens</u>
Trillium	<u>Trillium grandiflorum</u>
Canada Mayflowers	<u>Mianthemum canadense</u>
Wood Nettle	<u>Laportea canadensis</u>
Downy Yellow Violet	<u>Viola pubescens</u>
Violet sp.	Probably <u>Viola canadensis</u>
Herb Robert	<u>Geranium robertianum</u>

Birds:

Wood Pewee
Crested Flycatcher

Stream Area at NW Corner of Boundary

Clear Oligotrophic Stream - Silt - Sand - Gravel

Trees:

Basswood	<u>Tilia americana</u>
White Birch	<u>Betula papyrifera</u>
Yellow Birch	<u>Betula lutea</u>
Ash	<u>Fraxinus americanus</u>
Quaking Aspen	<u>Populus tremuloides</u>
Red Maple	<u>Acer rubra</u>
American Elm	<u>Ulmus americanus</u>
Slippery Elm	<u>Ulmus fulva</u>
White Cedar	<u>Arbor vitae</u>
Hemlock	<u>Tsuga canadensis</u>

*Co-dominants

Shrubs:

Dogwood
Red Elder
Wild Grape

Cornus rugosa
Sambucus canadensis-
Vitis riparia

Aquatic Life:

Brook Trout
Liver Worts
Sallaginella
Cow Slip
Water Cress

Salvelinus fontanelis
Marchantia sp.
Sallaginella sp.
Caltha palustris
Nasturtium officinals

Herbs

Ferns:

Horsetail
Sensitive Fern
Interrupted Fern
Bracken Fern
Maidenhair Fern

Equisetum fluviatile
Onoclea sensibilis
Osmunda claytonia
Pteridium aquilinum
Adiantum pedatum

Flowering Plants:

Iris
Jack-in-the-Pulpit
Jewel Weed
Bone Set
Joe Pye Weed
No. Lopseed
Swams Buttercup
Goldenrod
Sweet Cicely
Purple Water Avens

Iris versicolor
Arisaema actrorubens
Impatiens capensis
Eupatorium pexfoliatum
Eupatorium purpureum
Phryma leptostachya
Ranunculus septentrinalis
Solidago sp.
Osmorhiza claytoni
Geum rivale

PARCEL B
(SEC. 3 - BOUNDED BY PUTNAM RD. AND W. BOUNDARY PESHAWBESTOWN)

Trees:

*Beech	<u>Fagus grandifolia</u>
*Sugar Maple	<u>Acer saccharum</u>
*Basswood	<u>Tilia americana</u>
Large Tooth Aspen	<u>Populus grandidentata</u>
Quaking Aspen	<u>Populus tremuloides</u>
Iron wood	<u>Ostrya virginiana</u>
American Ash	<u>Fraxinus americanus</u>
Red Oak	<u>Quercus rubra</u>
Red Maple	<u>Acer rubrum</u>
American Elm	<u>Ulmus americanus</u>

Shrubs:

Bush Honeysuckle	<u>Diervilla lonicera</u>
Ribes	<u>Ribes cynosbati</u>
Canada Yew	<u>Taxus canadensis</u>
June Berry	<u>Amelanchier humilis</u>

Herbs

Ferns and Aquatics:

Water Horsetail	<u>Equisetum fluviatile</u>
Cinnamon Fern	<u>Osmunda cinnamomea</u>
Rattlesnake Fern	<u>Botrychium virginianum</u>
Oakfern	<u>Dryopteris disjunctus</u>
Spinulose Shield Fern	<u>Dryopteris spinulosa</u>
Crested Shield Fern	<u>Dryopteris cristata</u>
Narrow Leaved Speenwort	<u>Athyrium psychocarpom</u>
Silvery Spleenwort	<u>Athyrium theleptroides</u>
Maidenhair Fern	<u>Adiantum pedantum</u>
Bracken Fern	<u>Pteridium aquiclinium</u>
Sensitive Fern	<u>Onoclea sensibilis</u>
*Ebony Spleenwort	<u>Asplenium platyneuron</u> - far from known range

Flowering Plants:

Longbracted Rein Orchid	<u>Habenaria viridis</u>
Trillium	<u>Trillium grandiflorum</u>
Indian Cucumber Root	<u>Medeola virginiana</u>
Canada Mayflower	<u>Mianthemum canadense</u>
Solomon's Seal	<u>Polygonatum pubescens</u>
False Solomon's Seal	<u>Smilacina zacemosa</u>

*Co-dominant, small amounts of White Cedar, Red Pine, White Pine

Flowering Plants continued

Ladies Tresses
Leek
Sessile Bellwort
Bead Lily
Jack-in-the-Pulpit
Adder's Tongue
Blue Cohosh
Downy Yellow Violet
Violet Sp.

Round Leaf Pyrola
Partridge Berry
Black Snake Root
Foam Flower
Liver Leaf
No. Lopseed
Barreberry
Doll's Eyes
Sweet Cicely
Herb Robert
Wild Licorice
Sweet Scented Bedstraw
Wild Sasparilla
Star Flower

Spiranthes sp prob. cernua
Allium tricoccum
Uvularia sessilifolia
Clintonia borealis
Arisaema atrorubens
Erythronium americanum
Caulophyllum thalictroides
Viola pubescens
probably V. canadensis and V. conspensa
Pyrola rotundifolia
Mitchella repens
Sanicula canadensis
Mitella diphylla
Hepatica acutiloba
Phryma leptostachya
Actea rubra
Actea pachypoda
Osmorrhiza claytoni
Geranium robertianum
Galium lanceolatum
Galium triflorum
Aralia nudicaulis
Trientalis borealis

Amphibians:

Wood Frog

Rana sylvatica

Birds Seen or Heard

Downy Woodpecker
Hairy Woodpecker
Pileated Woodpecker
Ovenbird
White Breasted Nuthatch
Blue Jay
Least Fly Catcher
Wood Peewee
Crested Flycatcher
Red-Eyed Vireo

Mammals:

White Tailed Deer
Porcupine
Red Fox

Odocoileus virgini^uenus - tracks
Erithizon dorsatum - den tree
Vulpes vulpes - possible den

PARCELS C₁ and C₂
EAST OF LOTS 1 - 9 TO LAKESHORE
(EXCLUDES OLD FIELD SPECIES ON RAILROAD TRACKS)

Trees:

*Hemlock	<u>Tsuga canadensis</u>
*White Cedar	<u>Arbor vitae</u>
*American Ash	<u>Fraxinus americanus</u>
*Yellow Birch	<u>Betula lutea</u>
Red Maple	<u>Acer rubra</u>
Basswood	<u>Tilia americana</u>
Quaking Aspen	<u>Populus tremuloides</u>
Balsum Poplar	<u>Populus tackamahacka</u>
Paper Birch	<u>Betula papyrifera</u>
Sugar Maple	<u>Acer saccharum</u>
American Elm	<u>Ulmus americanus</u>

Shrubs:

Rose	<u>Rosa sp. prob. blanda</u>
Wild Grape	<u>Vitis riparia</u>
Wild Currant	<u>Ribes sativum</u>
Ribes	<u>Ribes cynosbati</u>
Red Elder	<u>Sambucus canadensis</u>
Raspberry	<u>Rubus sp.</u>
Blackberry	<u>Rusus sp.</u>
Mountain Maple	<u>Aeer spicatum</u>
Canada Yew	<u>Taxus canadensis</u>
Choke Cherry	<u>Prunus virginiana</u>
June Berry	<u>Amelanchier humilis</u>
Poison Ivy	<u>Rhus radicans</u>
Bush Honeysuckle	<u>Diervilla lonicera</u>
Red Osier Dogwood	<u>Cornus stolonifera</u>
Round Leaved Dogwood	<u>Cornus rugosa</u>
Willows	<u>Salix sp.</u>

Herbs

Ferns and Aquatics:

<u>Selaginella sp.</u>	<u>Marchantia sp.</u>
Livenworts	<u>Myriophyllum sp.</u>
Foxtail	<u>Equisetum fluviatile</u>
Water Horsetail	<u>Dryopteris putall</u>
Evergreen Woodfern	<u>Dryopteris putall</u>
Spinulose Shield Fern	<u>Dryopteris putall</u>
Oak Fern	<u>Dryopteris putall</u>
No. Oak Fern	<u>Dryopteris putall</u>
Crested Shield Fern	<u>Dryopteris putall</u>
Bracken Fern	<u>Pteridium aquilinum</u>
Cinnamon Fern	<u>Osmunda cinnamomea</u>
Rattlesnake Fern	<u>Botrychium virginianum</u>
Water Cress	<u>Nasturtium officinalis</u>

*Co-dominant Species

Flowering Plants:

Rush
Trillium
Canada Mayflower
Jack-in-the-Pulpit
Bead Lily
False Solomon's Seal
Long Bracted Rein Orchid
Showy Lady's Slipper
Cattail
Swamp Buttercup
Tall Yellow Buttercup
Herb Robert
Wild Sasparilla
Twin Flower
Yarrow
Joe-Pye Weed
Boneset
Jewel Weed
Agrimony
Purple Water Avens
No. Lopseed
Red Baneberry
Doll's Eyes
Sweet Cicely
Star Flower
Bitter Night Shade
Golden Rod
Orange Hankweed

Scirpus atricapilis
Trillium grandiflorum
Mianthemum canadensis
Arisaema atrorubens
Clintonia borealis
Smilacina raccomosa
Habeneria viridis
Cypripedium reginae
Typha latifolia
Ranunculus septantrionalis
Ranunculus acris
Geranium robertiana
Aralia nudicaulis
Linnaea borealis
Achillea millefolium
Eupatorium purpureum
Eupatorium perfoliatum
Impatiens capensis
Agrimonia gryposepala
Geum rivale
Phryma leptostachya
Actea rubra
Actea pachypoda
Osmorhiza claytoni
Trientalis borealis
Solarum dulcamara
Solidago sp.
Hieracium aurantiacum

Amphibians:

Green Frog

Rana clamitans

Birds:

Blue Jay
Pileated Woodpecker
Yellow Warbler
Chickadee
Common Flicker
White Throated Sparrow
Red-Winged Black Bird
Northern Oriole

PARCEL F
WOODED BORDER OF ADMINISTRATIVE PROPERTY

Trees:

Red Oak	<u>Quercus rubra</u>
Basswood	<u>Tilia americana</u>
Large Tooth Aspen	<u>Populus grandidentata</u>
Sugar Maple	<u>Acer saccharum</u>
Beech	<u>Fagus grandifolia</u>
Hemlock	<u>Tsuga canadensis</u>

Shrubs:

Maple Leaf Viburnum	<u>Viburnum acerifolium</u>
Ribes	<u>Ribes cynosbati</u>
June Berry	<u>Amelanchier humilis</u>

Herbs

Ferns:

Rattlesnake Fern	<u>Botrychium virginianum</u>
Evergreen Wood Fern	<u>Dropteris marginalis</u>

Flowering Plants:

Trillium	<u>Trillium grandiflorum</u>
Solomon's Seal	<u>Polygonatum pubens</u>
Canada May Flower	<u>Mianthemum canadense</u>
Herb Robert	<u>Geranium robertianum</u>
Sweet Cicely	<u>Osmorhiza claytoni</u>
Wild Sasparilla	<u>Aralia nudicaulis</u>
Red Baneberry	<u>Actea rubra</u>