I	CONIFERS	1	2	3	4	5	6
	Abies balsamea						
	Juniperus communis						
	Juniperus virginiana						
	Larix laricina						
	Picea abies						
	Picea glauca						
	Pinus resinosa						
	Pinus strobus						
	Pinus sylvestris						
	Thuja occidentalis	X					
	Tsuga canadensis	X					
	TREES and SHRUBS						
	Acer negundo						
	Acer rubrum						
	Acer saccharinum [illegible]			X			
	Acer saccharum	X		X			
	Acer spicatum						
	Alnus rugosa						
	Amelanchier						
	Berberis thunbergii						
	Betula alleghaniensis	X					
	Betula papyrifera						
	Carpinus caroliniana	X					
	Carya cordiformis	X					
	Celastrus scandens						
	Cornus alternifolia						
	Cornus amomum					X	
	Cornus rugosa						
	Cornus stolonifera			X			
	Corylus cornuta						
	Crataegus monogyna						
	Crataegus punctata						
	Crataegus sp.						
	Crataegus						
	Diervilla lonicera						
	Fagus grandifolia	X		X			
	Fraxinus americana	X					
	Fraxinus nigra	X		X			
	Fraxinus pennsylvanica			X			
	Ilex verticillata			X			
	Juglans cinerea						
	Juglans nigra						
	Lonicera morrowi						
	Lonicera tatarica						
	Lonicera						
	Malus pumila						
	Ostrya virginiana	X					
	Parthenocissus inserta	X					
	Populus balsamifera						
	Populus grandidentata						
	Populus tremuloides			X			
	Populus						
	Prunus pensylvanica						
	Prunus serotina	X		X			
	Prunus virginiana	X		X			
	Prunus avium	X					
	Quercus macrocarpa						
	Quercus rubra						
	Quercus						
	Rhamnus cathartica						
	Rhus radicans						
	Rhus typhina						
	Ribes americanum						
	Ribes cynosbati	X					
	Ribes x rubrum						
	Robinia pseudo-acacia						
	Lonicera [illegible]						X

I	TREES and SHRUBS	1	2	3	4	5	6
+	Rosa multiflora						
	Rosa						
	Rubus allegheniensis						
	Rubus idaeus	X					
	Rubus occidentalis						
	Rubus odoratus						
	Rubus pubescens						
	Salix alba						
	Salix amygdaloides						
	Salix bebbiana						
+	Salix discolor						
	Salix eriocephala						
	Salix exigua						
	Salix lucida						
	Salix petiolaris						
+	Salix purpurea						
	Salix x rubens						
+	Salix						
	Sambucus canadensis					X	
	Sambucus racemosa						
	Sorbus aucuparia						
	Spiraea alba						
	Syringa vulgaris						
+	Tilia americana	X		X			
	Ulmus americana						
	Ulmus						
	Vaccinium						
	Viburnum lentago						
	Viburnum opulus						
	Viburnum						
	Vitis riparia	X					
	FERNS						
	Adiantum pedatum						
	Athyrium filix-femina						
	Botrychium multifidum						
	Botrychium virginianum						
	Cystopteris bulbifera						
	Dryopteris carthusiana						
	Dryopteris cristata						
	Dryopteris marginalis						
	Dryopteris						
	Equisetum arvense	X					
	Equisetum hyemale						
	Equisetum variegatum						
	Equisetum						
	Gymnocarpium dryopteris						
	Lycopodium digitatum						
	Lycopodium obscurum						
	Lycopodium						
	Lycopodium						
	Matteuccia struthiopteris						
	Onoclea sensibilis						
	Osmunda cinnamomea						
	Osmunda regalis						
	Polystichum acrostichoides	X					
	Pteridium aquilinum						
	Thelypteris palustris						

I	GRAMINOIDS	1	2	3	4	5	6
	Agrostis gigantea						
	Agrostis stolonifera						
	Agropyron repens						
	Alopecurus						
	Bromus inermis						
	Calamagrostis canadensis						
	Carex arctata						
	Carex aurea						
	Carex bebbii						
	Carex blanda						
	Carex gracillima						
	Carex granularis						
	Carex hystericina						
	Carex pensylvanica	X					
	Carex radiata	X					
	Carex retrorsa			X			
	Carex stipata						
	Carex stricta						
	Carex vulpinoidea						
	Carex intumesc	X					
	Carex platyphylla	X					
	Carex lupulina					X	
	Carex crinita			X			
	Carex comosa			X			
	Carex						
	Carex						
	Carex						
	Carex						
	Cyperus						
	Cyperus						
	Dactylis glomerata	X					
	Danthonia spicata						
	Echinochloa crus-galli						
	Eleocharis erythropoda						
	Eleocharis						
	Elymus virginicus						
	Elymus						
	Festuca arundinacea						
	Glyceria striata	X					
	Glyceria						
	Juncus dudleyi						
	Juncus effusus						
	Juncus tenuis						
	Juncus						
	Juncus						
	Leersia oryzoides			X			
	Muhlenbergia						
	Oryzopsis asperifolia						
	Panicum						
	Panicum'						
	Phalaris arundinacea	X					
	Phleum pratense						
	Phragmites australis	■		X			
	Poa compressa						
	Poa pratensis						
	Poa						
	Scirpus atrovirens						
	Scirpus cyperinus			X			
	Scirpus validus			X			
	Scirpus						
	Scirpus						
	Setaria						
	Sparganium						
	Typha angustifolia						
	Typha latifolia						
	Typha Xglauca						

ELC WILDLIFE		
	SITE: Goshen 339	
	POLYGON:	
	DATE: Sept 7, 2011	
	SURVEYORS: JK	
	START TIME: 17:00	END TIME: 18:00

TEMP (°C): 16	CLOUD (10th): 10	WIND: 2	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS	✓	SNAGS
	HIBERNACULA	✓	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#
B	EWPE	VO		
	MOPO	OB		
	AMGO	VO		
	WBNU	"		
	DOWO	"		
	WITU		further	
✓	Cooper's H	OB		

TY	SP. CODE	EV	NOTES	#
H	Spring Peeper	VO		
	BLJA			
	Snow Bunting		fly over	

James Kamstra
Nov 8

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG
TK = TRACKS FE = FEEDING EVIDENCI SC = SCAT
SI = OTHER SIGNS (specify)

Completed Aug. 16/11 – SAM

North-Central

342 – GSH 1049

Goshen Access Road / Collection Lines

0 35 70 140 Meters

Roads
Access/Collection Line
No Access (as of August 2011)
Access
ELC to Evaluate
Waterbodies
Goshen Wind Energy Centre
120m Buffer

ELC Community Description and Classification

306

Site: 65H1049		Polygon: 1	
Surveyor(s): SAM	Date: Aug. 16/11	Time start: 1342h finish: 1501h	
UTMZ: 17T	UTMZ:	UTMN:	

Polygon Description

WP#210 (209-record)

System	Substrate	Topographic Feature	Plant Form	Community
☒ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	☒ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☐ Tableland	☐ Lichen	☐ Swamp
☒ Surficial Dep.		☒ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☒ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☒ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☐ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
☒ Treed		☐ Bluff		☒ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1			MH > He > Aw > Be
2			MH > Aw > Hs > Bo
3			MH >> Hs > Ba
4			Jack In The Pulpit > MH >> Each Lshd > Zigzag Goldenrod

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	<10	10-24	25-50	>50
MH41 He22 Aw13 Be9	Size Class Analysis:	A	A	A	A
	Standing Snags:	R	O	O	R
BA: 32	Deadfall / Logs:	A	O	O	R

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: ☐ Pioneer ☐ Young ☐ Mid-Age ☒ Mature ☐ Old Growth

Ecosite:	Dry-Fresh Sugar Maple Deciduous Forest	Code:	FOD5
Vegetation Type:	Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type	Code:	FOD5-5
Inclusion:		Code:	
Complex:	/	Code:	/

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Prism Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Be	1	2			3	9
MH	6	7			13	41
Io	2	1			3	9
Hs	4	3			7	22
Aw	1	3			4	13
Bp	0	2			2	6
Total	14	15			32	100
Basal Area (BA)	28	36			64	32
Dead	1	1			2	

Soils Ontario and ELC Soils Description

						Summary
Pit/Auger #		WP#209 (1)	WP#210 (2)			
Site Metrics – UTM	Zone					Moisture Regime
	Easting					
	Northing					
Site Metrics – Slope	Position	2	4			Drainage
	Aspect	SW	SW			
	Percent	5	2			
	Slope Length	3m	4m			
Depth to…	Mottles	27	29			Effective Texture (indicate below)
	Gley	>120	>120			
	Water Table	>120	>120			
	Carbonates	52	22			
	Bedrock	>120	>120			

Soil Horizon Description			% CF		% CF		% CF		% CF
1	Depth from zero	0	/	0	/				
	Texture	vfSSiCL		vfSCL					
2	Depth from zero	12	/	18	5				
	Texture	SiC		C					
3	Depth from zero	23	/	24	[illegible]				
	Texture	C		C					
4	Depth from zero								
	Texture								
	% Surface Stone/Rock								
Moisture Regime									
Drainage									

I	CONIFERS	1	2	3	4	5	6	I	TREES and SHRUBS	1	2	3	4	5	6	I	GRAMINOIDS	1	2	3	4	5	6
	Abies balsamea							+	Rosa multiflora								Agrostis gigantea						
	Juniperus communis								Rosa								Agrostis stolonifera						
	Juniperus virginiana								Rubus allegheniensis								Agropyron repens						
	Larix laricina								Rubus idaeus								Alopecuris						
	Picea abies								Rubus occidentalis								Bromus inermis						
	Picea glauca								Rubus odoratus								Calamagrostis canadensis						
	Pinus resinosa								Rubus pubescens								Carex arctata						
	Pinus strobus								Salix alba								Carex aurea						
	Pinus sylvestris								Salix amygdaloides								Carex bebbii						
	Thuja occidentalis								Salix bebbiana								Carex blanda						
	Tsuga canadensis							+	Salix discolor								Carex gracillima						
									Salix eriocephala								Carex granularis						
									Salix exigua	X							Carex hystericina						
									Salix lucida								Carex pensylvanica						
									Salix petiolaris								Carex radiata						
	TREES and SHRUBS							+	Salix purpurea								Carex retrorsa						
	Acer negundo								Salix x rubens								Carex stipata						
	Acer rubrum							+	Salix								Carex stricta						
	Acer saccharinum								Sambucus canadensis								Carex vulpinoidea						
	Acer saccharum	X							Sambucus racemosa								Carex lupulina	X					
	Acer spicatum								Sorbus aucuparia								Carex						
	Alnus rugosa								Spiraea alba								Carex						
	Amelanchier								Syringa vulgaris								Carex						
	Berberis thunbergii							+	Tilia americana	X							Carex						
	Betula alleghaniensis								Ulmus americana	X							Carex						
	Betula papyrifera								Ulmus								Carex						
	Carpinus caroliniana	X							Vaccinium								Carex						
	Carya cordiformis	X							Viburnum lentago								Carex						
	Celastrus scandens								Viburnum opulus								Cyperus						
	Cornus alternifolia								Viburnum								Cyperus						
	Cornus amomum								Vitis riparia	X							Dactylis glomerata						
	Cornus rugosa																Danthonia spicata						
	Cornus stolonifera																Echinochloa crus-galli	X					
	Corylus cornuta																Eleocharis erythropoda						
	Crataegus monogyna																Eleocharis						
	Crataegus punctata																Elymus virginicus						
	Crataegus sp.																Elymus						
	Crataegus																Festuca arundinacea						
	Diervilla lonicera																Glyceria striata						
	Fagus grandifolia	X															Glyceria						
	Fraxinus americana	X															Juncus dudleyi						
	Fraxinus nigra								FERNS								Juncus effusus						
	Fraxinus pennsylvanica								Adiantum pedatum								Juncus tenuis						
	Ilex verticillata								Athyrium filix-femina								Juncus						
	Juglans cinerea								Botrychium multifidum								Juncus						
	Juglans nigra								Botrychium virginianum								Leersia oryzoides						
	Lonicera morrowi								Cystopteris bulbifera								Muhlenbergia						
	Lonicera tatarica								Dryopteris carthusiana								Oryzopsis asperifolia						
	Lonicera								Dryopteris cristata								Panicum						
	Malus pumila								Dryopteris marginalis								Panicum						
	Ostrya virginiana	X							Dryopteris								Phalaris arundinacea						
	Parthenocissus inserta								Equisetum arvense								Phleum pratense						
	Populus balsamifera								Equisetum hyemale								Phragmites australis						
	Populus grandidentata								Equisetum variegatum								Poa compressus						
	Populus tremuloides								Equisetum								Poa pratensis						
	Populus deltoides	X							Gymnocarpium dryopteris								Poa						
	Prunus pensylvanica								Lycopodium digitatum								Scirpus atrovirens	X					
	Prunus serotina	X							Lycopodium obscurum								Scirpus cyperinus						
	Prunus virginiana								Lycopodium								Scirpus validus						
	Prunus Cerasus	X							Lycopodium								Scirpus						
	Quercus macrocarpa								Matteucia struthiopteris								Scirpus						
	Quercus rubra								Onoclea sensibilis	X							Setaria						
	Quercus								Osmunda cinnamomea								Sparganium						
	Rhamnus cathartica								Osmunda regalis								Typha angustifolia						
	Rhus radicans								Polystichum acrostichoides	X							Typha latifolia						
	Rhus typhina								Pteridium aquilinum								Typha Xglauca						
	Ribes americana								Thelypteris palustris														
	Ribes cynosbati	X																					
	Ribes x rubrum																						
	Robinia pseudo-acacia																						
	Carya ovata	X																					
	Ribes lacustre	X																					

VASCULAR PLANT CHECKSHEET

Location: 306 GSH 1049
Observer: SAM

Date: Aug. 16/11
Job Number:

DICOT HERBS	1	2	3	4	5	6		1	2	3	4	5	6		1	2	3	4	5	6	MONOCOT HERBS	1	2	3	4	5	6
Achillea millefolia							Erigeron annuus							Plantago lanceolata							Alisma plantago-aquatica						
Actaea pachypoda							Erigeron philadelphicus							Plantago major							Allium tricoccum	X					
Actaea rubra							Erigeron strigosus							Plantago rugelii							Allium						
Agalinus							Erysimum chierantholdes							Podophyllum peltatum							Arisaema triphyllum	X					
Agrimonia gryposepala							Eupatorium maculatum							Polygonum							Asparagus officinalis						
Alliaria petiolata							Eupatorium perfoliatum							Polygonum							Calla palustris						
Amaranthus retroflexus							Eupatorium rugosum							Polygonum							Clintonia borealis						
Ambrosia artemisiifolia							Euphorbia							Polygonum lapathifolium							Convallaria majus						
Amphicarpaea bracteata							Euthamia graminifolia	X						Polygonum persicaria							Cypripedium calceolus						
Anaphalis margaritacea							Fragaria virginiana	X						Potentilla							Elodea canadensis						
Anemone							Fragaria vesca	X						Potentilla norvegica							Epipactis helleborine						
Anemone canadensis							Galeopsis tetrahit							Potentilla recta							Erythronium americanum						
Anemone virginiana							Galium							Prenanthes alba							Hemerocallis fulva						
Antennaria neglecta							Galium							Prunella vulgaris							Iris versicolor						
Apocynum androsaemifolium							Galium palustre							Pyrola elliptica							Lemna minor						
Apocynum cannabinum							Galium triflorum							Ranunculus							Lemna trisulca						
Aquilegia canadensis							Geranium maculatum							Ranunculus abortivus							Lilium						
Aralia nudicaulis							Geranium robertianum	X						Ranunculus acris							Maianthemum canadense						
Arctium minus							Geum aleppicum							Rudbeckia hirta							Maianthemum racemosa	X					
Artemisia							Geum canadense							Rumex acetosella							Maianthemum stellata						
Asarum canadense							Geum							Rumex crispus	X						Platanthera						
Asclepias incarnata							Glecoma hederacea							Rumex							Pontederia cordata						
Asclepias syriaca							Hepatica acutiloba							Sanguinaria canadensis							Polygonatum pubescens						
Aster							Hesperis matronalis							Sanicula marilandica							Potamogeton crispus						
Aster cordifolius							Hieracium aurantiacum							Saponaria officinalis							Potamogeton pectinatus						
Aster ericoides							Hieracium caespitosum							Satureja vulgaris							Potamogeton						
Aster lanceolatus	X						Hieracium							Scutellaria galericulata							Potamogeton						
Aster lateriflorus	X						Hydrophyllum virginianum							Silene vulgaris							Potamogeton						
Aster macrophyllus							Hypericum perforatum							Sium suave							Sagittaria latifolia						
Aster novae-angliae							Impatiens capensis							Solanum dulcamara	X						Sisyrinchim montanum						
Aster puniceus							Inula helenium							Solidago							Smilax herbacea						
Barbarea vulgaris							Lactuca							Solidago altissima							Spiranthes cernua						
Bidens cernua							Laportea canadensis	X						Solidago caesia							Spirodela polyrhiza						
Bidens frondosa							Lapsana communis							Solidago canadensis	X						Streptopus roseus						
Boehmeria cylindrica							Leonurus cardiaca							Solidago flexicaulis	X						Trillium erectum						
Calitha palustris							Lepidium							Solidago gigantea							Trillium grandiflorum						
Calystegia sepium							Linaria vulgaris							Solidago nemoralis							Uvularia grandiflora						
Cardamine diphylla							Lithospermum officinale							Solidago rugosa													
Cardamine							Lobelia							Sonchus arvensis													
Caulophyllum thalictroides							Lobelia inflata							Sonchus asper													
Cerastium fontanum							Lotus corniculatus							Stellaria													
Ceratophyllum demersum							Lycopus americanus							Tanacetum vulgare													
Chelidonium majus							Lycopus							Taraxacum officinale													
Chenopodium album							Lysimachia ciliata							Thalictrum dioicum													
Chrysanth. leucanthemum							Lythrum salicaria							Thalictrum pubescens													
Cichorium intybus							Medicago lupulina							Tiarella cordifolia													
Cicuta							Medicago sativum							Tragopogon pratensis													
Circaea lutetiana	X						Melilotus alba							Trientalis borealis													
Cirsium arvense	X						Mentha arvensis							Trifolium hybridum	X												
Cirsium vulgare							Mimulus ringens							Trifolium pratense													
Clematis virginiana							Mimulus ringens							Trifolium repens													
Clintonia borealis							Mitella diphylla							Tussilago farfara													
Conyza canadensis							Monarda fistulosa							Urtica dioica													
Coronilla varia							Myosotis							Utricularia vulgaris													
Cynanchum rossicum							Nasturtium officinale							Verbascum thapsus													
Cynoglossum officinale							Nepeta cataria							Verbena hastata													
Daucus carota	X						Nuphar variegatum							Verbena urticifolia													
Desmodium canadense							Nymphaea odorata							Veronica													
Dianthus armeria							Oenothera biennis							Veronica officinalis	X												
Dipsacus fullonum							Osmorhiza							Viola cracca													
Echinocystis lobata	X						Oxalis stricta							Viola tetrasperma													
Echium vulgare							Ptycma leptostachya							Viola													
Epilobium							Physalis heterophylla							Viola													
Epilobium ciliatum														Viola pubescens													
Epilobium hirsutum														Viola sororia													
Epilobium parviflorum																											

SITE LOCATIONS

1: polygon (D
2:
3:
4:
5:
6:

ELC Plant Species List	
	SITE: 306 GSH 1049
	POLYGON: 1
	DATE: Aug. 16/11
	SURVEYOR(S): SAM

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTORY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASSIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Sandbar Willow					
Cottonwood					
Alsike Clover					
G-LG'rod					
Curled Dock					
QALace					
Pan. Aster					
B/R Bulrush					
Can. G'rod					
Rough Barnyard Grass					
Strawberry					
Can. Thistle					
Sour Cherry					
Calico Aster					
Ash					
Prickly Gooseberry					
As					
MA					
False Sol Seal					
Be					
Jack In Pulpit					
ID					
BN Hickory					
Bp					
Xmas Fern					
Choke Cherry					
Strawberry					
ZigZag G'rod					

SPECIES CODE	LAYER 1	2	3	4	COLL.
Leek					
Bristly B/K Currant					
Herb Robt					
Com. Speedwell					
CB					
Ench Ntshd					
Grape					
Wild Cuc. Vine					
Wood Nettle					
Hop Sedge					
Blue Beech					
Sens Fern					
BS Ntshd					
Woodland Strawb.					
Ew					

ELC WILDLIFE	
SITE: 306 GSA 1049	
POLYGON: (1)	
DATE: Aug. 16/11	
SURVEYORS: SAM	
START TIME: 1342	END TIME: 1501

TEMP (°C): 26	CLOUD (10th): 1	WIND: 2	PRECIPITATION: nil
CONDITIONS: warm, sunny, clear, light breeze - beautiful day!			

POTENTIAL WILDLIFE HABITAT:

X	VERNAL POOLS	X	SNAGS
	HIBERNACULA	X	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	RTHA	SH	VO Pair (agitated)	2					
B	WITU	DP	(feathers)						
B	EAWP	SM		1					
B	WBNU	SM		1					

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG
TK = TRACKS FE = FEEDING EVIDENCI SC = SCAT
SI = OTHER SIGNS (specify)

Legend

- Turbine Location
- Road Turn-Around
- Collection Line Layout
- Access Road Layout
- Turbine Turn-Around Box
- Collection Line 20m Buffer
- Access Road 60m Buffer
- Area of Disturbance 120m Buffer
- Natural Feature

Roads

- Major Road
- Local Road

Water Features

- Intermittent Stream
- Permanent Stream

Basemapping from Ontario Ministry of Natural Resources
Orthophotography:

Metres
0 15 30 60 90 120
1:2,500
UTM Zone 17N, NAD 83

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NextEra Energy Canada, ULC
Goshen Wind Energy Centre

Feature 346/349

December 2011
60155032

AECOM

Figure 1

Path: D:\Projects\AECOM\60155032\2011\GIS\spatial\mxd\Goshen\Field Maps Dec 2011\GSH_Feature349_346.mxd

ELC
Community Description and Classification

Map #: 346/349 GSH 1041		Polygon: 1	
Surveyor(s): SG, TS	Date: July 3, 2012	Time start: 4:30pm	finish: 6:30pm
UTMZ:	UTMZ:	UTMN:	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
☐ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☑ Wetland	☑ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☑ Tableland	☐ Lichen	☐ Swamp
☑ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☑ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☑ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☐ Cultural		☐ Alvar		☐ Swamp
Cover		☐ Rockland		☐ Prairie
☐ Open		☐ Beach / Bar		☐ Thicket
☐ Shrub		☐ Sand Dune		☐ Savannah
☑ Treed		☐ Bluff		☐ Woodland
				☑ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	2	4	Fra penn >> Ulmamer
2	2	2	fra penn > ulmamer
3	4	3	lin ben > Rha cath
4	6-5	4	que alb > [illegible]

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	<10	10-24	25-50	>50
	Standing Snags:	R	R	R	R
BA:	Deadfall / Logs:	R	R	R	R

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age:	☐ Pioneer	☐ Young	☑ Mid-Age	☐ Mature	☐ Old Growth

Ecosite:	Fresh-moist lowland dec. cham. For	Code:	FO D7
Vegetation Type:	Fresh-moist Ash lowland dec. for	Code:	FOD7-2
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Prism Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

						Summary
Site Metrics		Pit/Auger #				
	UTM	Zone	17t			Moisture Regime
		Easting	0447641			
		Northing	4802252			
	Slope	Position	table			
		Aspect	—			Drainage
		Percent	—			
		Slope Length	—			
Depth to...		Mottles	(Faint) 30cm			
		Gley	—			Effective Texture (indicate below)
		Water Table	—			
		Carbonates	—			
		Bedrock	—			

Soil Horizon Description										
	1	Depth from zero	30	% CF		% CF		% CF		% CF
		Texture	Sandy loam							
	2	Depth from zero	30+	% CF		% CF		% CF		% CF
		Texture	Fine sand.							
	3	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	4	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
		% Surface Stone/Rock								
	Moisture Regime		moist (5)							
	Drainage		I/P							

ELC Community Description and Classification	Map #: 346/349 GSH 1041		Polygon: 3	
	Surveyor(s): SG, TS	Date: July 3, 2012	Time start: 4:30 pm finish: 6:30 pm	
	UTMZ:	UTMZ:	UTMN:	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
☑ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	☑ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☑ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☑ Tableland	☐ Lichen	☐ Swamp
☑ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☐ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☐ Natural		☐ Crevice/Cave	☐ Mixed	☑ Meadow
☑ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☑ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
☐ Treed		☐ Bluff		☐ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than, > Greater Than; = About Equal To)
1	2	1	Fra penn >> Jug Nig
2	—	—	
3	—	—	
4	5-4	4	Pha arun

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	R	<10	N	10-24	N	25-50	N	>50
	Standing Snags:	N	<10	N	10-24	N	25-50	N	>50
BA:	Deadfall / Logs:	N	<10	N	10-24	N	25-50	N	>50

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age:	☑ Pioneer	☑ Young	☐ Mid-Age	☐ Mature	☐ Old Growth

Ecosite:	Mineral cultural meadow	Code:	CUM1
Vegetation Type:	Dry to fresh mineral cultural meadow	Code:	CUM1-1
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Prism Factor	2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

						Summary
Site Metrics		Pit/Auger #				
	UTM	Zone				Moisture Regime
		Easting				
		Northing				
	Slope	Position				
		Aspect				Drainage
		Percent				
		Slope Length				
Depth to...		Mottles				Effective Texture (indicate below)
		Gley				
		Water Table				
		Carbonates				
		Bedrock				

Soil Horizon Description										
	1	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	2	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	3	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	4	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
		% Surface Stone/Rock								
	Moisture Regime									
	Drainage									

ELC
Community Description and Classification

Map #: 246/349 GSH 1041		Polygon: 2	
Surveyor(s): SG, TS	Date: July 3, 2012	Time start: 4:30pm	finish: 6:30pm
UTMZ:	UTMZ:	UTMN:	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
[x] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Plankton	[ ] Lake
[ ] Wetland	[x] Mineral Soil	[ ] Riverine	[ ] Submerged	[ ] Pond
[ ] Aquatic	[ ] Parent Min.	[ ] Bottomland	[ ] Floating-LVD.	[ ] River
Site	[ ] Acidic Bedrk	[ ] Terrace	[ ] Graminoid	[ ] Stream
[ ] Open Water	[ ] Basic Bedrk	[ ] Valley Slope	[ ] Forb	[ ] Marsh
[ ] Shallow Water	[ ] Carb. Bedrk	[x] Tableland	[ ] Lichen	[ ] Swamp
[x] Surficial Dep.		[ ] Roll. Upland	[ ] Bryophyte	[ ] Fen
[ ] Bedrock		[ ] Cliff	[x] Deciduous	[ ] Bog
History		[ ] Talus	[ ] Coniferous	[ ] Barren
[x] Natural		[ ] Crevice/Cave	[ ] Mixed	[ ] Meadow
[ ] Cultural		[ ] Alvar		[ ] Prairie
Cover		[ ] Rockland		[ ] Thicket
[ ] Open		[ ] Beach / Bar		[ ] Savannah
[ ] Shrub		[ ] Sand Dune		[ ] Woodland
[x] Treed		[ ] Bluff		[x] Forest
				[ ] Plantation

Stand Description

Layer	HT	CVR	Species In Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	2	4	Frapenn > Betpap = Ulmamer
2	2	2-3	Frapenn = Ulmamer
3	4-3	4	Linbenz > Frapenn > Malpumi
4	6-5	4	Rubidae = Cirlute = Parinse = Toxradh = Maivalle

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:		<10		10-24		25-50		>50
	Size Class Analysis:	A	<10	A	10-24	O	25-50	N	>50
	Standing Snags:	O	<10	[illegible]	10-24	N	25-50	N	>50
BA:	Deadfall / Logs:	O	<10	O	10-24	O	25-50	N	>50

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: [ ] Pioneer [ ] Young [x] Mid-Age [ ] Mature [ ] Old Growth

Ecosite:	Dry-fresh deciduous forest ecosite	Code:	FOD 4
Vegetation Type:		Code:	
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

— no further ELC typing — there is no code

Notes:

Tree Tally by Species

Prism Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

							Summary
Site Metrics		Pit/Auger #					
	UTM	Zone	17T				Moisture Regime
		Easting	0447696				
		Northing	4802158				
	Slope	Position	table				Drainage
		Aspect	—				
		Percent	—				
		Slope Length	—				
Depth to...		Mottles					Effective Texture (indicate below)
		Gley					
		Water Table					
		Carbonates					
		Bedrock					
Soil Horizon Description	1	Depth from zero	20+ % CF	% CF	% CF		% CF
		Texture	VFS				
	2	Depth from zero	% CF	% CF	% CF		% CF
		Texture					
	3	Depth from zero	% CF	% CF	% CF		% CF
		Texture					
	4	Depth from zero	% CF	% CF	% CF		% CF
		Texture					
		% Surface Stone/Rock					
		Moisture Regime					
		Drainage					

Plant Species List
2012

Dicot Herbs - Asteraceae	1	2	3	4	5
Common Yarrow (*Achillea millefolium*)					
White Snakeroot (*Ageratina altissima*)					
Com. Ragweed (*Ambrosia artemisiifolia*)					
Giant Ragweed (*Ambrosia trifida*)					
Field Pussytoes (*Antennaria neglecta*)					
Artemisia					
Common Burdock (*Arctium minus*)					
Nodding Beggar-ticks (*Bidens cernua*)					
Devil's Beggar-ticks (*Bidens frondosa*)					
Spotted Knapweed (*Centaurea biebersteinii*)					
Brown Knapweed (*Centaurea jacea*)					
Chicory (*Cichorium intybus*)					
Canada Thistle (*Cirsium arvesnse*)					
Bull Thistle (*Cirsium vulgare*)					
Horseweed (*Conyza canadensis*)					
Daisy Fleabane (*Erigeron annus*)					
Philadelphia Fleabane (*Erig. philadelphicus*)					
Erigeron					
Joe-pye-weed (*Eupatorium maculatum*)					
Boneset (*Eupatorium perfoliatum*)					
Large-leaved Aster (*Eurybia macrophylla*)					
Flat-top Goldenrod (*Euthamia graminifolia*)					
Orange Hawkweed (*Hieracium aurantiacum*)					
Field Hawkweed (*Hieracium caespitosum*)					
Hieracium					
Elecampane (*Inula helenium*)					
Prickly Lettuce (*Lactuca serriola*)					
Lactuca					
Ox-eye Daisy (*Leucanthemum vulgare*)					
Pineapple-weed (*Matricaria discoidea*)					
Tall White Lettuce (*Prenanthes altissima*)					
Black-eyed Susan (*Rudbeckia hirta*)					
Tall Goldenrod (*Solidago altissima*)			R	U	
Blue-stem Goldenrod (*Solidago caesia*)					
Canada Goldenrod (*Solidago canadensis*)					
Zig-zag Goldenrod (*Solidago flexicaulis*)		F			
Giant Goldenrod (*Solidago gigantea*)					
Early Goldenrod (*Solidago juncea*)					
Gray Goldenrod (*Solidago nemoralis*)					
Solidago					
Field Sow-thistle (*Sonchus arvensis*)					
Sonchus					
Heart-leaf Aster (*Symph. cordifolium*)					
Heath Aster (*Symphyotrichum ericoides*)					
Tall White Aster (*Symph. lanceolatum*)					
Calico Aster (*Symphyotrichum lateriflorum*)	F				
New England Aster (*Symph. novae-angliae*)					
Purple-stem Aster (*Symph. puniceus*)					
Common Tansy (*Tanacetum vulgare*)					
Common Dandelion (*Taraxacum officinale*)					
Com. Goatsbeard (*Tragopogon pratensis*)					
Coltsfoot (*Tussilago farfara*)					

Other Dicot Herbs	1	2	3	4	5
White Baneberry (*Actaea pachypoda*)					
Red Baneberry (*Actaea rubra*)		R			
Tall Agrimony (*Agrimonia gryposepala*)					
Garlic Mustard (*Alliaria petiolata*)	R				
Green Amaranth (*Amaranthus retroflexus*)					
Hog-peanut (*Amphicarpa bracteata*)					
Pearly Everlasting (*Anaphalis margaritacea*)					
Canada Anemone (*Anemone canadensis*)					
Ivy Hepatica (*Anemone acutiloba*)					
Thimbleweed (*Anemone virginiana*)					
Purple Angelica (*Angelica atropurpurea*)					
Indian Hemp (*Apocynum cannabinum*)					
Wild Sarsaparilla (*Aralia nudicaulis*)					
Spikenard (*Aralia racemosa*)					
Wild Ginger (*Asarum canadense*)					
Swamp Milkweed (*Asclepias incarnata*)					
Common Milkweed (*Asclepias syriaca*)					
Yellow Rocket (*Barbarea vulgaris*)					
False Nettle (*Boehmeria cylindrica*)					
Black Mustard (*Brassica nigra*)					
Marsh-marigold (*Caltha palustris*)					
Creeping Bellflower (*Campanula rapunculoides*)					

Dicot Herbs	1	2	3	4	5
Shepherd's Purse (*Capsella bursa-pastoris*)					
Cutleaf Toothwort (*Cardamine concatenata*)					
Toothwort (*Cardamine diphylla*)					
Penn. Bitter-cress (*Cardamine pensylvanica*)					
Cardamine					
Blue Cohosh (*Caulophyllum thalictroides*)					
Mouse-ear Chickweed (*Cerastium fontanum*)					
Turtlehead (*Chelone glabra*)					
Spotted Water-hemlock (*Cicuta maculata*)					
Water-hemlock (*Cicuta virosa*)					
Enchanter's Nightshade (*Circaea lutetiana*)	F	F			
Carolina Spring Beauty (*Claytonia caroliniana*)					
Virginia Spring Beauty (*Claytonia virginica*)					
Virgin's-bower (*Clematis virginiana*)					
Field Bindweed (*Convolvulus arvensis*)					
Dog-strangling Vine (*Cynanchum rossicum*)					
Wild Carrot (*Daucus carota*)					
Deptford Pink (*Dianthus armeria*)					
Squirrel-corn (*Dicentra canadensis*)					
Dutchman's-breeches (*Dicentra cucullaria*)					
Wild Teasel (*Dipsacus fullonum*)			I	R	
Wild Cucumber (*Echinocystis lobata*)					
Viper's Bugloss (*Echium vulgare*)					
Northern Willow-herb (*Epilobium ciliatum*)					
Hairy Willow-herb (*Epilobium hirsutum*)					
Small-fl. Willow-herb (*Epilobium parviflorum*)					
Epilobium					
Worm Mustard (*Erysimum cheiranthoides*)					
Euphorbia					
Hemp Nettle (*Galeopsis tetrahit*)					
Wild Madder (*Galium mollugo*)					
Marsh Bedstraw (*Galium palustre*)					
Sweet-scented Bedstraw (*Galium triflorum*)					
Galium					
Spotted Geranium (*Geranium maculatum*)					
Herb-robert (*Geranium robertianum*)	U				
Yellow Avens (*Geum aleppicum*)	D	F	F		
White Avens (*Geum canadense*)					
Urban Avens (*Geum urbanum*)					
Dame's Rocket (*Hesperis matronalis*)					
Virg. Water-leaf (*Hydrophyllum virginianum*)					
Com. St. John's-wort (*Hypericum perforatum*)					
Spotted Jewelweed (*Impatiens capensis*)	R				
Wood Nettle (*Laportea canadensis*)					
Motherwort (*Leonurus cardiaca*)					
Field Peppergrass (*Lepidium campestre*)					
Eur. Gromwell (*Lithospermum officinale*)					
Butter & Eggs (*Linaria vulgaris*)					
Great Lobelia (*Lobelia siphilitica*)					
Lobelia					
Cut-leaf Bugleweed (*Lycopus americanus*)					
Northern Bugleweed (*Lycopus uniflorus*)					
Fringed Loosestrife (*Lysimachia ciliata*)					
Moneywort (*Lysimachia nummularia*)					
Lysimachia					
Purple Loosestrife (*Lythrum salicaria*)					
Black Medick (*Medicago lupulina*)					
Alfalfa (*Medicago sativa*)					
White Sweet-clover (*Melilotus alba*)					
Yellow Sweet-clover (*Melilotus officinalis*)					
Wild Mint (*Mentha arvensis*)					
Wild Bergamot (*Monarda fistulosa*)					
Small Forget-me-not (*Myosotis laxa*)					
Forget-me-not (*Myosotis scorpioides*)					
Water-cress (*Nasturtium officinale*)					
Com. Evening-primrose (*Oenothera biennis*)					
Sweet-cicely (*Osmorhiza berterii*)					
Yellow Wood-sorrel (*Oxalis stricta*)					
Wild Parsnip (*Pastinaca sativa*)					
English Plantain (*Plantago lanceolata*)					
Common Plantain (*Plantago major*)					
Rugel's Plantain (*Plantago rugelii*)					
May-apple (*Podophyllum peltatum*)					
Pale Smartweed (*Polygonum lapathifolium*)					
Lady's-thumb (*Polygonum persicaria*)					
Virginia Knotweed (*Polygonum virginianum*)					
Polygonum					
Polygonum					
Rough Cinquefoil (*Potentilla norvegica*)					
Rough-fruited Cinquefoil (*Potentilla recta*)					
Common Cinquefoil (*Potentilla simplex*)					
Potentilla					
Heal-all (*Prunella vulgaris*)					
Shinleaf (*Pyrola elliptica*)					

Dicot Herbs	1	2	3	4	5
Kidney-leaf Buttercup (*Ranunculus abortivus*)					
Tall Buttercup (*Ranunculus acris*)					
Hooked Buttercup (*Ranunculus recurvatus*)					
Ranunculus					
Sheep Sorrel (*Rumex acetosella*)					
Curly-leaf Dock (*Rumex crispus*)					
Bitter Dock (*Rumex obtusifolius*)					
Bloodroot (*Sanginaria canadense*)					
Black Snakeroot (*Sanicula marilandica*)					
Bouncing Bet (*Saponaria officinalis*)					
Marsh Skullcap (*Scutellaria galericulata*)					
Mad Dog Skullcap (*Scutellaria lateriflora*)					
White Campion (*Silene latifolia*)					
Bladder Campion (*Silene vulgaris*)					
Hemlock Water-parsnip (*Sium suave*)					
Bitter Nightshade (*Solanum dulcamara*)		U		R	
Black Nightshade (*Solanum ptychanthum*)					
Grassleaf Stitchwort (*Stellaria graminea*)					
Common Chickweed (*Stellaria media*)					
Early Meadow-rue (*Thalictrum dioicum*)					
Tall Meadow-rue (*Thalictrum pubescens*)					
Field Penny-cress (*Thlaspi arvense*)					
Foamflower (*Tiarella cordifolia*)					
Star-flower (*Trientalis borealis*)					
Red Clover (*Trifolium pratense*)					
White Clover (*Trifolium repens*)					
Trifolium					
Stinging Nettle (*Urtica dioica*)					
Greater Bladderwort (*Utricularia vulgaris*)					
Common Mullein (*Verbascum thapsus*)					
Blue Vervain (*Verbena hastata*)					
White Vervain (*Verbena urticifolia*)					
Water Speedwell (*Veron. anagallis-aquatica*)					
Common Speedwell (*Veronica officinalis*)					
Veronica					
Cow Vetch (*Vicia cracca*)					
Vicia					
Periwinkle (*Vinca minor*)					
Dog Violet (*Viola conspersa*)					
Yellow Violet (*Viola pubescens*)					
Com. Blue Violet (*Viola sororia*)					
Viola					

Monocot Herbs	1	2	3	4	5
Water-plantain (*Alisma plantago-aquatica*)					
Wild Leek (*Allium tricoccum*)					
Jack-in-the-pulpit (*Arisaema triphyllum*)		R			
Asparagus (*Asparagus officinalis*)					
Wild Calla (*Calla palustris*)					
Bluebead-lily (*Clintonia borealis*)					
Garden Lily-of-valley (*Convallaria majalis*)					
Yel. Lady's Slipper (*Cypripedium parviflora*)					
Canada Waterweed (*Elodea canadensis*)					
Helleborine (*Epipactis helleborine*)					
Yellow Trout Lily (*Erythronium americanum*)					
Blue-flag Iris (*Iris versicolor*)					
Orange Day Lily (*Hemerocallus fulva*)					
Lesser Duckweed (*Lemna minor*)					
Starry Duckweed (*Lemna trisulca*)					
Wild Lily-of-valley (*Maianthemum canadense*)					
False Solom Seal (*Maianthemum racemosum*)		R			
Star False Solomon (*Maianthemum stellatum*)					
True Solomon Seal (*Polygonatum pubescens*)					
Pickerel-weed (*Pontederia cordata*)					
Curly-leaf Pondweed (*Potamogeton crispus*)					
Sago Pondweed (*Potamogeton pectinatus*)					
Potamogeton					
Potamogeton					
Broad-leaved Arrowhead (*Sagittaria latifolia*)					
Blue-eyed-grass (*Sisyrinchium montanum*)					
Herb. Carrion Flower (*Smilax herbacea*)					
Bristly Greenbrier (*Smilax hispida*)					
Nodding Ladies' Tresses (*Spiranthes cernua*)					
Rose Twisted-stalk (*Streptopus lanceolatus*)					
Skunk-cabbage (*Symplocarpus foetidus*)					
Purple Trillium (*Trillium erectum*)					
White Trillium (*Trillium grandiflorum*)	R	P			
Large-flowered Bellwort (*Uvularia grandiflora*)					

D - Dominant: represented by large numbers; generally forming >10% ground cover or >25% vegetation cover in any one stratum

F - Fairly common (=Abundant in ELC) : generally widespread represented by fairly large numbers of individual clumps; usually forming >10% ground cover

U - Uncommon (=Occasional in ELC) : present as widespread scattered individuals or represented by one or more clumps of many individuals (most species will fall into this catergory)

R - Rare represented in the polygon by less than about five individuals or small clumps

Map Number: 349/346 GSH 104	1	FOD7-2	4	Poly 3 : CUM 1-1
Date: July 3, 2012	2	FOD	5	
Surveyors: SG, T	3	103-2 inclusion.		

Plant Species List
2012

Trees & Shrubs	1	2	3	4	5
Conifers					
Balsam Fir (*Abies balsamea*)					
Common Juniper (*Juniperus communis*)					
Eastern Red Cedar (*Juniperus virginiana*)					
Tamarack (*Larix laricina*)					
Norway Spruce (Picea abies)					
White Spruce (*Picea glauca*)					
Black Spruce (*Picea mariana*)					
Jack Pine (*Pinus banksiana*)					
Red Pine (*Pinus resinosa*)					
Eastern White Pine (*Pinus strobus*)			D		
Scotch Pine (*Pinus sylvestris*)					
Canada Yew (*Taxus canadensis*)					
Eastern White Cedar (*Thuja occidentalis*)	R	R			
Eastern Hemlock (*Tsuga canadensis*)					
Deciduous					
Manitoba Maple (*Acer negundo*)					
Black Maple (*Acer nigrum*)					
Norway Maple (*Acer platanoides*)					
Red Maple (*Acer rubrum*)					
Silver Maple (*Acer saccharinum*)					
Freeman's Maple (*Acer X freemanii*)					
Sugar Maple (*Acer saccharum*)					
Mountain Maple (*Acer spicatum*)					
Speckled Alder (*Alnus incana*)					
Downy Serviceberry (*Amelanchier arborea*)					
Serviceberry (*Amelanchier sanguinea*)					
Yellow Birch (*Betula alleghaniensis*)		R			
White Birch (*Betula papyrifera*)					
European Birch (*Betula pendula*)					
Blue Beech (*Carpinus caroliniana*)	R	R			
Bitternut hickory (*Carya cordiformis*)					
Shagbark Hickory (*Carya ovata*)					
Climbing Bittersweet (*Celastrus scandens*)					
Common Hackberry (*Celtis occidentalis*)					
Buttonbush (*Cephalanthus occidentalis*)					
Alt.-leaved Dogwood (*Cornus alternifolia*)	U	U			
Silky Dogwood (*Cornus amomum*)					
Bunchberry (*Cornus canadensis*)					
Gray dogwood (*Cornus racemosa*)					
Round-leaved Dogwood (*Cornus rugosa*)					
Red-osier Dogwood (*Cornus sericea*)					
American Hazel (*Corylus americana*)					
Beaked Hazel (*Corylus cornuta*)					
Cockspur Thorn (*Crataegus crus-galli*)					
English Hawthorn (*Crataegus monogyna*)					
Large-fruited Thorn (*Crataegus punctata*)					
Crataegus					
Crataegus					
Bush Honeysuckle (*Diervilla lonicera*)					
Russian Olive (*Elaeagnus angustifolia*)					
Autumn Olive (*Elaeagnus umbellata*)					
Run. Strawberry-bush (*Euonymus obovata*)					
American Beech (*Fagus grandifolia*)					
Glossy Buckthorn (*Frangula alnus*)					
White Ash (*Fraxinus americana*)					
Black Ash (*Fraxinus nigra*)	R				
Green Ash (*Fraxinus pennsylvanica*)	D	F	F	R	
Witch-hazel (*Hamamelis virginiana*)		R			
Winterberry (*Ilex verticilata*)					
Butternut (*Juglans cinerea*)					
Black Walnut (*Juglans nigra*)	R				
Common Privet (*Ligustrum vulgare*)					
Spicebush (*Lindera benzoin*)	U	D			
Fly Honeysuckle (*Lonicera canadensis*)					
Glaucous Honeysuckle (*Lonicera dioica*)					
Morrow's Honeysuckle (*Lonicera morrowii*)					
Tartarian Honeysuckle (*Lonicera tatarica*)					
Common Apple (*Malus pumila*)		U	R		
White Mulberry (*Morus alba*)					
Sweet Gale (*Myrica gale*)					
Ironwood (*Ostrya virginiana*)					
Thicket-creeper (*Parthenocissus inserta*)	U	U			
Ninebark (*Physocarpus opulifolius*)					
Balsam Poplar (*Populus balsamifera*)					
Eastern Cottonwood (*Populus deltoides*)					
Large-tooth Aspen (*Populus grandidentata*)					
Trembling Aspen (*Populus tremuloides*)					
Sweet Cherry (*Prunus avium*)					
Pin Cherry (*Prunus pensylvanica*)		F			
Black Cherry (*Prunus serotina*)	U	D	R		
Choke Cherry (*Prunus virginiana*)					
Prunus					

Tree & Shrubs	1	2	3	4	5
Deciduous					
White Oak (*Quercus alba*)					
Bur Oak (*Quercus macrocarpa*)					
Red Oak (*Quercus rubra*)					
Alder Buckthorn (*Rhamnus alnifolia*)					
Common Buckthorn (*Rhamnus cathartica*)	F				
Smooth Sumac (*Rhus glabra*)					
Staghorn Sumac (*Rhus hirta*)					
Wild Black Currant (*Ribes americanum*)					
Prickly Gooseberry (*Ribes cynosbati*)					
Swamp Black Currant (*Ribes lacustre*)					
Red Currant (*Ribes rubrum*)					
Ribes					
Black Locust (*Robinia pseudo-acacia*)					
Prickly Rose (*Rosa acicularis*)					
Smooth Rose (*Rosa blanda*)					
Multiflora Rose (*Rosa multiflora*)					
Rosa					
Com. Blackberry (*Rubus allegheniensis*)		U			
Wild Red Raspberry (*Rubus idaeus*)	R				
Black Raspberry (*Rubus occidentalis*)		U			
Purple-fl. Raspberry (*Rubus odoratus*)					
Dwarf Raspberry (*Rubus pubescens*)					
Rubus					
Peach-leaved Willow (*Salix amygdaloides*)					
Bebb's Willow (*Salix bebbiana*)					
Pussy Willow (*Salix discolor*)					
Missouri Willow (*Salix eriocephala*)					
Sandbar Willow (*Salix exigua*)					
Shining Willow (*Salix lucida*)					
Black Willow (*Salix nigra*)					
Slender Willow (*Salix petiolaris*)					
Salix					
Hybrid Crack Willow (*Salix X rubens*)					
Black-berried Elder (*Sambucus nigra*)					
Red-berried Elder (*Sambucus racemosa*)			R		
Buffaloberry (*Shepherdia canadensis*)					
Eur. Mountain Ash (*Sorbus aucuparia*)					
Narrow Meadow-sweet (*Spiraea alba*)					
Common Lilac (*Syringa vulgaris*)					
Poison-ivy (*Toxicodendron rydbergii*)					
Climbing Poison-ivy (*Toxicodendron radicans*)					
White Elm (*Ulmus americana*)	F	F	R		
Siberian Elm (*Ulmus pumila*)					
Slippery Elm (*Ulmus rubra*)					
Low Blueberry (*Vaccinium angustifolium*)					
Maple-leaf Viburnum (*Viburnum acerifolium*)					
Hobblebush (*Viburnum lantanoides*)					
Nannyberry (*Viburnum lentago*)					
Guelder-Rose (*Viburnum opulus*)					
Downy Arrow-wood (*Vib. rafinesquianum*)					
Riverbank Grape (*Vitis riparia*)	U	U			
Am. Prickly-ash (*Zanthoxylum americanum*)					
[illegible]			F		
Ferns & Allies					
Lady Fern (*Athyrium filix-femina*)		R			
Rattlesnake Fern (*Botrychium virginianum*)					
Bulbet Bladder Fern (*Cystopteris bulbifera*)					
Spin. Wood Fern (*Dryopteris carthusiana*)					
Crested Wood Fern (*Dryopteris cristata*)					
Marginal Wood Fern (*Dryopteris marginalis*)					
Dryopteris					
Ostrich Fern (*Matteuccia struthiopteris*)					
Sensitive Fern (*Onoclea sensibilis*)		F			
Cinnamon Fern (*Osmunda cinnamomea*)					
Interrupted Fern (*Osmunda claytoniana*)					
Royal Fern (*Osmunda regalis*)					
Christmas Fern (*Polystichum acrostichoides*)					
Eastern Bracken-fern (*Pteridium aquilinum*)					
Marsh Fern (*Thelypteris palustris*)					
Field Horsetail (*Equisetum arvense*)					
Scouring-rush (*Equisetum hyemale*)					
Variegated Horsetail (*Equisetum variegatum*)					
Equisetum					
Ground-cedar (*Lycopodium digitatum*)					
Shining Clubmoss (*Lycopodium lucidulum*)					
Ground-pine (*Lycopodium obscurum*)					

Graminoids	1	2	3	4	5
Grasses					
Giant Redtop (*Agrostis gigantea*)					
Redtop (*Agrostis stolonifera*)					
Awnless Brome (*Bromus inermis*)					
Bromus				R	
Blue-joint Grass (*Calamagrostis canadensis*)					
Orchard Grass (*Dactylis glomerata*)					
Poverty Oat Grass (*Danthonia spicata*)					
Quack Grass (*Elymus repens*)					
Virginia Wild Rye (*Elymus virginicus*)					
Elymus					
Fowl Manna Grass (*Glyceria striata*)					
Glyceria					
Rice Cut Grass (*Leersia oryzoides*)					
Tall Fescue (*Lolium arundinaceum*)					
Muhlenbergia					
Witch-grass (*Panicum capillare*)					
Panicum					
Reed Canary Grass (*Phalaris arundinacea*)				D	
Timothy (*Phleum pratense*)					
Common Reed (*Phragmites australis*)					
Canada Blue Grass (*Poa compressa*)					
Fowl Meadow Grass (*Poa palustris*)					
Kentucky Bluegrass (*Poa pratensis*)					
Yellow Foxtail (*Setaria pumila*)					
Green Foxtail (*Setaria viridis*)					
Sedges					
Drooping Wood Sedge (*Carex arctata*)					
Golden-fruited Sedge (*Carex aurea*)					
Graceful Sedge (*Carex gracillima*)					
Inland Sedge (*Carex interior*)					
Bladder Sedge (*Carex intumescens*)					
Lake-bank Sedge (*Carex lacustris*)					
Hop Sedge (*Carex lupulina*)					
Pennsylvania Sedge (*Carex pensylvanica*)					
Awl-fruited Sedge (*Carex stipata*)					
Fox Sedge (*Carex vulpinoidea*)					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Carex					
Cyperus					
Redroot Spike-rush (*Eleocharis erythropoda*)					
Eleocharis					
Hard-stem Bulrush (*Schoenoplectus acutus*)					
Three-square Bulrush (*Sch. pungens*)					
Soft-stem Bulrush (*Sch. tabernaemontani*)					
Dark-green Bulrush (*Scirpus atrovirens*)					
Wool-grass (*Scirpus cyperinus*)					
Other Graminoids					
Broad Bur-reed (*Sparganium eurycarpum*)					
Narrow-leaved Cattail (*Typha angustifolia*)					
Broad-leaved Cattail (*Typha latifolia*)					
Broad-leaved Cattail (*Typha X glauca*)					
Articulated Rush (*Juncus articulatus*)					
Soft Rush (*Juncus effusus*)					
Path Rush (*Juncus tenuis*)					
Juncus					
Juncus					

D - Dominant represented by large numbers; generally forming >10% ground cover or >25% vegetation cover in any one stratum
F - Fairly common (=Abundant in ELC) : generally widespread represented by fairly large numbers of individual clumps; usually forming >10% ground cover
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R - Rare represented in the polygon by less than about five individuals or small clumps

Map Number:	1		4
Date:	2		5
Surveyors:	3		

Significant Wildlife Habitat Form

AECOM

Study Area:	BLW JER (GSH)	Map #:	346/349 GSH 1041
Date:	2012-07-03	Time Started:	4:30 p.m
Field Staff:	Tom Stone, Sam Gildner	Time Finished:	6:30 p.m
Weather Conditions:	Isolated T-Storms, 24°C		

Colonial Nesting Tree/Shrub Birds, Osprey Breeding/Feeding, Bald Eagle Breeding/Nesting Habitat
(FET1, FOC, FOM, FOD, SWC, SWM, SWD)

Nest bowls present: ☒ No ☐ Yes (*if yes, photograph and complete the following*)

UTMs: _____ Number of nests: _____

Decription of nests (location, e.g. in tree/on built structure; material; evidence of recent use; birds present):

Description of habitat (note riparian areas if present, evidence of disturbance):

Waterfowls Stopover/Nesting, Amphibian Breeding, Turtle Nesting/Over-wintering, Marsh Breeding Birds
(CUM1, CUT1, MAM, MAS, SAS1, SAM1, SAF1, SWD, SWT1, SWT2) (FOC, FOM, FOD, SWC, SWM, SWD,BOO1, FEO1)

Standing water present: ☒ No ☐ Yes (*if yes, photograph and complete the following*)

UTMs: _____ ☐ Area of standing water delineated on field map

Water depth (m): _____ % open water: _____ % emergent vegetation: _____

Potential to hold water until at least July in most years: Yes / No

Description of standing water (permanent pool, evidence of annual spring flooding, etc):

Area and soil/substrate of shoreline habitat:

Type and abundance of cover in open water habitat:

Type and abundance of cover in surrounding habitat:

Evidence of disturbance (e.g. cattle grazing):

Evidence of use by waterfowl, amphibians, turles (e.g. broken eggs), marsh breeding birds:

******Complete Vernal Pool Habitat Description Form******

Snake Hibernacula

Fissured rock/foundation or rock/debris pile present:

☒ No ☐ Yes (*if yes, photograph and complete the following*)

UTMs: _____ Likelihood to extend below frost line: _____

% canopy cover: _____ % slope: _____ Distance to open canopy (m): _____

Description of fissure or stone pile (composition/material, dimenstions, etc):

Description of surrounding habitat (type & abundance of cover, evidence of disturbance, etc):

Seeps and Springs (FOC, FOM, FOD, SWC, SWM, SWD)

Evidence of seep or spring: ☒ No ☐ Yes (*if yes, photograph and complete the following*)

UTMs: _____ Description (indicator species, etc): _____

NHA Site Investigation - Significant Wildlife Habitat Form

AECOM

Colonial Nesting Bird Breeding Habitat (Bank and Cliff Swallows)
(CUM1, CUT1, CUS, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1)

Eroding bank, sandy hill, pits, steep slope or rock face present:

☒ **No** ☐ **Yes (*if yes, photograph and complete the following*)**

UTMs: _____ Location (e.g. aggregate pit, bridge): _____

Evidence of use by bank or cliff swallows (provide number of nests): _____

Colonial Nesting Ground Breeding Birds, Shorebird Migratory Stopover Areas
(BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1, MAM2, MAM3, MAM4, MAM5)

Shoreline of lake, large river or large wetland present:

☒ **No** ☐ **Yes (*if yes, photograph and complete the following*)**

UTMs: _____ Rocky island or peninsula present: _____

Mudflat present: _____ Evidence of disturbance (e.g. cattle grazing):

Description of habitat (size of rocky outcrop/mudflat, substrate/soil type, type and abundance of cover):

Raptor Winter Feeding and Roosting, Open Country or Shrub/Early Successional Bird Breeding Habitat
CUT1, CUS1, >30ha, CUM1 >30ha, FOC, FOD, FOM with a CUM, CUT, CUS, CUW > 20ha, or a CUM, CUS, CUT, CUW>15ha

Large meadow, old field or generally open habitat (e.g. CUM, CUS, CUT, CUS, CUW) present:

Large open habitat present: ☒ **No** ☐ **Yes (*if yes, photograph and complete the following*)**

UTMs: _____ Evidence of disturbance (e.g. cattle grazing):

Description of habitat (abundance of food plants for rodents, abundance of perches, height of vegetation):

Old-growth or Mature Forests, Interior Forest Breeding Birds
(FOD, FOC, FOM, SWC, SWM, SWD. Mature forest (>60 years) present)

Mature forest present: ☒ **No** ☐ **Yes (*if yes, photograph and complete the following*)**

UTMs: _____ Age of oldest trees: _____

Evidence of disturbance (e.g. selective cutting): _____

Description of habitat (structural complexity, abundance of snags and/or downed woody debris, etc):

Photo #	Location or Subject	Photo #	Location or Subject

Species of Conservation Concern Habitat and Incidental Wildlife – Goshen

AECOM

Map No: 346/349 GSH-1041
Date (yyyy-mm-dd): 2012-07-03
Field Staff: Tom Sh[illegible]
[illegible]
Time Started: 4:30 p.m
Time Finished: 6:30 p.m

Observed Species List

Species Code	UTM	EV	Notes	Species Code	UTM	EV	Notes
Great Crested Flycatcher		VO					
Blue Jay		VO					
Song Sp.		VO					
Ebony Jewelwing		OB					
House wren		VO					
Black capped Chickadee		VO					

Note: ***Evidence Codes (EV)***

Breeding Bird (Possible) — *SH=Suitable Habitat, SM=Singing Male,*
Breeding Bird (Probable) — *T=Territory, D=Display, P=Pair, N=Nest Building, V= Visiting Nest, A=Anxiety Behavior;*
Breeding Bird (Confirmed) — *DD=Distraction, NU=Used Nest, FY=Fledged Young, NE=Eggs, NY=Young, FS=Foos/Faecal sack, AE=Nest Entry*

Other Wildlife Evidence: *OB=Observed, VO=Vocalization, CA=Carcass, DP=Distincitve Parts, HO=House/Den, FY=Eggs/young, TK=Tracks, FE=Feeding evidence, SC= Scat, SI=Other signs (specify)*

☆ N/O → Not observed

ELC	Species	Habitat Description	Habitat Present (Y/N; UTM; description of habitat if present)
PLANTS			
FOD7	**American Gromwell** (Lithospermum latifolium) - S3 *Bloom Time - Spring*	Shaded river banks, wooded floodplains. River floodplains, woods and edges of woods.	Y (N) UTM
ALO, TPO	**Muehlenberg's astomum moss** (*Astomum muehlenbergianum*)- S2 Bloom Time - Spring	Thin soil over level outcrop ledges and on soil under grasses in open prairie	Y (N) UTM
FOM1, FOM2, (CUP3)	**Autumn Coral-root** (Corallorhiza odontorhiza) - S2 *Bloom Time - summer to fall*	Oak-pine woods or occasionally in open, red pine or (white pine plantations). Dry, sandy woods.	(Y) N UTM N/O
FOC, FOM, (FOD)	**Burning Bush** *(Euonymus atropurpureus) – S3 Bloom Time- April - June*	Species occurs in dry to moist deciduous thickets and (woods)	(Y) N UTM: N/O
SWC1, SWC3, SWC4, SWM1, SWM2, SWM4, SWM5, SWM6	**Chinese Hemlock Parsley** *(Conioselinum chinense)* - S2 *Bloom Time –summer to fall*	Swampy places with deciduous trees, white cedars, tamarack; springy river banks, wet borders of streams and rivers. Also found among calcareous seepage slopes	Y (N) UTM
SWC, SWM, SWD,SWT, MAM, MAS	**Crowned Beggarticks** *(Bidens trichosperma) -S2 Bloom Time – late summer*	Found in openings in swamps, marshes, along shores & wet fields within the Carolinian zone and southeastern Georgian bay. Bogs, fens, tamarack swamps	Y (N) UTM
ALT1, (FOD7)	**Eastern Green-violet** (Hybanthus concolor) - S2 *Bloom Time –mid March to August*	Occurs in rich, wet-mesic floodplain forests as well as mesic forests over limestone. Includes floodplains and river banks	(Y) N UTM N/O
TPS, TPW, FOM1, FOM2	**Fogg's Goosefoot** *(Chenopodium foggi) -S2*	Species occurs in sandy areas on limestone under oak or pine-oak forests	Y (N) UTM:
TPO2, TPS2, TPW2,	**Giant Ironweed** *(Vernonia gigantean)-S1? Bloom Time-*	Found in mesic prairies, thickets, moist woods, roadsides and grassy meadows	Y (N) UTM:

Species of Conservation Concern Habitat and Incidental Wildlife – Goshen

AECOM

ELC	Species	Habitat Description	Habitat Present (Y/N; UTM; description of habitat if present)
CUM1, MAM	*June –August*		
FOD6, FOD7, FOD9	**Green Dragon (Arisaema dracontium) - SC/S3** *Bloom Time – May and June*	Species found in damp deciduous forest and along river streams. Particularly Maple forest and forest dominated by Red Ash and White Elm.	Y N UTM: N/O
TPO1, TPS1, TPW1, FOM1, FOM2, FOD1, FOD2, FOD3	**Hairy Bedstraw** *(Galium pilosum) -S3 Bloom Time – June-August*	Occurs in dry, sandy woods and thickets; occasionally in dry sandy fields	Y N UTM:
FEO1, FES1, FET1, SWC, SWM, SWD, SWT, TPO, TPS, TPW	**Hairy Valerian** (Valeriana edulis) -S1 *Bloom Time – June to August*	Inhabits swampy river flats and meadows, wet prairies, and wooded, rocky riverbanks and fens	Y N UTM
FOD6, FOD7, SWM, SWD	**Hairy Wood Mint** *(Blephilia hirsuta) –S1 Bloom Time- Summer*	Woodlands, often rocky, especially rivers. Rich woods, swamp forests, floodplains	Y N UTM N/O
FOD6, FOD7, FOD8, FOD9	**Harbinger-of-spring** (Erigenia bulbosa) - S3 *Bloom Time – early to late April*	Occurs in rich, moist deciduous woods, especially on floodplains.	Y N UTM N/O
SAS1, SAM1, SAF1	**Hill's Pond Weed** (Potamogeton hillii) - SC/S2 *Bloom Time – summer*	Aquatic plant found in highly alkaline waters of ditches, ponds, beaver ponds, and slow-moving cold waters.	Y N UTM
FOM6, FOM7, FOM8	**Large Round-leaved Orchid** (Platanthera macrophylla) - S2 *Bloom Time – June to August*	Species inhabits moist mixed woods. Found in fairly mature, upland sugar maple-beech-eastern hemlock woodlands.	Y N UTM
MAM2, MAM3, MAS2, MAS3, SWD	**Lizard's Tail** (Saururus cernuus) - S3 *Bloom Time – June – September*	Species inhabits shores and streambanks along shallow water. As well as swamps, floodplains, shallow water and mudflats at the borders of streams and ponds.	Y N UTM
FOD6, FOD7, FOD9	**Pawpaw** *(Asimina triloba) –S3 Bloom Time – March-May*	Occurs in moist deciduous woods and stream banks.	Y N UTM. N/O
FOM8, FOD6, FOD7, FOD9, CUM1	**Pilose Evening Primrose** ***(Oenothera pilosella)*** *–S2 Bloom Time – Late Spring – Early Summer*	Moist edges of woods and open, disturbed ground.	Y N UTM. N/O
TPW1, FOM1, FOM2, FOD1, FOD2, FOD3	**Prostate Tick-trefoil** *(Desmodium rotundifolium) –S2 Bloom Time – July-September*	Dry, sandy or rocky woods	Y N UTM
FOD7, SWD	**Pumpkin Ash** *(Fraxinus profunda)-S2? Bloom Time – March - June*	Swamps and floodplains	Y N UTM N/O
CUW1, ALO, FET1, SWC	**Ram's-head Lady's-slipper** (Cypripedium arietinum) - S3 *Bloom Time –mid May to mid June*	Found in cedar woodlands, limestone plains and wooded fens, moist coniferous swamps, dry-sandy woods, and limestone barren	Y N UTM
FOD1, FOD2, FOD3, FOD4, FOD5, FOC1, FOM1, FOM5	**Rattlesnake Hawkweed** (Hieracium venosum) - S2 *Bloom Time – April – September*	Species inhabits open, dry sandy woods. Jack pine, oak, and aspen woodlands.	Y N UTM:
FOD6, FOD7, FOD9	**Round-leaved Groundsel** *(Packera obovata) –S3 Bloom Time- May - June*	Found in moist woods	Y N UTM: N/O
CUM1, CUT1, CUS1	**Round-leaved hawthorn** *(Crataegus lumaria) –S3?*	Species occurs in old fields, poorly managed pastures, fencelines and roadsides	Y N UTM: N/O
FOD6, FOD7, FOD8, FOD9, SWT2, SWT3	**Scarlet Beebalm** (Monarda didyma) - S3 *Bloom Time – May to October*	Found in moist, rich woods, thicket swamps, banks and floodplains.	Y N UTM: N/O
ALO, ALS, ALT, TPO, TPS, TPW	**Slender Blazing Star** *(Liatris cylindracea) –S3*	Species occurs in limestone and dolostone pavement, prairies, open woods; alvars and moist sandy meadows	Y N UTM:
SBO, SBS, SBT, TPO1, TPS1, TPW1, FOD1, FOD2	**Slender Knotweed** *(Polygonum tenue)-S2*	Found in dry, sandy, open areas in deciduous (often oak woods), prairie meadows; at edges of sand pits	Y N UTM:
SDT1, FOD5, FOD9	**Slim-flowered Muhly** (Muhlenbergia tenuiflora) - S2	Found in rich deciduous forest, often on rocky or sandy soils, wooded dunes, hillsides, and riverbanks whether in oak or beech-maple woods	Y N UTM
BLO1, BLS1, BLT1, TPO2, TPS2, TPW2, MAM2, FOD7	**Stiff Gentian** (Gentianella quinquefolia) - S2 *Bloom Time – late summer to mid fall*	Found in moist soils of streambanks, edges of woods, wet prairies, marshy meadows, bluffs and wooded hillsides.	Y N UTM: N/O
TPS1, TPW1, CUW1, RBO, SBO	**Sundial Lupine** (Lupinus perennis) - S3 *Bloom Time – mid-March to mid-June*	Inhabits dry, sandy oak savannahs, prairies, open barrens or clearings in woodlands of oak, jack pine, and/or aspen	Y N UTM

Species of Conservation Concern Habitat and Incidental Wildlife – Goshen

AECOM

ELC	Species	Habitat Description	Habitat Present (Y/N; UTM; description of habitat if present)
TPO1, TPS1, TPW1, CUM1	**Tall Blazing Star** *(Liatris aspera)-S3/SC*	Occurs in open, sandy woods, dry roadsides and sandy prairies	Y N UTM N/O
FEO, FES, FET, MAM2, MAM3	**Tuberous Indian Plantain** (*Amoglossum plantagineum*) - *S3* Bloom Time –mid-March to mid-June	Occurs mainly in flat, sandy areas of the Bruce Peninsula. Fens, wet meadows, and calcareous river flats	Y N UTM
FOC1, FOC2, FOC3, FOC4	**Woodland Pinedrops** (Pterospora andromedea) - S2 *Bloom Time – summer*	Found in conifer woods, under pines, but also hemlock, spruce, fir, and white cedar. In dry or rocky soil, often with common juniper and sometimes aspen or birch.	Y N UTM:
CUM1, CUT1, CUW1, RBO1, SBO1	**Yellow Ladies'-tresses** (*Spiranthes ochroleuca*) - *S2* *Bloom Time – August to November*	Dry, open sites, usually on acidic sandy soil, dry to mesic open-woodland, thickets, meadows, barrens, ledges, outcrops, banks and roadsides, old fields.	Y N UTM: N/O
BIRDS			
-	**Bald Eagle (Haliaeetus leucocephalus) - SC**	Assessed as SWH. Record species if found	not required.
CUW, SDO, RBO, TPS	**Common Nighthawk (Chordeiles minor) - SC**	Hunts insects over a wide variety of habitats, in particular open or semi-open areas. Nests on ground in a wide range of open, sparse or vegetation-free habitats.	Y N UTM:
FOD, FOM	**Louisiana Waterthrush (Seiurus motacilla) - SC**	Inhabits mature forests along steeply sloped ravines adjacent to running water. Trees, bushes, exposed roots, cliffs, banks and mossy logs are favoured nesting spots. Riparian woodlands are preferred stopover sites during migration	Y N UTM:
FOD, CUW, CUT	**Red-headed Woodpecker (Melanerpes erythrocephalus) - SC**	Species inhabits open woodland/ edges (oak savannahs and riparian forest), open, deciduous forest with little understory; fields or pasture lands with scattered large trees, wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees, requires cavity trees with at least 40 cm dbh; requires about 4 ha for a territory.	Y N UTM:
-	**Short Eared Owl (Asio flammeus) - SC**	Assessed as SWH. Record species if found	not required.
CUT1	**Yellow-breasted Chat (Icteria virens) - SC**	Inhabits thickets, tall tangles of shrubbery beside streams, ponds; overgrown bushy clearings with deciduous thickets, nests above ground in bush, vines	Y N UTM:
REPTILES			
-	**Eastern Ribbonsnake (Thamnophis sauritus) - SC**	Assessed as SWH. Record species if found.	**not required.**
-	**Milksnake (Lampropeltis triangulum) -SC**	Assessed as SWH. Record species if found.	not required.
-	**Snapping Turtle (Chelydra serpentine) - SC**	Assessed as SWH. Record species if found.	not required.
INSECTS			
OAO, SA, SWM, SWD	**Azure Bluet** *(Enallagma aspersum) –S3*	Species inhabits fishless ponds, lakes and boggy swamps	Y N UTM
TPS, TPW	**Sleepy Duskywing** (Erynnis brizo) - S1	Occurs in oak/oak-pine scrub, chaparral, barrens, well-drained sandy or shaly soils. Species regularly seen at flowers in oak woods, on the ground, and at mud puddles	Y N UTM:
CUM1, CUT1, CUW1	**Monarch Butterfly (Danaus plexippus) - SC**	Their larvae only feed on milkweeds (Asclepius spp.). Habitat includes abandoned farmland, along roadsides, open spaces where these plants grow	Y N UTM: N/O
TPS, CUW	**Mottled Duskywing (Erynnis martialis) –S2**	Usually seen nectaring or on wet sandy roads. Larvae feeds on New Jersey Tea and adults only likely near where this plant is present	Y N UTM:
SWT, SWD, SWM, FOM, FOD4-3, TPW, TPS, CUM1	**Tawny Emperor** *(Asterocampa clyton)* – S3	Species inhabits densely wooded riparian areas, dry woods, open woods, fencerows and parks. Usually occurs near Hackberry , the larval foodplant	Y N UTM:
FOD5	**West Virginia White (Pieris virginiensis) - SC**	This species is restricted to rich, moist, deciduous woods, where its foodplant Toothwort occur	Y N UTM:

Path: D:\Projects\AECOM\60156032\2011\GIS\Spatial\mxd\Goshen\Field Maps Dec 2011\GSH_Feature349_348.mxd

ELC Community Description and Classification

Site: 346		Polygon: 7.	
Surveyor(s): B. Miller, R. Aitken	Date: 12 DEC. 2004	Time start: 2:15 pm finish: 3:30 pm	
UTMZ: 17	UTMZ: 447727	UTMN: 4802201	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
■ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	■ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	■ Tableland	☐ Lichen	☐ Swamp
■ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	■ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
■ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☐ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
■ Treed		☐ Bluff		■ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	1	3	BETPAPY = ULMAMER = FRAX SP.
2	2	4	BETPAPY > ULMAMER = FRAX SP.
3	3	3	ILEVIRT > MALPUMI > HAMVIRG
4	4-5	2	GEUM SP. > PRUVIRG > RUB CF. ACLE

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	<10	10-24	25-50	>50
	Standing Snags:	R	R	R	N
BA:	Deadfall / Logs:	O	O	R	R

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: ☐ Pioneer ☐ Young ☒ Mid-Age ☐ Mature ☐ Old Growth

Ecosite:	Dry-Fresh Deciduous Forest Ecosite	Code:	FOD4
Vegetation Type:		Code:	
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Plot Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

						Summary
Site Metrics		Pit/Auger #				
	UTM	Zone				Moisture Regime
		Easting				
		Northing				
	Slope	Position				
		Aspect				Drainage
		Percent				
		Slope Length				
Depth to...		Mottles				
		Gley				Effective Texture (Indicate below)
		Water Table				
		Carbonates				
		Bedrock				

Soil Horizon Description									
	1	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
	2	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
	3	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
	4	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
		% Surface Stone/Rock							
	Moisture Regime								
	Drainage								

ELC Community Description and Classification

Site: 346		Polygon: 8.	
Surveyor(s): B. Miller, R. Aitken	Date: DEC. 12, 2011	Time start: 2:15 pm	finish: 3:30 pm
UTMZ: 17	UTMZ: 447601	UTMN: 4802166	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
☒ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	☒ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☒ Tableland	☐ Lichen	☐ Swamp
☒ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☐ Deciduous	☐ Bog
History		☐ Talus	☒ Coniferous	☐ Barren
☐ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☒ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
☒ Treed		☐ Bluff		☐ Forest
				☒ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	1	0	
2	2	4	PINSTRO
3	3	2	FRAX SP.
4	4-7	1	FRAX SP.

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	R <10	O 10-24	A 25-50	N >50
	Standing Snags:	R <10	N 10-24	N 25-50	N >50
BA:	Deadfall / Logs:	N <10	N 10-24	N 25-50	N >50

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: ☐ Pioneer ☐ Young ☒ Mid-Age ☐ Mature ☐ Old Growth

Ecosite:	Coniferous Plantation	Code:	CUP3
Vegetation Type:	White Pine Coniferous Plantation	Code:	CUP3-2
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Plot Radius Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Ab. %
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

							Summary
Site Metrics		Pit/Auger #					
	UTM	Zone					Moisture Regime
		Easting					
		Northing					
	Slope	Position					
		Aspect					Drainage
		Percent					
		Slope Length					
Depth to...		Mottles					
		Gley					Effective Texture (Indicate below)
		Water Table					
		Carbonates					
		Bedrock					

Soil Horizon Description									
	1	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
	2	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
	3	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
	4	Depth from zero		% CF		% CF		% CF		% CF
		Texture							
		% Surface Stone/Rock							
	Moisture Regime								
	Drainage								

VASCULAR PLANT LIST

PROJECT / LOCATION: FEATURE 346 **POLYGON:** 7. + 8.

SURVEYOR(S): R. Aitken, B. Miller **DATE(S):** DEC. 12, 2011

VEGETATION TYPE:

NOTES: Crow, Cedar Waxwing,

Plant Species	Canopy (C)	Sub-canopy (SC)	Understory (U)	Ground Layer (GL)	Plant Species	Understory (U)	Ground Layer (GL)	Plant Species	Understory (U)	Ground Layer (GL)
TREES					**HERBACEOUS FLORA**			**HERBACEOUS FLORA**		
PRU SERO	O	O	R		GEUM SP.		O			
BET PAPY	A	A			DRY CART		R			
BET ALLE	O				SYM LANC		R			
ULM AMER	A	O								
THUA OCCI		O								
FRA NIGR		R		R						
CAR CARO			R							
MAL PUMI			O							
POP TREM		R	R							
FRAX SP.	A	O								
PRU cf. PENS		R								
RHA CATH		R								
ACE FREE		R								
POLYGON #8										
PIN STRO		D								
FRAXINUS SP.			D	D						
SHRUBS AND WOODY VINES										
HAM VIRG			O							
RHU HIRT				R						
VIT RIPA			O							
PRU VIRG				O						
TIL VERT			A							
RUB IDAE				R						
COR ALTE			R							
RUB cf. ALLE				O						

Relative Abundance: D = Dominant; A = Abundant; O = Occasional; R = Rare
Vegetation Height: C = > 20m; SC = 10 - 20m; U = 2 - 10m; GL = < 2m

POLYGON 7. & 8.

VASCULAR PLANT CHECKSHEET

Location: FEATURE 346

Date: DEC. 12, 2011

Observer: B. Miller R. Aitken

Job Number:

DICOT HERBS	1	2	3	4	5	6
Achillea millefolium						
Actaea pachypoda						
Actaea rubra						
Agalinus						
Agrimonia gryposepala						
Alliaria petiolata						
Amaranthus retroflexus						
Ambrosia artemisiifolia						
Amphicarpaea bracteata						
Anaphalis margaritacea						
Anemone						
Anemone canadensis						
Anemone virginiana						
Antennaria neglecta						
Apocynum androsaemifolium						
Apocynum cannabinum						
Aquilegia canadensis						
Aralia nudicaulis						
Arctium minus						
Artemisia						
Asarum canadense						
Asclepias incarnata						
Asclepias syriaca						
Aster						
Aster cordifolius						
Aster ericoides						
Aster lanceolatus	X					
Aster lateriflorus						
Aster macrophyllus						
Aster novae-angliae						
Aster puniceus						
Barbarea vulgaris						
Bidens cernua						
Bidens frondosa						
Boehmeria cylindrica						
Caltha palustris						
Calystegia sepium						
[illegible]						
Cardamine						
Caulophyllum thalictroides						
Cerastium fontanum						
[illegible]						
Chelidonium majus						
Chenopodium album						
Chrysanthemum leucanthemum						
Cichorium intybus						
Cicuta						
Circaea lutetiana						
Cirsium arvense						
Cirsium vulgare						
Clematis virginiana						
Clintonia borealis						
Conyza canadensis						
Coronilla varia						
Cynanchum [illegible]						
Cynoglossum officinale						
Daucus carota						
Desmodium canadense						
Dianthus armeria						
Dipsacus fullonum						
Echinocystis lobata						
Echium vulgare						
Epilobium						
Epilobium ciliatum						
Epilobium hirsutum						
Epilobium parviflorum						

	1	2	3	4	5	6
Erigeron annuus						
Erigeron philadelphicus						
Erigeron strigosus						
Erythronium americanum						
Eupatorium maculatum						
Eupatorium perfoliatum						
Eupatorium rugosum						
Euphorbia						
Euthamia graminifolia						
Fragaria virginiana						
Fragaria vesca						
Galeopsis tetrahit						
Galium						
Galium						
Galium palustre						
Galium triflorum						
Geranium maculatum						
Geranium robertianum						
Geum aleppicum						
Geum canadense						
Geum [illegible]	X					
Glechoma hederacea						
Hepatica acutiloba						
Hesperis matronalis						
Heracleum [illegible]						
Hieracium [illegible]						
Hieracium						
Hydrophyllum virginianum						
Hypericum perforatum						
Impatiens capensis						
Inula helenium						
Lactuca						
Laportea canadensis						
Lapsana communis						
Leonurus cardiaca						
Lepidium						
Linaria vulgaris						
Lithospermum officinale						
Lobelia						
Lobelia inflata						
Lotus corniculatus						
Lycopus americanus						
Lycopus						
Lysimachia ciliata						
Lythrum salicaria						
Medicago lupulina						
Medicago sativa						
Melilotus alba						
Mentha arvensis						
Mimulus ringens						
Mitchella repens						
Mitella diphylla						
Monarda fistulosa						
Myosotis						
Nasturtium officinale						
Nepeta cataria						
Nuphar variegatum						
Nymphaea odorata						
Oenothera biennis						
Oenothera						
Oxalis stricta						
Phryma leptostachya						
Physalis heterophylla						

	1	2	3	4	5	6
Plantago lanceolata						
Plantago major						
Plantago rugelii						
Podophyllum peltatum						
Polygonum						
Polygonum						
Polygonum						
Polygonum lapathifolium						
Polygonum persicaria						
Potentilla						
Potentilla norvegica						
Potentilla recta						
Prenanthes alba						
Prunella vulgaris						
Pyrola elliptica						
Ranunculus						
Ranunculus abortivus						
Ranunculus acris						
Rudbeckia hirta						
Rumex acetosella						
Rumex crispus						
Rumex						
Sanguinaria canadensis						
Sanicula marilandica						
Saponaria officinalis						
Satureja vulgaris						
Scutellaria galericulata						
Silene vulgaris						
Sium suave						
Solanum dulcamara						
Solidago						
Solidago altissima						
Solidago caesia						
Solidago canadensis						
Solidago flexicaulis						
Solidago gigantea						
Solidago nemoralis						
Solidago rugosa						
Sonchus arvensis						
Sonchus asper						
Stellaria						
Tanacetum vulgare						
Taraxacum officinale						
Thalictrum dioicum						
Thalictrum pubescens						
Tiarella cordifolia						
Tragopogon pratensis						
Trientalis borealis						
Trifolium						
Trifolium pratense						
Trifolium repens						
Tussilago farfara						
Urtica dioica						
Valeriana officinalis						
Verbascum thapsus						
Verbena hastata						
Verbena urticifolia						
Veronica						
Veronica officinalis						
Viola [illegible]						
Viola labradorica						
Viola						
Viola						
Viola pubescens						
Viola sororia						

MONOCOT HERBS	1	2	3	4	5	6
Alisma plantago-aquatica						
Allium tricoccum						
Allium						
Arisaema triphyllum						
Asparagus officinalis						
Calla palustris						
Clintonia borealis						
Convallaria majalis						
Cypripedium calceolus						
Elodea canadensis						
Epipactis helleborine						
Erythronium americanum						
Hemerocallis fulva						
Iris versicolor						
Lemna minor						
Lemna trisulca						
Lilium						
Maianthemum canadense						
Maianthemum racemosum						
Maianthemum stellatum						
[illegible]						
Pontederia cordata						
Polygonatum pubescens						
Potamogeton crispus						
Potamogeton pectinatus						
Potamogeton						
Potamogeton						
Potamogeton						
Sagittaria latifolia						
Sisyrinchium montanum						
Smilax herbacea						
Spiranthes cernua						
Spirodela polyrhiza						
Streptopus roseus						
Trillium erectum						
Trillium grandiflorum						
Uvularia grandiflora						

SITE LOCATIONS

1: Polygon 7.
2: Polygon 8.
3:
4:
5:
6:

FEATURE 346 POLYGONS 7 & 8.

I	CONIFERS	1	2	3	4	5	6
	Abies balsamea						
	Juniperus communis						
	Juniperus virginiana						
	Larix laricina						
	Picea abies						
	Picea glauca						
	Pinus resinosa						
	Pinus strobus		X				
	Pinus sylvestris						
	Thuja occidentalis	X					
	Tsuga canadensis						
	TREES and SHRUBS						
	Acer negundo						
	Acer rubrum						
	Acer saccharinum						
	Acer saccharum						
	Acer spicatum						
	Alnus rugosa						
	Amelanchier						
	Berberis thunbergii						
	Betula alleghaniensis	X					
	Betula papyrifera	X					
	Carpinus caroliniana	X					
	Carya cordiformis						
	Celastrus scandens						
	Cornus alternifolia	X					
	Cornus amomum						
	Cornus rugosa						
	Cornus stolonifera						
	Corylus cornuta						
	Crataegus monogyna						
	Crataegus punctata						
	Crataegus sp.						
	Crataegus						
	Diervilla lonicera						
	Fagus grandifolia						
	Fraxinus americana						
	Fraxinus nigra	X					
	Fraxinus pennsylvanica						
	Ilex verticillata	X					
	Juglans cinerea						
	Juglans nigra						
	Lonicera morrowi						
	Lonicera tatarica						
	Lonicera						
	Malus pumila	X					
	Ostrya virginiana						
	Parthenocissus inserta						
	Populus balsamifera						
	Populus grandidentata						
	Populus tremuloides	X					
	Populus						
	Prunus pensylvanica						
	Prunus serotina	X					
	Prunus virginiana	X					
	Prunus cf. PENS	X					
	Quercus macrocarpa						
	Quercus rubra						
	Quercus						
	Rhamnus cathartica	X					
	Rhus radicans						
	Rhus typhina	X					
	Ribes americana						
	Ribes cynosbati						
	Ribes x rubrum						
	Robinia pseudo-acacia						
	FRAXINUS SP.	X	X				
	ACER X FREEMANII	X					

I	TREES and SHRUBS	1	2	3	4	5	6
+	Rosa multiflora						
	Rosa						
	Rubus allegheniensis	X					
	Rubus idaeus	X					
	Rubus occidentalis						
	Rubus odoratus						
	Rubus pubescens						
	Salix alba						
	Salix amygdaloides						
	Salix bebbiana						
+	Salix discolor						
	Salix eriocephala						
	Salix exigua						
	Salix lucida						
	Salix petiolaris						
+	Salix purpurea						
	Salix x rubens						
+	Salix						
	Sambucus canadensis						
	Sambucus racemosa						
	Sorbus aucuparia						
	Spiraea alba						
	Syringa vulgaris						
+	Tilia americana						
	Ulmus americana	X					
	Ulmus						
	Vaccinium						
	Viburnum lentago						
	Viburnum opulus						
	Viburnum						
	Vitis riparia	X					
	HAMAMELIS VIRGINIANA	X					
	FERNS						
	Adiantum pedatum						
	Athyrium filix-femina						
	Botrychium multifidum						
	Botrychium virginianum						
	Cystopteris bulbifera						
	Dryopteris carthusiana	X					
	Dryopteris cristata						
	Dryopteris marginalis						
	Dryopteris						
	Equisetum arvense						
	Equisetum hyemale						
	Equisetum variegatum						
	Equisetum						
	Gymnocarpium dryopteris						
	Lycopodium digitatum						
	Lycopodium obscurum						
	Lycopodium						
	Lycopodium						
	Matteuccia struthiopteris						
	Onoclea sensibilis						
	Osmunda cinnamomea						
	Osmunda regalis						
	Polystichum acrostichoides						
	Pteridium aquilinum						
	Thelypteris palustris						

I	GRAMINOIDS	1	2	3	4	5	6
	Agrostis gigantea						
	Agrostis stolonifera						
	Agropyron repens						
	Alopecuris						
	Bromus inermis						
	Calamagrostis canadensis						
	Carex arctata						
	Carex aurea						
	Carex bebbii						
	Carex blanda						
	Carex gracillima						
	Carex granularis						
	Carex hystericina						
	Carex pensylvanica						
	Carex radiata						
	Carex retrorsa						
	Carex stipata						
	Carex stricta						
	Carex vulpinoidea						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Cyperus						
	Cyperus						
	Dactylis glomerata						
	Danthonia spicata						
	Echinochloa crus-galli						
	Eleocharis erythropoda						
	Eleocharis						
	Elymus virginicus						
	Elymus						
	Festuca arundinacea						
	Glyceria striata						
	Glyceria						
	Juncus dudleyi						
	Juncus effusus						
	Juncus tenuis						
	Juncus						
	Juncus						
	Leersia oryzoides						
	Muhlenbergia						
	Oryzopsis asperifolia						
	Panicum						
	Panicum						
	Phalaris arundinacea						
	Phleum pratense						
	Phragmites australis						
	Poa compressa						
	Poa pratensis						
	Poa						
	Scirpus atrovirens						
	Scirpus cyperinus						
	Scirpus validus						
	Scirpus						
	Scirpus						
	Setaria						
	Sparganium						
	Typha angustifolia						
	Typha latifolia						
	Typha Xglauca						

ELC Community Description and Classification

Site: 349		Polygon: [illegible].9.	
Surveyor(s): B. Miller, R. Aitken	Date: DEC. 12, 2011	Time start: 2:15 pm	finish: 3:30 pm
UTMZ: 17	UTMZ: 447611	UTMN: 4802217	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
☒ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	☒ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☒ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☐ Tableland	☐ Lichen	☐ Swamp
☒ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☒ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☒ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☐ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
☒ Treed		☐ Bluff		☒ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species In Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	1	0	
2	2	4	FRAPENN >> ULMAMER > VITRIPA
3	3	3	FRAPENN >> ULMAMER > ILEVERT > VITRIPA
4	4-7	2	GEUM SP. > RUBOCCI > FRAPENN

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	A <10	D 10-24	O 25-50	N >50
	Standing Snags:	R <10	A 10-24	O 25-50	N >50
BA:	Deadfall / Logs:	R <10	A 10-24	R 25-50	N >50

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: ☐ Pioneer ☒ Young ☐ Mid-Age ☐ Mature ☐ Old Growth

Ecosite:	Fresh-Moist Lowland Deciduous Forest	Code:	FOD7
Vegetation Type:	Fresh-Moist Ash Lowland Deciduous Forest Type	Code:	FOD7-2
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Prism Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

						Summary
	Pit/Auger #					
Site Metrics – UTM	Zone					Moisture Regime
	Easting					
	Northing					
Site Metrics – Slope	Position					Drainage
	Aspect					
	Percent					
	Slope Length					
Depth to...	Mottles					Effective Texture (indicate below)
	Gley					
	Water Table					
	Carbonates					
	Bedrock					

Soil Horizon Description					
1	Depth from zero	% CF	% CF	% CF	% CF
	Texture				
2	Depth from zero	% CF	% CF	% CF	% CF
	Texture				
3	Depth from zero	% CF	% CF	% CF	% CF
	Texture				
4	Depth from zero	% CF	% CF	% CF	% CF
	Texture				
	% Surface Stone/Rock				
	Moisture Regime				
	Drainage				

VASCULAR PLANT LIST

PROJECT / LOCATION: FEATURE 349 **POLYGON:** 9.

SURVEYOR(S): B. Miller, R. Aitken **DATE(S):** Dec. 12, 2011

VEGETATION TYPE:

NOTES:

Plant Species	Abundance / Layer: Canopy (C)	Sub-canopy (SC)	Understory (U)	Ground Layer (GL)	Plant Species	Understory (U)	Ground Layer (GL)	Plant Species	Understory (U)	Ground Layer (GL)
TREES					**HERBACEOUS FLORA**			**HERBACEOUS FLORA**		
FRAPENN	D	D	D	O	GER ROBE		R			
ULM AMER		O	O		GEUM SP.		D			
JUG NIGRA		R		R	SOL CF. CANA		O			
CAR CARO			R							
SHRUBS AND WOODY VINES										
RUBOCCI				A						
VIT RIPA		O	O							
PAR VITA		R								
ILE VERT			O							
RHA CATH			R							

ndance: D = Dominant; A = Abundant; O = Occasional; R = Rare
eight: C = > 20m; SC = 10 - 20m; U = 2 - 10m; GL = < 2m

POLYGON 9.

VASCULAR PLANT CHECKSHEET

Location: Feature 349
Date: Dec. 12, 2011
Observer: B. Miller, R. Aitken
Job Number:

DICOT HERBS	1	2	3	4	5	6
Achillea millefolium						
Actaea pachypoda						
Actaea rubra						
Agalinis						
Agrimonia gryposepala						
Alliaria petiolata						
Amaranthus retroflexus						
Ambrosia artemisiifolia						
Amphicarpaea bracteata						
Anaphalis margaritacea						
Anemone						
Anemone canadensis						
Anemone virginiana						
Antennaria neglecta						
Apocynum androsaemifolium						
Apocynum cannabinum						
Aquilegia canadensis						
Aralia nudicaulis						
Arctium minus						
Artemisia						
Asarum canadense						
Asclepias incarnata						
Asclepias syriaca						
Aster						
Aster cordifolius						
Aster ericoides						
Aster lanceolatus						
Aster lateriflorus						
Aster macrophyllus						
Aster novae-angliae						
Aster puniceus						
Barbarea vulgaris						
Bidens cernua						
Bidens frondosa						
Boehmeria cylindrica						
Caltha palustris						
Calystegia sepium						
Cardamine diphylla						
Cardamine						
Caulophyllum thalictroides						
Cerastium fontanum						
Ceratophyllum demersum						
Chelidonium majus						
Chenopodium album						
Chrysanthemum leucanthemum						
Cichorium intybus						
Cicuta						
Circaea lutetiana						
Cirsium arvense						
Cirsium vulgare						
Clematis virginiana						
[illegible]						
Conyza canadensis						
Coronilla varia						
Cynanchum [illegible]						
Cynoglossum officinale						
Daucus carota						
Desmodium canadense						
Dianthus armeria						
Dipsacus fullonum						
Echinocystis lobata						
Echium vulgare						
Epilobium						
Epilobium ciliatum						
Epilobium hirsutum						
Epilobium parviflorum						

	1	2	3	4	5	6
Erigeron annuus						
Erigeron philadelphicus						
Erigeron strigosus						
Erysimum cheiranthoides						
Eupatorium maculatum						
Eupatorium perfoliatum						
Eupatorium rugosum						
Euphorbia						
Euthamia graminifolia						
Fragaria virginiana						
Fragaria vesca						
Galeopsis tetrahit						
Galium						
Galium						
Galium palustre						
Galium triflorum						
Geranium maculatum						
Geranium robertianum	X					
Geum aleppicum						
Geum canadense						
Geum sp.	X					
Glechoma hederacea						
Hepatica acutiloba						
Hesperis matronalis						
Hieracium aurantiacum						
Hieracium caespitosum						
Hieracium						
Hydrophyllum virginianum						
Hypericum perforatum						
Impatiens capensis						
Inula helenium						
Lactuca						
Laportea canadensis						
Lapsana communis						
Leonurus cardiaca						
Lepidium						
Linaria vulgaris						
Lithospermum officinale						
Lobelia						
Lobelia [illegible]						
Lotus corniculatus						
Lycopus americanus						
Lycopus						
Lysimachia ciliata						
Lythrum salicaria						
Medicago lupulina						
Medicago sativum						
Melilotus alba						
Mentha arvensis						
Mimulus ringens						
[illegible]						
[illegible]						
Monarda fistulosa						
Myosotis						
Nasturtium officinale						
Nepeta cataria						
Nuphar variegatum						
Nymphaea odorata						
Oenothera biennis						
Osmorhiza						
Oxalis stricta						
Phryma leptostachya						
Physalis heterophylla						

	1	2	3	4	5	6
Plantago lanceolata						
Plantago major						
Plantago rugelii						
Podophyllum peltatum						
Polygonum						
Polygonum						
Polygonum						
Polygonum lapathifolium						
Polygonum persicaria						
Potentilla						
Potentilla norvegica						
Potentilla recta						
Prenanthes alba						
Prunella vulgaris						
Pyrola elliptica						
Ranunculus						
Ranunculus abortivus						
Ranunculus acris						
Rudbeckia hirta						
Rumex acetosella						
Rumex crispus						
Rumex						
Sanguinaria canadensis						
Sanicula marilandica						
Saponaria officinalis						
Satureja vulgaris						
Scutellaria galericulata						
Silene vulgaris						
Sium suave						
Solanum dulcamara						
Solidago						
Solidago altissima						
Solidago caesia						
Solidago canadensis	X					
Solidago flexicaulis						
Solidago gigantea						
Solidago nemoralis						
Solidago rugosa						
Sonchus arvensis						
Sonchus asper						
Stellaria						
Tanacetum vulgare						
Taraxacum officinale						
Thalictrum dioicum						
Thalictrum pubescens						
Tiarella cordifolia						
Tragopogon pratensis						
Trientalis borealis						
Trifolium						
Trifolium pratense						
Trifolium repens						
Tussilago farfara						
Urtica dioica						
Utricularia vulgaris						
Verbascum thapsus						
Verbena hastata						
Verbena urticifolia						
Veronica						
Veronica officinalis						
Vicia cracca						
Vicia tetrasperma						
Viola						
Viola						
Viola pubescens						
Viola sororia						

MONOCOT HERBS	1	2	3	4	5	6
Alisma plantago-aquatica						
Allium tricoccum						
Allium						
Arisaema triphyllum						
Asparagus officinalis						
Calla palustris						
Clintonia borealis						
Convallaria majus						
Cypripedium calceolus						
Elodea canadensis						
Epipactis helleborine						
Erythronium americanum						
Hemerocallis fulva						
Iris versicolor						
Lemna minor						
Lemna trisulca						
Lilium						
Maianthemum canadense						
Maianthemum racemosa						
Maianthemum stellata						
[illegible]						
Pontederia cordata						
Polygonatum pubescens						
Potamogeton crispus						
Potamogeton pectinatus						
Potamogeton						
Potamogeton						
Potamogeton						
Sagittaria latifolia						
Sisyrinchium montanum						
Smilax herbacea						
Spiranthes cernua						
Spirodela polyrhiza						
Symplocarpus foetidus						
Trillium erectum						
Trillium grandiflorum						
Uvularia grandiflora						

SITE LOCATIONS

1: ______________________ 4: ______________________
2: ______________________ 5: ______________________
3: ______________________ 6: ______________________

Feature 349 POLYGON 9.

I	CONIFERS	1	2	3	4	5	6
	Abies balsamea						
	Juniperus communis						
	Juniperus virginiana						
	Larix laricina						
	Picea abies						
	Picea glauca						
	Pinus resinosa						
	Pinus strobus						
	Pinus sylvestris						
	Thuja occidentalis						
	Tsuga canadensis						
	TREES and SHRUBS						
	Acer negundo						
	Acer rubrum						
	Acer saccharinum						
	Acer saccharum						
	Acer spicatum						
	Alnus rugosa						
	Amelanchier						
	Berberis thunbergii						
	Betula alleghaniensis						
	Betula papyrifera						
	Carpinus caroliniana	X					
	Carya cordiformis						
	Celastrus scandens						
	Cornus alternifolia						
	Cornus amomum						
	Cornus rugosa						
	Cornus stolonifera						
	Corylus cornuta						
	Crataegus monogyna						
	Crataegus punctata						
	Crataegus sp.						
	Crataegus						
	Diervilla lonicera						
	Fagus grandifolia						
	Fraxinus americana						
	Fraxinus nigra						
	Fraxinus pennsylvanica	X					
	Ilex verticillata	X					
	Juglans cinerea						
	Juglans nigra	X					
	Lonicera morrowi						
	Lonicera tatarica						
	Lonicera						
	Malus pumila						
	Ostrya virginiana						
	Parthenocissus inserta	X					
	Populus balsamifera						
	Populus grandidentata						
	Populus tremuloides						
	Populus						
	Prunus pensylvanica						
	Prunus serotina						
	Prunus virginiana						
	Prunus						
	Quercus macrocarpa						
	Quercus rubra						
	Quercus						
	Rhamnus cathartica	X					
	Rhus radicans						
	Rhus typhina						
	Ribes americana						
	Ribes cynosbati						
	Ribes x rubrum						
	Robinia pseudo-acacia						

I	TREES and SHRUBS	1	2	3	4	5	6
+	Rosa multiflora						
	Rosa						
	Rubus allegheniensis						
	Rubus idaeus						
	Rubus occidentalis	X					
	Rubus odoratus						
	Rubus pubescens						
	Salix alba						
	Salix amygdaloides						
	Salix bebbiana						
+	Salix discolor						
	Salix eriocephala						
	Salix exigua						
	Salix lucida						
	Salix petiolaris						
+	Salix purpurea						
	Salix x rubens						
+	Salix						
	Sambucus canadensis						
	Sambucus racemosa						
	Sorbus aucuparia						
	Spiraea alba						
	Syringa vulgaris						
+	Tilia americana						
	Ulmus americana	X					
	Ulmus						
	Vaccinium						
	Viburnum lentago						
	Viburnum opulus						
	Viburnum						
	Vitis riparia	X					

FERNS
Adiantum pedatum
Athyrium filix-femina
Botrychium multifidum
Botrychium virginianum
Cystopteris bulbifera
Dryopteris carthusiana
Dryopteris cristata
Dryopteris marginalis
Dryopteris
Equisetum arvense
Equisetum hyemale
Equisetum variegatum
Equisetum
Gymnocarpium dryopteris
Lycopodium digitatum
Lycopodium obscurum
Lycopodium
Lycopodium
Matteucia struthiopteris
Onoclea sensibilis
Osmunda cinnamomea
Osmunda regalis
Polystichum acrostichoides
Pteridium aquilinum
Thelypteris palustris

I	GRAMINOIDS	1	2	3	4	5	6
	Agrostis gigantea						
	Agrostis stolonifera						
	Agropyron repens						
	Alopecuris						
	Bromus inermis						
	Calamagrostis canadensis						
	Carex aestata						
	Carex aurea						
	Carex bebbii						
	Carex blanda						
	Carex gracillima						
	Carex glaucularis						
	Carex hystericina						
	Carex pensylvanica						
	Carex radiata						
	Carex retrorsa						
	Carex stipata						
	Carex stricta						
	Carex vulpinoidea						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Cyperus						
	Cyperus						
	Dactylis glomerata						
	Danthonia spicata						
	Echinochloa crus-galli						
	Eleocharis erythropoda						
	Eleocharis						
	Elymus virginicus						
	Elymus						
	Festuca arundinacea						
	Glyceria striata						
	Glyceria						
	Juncus dudleyi						
	Juncus effusus						
	Juncus tenuis						
	Juncus						
	Juncus						
	Leersia oryzoides						
	Muhlenbergia						
	Oryzopsis asperifolia						
	Panicum						
	Panicum						
	Phalaris arundinacea						
	Phleum pratense						
	Phragmites australis						
	Poa compressus						
	Poa pratensis						
	Poa						
	Scirpus atrovirens						
	Scirpus cyperinus						
	Scirpus validus						
	Scirpus						
	Scirpus						
	Setaria						
	Sparganium						
	Typha angustifolia						
	Typha latifolia						
	Typha Xglauca						

ELC WILDLIFE	SITE: 346 and 349		
	POLYGON: 7., 8., and 9.		
	DATE: December 12 2011		
	SURVEYORS: B. Miller, R. Aitken		
	START TIME: 2:15 pm	END TIME: 3:30 pm	

TEMP (°C): 2	CLOUD (10th): 1	WIND: 1	PRECIPITATION: None
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS	X	SNAGS
	HIBERNACULA	X	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	American Crow	VO		-					
B	Cedar Waxwing	VO		-					
M	Eastern Cottontail	TK		-					

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG
TK = TRACKS FE = FEEDING EVIDENCE SC = SCAT
SI = OTHER SIGNS (specify)

AECOM

Wetland Data Collection Sheet

Study area: Goshen	Map No: 346/349 GSH 1041
Date (yyyy-mm-dd): 2012-07-0?	Time Started: 4:30 pm
Field Staff: SG, ?S	Time Finished: 5:30 pm

Presence of Groundwater No ☑ Yes ☐

☐ bank seepage ☐ iron staining ☐ groundwater indicator

Site Type

Lacustrine ☐ (associated with lakes) Isolated ☑

Riverine ☐ (associated with rivers)

Palustrine ☐ absent or intermittnet inflow and either intermittnet or permanent outflow

what are the water inputs and outputs? precipitation.

Soils refer to ELC card for soils information

30 cm = Sandy loam. 30 cm+ = fine sand w faint mottles.

% open Water

Type 1 - <5% ☑

Type 2 - 5-25% ☐ (water occuring in one central location)

Type 3 - 5-25% ☐ (water occuring in ponds of various sizes)

Type 4 - 26-75% ☐ (water occuring in a central location)

Type 5 - 26-75% ☐ (water occuring in a small patern)

Type 6 - 76-95% ☐ (occuring in a central location, vegeation is peripehral)

Type 7 - 76-95% ☐ (vegetation occurs inpatches or diffuse, open stands)

Type 8 - >95% ☐ (water occupies over 95% of the area)

Community Descriptions

Vegetation forms

h (deciduous trees)	ne (narrow leaved emergents)	ts (tall shrubs 1-6m)	f (aquatic with floating leaf)
c (coniferous trees)	be (broad leaved emergents)	ls (low shrubs up to 1m)	ff (free floating)
dh (dead deciduous trees)	gc (ground cover)	ds (dead shrubs)	su (all under water)
dc (dead coniferous trees)	m (mosses)	re (robust emergents)	u (unvegetated)

Map Code/ ELC Code	Community Description - list at least four dominant species for each form
Po4:1 FOD7-2	h - Fra penn > ? maner ts - lin benz > Rhacath gc - geu allep > ? ? ? [illegible]

Wetland Data Collection Sheet

AECOM

Notes on Ecological Functions or features

should include notes on: furbearer, cranberries, wild rice, baitfish, bullfrogs, winter cover for wildlife, suitablility for waterfowl breeding staging, moulting, evidence of recreational activities, disturbance, sourrounding topography (flat, rolling, hilly, steep), and surrounding habitat diversity

- Adjacent to small section [illegible] adjacent to a dry stream F0107-2 borders a F0074, which comprises the rest of the forested feature.
- Little evidence of disturbances.

Completed Aug 16/11 North-Central
-SAA

352 - GSH 1040

Goshen Access Road / Collection Lines

0 35 70 140 Meters

Roads
Access/Collection Line
No Access (as of August 2011)
Access
ELC to Evaluate
Waterbodies
Goshen Wind Energy Centre
120m Buffer

Parks 271-73
WP 058

342 WP 211 [redacted]

ELC Community Description and Classification

Site: GSA 1040	Polygon: 1		
Surveyor(s): SAM	Date: Aug-16/11	Time start: 1509h finish: 1644h	
UTMZ: 17	UTMZ:	UTMN:	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
☐ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	☒ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☐ Tableland	☐ Lichen	☐ Swamp
☒ Surficial Dep.		☒ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☒ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☒ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☐ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
☒ Treed		☐ Bluff		☒ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	2	4	MH >> Be >> Aw > BD
2	2-3	3	MH >> Aw >> BD > To
3	4-5	2	MH > Be = Aw > Choke Cherry
4	6	2	Aw > MH > Jack in the Pulpit > Enchanted Nightshade

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	<10	10-24	25-50	>50
MH Be Aw BD	Standing Snags:	O	O	R	R
BA:	Deadfall / Logs:	A	O	R	R

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: ☐ Pioneer ☐ Young ☐ Mid-Age ☒ Mature ☐ Old Growth

Ecosite:	Dry-Fresh Sugar Maple Deciduous Forest	Code:	FOD5
Vegetation Type:	Dry-Fresh Sugar Maple-Beech Deciduous Forest Type	Code:	FOD5-2
Inclusion:	/	Code:	/
Complex:		Code:	/

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Prism Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
MH	8	8			16	53
Be	4	3			7	23
Aw	0	3			3	10
BD	0	0			0	1
Bo	1	1			2	7
AS		1			1	3
CB	0	1			1	3
Total	13	17			30	100
Basal Area (BA)	26	34			60	30
Dead	2	0			2	

Soils Ontario and ELC Soils Description

		Pit/Auger #	WP211 (1)	[redacted] (2)		Summary
Site Metrics	UTM	Zone				Moisture Regime
		Easting				
		Northing				
	Slope	Position	2	4		
		Aspect	SE	NE		Drainage
		Percent	7	5		
		Slope Length	5m	4m		
Depth to...	Mottles		36	29		
	Gley		>120	>120		Effective Texture (indicate below)
	Water Table		>120	>120		
	Carbonates		21	36		
	Bedrock		>120	>120		
Soil Horizon Description	1	Depth from zero	0	0		
		% CF	0	0		
		Texture	vfSCL	vfSCL		
	2	Depth from zero	13	15		
		% CF	5	0		
		Texture	vfSC	vfSC		
	3	Depth from zero	28	21		
		% CF	5	0		
		Texture	vfSC	C		
	4	Depth from zero	53			
		% CF	[redacted]			
		Texture	C			
		% Surface Stone/Rock	2%			
	Moisture Regime					
	Drainage					

VASCULAR PLANT CHECKSHEET

Location: 342 GSH 1040/1164
Date: Aug 16/11 & July 19/11
Observer: SAM
Job Number:

DICOT HERBS	1	2	3	4	5	6
Achillea millefolia						
Actaea pachypoda	X					
Actaea rubra						
Agalinus						
Agrimonia gryposepala						
Alliaria petiolata						
Amaranthus retroflexus						
Ambrosia artemisiifolia						
Amphicarpaea bracteata						
Anaphalis margaritacea						
Anemone						
Anemone canadensis						
Anemone virginiana						
Antennaria neglecta						
Apocynum androsaemifolium						
Apocynum cannabinum						
Aquilegia canadensis						
Aralia nudicaulis						
Arctium minus						
Artemisia						
Asarum canadense	X					
Asclepias incarnata						
Asclepias syriaca						
Aster						
Aster cordifolius						
Aster ericoides						
Aster lanceolatus	X					
Aster lateriflorus	X					
Aster macrophyllus						
Aster novae-angliae						
Aster puniceus						
Barbarea vulgaris						
Bidens cernua						
Bidens frondosa						
Boehmeria cylindrica						
Caltha palustris						
Calystegia sepium						
Cardamine diphylla						
Cardamine						
Caulophyllum thalictroides						
Ceratium fontanum						
Ceratophyllum demersum						
Chaiidonium majus						
Chenopodium album						
Chrysanth. leucanthemum						
Cichorium intybus						
Cicuta						
Circaea lutetiana	X					
Cirsium arvense						
Cirsium vulgare						
Clematis virginiana						
Clintonia borealis						
Conyza canadensis						
Coronilla varia						
Cynanchum rossicum						
Cynoglossum officinale						
Daucus carota						
Desmodium canadense						
Dianthus armeria						
Dipsacus fullonum						
Echinocystis lobata						
Echium vulgare						
Epilobium						
Epilobium ciliatum						
Epilobium hirsutum						
Epilobium parviflorum						

	1	2	3	4	5	6
Erigeron annuus						
Erigeron philadelphicus						
Erigeron strigosus						
Erysimum cheiranthoides						
Eupatorium maculatum						
Eupatorium perfoliatum						
Eupatorium rugosum						
Euphorbia						
Euthamia graminifolia	X					
Fragaria virginiana	X					
Fragaria vesca						
Galeopsis tetrahit						
Galium						
Galium						
Galium palustre						
Galium trifidum						
Geranium maculatum						
Geranium robertianum	X					
Geum aleppicum	X					
Geum canadense	X					
Geum						
Glecoma hederacea						
Hepatica acutiloba						
Hesperis matronalis						
Hieracium aurantiacum						
Hieracium caespitosum						
Heracium						
Hydrophyllum virginianum						
Hypericum perforatum						
Impatiens capensis						
Inula helenium						
Lactuca						
Laportea canadensis						
Lapsana communis						
Leonurus cardiaca						
Lepidium						
Linaria vulgaris						
Lithospermum officinale						
Lobelia						
Lobelia inflata						
Lotus corniculatus						
Lycopus americanus	X					
Lycopus						
Lysimachia ciliata						
Lythrum salicaria						
Medicago lupulina						
Medicago sativum						
Melilotus alba						
Mentha arvensis						
Mimulus ringens						
Mimulus ringens						
Mitella diphylla						
Monarda fistulosa						
Myosotis						
Nasturtium officinale						
Nepeta cataria						
Nuphar variegatum						
Nymphaea odorata						
Oenothera biennis						
Osmorhiza						
Oxalis stricta						
Physa leptostachya						
Physalis heterophylla						

	1	2	3	4	5	6
Plantago lanceolata						
Plantago major						
Plantago rugelii						
Podophyllum peltatum	X					
Polygonum						
Polygonum						
Polygonum						
Polygonum lapathifolium						
Polygonum persicaria						
Potentilla						
Potentilla norvegica						
Potentilla recta						
Prenanthes alba						
Prunella vulgaris	X					
Pyrola elliptica						
Ranunculus						
Ranunculus abortivus						
Ranunculus acris						
Rudbeckia hirta						
Rumex acetosella						
Rumex crispus						
Rumex						
Sanguinaria canadensis	X					
Sanicula marilandica						
Saponaria officinalis						
Satureja vulgaris						
Scutellaria galericulata						
Silene vulgaris						
Sium suave						
Solanum dulcamara	X					
Solidago						
Solidago altissima						
Solidago caesia						
Solidago canadensis						
Solidago flexicaulis	X					
Solidago gigantea						
Solidago nemoralis						
Solidago rugosa						
Sonchus arvensis						
Sonchus asper						
Stellaria						
Tanacetum vulgare						
Taraxacum officinale						
Thalictrum dioicum						
Thalictrum pubescens						
Tiarella cordifolia						
Tragopogon pratensis						
Trientalis borealis						
Trifolium						
Trifolium pratense						
Trifolium repens						
Tussilago farfara						
Urtica dioica						
Utricularia vulgaris						
Verbascum thapsus						
Verbena hastata						
Verbena urticifolia						
Veronica						
Veronica officinalis	X					
Vicia cracca						
Vicia tetrasperma						
Viola						
Viola						
Viola pubescens						
Viola sororia						

MONOCOT HERBS	1	2	3	4	5	6
Alisma plantago-aquatica						
Allium tricoccum						
Allium						
Arisaema triphyllum	X					
Asparagus officinalis						
Calla palustris						
Clintonia borealis						
Convallaria majus						
Cypripedium calceolus						
Elodea canadensis						
Epipactis helleborine						
Erythronium americanum						
Hemerocallis fulva						
Iris versicolor						
Lemna minor						
Lemna trisulca						
Lilium						
Maianthemum canadense						
Maianthemum racemosa	X					
Maianthemum stellata						
Pistia stratiotes						
Pontederia cordata						
Polygonatum pubescens						
Potamogeton crispus						
Potamogeton pectinatus						
Potamogeton						
Potamogeton						
Potamogeton						
Sagittaria latifolia						
Sparganium montanum						
Smilax herbacea						
Spiranthes cernua						
Spirodela polyrhiza						
Streptopus roseus						
Trillium erectum						
Trillium grandiflorum		X				
Uvularia grandiflora		X				

SITE LOCATIONS

1: polygon #1
2:
3:
4:
5:
6:

1	CONIFERS	1	2	3	4	5	6
	Abies balsamea						
	Juniperus communis						
	Juniperus virginiana						
	Larix laricina						
	Picea abies						
	Picea glauca						
	Pinus resinosa						
	Pinus strobus						
	Pinus sylvestris						
	Thuja occidentalis						
	Tsuga canadensis						
	TREES and SHRUBS						
	Acer negundo						
	Acer rubrum						
	Acer saccharinum						
	Acer saccharum	X					
	Acer spicatum						
	Alnus rugosa						
	Amelanchier						
	Berberis thunbergii	X					
	Betula alleghaniensis						
	Betula papyrifera						
	Carpinus caroliniana						
	Carya cordiformis	X					
	Celastrus scandens						
	Cornus alternifolia						
	Cornus amomum						
	Cornus rugosa						
	Cornus stolonifera	X					
	Corylus cornuta						
	Crataegus monogyna						
	Crataegus punctata						
	Crataegus sp.						
	Crataegus						
	Diervilla lonicera						
	Fagus grandifolia	X					
	Fraxinus americana	X					
	Fraxinus nigra						
	Fraxinus pennsylvanica	X					
	Ilex verticillata						
	Juglans cinerea						
	Juglans nigra						
	Lonicera morrowi						
	Lonicera tatarica						
	Lonicera						
	Malus pumila	X					
	Ostrya virginiana	X					
	Parthenocissus inserta	X					
	Populus balsamifera						
	Populus grandidentata						
	Populus tremuloides						
	Populus						
	Prunus pensylvanica						
	Prunus serotina	X					
	Prunus virginiana	X					
	Prunus cerasus	X					
	Quercus macrocarpa						
	Quercus rubra						
	Quercus						
	Rhamnus cathartica						
	Rhus radicans						
	Rhus typhina						
	Ribes americana						
	Ribes cynosbati						
	Ribes x rubrum						
	Robinia pseudo-acacia						
	Cornus racemosa	X					
	Ribes lacustre	X					
	Carya ovata	X					
	Ribes triste	X					

1	TREES and SHRUBS	1	2	3	4	5	6
+	Rosa multiflora						
	Rosa						
	Rubus allegheniensis						
	Rubus idaeus						
	Rubus occidentalis	X					
	Rubus odoratus						
	Rubus pubescens						
	Salix alba						
	Salix amygdaloides						
	Salix bebbiana						
+	Salix discolor						
	Salix eriocephala						
	Salix exigua						
	Salix lucida						
	Salix petiolaris						
+	Salix purpurea						
	Salix x rubens						
+	Salix						
	Sambucus canadensis						
	Sambucus racemosa						
	Sorbus aucuparia						
	Spiraea alba						
	Syringa vulgaris						
+	Tilia americana	X					
	Ulmus americana	X					
	Ulmus						
	Vaccinium						
	Viburnum lentago						
	Viburnum opulus						
	Viburnum						
	Vitis riparia	X					
	FERNS						
	Adiantum pedatum						
	Athyrium filix-femina						
	Botrychium multifidum						
	Botrychium virginianum						
	Cystopteris bulbifera						
	Dryopteris carthusiana						
	Dryopteris cristata						
	Dryopteris marginalis						
	Dryopteris						
	Equisetum arvense						
	Equisetum hyemale						
	Equisetum variegatum						
	Equisetum						
	Gymnocarpium dryopteris						
	Lycopodium digitatum						
	Lycopodium obscurum						
	Lycopodium						
	Lycopodium						
	Matteuccia struthiopteris						
	Onoclea sensibilis						
	Osmunda cinnamomea						
	Osmunda regalis						
	Polystichum acrostichoides	X					
	Pteridium aquilinum						
	Thelypteris palustris						

1	GRAMINOIDS	1	2	3	4	5	6
	Agrostis gigantea	X					
	Agrostis stolonifera						
	Agropyron repens						
	Alopecurus						
	Bromus inermis						
	Calamagrostis canadensis						
	Carex arctata						
	Carex aurea						
	Carex bebbii						
	Carex blanda						
	Carex gracillima						
	Carex granularis						
	Carex hystericina						
	Carex pensylvanica						
	Carex radiata						
	Carex retrorsa						
	Carex stipata						
	Carex stricta						
	Carex vulpinoidea						
	Carex lupulina	X					
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Carex						
	Cyperus						
	Cyperus						
	Dactylis glomerata						
	Danthonia spicata						
	Echinochloa crus-galli						
	Eleocharis erythropoda						
	Eleocharis						
	Elymus virginicus						
	Elymus						
	Festuca arundinacea						
	Glyceria striata						
	Glyceria						
	Juncus dudleyi						
	Juncus effusus						
	Juncus tenuis						
	Juncus						
	Juncus						
	Leersia oryzoides						
	Muhlenbergia						
	Oryzopsis asperifolia						
	Panicum						
	Panicum						
	Phalaris arundinacea						
	Phleum pratense						
	Phragmites australis						
	Poa compressa	X					
	Poa pratensis						
	Poa						
	Scirpus atrovirens	X					
	Scirpus cyperinus						
	Scirpus validus						
	Scirpus						
	Scirpus						
	Setaria						
	Sparganium						
	Typha angustifolia						
	Typha latifolia						
	Typha Xglauca						

ELC Plant Species List	
	SITE: GSA 1040/1164
	POLYGON: 1
	DATE: Aug. 16/11
	SURVEYOR(S): SAM

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTORY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASSIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
BD	A				
Aw		O	D	D	
Ew					
Grape					
Virg. Creeper					
Mt	D	D	A	A	
Sour Cherry					
BlkRasp					
AG					
Apple					
Pl					
RedOsier Dogwd					
Be	D	A	A		
Gray Dogwd					
HBN					
Poa compressa					
[illegible]					
Hop Sedge					
- Pan. Aster					
- Self Heal					
Blk Bulrush					
- Cut-leaf Water Horehound					
- GLG'rod					
Reddop					
- Wild Ginger					
Bristly Blk Currant					
Jack					
Com. Barberry					

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.
Choke Cherry					
- Wt Baneberry					
- Ench. Ntshd					
Xmas Fern					
- False Sol. Seal					
CB					
- Wt Trillium					
- Com. Speedwell					
- BS Ntshd					
- Yellow Avens					

Goshen

ELC Plant Species List	SITE: ~~[illegible]~~ GE 14/342-GSHD49
	POLYGON: 1
	DATE: July 19/11
	SURVEYOR(S): SAM

LAYERS: 1 = CANOPY 2 = SUB-CANOPY 3 = UNDERSTORY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASSIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
MayApple					
Aw					
Mm					
Choke					
Strawb.					
Stingbark					
Jack -					
Id					
Zig Zag					
Caltrop					
Red Currant					
Bloodroot					
Pse Compressa					
Herb Robt					
Lg-fl Bellwort					
Ench Nfshd					
Wt Avens					
Bl. Cherry					
Be					
Wt Trillium					

SPECIES CODE	LAYER 1	2	3	4	COLL.

EAWP
PIWO
YTUI

ELC	SITE: GSA 1040 / 1164
	POLYGON:
	DATE: Aug. 16/11
WILDLIFE	SURVEYORS: SAM
	START TIME: 1509h END TIME: 1644h

TEMP (°C): 26	CLOUD (10th): 1	WIND: 2-3	PRECIPITATION: nil
CONDITIONS: hot, light breeze, clear			

POTENTIAL WILDLIFE HABITAT:

X	VERNAL POOLS very shallow w/few	X	SNAGS
	HIBERNACULA	X	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	GCFL	SM		2					
L	Monarch	OB	Milkweed Feeding	5					
L	Red Spotted Purple	OB		1					
B	CEWA	VO		2					
B	AMRO	VO		2					
B	EAWP	SM		1					

FAUNAL TYPE CODES (TY):

B = BIRD M = MAMMAL H = HERPETOFAUNA L = LEPIDOPTERA F = FISH O = OTHER

EVIDENCE CODES (EV):

BREEDING BIRD - POSSIBLE:

SH = SUITABLE HABITAT SM = SINGING MALE

BREEDING BIRD - PROBABLE:

T = TERRITORY D = DISPLAY P = PAIR
A = ANXIETY BEHAVIOUR N = NEST BUILDING V = VISITING NEST

BREEDING BIRD - CONFIRMED:

DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG
TK = TRACKS FE = FEEDING EVIDENCI SC = SCAT
SI = OTHER SIGNS (specify)

ELC WILDLIFE	SITE: 3416 SH 1049	
	POLYGON: N	
	DATE: July 14/11	
	SURVEYORS: SAM	
	START TIME:	END TIME:

TEMP (°C):	CLOUD (10th):	WIND:	PRECIPITATION:
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS		SNAGS
	HIBERNACULA		FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	EAWP	SM		2					
B	PIWO	SM		1					
B	YTVI	SM		1					

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OTHER WILDLIFE EVIDENCE:

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DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG
TK = TRACKS FE = FEEDING EVIDENCI SC = SCAT
SI = OTHER SIGNS (specify)

Goshen Feature: 358 GSH1119/1166

(Properties that contain Features within 125m from Collection lines and 171.5m from Turbines)

Nov 9/2011
James Kamstra

0 30 60 120 Meters

October 28, 2011

Roads
Access/Collection Line
Survey to be Completed
Turbine Buffer (171.5m)
ELC Survey Completed
Turbine Buffer/Feature Intersect
Property Fabric
Goshen Wind Energy Centre

- confirm fenceline of GSH1166

Goshen Feature: 358 GSH1119/GSH1166

(Properties that contain Features within 125m from Collection lines and 171.5m from Turbines)

5 50 100 Meters

September 1, 2011

h

Roads
Access/Collection Line
Collection Buffer (125m)
Turbine Buffer (171.5m)
Collection/Feature Intersect
Turbine Buffer/Feature Intersect
Property Fabric
Bluewater Wind Energy Centre

PRE-SURVEY COMMENT:

ELC Community Description and Classification			
Site: 388_GSH1119		Polygon: A	
Surveyor(s): Kaunster	Date: Sept 7/11	Time start: 15:40	finish:
UTMZ: 17	UTMZ: 449140	UTMN: 4803200	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
☐ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	☐ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	☐ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☒ Tableland	☐ Lichen	☐ Swamp
☐ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	☒ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☐ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
☐ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		☐ Woodland
☐ Treed		☐ Bluff		☒ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	2	4	Faggran > Acesacu > Ostvirg > Fraamer
2	3	3	Acesacu > Faggran
3	4	3	Faggran – Fraamer
4	6	3	Sassalb – Ostvirg – Rhucadi – [illegible] – Alltric

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	A	<10	A	10-24	O	25-50		>50
	Standing Snags:		<10	R	10-24		25-50		>50
BA:	Deadfall / Logs:	A	<10	O	10-24		25-50		>50

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age: ☐ Pioneer ☐ Young ☐ Mid-Age ☒ Mature ☐ Old Growth

Ecosite:		Code:	
Vegetation Type:	FOD5-2	Code:	
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Sugar Maple – Beech, Ba[illegible] but Beech > 50%

Notes:

Tree Tally by Species

Prism Factor: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Total	Rel. Avg.
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

							Summary
Site Metrics	Pit/Auger #						
	UTM	Zone					Moisture Regime
		Easting					
		Northing					
	Slope	Position					
		Aspect					Drainage
		Percent					
		Slope Length					
Depth to...	Mottles						Effective Texture (indicate below)
	Gley						
	Water Table						
	Carbonates						
	Bedrock						
Soil Horizon Description	1	Depth from zero	% CF	% CF	% CF	% CF	
		Texture	loam.				
	2	Depth from zero	% CF	% CF	% CF	% CF	
		Texture					
	3	Depth from zero	% CF	% CF	% CF	% CF	
		Texture					
	4	Depth from zero	% CF	% CF	% CF	% CF	
		Texture					
		% Surface Stone/Rock					
	Moisture Regime						
	Drainage						

Turn Over

Site 358 Polygon B Sept 7

UTM. 449185 / 4803175

meadow Marsh along intermittent flow channel through woodlot

4-1 Samcana

5/6-4 Impcape > Polylapa - Sol - Rumobtu

Forb Mixed Meadow Marsh MAM 2-10

ELC WILDLIFE	SITE: Goshen 358	
	POLYGON:	
	DATE: Sept 7, 2011	
	SURVEYORS: Kamstra	
	START TIME: 15:30	END TIME: 16:15

TEMP (°C): 16	CLOUD (10th): 10	WIND: 2-3	PRECIPITATION: Some drizzle
CONDITIONS:			

POTENTIAL WILDLIFE HABITAT:

	VERNAL POOLS	✓	SNAGS
✓	HIBERNACULA rock piles	✓	FALLEN LOGS

SPECIES LIST:

TY	SP. CODE	EV	NOTES	#	TY	SP. CODE	EV	NOTES	#
B	Wild Turk		feathers						
	TUVU	OB							
	RTHU	OB	feeding in mm	6					
	AMGO	"							
	EVPE	VO							

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DD = DISTRACTION NU = USED NEST FY = FLEDGED YOUNG
NE = EGGS NY = YOUNG FS = FOOD/FECAL SACK
AE = NEST ENTRY

OTHER WILDLIFE EVIDENCE:

OB = OBSERVED VO = VOCALIZATION CA = CARCASS
DP = DISTINCTIVE PARTS HO = HOUSE/DEN FY = EGGS/YOUNG
TK = TRACKS FE = FEEDING EVIDENCI SC = SCAT
SI = OTHER SIGNS (specify)

VASCULAR PLANT CHECKSHEET

Location: Goshen 358
Observer: Kaunstra

Date:
Job Number:

DICOT HERBS	1	2	3	4	5	6
Achillea millefolia						
Actaea pachypoda	X					
Actaea rubra						
Agalinus						
Agrimonia gryposepala						
Alliaria petiolaris						
Amaranthus retroflexus						
Ambrosia artemisiifolia	X	X				
Amphicarpaea bracteata						
Anaphalis margaritacea						
Anemone						
Anemone canadensis						
Anemone virginiana						
Antennaria neglecta						
Apocynum androsaemifolium						
Apocynum cannabinum						
Aquilegia canadensis						
Aralia nudicaulis						
Arctium minus						
Artemisia						
Asarum canadense						
Asclepias incarnata						
Asclepias syriaca						
Aster						
Aster cordifolius						
Aster ericoides						
Aster lanceolatus		X	X			
Aster lateriflorus						
Aster macrophyllus						
Aster novae-angliae						
Aster puniceus						
Barbarea vulgaris						
Bidens cernua						
Bidens frondosa						
Boehmeria cylindrica						
Caltha palustris						
Calystegia sepium						
Cardamine diphylla						
Cardamine						
Caulophyllum thalictroides						
Ceratodum fontanum						
Ceratophyllum demersum						
Chelidonium majus						
Chenopodium album						
Chrysanth. leucanthemum						
Cichorium intybus						
Cicuta						
Circaea lutetiana		X				
Cirsium arvense						
Cirsium vulgare						
Clematis virginiana						
Clintonia borealis						
Conyza canadensis						
Coronilla varia						
Cynanchum rossicum						
Cynoglossum officinale						
Daucus carota						
Desmodium canadense						
Dianthus armeria						
Dipsacus fullonum						
Echinocystis lobata						
Echium vulgare						
Epilobium						
Epilobium ciliatum						
Epilobium hirsutum						
Epilobium parviflorum						
Epifagus			X			
Arbutilon theo			X			

	1	2	3	4	5	6
Erigeron annuus						
Erigeron philadelphicus						
Erigeron strigosus						
Erysimum chieranthoides						
Eupatorium maculatum						
Eupatorium perfoliatum						
Eupatorium rugosum						
Euphorbia						
Euthamia graminifolia		X				
Fragaria virginiana						
Fragaria vesca						
Galeopsis tetrahit						
Galium						
Galium						
Galium palustre						
Galium triflorum						
Geranium maculatum						
Geranium robertianum	X					
Geum aleppicum						
Geum canadense						
Geum urbanum	X					
Glecoma hederacea						
Hepatica acutiloba						
Hesperis matronalis						
Hieracium aurantiacum						
Hieracium caespitosum						
Hieracium						
Hydrophyllum virginianum						
Hypericum perforatum						
Impatiens capensis			X			
Inula helenium						
Lactuca						
Laportea canadensis						
Lapsana communis						
Leonurus cardiaca						
Lepidium						
Linaria vulgaris						
Lithospermum officinale						
Lobelia						
Lobelia inflata						
Lotus corniculatus						
Lycopus americanus						
Lycopus						
Lysimachia ciliata						
Lythrum salicaria						
Medicago lupulina						
Medicago sativum						
Melilotus alba						
Mentha arvensis						
Mimulus ringens						
Mimulus ringens						
Mitella diphylla						
Monarda fistulosa						
Myosotis						
Nasturtium officinale						
Nepeta cataria						
Nuphar variegatum						
Nymphaea odorata						
Oenothera biennis						
Osmorhiza						
Oxalis stricta						
Phyrma leptostachya						
Physalis heterophylla						
Menispermum c			X			

	1	2	3	4	5	6
Plantago lanceolata						
Plantago major						
Plantago rugelii						
Podophyllum peltatum						
Polygonum						
Polygonum						
Polygonum						
Polygonum lapathifolium	X					
Polygonum persicaria						
Potentilla						
Potentilla norvegica						
Potentilla recta						
Prenanthes alba altissima	X					
Prunella vulgaris						
Pyrola elliptica						
Ranunculus						
Ranunculus abortivus						
Ranunculus acris						
Rudbeckia hirta						
Rumex acetosella						
Rumex crispus						
Rumex obtusifolius	X					
Sanguinaria canadensis	X					
Sanicula marilandica						
Saponaria officinalis						
Satureja vulgaris						
Scutellaria galericulata						
Silene vulgaris						
Sium suave						
Solanum dulcamara						
Solidago						
Solidago altissima	X					
Solidago caesia						
Solidago canadensis						
Solidago flexicaulis	X					
Solidago gigantea						
Solidago nemoralis						
Solidago rugosa						
Sonchus arvensis						
Sonchus asper						
Stellaria						
Tanacetum vulgare						
Taraxacum officinale						
Thalictrum dioicum						
Thalictrum pubescens						
Tiarella cordifolia						
Tragopogon pratensis						
Trientalis borealis						
Trifolium						
Trifolium pratense						
Trifolium repens						
Tussilago farfara						
Urtica dioica						
Utricularia vulgaris						
Verbascum thapsus						
Verbena hastata						
Verbena urticifolia						
Veronica						
Veronica officinalis						
Viola cracca						
Viola tetraspema						
Viola						
Viola						
Viola pubescens						
Viola sororia			X			

MONOCOT HERBS	1	2	3	4	5	6
Alisma plantago-aquatica						
Allium tricoccum	X					
Allium						
Arisaema triphyllum						
Asparagus officinalis						
Calla palustris						
Clintonia borealis						
Convallaria majus						
Cypripedium calceolus						
Elodea canadensis						
Epipactis helleborine	X					
Erythronium americanum						
Hemerocallis fulva						
Iris versicolor						
Lemna minor						
Lemna trisulca						
Lilium						
Maianthemum canadense						
Maianthemum racemosa	X					
Maianthemum stellata						
Platanthera						
Pontederia cordata						
Polygonatum pubescens						
Potamogeton crispus						
Potamogeton pectinatus						
Potamogeton						
Potamogeton						
Potamogeton						
Sagittaria latifolia						
Sparganium montanum						
Smilax herbacea						
Spiranthes cernua						
Spirodela polyrhiza						
Streptopus roseus						
Trillium erectum						
Trillium grandiflorum						
Uvularia grandiflora						

SITE LOCATIONS

1: FOD
2: MAM
3:
4:
5:
6:

I	CONIFERS	1	2	3	4	5	6	I	TREES and SHRUBS	1	2	3	4	5	6	I	GRAMINOIDS	1	2	3	4	5	6
	Abies balsamea							+	Rosa multiflora								Agrostis gigantea						
	Juniperus communis								Rosa								Agrostis stolonifera						
	Juniperus virginiana								Rubus allegheniensis								Agropyron repens						
	Larix laricina								Rubus idaeus	X							Alopecuris						
	Picea abies								Rubus occidentalis	X							Bromus inermis						
	Picea glauca								Rubus odoratus								Calamagrostis canadensis						
	Pinus resinosa								Rubus pubescens								Carex arctata						
	Pinus strobus								Salix alba								Carex aurea						
	Pinus sylvestris								Salix amygdaloides								Carex bebbii						
	Thuja occidentalis								Salix bebbiana								Carex blanda	X					
	Tsuga canadensis							+	Salix discolor								Carex gracillima	X					
									Salix eriocephala								Carex granularis						
									Salix exigua								Carex hystericina						
									Salix lucida								Carex pensylvanica						
									Salix petiolaris								Carex radiata						
	TREES and SHRUBS							+	Salix purpurea								Carex retrorsa						
	Acer negundo	X							Salix x rubens								Carex stipata						
	Acer rubrum							+	Salix								Carex stricta						
	Acer saccharinum								Sambucus canadensis		X						Carex vulpinoidea						
	Acer saccharum	X							Sambucus racemosa								Carex pedunculata	X					
	Acer spicatum								Sorbus aucuparia								Carex platyphylla	X					
	Alnus rugosa								Spiraea alba								Carex						
	Amelanchier								Syringa vulgaris								Carex						
	Berberis thunbergii							+	Tilia americana	X							Carex						
	Betula alleghaniensis								Ulmus americana	X							Carex						
	Betula papyrifera								Ulmus								Carex						
	Carpinus caroliniana								Vaccinium								Carex						
	Carya cordiformis								Viburnum lentago								Carex						
	Celastrus scandens								Viburnum opulus								Cyperus						
	Cornus alternifolia								Viburnum								Cyperus						
	Cornus amomum								Vitis riparia	X							Dactylis glomerata						
	Cornus rugosa																Danthonia spicata						
	Cornus stolonifera																Echinochloa crus-galli						
	Corylus cornuta																Eleocharis erythropoda						
	Crataegus monogyna																Eleocharis						
	Crataegus punctata																Elymus virginicus						
	Crataegus sp.																Elymus						
	Crataegus																Festuca arundinacea						
	Diervilla lonicera																Glyceria striata						
	Fagus grandifolia	X															Glyceria						
	Fraxinus americana	X															Juncus dudleyi						
	Fraxinus nigra								FERNS								Juncus effusus						
	Fraxinus pennsylvanica								Adiantum pedatum								Juncus tenuis						
	Ilex verticillata								Athyrium filix-femina								Juncus						
	Juglans cinerea								Botrychium multifidum								Juncus						
	Juglans nigra								Botrychium virginianum								Leersia oryzoides						
	Lonicera morrowi								Cystopteris bulbifera								Muhlenbergia						
	Lonicera tatarica								Dryopteris carthusiana								Oryzopsis asperifolia						
	Lonicera								Dryopteris cristata								Panicum						
	Malus pumila	X							Dryopteris marginalis								Panicum						
	Ostrya virginiana	X							Dryopteris								Phalaris arundinacea		X				
	Parthenocissus inserta								Equisetum arvense								Phleum pratense						
	Populus balsamifera								Equisetum hyemale								Phragmites australis						
	Populus grandidentata								Equisetum variegatum								Poa compressus						
	Populus tremuloides								Equisetum								Poa pratensis						
	Populus deltoides	X							Gymnocarpium dryoperis								Poa						
	Prunus pensylvanica	X							Lycopodium digitatum								Scirpus atrovirens						
	Prunus serotina	X							Lycopodium obscurum								Scirpus cyperinus						
	Prunus virginiana	X							Lycopodium								Scirpus validus						
	Prunus avium	X							Lycopodium								Scirpus						
	Quercus macrocarpa								Matteucia struthiopteris								Scirpus						
	Quercus rubra								Onoclea sensiblis								Setaria						
	Quercus								Osmunda cinnamomia								Sparganium						
	Rhamnus cathartica	X							Osmunda regalis								Typha angustifolia						
	Rhus radicans								Polystichum acrostichoides								Typha latifolia						
	Rhus typhina								Pteridium aquilinum								Typha Xglauca						
	Ribes americana								Thelypteris palustris														
	Ribes cynosbati	X																					
	Ribes x rubrum																						
	Robinia pseudo-acacia																						

Goshen Feature: 358 GSH1119/1166

(Properties that contain Features within 125m from Collection lines and 171.5m from Turbines)

Nov 9/2011
James Komstra

0 30 60 120 Meters

October 28, 2011

Roads
Access/Collection Line
Survey to be Completed
Turbine Buffer (171.5m)
ELC Survey Completed
Turbine Buffer/Feature Intersect
Property Fabric
Goshen Wind Energy Centre

ORIGINAL

Legend

- Turbine Location
- Road Turn-Around
- Collection Line Layout
- Access Road Layout
- Turbine Turn-Around Box
- Collection Line 20m Buffer
- Access Road 60m Buffer
- Area of Disturbance 120m Buffer
- Natural Feature

Roads

- Major Road
- Local Road

Water Features

- Intermittent Stream
- Permanent Stream

Basemapping from Ontario Ministry of Natural Resources Orthophotography.

N W E S

Metres

0 15 30 60 90 120

1:2,500

UTM Zone 17N, NAD 83

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NextEra Energy Canada, ULC
Goshen Wind Energy Centre

Feature 361

December 2011
60163032

AECOM

Figure 1

Path: D:\Projects\AECOM\60163032\2011\GIS\Spatial\mxd\Goshen\Field Maps Dec 2011\GSH_Feature361.mxd

ELC Community Description and Classification

Site: 361		Polygon: 6	
Surveyor(s): B. Miller, B. Aitken	Date: DEC. 12 2011	Time start: 1:00 pm	finish: 1:45 pm
UTMZ: 17	UTMZ: 447730	UTMN: 4803479	

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
■ Terrestrial	☐ Organic	☐ Lacustrine	☐ Plankton	☐ Lake
☐ Wetland	■ Mineral Soil	☐ Riverine	☐ Submerged	☐ Pond
☐ Aquatic	☐ Parent Min.	■ Bottomland	☐ Floating-LVD.	☐ River
Site	☐ Acidic Bedrk	☐ Terrace	☐ Graminoid	☐ Stream
☐ Open Water	☐ Basic Bedrk	☐ Valley Slope	☐ Forb	☐ Marsh
☐ Shallow Water	☐ Carb. Bedrk	☐ Tableland	☐ Lichen	☐ Swamp
■ Surficial Dep.		☐ Roll. Upland	☐ Bryophyte	☐ Fen
☐ Bedrock		☐ Cliff	■ Deciduous	☐ Bog
History		☐ Talus	☐ Coniferous	☐ Barren
☐ Natural		☐ Crevice/Cave	☐ Mixed	☐ Meadow
■ Cultural		☐ Alvar		☐ Prairie
Cover		☐ Rockland		☐ Thicket
☐ Open		☐ Beach / Bar		☐ Savannah
☐ Shrub		☐ Sand Dune		■ Woodland
■ Treed		☐ Bluff		☐ Forest
				☐ Plantation

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	1	3	FRAX SP. >> TILAMER
2	2	3	FRAX SP. >> TOX RADI
3	3	4	ILE VERT > FRAX SP. > TOX RADI
4	4-7	2	GEUM SP. >> SYM LATE > SOL CANA

HT Codes: 7 <0.2m 6 >0.2-0.5m 5 >0.5-1m 4 >1-2m 3 >2-6m 2 >6-25m 1 >25m
CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 60% 4 > 60%

Stand Composition:	Size Class Analysis:	<10	10-24	25-50	>50
	Standing Snags:	R	O	A	R
BA:	Deadfall / Logs:	O	A	A	R

Abundance Codes: N = None R = Rare O = Occasional A = Abundant

Com. Age:	☐ Pioneer	☒ Young	☒ Mid-Age	☐ Mature	☐ Old Growth

Ecosite:	Mineral Cultural Woodland	Code:	CUW1
Vegetation Type:	—	Code:	—
Inclusion:		Code:	
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

Sample Area: 2

Species	Tally 1	Tally 2	Tally 3	Tally 4	Tally 5	Total
Total						100
Basal Area (BA)						
Dead						

Soils Ontario and ELC Soils Description

						Summary
Site Metrics		Pit/Auger #				
	UTM	Zone				Moisture Regime
		Easting				
		Northing				
	Slope	Position				
		Aspect				Drainage
		Percent				
		Slope Length				
Depth to...		Mottles				
		Gley				Effective Texture (indicate below)
		Water Table				
		Carbonates				
		Bedrock				

Soil Horizon Description										
	1	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	2	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	3	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
	4	Depth from zero		% CF		% CF		% CF		% CF
		Texture								
		% Surface Stone/Rock								
Moisture Regime										
Drainage										

VASCULAR PLANT LIST

PROJECT / LOCATION: FEATURE 361

POLYGON: 6.

SURVEYOR(S): E. Miller, R. Aitken

DATE(S): DEC. 12, 2011

VEGETATION TYPE:

NOTES: Vegetation composition is misleading Soils were not wet or moist.

Blue Jay
Downy
Goldfinch

Plant Species	Canopy (C)	Sub-canopy (SC)	Understory (U)	Ground Layer (GL)
TREES				
ULM AMER		R	R	
FRAXINUS SP.	D	D	A	O
TIL AMER	O		R	
FRA NIGR			D	
THU OCCI			O	R
ACE NEGU		R	R	
TSU CANA				R
ACE FREE	R		R	
CAR CARO			R	
SALIX SP.	R			
SHRUBS AND WOODY VINES				
VIBURNUM CF LENT			O	
VIT RIPA			R	
RUB IDAE				O
COR ALTE			A	
TOX RADI		A	A	
? ILEX VERT			D	
RHA CATH			R	
SAM CANA			O	
ROS MULT			R	
CORNUS OBLIQUA			R	

Plant Species	Understory (U)	Ground Layer (GL)
HERBACEOUS FLORA		
ALL PETI		O
SYM SP. CF. LATE		A
GEUM SP.		D
SOL CF. CANA		O
SYM LANC		R
DAU CARO		R

Plant Species	Understory (U)	Ground Layer (GL)
HERBACEOUS FLORA		

Relative Abundance: D = Dominant; A = Abundant; O = Occasional; R = Rare
Vegetation Height: C = > 20m; SC = 10 - 20m; U = 2 - 10m; GL = < 2m