

Appendix A

MNR Confirmation Letter

Renewable Energy Operations Team
P.O. Box 7000
300 Water Street
4th Floor, South Tower
Peterborough, ON K9J 8M5

March 28, 2012

NextEra Energy Canada
5500 Service Road, Suite 205
Burlington, ON L7L 6W6

RE: NHA Confirmation for Bluewater Wind Energy Centre

Dear Tom Bird:

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for the Bluewater Wind Energy Centre located in Huron County submitted by Nextera Energy Canada on March 26, 2012.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

In accordance with Appendix D of MNR's Natural Heritage Assessment Guide, a commitment has been made to complete pre-construction assessments of habitat use for candidate significant wildlife habitats. MNR has reviewed and confirmed the assessment methods and the range of mitigation options. Pending completion of the pre-construction assessments and determination of significance, the appropriate

mitigation is expected to be implemented, as committed to in the environmental impact study for the following candidate significant wildlife habitats:

- Reptile Hibernaculum (features RH-01, RH-02)
- Bat Maternity Colony (features BMC-02, BMC-03, BMC-10, BMC-12, BMC-14)
- Amphibian Woodland Breeding (features AWO-03, AWO-04, AWO-05, AWO-06, AWO-08, AWO-11)
- Amphibian Wetland Breeding (feature AWE-01)

In addition to the NHA, Environmental Effects Monitoring Plans that address post-construction monitoring and mitigation for birds and bats must be prepared and implemented. It is recommended that post-construction monitoring plans be prepared in accordance with MNR Guidelines and be reviewed by MNR in advance of submitting a REA application to MOE in order to minimize potential delays in determining if the application is complete.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact me at jim.beal@ontario.ca or 705-755-3203.

Sincerely,



Jim Beal
Renewable Energy Provincial Field Program Coordinator
Regional Operations Division
Ministry of Natural Resources

cc. Ian Hagman, District Manager, MNR Guelph District
cc. Amy Cameron, A/Renewable Energy Field Advisor, MNR REOT
cc. Erin Cotnam, A/Renewable Energy Coordinator, MNR Southern Region

cc. Narren Santos, Environmental Assessment and Approvals Branch, MOE
cc. Sandra Guido, Environmental Assessment and Approvals Branch, MOE
cc. Jessica MacKay Ward, Ecologist, AECOM

Appendix B

Field Notes

- B1. Ecological Land Classification (ELC), Vascular Plant Inventory & Incidental Wildlife**
- B2. Woodland Breeding Bird Surveys**
- B3. Species of Conservation Concern (SOCC) Vascular Plant Surveys**
- B4. Snake Hibernaculum Surveys**
- B5. Ontario Wetland Evaluation System (OWES) Field Notes**

**B1. Ecological Land Classification
(ELC), Vascular Plant Inventory
& Incidental Wildlife**

Legend

Project Location

- GE Turbine
- Disturbance Area
- Property Boundary
- Transmission Line Buffer (180 m)
- ELC Polygon Boundaries

Basemapping from Ontario Ministry of Natural Resources
Orthophotography: 2006

UTM Zone 17N, NAD 83
1:2,000

Meters
0 7.5 15 30 45 60

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ELC &
Bluewater Amphibian Survey

514 - BLW1603 / 514 - BLW1658
March 2012
Project 80155032

AECOM

Figure 1



ELC
Community Description and Classification

Map #: S14-S15-108/518 Polygon: 2 Date: 10/13/02 Time start: 10:35
 Surveyor(s): SJ, RA UTMZ: 84S1360 UTMN: 04S1360
 UTMZ: 84S1360 UTMN: 04S1360

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
<input checked="" type="checkbox"/> Terrestrial <input type="checkbox"/> Wetland <input type="checkbox"/> Aquatic <input type="checkbox"/> Open Water <input type="checkbox"/> Shallow Water <input checked="" type="checkbox"/> Surficial Dep. <input type="checkbox"/> Bedrock	<input checked="" type="checkbox"/> Parent Mln. <input type="checkbox"/> Acidic Bedrk <input type="checkbox"/> Basic Bedrk <input type="checkbox"/> Carb. Bedrk	<input type="checkbox"/> Lacustrine <input type="checkbox"/> Riverine <input type="checkbox"/> Bottomland <input type="checkbox"/> Terrace <input checked="" type="checkbox"/> Valley Slope <input type="checkbox"/> Tableland <input type="checkbox"/> Roll. Upland <input type="checkbox"/> Cliff <input type="checkbox"/> Talus <input type="checkbox"/> Crevice/Cave <input type="checkbox"/> A1var <input type="checkbox"/> Rockland <input type="checkbox"/> Beach / Bar <input type="checkbox"/> Sand Dune <input type="checkbox"/> Bluff	<input type="checkbox"/> Plankton <input type="checkbox"/> Submerged <input type="checkbox"/> Floating-LVD. <input type="checkbox"/> Graminoid <input type="checkbox"/> Forb <input type="checkbox"/> Lichen <input type="checkbox"/> Bryophyte <input checked="" type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Mixed	<input type="checkbox"/> Lake <input type="checkbox"/> Pond <input type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Fen <input type="checkbox"/> Bog <input type="checkbox"/> Barren <input type="checkbox"/> Meadow <input type="checkbox"/> Prairie <input type="checkbox"/> Thicket <input type="checkbox"/> Savannah <input type="checkbox"/> Woodland <input type="checkbox"/> Forest <input type="checkbox"/> 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	<u>Acesac 77 Fraxet</u>
2	2	3	<u>"</u>
3	4	2	<u>Acesac 77 Prv.ing</u>
4	7	4	<u>Trigrad > Equival</u>

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

Stand Composition:

Size Class Analysis:	Standing Snags:	Deadfall / Logs:
<input type="checkbox"/> <10 <input type="checkbox"/> 10-24 <input type="checkbox"/> 25-50 <input type="checkbox"/> >50	<input type="checkbox"/> <10 <input type="checkbox"/> 10-24 <input type="checkbox"/> 25-50 <input type="checkbox"/> >50	<input type="checkbox"/> <10 <input type="checkbox"/> 10-24 <input type="checkbox"/> 25-50 <input type="checkbox"/> >50

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

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

Vegetation Type: Deciduous Forest - Beech
Code: F005-1

Inclusion: Deciduous Forest - Beech
Code: F005-1

Complex:

Community Profile Diagram/Comments

Notes:

Tree Tally by Species

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

Soils Ontario and ELC Soils Description

Site Metrics	PI/Auger #	Soils Description				Summary
UTM	Zone					Moisture Regime
	Easting	4816389				
	Northing	0451360				Drainage
	Position	Table				
Slope	Aspect					Effective Texture (Indicate below)
	Percent					
Mottles	Slope					% CF
	Length					
Gley	Depth from zero	17	% CF			% CF
	Texture	Silty loam				
Water Table	Depth from zero	17+	% CF			% CF
	Texture	loamy sand				
Carbonates	Depth from zero		% CF			% CF
	Texture					
Bedrock	Depth from zero		% CF			% CF
	Texture					
Depth to...	Depth from zero		% CF			% CF
	Texture					
Soil Horizon Description	Depth from zero		% CF			% CF
	Texture					
Moisture Regime	Depth from zero		% CF			% CF
	Texture					
Drainage	% Surface Stone/Rock					% CF
	Moisture Regime	Very Fresh				
	Drainage	m-II				

ELC

Community Description and Classification

Map #: S4 - BLD 163 / SUP 1
Surveyor(s): SF PA
UTMZ:

Polygon: 3
Date: April 17, 2012
UTMZ:

Time start: 10:45
finish: 1:00
UTMZN:

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

Site Metrics	Pit/Auger #	Pt. #	Summary
UTM	Zone		Moisture Regime
	Easting	0451074	
	Northing	4816377	
	Position	Table	
	Aspect	N/A	
	Percent	N/A	
	Slope	N/A	Drainage
	Length		
	Mottles	N/A	
	Gley	N/A	
	Water Table	N/A	
	Carbonates	N/A	Effective Texture (Indicate below)
	Bedrock	N/A	% CF
	1	0 +	% CF
	Texture	Loam	% CF
	2		% CF
	Texture		% CF
	3		% CF
	Texture		% CF
	4		% CF
	Texture		% CF
	% Surface Stone/Rock		
	Moisture Regime	Fresh.	
	Drainage	W / 70 W	

Soil Horizon Description	Depth to...	Depth from zero	% CF	Texture	Depth from zero	% CF	Texture
	1	0 +	% CF	Loam		% CF	% CF
	2		% CF			% CF	% CF
	3		% CF			% CF	% CF
	4		% CF			% CF	% CF

Polygon Description

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

Layer	HT	CVR	Species In Order of Decreasing Dominance (up to 4 sp)
1	5	1	ACEFREE > VILCAGNER > TILANER
2	2	2	ULLANER > TILACER
3	4	2	VILACER > CORPES > CORSTOLI
4	7	4	PHARAN

HT Codes: 7 < 0.2m 6 > 0.2-0.5m 5 > 0.5-1m 4 > 1-2m 3 > 2-4m 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:
Standing Snags:	R < 10 Q 10-24 Q 25-50 R > 50
Deadfall / Logs:	N < 10 N 10-24 N 25-50 N > 50
	R < 10 Q 10-24 Q 25-50 N > 50

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

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

Ecosite:	mixed cultural woodlands	Code:	CUW1
Vegetation Type:	Mineral Cultural Woodland	Code:	CUW1
Inclusion:	Dry-Corst Old Field Meadow Type	Code:	CLMY-1
Complex:		Code:	

Community Profile Diagram/Comments

Notes:

Significant Wildlife Habitat Form

AECOM

Study Area:	<u>BLW</u> JER GSH	Map #:	<u>514-BLW 160311658</u>
Date:	<u>April 17, 2012</u>	Time Started:	<u>10:45</u>
Field Staff:	<u>RA, SG</u>	Time Finished:	<u>12:55</u>
Weather Conditions:	<u>Sunny & some cloud & slight breeze</u>		

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: _____

Description 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: _____

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, turtles (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, dimensions, 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

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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 Conservation Concern Habitat and Incidental Wildlife - Bluewater

Map No: 514 - BLU1603 / 1658

Field Staff: RA, SG

Time Started: 10:45 am

Time Finished: 1:00 pm



Observed Species List

Species Code	UTM	EV	Notes	Species Code	UTM	EV	Note #
Wood Frog		OB					
House Wren		VO					
Yellow Belly Sapsucker		VO					
Black capped Chickadee		VO					
Downy Woodpecker		VO					
Red Tailed Hawk		VO					
White Crowned Sparrow		VO					

Note: Evidence Codes (EV) **B**reeding Bird (Possible) **SH**=Suitable Habitat, **SM**=Singing Male; **B**reeding Bird (Probable) **T**-Territory, **D**=Display, **P**=Pair, **N**=Nest Building, **V**=Visiting Nest, **A**=Anxiety Behavior; **B**reeding Bird (Confirmed) **DD**=Distraction, **NU**=Used Nest, **FY**=Fledged Young, **NE**=Eggs, **NY**=Young, **FS**=Foods/Faecal sock, **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)

ELC	Species	Habitat Description	Habitat Present (Y/N)	UTM	Description of habitat if present
FOD7	American Gromwell (Lithospermum latifolium) - S3 Bloom Time - Spring	Shaded river banks, wooded floodplains. River floodplains, woods and edges of woods.	Y	N	
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	Not Observed
FEO, FES, FET	Bald Eagle (Haliaeetus leucocephalus) - SC Time - May to October	Assessed as SWH. Record species if found.			not required.
SWC1, SWC3, SWC4, SWM1, SWM2, SWM4, SWM5, SWM6	Beaked Spike-Rush (Eleocharis rostellata) - S3 Bloom Time - summer to fall	Found among fens, calcareous shores and meadows.	Y	N	Not Observed
CUW, SDO, RBO, TPS	Chinese Hemlock Parsley (Conioselinum chinense) - S2 Bloom Time - summer to fall	Swampy places with deciduous trees, white cedars, tamarack; springy river banks, creek borders, wet borders of streams and rivers. Also found among calcareous seepage slopes.	Y	N	Not Observed
SWC, SWM, SWD, SWT, MAM, MAS	Common Nighthawk (Chordeiles minor) - SC Time - late summer	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	Not Observed
ALT1, FOD7	Crowned Beggarticks (Bidens trichosperma) - S2 Bloom Time - mid March to August	Found in openings in swamps, marshes, along shores & wet fields within the Carolinian zone and southeastern Georgian bay. Bogs, fens, tamarack swamps.	Y	N	Not Observed
FOD6, FOD7, FOD9	Eastern Green-violet (Hybanthus concolor) - S2 Bloom Time - May and June	Occurs in rich, wet-mesic floodplain forests as well as mesic forests over limestone. Includes floodplains and river banks.	Y	N	Not Observed
	Eastern Ribbonsnake (Thamnophis sauritus) - SC Time - May and June	Assessed as SWH. Record species if found.			not required.
	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	Not Observed

Species of Conservation Concern Habitat and Incidental Wildlife – Bluewater

AECOM

ELC	Species	Habitat Description	Habitat Preference	UTM
FEO1, FES1, FET1, SWC, SWM, SWD, SWT, TPO, TPS, TPW	Hairy Valerian (<i>Valeriana edulis</i>) - S1 June to August	Inhabits swampy river flats and meadows, wet prairies, and wooded, rocky riverbanks and fens.	Y	N UTM: "
FOD6, FOD7, FOD8, FOD9	Harbinger-of-spring (<i>Eriogonum bulbosum</i>) - S3 Bloom Time - early to late April	Occurs in rich, moist deciduous woods, especially on floodplains.	Y	N UTM: "
SAS1, SAM1, SAF1	Hill's Pond Weed (<i>Potamogeton hillii</i>) - 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 (<i>Platanthera macrophylla</i>) - 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 (<i>Saururus cernuus</i>) - 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: "
FOD, FOM	Louisiana Waterthrush (<i>Selurus motacilla</i>) - 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. Wetland woodlands are preferred stop-over sites during migration.	Y	N UTM: "
-	Milkshake (<i>Lamprolaima trianulum</i>) - SC	Assessed as SWH. Record species if found.	not required.	
CUM1, CUT1, CUW1	Monarch Butterfly (<i>Danaus plexippus</i>) - SC	Their larvae only feed on milkweeds (<i>Asclepius</i> spp.). Habitat includes abandoned farmland, along roadsides, open spaces where these plants grow.	Y	N UTM: "
CUW1, ALO, FET1, SWC	Ram's-head Lady's-slipper (<i>Cypripedium arietinum</i>) - 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 (<i>Hieracium venosum</i>) - S2 Bloom Time - April - September	Species inhabits open, dry sandy woods. Jack pine, oak, and aspen woodlands.	Y	N UTM: "
FOD, CUW, CUT	Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) - 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: "
FOD6, FOD7, FOD8, FOD9, SWT2, SWT3	Scarlet Beebalm (<i>Monarda didyma</i>) - S3 Bloom Time - May to October	Found in moist, rich woods, thicket swamps, banks and floodplains.	Y	N UTM: "
-	Short Eared Owl (<i>Asio flammeus</i>) - SC	Assessed as SWH. Record species if found.	not required.	
TPS, TPW	Sleepy Duskywing (<i>Erynnis brizo</i>) - 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: "
SDO1, SDS1, SDT1	Slender Vulpia (<i>Vulpia octoflora</i>) - S2	Species inhabits dry, sandy habitats, including rocky woods meadows, dry forests, and stabilized dunes.	Y	N UTM: "
SDT1, FOD5, FOD9	Slim-flowered Muhly (<i>Muhlenbergia tenuiflora</i>) - 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: "Not Observed"
-	Snapping Turtle (<i>Chelydra serpentina</i>) - SC	Assessed as SWH. Record species if found.	not required.	
BLO1, BLS1, BLT1, TPO2, TPS2, TPW2, MAM2, FOD7	Stiff Gentian (<i>Gentiana quinquefolia</i>) - 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: "
TPS1, TPW1, CUW1, RBO, SBO	Sundial Lupine (<i>Lupinus perennis</i>) - 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: "
FEO, FES, FET, MAM2, MAM3	Tuberous Indian Plantain (<i>Amoglossum plantagineum</i>) - 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: "
FOD5	West Virginia White (<i>Pteris virginiensis</i>) - SC	This species is restricted to rich, moist, deciduous woods, where its foodplant <i>Toothwort</i> occur.	Y	N UTM: "
FOC1, FOC2, FOC3, FOC4	Woodland Pinedrops (<i>Pterospora andromedea</i>) - 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 (<i>Spiranthes ochroleuca</i>) - 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: "
-	Yellow-breasted Chat (<i>Icteria virens</i>) - 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: "1"

Wetland Data Collection Sheet



Study area: <i>514-BLW1603/1658</i>	Map No: <i>514-BLW1603/1658</i>
Date (yyyy-mm-dd): <i>2012-04-17</i>	Time Started: <i>10:45am</i>
Field Staff: <i>RA, SG</i>	Time Finished: <i>12:55pm</i>

Presence of Groundwater	No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	
	<input type="checkbox"/> bank seepage	<input type="checkbox"/> iron staining	<input type="checkbox"/> groundwater indicator

Site Type	Lacustrine <input type="checkbox"/> (associated with lakes)	Isolated <input checked="" type="checkbox"/>	
	Riverine <input type="checkbox"/> (associated with rivers)		
	Palustrine <input type="checkbox"/> absent or intermittent inflow and either intermittent or permanent outflow		
	what are the water inputs and outputs? _____		

Soils	refer to ELC card for soils information
-------	---

% open Water	
Type 1 - <5% <input checked="" type="checkbox"/>	Type 5 - 26-75% <input type="checkbox"/> (water occurring in a small pattern)
Type 2 - 5-25% <input type="checkbox"/> (water occurring in one central location)	Type 6 - 76-95% <input type="checkbox"/> (occurring in a central location, vegetation is peripheral)
Type 3 - 5-25% <input type="checkbox"/> (water occurring in ponds of various sizes)	Type 7 - 76-95% <input type="checkbox"/> (vegetation occurs in patches or diffuse, open stands)
Type 4 - 26-75% <input type="checkbox"/> (water occurring in a central location)	Type 8 - >95% <input type="checkbox"/> (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
<i>Poly-1 SW06-3</i>	<i>h - ACEFREE, IFRANIGR</i>

Wetland Data Collection Sheet



Notes on Ecological Functions or features

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

- Surrounded by Sugar Maple Forest, Agricultural Land, Creek, Cultural Forest → Meadow



- Legend**
- Project Location**
- GE Turbine
 - ▨ Disturbance Area
 - ▭ Property Boundary
 - ▭ Transmission Line Buffer (180 m)
 - ▭ ELC Polygon Boundaries

Reimagining from Ontario Ministry of Natural Resources
Cartography 2012



0 7.5 15 30 45 60
Metres
UTM Zone 17N, UAC 88
1:12,000

This drawing has been prepared for the use of AECOM's client and is not to be used for any other purpose without the written consent of AECOM. AECOM and its client shall be responsible for the accuracy and completeness of the information provided to AECOM and for the use of the information for any purpose other than that intended. AECOM accepts no responsibility and does not warrant or make any representation to any party in reliance on the information provided by AECOM to its client.

ELC
Bluewater Amphibian Survey
561 - BLW1358/551 - BLW1371
March 2012
Project 60155332

AECOM

Figure 1

ELC
Community Description and Classification

Map #: S51-BLW1358 Polygon: 1
 Surveyor(s): S51 RA Date: April 19, 2012 Time start: 9:00 AM finish: 12:00 PM
 UTMZ: UTMN:

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
<input checked="" type="checkbox"/> Terrestrial <input type="checkbox"/> Wetland <input type="checkbox"/> Aquatic <input type="checkbox"/> Open Water <input type="checkbox"/> Shallow Water <input checked="" type="checkbox"/> Surficial Dep. <input type="checkbox"/> Bedrock	<input type="checkbox"/> Organic <input checked="" type="checkbox"/> Mineral Soil <input type="checkbox"/> Parent Min. <input type="checkbox"/> Acidic Bedrk <input type="checkbox"/> Basic Bedrk <input type="checkbox"/> Carb. Bedrk	<input type="checkbox"/> Lacustrine <input type="checkbox"/> Riverine <input type="checkbox"/> Bottomland <input type="checkbox"/> Terrace <input checked="" type="checkbox"/> Valley Slope <input type="checkbox"/> Tableland <input type="checkbox"/> Roll. Upland <input type="checkbox"/> Cliff <input type="checkbox"/> Talus <input type="checkbox"/> Crevice/Cave <input type="checkbox"/> Alvar <input type="checkbox"/> Rockland <input type="checkbox"/> Beach / Bar <input type="checkbox"/> Sand Dune <input type="checkbox"/> Bluff	<input type="checkbox"/> Plankton <input type="checkbox"/> Submerged <input type="checkbox"/> Floating-LVD. <input type="checkbox"/> Graminoid <input type="checkbox"/> Forb <input type="checkbox"/> Lichen <input type="checkbox"/> Bryophyte <input checked="" type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Mixed	<input type="checkbox"/> Lake <input type="checkbox"/> Pond <input type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Fen <input type="checkbox"/> Bog <input type="checkbox"/> Barren <input type="checkbox"/> Meadow <input type="checkbox"/> Prairie <input type="checkbox"/> Thicket <input type="checkbox"/> Savannah <input type="checkbox"/> Woodland <input checked="" type="checkbox"/> Forest <input type="checkbox"/> 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	Age 50-70 > Fraxinus > Quercus
2	2	3	Age 50-70 > Fraxinus > Quercus
3	4	3	Age 50-70 > Fraxinus > Quercus
4	7	4	Age 50-70 > Fraxinus > Quercus

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:

Standing Snags:	A < 10	A 10-24	A 25-50	N > 50
Deadfall / Logs:	B < 10	R 10-24	O 25-50	K > 50
	O < 10	O 10-24	O 25-50	R > 50

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

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

Ecotope: Dry - Fresh Sugar maple deciduous. Code: F0R5
Vegetation Type: Dry - Fresh Sugar maple - Beech. Code: F0R5-2
Inclusion: ~~Conifer~~ Dry - Moist old field meadow. Code: CUM-1
Complex: Code:

Community Profile Diagram / Comments

any trees of lawn, left on ground.
 Disturbance overstory

Notes:

Tree Tally by Species

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

Soils Ontario and ELC Soils Description

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

Not required - Dry

ELC Community Description and Classification

Map #: **SS1-BLW1358** Polygon: **2** / **SS1-BLW1371**

Surveyor(s): **SS, RA** Date: **Apr 19, 2012** Time start: **9:20 AM** finish: **12:00 PM**

UTMZ: _____ UTMZ: _____

Polygon Description

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

Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp)
1	1	4	Pin strob 7 Acer oak
2	2	3	Ace oak
3	3	4	Red pine
4	7	3	Esparmer

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:

Size Class	0	<10	10-24	25-50	>50
Standing Snags:	0	0	A	A	N
Downfall / Logs:	0	0	0	0	N

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

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

Ecotope: **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

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

Soils Ontario and ELC Soils Description

Site Metrics	PIVAuger #	Summary
Zone		
Easting		
Northing		
Position		
Aspect		
Percent		
Slope		
Length		
Mottles		
Gley		
Water Table		
Carbonates		
Bedrock		
Depth from zero		
Texture		
Depth from zero		
Texture		
Depth from zero		
Texture		
Depth from zero		
Texture		
% Surface Stone/Rock		
Moisture Regime		
Drainage		

not reported - Dry

Plant Species List
2012

Trees & Shrubs					Tree & Shrubs					Graminoids				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Conifers					Deciduous					Grasses				
Balsam Fir (<i>Abies balsamea</i>)					White Oak (<i>Quercus alba</i>)					Giant Redtop (<i>Agrostis gigantea</i>)				
Common Juniper (<i>Juniperus communis</i>)					Bur Oak (<i>Quercus macrocarpa</i>)					Redtop (<i>Agrostis stolonifera</i>)				
Eastern Red Cedar (<i>Juniperus virginiana</i>)					Red Oak (<i>Quercus rubra</i>)					Awnless Brome (<i>Bromus inermis</i>)				
Tamarack (<i>Larix laricina</i>)					Alder Buckthorn (<i>Rhamnus alnifolia</i>)					Bromus				
Norway Spruce (<i>Picea abies</i>)					Common Buckthorn (<i>Rhamnus cathartica</i>)					Blue-joint Grass (<i>Calamagrostis canadensis</i>)				
White Spruce (<i>Picea glauca</i>)					Smooth Sumac (<i>Rhus glabra</i>)					Orchard Grass (<i>Dactylis glomerata</i>)				
Black Spruce (<i>Picea mariana</i>)					Staghorn Sumac (<i>Rhus hirta</i>)					Poverty Oat Grass (<i>Danthonia spicata</i>)				
Jack Pine (<i>Pinus banksiana</i>)					Wild Black Currant (<i>Ribes americanum</i>)					Quack Grass (<i>Elymus repens</i>)				
Red Pine (<i>Pinus resinosa</i>)					Prickly Gooseberry (<i>Ribes cynosbati</i>)					Virginia Wild Rye (<i>Elymus virginicus</i>)				
Eastern White Pine (<i>Pinus strobus</i>)					Swamp Black Currant (<i>Ribes lacustre</i>)					Elymus				
Scotch Pine (<i>Pinus sylvestris</i>)					Red Currant (<i>Ribes rubrum</i>)									
Canada Yew (<i>Taxus canadensis</i>)					<i>Ribes</i>					Fowl Manna Grass (<i>Glyceria striata</i>)				
Eastern White Cedar (<i>Thuja occidentalis</i>)					Black Locust (<i>Robinia pseudo-acacia</i>)					Glyceria				
Eastern Hemlock (<i>Tsuga canadensis</i>)					Prickly Rose (<i>Rosa acicularis</i>)					Rice Cut Grass (<i>Leersia oryzoides</i>)				
					Smooth Rose (<i>Rosa blanda</i>)					Tall Fescue (<i>Lolium arundinaceum</i>)				
					Multiflora Rose (<i>Rosa multiflora</i>)					Muhlenbergia				
					<i>Rosa</i>					Witch-grass (<i>Panicum capillare</i>)				
Deciduous														
Manitoba Maple (<i>Acer negundo</i>)					Com. Blackberry (<i>Rubus allegheniensis</i>)					Panicum				
Black Maple (<i>Acer nigrum</i>)					Wild Red Raspberry (<i>Rubus idaeus</i>)					Reed Canary Grass (<i>Phalaris arundinacea</i>)				
Norway Maple (<i>Acer platanoides</i>)					Black Raspberry (<i>Rubus occidentalis</i>)					Timothy (<i>Phleum pratense</i>)				
Red Maple (<i>Acer rubrum</i>)					Purple-fl. Raspberry (<i>Rubus odoratus</i>)					Common Reed (<i>Phragmites australis</i>)				
Silver Maple (<i>Acer saccharinum</i>)					Dwarf Raspberry (<i>Rubus pubescens</i>)					Canada Blue Grass (<i>Poa compressa</i>)				
Freeman's Maple (<i>Acer X freemanii</i>)					<i>Rubus</i>					Fowl Meadow Grass (<i>Poa palustris</i>)				
Sugar Maple (<i>Acer saccharum</i>)					Peach-leaved Willow (<i>Salix amygdaloides</i>)					Kentucky Bluegrass (<i>Poa pratensis</i>)				
Mountain Maple (<i>Acer spicatum</i>)					Bebb's Willow (<i>Salix bebbiana</i>)					Yellow Foxtail (<i>Setaria pumila</i>)				
Speckled Alder (<i>Alnus incana</i>)					Pussy Willow (<i>Salix discolor</i>)					Green Foxtail (<i>Setaria viridis</i>)				
Downy Serviceberry (<i>Amelanchier arborea</i>)					Missouri Willow (<i>Salix eriocephala</i>)									
Serviceberry (<i>Amelanchier sanguinea</i>)					Sandbar Willow (<i>Salix exigua</i>)									
Yellow Birch (<i>Betula alleghaniensis</i>)					Shining Willow (<i>Salix lucida</i>)									
White Birch (<i>Betula papyrifera</i>)					Black Willow (<i>Salix nigra</i>)									
European Birch (<i>Betula pendula</i>)					Slender Willow (<i>Salix petiolaris</i>)									
Blue Beech (<i>Carpinus caroliniana</i>)					<i>Salix</i>									
Bitternut hickory (<i>Carya cordiformis</i>)					Hybrid Crack Willow (<i>Salix X rubens</i>)									
Shagbark Hickory (<i>Carya ovata</i>)					Black-berried Elder (<i>Sambucus nigra</i>)									
Climbing Bittersweet (<i>Celastrus scandens</i>)					Red-berried Elder (<i>Sambucus racemosa</i>)									
Common Hackberry (<i>Celtis occidentalis</i>)					Buffaloberry (<i>Shepherdia canadensis</i>)									
Buttonbush (<i>Cephalanthus occidentalis</i>)					Eur. Mountain Ash (<i>Sorbus aucuparia</i>)									
Alt.-leaved Dogwood (<i>Cornus alternifolia</i>)					Narrow Meadow-sweet (<i>Spiraea alba</i>)									
Silky Dogwood (<i>Cornus amomum</i>)					Common Lilac (<i>Syringa vulgaris</i>)									
Bunchberry (<i>Cornus canadensis</i>)					Poison-ivy (<i>Toxicodendron rydbergii</i>)									
Gray dogwood (<i>Cornus racemosa</i>)					Climbing Poison-ivy (<i>Toxicodendron radicans</i>)									
Round-leaved Dogwood (<i>Cornus rugosa</i>)					White Elm (<i>Ulmus americana</i>)									
Red-osier Dogwood (<i>Cornus sericea</i>)					Siberian Elm (<i>Ulmus pumila</i>)									
American Hazel (<i>Corylus americana</i>)					Slippery Elm (<i>Ulmus rubra</i>)									
Beaked Hazel (<i>Corylus cornuta</i>)					Low Blueberry (<i>Vaccinium angustifolium</i>)									
Cockspur Thorn (<i>Crataegus crus-galli</i>)					Maple-leaf Viburnum (<i>Viburnum acerifolium</i>)									
English Hawthorn (<i>Crataegus monogyna</i>)					Hobblebush (<i>Viburnum lantanoides</i>)									
Large-fruited Thorn (<i>Crataegus punctata</i>)					Nannyberry (<i>Viburnum lentago</i>)					Carex <i>Redunculata</i> R				
Crataegus					Guelder-Rose (<i>Viburnum opulus</i>)					Carex				
Crataegus					Downy Arrow-wood (<i>Vib. rafinesquianum</i>)					Carex				
Bush Honeysuckle (<i>Diervilla lonicera</i>)					Riverbank Grape (<i>Vitis riparia</i>)					Carex				
Russian Olive (<i>Elaeagnus angustifolia</i>)					Am. Prickly-ash (<i>Zanthoxylum americanum</i>)					Carex				
Autumn Olive (<i>Elaeagnus umbellata</i>)					TILANER					Carex				
Run. Strawberry-bush (<i>Euonymus obovata</i>)					PEAR					Carex				
American Beech (<i>Fagus grandifolia</i>)										Carex				
Glossy Buckthorn (<i>Frangula alnus</i>)										Carex				
White Ash (<i>Fraxinus americana</i>)										Carex				
Black Ash (<i>Fraxinus nigra</i>)										Carex				
Green Ash (<i>Fraxinus pennsylvanica</i>)					Ferns & Allies					Carex				
Witch-hazel (<i>Hamamelis virginiana</i>)					Lady Fern (<i>Athyrium filix-femina</i>)					Cyperus				
Winterberry (<i>Ilex verticillata</i>)					Rattlesnake Fern (<i>Botrychium virginianum</i>)					Redroot Spike-rush (<i>Eleocharis erythropoda</i>)				
Butternut (<i>Juglans cinerea</i>)					Bulbet Bladder Fern (<i>Cystopteris bulbifera</i>)					Eleocharis				
Black Walnut (<i>Juglans nigra</i>)					Spin. Wood Fern (<i>Dryopteris carthusiana</i>)					Hard-stem Bulrush (<i>Schoenoplectus acutus</i>)				
Common Privet (<i>Ligustrum vulgare</i>)					Crested Wood Fern (<i>Dryopteris cristata</i>)					Three-square Bulrush (<i>Sch. pungens</i>)				
Spicebush (<i>Lindera benzoin</i>)					Marginal Wood Fern (<i>Dryopteris marginalis</i>)					Soft-stem Bulrush (<i>Sch. tabernaemontani</i>)				
Fly Honeysuckle (<i>Lonicera canadensis</i>)					Dryopteris					Dark-green Bulrush (<i>Scirpus atrovirens</i>)				
Glaucous Honeysuckle (<i>Lonicera dioica</i>)					Ostrich Fern (<i>Matteuccia struthiopteris</i>)					Wool-grass (<i>Scirpus cyperinus</i>)				
Morrow's Honeysuckle (<i>Lonicera morrowii</i>)					Sensitive Fern (<i>Onoclea sensibilis</i>)									
Tartarian Honeysuckle (<i>Lonicera tatarica</i>)					Cinnamon Fern (<i>Osmunda cinnamomea</i>)									
Common Apple (<i>Malus pumila</i>)					Interrupted Fern (<i>Osmunda claytoniana</i>)									
White Mulberry (<i>Morus alba</i>)					Royal Fern (<i>Osmunda regalis</i>)									
Sweet Gale (<i>Myrica gale</i>)					Christmas Fern (<i>Polystichum acrostichoides</i>)									
Ironwood (<i>Ostrya virginiana</i>)					Eastern Bracken-fern (<i>Pteridium aquilinum</i>)									
Thicket-creeper (<i>Parthenocissus inserta</i>)					Marsh Fern (<i>Thelypteris palustris</i>)									
Ninebark (<i>Physocarpus opulifolius</i>)										Other Graminoids				
Balsam Poplar (<i>Populus balsamifera</i>)					Field Horsetail (<i>Equisetum arvense</i>)					Broad Bur-reed (<i>Sparganium eurycarpum</i>)				
Eastern Cottonwood (<i>Populus deltoides</i>)					Scouring-rush (<i>Equisetum hyemale</i>)					Narrow-leaved Cattail (<i>Typha angustifolia</i>)				
Large-tooth Aspen (<i>Populus grandidentata</i>)					Variegated Horsetail (<i>Equisetum variegatum</i>)					Broad-leaved Cattail (<i>Typha latifolia</i>)				
Trembling Aspen (<i>Populus tremuloides</i>)					Equisetum					Broad-leaved Cattail (<i>Typha X glauca</i>)				
Sweet Cherry (<i>Prunus avium</i>)					Ground-cedar (<i>Lycopodium digitatum</i>)					Articulated Rush (<i>Juncus articulatus</i>)				
Pin Cherry (<i>Prunus pensylvanica</i>)					Shining Clubmoss (<i>Lycopodium lucidulum</i>)					Soft Rush (<i>Juncus effusus</i>)				
Black Cherry (<i>Prunus serotina</i>)					Ground-pine (<i>Lycopodium obscurum</i>)					Path Rush (<i>Juncus tenuis</i>)				
Choke Cherry (<i>Prunus virginiana</i>)										Juncus				
Prunus										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
 U - Uncertain (=Occasional in ELC): present as widespread scattered individuals or represented by one or more clumps of many individuals (most species will fall into this category)
 R - Rare: represented in the polygon by less than about five individuals or small clumps

Map Number: 551-1366/1358/1371	4	F005-2
Date: April 19, 2012	2	CUM3-2
Surveyors: I.R. SC	3	

Significant Wildlife Habitat Form

AECOM

Study Area:	<u>BLW</u> JER GSH	Map #:	<u>CSI-BLL1358/1371</u>
Date:	<u>April 19, 2012</u>	Time Started:	<u>9:00 am</u>
Field Staff:	<u>BA, SG</u>	Time Finished:	<u>10:00 am</u>
Weather Conditions:	<u>SUNNY, ~15°C</u>		

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: _____

Description 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: _____

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, turtles (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, dimensions, etc): see Snake Hibernacula sheet

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)
 UTM: _____ 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)
 UTM: _____ 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)
 UTM: _____ 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)
 UTM: _____ 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 - Bluewater

Map No: 551-BLW 1358/551-BLW 1371 Field Staff: SG, RA Time Started: 9:00 am
 Date (yyyy-mm-dd): April 19, 2012 Time Finished: 10:20 am



Observed Species List

Species Code	UTM	EV	Notes	Species Code	UTM	EV	Notes
Cypress Swallow		OB		Dusky Woodpecker		VO	
Blue Jay		VO					
Turkey		OB					
Yellow-billed Cuckoo		OB					
Warbler		VO					
American Robin		VO					
Mocker		VO					
Red-winged Blackbird		VO					
Red-shouldered Hawk		VO					
Brown-headed Nuthatch		VO					
Red-bellied Woodpecker		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=Distinctive Parts, HO=House/Den, FY=Eggs/Young, TK=tracks, FE=Feeding evidence, SC=Scat, SI=Other signs (specify)

ELC	Species	Habitat Description	Habitat Present (Y/N) UTM:
FOD7	American Gromwell (Lithospermum latifolium) - S3 Bloom Time - Spring	Shaded river banks, wooded floodplains. River floodplains, woods and edges of woods.	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: <u>Not observed (N/O)</u>
FEO, FES, FET	Bald Eagle (Haliaeetus leucocephalus) - SC Bloom Time - May to October	Assessed as SWH. Record species if found. Found among fens, calcareous shores and meadows.	not required. Y (N) UTM:
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, spring river banks, creek borders, wet borders of streams and rivers. Also found among calcareous seepage slopes.	Y (N) UTM:
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:
SWC, SWM, SVD, 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:
FOD6, FOD7, FOD9	Eastern Ribbonsnake (Thamnophis sauritus) - SC Green Dragon (Arisaema dracontium) - SC/S3 Bloom Time - May and June	Assessed as SWH. Record species if found. Species found in damp deciduous forest and along river streams. Particularly Maple forest and forest dominated by Red Ash and White Elm.	not required. Y (N) UTM:

Species of Conservation Concern Habitat and Incidental Wildlife – Bluewater

AECOM

ELC	Species	Habitat Description	Habitat Present (Y/N); UTM: description of habitat if present
FE01, FES1, FET1, SWC, SWM, SWD, SWT, TPO, TPS, TPW	Hairy Valerian (<i>Valeriana edulis</i>) - S1 <u>Bloom Time</u> - June to August	Inhabits swampy river flats and meadows, wet prairies, and wooded, rocky riverbanks and fens.	Y <input checked="" type="checkbox"/> UTM:
FOD6, FOD7, FOD8, FOD9	Harbinger-of-spring (<i>Eriogonum bulbosum</i>) - S3 <u>Bloom Time</u> - early to late April	Occurs in rich, moist deciduous woods, especially on floodplains.	Y <input checked="" type="checkbox"/> UTM:
SAS1, SAM1, SAF1	Hill's Pond Weed (<i>Potamogeton hillii</i>) - SC/S2 <u>Bloom Time</u> - summer	Aquatic plant found in highly alkaline waters of ditches, ponds, beaver ponds, and slow-moving cold waters.	Y <input checked="" type="checkbox"/> UTM:
FOM6, FOM7, FOM8	Large Round-leaved Orchid (<i>Platanthera macrophylla</i>) - S2 <u>Bloom Time</u> - June to August	Species inhabits moist mixed woods. Found in fairly mature, upland sugar maple-beech-eastern hemlock woodlands.	Y <input checked="" type="checkbox"/> UTM:
MAM2, MAM3, MAS2, MAS3, SWD	Lizard's Tail (<i>Saururus cernuus</i>) - S3 <u>Bloom Time</u> - 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 <input checked="" type="checkbox"/> UTM:
FOD, FOM	Louisiana Waterthrush (<i>Seiurus motacilla</i>) - SC	Inhabits <u>mature forests</u> along steeply sloped ravines adjacent to running water. Trees, bushes, exposed roots, cliffs, banks and mossy logs are favoured nesting spots. <u>Riparian woodlands</u> are preferred stopover sites during migration. Assessed as SWH. Record species if found.	<input checked="" type="checkbox"/> N UTM: <i>n/o.</i>
-	Milksnake (<i>Lampropeltis triangulum</i>) - SC	Their larvae only feed on <u>milkweds</u> (<i>Asclepius</i> spp.). Habitat includes abandoned farmland, along roadsides, open spaces where these plants grow	not required.
CUM1, CUT1, CUW1	Monarch Butterfly (<i>Danaus plexippus</i>) - SC	Found in cedar woodlands, limestone plains and wooded fens, moist coniferous swamps, dry-sandy woods, and limestone barren.	Y <input checked="" type="checkbox"/> UTM:
CUW1, ALO, FET1, SWC	Ram's-head Lady's-slipper (<i>Cypripedium arietinum</i>) - S3 <u>Bloom Time</u> - mid May to mid June	Species inhabits open, dry sandy woods, Jack pine, oak, and aspen woodlands.	Y <input checked="" type="checkbox"/> UTM: <i>n/o</i>
FOD1, FOD2, FOD3, FOD4, FOD5, FOC1, FOM1, FOM5	Rattlesnake Hawkweed (<i>Hieracium venosum</i>) - S2 <u>Bloom Time</u> - April - September	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.	<input checked="" type="checkbox"/> N UTM: <i>n/o</i>
FOD, CUW, CUT	Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) - SC	Found in moist, rich woods, thicket swamps, banks and floodplains.	Y <input checked="" type="checkbox"/> UTM:
FOD6, FOD7, FOD8, FOD9, SWT2, SWT3	Scarlet Beebalm (<i>Monarda didyma</i>) - S3 <u>Bloom Time</u> - May to October	Assessed as SWH. Record species if found.	not required.
-	Short Eared Owl (<i>Asio flammeus</i>) - SC	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 <input checked="" type="checkbox"/> UTM:
TPS, TPW	Sleepy Duskywing (<i>Erynnis brizo</i>) - S1	Species inhabits dry, sandy habitats, including rocky woods meadows, dry forests, and stabilized dunes	Y <input checked="" type="checkbox"/> UTM:
SDO1, SDS1, SDT1	Slender Vulpia (<i>Vulpia octoflora</i>) - S2	Found in rich deciduous forest, often on rocky or sandy soils, wooded dunes, hillsides, and riverbanks whether in oak or beech-maple woods	<input checked="" type="checkbox"/> N UTM: <i>n/o</i>
SDT1, FOD5, FOD9	Slim-flowered Muhly (<i>Muhlenbergia tenuiflora</i>) - S2	Assessed as SWH. Record species if found.	not required.
-	Snapping Turtle (<i>Chelydra serpentina</i>) - SC	Found in moist soils of streambanks, edges of woods, wet prairies, marshy meadows, bluffs and wooded hillsides.	Y <input checked="" type="checkbox"/> UTM:
BLO1, BLS1, BLT1, TPO2, TPS2, TPW2, MAM2, FOD7	Stiff Gentian (<i>Gentianella quinquefolia</i>) - S2 <u>Bloom Time</u> - late summer to mid fall	Assessed as SWH. Record species if found.	not required.
TPS1, TPW1, CUW1, RBO, SBO	Sundial Lupine (<i>Lupinus perennis</i>) - S3 <u>Bloom Time</u> - 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 <input checked="" type="checkbox"/> UTM:
FE0, FES, FET, MAM2, MAM3	Tuberous Indian Plantain (<i>Armoglossum plantagineum</i>) - S3 <u>Bloom Time</u> - mid-March to mid-June	Occurs mainly in flat, sandy areas of the Bruce Peninsula. Fens, wet meadows, and calcareous river flats.	Y <input checked="" type="checkbox"/> UTM:
FOD5	West Virginia White (<i>Pteris virginensis</i>) - SC	This species is restricted to rich, moist, deciduous woods, where its <u>foodplant</u> <u>Toothwort</u> occur	<input checked="" type="checkbox"/> N UTM: <i>n/o</i>
FOC1, FOC2, FOC3, FOC4	Woodland Pinedrops (<i>Pteropora andromedea</i>) - S2 <u>Bloom Time</u> - 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 <input checked="" type="checkbox"/> UTM:
CUM1, CUT1, CUW1, RBO1, SBO1	Yellow Ladies'-tresses (<i>Spiranthes ochroleuca</i>) - S2 <u>Bloom Time</u> - 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 <input checked="" type="checkbox"/> UTM:
-	Yellow-breasted Chat (<i>Icteria virens</i>) - SC	Inhabits thickets, tall tangles of shrubbery beside streams, ponds; overgrown bushy clearings with deciduous thickets; nests above ground in bush, vines	Y <input checked="" type="checkbox"/> UTM:

ELC

Community Description and Classification

Map #: 555 BLW 1329 Polygon: 2
 Surveyor(s): KA Dates: Apr 13, 2012 Time start: 12 finish: 1
 UTMZ: UTMZ: UTMZ: UTMZ:

Tree Tally by Species

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

Prism Factor 2

Soils Ontario and ELC Soils Description

Site Metrics			Soil Metrics				Summary	
PH/Auger #	Zone	17T						Moisture Regime
	Easting	0461560						
	Northing	4817759						
Slope	Position	TRR						Drainage
	Aspect	NK						
	Percent	h/e						
	Slope Length	h/k						Effective Texture (Indicate below)
	Mottles	h/k						
	Gley	h/k						
Depth to...	Water Table	h/k						% CF
	Carbonates	h/k						
	Bedrock	h/k						Soil Horizon Description
1	Depth from zero	0.22	% CF					
	Texture	Silty (CL)						
2	Depth from zero	0.27	% CF					
	Texture	h/sand						
3	Depth from zero		% CF					
	Texture							
4	Depth from zero		% CF					
	Texture							
	% Surface Stone/Rock							
	Moisture Regime	Very Fresh						
	Drainage	Mw/I						

Polygon Description

System	Substrate	Topographic Feature	Plant Form	Community
<input checked="" type="checkbox"/> Terrestrial <input type="checkbox"/> Wetland <input type="checkbox"/> Aquatic Site	<input type="checkbox"/> Organic <input checked="" type="checkbox"/> Mineral Soil <input type="checkbox"/> Parent Min. <input type="checkbox"/> Basic Bedrk <input type="checkbox"/> Carb. Bedrk	<input type="checkbox"/> Lacustrine <input type="checkbox"/> Riverine <input type="checkbox"/> Bottomland <input type="checkbox"/> Terrace <input type="checkbox"/> Valley Slope <input checked="" type="checkbox"/> Tableland <input type="checkbox"/> Roll. Upland <input type="checkbox"/> Cliff <input type="checkbox"/> Talus <input type="checkbox"/> Crevice/Cave <input type="checkbox"/> Alvar <input type="checkbox"/> Rockland <input type="checkbox"/> Beach / Bar <input type="checkbox"/> Sand Dune <input type="checkbox"/> Bluff	<input type="checkbox"/> Plankton <input type="checkbox"/> Submerged <input type="checkbox"/> Floating-LVD. <input type="checkbox"/> Graminoid <input type="checkbox"/> Forb <input type="checkbox"/> Lichen <input type="checkbox"/> Bryophyte <input checked="" type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Mixed	<input type="checkbox"/> Lake <input type="checkbox"/> Pond <input type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Fen <input type="checkbox"/> Bog <input type="checkbox"/> Barren <input type="checkbox"/> Meadow <input type="checkbox"/> Prairie <input type="checkbox"/> Thicket <input type="checkbox"/> Savannah <input type="checkbox"/> Woodland <input type="checkbox"/> Forest <input type="checkbox"/> 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	CORDON 7 YEARNLEY APR SOIL
2	2	4	ACE SOIL
3	3	3	OV 2 APR SOIL
4	3	3	EV 2 APR 7 MOI MO

HT Codes: 7 < 0.2m 6 > 0.2-0.5m 5 > 0.5-1m 4 > 1-2m 3 > 2-8m 2 > 8-25m 1 > 25m
 CVR Codes: 0 = none 1 0% - 10% 2 10 - 25% 3 25 - 50% 4 50 - 75% 5 75 - 100%

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

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

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

Ecotope:	Vegetation Type:	Inclusion:	Comment:
Fresh - MOIST OAK - Sugar maple.	FOD9		
Fresh - moist Biltmore maple	FOD9-5		

Community Profile Diagram/Comments

TREE COVER IS CRIPPLED TO FOD9-5, but the site is well forested and the vegetation is not on wetland as presumed in ELC-5

Notes:

Plant Species List
2012

Trees & Shrubs	1	2	3	4	5	Trees & Shrubs	1	2	3	4	5	Graminoids	1	2	3	4	5
Conifers						Deciduous						Grasses					
Balsam Fir (<i>Abies balsamea</i>)						White Oak (<i>Quercus alba</i>)						Giant Redtop (<i>Agrostis gigantea</i>)					
Common Juniper (<i>Juniperus communis</i>)						Bur Oak (<i>Quercus macrocarpa</i>)						Redtop (<i>Agrostis stolonifera</i>)					
Eastern Red Cedar (<i>Juniperus virginiana</i>)						Red Oak (<i>Quercus rubra</i>)						Awnless Brome (<i>Bromus inermis</i>)					
Tamarack (<i>Larix laricina</i>)						Alder Buckthorn (<i>Rhamnus alnifolia</i>)						<i>Bromus</i>					
Norway Spruce (<i>Picea abies</i>)						Common Buckthorn (<i>Rhamnus cathartica</i>)						Blue-joint Grass (<i>Calamagrostis canadensis</i>)					
White Spruce (<i>Picea glauca</i>)						Smooth Sumac (<i>Rhus glabra</i>)						Orchard Grass (<i>Dactylis glomerata</i>)					
Black Spruce (<i>Picea mariana</i>)						Staghorn Sumac (<i>Rhus hirta</i>)						Poverty Oat Grass (<i>Danthonia spicata</i>)					
Jack Pine (<i>Pinus banksiana</i>)						Wild Black Currant (<i>Ribes americanum</i>)						Quack Grass (<i>Elymus repens</i>)					
Red Pine (<i>Pinus resinosa</i>)						Prickly Gooseberry (<i>Ribes cynosbati</i>)						Virginia Wild Rye (<i>Elymus virginicus</i>)					
Eastern White Pine (<i>Pinus strobus</i>)						Swamp Black Currant (<i>Ribes lacustre</i>)						<i>Elymus</i>					
Scotch Pine (<i>Pinus sylvestris</i>)						Red Currant (<i>Ribes rubrum</i>)											
Canada Yew (<i>Taxus canadensis</i>)						<i>Ribes</i>						Fowl Manna Grass (<i>Glyceria striata</i>)					
Eastern White Cedar (<i>Thuja occidentalis</i>)						Black Locust (<i>Robinia pseudo-acacia</i>)						<i>Glyceria</i>					
Eastern Hemlock (<i>Tsuga canadensis</i>)						Prickly Rose (<i>Rosa acicularis</i>)						Rice Cut Grass (<i>Leersia oryzoides</i>)					
						Smooth Rose (<i>Rosa blanda</i>)						Tall Fescue (<i>Lolium arundinaceum</i>)					
						Multiflora Rose (<i>Rosa multiflora</i>)						<i>Muhlenbergia</i>					
						<i>Rosa</i>						Witch-grass (<i>Panicum capillare</i>)					
						Com. Blackberry (<i>Rubus allegheniensis</i>)						<i>Panicum</i>					
Deciduous						Wild Red Raspberry (<i>Rubus idaeus</i>)						Reed Canary Grass (<i>Phalaris arundinacea</i>)					
Manitoba Maple (<i>Acer negundo</i>)						Black Raspberry (<i>Rubus occidentalis</i>)						Timothy (<i>Phleum pratense</i>)					
Black Maple (<i>Acer nigrum</i>)						Purple-fl. Raspberry (<i>Rubus odoratus</i>)						Common Reed (<i>Phragmites australis</i>)					
Norway Maple (<i>Acer platanoides</i>)						Dwarf Raspberry (<i>Rubus pubescens</i>)						Canada Blue Grass (<i>Poa compressa</i>)					
Red Maple (<i>Acer rubrum</i>)						<i>Rubus</i>						Fowl Meadow Grass (<i>Poa palustris</i>)					
Silver Maple (<i>Acer saccharinum</i>)						Peach-leaved Willow (<i>Salix amygdaloides</i>)						Kentucky Bluegrass (<i>Poa pratensis</i>)					
Freeman's Maple (<i>Acer X freemanii</i>)						Bebb's Willow (<i>Salix bebbiana</i>)						Yellow Foxtail (<i>Setaria pumila</i>)					
Sugar Maple (<i>Acer saccharum</i>)						Pussy Willow (<i>Salix discolor</i>)						Green Foxtail (<i>Setaria viridis</i>)					
Mountain Maple (<i>Acer spicatum</i>)						Missouri Willow (<i>Salix eriocephala</i>)											
Speckled Alder (<i>Alnus incana</i>)						Sendbar Willow (<i>Salix edige</i>)											
Downy Serviceberry (<i>Amelanchier arborea</i>)						Shining Willow (<i>Salix lucida</i>)											
Serviceberry (<i>Amelanchier sanguinea</i>)						Black Willow (<i>Salix nigra</i>)											
Yellow Birch (<i>Betula alleghaniensis</i>)						Siender Willow (<i>Salix petolaris</i>)											
White Birch (<i>Betula papyrifera</i>)						<i>Salix</i>											
European Birch (<i>Betula pendula</i>)						Hybrid Crack Willow (<i>Salix X rubens</i>)											
Blue Beech (<i>Carpinus caroliniana</i>)						Black-berried Elder (<i>Sambucus nigra</i>)											
Bitternut Hickory (<i>Carya cordiformis</i>)						Red-berried Elder (<i>Sambucus racemosa</i>)											
Shagbark Hickory (<i>Carya ovata</i>)						Buffaloberry (<i>Shepherdia canadensis</i>)											
Climbing Bittersweet (<i>Celastrus scandens</i>)						Eur. Mountain Ash (<i>Sorbus aucuparia</i>)											
Common Hackberry (<i>Celtis occidentalis</i>)						Narrow Meadow-sweet (<i>Spiraea alba</i>)											
Buttonbush (<i>Cephalanthus occidentalis</i>)						Common Lilac (<i>Syringa vulgaris</i>)											
Ait.-leaved Dogwood (<i>Cornus alternifolia</i>)						Poison-ivy (<i>Toxicodendron rydbergii</i>)											
Silky Dogwood (<i>Cornus amomum</i>)						Climbing Poison-ivy (<i>Toxicodendron radicans</i>)											
Bunchberry (<i>Cornus canadensis</i>)						White Elm (<i>Ulmus americana</i>)											
Gray dogwood (<i>Cornus racemosa</i>)						Siberian Elm (<i>Ulmus pumila</i>)											
Round-leaved Dogwood (<i>Cornus rugosa</i>)						Slippery Elm (<i>Ulmus rubra</i>)											
Red-osier Dogwood (<i>Cornus sericea</i>)						Low Blueberry (<i>Vaccinium angustifolium</i>)											
American Hazel (<i>Corylus americana</i>)						Maple-leaf Viburnum (<i>Viburnum acerifolium</i>)											
Beaked Hazel (<i>Corylus cornuta</i>)						Hobblebush (<i>Viburnum lantanoides</i>)											
Cockspur Thorn (<i>Crataegus crus-galli</i>)						Nannyberry (<i>Viburnum lentago</i>)											
English Hawthorn (<i>Crataegus monogyne</i>)						Guelder-Rose (<i>Viburnum opulus</i>)											
Large-fruited Thorn (<i>Crataegus punctata</i>)						Downy Arrow-wood (<i>Vib. rafinesquianum</i>)											
<i>Crataegus</i>						Riverbank Grape (<i>Vitis riparia</i>)											
<i>Crataegus</i>						Am. Prickly-ash (<i>Zanthoxylum americanum</i>)											
Bush Honeysuckle (<i>Dierella lonicera</i>)																	
Russian Olive (<i>Elaeagnus angustifolia</i>)																	
Autumn Olive (<i>Elaeagnus umbellata</i>)																	
Run. Strawberry-bush (<i>Evonymus obovata</i>)																	
American Beech (<i>Fagus grandifolia</i>)																	
Glossy Buckthorn (<i>Frangula alnus</i>)																	
White Ash (<i>Fraxinus americana</i>)																	
Black Ash (<i>Fraxinus nigra</i>)																	
Green Ash (<i>Fraxinus pennsylvanica</i>)																	
Witch-hazel (<i>Hamamelis virginiana</i>)																	
Winterberry (<i>Ilex verticillata</i>)																	
Butternut (<i>Juglans cinerea</i>)																	
Black Walnut (<i>Juglans nigra</i>)																	
Common Privet (<i>Ligustrum vulgare</i>)																	
Spicebush (<i>Lindera benzoin</i>)																	
Fly Honeysuckle (<i>Lonicera canadensis</i>)																	
Glaucous Honeysuckle (<i>Lonicera dioica</i>)																	
Morrow's Honeysuckle (<i>Lonicera morrowii</i>)																	
Tartarian Honeysuckle (<i>Lonicera tatarica</i>)																	
Common Apple (<i>Malus pumila</i>)																	
White Mulberry (<i>Morus alba</i>)																	
Sweet Gale (<i>Myrica gale</i>)																	
Ironwood (<i>Ostrya virginiana</i>)																	
Thicket-creeper (<i>Parthenocissus inserta</i>)																	
Ninebark (<i>Physocarpus opulifolius</i>)																	
Balsam Poplar (<i>Populus balsamifera</i>)																	
Eastern Cottonwood (<i>Populus deltoides</i>)																	
Large-tooth Aspen (<i>Populus grandidentata</i>)																	
Trembling Aspen (<i>Populus tremuloides</i>)																	
Sweet Cherry (<i>Prunus avium</i>)																	
Pin Cherry (<i>Prunus pensylvanica</i>)																	
Black Cherry (<i>Prunus serotina</i>)																	
Choke Cherry (<i>Prunus virginiana</i>)																	
<i>Prunus</i>																	

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

Map Number: 555-BLW1679	1	FOD9-5				4
Date: April 23, 2012	2					6
Surveyors: J. B. S.	3					

Plant Species List
2012

Dicot Herbs - Asteraceae						Dicot Herbs						Dicot Herbs					
1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Common Yarrow (<i>Achillea millefolium</i>)						Shepherd's Purse (<i>Capsella bursa-pastoris</i>)						Kidney-leaf Buttercup (<i>Ranunculus abortivus</i>)					
White Snakeroot (<i>Ageratina altissima</i>)						Cuteleaf Toothwort (<i>Cardamine concatenata</i>)						Tall Buttercup (<i>Ranunculus acris</i>)					
Com. Ragweed (<i>Ambrosia artemisiifolia</i>)						Toothwort (<i>Cardamine diphylla</i>)						Hooked Buttercup (<i>Ranunculus recurvatus</i>)					
Giant Ragweed (<i>Ambrosia trifida</i>)						Penn. Bitter-cress (<i>Cardamine pensylvanica</i>)						<i>Ranunculus</i>					
Field Pussytoes (<i>Antennaria neglecta</i>)						<i>Cardamine</i>						Sheep Sorrel (<i>Rumex acetosella</i>)					
<i>Artemisia</i>						Blue Cohosh (<i>Caulophyllum thalictroides</i>)	R					Curly-leaf Dock (<i>Rumex crispus</i>)					
Common Burdock (<i>Arctium minus</i>)						Mouse-ear Chickweed (<i>Cerastium fontanum</i>)						Bitter Dock (<i>Rumex obtusifolius</i>)					
Nodding Beggar-ticks (<i>Bidens cernua</i>)						Turtlehead (<i>Chelone glabra</i>)						Bloodroot (<i>Sanguinaria canadense</i>)	u				
Devil's Beggar-ticks (<i>Bidens frondosa</i>)						Spotted Water-hemlock (<i>Cicuta maculata</i>)						Black Snakeroot (<i>Sanicula marilandica</i>)					
Spotted Knapweed (<i>Centaurea biebersteinii</i>)						Water-hemlock (<i>Cicuta virosa</i>)						Bouncing Bet (<i>Saponaria officinalis</i>)					
Brown Knapweed (<i>Centaurea jacea</i>)						Enchanter's Nightshade (<i>Circaea lutetiana</i>)						Marsh Skullcap (<i>Scutellaria galericulata</i>)					
Chicory (<i>Cichorium intybus</i>)						Carolina Spring Beauty (<i>Claytonia caroliniana</i>)						Mad Dog Skullcap (<i>Scutellaria lateriflora</i>)					
Canada Thistle (<i>Cirsium arvense</i>)						Virginia Spring Beauty (<i>Claytonia virginica</i>)						White Campion (<i>Silene latifolia</i>)					
Bull Thistle (<i>Cirsium vulgare</i>)						Virgin's-bower (<i>Clematis virginiana</i>)						Bladder Campion (<i>Silene vulgaris</i>)					
Horsenead (<i>Conyza canadensis</i>)						Field Bindweed (<i>Convolvulus arvensis</i>)						Hemlock Water-parsnip (<i>Sium suave</i>)					
Daisy Fleabane (<i>Erigeron annuus</i>)						Dog-strangling Vine (<i>Cynanchum rossicum</i>)						Bitter Nightshade (<i>Solanum dulcamara</i>)					
Philadelphia Fleabane (<i>Erig. philadelphicus</i>)						Wild Carrot (<i>Daucus carota</i>)						Black Nightshade (<i>Solanum pycnanthum</i>)					
<i>Erigeron</i>						Deptford Pink (<i>Dianthus armeria</i>)						Grassleaf Stitchwort (<i>Stellaria graminea</i>)					
Joe-pye-weed (<i>Eupatorium maculatum</i>)						Squirrel-orn (<i>Dicentra canadensis</i>)						Common Chickweed (<i>Stellaria media</i>)					
Boneset (<i>Eupatorium perfoliatum</i>)						Dutchman's-breaches (<i>Dicentra cucullaria</i>)						Early Meadow-rue (<i>Thalictrum dikokum</i>)					
Large-leaved Aster (<i>Eurybia macrophylla</i>)						Wild Tassel (<i>Dipsacus fulanum</i>)						Tall Meadow-rue (<i>Thalictrum pubescens</i>)					
Flat-top Goldenrod (<i>Euthamia graminifolia</i>)						Wild Cucumber (<i>Echinocystis lobata</i>)						Field Penny-cress (<i>Thlaspi arvense</i>)					
Orange Hawkweed (<i>Hieracium aurantiacum</i>)						Viper's Bugloss (<i>Echium vulgare</i>)						Foamflower (<i>Tiarella cordifolia</i>)					
Field Hawkweed (<i>Hieracium caespitosum</i>)						Northern Willow-herb (<i>Epilobium ciliatum</i>)						Star-flower (<i>Trientalis borealis</i>)					
<i>Hieracium</i>						Hairy Willow-herb (<i>Epilobium hirsutum</i>)						Red Clover (<i>Trifolium pratense</i>)					
Eleocharis (<i>Inula helenium</i>)						Small-fl. Willow-herb (<i>Epilobium parviflorum</i>)						White Clover (<i>Trifolium repens</i>)					
Prickly Lettuce (<i>Lactuca scariola</i>)						<i>Epilobium</i>						<i>Trifolium</i>					
<i>Lactuca</i>						Worm Mustard (<i>Erysimum cheiranthoides</i>)						Stinging Nettle (<i>Urtica dioica</i>)					
Ox-eye Daisy (<i>Leucanthemum vulgare</i>)						<i>Euphorbia</i>						Greater Bladderwort (<i>Utricularia vulgaris</i>)					
Pineapple-weed (<i>Matricaria discolor</i>)						Hemp Nettle (<i>Galeopsis tetrahit</i>)						Common Mullein (<i>Verbascum thapsus</i>)					
Tall White Lettuce (<i>Prenanthes altissima</i>)						Wild Madder (<i>Galium mollugo</i>)						Blue Vervain (<i>Verbena hastata</i>)					
Black-eyed Susan (<i>Rudbeckia hirta</i>)						Marsh Bedstraw (<i>Galium palustre</i>)						White Vervain (<i>Verbena urticifolia</i>)					
Tall Goldenrod (<i>Solidago altissima</i>)						Sweet-scented Bedstraw (<i>Galium triflorum</i>)						Water Speedwell (<i>Veron. angustata-aquatica</i>)					
Blue-stem Goldenrod (<i>Solidago caesia</i>)						<i>Galium</i>						Common Speedwell (<i>Veronica officinalis</i>)					
Canada Goldenrod (<i>Solidago canadensis</i>)						Spotted Geranium (<i>Geranium maculatum</i>)						<i>Veronica</i>					
Zig-zag Goldenrod (<i>Solidago flexicaulis</i>)	u					Herb-robert (<i>Geranium robertianum</i>)						Cow Vetch (<i>Vicia cracca</i>)					
Giant Goldenrod (<i>Solidago gigantea</i>)						Yellow Avens (<i>Geum alepolicum</i>)						<i>Vicia</i>					
Early Goldenrod (<i>Solidago juncea</i>)						White Avens (<i>Geum canadense</i>)						Periwinkle (<i>Viola minor</i>)					
Gray Goldenrod (<i>Solidago nemoralis</i>)						Urban Avens (<i>Geum urbanum</i>)						Dog Violet (<i>Viola conspersa</i>)	R				
<i>Solidago</i>						Dame's Rocket (<i>Hesperis matronalis</i>)						Yellow Violet (<i>Viola pubescens</i>)					
Field Sow-thistle (<i>Sonchus arvensis</i>)						Virg. Water-leaf (<i>Hydrophyllum virginianum</i>)						Com. Blue Violet (<i>Viola sororia</i>)					
<i>Sonchus</i>						Com. St. John's-wort (<i>Hypericum perforatum</i>)						<i>Viola</i>					
Heart-leaf Aster (<i>Symph. cordifolium</i>)						Spotted Jewelweed (<i>Impatiens capensis</i>)						FRASIAS	R				
Heath Aster (<i>Symphytichum ericoides</i>)						Wood Nettle (<i>Laportea canadensis</i>)											
Tall White Aster (<i>Symph. lanceolatum</i>)						Motherwort (<i>Leonurus cardiaca</i>)											
Calico Aster (<i>Symphytichum lateriflorum</i>)						Field Peppergrass (<i>Lepidium campestre</i>)											
New England Aster (<i>Symph. nove-angliae</i>)						Eur. Gromwell (<i>Lithospermum officinale</i>)											
Purple-stem Aster (<i>Symph. punctatus</i>)						Butter & Eggs (<i>Linaria vulgaris</i>)											
Common Tansy (<i>Tanacetum vulgare</i>)						Great Lobelia (<i>Lobelia siphilitica</i>)											
Common Dandelion (<i>Taraxacum officinale</i>)	R					<i>Lobelia</i>											
Com. Goatsbeard (<i>Tragopogon pratensis</i>)						Cut-leaf Bugleweed (<i>Lycopus americanus</i>)											
Colefoot (<i>Tussilago farfara</i>)						Northern Bugleweed (<i>Lycopus uniflorus</i>)											
						Fringed Loosestrife (<i>Lythrum ciliata</i>)											
						Moneywort (<i>Lysimachia nummularia</i>)											
						<i>Lysimachia</i>											
						Purple Loosestrife (<i>Lythrum salicaria</i>)											
						Black Medick (<i>Medicago lupulina</i>)											
						Alfalfa (<i>Medicago sativa</i>)											
						White Sweet-clover (<i>Mellilotus alba</i>)											
						Yellow Sweet-clover (<i>Mellilotus officinalis</i>)											
						Wild Mint (<i>Mentha arvensis</i>)											
						Wild Bergamot (<i>Monarda fistulosa</i>)											
						Small Forget-me-not (<i>Myosotis laxa</i>)											
						Forget-me-not (<i>Myosotis scorpioides</i>)											
						Water-cress (<i>Nasturtium officinale</i>)											
						Com. Evening-primrose (<i>Oenothera biennis</i>)											
						Sweet-cicely (<i>Osmorhiza berterii</i>)											
						Yellow Wood-sorrel (<i>Oxalis stricta</i>)											
						Wild Parsnip (<i>Pastinaca sativa</i>)											
						English Plantain (<i>Plantago lanceolata</i>)											
						Common Plantain (<i>Plantago major</i>)											
						Rugel's Plantain (<i>Plantago rugelii</i>)											
						May-apple (<i>Podophyllum peltatum</i>)											
						Pale Smartweed (<i>Polygonum lapathifolium</i>)											
						Lady's-thumb (<i>Polygonum persicaria</i>)											
						Virginia Knotweed (<i>Polygonum virginianum</i>)											
						<i>Polygonum</i>											
						<i>Polygonum</i>											
						Rough Cinquefoil (<i>Potentilla norvegica</i>)											
						Rough-fruited Cinquefoil (<i>Potentilla recta</i>)											
						Common Cinquefoil (<i>Potentilla simplex</i>)											
						<i>Potentilla</i>											
						Heal-all (<i>Prunella vulgaris</i>)											
						Shinleaf (<i>Pyrola elliptica</i>)											

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Map Number: 555-BLW1679 1 FOD95 4
 Date: April 25, 2012 2
 Surveyor: RA, SC 3

Significant Wildlife Habitat Form

AECOM

Study Area:	<u>BLW</u> JER GSH	Map #:	<u>SSS-BLW 1329</u>
Date:	<u>April 23, 2012</u>	Time Started:	<u>12:00 pm</u>
Field Staff:	<u>SG, RA</u>	Time Finished:	<u>1:00 pm</u>
Weather Conditions:	<u>Overcast, cool, strong wind.</u>		

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: _____

Description 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: _____

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, turtles (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, dimensions, 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 Conservation Concern Habitat and Incidental Wildlife - Bluewater

Map No: SSS - BULLYBAP 1720
 Date (yyyy-mm-dd): 2012/04/23

Field Staff: AA, SG

Time Started: 12:00pm
 Time Finished: 1:15pm



Observed Species List

Species Code	UTM	EV	Notes	Species Code	UTM	EV	Note*
<u>Red Adirax</u>		<u>OB</u>					

Note: Evidence Codes (EV) Breeding Bird (Possible) SH=Suitable Habitat, SM=Shing 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=Foss/Faecal 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)

ELC	Species	Habitat Description	Habitat Present (Y/N): UTM: description of habitat if present
FOD7	American Gromwell (<i>Lithospermum latifolium</i>) - S3 <u>Bloom Time - Spring</u>	Shaded river banks, wooded floodplains. River floodplains, woods and edges of woods.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
FOM1, FOM2, CUP3	Autumn Coral-root (<i>Corallorhiza odontorhiza</i>) - S2 <u>Bloom Time - summer to fall</u>	Oak-pine woods or occasionally in open, red pine or white pine plantations. Dry, sandy woods.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
FEO, FES, FET	Bald Eagle (<i>Haliaeetus leucocephalus</i>) - SC <u>Bloom Time - May to October</u>	Assessed as SWH. Record species if found.	not required.
SWC1, SWC3, SWC4, SWM1, SWM2, SWM4, SWM5, SWM6	Beaked Spike-Rush (<i>Eleocharis rostrata</i>) - S3 <u>Bloom Time - summer to fall</u>	Found among fens, calcareous shores and meadows.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
CUW, SDO, RBO, TPS	Chinese Hemlock Parakey (<i>Conioselinum chinense</i>) - S2 <u>Bloom Time - mid March to August</u>	Swampy places with deciduous trees, white cedars, tamarack; springy river banks, creek borders, wet borders of streams and rivers. Also found among calcareous seepage slopes.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
SWC, SWM, SWD, SWT, MAM, MAS	Common Nighthawk (<i>Chordeiles minor</i>) - SC <u>Bloom Time - late summer</u>	Hunts insects over a wide variety of habitats, in particular open or semi-open areas. Nests on ground in a wide range of open <u>open or semi-open</u> habitats.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
ALT1, FOD7	Crowned Beggarticks (<i>Bidens trichosperma</i>) - S2 <u>Bloom Time - mid March to August</u>	Found in openings in swamps, marshes, along shores & wet fields within the Carolinian zone and southeastern Georgian bay. Bogs, fens, tamarack swamps.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
FOD6, FOD7, FOD8	Eastern Green-violet (<i>Hybanthus concolor</i>) - S2 <u>Bloom Time - May and June</u>	Occurs in rich, wet-mesic floodplain forests as well as mesic forests over limestone. Includes floodplains and river banks.	Y <input checked="" type="radio"/> UTM: <u>NO</u>
	Eastern Ribbonsnake (<i>Thamnophis sauritus</i>) - SC <u>Bloom Time - May and June</u>	Assessed as SWH. Record species if found.	not required.
	Green Dragon (<i>Arisaema dracontium</i>) - SC(S3) <u>Bloom Time - May and June</u>	Species found in damp deciduous forest and along river streams. Particularly Maple forest and forest dominated by Red Ash and White Elm.	Y <input checked="" type="radio"/> UTM: <u>NO</u>

Species of Conservation Concern Habitat and Incidental Wildlife – Bluewater

ELC	Species	Habitat Description	Habitat Present (Y/N): UTM: description of habitat if present)
FEO1, FES1, FET1, SWC, SWM, SWD, SWT, TPO, TPS, TPW	Halcyon (Halcyon edulis) - S1 <i>Bloom Time - June to August</i>	Inhabits swampy river flats and meadows, wet prairies, and wooded, rocky riverbanks and fens.	Y (N) UTM: NO
FOD6, FOD7, FOD8, FOD9	Harbinger-of-spring (Erigenia bulbosa) - S3 <i>Bloom Time - early to late April</i>	Occurs in rich, moist deciduous woods, especially on floodplains.	Y (N) UTM: NO
SAS1, SAM1, SAF1	Hill's Pond Weed (Potamogeton hillii) - SC/S2 <i>Bloom Time - summer</i>	Aquatic plant found in highly alkaline waters of ditches, ponds, beaver ponds, and slow-moving cold waters.	Y (N) UTM: NO
FOM6, FOM7, FOM8	Large Round-leaved Orchid (Platanthera macrophylla) - S2 <i>Bloom Time - June to August</i>	Species inhabits moist mixed woods. Found in fairly mature upland sugar maple-beech-eastern hemlock woodlands.	Y (N) UTM: NO
MAM2, MAM3, MAS2, MAS3, SWD	Lizard's Tail (Saururus cernuus) - S3 <i>Bloom Time - June - September</i>	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: NO
FOD, FOM	Louisiana Waterthrush (Selurus 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 sites. Swampy woodlands are referred to as rover sites during migration.	Y (N) UTM: NO
-	Milksnake (Lampropeltis triangulum) - SC	Assessed as SWH. Record species if found.	not required.
CUM1, CUT1, CUW1	Monarch Butterfly (Danaus plexippus) - SC	Their larvae only feed on milkweeds (<i>Asclepius</i> spp.). Habitat includes abandoned farmland, along roadsides, open spaces where these plants grow.	Y (N) UTM: NO
CUW1, AL0, FET1, SWC	Ram's-head Lady's-slipper (Cypripedium arietinum) - S3 <i>Bloom Time - mid May to mid June</i>	Found in cedar woodlands, limestone plains and wooded fens, moist coniferous swamps, dry-sandy woods, and limestone barren.	Y (N) UTM: NO
FOD1, FOD2, FOD3, FOD4, FOD5, FOC1, FOM1, FOM5	Rattlesnake Hawkweed (Hieracium venosum) - S2 <i>Bloom Time - April - September</i>	Species inhabits open, dry sandy woods. Jack pine, oak, and aspen woodlands.	Y (N) UTM: NO
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: NO
FOD6, FOD7, FOD8, FOD9, SWT2, SWT3	Scarlet Beebalm (Monarda didyma) - S3 <i>Bloom Time - May to October</i>	Found in moist, rich woods, thicket swamps, banks and floodplains.	Y (N) UTM: NO
-	Short Eared Owl (Asio flammeus) - SC	Assessed as SWH. Record species if found.	not required.
TPS, TPW	Sleepy Duskywing (Erynnis brize) - 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: NO
SDO1, SDS1, SDT1	Slender Vulpia (Vulpia octiflora) - S2	Species inhabits dry, sandy habitats, including rocky woods meadows, dry forests, and stabilized dunes.	Y (N) UTM: NO
SDT1, FOD, 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: NO
-	Snapping Turtle (Chelydra serpentina) - SC	Assessed as SWH. Record species if found.	not required.
BLO1, BLS1, BLT1, TPO2, TPS2, TPW2, MAM2, FOD7	Stiff Gentian (Gentiana quinquefolia) - S2 <i>Bloom Time - late summer to mid fall</i>	Found in moist soils of streambanks, edges of woods, wet prairies, marshy meadows, bluffs and wooded hillsides.	Y (N) UTM: NO
TPS1, TPW1, CUW1, RBO, SBO	Sundial Lupine (Lupinus perennis) - S3 <i>Bloom Time - mid-March to mid-June</i>	Inhabits dry, sandy oak savannahs, prairies, open barrens or clearings in woodlands of oak, jack pine, and/or aspen.	Y (N) UTM: NO
FEO, FES, FET, MAM2, MAM3	Tuberous Indian Plantain (<i>Arnoglossum plantagineum</i>) - S3 <i>Bloom Time - mid-March to mid-June</i>	Occurs mainly in flat, sandy areas of the Bruce Peninsula. Fens, wet meadows, and calcareous river flats.	Y (N) UTM: NO
FOD5	West Virginia White (Pteris virginianensis) - SC	This species is restricted to rich, moist, deciduous woods, where its foodplant <u>Toothwort</u> occur.	Y (N) UTM: NO
FOC1, FOC2, FOC3, FOC4	Woodland Pinedrops (Pterospora andromedea) - S2 <i>Bloom Time - summer</i>	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: NO
CUM1, CUT1, CUW1, RBO1, SBO1	Yellow Ladies'-Tresses (<i>Spiranthes ochroleuca</i>) - S2 <i>Bloom Time - August to November</i>	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: NO
-	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: NO



- Legend**
- Transmission Line
 - Property Boundary
 - Natural Feature and ID
 - ELC Polygon Boundary
 - Valley Land
 - Area of Investigation
 - ANSI
 - Evaluated Wetlands - PSW
 - Watercourse

0.5 ha

Basemapping from Ontario Ministry of Natural Resources
 Spatial Information System
 Tubeline Layer, April 9, 2012



0 25 50 100
 Metres
 UTM Zone 17N, NAD 83

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Blenwater ELC Survey
 682_BLW1315

May 2012
 Project 60156032



Figure 1

ASA

ELC
Community Description and Classification

Map #: S22-BLW/315 Polygon: /

Surveyor(s): RA, SC Date: May 16, 2012 Time start: 10:00 am finish: 10:45 am

UTMZ: UTMN:

Polygon Description

System	Substrate	Topographic Feature	Piant Form	Community
<input checked="" type="checkbox"/> Terrestrial <input type="checkbox"/> Wetland <input type="checkbox"/> Aquatic	<input type="checkbox"/> Organic <input checked="" type="checkbox"/> Mineral Soil <input type="checkbox"/> Parent Min. <input type="checkbox"/> Acidic Bedrk <input type="checkbox"/> Basic Bedrk <input type="checkbox"/> Carb. Bedrk	<input type="checkbox"/> Lacustrine <input type="checkbox"/> Riverine <input type="checkbox"/> Bottomland <input type="checkbox"/> Terrace <input checked="" type="checkbox"/> Valley Slope <input type="checkbox"/> Tableland <input type="checkbox"/> Roll. Upland <input type="checkbox"/> Cliff <input type="checkbox"/> Talus <input type="checkbox"/> Crevice/Cave <input type="checkbox"/> Alvar <input type="checkbox"/> Rockland <input type="checkbox"/> Beach / Bar <input type="checkbox"/> Sand Dune <input type="checkbox"/> Bluff	<input type="checkbox"/> Plankton <input type="checkbox"/> Submerged <input type="checkbox"/> Floating-LVD. <input checked="" type="checkbox"/> Graminoid <input type="checkbox"/> Forb <input type="checkbox"/> Lichen <input type="checkbox"/> Bryophyte <input type="checkbox"/> Deciduous <input type="checkbox"/> Coniferous <input type="checkbox"/> Mixed	<input type="checkbox"/> Lake <input type="checkbox"/> Pond <input type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Marsh <input type="checkbox"/> Swamp <input type="checkbox"/> Fen <input type="checkbox"/> Bog <input type="checkbox"/> Barren <input checked="" type="checkbox"/> Meadow <input type="checkbox"/> Prairie <input type="checkbox"/> Thicket <input type="checkbox"/> Savannah <input type="checkbox"/> Woodland <input type="checkbox"/> Forest <input type="checkbox"/> 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		0	
2	2	2	FRAPENN > PICABIE
3	4	2	CORSERI > CORRACE
4	6	4	PHARUN > POAPRAT > DACGLDM

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: Q < 10 R 10-24 N 25-50 N > 50
 Standing Snags: N < 10 N 10-24 N 25-50 N > 50
 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: CUMI
 Vegetation Type: Dry-Moist Old Field Meadow Code: CUMI-1
 Inclusion: - Code: -
 Complex: - Code: -

Community Profile Diagram/Comments

Regenerating grassland along road side / drainage ditch

Notes:

Tree Tally by Species

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

Soils Ontario and ELC Soils Description

Site Metrics		Soils Ontario and ELC Soils Description				Summary	
Zone	UTM						
Easting							
Northing							
Position							
Aspect							
Percent							
Slope							
Length							
Mottles							
Gley							
Water Table							
Carbonates							
Bedrock							
1	Depth from zero		% CF		% CF		% CF
	Texture						
2	Depth from zero		% CF		% CF		% CF
	Texture						
3	Depth from zero		% CF		% CF		% CF
	Texture						
4	Depth from zero		% CF		% CF		% CF
	Texture						
	% Surface Stone/Rock						
	Moisture Regime						
	Drainage						

Plant Species List
2012

Trees & Shrubs					Tree & Shrubs					Graminoids				
Conifers					Deciduous					Grasses				
Balsam Fir (<i>Abies balsamea</i>)					White Oak (<i>Quercus alba</i>)					Giant Redtop (<i>Agrostis gigantea</i>)				
Common Juniper (<i>Juniperus communis</i>)					Bur Oak (<i>Quercus macrocarpa</i>)					Redtop (<i>Agrostis stolonifera</i>)				
Eastern Red Cedar (<i>Juniperus virginiana</i>)					Red Oak (<i>Quercus rubra</i>)					Awnless Brome (<i>Bromus inermis</i>)				
Tamarack (<i>Larix laricina</i>)					Alder Buckthorn (<i>Rhamnus alnifolia</i>)					Bromus				
Norway Spruce (<i>Picea abies</i>)		U			Common Buckthorn (<i>Rhamnus cathartica</i>)					Blue-joint Grass (<i>Calamagrostis canadensis</i>)				
White Spruce (<i>Picea glauca</i>)					Smooth Sumac (<i>Rhus glabra</i>)					Orchard Grass (<i>Dactylis glomerata</i>)			F	
Black Spruce (<i>Picea mariana</i>)					Staghorn Sumac (<i>Rhus hirta</i>)					Poverty Oat Grass (<i>Danthonia spicata</i>)				
Jack Pine (<i>Pinus banksiana</i>)					Wild Black Currant (<i>Ribes americanum</i>)				U	Quack Grass (<i>Elymus repens</i>)				
Red Pine (<i>Pinus resinosa</i>)					Prickly Gooseberry (<i>Ribes cynosbati</i>)				U	Virginia Wild Rye (<i>Elymus virginicus</i>)				
Eastern White Pine (<i>Pinus strobus</i>)					Swamp Black Currant (<i>Ribes lacustre</i>)					<i>Elymus</i>				
Scotch Pine (<i>Pinus sylvestris</i>)					Red Currant (<i>Ribes rubrum</i>)					Fowl Manna Grass (<i>Glyceria striata</i>)				
Canada Yew (<i>Taxus canadensis</i>)					<i>Ribes</i>					<i>Glyceria</i>				
Eastern White Cedar (<i>Thuja occidentalis</i>)					Black Locust (<i>Robinia pseudo-acacia</i>)					Rice Cut Grass (<i>Leersia oryzoides</i>)				
Eastern Hemlock (<i>Tsuga canadensis</i>)					Prickly Rose (<i>Rosa acicularis</i>)					Tall Fescue (<i>Lolium arundinaceum</i>)				
					Smooth Rose (<i>Rosa blanda</i>)					<i>Muhlenbergia</i>				
					Multiflora Rose (<i>Rosa multiflora</i>)					Witch-grass (<i>Panicum capillare</i>)				
					Rosa					<i>Panicum</i>				
					Com. Blackberry (<i>Rubus allegheniensis</i>)					Reed Canary Grass (<i>Phalaris arundinacea</i>)			D	
Deciduous					Wild Red Raspberry (<i>Rubus idaeus</i>)				U	Timothy (<i>Phleum pratense</i>)				
Manitoba Maple (<i>Acer negundo</i>)					Black Raspberry (<i>Rubus occidentalis</i>)					Common Reed (<i>Phragmites australis</i>)				
Black Maple (<i>Acer nigrum</i>)					Purple-fl. Raspberry (<i>Rubus odoratus</i>)					Canada Blue Grass (<i>Poa compressa</i>)				
Norway Maple (<i>Acer platanoides</i>)		U			Dwarf Raspberry (<i>Rubus pubescens</i>)					Fowl Meadow Grass (<i>Poa palustris</i>)				
Red Maple (<i>Acer rubrum</i>)					<i>Rubus</i>					Kentucky Bluegrass (<i>Poa pratensis</i>)			F	
Silver Maple (<i>Acer saccharinum</i>)					Peach-leaved Willow (<i>Salix amygdaloides</i>)					Yellow Foxtail (<i>Setaria pumila</i>)				
Freeman's Maple (<i>Acer X freemanii</i>)					Bebb's Willow (<i>Salix bebbiana</i>)					Green Foxtail (<i>Setaria viridis</i>)				
Sugar Maple (<i>Acer saccharum</i>)					Pussy Willow (<i>Salix discolor</i>)									
Mountain Maple (<i>Acer spicatum</i>)					Missouri Willow (<i>Salix eriocephala</i>)									
Speckled Alder (<i>Alnus incana</i>)					Sandbar Willow (<i>Salix exigua</i>)									
Downy Serviceberry (<i>Amelanchier arborea</i>)					Shining Willow (<i>Salix lucida</i>)									
Serviceberry (<i>Amelanchier sanguinea</i>)					Black Willow (<i>Salix nigra</i>)									
Yellow Birch (<i>Betula alleghaniensis</i>)					Slender Willow (<i>Salix petiolaris</i>)									
White Birch (<i>Betula papyrifera</i>)					<i>Salix</i>									
European Birch (<i>Betula pendula</i>)					Hybrid Crack Willow (<i>Salix X rubens</i>)									
Blue Beech (<i>Carpinus caroliniana</i>)					Black-berried Elder (<i>Sambucus nigra</i>)									
Bitternut hickory (<i>Carya cordiformis</i>)					Red-berried Elder (<i>Sambucus racemosa</i>)									
Shagbark Hickory (<i>Carya ovata</i>)					Buffaloberry (<i>Shepherdia canadensis</i>)									
Climbing Bittersweet (<i>Celastrus scandens</i>)					Eur. Mountain Ash (<i>Sorbus aucuparia</i>)				U	Sedges				
Common Hackberry (<i>Celtis occidentalis</i>)					Narrow Meadow-sweet (<i>Spiraea alba</i>)					Drooping Wood Sedge (<i>Carex arctata</i>)				
Buttonbush (<i>Cephalanthus occidentalis</i>)					Common Lilac (<i>Syringa vulgaris</i>)					Golden-fruited Sedge (<i>Carex aurea</i>)				
Alt.-leaved Dogwood (<i>Cornus alternifolia</i>)					Poison-ivy (<i>Toxicodendron rydbergii</i>)					Graceful Sedge (<i>Carex gracillima</i>)				
Silky Dogwood (<i>Cornus amomum</i>)					Climbing Poison-ivy (<i>Toxicodendron radicans</i>)					Inland Sedge (<i>Carex interior</i>)				
Bunchberry (<i>Cornus canadensis</i>)					White Elm (<i>Ulmus americana</i>)				R	Bladder Sedge (<i>Carex intumescens</i>)				
Gray dogwood (<i>Cornus racemosa</i>)		U			Siberian Elm (<i>Ulmus pumila</i>)					Lake-bank Sedge (<i>Carex lacustris</i>)				
Round-leaved Dogwood (<i>Cornus rugosa</i>)					Slippery Elm (<i>Ulmus rubra</i>)					Hop Sedge (<i>Carex lupulina</i>)				
Red-osier Dogwood (<i>Cornus sericea</i>)					Low Blueberry (<i>Vaccinium angustifolium</i>)					Pennsylvania Sedge (<i>Carex pennsylvanica</i>)				
American Hazel (<i>Corylus americana</i>)					Maple-leaf Viburnum (<i>Viburnum acerifolium</i>)					Awl-fruited Sedge (<i>Carex stipata</i>)				
Beaked Hazel (<i>Corylus cornuta</i>)					Hobblebush (<i>Viburnum lantanoides</i>)					Fox Sedge (<i>Carex vulpinoidea</i>)				
Cockspur Thorn (<i>Crataegus crus-galli</i>)					Nannyberry (<i>Viburnum lentago</i>)				R	<i>Carex</i>				
English Hawthorn (<i>Crataegus monogyna</i>)					Guelder-Rose (<i>Viburnum opulus</i>)					<i>Carex</i>				
Large-fruited Thorn (<i>Crataegus punctata</i>)		F			Downy Arrow-wood (<i>Vib. rafinesquianum</i>)					<i>Carex</i>				
<i>Crataegus</i>					Riverbank Grape (<i>Vitis riparia</i>)					<i>Carex</i>				
<i>Crataegus</i>					Am. Prickly-ash (<i>Zanthoxylum americanum</i>)					<i>Carex</i>				
Bush Honeysuckle (<i>Dierilla lonicera</i>)										<i>Carex</i>				
Russian Olive (<i>Elaeagnus angustifolia</i>)										<i>Carex</i>				
Autumn Olive (<i>Elaeagnus umbellata</i>)										<i>Carex</i>				
Run. Strawberry-bush (<i>Euonymus obovata</i>)										<i>Carex</i>				
American Beech (<i>Fagus grandifolia</i>)										<i>Carex</i>				
Glossy Buckthorn (<i>Frangula alnus</i>)										<i>Carex</i>				
White Ash (<i>Fraxinus americana</i>)										<i>Carex</i>				
Black Ash (<i>Fraxinus nigra</i>)					Ferns & Allies					<i>Carex</i>				
Green Ash (<i>Fraxinus pennsylvanica</i>)		U			Lady Fern (<i>Athyrium filix-femina</i>)					<i>Carex</i>				
Witch-hazel (<i>Hamamelis virginiana</i>)					Rattlesnake Fern (<i>Botrychium virginianum</i>)					<i>Cyperus</i>				
Winterberry (<i>Ilex verticillata</i>)					Bulbet Bladder Fern (<i>Cystopteris bulbifera</i>)					Redroot Spike-rush (<i>Eleocharis erythropoda</i>)				
Butternut (<i>Juglans cinerea</i>)					Spin. Wood Fern (<i>Dryopteris carthuasiana</i>)					<i>Eleocharis</i>				
Black Walnut (<i>Juglans nigra</i>)					Crested Wood Fern (<i>Dryopteris cristata</i>)					Hard-stem Bulrush (<i>Schoenoplectus acutus</i>)				
Common Privet (<i>Ligustrum vulgare</i>)					Marginal Wood Fern (<i>Dryopteris marginalis</i>)					Three-square Bulrush (<i>Sch. pungens</i>)				
Spicebush (<i>Lindera benzoin</i>)					<i>Dryopteris</i>					Soft-stem Bulrush (<i>Sch. tabernaemontani</i>)				
Fly Honeysuckle (<i>Lonicera canadensis</i>)					Ostrich Fern (<i>Matteuccia struthiopteris</i>)					Dark-green Bulrush (<i>Scirpus atrovirens</i>)				
Glaucous Honeysuckle (<i>Lonicera dioica</i>)					Sensitive Fern (<i>Onoclea sensibilis</i>)					Wool-grass (<i>Scirpus cyperinus</i>)				
Morrow's Honeysuckle (<i>Lonicera morrowii</i>)					Cinnamon Fern (<i>Osmunda cinnamomea</i>)									
Tatarian Honeysuckle (<i>Lonicera tatarica</i>)		U			Interrupted Fern (<i>Osmunda claytoniana</i>)									
Common Apple (<i>Malus pumila</i>)		R			Royal Fern (<i>Osmunda regalis</i>)									
White Mulberry (<i>Morus alba</i>)					Christmas Fern (<i>Polystichum acrostichoides</i>)									
Sweet Gale (<i>Myrica gale</i>)					Eastern Bracken-fern (<i>Pteridium aquilinum</i>)									
Ironwood (<i>Ostrya virginiana</i>)					Marsh Fern (<i>Thelypteris palustris</i>)									
Thicket-creeper (<i>Parthenocissus inserta</i>)										Other Graminoids				
Ninebark (<i>Physocarpus opulifolius</i>)					Field Horsetail (<i>Equisetum arvense</i>)					Broad Bur-reed (<i>Sparganium eurycarpum</i>)				
Balsam Poplar (<i>Populus balsamifera</i>)					Scouring-rush (<i>Equisetum hyemale</i>)					Narrow-leaved Cattail (<i>Typha angustifolia</i>)				
Eastern Cottonwood (<i>Populus deltoides</i>)					Variegated Horsetail (<i>Equisetum variegatum</i>)					Broad-leaved Cattail (<i>Typha X glauca</i>)				
Large-tooth Aspen (<i>Populus grandidentata</i>)					<i>Equisetum</i>					Articulated Rush (<i>Juncus articulatus</i>)				
Trembling Aspen (<i>Populus tremuloides</i>)					Ground-cedar (<i>Lycopodium dlqitatum</i>)					Soft Rush (<i>Juncus effusus</i>)				
Sweet Cherry (<i>Prunus avium</i>)					Shining Clubmoss (<i>Lycopodium lucidulum</i>)					Path Rush (<i>Juncus tenuis</i>)				
Pin Cherry (<i>Prunus pensylvanica</i>)					Ground-pine (<i>Lycopodium obscurum</i>)					<i>Juncus</i>				
Black Cherry (<i>Prunus serotina</i>)										<i>Juncus</i>				
Choke Cherry (<i>Prunus virginiana</i>)														
<i>Prunus</i>														

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

Map Number: _____ Date: _____ Surveyors: _____

C. Chen H.

Plant Species List
2012

Dicot Herbs - Asteraceae					Dicot Herbs					Dicot Herbs				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Common Yarrow (<i>Achillea millefolium</i>)					Shepherd's Purse (<i>Capsella bursa-pastoris</i>)					Kidney-leaf Buttercup (<i>Ranunculus abortivus</i>)				
White Snakeroot (<i>Ageratina altissima</i>)					Cutleaf Toothwort (<i>Cardamine concatenata</i>)					Tall Buttercup (<i>Ranunculus acris</i>)				
Com. Ragweed (<i>Ambrosia artemisiifolia</i>)					Toothwort (<i>Cardamine diphylla</i>)					Hooked Buttercup (<i>Ranunculus recurvatus</i>)				
Giant Ragweed (<i>Ambrosia trifida</i>)					Penn. Bitter-cren (<i>Cardamine pensylvanica</i>)					<i>Ranunculus</i>				
Field Pusstyoos (<i>Antennaria neglecta</i>)					<i>Cardamine</i>					Sheep Sorrel (<i>Rumex acetosella</i>)				
<i>Artemisia</i>					Blue Cohosh (<i>Caulophyllum thalictroides</i>)					Curly-leaf Dock (<i>Rumex crispus</i>)				
Common Burdock (<i>Arctium minus</i>)	UA				Mouse-ear Chickweed (<i>Cerastium fontanum</i>)					Bitter Dock (<i>Rumex obtusifolius</i>)				
Nodding Beggar-ticks (<i>Bidens cernua</i>)					Turtlehead (<i>Chelone glabra</i>)					Bloodroot (<i>Sanguinaria canadense</i>)				
Devil's Beggar-ticks (<i>Bidens frondosa</i>)					Spotted Water-hemlock (<i>Cicuta maculata</i>)					Black Snakeroot (<i>Sanicula marilandica</i>)				
Spotted Knapweed (<i>Centaurea biebersteinii</i>)	UA				Water-hemlock (<i>Cicuta virosa</i>)					Bouncing Bet (<i>Saponaria officinalis</i>)				
Brown Knapweed (<i>Centaurea jacea</i>)					Enchanter's Nightshade (<i>Circaea lutetiana</i>)					Marsh Skullcap (<i>Scutellaria galericulata</i>)				
Chicory (<i>Cichorium intybus</i>)					Carolina Spring Beauty (<i>Claytonia caroliniana</i>)					Mad Dog Skullcap (<i>Scutellaria lateriflora</i>)				
Canada Thistle (<i>Cirsium arvense</i>)					Virginia Spring Beauty (<i>Claytonia virginica</i>)					White Campton (<i>Silene latifolia</i>)				
Bull Thistle (<i>Cirsium vulgare</i>)					Virgin's-bower (<i>Clematis virginiana</i>)					Bladder Campton (<i>Silene vulgaris</i>)				
Horseweed (<i>Conyza canadensis</i>)					Field Bindweed (<i>Convolvulus arvensis</i>)					Hemlock Water-parsnip (<i>Sium suave</i>)				
Daisy Fleabane (<i>Erigeron annuus</i>)					Dog-strangling Vine (<i>Cynanchum rossicum</i>)					Bitter Nightshade (<i>Solanum dulcamara</i>)				
Philadelphia Fleabane (<i>Erig. philadelphicus</i>)					Wild Carrot (<i>Daucus carota</i>)			U		Black Nightshade (<i>Solanum ptychanthum</i>)				
<i>Erigeron</i>					Deptford Pink (<i>Dianthus armeria</i>)					Grassleaf Stitchwort (<i>Stellaria graminea</i>)				
Joe-pye-weed (<i>Eupatorium maculatum</i>)					Squirrel-corn (<i>Dicentra canadensis</i>)					Common Chickweed (<i>Stellaria media</i>)				
Boneset (<i>Eupatorium perforatum</i>)					Dutchman's-breeches (<i>Dicentra cucullaria</i>)					Early Meadow-rue (<i>Thalictrum dioicum</i>)				
Large-leaved Aster (<i>Eurybia macrophylla</i>)					Wild Teasel (<i>Dipsacus fullonum</i>)					Tall Meadow-rue (<i>Thalictrum pubescens</i>)				
Fiat-top Goldenrod (<i>Euthamia graminifolia</i>)					Wild Cucumber (<i>Echinocystis lobata</i>)					Field Penny-cren (<i>Thlaspi arvense</i>)				
Orange Hawkweed (<i>Hieracium aurantiacum</i>)					Viper's Bugloss (<i>Echium vulgare</i>)					Foamflower (<i>Tiarella cordifolia</i>)				
Field Hawkweed (<i>Hieracium caespitosum</i>)					Northern Willow-herb (<i>Epilobium ciliatum</i>)					Star-flower (<i>Trientalis borealis</i>)				
<i>Hieracium</i>					Hairy Willow-herb (<i>Epilobium hirsutum</i>)					Red Clover (<i>Trifolium pratense</i>)				
Elecampane (<i>Inula helenium</i>)					Small-fl. Willow-herb (<i>Epilobium parviflorum</i>)					White Clover (<i>Trifolium repens</i>)				
Prickly Lettuce (<i>Lactuca scariola</i>)					<i>Epilobium</i>					<i>Trifolium</i>				
<i>Lactuca</i>					Worm Mustard (<i>Erysimum cheiranthoides</i>)					Stinging Nettle (<i>Urtica dioica</i>)				
Ox-eye Daisy (<i>Leucanthemum vulgare</i>)					<i>Euphorbia</i>					Greater Bladderwort (<i>Utricularia vulgaris</i>)				
Pineapple-weed (<i>Matricaria discoidea</i>)					Hemp Nettle (<i>Galeopsis tetrahit</i>)					Common Mullein (<i>Verbascum thapsus</i>)				
Tall White Lettuce (<i>Prenanthes altissima</i>)					Wild Madder (<i>Galium mollugo</i>)					Blue Vervain (<i>Verbena hastata</i>)				
Black-eyed Susan (<i>Rudbeckia hirta</i>)					Marsh Bedstraw (<i>Galium palustre</i>)					White Vervain (<i>Verbena urticifolia</i>)				
Tall Goldenrod (<i>Solidago altissima</i>)	UA				Sweet-scented Bedstraw (<i>Galium triflorum</i>)					Water Speedwell (<i>Veron. anagallis-aquatica</i>)				
Blue-stem Goldenrod (<i>Solidago caesia</i>)					<i>Galium</i>					Common Speedwell (<i>Veronica officinalis</i>)				
Canada Goldenrod (<i>Solidago canadensis</i>)					Spotted Geranium (<i>Geranium maculatum</i>)					<i>Veronica</i>				
Zig-zag Goldenrod (<i>Solidago flexicaulis</i>)					Herb-robert (<i>Geranium robertianum</i>)					Cow Vetch (<i>Vicia cracca</i>)				
Giant Goldenrod (<i>Solidago gigantea</i>)					Yellow Avens (<i>Geum alepPICUM</i>)					<i>Vicia</i>				
Early Goldenrod (<i>Solidago juncea</i>)					White Avens (<i>Geum canadense</i>)					Periwinkle (<i>Vinca minor</i>)				
Gray Goldenrod (<i>Solidago nemoralis</i>)					Urban Avens (<i>Geum urbanum</i>)					Dog Violet (<i>Viola conspersa</i>)				
<i>Solidago</i>					Dame's Rocket (<i>Hesperis matronalis</i>)					Yellow Violet (<i>Viola pubescens</i>)				
Field Sow-thistle (<i>Sonchus arvensis</i>)					Virg. Water-leaf (<i>Hydrophyllum virginianum</i>)					Com. Blue Violet (<i>Viola sororia</i>)				
<i>Sonchus</i>					Com. St. John's-wort (<i>Hypericum perforatum</i>)					<i>Viola</i>				
Heart-leaf Aster (<i>Symph. cordifolium</i>)					Spotted Jewelweed (<i>Impatiens capensis</i>)					<i>Phlox</i>		UA		
Heath Aster (<i>Symphotrichum ericoides</i>)					Wood Nettle (<i>Laportea canadensis</i>)									
Tall White Aster (<i>Symph. lanceolatum</i>)					Motherwort (<i>Leonurus cardiaca</i>)									
Calico Aster (<i>Symphotrichum lateriflorum</i>)					Field Peppergrass (<i>Lepidium campestre</i>)									
New England Aster (<i>Symph. novae-angliae</i>)					Eur. Gromwell (<i>Lithospermum officinale</i>)									
Purple-stem Aster (<i>Symph. puniceus</i>)					Butter & Eggs (<i>Linaria vulgaris</i>)									
Common Tansy (<i>Tanacetum vulgare</i>)					Great Lobelia (<i>Lobelia siphilitica</i>)									
Common Dandelion (<i>Taraxacum officinale</i>)	UA				<i>Lobelia</i>									
Com. Goatsbeard (<i>Tragopogon pratensis</i>)					Cut-leaf Bugleweed (<i>Lycopus americanus</i>)									
Coltsfoot (<i>Tussilago farfara</i>)					Northern Bugleweed (<i>Lycopus uniflorus</i>)					Water-plantain (<i>Alisma plantago-aquatica</i>)				
					Fringed Loosetrife (<i>Lysimachia ciliata</i>)					Wild Leek (<i>Allium tricoccum</i>)				
					Moneywort (<i>Lysimachia nummularia</i>)					Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)				
					<i>Lysimachia</i>					Asparagus (<i>Asparagus officinalis</i>)				
					Purple Loosetrife (<i>Lythrum salicaria</i>)					Wild Calla (<i>Calla palustris</i>)				
					Black Medick (<i>Medicago lupulina</i>)					Bluebeard-lily (<i>Clintonia borealis</i>)				
					Alfalfa (<i>Medicago sativa</i>)					Garden Lily-of-valley (<i>Convallaria majalis</i>)				
					White Sweet-clover (<i>Mellilotus alba</i>)					Yel. Lady's Slipper (<i>Cypripedium parviflora</i>)				
					Yellow Sweet-clover (<i>Mellilotus officinalis</i>)					Canada Waterweed (<i>Elodea canadensis</i>)				
					Wild Mint (<i>Mentha arvensis</i>)					Helleborine (<i>Epipactis helleborine</i>)				
					Wild Bergamot (<i>Monarda fistulosa</i>)					Yellow Trout Lily (<i>Erythronium americanum</i>)				
					Small Forget-me-not (<i>Myosotis laxa</i>)					Blue-flag Iris (<i>Iris versicolor</i>)				
					Forget-me-not (<i>Myosotis scorpioides</i>)					Orange Day Lily (<i>Hemerocallis fulva</i>)				
					Water-cren (<i>Nasturtium officinale</i>)					Lesser Duckweed (<i>Lemna minor</i>)				
					Com. Evening-primrose (<i>Oenothera biennis</i>)					Starry Duckweed (<i>Lemna trisulca</i>)				
					Sweet-cicely (<i>Osmorhiza berterii</i>)					Wild Lily-of-valley (<i>Maianthemum canadense</i>)				
					Yellow Wood-sorrel (<i>Oxalis stricta</i>)					False Solomon Seal (<i>Maianthemum racemosum</i>)				
					Wild Parsnip (<i>Pastinaca sativa</i>)					Star False Solomon (<i>Maianthemum stellatum</i>)				
					English Plantain (<i>Plantago lanceolata</i>)					True Solomon Seal (<i>Polygonatum pubescens</i>)				
					Common Plantain (<i>Plantago major</i>)			UA		Pickering-weed (<i>Pontederia cordata</i>)				
					Rugel's Plantain (<i>Plantago rugelii</i>)					Curly-leaf Pondweed (<i>Potamogeton crispus</i>)				
					May-apple (<i>Podophyllum peltatum</i>)					Sago Pondweed (<i>Potamogeton pectinatus</i>)				
					Pale Smartweed (<i>Polygonum lapathifolium</i>)					<i>Potamogeton</i>				
					Lady's-thumb (<i>Polygonum persicaria</i>)					<i>Potamogeton</i>				
					Virginia Knotweed (<i>Polygonum virginianum</i>)					Broad-leaved Arrowhead (<i>Sagittaria latifolia</i>)				
					<i>Polygonum</i>					Blue-eyed-grass (<i>Sisyrinchium montanum</i>)				
					<i>Polygonum</i>					Herb. Carrion Flower (<i>Smilax herbacea</i>)				
					Rough Cinquefoil (<i>Potentilla norvegica</i>)					Bristly Greenbrier (<i>Smilax hispida</i>)				
					Rough-fruited Cinquefoil (<i>Potentilla recta</i>)					Nodding Ladies' Tresses (<i>Spiranthes cernua</i>)				
					Common Cinquefoil (<i>Potentilla simplex</i>)					Rose Twisted-stalk (<i>Streptopus lanceolatus</i>)				
					<i>Potentilla</i>					Skunk-cabbage (<i>Symplocarpus foetidus</i>)				
					Heal-all (<i>Prunella vulgaris</i>)					Purple Trillium (<i>Trillium erectum</i>)				
					Shinleaf (<i>Pyrola elliptica</i>)					White Trillium (<i>Trillium grandiflorum</i>)				
										Large-flowered Bellwort (<i>Uvularia grandiflora</i>)				

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

Map Number: 582-BLW1315	1	CUMI-1	4
Date: May 16, 2012	2		5
Surveyors: RA, SG	3		

ASA.

Significant Wildlife Habitat Form

AECOM

Study Area:	<u>BLW</u> JER GSH	Map #:	<u>S82 BLW 1315</u>
Date:	<u>April 16, 2017</u>	Time Started:	<u>10:00 am</u>
Field Staff:	<u>Shelley SG, RA</u>	Time Finished:	<u>10:45 am</u>
Weather Conditions:	<u>overcast, 100% cloud, 6°C, moderate wind.</u>		

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: _____

Description 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: _____

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, turtles (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, dimensions, 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 - Bluewater



Map No: 582 BLW 1315
 Date (yyyy-mm-dd): 2012 May 16
 Field Staff: S.G. RA
 Time Started: 10:00 AM
 Time Finished: 1:15 PM

Observed Species List

Species Code	UTM	EV	Notes	Species Code	UTM	EV	Notes
<u>Redwing Black bird</u>		<u>DB</u>					
<u>American robin</u>		<u>VO</u>					
<u>Yellow warbler</u>		<u>VO</u>					
<u>Warbler</u>		<u>VO</u>					
<u>Song Sparrow</u>		<u>VO</u>					

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=Distinctive Parts, HO=House/Den, FY=Eggs/young, TK=tracks, FE=Feeding evidence, SC= Scat, SI=Other signs (specify)

ELC	Species	Habitat Description	Habitat Present (Y/N; UTM; description of habitat if present)
FOD7	American Gromwell (Lithospermum latifolium) - S3 Bloom Time - Spring	Shaded river banks, wooded floodplains. River floodplains, woods and edges of woods.	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;
FEO, FES, FET	Bald Eagle (Haliaeetus leucocephalus) - SC Beaked Spike-Rush (Eleocharis rostellata) - S3 Bloom Time - May to October	Assessed as SWH. Record species if found. Found among fens, calcareous shores and meadows.	not required. Y (N) UTM;
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, creek borders, wet borders of streams and rivers. Also found among calcareous seepage slopes.	Y (N) UTM
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;
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;
FOD6, FOD7, FOD9	Eastern Ribbonsnake (Thamnophis sauritus) - SC Green Dragon (Arisaema dracontium) - SC/S3 Bloom Time - May and June	Assessed as SWH. Record species if found. Species found in damp deciduous forest and along river streams. Particularly Maple forest and forest dominated by Red Ash and White Elm.	not required. Y (N) UTM;

Species of Conservation Concern Habitat and Incidental Wildlife – Bluewater

AECOM

ELC	Species	Habitat Description	Habitat Present (Y/N); UTM; description of habitat if present
FE01, FES1, FET1, SWC, SWM, SWD, SWT, TPO, TPS, TPW	Haiky Valerian (<i>Valeriana edulis</i>) - S1 <i>Bloom Time</i> - June to August	Inhabits swampy river flats and meadows, wet prairies, and wooded, rocky riverbanks and fens.	Y (N) UTM:
FOD6, FOD7, FOD8, FOD9	Harbinger-of-spring (<i>Erigenia bulbosa</i>) - S3 <i>Bloom Time</i> - early to late April	Occurs in rich, moist deciduous woods, especially on floodplains.	Y (N) UTM:
SAS1, SAM1, SAF1	Hill's Pond Weed (<i>Potamogeton hillii</i>) - SC/S2 <i>Bloom Time</i> - 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 (<i>Platanthera macrophylla</i>) - S2 <i>Bloom Time</i> - 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 (<i>Saururus cernuus</i>) - S3 <i>Bloom Time</i> - 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:
FOD, FOM	Louisiana Waterthrush (<i>Seiurus motacilla</i>) - 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. Assessed as SWH. Record species if found.	Y (N) UTM:
-	Milksnake (<i>Lampropeltis triangulum</i>) - SC	Their larvae only feed on milkweeds (<i>Asclepius</i> spp.). Habitat includes abandoned farmland, along roadides, open spaces where these plants grow	Y (N) UTM: Very low (N/A)
CUM1, CUT1, CUW1	Monarch Butterfly (<i>Danaus plexippus</i>) - SC	Found in cedar woodlands, limestone plains and wooded fens, moist coniferous swamps, dry-sandy woods, and limestone barren.	Y (N) UTM:
CUW1, ALO, FET1, SWC	Ram's-head Lady's-slipper (<i>Cypripedium arietinum</i>) - S3 <i>Bloom Time</i> - mid May to mid June	Species inhabits open, dry sandy woods, Jack pine, oak, and aspen woodlands.	Y (N) UTM:
FOD1, FOD2, FOD3, FOD4, FOD5, FOC1, FOM1, FOM5	Rattlesnake Hawkweed (<i>Hieracium venosum</i>) - S2 <i>Bloom Time</i> - April - September	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:
FOD, CUW, CUT	Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) - SC	Found in moist, rich woods, thicket swamps, banks and floodplains.	Y (N) UTM:
FOD6, FOD7, FOD8, FOD9, SWT2, SWT3	Scarlet Beehalm (<i>Monarda didyma</i>) - S3 <i>Bloom Time</i> - May to October	Assessed as SWH. Record species if found.	Y (N) UTM:
-	Short Eared Owl (<i>Asio flammeus</i>) - SC	Occurs in oak/oak-pine scrub, chaparral, barrens, well-drained sandy or shaly soils.	Y (N) UTM:
TPS, TPW	Sleepy Duskywing (<i>Erynnis brizo</i>) - S1	Species regularly seen at flowers in oak woods, on the ground, and at mud puddles	Y (N) UTM:
SDO1, SDS1, SDT1	Slender Vulpia (<i>Vulpia octoflora</i>) - S2	Species inhabits dry, sandy habitats, including rocky woods meadows, dry forests, and stabilized dunes	Y (N) UTM:
SDT1, FOD5, FOD9	Slim-flowered Mithy (<i>Muhlenbergia tenuiflora</i>) - 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:
-	Snapping Turtle (<i>Chelydra serpentina</i>) - SC	Assessed as SWH. Record species if found.	not required.
BLO1, BLS1, BLT1, TPO2, TPS2, TPW2, MAM2, FOD7	Stiff Gentian (<i>Gentiana quinquefolia</i>) - S2 <i>Bloom Time</i> - 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:
TPS1, TPW1, CUW1, RBO, SBO	Sundial Lupine (<i>Lupinus perennis</i>) - S3 <i>Bloom Time</i> - 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:
FE0, FES, FET, MAM2, MAM3	Tuberous Indian Plantain (<i>Arnoglossum plantagineum</i>) - S3 <i>Bloom Time</i> - 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:
FOD5	West Virginia White (<i>Pteris virginiana</i>) - SC	This species is restricted to rich, moist, deciduous woods, where its foodplant <u>Toothwort</u> occur	Y (N) UTM:
FOC1, FOC2, FOC3, FOC4	Woodland Pinedrops (<i>Pterospora andromedea</i>) - S2 <i>Bloom Time</i> - 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 (<i>Spiranthes ochroleuca</i>) - S2 <i>Bloom Time</i> - 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 10
-	Yellow-breasted Chat (<i>Icteria virens</i>) - 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: