$\bigcirc$					$\bigcirc$		4			L'			ſ	
FLO	Map #: 22763H	1605	Polygon:		Ť,	i Troi	e Tally by S	naciae				Dei	sm Facto	or 2
	Surveyor(s):	Date:	Time si	art: ]1:586m			Species	Tally	4	Tally 2	Taily 3	Tally 4	Total	Rel. A
Description and	Jess Piette + Tur Sha			ish: 3 10 pm			Species	lany		Tany 2	Tany 3	. Tany 4	Totar	INCI. AN
Classification	UTMZ:	UTMZ:	UTMI	N: 7/17										
olygon De	scription			£	1-			$\rightarrow$	$ \rightarrow $					
System	Substrate	Topographic Feature	Plant Form	Community					$\rightarrow$					
Terrestrial	Organic Mineral Soil	Lacustrine Riverine	Plankton Submerged	Lake Pond							$\leftarrow$		1	
Aquatic	Parent Min.	Bottomland	Floating-LVD.	River	Ē	otal							1	100
Site	Acidic Bedrk		Graminoid Forb	Stream			Area (BA)					$\searrow$	ļ	
Open Water Shallow Water	Basic Bedrk	Uvalley Slope				)ead					·	<u>.</u>	1	
Surficial Dep.		Roll. Upland	Bryophyte			501	<u>Is Ontario a</u>	nd ELO	; 50	IS De	script	ion		
Bedrock History				Bog Barren			Pit/Auger #						Su	ımmar
Natural		Crevice/Cave	Mixed	Meadow			Zone							
		Alvar Rockland	1	Prairie Thicket		S	Easting						M	oisture
Cover Open		Beach / Bar				etri	Northing							Regime
Shrub		Sand Dune		Woodland		Site Metrics	Position		$\sum$					
Treed		Bluff		Forest Plantation		ŝ	& Aspect			$\sum$				
tand Desci	intion	A	• • • • • •				Percent			$\vdash$				
tand Desci	-						Slope Length						D	rainag
ayer HT CV		s In Order of Decre ch Greater Than; >					Mottles				$\rightarrow$			
1 4 2		esach - Ostvin		our Equar TO			Gley							
2 3 3	Tilamer > Ulu	ICIMPY DIFICULT				Depth to	Water Table					$\overline{\}$		ffective 'exture
3 4 2		DOCC> PILLING	- ( č. )				Carbonates							ndicate
- 6		5-1m 4>1-2m	T 1 1 1 1	the second se			Bedrock							below)
T Codes:         7 < 0.2m           VR Codes:         0 = none		.5-1m 4>1-2m 5% 3.25-(60% 4>	3 >2-6m 2 >6-25m 60%	1 >25m			1 Depth from zero		% CF		% CF	%0	75	%
			•				Texture	I	$\leftarrow$					
Stand Composition				25-50 7 >50										
	Standing Deadfall						2 Depth from		% CF	$\square$	% CF	% (	F	%
BA: bundance Codes:		I Logs: 0 <10		25-50 💦 >50		_	Zero Texture			$\vdash$	4			1
Jungance Codes:	$\mathbf{N} = \mathbf{NOB}$ $\mathbf{K} = \mathbf{K}$		M - ADURIDARI				TEAUIE							
Com. Age:	Pioneer X Y	oung 🖂 Mid-A	ge Mature	Old Growth		escription	3 Depth from		% CF		% CF	% (	F	%
						nes	zero				$\perp$			
		naple Rudiums (					Texture							
Vegetation Fres	H-MOIST Sugar M	ape-Itardword D	Endura Code:	FUD6-5-			_ Depth from		% CF		% CF	80	F	%
Type: Inclusion: M	ineral Cultural	Woolland	Code:	CUNI			4 zero					$\perp$		
Complex:	· · · ·		Code:			8	Texture					$\backslash$		
ommunity	Profile Dia	gram/Comm	ents . o A	A 4		$\vdash$	% Surface					<u> </u>		·
* Qro	is amently	being used as	a memorial Po	nk with trab			Stone/Rock							
the (	ther and new that	us and when the const	withd	nk with trab		Π	Moisture Regime				T			
* M	neral cultural wi	riland has acars	erch, Prapeno, PSTV	19. Tilgmer		h	Drainage							
		· · · · · · · · · · · · · · · · · · ·				1	· · · · · · · · · · · · · · · · · · ·			L		al a		/
lotes:	4	microtypy raphy	\$15 undulat	in creating	1		then community	on N	ing si	ve of a	arne is	F. Of Jun	matine	, (you
							TEN IN A		- Had I	annath on	dod in	1000 11 -	h h	1 4

nature (young) h it has the pame Y Veyetition Comprition.

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FLC	Map #: 227 GSH /	605	Polygon:		
Community	Surveyor(s): JESS Viette + Tom	Share April 1	Tim		11:58 am
Description and Classification	UTMZ:		5, 1013	UTMN:	3:10 P.m.

#### Polygon Description

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

#### Stand Description

Layer	HT	CVR	Species in Order of Decreasing Dominance (up to 4 sp) (>> Much Greater Than; > Greater Than; = About Equal To)
1	2		UIM Ames
2			
3		211	A
4	5	4	Phaatun > Dacglon = Sol SP

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

Stand Composition:	Size Class Analysis:	<10	] 10-24 [	25-50	>	50
	Standing Snags:	<10	10-24	25-50	>	50
BA:	Deadfail/Logs:	- <10	10-24	25-50	>	50

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

Com. Age:	Pioneer Young Mid-Age	Mature	Old Growth
Ecosite:	mineral cultural mendow.	Code:	CUM
Vegetation Type:			CUMI-1
Inclusion:		Code:	
Complex:		Code:	

#### Community Profile Diagram/Comments



		Species	Tally	1	Tally 2	Tally 3	3 Ta	ity 4	Total	Rel. Avg
									roun	
	•									
	t			-					1.	
	1	с — п			/					
	1					r				
	译									
oti		/								100
88	al Are	a (BA)								
ea	لله		-							
50	ils	Ontario ar	nd EL(	C So	ils De	scrip	tion			/
	) F	Pit/Auger #							Su	mmary
	.D.	Zone								
<b>"</b>	MTU	Easting							- ٦	
	2	Northing			<u> </u>			• • •	⊣ 1⁄2	<b>6isture</b>
		Position			<u> </u>				⊣⁄*	egime
8	1						_		$\mathbf{I}$	
ō	Slope	Aspect	_					/	4	
	Slo	Percent							4	
	1	Slope							D	rainage
_		Length				-			-	
:	Mott						$-\!\!-$		-	
ueptn to	Gley	er Table	·	-			-		- EI	fective
	1									exture
ŝ	1.0	onates		_						ndicate
	Bed								t	elow)
	j1	Depth from zero		% CF	/	% CF		% CF		% CI
	2	Texture		5	/-	1				
	2	Depth from zero	1	% CF		% CF		% CF		% C
	i.	Texture		/						
	3	Depth from		% CF		% CF		% CF		% C
ŝ	ď.	zero Texture	$ \rightarrow $	· · · · · ·		1				
	1									
	4	Depth from zero		% CF		% CF	17.	% CF	-	% CI
5	1	Texture								
		%/Surface Stone/Rock	_							
	Mois	ture Regime								

Page 1 of 2

### Plant Species List

Trees & Shrubs	1	2	3 4	4 5	2012 Tree & Shruba   1   2   3   4   5 Graminoids	Te	5	5		T
Conifers	È	Ĩ	1	1	Deciduous Grasses	┿┦	Ľ	3	-	╞
alsam Fir (Abies balsamea)			T	T	White Oak (Quercus alba) Giant Redtop (Agrostis gigantee)	+	Η	Н	-	ŧ
common Juniper (Juniperus communis)			1		Bur Oak (Quercus mecrocarpe)				-	İ
astern Red Cedar (Juniperus virginiana)	L		1	1.	Red Oak (Quercus rubra) Awnless Brome (Bromus Inermis)					l
amarack (Larix laricina)		$\square$		-1	Alder Buckthom (Rhamnus alhifolia) Bromus	1.1	[ ]		-	t
lorway Spruce (Picea ables)				1	Common Buckthorn (Rhamnus cathartice) R Blue-joint Grass (Calamagrostis canadansis,		ſ I			ŀ
Vhite Spruce (Pices glauce)	Ļ				Smooth Sumac (Rhus glabra) Orchard Grass (Dectvils clomerata)	T	u	U		t
llack Spruce (Picea marlana)	-	- +			Staghorn Sumac (Rhus hinta)	T				ľ
ack Pine (Pinus banksiane)				4	Wild Black Currant (Ribes americanum) Quack Grass (Elymus repens)	11			-	ľ
ted Pine (Pinus resinose)					Prickly Gooseberry (Ribee cynosbeti) Virginia Wild Rye (Elymus virginicus)	Τ.Ι				I
astern White Pine (Pinus strobus)	-				Swamp Black Currant (Ribes lacustre)	11			_	I
cotch Pine (Pinus sylvestris)		-		+	Red Currant (Ribes rubrum)					ſ
Canada Yew (Texus canadansis)		-			Ribes Fowl Manna Grass (Glyceria strieta)	$\Box$				l
astem White Cedar (Thuja occidentalis)	0	-			Black Locust (Robinia pseudo-acacia) Giycaria					ſ
astem Hemiock (Tsuga canadensis)	D.				Prickty Rose (Rose acicularis) Rice Cut Grass (Leersia oryzoides)					
			- [		Smooth Rose (Rosa blande) Tail Fescue (Lolium arundinaceum)					ľ
Deciduous	÷			-	Multillora Rose (Rose multillora) Rose ///. D Witch-onse (Parkium caoliare)					Į.
lanitoba Maple (Acer negundo)	$\{l_{i}\}_{i}$		-	-		11				
lack Maple (Acer nigrum)	$\vdash$	$\square$	-+-		Com Blackberry (Rubus ellegheniensts)	-		_		L
lorway Maple (Acer platanoides)		-	+		Wild Red Raspberry (Rubus ideeus)	R	E	F		L
led Maple (Acer rubrum)		-	-†-	-	Black Respberry (Rubus occidentalis) Timothy (Phleum pratense)	4-4		-	_	Ĺ.,
liver Maple (Acer seccharinum)		-			Purple-fl. Raspberry (Rubus odoratus) Common Reed (Phregmites australia) Dwarf Raspberry (Rubus pubescens) Canada Blue Grass (Poe compresse)	1-1			. 1	Ĺ.
reeman's Maple (Acer X freemanii)		ŀ	-+	+		- -	. 1		- 1	Į.
ugar Maple (Acer saccharum)	F	i ł		-			. 1	. 1	- 1	İ.
Aountain Maple (Acer spicetum)	¥ -	Ч	-+-	+	Peach-leaved Willow (Salix amygdatoides) Kentucky Bluegrass (Poa pretensia) Bebb's Willow (Salix bebblane) Yellow Foxtali (Setaria oumita)	+ 1	- 1	-	1	í
peckled Alder (Alnus incens)		-		+ •		· <b> </b>	_		-1	F
owny Serviceberry (Amelanchier arborea)	- 1			+	Pussy Willow (Saltz discolor) Green Foxtall (Setarla vindia) Missourt Willow (Saltz eriocephala)	1-1	ļ	. 1	. 4	ŀ
ervicebeny (Amelanchier sanguinea)		-		+	Sandbar Willow (Saliz exigua)	+ +	4	- 1	4	F
'ellow Birch (Betula alleghaniensis)		1	-	1-	Shining Willow (Sala singua)	1 4	4	1	-1	
Vhite Birch (Betula papyrflera)		t t	-1		Black Willow (Saba nigra)	11	- 1	- 1	1	
uropean Birch (Betule pendula)			- 1 -	1	Slender Willow (Saltz petiolaria)	+ +	- 1			
lue Beech (Carpinus caroliniana)	-	÷		1-	Salin Salin (Salin perchang)	₽ŀ.	-	-		-
itternut hickory (Carya cordiformis		- +	-†-	+-	Hybrid Crack Willow (Salbr X rubens)		-+	- 1		Ē
hagbark Hickory (Carya ovata)		-	+	+-	Black-bernied Elder (Sembucus nigra)		-+	· i	-+	è
Imbing Bittersweet (Celestrus scandens)	- 1	t		-	Red-berried Elder (Sambucus racemosa)	4		÷	-1	1
common Hackberry (Cettis occidentalis)	- 1	-		-	Buffaloberry (Shepherdia canadensis) Sedges	ŧ ₽	-	-	÷	į.
utionbush (Cephalanthus occidentalis)	- 1		-		Eur. Mountain Ash (Sorbus aucuperia)	4 1	1		ł	i.
Itleaved Dogwood (Cornus alternifolia)	- 1	1	-		Narrow Meadow-sweet (Sprace alba)	l l	1		1	
liky Dogwood (Comus amomum)	~1	1		-	Common Lilac (Syringa vulgaria) Graceful Sedge (Carex gracilima)	₽7 ÷	- 1		T	2
unchberry (Comus canadensis)	-	+	-+-	-	Polson-ivy (Toxicodendron rydbergi) Inland Sedge (Carex interior)	+	+	4	- 1-	-
	R						2	-+	-	
tound-leaved Dogwood (Comus rugose)	1	÷ŧ	•		Climbing Polson-tvy (Toxicodendron radicana) R Bladder Sedge (Carex intumescans) White Elm (Ulimus emericana) U R R Lake-bank Sedge (Carex lacustris)	1 +	6	1	-	i.
ed-osler Dogwood (Comus serices)	- 1	-1		1-1	Siberlan Elm (Ulmus pumila)	ł ł	- +	- 1	1	
merican Hazal (Corylus emericana)	- f	· 1		+	Slippery Elm (Ulmus rubre) Pennsylvenia Sedge (Carex lupuster)	F F		1		
eaked Hazel (Corylus comuta)			-1	+ -		+ +	- 1		+	ŝ
ockspur Thom (Crataegus crus-galli)	-			1	Low Blueberry (Vecchium angustibilium) Awi-fruited Sedge (Carex stipata) Maple-teaf Viburnum (Viburnum ecarifolium) Fox Sedge (Carex vulpinoides)	1	- F	+	+	
nglish Hawthorn (Crataegus monogyna)		~†	1			1.1	-			
arge-fruited Thom (Crataegus punctate)	-1	-†	1-		Nannyberry (Vibumum lentago)	<b>₩</b> į		-	-1	
rataogus	- 1	1		1-1	Guelder-Rose (Viburnum opulus)	ł ł		1	÷	
rataegus	-	-			Downy Arrow-wood (Vib. rafinesquianum)	+ +	-1	ł	÷	
ush Honeysuckle (Dierville Ionicera)	- 1		1	t I	Riverbank Grape (Vitis riparia)					
ussian Olive (Elesegnus angustifolia)	<u> </u>	t	1	1 1	Am Prickly-ash (Zenthoxytum americanum) Carax			ł	ł	
utumn Olive (Elseegnus umbeliata)	1				Carex	ΗĒ	÷	+	ŧ.	
un. Strawberry-bush (Euonymus obovata)	1	1	T-	T	TI AMI F Carex	+	+	-t	÷	-
merican Beech (Fegus grandifolia)	FI	-			Carex		+	1	+	-
lossy Buckthom (Frangula alnus)		· 1	F	i I	Carex	t t	t	÷	÷	•
(hite Ash (Fraxinus americana)	-	1	1	1	Ferns & Allies			ŀ	1	
ack Ash (Fraxinus nigra)	1		T.		Lady Fern (Athyrtum fibs-femine ) Carex		1			
reen Ash (Fraxinus pennsylvanice)	1	at:	1	[ ]	Rattlesnake Fem (Botrychlum virginianum) Cyperus	11	ł		ł	ŝ
litch-hazel (Hamamalis virginiana)	T	T	T	11	Bulbet Bladder Fern (Cystopteris bulbifera) Redroot Spike-rush (Eleocharis arythropoda)	•••••	1	ł	1	-
Interberry (liex verticitete)	T	1			Spin. Wood Fern (Dryopteris carthusiana) Eleocharis	r+	+	-1	-	
utternut (Jugians cinerea)	.1	F	J		Created Wood Fern (Dryopteris cristata) Herd-stern Butrush (Schoenoplectus acutus)	$\vdash$	Ŧ	+	+	-
lack Walnut (Juglans nigra)	1	T	T		Marginal Wood Fern (Dryopteris marginalis) [] [] [] Three-square Butrush (Sch. pungens)	1.7.1	t	t	+	ŝ
ommon Privet (Ligustrum vulgare)	.1	Ľ	1	Π	Dryopter/s Soft-stem Bulrush (Sch. tabemaemoritan)	11	1	1	1	
picebush (Lindere benzoin)	- [	1	1.		Ostrich Fern (Matteuccia struthiopteris) Dark-green Bulrush (Scirpus etrovinens)		ł	ł	1	
y Honeysuckle (Lonicere canadensis)	[	. I.	1	1	Sensitive Fem (Onoclea sensibilis) Wool-grass (Scirpus cyperinus)		t	1	1	
laucous Honeysuckle (Lonicere dioica)	_[	ľ	L		Cinnamon Fem (Osmunde cinnamomea)		٦Ť.	1	-	1.00
orrow's Honeysuckle (Lonicera morrowii)	L	T			nterrupted Fern (Osmunda claytoniana)		+	+	+	-
intarian Honeysuckle (Lonicera taterice)	I	1	1		Royal Fern (Osmunda regalis)		+	t	+	-
ommon Apple (Malus pumile)		1	1.		Christmas Fern (Polystichum acrosticholdes)	11	1	T	1	
hite Mulberry (Morus alba)	1	1.	1		Eastern Bracken-fern (Pteridium aquilinum)		t			
weet Gale (Myrica gale)	-1	1	1.		Marsh Fern (Thelypteris palustris) Other Graminoids	11	t	1	t	1
nwood (Ostrya virginiana)	1	u.			Broad Bur-reed (Sparganium surycarpum)	11	t	1	t	
icket-creeper (Parthenociseus inserta)			1		Narrow-leaved Cattail (Typha angustifolia)		1	1	1	-
nebark (Physocarpus opulifolius)	Т	1			Field Horsetall (Equisetum arvense) Broad-leaved Cattall (Typhe latificita)		T	Ť	t	-
Isam Poplar (Populus baisamifera)			1		Scouring-rush (Equisetum hyemale) Broad-leaved Cattali (Typha X glauca)		+	-1-	+	-
atem Cottonwood (Populus deltoides)		Ľ	1		Variegated Horsetall (Equisetum veriegatum) Articulated Rush (Juncus articulatus)		1	1	t	
rge-tooth Aspen (Populus grandidentata)					Equisetum Soft Rush (Juncus effusus)	11	t		1	
embling Aspen (Populus tremuloides)		_[	1		Ground-cedar(Lycopodium digitatum) Path Rush (Juncus tenuis)		1	1	1	
weet Cherry (Prunus evium)	T		L		Shining Clubmoss (Lycopodium lucidulum)	1	t	t	t	
n Cherry (Prunus pensylvanica)	T	Т	T		Bround-pine (Lycopodium obscurum)	1	Ŧ	+	+	-
ack Cherry (Prunus serotine)	C	T	J				+	+	+	-
	沽	-1-	1	П		·* . •	+		-	ŀ
unus	-1-			+		+	-1-	÷	Ŧ	
Dominant: represented by large numbers; generally f	brmi	ng >	10% 0	round	cover or >25% vegetation cover in any one stratum	1	4	4	1	-
Febry common ("Abundant in ELC) : generally widea	0784	dime	10.101	inci in	Birly lance cumbers of individual change: county framing >1/06, one and ensure					
	0/100	d ace	derad	Indiv	chails or represented by one or more churge of meny individuals (most species will fail into this cateroon)		-			-
Uncommon (=Occasional in ELC) : present as wides;										
Uncommon (=Occasional in ELC) : present as wides; Rere : represented in the polygon by less than about in	ve in	divid	uels or	-						
Uncommon (=Occasional in ELC) : present as wides Rere : represented in the polygon by less than about ih	ne in	divid	unda ca	s/ne			T	-	1	_
Uncommon (=Occasional in ELC) : present as wides;		divida			FDDC-5 4 CAM/1	T	Ŧ	Ţ	4.	

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#### Plant Species List 2012

	141	2	21	416	2012	14	1.2	12	4	
Dicot Herbs - Asteracese Common Yarrow (Achilles millefolium )	H	4	311	1 3	Dicot Herbs Shepherd's Purse (Capsella bursa-pestoris)	+	12	3		Dicot Herbs         1         2         3         4           Kidney-leaf Buttercup (Ranunculus abortivus)         I
White Snakeroot (Ageratina altissima)	t-t	-	t	+	Cutleaf Toothwort (Cardamine concatenata)		1.0	+ 1		Tall Buttercup (Ranunculus ecris)
Com. Ragweed (Ambrosie artemialifolia)			1	-	Toothwort (Cardamine diphytle)		1		-	Hooked Buttercup (Ranunculus recurvatus)
Giant Ragwaed (Ambroala trifida )					Penn. Bitter-cress (Cardamine pensylvanica)		1			Ranunculus
Field Pussyloes (Antennaria neglecta)	L T	. 1	T	-	Cerdamine	·	1			Sheep Sorrel (Rumex acetoselle)
Artemisia		<u> </u>	1	1	Blue Cohosh (Caulophyllum thalictroides)	T	1			Curly-leaf Dock (Rumex crispus)
Common Burdock (Arctium minus)					Mouse-ear Chickweed (Cerastium fontenum)		Ī			Bitter Dock (Rumex obtustfolius)
Nodding Beggar-ticks (Bidens cemua)					Turtishead (Chelone glabre)	1	I			Bloodroot (Sanginaria canadense)
Devil's Beggar-ticks (Bidens frondose)					Spotted Water-hemiock (Cicute maculate)	1	1			Black Snakeroot (Sanicula marilandica)
Spotted Knapweed (Centaurea biebersteinii)		1.		1.	Water-hemiock (Cicuta virosa)		1			Bouncing Bet (Seponaria officinatis)
Brown Knapweed (Centaures Jaces )				4.	Enchanter's Nightshade (Circaee lutetiane)	111				Marsh Skulicap (Scutellaria galericulata)
Chicory (Cichorlum intybus)			_	-	Carolina Spring Beauty (Claytonia caroliniane	)] -	1			Mad Dog Skulicap (Scutellaria lateriflore)
Canada Thistle (Cirsium arveense)	┝╌┝	-	_	- -	Virginia Spring Beauty (Claytonia virginica)	÷.				White Campion (Silene latifolie)
Bull Thistie (Cirsium vulgere)					Virgin's-bower (Clematis virginiane)	+	+ -		-	Bladder Campion (Silene vulgaris)
Horseweed (Conyze canadensis)					Field Bindweed (Convolvulus arvansis)	+	<b>†</b> -	1	-	Hemiock Water-paranip (Sturn sueve)
Daisy Fleabane (Engeron annus)			-+-		Dog-strangling Vine (Cynanchum rossicum)	1.	1.1		+	Bitter Nightshade (Solanum dukamara)
Philadelphia Fleabane (Erig. philadelphicus) Erigeron		-	-		Wild Carrol (Deucus carota) Deptford Pink (Dianthus armenta)	IN	UN.	M		Black Nightshade (Solanum ptychanthum)
Joe-pys-weed (Eupetonium maculatum)				-	Squinel-com (Dicentra canadensis)	1		+		Grassleaf Stitchwort (Stellaria graminea)
Boneset (Eupatorium perfoliatum)	** **	· +-	+	+-	Dutchman's-breeches (Dicentre cuculieria)					Early Meadow-rue (Thelictrum dioicum)
Large-leaved Aster (Eurybia macrophylla)	┝─┢	•	-[-	-	Wild Teasel (Dipsacus futionum)	10	1	κ,		Tall Meadow-rue (Thalictrum pubescens)
Flat-top Goldenrod (Euthamia grammifolia)		-+-	-†-	-	Wild Cucumber (Echinocystis lobata)	P	+	ľ		Field Penny-cress (Thiaspi aivense)
Orange Hawkweed (Hieracium aurantiacum)	-	-1-		+	Viper's Bugloss (Echium vulgare)	1	t	1-1	1	Foamflower (Tiarella conditolia)
Field Hawkweed (Hieracium ceespitosum)		- †-	1	-1	Northern Willow-herb (Epilobium ciliatum)	10	1 -	t I		Star-flower (Trientalis borealis)
Hieracium	-		Ŧ		Hairy Willow-herb (Epilobium hirsutum)					Red Clover (Trifolium pratense)
Elecampane (Inula helenium)		1	1	1	Small-II. Willow-herb (Epilobium perviflorum)		1			White Clover (Tritolium repens)
Prickly Lettuce (Lactuca serriola)		1	T	T	Epilobium	T	1			Trifokum
Lactuca		T	1	L	Norm Mustard (Erysimum cheirenthoides)		1	11		Stinging Nettle (Urtica diolca)
Ox-eye Delay (Leucanthemum vulgare)			1	L	Euphorbia	Г	1		T	Greater Bladderwort (Utricularia vulgaris)
Pineapple-weed (Matricaria discoidea )	LT	Т.	Τ.		Hemp Nettle (Galeopsis tetrahit)				. T	Common Mullein (Verbascum thapsus)
Tall White Lettuce (Prenanthes atlasima)	T	ſ	1	_	Wild Madder (Galium mollugo)	1	1.		1	Blue Vervain (Verbena hastata)
Black-eyed Susan (Rudbeckia hirta)	ļ. <b>ļ</b> .			4	Marsh Bedstraw (Gallum palustre)		1			White Vervain (Verbena unticifolia)
Tall Goldenrod (Solidego allissime)	┝- ╺┡-	.			Sweet-scented Bedstraw (Gallum triflorum)	1.	1	<u>                                     </u>		Water Speedwell (Veron. anagallis-aquatica)
Blue-stem Goldenrod (Solidago caesia)				+	Gelium fough	JR.	1=			Common Speedwell (Veronice officinells)
Canada Goldenrod (Solidego canadensis)	┝─┡				Spotted Geranium (Geranium maculatum)	In.	h	j		Veronice
Zig-zag Goldenrod (Solidago flexicaulis)	<b>ļ</b> .	-	+.	+	Herb-robert (Geranium robertianum)	A	Į.,			Cow Vetch (Vicie crecce)
Giant Goldenrod (Solidego gigantee)	l.		4.		fellow Avens (Geum aleppicum)		Ļ.		.  .	Vicia
Early Goldenrod (Solidago juncea)		-	1		White Avens (Geum canadense)		ļ		ł	Perfwinkle (Vince minor)
Gray Goldenrod (Solidago nemoralis )	1.1	de	÷		Jrban Avens (Geum urbanum)	ł	-			Dog Violet (Viole consperse)
Solidago <u>pp</u> . Field Sow-thistle (Sonchus ervensis)	мµ	ЦU	4.		Dame's Rocket (Hesperis matronalis) /irg. Water-leaf (Hydrophyllum virginianum)	+ -	ł	-	<del> </del> -	Yellow Violet (Viole pubescens) Com. Blue Violet (Viole soronis)
Sonchus		+	-+-	+-+	Com. St. John's wort (Hypericum perforatum)	Ø	R	2	-+-	Viole
Heart-leaf Aster (Symph. cordifolium)		1	÷	+	Spotlad Jewelweed (Impatiens capensis)	45	1	Б		
Heath Aster (Symphyotrichum ericoides)		-	1		Nood Nettle (Leportes canadensis)	1.	t		· E	
Tall White Aster (Symph. lanceoletum)		1	1	1-1	Notherwort (Leonurus cardiaca)	1	1		- † -	* *****
Calico Aster (Symphyotrichum lateriflorum)		1		11	field Peppergrass (Lepidium campestre)		1-			
New England Aster (Symph. novae-angliae)		-	1		Eur. Gromwell (Lithospermum officinale)	1	t	H	- 1-	t tttt
Purple-stem Aster (Symph. puniceus)		1	1.		Butter & Eggs (Linaria vuigaris)		r-	1	-	
Common Tanay (Tanacetum vulgare)		ĒĒ	Ť	1	Great Lobella (Lobella siphilitica)	1-		$\Gamma$		
Common Dandelion (Taraxacum officinale)	KI	uR	21		obelia	Ι	Γ.			Monocot Herbs
Com. Goatsbeard (Tragopogon pratensis)			L		Cut-leaf Bugleweed (Lycopus americanus)		1.		T.	Water-plantain (Alisme plantago-aquatice )
Coltsfoot (Tussilago farfare)				11	Northern Bugieweed (Lycopus unifiorus)					Wild Leek (Allium tricoccum)
		1	+	- I	ringed Loosestrife (Lysimachia cilista)		1.	1	-1	Jack-in-the-pulpit (Ariseeme triphythum)
Symphy trichwar m	11	Ч	- <b> </b>		Aoneywort (Lysimachia nummularia)		Ι.		Carland.	Asparagus (Asperagus officinaiis)
		-	+=	4-1	ysimechie	-			+	Wild Calle (Calle palustris)
and a second sec			+		Purple Loosestrife (Lythrum salicarie)	-	1	-4	+-	Bluebeed-Illy (Clintonia borealis)
		1.		-	Black Medick (Medicago lupuline)		- 1	1-1	+	Garden Lily-of-valley (Convallaria mejalis)
	1	+	-	+	Nfalfa (Medicego sative ) White Sweet-clover (Melliotus alba )	+	ŧ - :		- 11	Yel. Lady's Slipper (Cypripedium pervillora)
			+			Ł	1			Canada Waterweed (Elodes canadensis)
		1-		1	(ellow Sweet-clover (Melilotus officinatis) Vild Mint (Mentha arvensis)	1	t-	H	+	Helleborine (Epipactis helleborine)
Other Dicot Herbe	1	+	+-	++	Viid Bergamot (Monarda fistulosa )		t		- +	Blue-flag iris (Iris versicolor)
White Baneberry (Actees pschybods)	1	t	1	+	Small Forget-me-not (Myosotis laxe)	1	+	+	-+	Orange Day Lily (Hemerocalius fulve )
Red Baneberry (Actaee rubra)	+	1-	+	+	arget-me-not (Myosotis scorpioides)	+			-+-	Lesser Duckweed (Lenna minor)
Tall Agrimony (Agrimonie gryposepale)	-	1	1	11	Vater-cress (Nasturtium officinale )	1	1	11		Starry Duckweed (Lemna trisuica )
	1	1.1	-	T	Com. Evening-primose (Oenothere blennis)	E	[]]	I İ		Wild Lily-of-valley (Maienthemum canadense)
Gartic Mustard (Alliaria petiolata)	1	L	· L ·		Sweet-cicely (Osmorhize bertenii)	1	1		1	False Solom Seal (Malanthemum recemosum)
Garlic Mustard (Alliaria peticiata)		ŀ	T			4.1				Star False Solomon (Melanthemum stellatum)
Garlic Mustard ( <i>Allaria peliciata</i> ) Green Amaranth ( <i>Amarenthus retroflexus</i> ) Hog-peanut ( <i>Amphicarpe bracteata</i> )		+	1		(ellow Wood-somet (Oxel/s stricts)	t			I	
Garlic Mustard (Allaria peliolata) Green Amarenth (Amarenthus retrollexus) Hog-peanut (Amphicarpa bracteata) Pearly Evertesting (Anaphalis margaritacea)			-		Vild Parenip (Pastinaca sativa)	L			I	True Sciomon Seal (Polygonetum pubescens)
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Garlic Mustard (Alleria polioiata) Green Amaranth (Amaranthus retroflexus) Hog-peanut (Amphicarpe bracteele) Pearly Eventesting (Anaphalis margaritacea) Canada Anemone (Anemone acanadensis) vy Hepstica (Anemone acanadensis) vy Hepstica (Anemone viginiana) Purple Angelica (Angelica europurpurea)					Vild Pannip (Pastinaca aativa) Inglish Plantain (Plantago lanceolata) Common Plantain (Plantago major) Vugeta Plantain (Plantago rugeti) Aay-apple (Podophytlum pelatum)					True Solomon Seal (Polygonatum pubescens) Pickensi-weed (Pontaderie condata) Cutty-leal Pondweed (Polamogeton crispus) Sago Pondweed (Polamogeton pectinatus) Polamogeton
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Santic Mustard (Allaria poliolata) Green Amaranth (Amaranthus retroflexus) hog-peanut (Amphicarpa bractaela) Peanty Eventesting (Anaphala margantacea) Canada Anemone (Anemone acuitaba) Timbleweed (Anemone virginiana) Purple Angelica (Angelice atropurgurea) ndian Herro (Apocynum cannabhum) Nid Sansapanila (Aralla nudicaulis) Spikenard (Aralla racemosa)					Vild Pansnip (Pastinace sativa) English Plantain (Plantago lanceolate) Common Plantain (Plantago major) Rugel'a Plantain (Plantago rugelit) Aay-apple (Podophylium petitatum) aals Smartweed (Podygonum lapathifolum) ady's-thumb (Polygonum persicarle) ringinia Knotweed (Podygonum viginianum)					True Solomon Seal (Polygonatum pubescens)         Pickersi-weed (Pontaderia condata)         Cutty-leaf Pondweed (Polamogeton crispus)         Sago Pondweed (Polamogeton pecinatus)         Polaimogeton         Potaimogeton         Potaimogeton         Broad-leaved Anowhead (Segittaria latifolia)         Blue-eyed-grass (Sisyrinchlum montanum)
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Garlic Mustard (Allaria poliolata) Green Amaranth (Amaranthus retroflexus) Hog-peanut (Amphicarpe bracteala) Peany Evertesting (Anaphalia margartacea) Canada Anemone (Anemone acruitoba) Thimbleweed (Anemone virginiana) Purple Angelica (Angelice stropurpurea) Indian Herro (Apocynum cannabhum) Wild Saraspanila (Arelia nudicaulis) Spikenard (Aralia racemosa) Wild Ginger (Asarum canadanse) Swamp Milkweed (Asclapias incarnate) Common Milkweed (Asclapias syrice) Yellow Rocket (Barbaraa vulgaris) False Nettle (Boehmerta cylindrice) Black Mustard (Brassica nigra)					Vild Pansnip (Pastinace sativa) English Plantain (Plantago lanceolate) Common Plantain (Plantago major) Rugel'a Plantain (Plantago major) Rugel'a Plantain (Plantago major) Pale Smartweed (Polygonum lapathifolum) sady's-thumb (Polygonum paraicate) finginia Knotweed (Polygonum virginianum) Polygonum Polygonum Polygonum Polygonum Rough-fruited Cinquefoll (Potentilla norvegica) Rough-fruited Cinquefoll (Potentilla simplex) Potentilia eal-all (Prunella vulgaris)		U.			True Solomon Seal (Polygonatum pubescens)         Pickersi-weed (Pontederia condata)         Cutty-leaf Pondweed (Polamogeton crispus)         Sago Pondweed (Polamogeton crispus)         Sago Pondweed (Polamogeton crispus)         Polamogeton         Potamogeton         Braad-laeved Arrowhead (Segittaris latifolie)         Bilue-eyed-grass (Sisyrinchium montanum)         Herb. Carrion Flower (Smitax herbacce)         Bristy Greenbrier (Smitax hispida)         Nodding Ladies' Tresses (Spiranthes cerrue)         Rose Twisted-stafik (Streptopus lanceolatus)         Skunk-cabbage (Symplocarpus foetidus)         Purple Trillium (Trillium grandiforum)         White Trillium (Trillium grandiforum)
Garlic Mustard (Allana poliolata) Green Amaranth (Amaranthus retroflexus) Hog-peanut (Amphicarpe bracteata) Peany Evertesting (Anachalis margantaces) Canada Anamone (Anamone acuitaba) Ivy Hepstica (Anemone evuitaba) Thimbleweed (Anamone virginiana) Purple Angelica (Angelice stropurpures) Indian Hemp (Angelice stropurpures) Indian Hemp (Angelice stropurpures) Indian Hemp (Angelice atropurpures) Spikamand (Angelice atropurpures) Spikamand (Aralis racemose) Wild Ganger (Asarum canadense) Swamp Milkweed (Asclapies syrlace) Yellow Rocket (Barbaras vurgers) False Nettis (Boshmeric ofindrice) Black Mustard (Brassae nigra)					Vild Parsnip (Postinace sativa) English Plantain (Plantago lanceolate) Common Plantain (Plantago najor) tugeta Plantain (Plantago nugelii) tageta Plantain (Plantago nugelii) tagyta-thumb (Polygonum lepatitifolium) adyta-thumb (Polygonum virginlanum) tolygonum tolygon		U			True Sotomon Seal (Polygonstum pubescens)         Pickeni-weed (Portederia cordata)         Cutty-leaf Pondweed (Potamogeton crispus)         Sago Pondweed (Potamogeton crispus)         Potamogeton         Potamogeton         Potamogeton         Broad-lasved Anowhead (Sagittaris latifolle)         Blue-syed-grass (Sisyrinchium montanum)         Herb. Carrion Flower (Smfax herbace)         Bristy Greenberter (Smfax herbace)         Nodding Ladles' Tresses (Spiranthes cernue)         Rose Twistict-stafik (Streptopus lanceolatus)         Skunk-cablege (Symplocarpus footidus)         Purple Trillium (Trillium crectum)
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Garile Mustard (Allaria poliolate) Green Amaranth (Amaranthus retroflexus) Hog-peanut (Amphicarpe bracteele) Pearly Evertesting (Anephalis mengantacee) Canada Anemone (Anemone canedensie) Pearly Evertesting (Anephalis mengantacee) Thimbleweed (Anemone virginiana) Purple Angelica (Anerelice activitos) Thimbleweed (Anerelice activitos) Purple Angelica (Anerelice activitos) Spikenard (Anelice atropurpurea) Indian Herry (Accorum cannabhum) Wild Garger (Aserum canadense) Systemard (Araile arcemase) Wild Ginger (Aserum canadense) Swamp Milkweed (Ascleplas incarnate) Common Milkweed (Ascleplas incarnate) False Nettle (Bochmarla cylindrice) Black Mustard (Brasske nigra) Mersh-marigold (Calthe pelustris) Creeping Beilflower (Campanula repurculoki D. Dembant: represented by lege number, generally wida	formi	d rep	-	nted b	Vild Parsnip (Postinace sativa) Inglish Plantain (Plantago lanceolate) Common Plantain (Plantago najor) tugefa Plantain (Plantago nugelii) tagyapie (Podophylium peltatum) ale Smartweed (Polygonum tepatitikolium) ady's-thumb (Polygonum persicarle) iriginia Knotweed (Polygonum virginianum) Polygonum Polygonum Sough-futtade Cinquefoli (Potentilla norvegica) Sough-futtade Cinquefoli (Potentilla racta) Sough-futtade Cinquefoli (Potentilla simplex) Potentilla teal-all (Prunella vulgaris) Shiniaaf (Pyrota elliptica) GEULY1 //L GeW or >25% Vegetation cover in any one stratum thyl targe numbers of individual clarges, saulty forming		K gn			True Sotomon Seal (Polygonetum pubescens)         Pickeni-weed (Portederia cordata)         Cutty-leaf Pondweed (Polarmogeton crispus)         Sago Pondweed (Polarmogeton pectnetus)         Polarmogeton         Potamogeton         Potamogeton         Braad-leaved Anowhead (Sagittaria latifolie)         Bitue-eyed-grass (Sisyrinchium montanum)         Herb. Carrinon Flower (Smilar herboce)         Bristly Greenbrier (Smilar hispide)         Nodding Ladies' Treases (Spiranthes cerrue)         Rose Twiste-testik (Streptopus lanceoletus)         Skunk-cabbage (Symplocarpus foetidus)         Putper Trillium (Trillium grandiflorum)         Large-Riowered Bellwon (Uvuleria grandiflore)
Garlic Mustard (Allaria poliolata) Green Amaranth (Amaranthus retroflexus) Hog-peanut (Amphicarpe bracteala) Peany Evertesting (Anaphalia margartacea) Canada Anemone (Anemone acruitoba) Thimbleweed (Anemone virginiana) Purple Angelica (Angelice stropurpurea) Indian Herro (Apocynum cannabhum) Wild Saraspanila (Arelia nudicaulis) Spikenard (Aralia racemosa) Wild Ginger (Asarum canadanse) Swamp Milkweed (Asclapias incarnate) Common Milkweed (Asclapias syrice) Yellow Rocket (Barbaraa vulgaris) False Nettle (Boehmerta cylindrice) Black Mustard (Brassica nigra)	formi	d rep d acei		nted b d inch	Vild Pansnip (Postinace sativa) English Plantain (Plantago lanceolate) Common Plantain (Plantago najor) tugeta Plantain (Plantago najor) tugeta Plantain (Plantago nugetii) Aay-sepple (Podophylum petatum) Pala Smartweed (Podygonum ispailitiölium) ady's-thumb (Podygonum persicarle) /inglinia Kinctweed (Podygonum virginianum) Podygonum Yogonum		K gn			True Sotomon Seal (Polygonetum pubescens)         Pickeni-weed (Portederia cordata)         Cutty-leaf Pondweed (Polarmogeton crispus)         Sago Pondweed (Polarmogeton pectnetus)         Polarmogeton         Potamogeton         Potamogeton         Braad-leaved Anowhead (Sagittaria latifolie)         Bitue-eyed-grass (Sisyrinchium montanum)         Herb. Carrinon Flower (Smilar herboce)         Bristly Greenbrier (Smilar hispide)         Nodding Ladies' Treases (Spiranthes cerrue)         Rose Twiste-testik (Streptopus lanceoletus)         Skunk-cabbage (Symplocarpus foetidus)         Putper Trillium (Trillium grandiflorum)         Large-Riowered Bellwon (Uvuleria grandiflore)
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Gartic Mustard (Allaria polioida) Green Amaranth (Amaranthus retroflexus) Heg-peanut (Amphicarps bracteels) Pearly Evertesting (Anephalis mengantaces) Canada Anemone (Anemone canadensis) Vi Hegstica (Anemone excitaces) Thimbleweed (Anemone excitaces) Purple Angelica (Angelice etropurgurea) Indian Herny (Apocynum cannabhum) Wild Sarsapantila (Arelia nudicaulis) Spikanard (Arelia nudicaulis) Spikanard (Arelia nudicaulis) Spikanard (Arelia nudicaulis) Swemp Milkweed (Asclepies incernate) Common Milkweed (Asclepies syntace) Yellow Rocket (Barbares ungers) False Nettle (Bostmarte cylindrice) Black Mustard (Brasske nigra) Marsh-marigold (Cathe polustris) Creeping Beliflower (Campanule repunculoid D. Dominent: represented by lege numbers, generally ". Patry common (Docestonal in ELC) general e wides ". Rear: represented by lege numbers, generally ". Rear: Spikaneshed in the polygon by less the about Mitter Dag (CSH) (405	formi	d rep d acei		nted b d inch or ema	Vild Pansnip (Postinace sativa) English Plantain (Plantago lanceolate) Common Plantain (Plantago najor) tugeta Plantain (Plantago najor) tugeta Plantain (Plantago nugetii) Aay-sepple (Podophylum petatum) Pala Smartweed (Podygonum ispailitiölium) ady's-thumb (Podygonum persicarle) /inglinia Kinctweed (Podygonum virginianum) Podygonum Yogonum		N. gru is (m			True Sotomon Seal (Polygonetum pubescens)         Pickeni-weed (Portederia cordata)         Cutty-leaf Pondweed (Polarmogeton crispus)         Sago Pondweed (Polarmogeton pectnetus)         Polarmogeton         Potamogeton         Potamogeton         Braad-leaved Anowhead (Sagittaria latifolie)         Bitue-eyed-grass (Sisyrinchium montanum)         Herb. Carrinon Flower (Smilar herboce)         Bristly Greenbrier (Smilar hispide)         Nodding Ladies' Treases (Spiranthes cerrue)         Rose Twiste-testik (Streptopus lanceoletus)         Skunk-cabbage (Symplocarpus foetidus)         Putper Trillium (Trillium grandiflorum)         Large-Riowered Bellwon (Uvuleria grandiflore)

Study Area:	BLW (JER) (	GSH) Map #:	227 - 65+11605
Date:	04/16/2013	Time Started:	11:58 am
Field Staff:	Tom Shorney +	Jess Pieterime Finished:	3:10 P.~
Weather Condition		Period Sec 1	row theene
		Breeding/Feeding, Bald Eagl	e Breeding/Nesting Habitat
FET1, FOC, FOM, FOD, SW		Vec/Successo	
Nest bowls present	:: 📉 No		ograph and complete the following )
UTMs:	/location or in trad/on k	Number of	nests: lence of recent use; birds present):
Jechption of nests	liocation, e.g. in tree/on c	Junt Structure, Material, evic	lence of recent use; birds present).
Description of habit	tat (note riparian areas if p	present, evidence of disturba	ince):
	<b>VEF/ NESTING, AMPHIDIAN B</b> , SAS1, SAM1, SAF1, SWD, SWT1, SV		er-wintering, Marsh Breeding Birds /M, SWD, BOO1, FEO1)
Standing water pre			ograph and complete the following )
	12147,4791928		g water delineated on field map
Water depth (m):			6 emergent vegetation: 2%
	vater until at least July in I		
		ool, evidence of annual spring	plooding etc): Venue R.J
leature his a		Le ding Pord.	nooding, etc). 000 to prove
		comma lorg.	
Area and coil/subst	rate of shoreline habitat.	In Soil and	
Area and soil/subst	rate of shoreline habitat:	boam Soils alo	y shoreling,
<u></u>	· · · · · · · · · · · · · · · · · · ·		<del>, , , , , , , , , , , , , , , , , , , </del>
<u> </u>	rate of shoreline habitat:		y shoreling, - Frax Pairon 98%, Til A.
Type and abundanc	ce of cover in open water l	habitat: 109, Concer	- Frank Parison 98%, Til A
Type and abundanc	· · · · · · · · · · · · · · · · · · ·	habitat: 109, Concer	<del>, , , , , , , , , , , , , , , , , , , </del>
Type and abundanc	ce of cover in open water l	habitat: 109 Correr habitat: Cultural me	- Frank Parison 98%, Til A
Type and abundanc Type and abundanc Evidence of disturb	ce of cover in open water l ce of cover in surrounding nance (e.g. cattle grazing ):	habitat: 109 Correr habitat: Cultural me	- Frox Pointon 9820 Til A adou surrounding Pool works mearly
Type and abundanc Type and abundanc Evidence of disturb	ce of cover in open water l ce of cover in surrounding nance (e.g. cattle grazing ):	habitat: 109, Grier habitat: Cultural me lestoution	- Frox Pointon 9820 Til A adou surrounding Pool works mearly
Type and abundanc Type and abundanc Evidence of disturb	ce of cover in open water l ce of cover in surrounding pance (e.g. cattle grazing): waterfowl, amphibians, tu	habitat: <u>109</u> Guer habitat: <u>Cultural me</u> lestoution urles (e.g. broken eggs), mars study site.	The Frank Pointing 98% Till adow surrounding Pool works nearly the breeding birds: <u>None</u>
Type and abundanc Type and abundanc Evidence of disturb	ce of cover in open water l ce of cover in surrounding pance (e.g. cattle grazing): waterfowl, amphibians, tu	habitat: 109, Grier habitat: Cultural me lestoution	The Frank Pointing 98% Till adow surrounding Pool works nearly the breeding birds: <u>None</u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> Yoolo Snake Hibernacula	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl, amphibians, tu materfowl, amphibians, tu materfowl, amphibians, tu	habitat: <u>109</u> , <u>Guer</u> habitat: <u>Cultural me</u> <u>les toution</u> urles (e.g. broken eggs), mars <u>sturby</u> site <u>ernal Pool Habitat Description</u>	The Frank Pointing 98% Till adow surrounding Pool works nearly the breeding birds: <u>None</u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> Yoolo Snake Hibernacula	ce of cover in open water h ce of cover in surrounding bance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl, amphibians, tu suthin ours ***Complete Ve	habitat: <u>109</u> , <u>Grier</u> habitat: <u>Lestoution</u> urles (e.g. broken eggs), mars <u>study ale</u> ernal Pool Habitat Description present:	Those Pointon 9820, Til A adou surrounding fool works nearly in breeding birds: <u>Nono</u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> Yoolo Snake Hibernacula	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl, amphibians, tu materfowl, amphibians, tu materfowl, amphibians, tu	habitat: <u>109</u> , <u>Grier</u> habitat: <u>Lestoution</u> urles (e.g. broken eggs), mars <u>study ale</u> ernal Pool Habitat Description present:	The Frank Pointing 98% Till adow surrounding Pool works nearly the breeding birds: <u>None</u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> <i>Voolo</i> <b>Snake Hibernacula</b> Fissured rock/found	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing): waterfowl, amphibians, tu waterfowl, amphibians, tu <u>waterfowl</u> , amphibians, tu <u>waterfowl</u> , amphibians, tu <u>waterfowl</u> , amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu	habitat: <u>109</u> , <u>Green</u> habitat: <u>Utural me</u> <u>les toution</u> urles (e.g. broken eggs), mars <u>sturing</u> <u>Me</u> ernal Pool Habitat Description present: <u>Yes (if yes, pho</u>	Those Pointon 9820, Til A adou surrounding fool works nearly in breeding birds: <u>Nono</u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>Yoolo</u> Sinake Hibernacula Fissured rock/found	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing): waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu waterfowl, amphibians, tu back of the surrow waterfowl, amphibians, tu waterfowl, amphibia	habitat: <u>109</u> , <u>Green</u> habitat: <u>Les toute on</u> urles (e.g. broken eggs), mars <u>stuch</u> <u>ste</u> ernal Pool Habitat Description present: <u>Yes (if yes, pho</u> Likelihood to ex	The prove Pointing 98% Till adow Aurronading Pool works nearly the breeding birds: <u>None</u> on Form***
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> <u>Vools</u> Snake Hibernacula Fissured rock/founce UTMs: % canopy cover:	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing): waterfowl, amphibians, tu waterfowl, a	habitat: <u>109</u> , <u>Green</u> habitat: <u>Les toute on</u> urles (e.g. broken eggs), mars <u>stuch</u> <u>ste</u> ernal Pool Habitat Description present: <u>Yes (if yes, pho</u> Likelihood to ex	The first line:
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> <u>Vorto</u> <b>Snake Hibernacula</b> Fissured rock/founce UTMs: % canopy cover: Description of fissu	ce of cover in open water l ce of cover in surrounding pance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl,	habitat: <u>109</u> Green habitat: <u>Ustorition</u> urles (e.g. broken eggs), mars <u>study</u> site ernal Pool Habitat Description present: <u>Yes (if yes, pho</u> Likelihood to ex % slope: Distantion ion/material, dimenstions, e	The prove Pairson 982, Till, adou surrounding fool works nearthy h breeding birds: <u>None</u> <b>Dr. Form***</b> <b>Cograph and complete the following )</b> tend below frost line: te to open canopy (m): <u></u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> <u>Vorto</u> <b>Snake Hibernacula</b> Fissured rock/founce UTMs: % canopy cover: Description of fissu	ce of cover in open water l ce of cover in surrounding pance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl,	habitat: <u>109</u> , <u>Green</u> habitat: <u>Les toute on</u> urles (e.g. broken eggs), mars <u>study</u> <u>ale</u> ernal Pool Habitat Description present: <u>Yes (if yes, pho</u> Likelihood to ex % slope: <u>Distan</u>	The prove Pairson 982, Till, adou surrounding fool works nearthy h breeding birds: <u>None</u> <b>Dr. Form***</b> <b>Cograph and complete the following )</b> tend below frost line: te to open canopy (m): <u></u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>X</u> <u>Yorlo</u> <b>Snake Hibernacula</b> Fissured rock/founce UTMs: % canopy cover: Description of fissu Description of surre	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl,	habitat: <u>109</u> , <u>Green</u> habitat: <u>Les torution</u> urles (e.g. broken eggs), mars <u>atuch</u> <u>ate</u> ernal Pool Habitat Description present: <u>Yes (if yes, pho</u> Likelihood to ex % slope: <u>Distan</u> ion/material, dimenstions, e	The prove Pairson 982, Till, adou surrounding fool works nearthy h breeding birds: <u>None</u> <b>Dr. Form***</b> <b>Cograph and complete the following )</b> tend below frost line: te to open canopy (m): <u></u>
Type and abundance Type and abundance Evidence of disturb Evidence of use by <u>X</u> <u>3</u> <u>Vorto</u> <b>Snake Hibernacula</b> Fissured rock/founce UTMs: % canopy cover: Description of fissu	ce of cover in open water h ce of cover in surrounding pance (e.g. cattle grazing ): waterfowl, amphibians, tu waterfowl,	habitat: <u>109</u> , <u>Green</u> habitat: <u>Lestorition</u> urles (e.g. broken eggs), mars <u>atuch</u> , <u>ate</u> ernal Pool Habitat Description present: <u>Yes (if yes, pho</u> Likelihood to ex % slope: <u>Distan</u> ion/material, dimenstions, e pundance of cover, evidence	The prove Pairson 982, Till, adou surrounding fool works nearthy h breeding birds: <u>None</u> <b>Dr. Form***</b> <b>Cograph and complete the following )</b> tend below frost line: te to open canopy (m): <u></u>

NHA Site Ir	nvestigation - Significa	ant Wildlife	Habitat Form	AECOM
	g Bird Breeding Habitat (Bank a	and Cliff Swallow	s)	
	01, BLS1, BLT1, CLO1, CLS1, CLT1)			
Eroding bank, sa	andy hill, pits, steep slope or roc			a tha falloution)
	No		es, photograph and complet	e the following (
UTMs:	www.comp. http://www.comp.com/	Locatio	n (e.g. aggregate pit, bridge):	
Evidence of use	by bank or cliff swallows (provid	de number of nes	ts):	
	g Ground Breeding Birds, Shore			
	352, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1,		, MAM5)	
Shoreline of lake	e, large river or large wetland pr			
	No	Yes (if	ves, photograph and complete	e the following )
UTMs:		Rocky i	sland or peninsula present:	
Mudflat present		Eviden	ce of disturbance (e.g. cattle g	;razing):
Description of h	abitat (size of rocky outcrop/mu	udflat, substrate/	oil type, type and abundance	of cover):
•	Feeding and Roosting, Open Co	•	•	ing Habitat
	UM1 >30ha, FOC, FOD, FOM with a CUM, C			
_	old field or generally open habit			
Large open habi	tat present: 📉 No		yes, photograph and complet	
UTMs:		Eviden	e of disturbance (e.g. cattle g	razing):
Description of h	abitat (abundance of food plant	is for rodents, ab	indance of perches, height of	vegetation):
	· · · · · · · · · · · · · · · · · · ·		2.4. M	
Old-growth or N	Mature Forests, Interior Forest	Breeding Birds		
(FOD, FOC, FOM, SWC	, SWM, SWD. Mature forest (>60 years) pro	esent)		
Mature forest p	resent: XNo	Yes (if	yes, photograph and complet	e the following )
UTMs:	—	Age of	oldest trees:	
Evidence of dist	urbance (e.g. selective cutting):			
Description of h	nabitat (structural complexity, a	bundance of snag	s and/or downed woody deb	ris, etc):
Photo #	Location or Subject	Photo #	Location or Subject	
				-
				· · · · · · · · · · · · · · · · · · ·
	1	di na m		

# Species of Conservation Concern Habitat and Incidental Wildlife – Goshen Map No: 227-65H 1605

Date (yyyy-mm-dd): 2013 - 04 - 14

Field Staff: Tem Shorney Tere



### **Observed Species List**

Species Code	UTM	EV	Notes	Species Code	UTM	EV	Notes
Im. Kolvin	1	10	2 m				
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licken		10					
no - to ligder	Ċ	06					
whe sych sume		06					
ock- get The p	e	26	-				
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inkey Vulture	5 (	26			···· · · · · · · · · · · · · · · · · ·		
		-					
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					· ····		
te: Evidence Co	des (EV) Breedina	Bird (Possible)	SH=Suitable Habitat, SM	=Sinaina Mele:			

SH=Suitable Habitat, SM=Singing Male; Breeding Bird (Probable)

T=Territory, D=Display, P=Pair, N=Nest Building, V= Visiting Nest; A=Anxiety Behavior;

Breeding Bird (Confirmed) DD=Distraction, NU=Used Nest, FY=Fledged Young, NE=Eggs, NY=Young, FS=Foos/Faecal sack, AE=Nest Entry

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

N/0 + Not observed

ELC	Species	Habitat Description	Habitat Present (Y/N; UTM; description of habitat if present)
PLANTS			
FOD7	American Gromwell (Lithospermum latifolium) - S3 Bloom Time - Spring	Shaded river banks, wooded floodplains. River floodplains, woods and edges of woods.	Y 602 UTM:
ALO, TPO	Muehlenberg's astomum moss (Astomum muehlenbergianum)- S2 <u>Bloom Time</u> - Spring	Thin soil over level outcrop ledges and on soil under grasses in open prairie	Y (N UTM:
FOM1, FOM2, CUP3	Autumn Coral-root (Corallorhiza odontorhiza) - S2 Bloom Time - summer to fall	Oak-pine woods or occasionally in open, red pine or white pine plantations. Dry, sandy woods.	
FOC, FOM FOD	Burning Bush (Euonymus atropurpureus) – S3 <u>Bloom</u> <u>Time</u> - April - June	Species occurs in dry to moist deciduous thickets and woode	YN UTM: NOO
SWC1, SWC3, SWC4, SWM1, SWM2, SWM4, SWM5, SWM6	Chinese Hemiock Parsley (Conioselinum chinense) - S2 Bloom Time –summer to fail	Swampy places with deciduous trees, white cedars, tamarack; springy river banks, wet borders of streams and rivers. Also found among calcareous seepage slopes.	Y NUTM:
SWC, SWM, SWD,SWT, MAM, MAS	Crowned Beggarticke (Bidens trichosperme) -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 <u>Bloom</u> <u>Time</u> mid March to August	Occurs in rich, wet-mesic floodplain forests as well as mesic forests over limestone. Includes floodplains and river banks.	Y NUTM:
TPS, TPW, FOM1, FOM2	Fogg's Goosefoot (Chenopodium foggi) -S2	Species occurs in sandy areas on limestone under oak or pine- oak forests	Y N UTM:
TPO2, TPS2, TPW2,	Giant Ironweed (Vemonia gigantean)-S1? Bloom Time-	Found in mesic prairies, thickets, moist woods, roadsides and grassy meadows	Y N UTM:

# Species of Conservation Concern Habitat and incidental Wildlife – Goshen



ELC	Species	Habitat Description	Habitat Present (Y/N; UTM; description of habitat if present)
CUM1, MAM,	June August		
FOD6, FOD7, FOD9	Green Dragon (Arissema dracontium ) - SC/S3 <u>Bloom</u> <u>Time</u> – May and June	Species found in damp deciduous orest and along river streams. Particularly Maple forest and forest dominated by Red Ash and White Elm.	DN UTM: N/O
TPO1, TPS1, TPW1, FOM1, FOM2, FOD1, FOD2, FOD3	Hai <b>ry Bedstraw</b> (Gallum pliosum) -S3 <u>Bloom Time</u> – June-August	Occurs in dry, sandy woods and thickets; occasionally in dry sandy fields	Y(N) UTM:
FEO1, FES1, FET1, SWC, SWM, SWD, SWT, TPO, TPS, TPW	Hairy Valerian (Valeriana edulis ) -S1 <u>Bloom Time</u> – June to August	Inhabits swampy river flats and meadows, wet prairies, and wooded, rocky riverbanks and fens.	Y N UTM:
FOD6, FOD7, SWM, SWD	Halry Wood Mint (Blephilia hirsuta)S1 <u>Bloom Time</u> - Summer	Woodlands, often rocky, especially rivers Rich woods, awamp forests, floodplains.	YN UTM: N/O
FOD6, FOD7, FOD8, FOD9	Harbinger-of-spring (Erigenia bulbosa) - S3 <u>Bloom</u> <u>Time</u> – early to late April	Occurs in the moist deciduous woods, especially on floodplains.	YN UTM: N/O
SAS1, SAM1, SAF1	Hill's Pond Weed (Potamogeton hilili) - SC/S2 <u>Bloom</u> <u>Time</u> – summer	Aquatic plant found in highly alkaline waters of ditches, ponds, beaver ponds, and slow-moving cold waters.	Y 🕅 UTM:
FOM6, FOM7, FOM8	Large Round-leaved Orchid (Platanthera macrophylia) - S2 <u>Bloom Time</u> – June to August	Species inhabits moist mixed woods. Found in fairly mature, upland sugar maple- beech-eastern hemiock woodlands.	Y 🕅 UTM:
MAM2, MAM3, MAS2, MAS3, SWD	Ltzard's Tali (Saururus cemuus) - 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 W UTM:
FOD8, FOD7, FOD9	Pawpaw (Asimina triloba) –S3 <u>Bloom Time</u> – March-May	Occurs in moist deciduous woods and stream banks.	Y) N UTM: N/6
FOM8, FOD8, FOD7, FOD9, CUM1	Pilose Evening Primrose (Oenothera piloselia) – S2 ( Bloom Time – Late Spring – Early Summer	Moist edges of wood and open, disturbed ground.	YN UTM: N/O
TPW1, FOM1, FOM2, FOD1, FOD2, FOD3	Prostate Tick-trefoli (Desmodium rotundifolium) –S2 <u>Bloom Time</u> – July-September	Dry, sandy or rocky woods	Y N UTM:
FOD7, SWD	Pumpkin Ash (Fraxinus profunda)-S2? <u>Bloom Time</u> – March - June	Swamps and floodplains	Y NUTM:
CUW1, ALO, FET1, SWC	Ram's-head Lady's-slipper (Cypripedium arietinum) - S3 Bloom Timemid May to mid June	Found in cedar woodiands, limestone plains and wooded fens, moist coniferous swamps, dry-sandy woods, and limestone barren .	Y NUTM:
FOD1, FOD2, FOD3, FOD4, FOD5, FOC1, FOM1, FOM5	Rattlesnake Hawkweed (Hieraclum venosum) - S2 <u>Bloom Time</u> – April – September	Species inhabits open, dry sandy woods. Jack pine, oak, and aspen woodlands.	Y N UTM:
FOD6, FOD7, FOD9	Round-ieaved Groundsei (Packera obovata) –S3 <u>Bloom</u> <u>Time-</u> May - June	Found in moist woods	N UTM: NO
CUM1, CUT1, CUS1	Round-leaved hawthorn (Crataegus lumaria)S3?	Species occurs in old fields, poorly managed pastures, fencelines and roadsides	Y NUTM:
FOD6, FOD7, FOD8, FOD9, SWT2, SWT3	Scarlet Beebaim (Monarda didyma) - S3 <u>Bioom Time</u> – May to October	Found in moist, rich woods, thicket swamps, banks and floodplains.	PNUTM: N/O
ALO, ALS, ALT, TPO, TPS, TPW	Siender Blazing Star (Lietris cylindracee) –S3	Species occurs in limestone and dolostone pavement, prairies, open woods; alvars and moist sandy meadows.	YNUTM:
SBO, SBS, SBT, TPO1, TPS1, TPW1, FOD1, FOD2	Siender Knotweed (Polygonum tenue)-S2	Found in dry, sandy, open areas in deciduous (often oak woods), prairie meadows; at adges of sand pits	Y N UTM:
SDT1, FOD5, FOD9	Silm-flowered Muhly (Muhlenbergia tenuiflora) - S2	Found in rich deciduous forest, often on rocky or sandy soils, wooded dunes, hilisides, and riverbanks whether in oak or beech-maple woods	Y (N) UTM:
BLO1, BLS1, BLT1, TPO2, TPS2, TPW2, MAM2, FOD7	Stiff Gentian (Gentianella quinquefolia) - S2 <u>Bicom</u> <u>Time</u> late summer to mid fall	Found in moist solis of streambanks, edges of woods, wet prairies, marshy meadows, bluffs and wooded hillsides.	Y N UTM:
TPS1, TPW1, CUW1, RBO, SBO	Sundial Lupine (Lupinus perennis) - S3 <u>Bloom Time</u> – mid-March to mid-June	Inhabits dry, sandy oak savannahs, prairies, open barrens or clearings in woodlands of oak, lack pine, and/or aspen .	Y NUTM:

# Species of Conservation Concern Habitat and Incidental Wildlife - Goshen



ELC	Species	Habitat Description	Habitat Present (V/N: LITM: desadation of babitat if any att
TPO1, TPS1, TPW1,	Tall Blazing Star (Liatris aspera)-S3/SC	Occurs in open, sandy woods, dry roadsides and sandy prairies	Habitat Present (Y/N; UTM; description of habitat if present) Y (N) UTM:
CUM1		Coccis in open, sandy woods, dry roadsides and sandy plantes	Y (N OTM:
FEO, FES, FET, MAM	2. Tuberous Indian Plantain (Amoglossum plantagineum) -	Occurs mainly in flat, sandy areas of the Bruce Peninsula. Fens, wet meadows, and	
MAM3	S3 <u>Bloom Time</u> –mid-March to mid-June	calcareous river flats.	Y N UTM:
FOC1, FOC2, FOC3,	Woodland Pinedrops (Pterospora andromedea) - S2	Found in conifer woods, under pines, but also hemiock, spruce, fir, and white cedar.	Y NUTM:
FOC4	<u>Bloom Time</u> – summer	In dry or rocky soil, often with common juniper and sometimes aspen or birch.	
CUM1, CUT1, CUW1	Yellow Ladles'-tresses (Spiranthes ochroleuca) - S2	Dry, open sites, usually on acidic sandy soil, dry to mesic open woodland, thickets,	Y (N) UTM:
RBO1, SBO1	Bloom Time – August to November	meadows, barrens, ledges, outcrops, banks and roadsides, old fields.	T (N) OTM.
BIRD8			and the second state of th
-	Baid Eagle (Hallacetus leucocephalus) - SC	Assessed as SWH. Record species if found.	not required.
CUW, SDO, RBO, TP	S Common Nighthawk (Chordelles minor) - SC	Hunts insects over a wide variety of habitats, in particular open or semi-open areas.	Y (N) UTM:
		Nests on ground in a wide range of open, sparse or vegetation-free habitats.	
FOD, FOM	Louisiana Waterthrush (Selurus motacilia) - SC	Inhabits mature forests along steeply sloped ravines adjacent to running water.	Y (N) UTM:
		Trees, bushes, exposed roots, cliffs, banks and mossy logs are favoured nesting	
		spots. <u>Riparian woodlands</u> are preferred stopover sites during migration	
FOD, CUW, CUT	Red-headed Woodpecker (Melanerpes	Species inhabits open woodland/ edges (oak savannahs and riparian forest), open,	Y N UTM:
	erythrocephalus) - SC	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 <u>40 cm dph;</u> requires about 4 ha for a	
		a ying nees, requires cavity nees with at least <u>40 cm dph</u> , requires about <u>4 na</u> for a territory.	
-	Short Eared Owi (Asio flammeus) - SC	Assessed as SWH. Record species if found.	not required.
CUT1	Yellow-breasted Chat (Icteria virens) - SC	Inhabits thickets, tail tangles of shrubbery beside streams, ponds; overgrown bushy	45
		clearings with deciduous thickets; nests above ground in bush, vines	Y (N) UTM:
REPTILES			
-	Eastern Ribbonsnake (Thamnophis sauritus) - SC	Assessed as SWH. Record species if found.	and annulated
	Millenales (Lemanasalile Adapaulum) - 80	Assessed as OMUL Decord encodes (fifeward	not required.
-	Milksnake (Lampropeitis triangulum) -SC	Assessed as SWH. Record species if found.	not required.
-	Snapping Turtle (Chelydra serpentine) - SC	Assessed as SWH. Record species if found.	not required.
INSECTS	The second states of the second second second second second second second second second second second second s		
OAO, SA, SWM, SWD	Azure Bluet (Enallagma aspersum) –S3	Species inhabits fishless ponds, lakes and boggy swamps	Y (N) UTM:
TPS, TPW	Sleepy Duskywing (Erynnis brizo) - S1	Occurs in oak/oak-pine scrub, chaparral, barrens, well-drained sandy or shaly soils.	Y 😡 UTM:
		Species regularly seen at flowers in oak woods, on the ground, and at mud puddles	
CUM1, CUT1, CUW1	Monarch Butterfly (Danaus plexippus) - SC	Their larvae only feed on milkweeds (Asclepius spp.). Habitat includes abandoned	Y 😡 UTM:
		farmland, along roadsides, open spaces where these plants grow	
TPS, CUW	Mottled Duskywing (Erynnis martialis)82	Usually seen nectaring or on wet sandy roads. Larvae feeds on New Jersey Tea and	Y W UTM:
		aduits only likely near where this plant is present	
SWT, SWD, SWM, FO	M. Tawny Emperor (Asterocampa clyton) – S3	Species inhabits densely wooded riparian areas, dry woods, open woods, fencerows	Y (N) UTM:
FOD4-3, TPW, TPS,		and parks. Usually occurs near Hackberry, the larval foodplant	
		and parties a second a constant second of a fer second plate	
CUM1		1	
CUM1 FOD5	West Virginia White (Pieris virginiensis) - SC	This species is restricted to rich, moist, deciduous woods, where its foodplant	Y (Ñ) UTM:



Appendix B2. Amphibian Woodland Breeding Habitat Evaluation of Significance Surveys

ASA	
Vernal Pool/Pond Habitat Description and	d Feature IdentificationFor Pg 1 of 2
Verhal Fool Fond habitat Description and	AECOM
Study Area: GSFI - 1606	
Pre-determined Station #: VP # 1	*Feature # : 255 -651-11606
GPS: 17T 0443256, 479 258	
	· · · · · · · · · · · · · · · · · · ·
Date(yyyy-mm-dd):2012-05-09	Field Staff (full name): <u> </u>
Weather: SUMY, SUGO de	ud cover, light breeze Marc
Time Started: 8:15am	Time Finished: 10,00am
Water Present (Y/N)	Vernal Pool or Pond?
Maximum Water Depth (m) 1	Water Quality (visual) gould .
Length(m) % 40-50	Width(m) 30
% open water (emergent)	% floating plant cover of open water
Potential to hold water until July (V/N) if y	es then complete amphibian and salamander sheet
Human Influences affecting area ( dykes, a	agriculture etc.) Nocel.
	A A A A
Describe area 100m behind you (field, ma	irsh etc) rocel x2, ogg, wheat f. d. f.) f
Submergent Plants (Species & % cover **	)
1	3
2	4
Emergent Plants (Species & % cover)	
1 —	3
2	4
Floating Plants (Species and % cover)	
1	3
2	4
Fringing Shrubs (Species & % cover)	
	_
1 Typha Lostinia 10%.	3
2 Carex Sp. 10th	<u>     3     4                          </u>
2 Cont Sp. 10th Trees (Species & % cover)	
2 Carex Sp. 10%	4 3
2 Cont Sp. 10th Trees (Species & % cover)	4
2 Corex Sp. 10%. Trees (Species & & cover) 1 PIND Sylochis, 10%. 2 populus (Ambads 10%.	4
2 Carex Sp. 10%. Trees (Species & % cover) 1 PINUA Sy (100 to 5 10%.	4

Amphibians/egg masses observed (Type, quantity, location) NML - A SA Comments open worker port very flew pryches shribs or Frees

\* - FEATURE # refers to the vernal pool ID that you will be giving. This # will be used on call sheet

\*\*-Of total percent cover (surface and canopy), select top 4 and estimate percent of their cover.

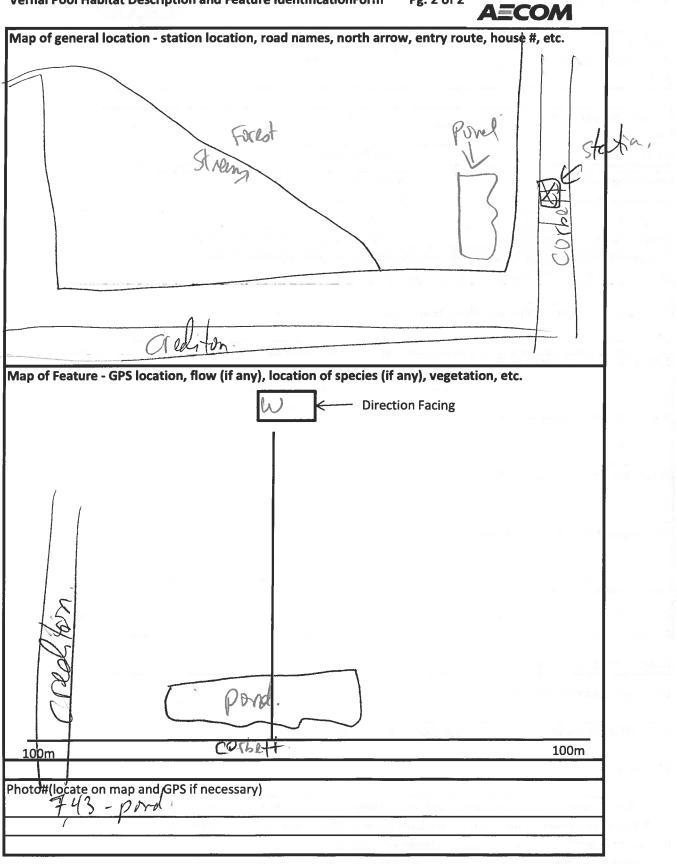
If no water present then no amphibian or salamander sheet completed

Pools created by tractor/ATV etc. ruts that are not naturalized are not considered vernal pool habitat

U

Thus 130pm

Vernal Pool Habitat Description and Feature IdentificationForm



Pg. 2 of 2



### Vernal Pool/Pond Habitat Description and Feature Identification Form

# AECOM

Study Area (circle one): Bluewater	Goshen Jericho
Pre-determined Station #: <u>\pre-determined Station</u>	Feature # 1:
UTMs: 442147 4	179.1928
Date (yyyy-mm-dd): _2013-04-16	
Field Staff (full name): Jess liette + Tim	Shornen
Weather Conditions: <u>13"C, OVECCENT</u>	
Time Started: $12^{2}27 \mu^{M}$	Time Finished:
Water Present (Y/N) Vy s	Vemal Pool or Pond ? Verve / pw/
Max Water Depth (m) and 30cm	Water Quality (visual) <u>rlept</u>
Length(m) QUAT 5-20 m	Width(m)
% open water (emergent) <u>96%</u>	% floating plant cover of open water <u>NML</u>
Potential to hold water until July? (circle on	
Human Influences affecting area ( dykes, agricu	iture etc.): park natterest to it + aqualtind in
(YUUA)	PLAG of WARDANANA
Describe area 100m behind you (field, marsh et	c). <u>Yul</u>
Submergent Plants (Species & % cover **) 0/.	
1	
2	4
Emergent Plants (Species & % cover) 2/	
1 1/15 m.	3
2 phalads aroun.	4
Floating Plants (Species and % cover) $^{d}$ //	
1	3
2	4
Fringing Shrubs (Species & % cover)	
1	3
2	4
Trees (Species & % cover) 2:/.	
1 Flamer	3 Wimamor
2 Frapenn	4
Exposed mud/sand/rock	
Logs (size, quantity, location) <u>W Lans hut</u>	there are trees within prots
Amphibians/egg masses observed (Type, quantity	y, location) ///ww
Comments area had several provers	
* Feature # refers to assigned AWO/ AWE EOS ID. This	a # will be used on call sheet & salamander forms

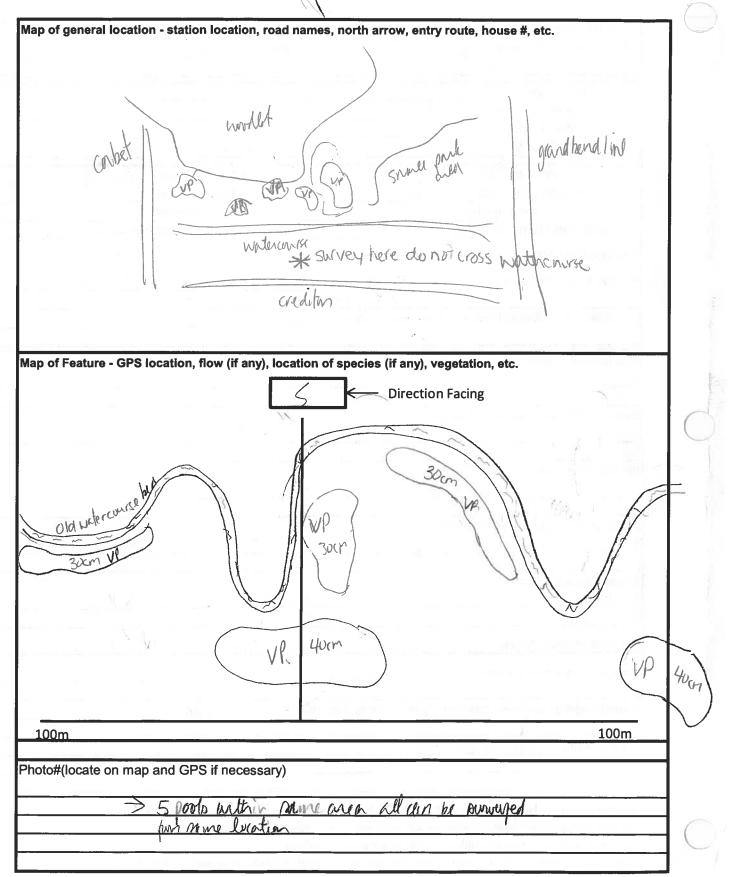
\*\* Of total percent cover (surface and canopy), select top 4 and estimate percent of their cover.

If no water present then no amphibian or salamander sheet completed

Pools created by tractor/ATV etc. ruts that are not naturalized are not considered vernal pool habitat

### Vernal Pool/Pond Habitat Description and Feature Identification Form

AECOM



# Salamander Area Search Survey Form

# A\_COM

Study Area (circle	one):	Bluewater	(	Goshen	$\geq$	Jericho
Pre-determined Stati	on #: <u>227 VI</u>	DI		Feature # 1	: 221	-
U1	Ms: 177 44214	7. 47919	28			
<b></b>						
Date(yyyy-mm	-dd): <u>2013-0</u>	4-16	<u> </u>			
Field Staff (full na Weather Condit Time Sta	ime): <u>Tom show</u>	Jess	Piette_			
Weather Condit	ions: Juny 1	L'clordy	period,	geve, h	ght he	ey
Time Sta	rted: [1:58 a		Time Finis	hed: <u>3</u> :	10 P.M.	
Water Present	Y/N) Yes		Vernal po	ol depth (m)	326-	ANO
Vernal Pool width	n (m) 5-10 m	Aus	Vernal Poo	ol depth (m) ol length (m)	5-20	M Alb
		0				
Vegetation Comm	ents:					0 2 overall Carrys
(Dominant, % cover	retc) Fragen	Tilane	n Ulm	amen -	> 10-2	0% overall Carros
	· · · · · · · · · · · · · · · · · · ·					Lover.
NO Amphibians Obs	Additional and a second s	X	1			
Amphibian Species	Life Stage <sup>2</sup>	Number <sup>3</sup>	-		Size <sup>5</sup>	Companyations
Auhungu Shacias	Line Stage	Number	Searci	h Type <sup>4</sup>	JIZE	Comments/GPS
· · · · · · · · · · · · · · · · · · ·						
·						
	· · · · · · · · · · · · · · · · · · ·					
·····						
<u> </u>					•	
	<u> </u>					
Photo #	Location/or Sut	blect	Photo #		Location/	or Subject
	Looddon of Odi			Al Sa La mit.	Location	UI GUDJECT
			1		· · · · · · · · · · · · · · · · · · ·	
						· · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·		1			
Comments (ex: egg mas	sses to have GPS	3				
	ools an a,	· · · · · · · · · · · · · · · · · · ·	or al	150-	10	is arred #
<u> </u>	Us - an a	<u>renage</u>	of an	~ > [0	07	manno *
	· · · · · · · · ·					

<sup>1</sup> Feature # refers to the vernal pool ID given on the habitat description form

<sup>2</sup> Adult or larvae or egg masses

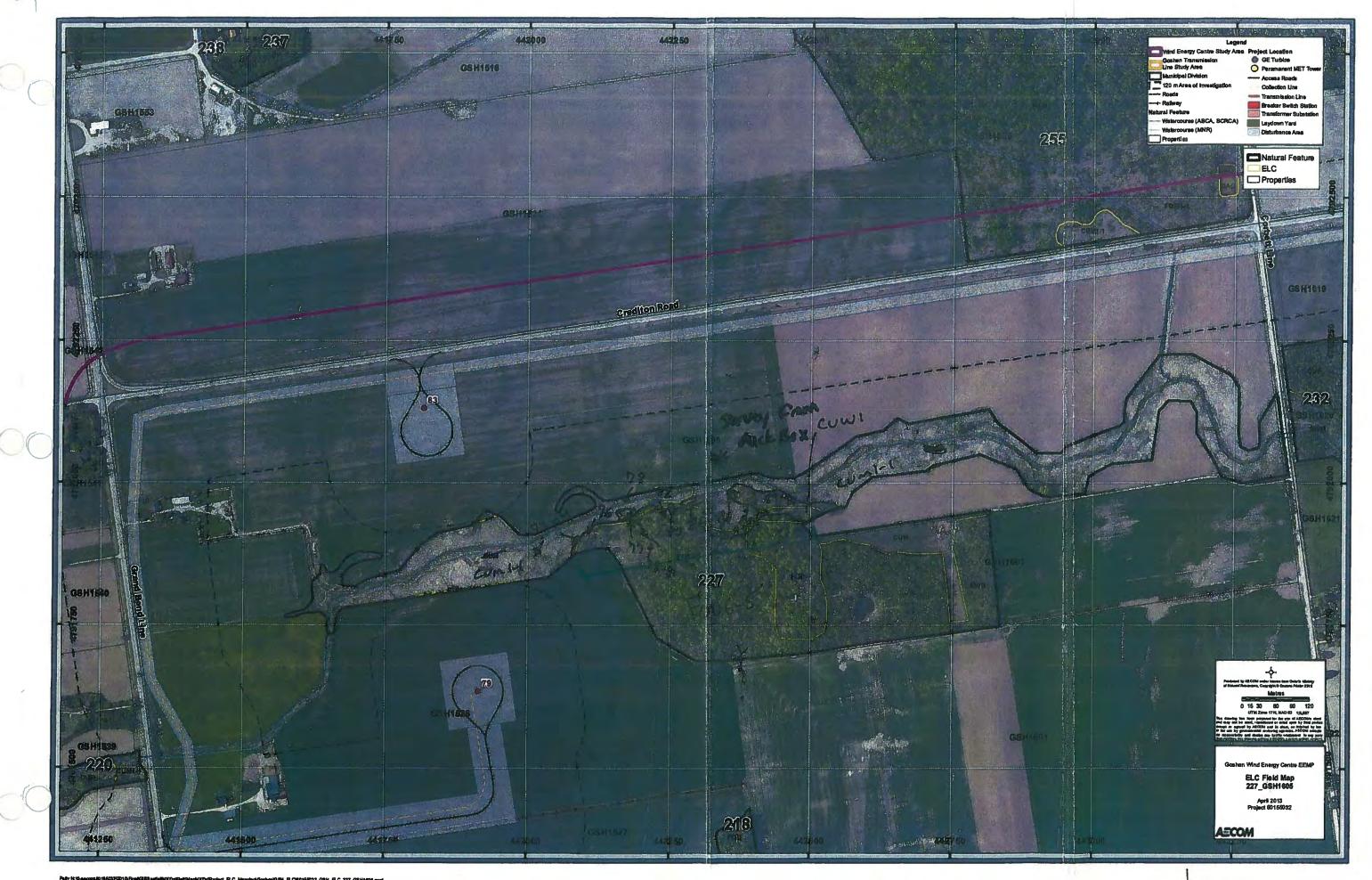
<sup>3</sup> Number of individuals (adults or larvae) or egg masses

<sup>4</sup> Overturned logs, D-ring dipnet, observation

<sup>5</sup> Size of individual (adult or larvae) or egg masses (cm)



Study Area (circle one): Bluewater	Goshen Jericho
Study Area (circle one): Bluewater Pre-determined Station #: <u>VP</u>	*Feature #: 65H 227-1605
UTMs: UY2647 47	
Water Present (Y/N) Yes	
* Feature # refers to the vernal pool /D given on the habitat of	description form
	Visit #(1-3):
Date (yyyy-mm-dd): 2013-04-30	
Field Staff (full names): Tom Shorey	Time Finished: 11: 28 P.~
Time Started: 11:25 P. n	
Beaufort Wind Scale (0-6): 2	Cloud Cover (%): 20%
Background Noise Scale (0-4):	Temperature Celcius 162
Precipitation (None, fog, drizzle,or rain)	e
	☐
Species IN OUT	
NONE	
AMTO ×	
BULL	
CHFR	
MIFR	
GRTR	
GRFR	SPPE 3 SPPEN
NLFR	STPR 2
PIFR	
SPPE ×	AMTE 3
WOFR	
WOFK	
100m	100m
	- he ecourately counted
Code 1 - not simultaneous, number of individuals c Code 2 - some call simultaneous, but number of individuals	an be accurately counted
Code 2 - some call simultaneous, but number of in Code 3 - full chorus, call continuous, numbers of in	dividuals cannot be reliably estimated
	4: 20-30 km/hr -moderate breeze -small branch moves
Beaufort 0: 0-2 km/hr - calm	5 : 31-38 km/hr - fresh breeze - moderate branch moves
Wind Scale 1: 3-5 km/hr - light air movement	to an brench mov/oc
2: 6-11km/hr - slight breeze - can feel c	
3: 12-19 km/hr- gentle breeze - leaves	
Background 0 - no appriciable effect	3 - serious -continuous traffic nearby (6-10 cars)
Noise Scale 1 - slight - distant traffic (1 car)	4- profound -continous traffic passing
2 - moderate -distant traffic (2-5 cars)	
	TR Gray Treefron SPPE - Spring Peeper
Shecies Yun o Annotes	IR- Gray Hoonog
Codes BULL- Dunnog	FR - Gleen nog
Chill IC - Offordo - 10g	FR - N.Leopard Frog
MIFR - Mink Frog PIF	R - Pickeral Frog
	O HE Calle
General Comments: Houndance	of Amphilian Calling
	•



1

### Salamander Area Search Survey Form



Study Area (circle one	ə):	Bluewater	Goshen		Jericho
Pre-determined Station	#: 22765H16	505	Feature a	#1:2276SH	1605
Study Area (circle one Pre-determined Station UTM	s:+15M-11	442143	4791933		
Date(yyyy-mm-do	1): 2013-08	5-13			
Field Staff (full name		+ Ton Sho	men		
Weather Condition			·	···	· · · · · · · · · · · · · · · · · · ·
	d: 5:15/pm		Time Finished:		
Water Present Y/I	N) YES (VOI)		Vernal pool depth (r	n) 2.0(M	
Vernal Pool width (r			Vernal Pool length (r		
(Dominant, % cover et		$\propto$	1		
(Dominant, % cover et	.c)	Number <sup>3</sup>	Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et Amphibians Obser	ved		Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et	c)	Number <sup>3</sup>	Search Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
(Dominant, % cover et ) Amphibians Obser Amphibian Species Photo #	ved	Number <sup>3</sup>	Search Type <sup>4</sup>	Size 5	

 Photo #
 Location/or Subject
 Photo #
 Location/or Subject

 29
 VP1 with writin
 30-34
 30-34
 30-34

Comments (ex: egg masses to have GPS)

> only first and had writer remaining all others were Closert to memorial hard man

<sup>1</sup> Feature # refers to the vernal pool ID given on the habitat description form

- <sup>2</sup> Adult or larvae or egg masses
- <sup>3</sup> Number of individuals (adults or larvae) or egg masses
- <sup>4</sup> Overturned logs, D-ring dipnet, observation
- <sup>5</sup> Size of individual (aduit or larvae) or egg masses (cm)



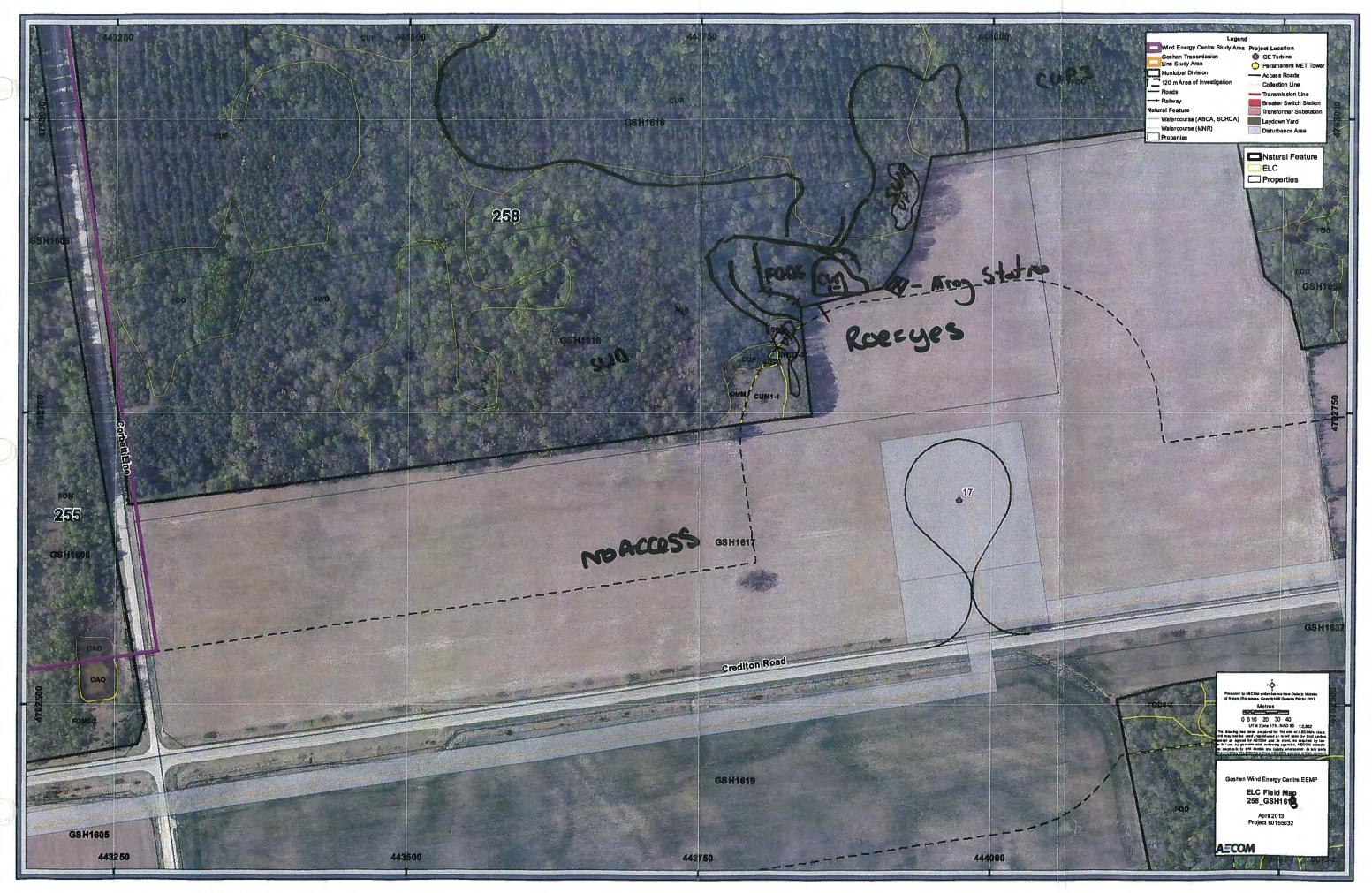
	ea (circle one):		Goshen	Jericho
Pre-determ	nined Station #:	727-6SH	1605 *Feature # :	
	UTMs:	See Low	N HINDLES	
	r Present (Y/N)			
* Feature # refe	rs to the vernal poo	I ID given on the hab	itat description form	
Daf	e (yyyy-mm-dd):	1.013-05	- 30 Visit #	#(1-3): 2
		Tom She		Pir
	Time Started:	10:22 P.M	Time Finished:	10:25 P
Beaufort Wir	d Scale (0-6):	Z	Cloud Cov	er (%):8070
	Noise Scale (0-4			Celcius <u>23</u> °C
		zle,or rain) No		
				1
Species	IN OUT		5	← Direction Facing
NONE	14		RTR 2-5 AMTO	
AMTO			D < Hmlc	)1-1
BULL		(-	RTR	
CHFR		9		
MIFR		- 1 -	3/	
GRTR	$\times$ .	LODE		
GRFR		SKI		
NLFR			, 	
PIFR				\
SPPE	$\mathbf{X}$			\
NOFR				
		100m		100m
ode 1 - not s	multaneous num			100m
<b>ode 1</b> - not si ode 2 - some	imultaneous, num	ber of individuals	can be accurately counted	
Code 2 - some	call simultaneou	ber of individuals s, but number of ir	ndividulas can be reliable estim	nated
Code 2 - some Code 3 - full cl	e call simultaneou norus, call continu	nber of individuals s, but number of ir uous, numbers of i	ndividulas can be reliable estim ndiviudals cannot be reliably e	nated stimated
Code 2 - some Code 3 - full cl Beaufort	e call simultaneou norus, call continu 0: 0-2 km/hr - calr	nber of individuals s, but number of ir uous, numbers of i m	ndividulas can be reliable estim ndiviudals cannot be reliably es 4: 20-30 km/hr -mod	nated stimated derate breeze -small branch moves
Code 2 - some Code 3 - full cl Beaufort	e call simultaneou norus, call continu 0: 0-2 km/hr - calr 1: 3-5 km/hr - ligh	nber of individuals s, but number of ir uous, numbers of i m t air movement	ndividulas can be reliable estim ndiviudals cannot be reliably estim 4: 20-30 km/hr -moo 5 : 31-38 km/hr - fres	nated stimated lerate breeze -small branch moves sh breeze - moderate branch moves
Code 2 - some Code 3 - full cl Beaufort	e call simultaneou norus, call continu 0: 0-2 km/hr - calr 1: 3-5 km/hr - ligh 2: 6-11km/hr - slig	nber of individuals s, but number of ir uous, numbers of i m	4: 20-30 km/hr - mod         5: 31-38 km/hr - free         on face       6: 39-49 km/hr - stree	nated stimated derate breeze -small branch moves
Code 2 - some Code 3 - full ch Beaufort Wind Scale	e call simultaneou norus, call continu 0: 0-2 km/hr - calr 1: 3-5 km/hr - ligh 2: 6-11km/hr - slig 3: 12-19 km/hr- ge	nber of individuals s, but number of ir Jous, numbers of i m t air movement ght breeze - can feel entle breeze - leaves	ndividulas can be reliable estim ndividulas cannot be reliably es 4: 20-30 km/hr - mod 5 : 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs	nated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background	e call simultaneou norus, call continu 0: 0-2 km/hr - calr 1: 3-5 km/hr - ligh 2: 6-11km/hr - slig 3: 12-19 km/hr- ge 0 - no appriciable e	nber of individuals s, but number of in uous, numbers of i m t air movement ght breeze - can feel entle breeze - leaves	Adividulas can be reliable estim ndiviudals cannot be reliably estim 4: 20-30 km/hr - mod 5 : 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo	nated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars)
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background	<ul> <li>call simultaneou norus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - ligh</li> <li>2: 6-11km/hr - slig</li> <li>3: 12-19 km/hr- ge</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> </ul>	nber of individuals s, but number of in Jous, numbers of i m t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car)	ndividulas can be reliable estim ndividulas cannot be reliably es 4: 20-30 km/hr - mod 5 : 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs	nated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars)
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background	<ul> <li>call simultaneou norus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - ligh</li> <li>2: 6-11km/hr - slig</li> <li>3: 12-19 km/hr- ge</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> </ul>	nber of individuals s, but number of in uous, numbers of i m t air movement ght breeze - can feel entle breeze - leaves	Adividulas can be reliable estim ndiviudals cannot be reliably estim 4: 20-30 km/hr - mod 5 : 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo	nated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars)
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background	<ul> <li>call simultaneou norus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - ligh</li> <li>2: 6-11km/hr - slig</li> <li>3: 12-19 km/hr- ge</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> </ul>	nber of individuals s, but number of in uous, numbers of in m t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars)	Adividulas can be reliable estim ndiviudals cannot be reliably estim 4: 20-30 km/hr - mod 5 : 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo	nated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars)
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale	<ul> <li>call simultaneou norus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - ligh</li> <li>2: 6-11km/hr - slig</li> <li>3: 12-19 km/hr- ge</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -dista</li> </ul>	aber of individuals s, but number of in Jous, numbers of in t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad <b>GR</b>	ndividulas can be reliable estim ndividulas cannot be reliably es 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species	<ul> <li>call simultaneou norus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>AMTO - America</li> </ul>	aber of individuals s, but number of in uous, numbers of in uous, numbers of i m t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad <b>GR</b> <b>GR</b>	Adividulas can be reliable estim ndiviudals cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species	<ul> <li>call simultaneou norus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11 km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>AMTO - America</li> <li>BULL- Bullfrog</li> </ul>	aber of individuals s, but number of in uous, numbers of in t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad GR GR Frog NL	Adividulas can be reliable estim ndividulas cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo 5: TR - Gray Treefrog FR - Green Frog	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species Codes	<ul> <li>call simultaneou horus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>2 - moderate -distant</li> <li>BULL- Bullfrog</li> <li>CHFR - Chorus I</li> <li>MIFR - Mink Frog</li> </ul>	aber of individuals s, but number of in uous, numbers of in t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad GR GR Frog NL	Adividulas can be reliable estim ndividulas cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo FR - Gray Treefrog FR - Green Frog FR - N.Leopard Frog	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species	<ul> <li>call simultaneou horus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>2 - moderate -distant</li> <li>BULL- Bullfrog</li> <li>CHFR - Chorus I</li> <li>MIFR - Mink Frog</li> </ul>	aber of individuals s, but number of in uous, numbers of in t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad GR GR Frog NL	Adividulas can be reliable estim ndividulas cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo FR - Gray Treefrog FR - Green Frog FR - N.Leopard Frog	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species Codes	<ul> <li>call simultaneou horus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>2 - moderate -distant</li> <li>BULL- Bullfrog</li> <li>CHFR - Chorus I</li> <li>MIFR - Mink Frog</li> </ul>	aber of individuals s, but number of in uous, numbers of in t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad GR GR Frog NL	Adividulas can be reliable estim ndividulas cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo FR - Gray Treefrog FR - Green Frog FR - N.Leopard Frog	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species Codes	<ul> <li>call simultaneou horus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>2 - moderate -distant</li> <li>BULL- Bullfrog</li> <li>CHFR - Chorus I</li> <li>MIFR - Mink Frog</li> </ul>	aber of individuals s, but number of in uous, numbers of in m t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad GR GR Frog NL	Adividulas can be reliable estim ndividulas cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo FR - Gray Treefrog FR - Green Frog FR - N.Leopard Frog	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper
Code 2 - some Code 3 - full cl Beaufort Wind Scale Background Noise Scale Species Codes	<ul> <li>call simultaneou horus, call continu</li> <li>0: 0-2 km/hr - calr</li> <li>1: 3-5 km/hr - light</li> <li>2: 6-11km/hr - sligt</li> <li>3: 12-19 km/hr - get</li> <li>0 - no appriciable e</li> <li>1 - slight - distant t</li> <li>2 - moderate -distant</li> <li>2 - moderate -distant</li> <li>BULL- Bullfrog</li> <li>CHFR - Chorus I</li> <li>MIFR - Mink Frog</li> </ul>	aber of individuals s, but number of in uous, numbers of in m t air movement ght breeze - can feel entle breeze - leaves effect raffic (1 car) ant traffic (2-5 cars) an Toad GR GR Frog NL	Adividulas can be reliable estim ndividulas cannot be reliably estim 4: 20-30 km/hr - mod 5: 31-38 km/hr - fres on face 6: 39-49 km/hr - stro move on twigs 3 - serious -continuo 4- profound -continuo FR - Gray Treefrog FR - Green Frog FR - N.Leopard Frog	hated stimated derate breeze -small branch moves sh breeze - moderate branch moves ong breeze - large branch moves us traffic nearby (6-10 cars) us traffic passing SPPE - Spring Peeper

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Q			1101			
Study Are	ea (circle one):	Bluewate	r ((	Goshen )	Je	richo
	ined Station #:	3		Feature # :	277	
	UTMs:			<u> </u>		
Water	Present (Y/N)	V		1. ma	to the	1
			habitat description	for more		
- Feature # reier.	s to the vernal pool	nD given on the	nabital description	iorm		
Date	e (yyyy-mm-dd):	2013-0	36-19	Vis	iit #(1-3):	S
Field St	aff (full names):	Jill de	Man +	Kayna	Carmic	chael
	Time Started:	11:0	7	ime Finishe	d:	110
					(0/)	A 41
Beaufort Wine		<u> </u>			over (%):	0"/.
-	Noise Scale (0-			Temperatur	e Celcius	Ildeq.
Precipitation (	None, fog, driz	zle,or rain)	None			
				<b>F</b>		
Species	IN OUT					ection Facing
NONE	X X					
AMTO						
BULL	<u>  </u>	CDI	R			
CHFR		UK!				(DTD
MIFR	<u> </u>	7 50	Om /			UKIK
		GRT 7 50 Veg-				GRTR > 500m
GRTR		Jear	p / m			$\lambda$ '
GRFR		Veg				
NLFR			/			
PIFR			/			N 1
SPPE			/			
WOFR					_	
		· · · · · · · · · · · · · · · · · · ·		1		
		100m 🖡				100m
			1.		)	Vultercourse.
			uals can be accur	· · · · · · · · · · · · · · · · · · ·		
			of individulas car			
Code 3 - full c	norus, call contin	uous, number	s of indiviudals ca	nnot be reliab	ly estimated	
Beaufort	0: 0-2 km/hr - ca	lm	4	: 20-30 km/hr -	moderate breez	e -small branch moves
Wind Scale	1: 3-5 km/hr - ligt	nt air movement	5	i : 31-38 km/hr -	fresh breeze - I	noderate branch moves
	2: 6-11km/hr - sli			39-49 km/hr	- strong breeze -	large branch moves
		•	eaves move on twigs		50.00.g 51.0020	
	3	,				the statement of the st
Background	0 - no appriciable	effect	3	- serious -cont	inuous traffic ne	arby (6-10 cars)
Noise Scale	1 - slight - distant	traffic (1 car)	4	- profound -con	tinous traffic pa	ssing
	2 - moderate -dist	tant traffic (2-5 c	ars)			
Species	AMTO - Americ	an Toad	GRTR - Gray Tr	eefrog	SP	PE - Spring Peeper
Codes	BULL- Bullfrog		GRFR - Green F	Frog	W	DFR - Wood Frog
1	CHFR - Chorus	Frog	NLFR - N.Leopa	ard Frog		
	MIFR - Mink Fre	bg	PIFR - Pickeral	Frog		
General Co	mment <u>s: M</u>	oon wa	is Very	bright	1 Veri	1 Shill
		101 0 404			2000000000	· · · · · · · · · · · · · · · · · · ·



### Vernal Pool/Pond Habitat Description and Feature Identification Form

AECOM

Study Area (circle one):BluewaterGoshenJerichoPre-determined Station #:Feature #1:25865H1618UTMs:H439354792873
Date (yyyy-mm-dd): 2013-04-24 Field Staff (full name): Ton Storney + Hob Aitken Weather Conditions: Snow, 3°C, 20kn/h mund Time Started: 2:30 P.m. Time Finished: 3:00 P.m.
Water Present (Y/N)       Ves       Vernal Pool or Pond ?       Vernal Pool or Pond ?         Max Water Depth (m)       2000       Water Quality (visual)       Clear         Length(m)       30       Width(m)       ISM         % open water (emergent)       90%       % floating plant cover of open water       0%
Potential to hold water until July? (circle one) (YES) NO Human Influences affecting area ( dykes, agriculture etc.): Agriculture land Surrounding Mommunet Describe area 100m behind you (field, marsh etc): Agriculture field
Submergent Plants (Species & % cover **) 1 2 4
Emergent Plants (Species & % cover)         1       Carex 5?       3         2       4         Floating Plants (Species and % cover)         1       3
2         4           Fringing Shrubs (Species & % cover)         3           1         15%         3           2         Fra         20%         4           Trees (Species & % cover)         4         4
1 Fra pron 80% 3 Acer X Free 10% 2 Ulm Amor 10% 4 Exposed mud/sand/rock
Logs (size, quantity, location) <u>Some downed woody debris</u> <u>Generally</u> <u>Amphibians/egg masses observed (Type, quantity, location)</u> <u>No Egg masses of</u> <u>Adults observed</u> <u>Comments Love methand</u> , running mater in some location

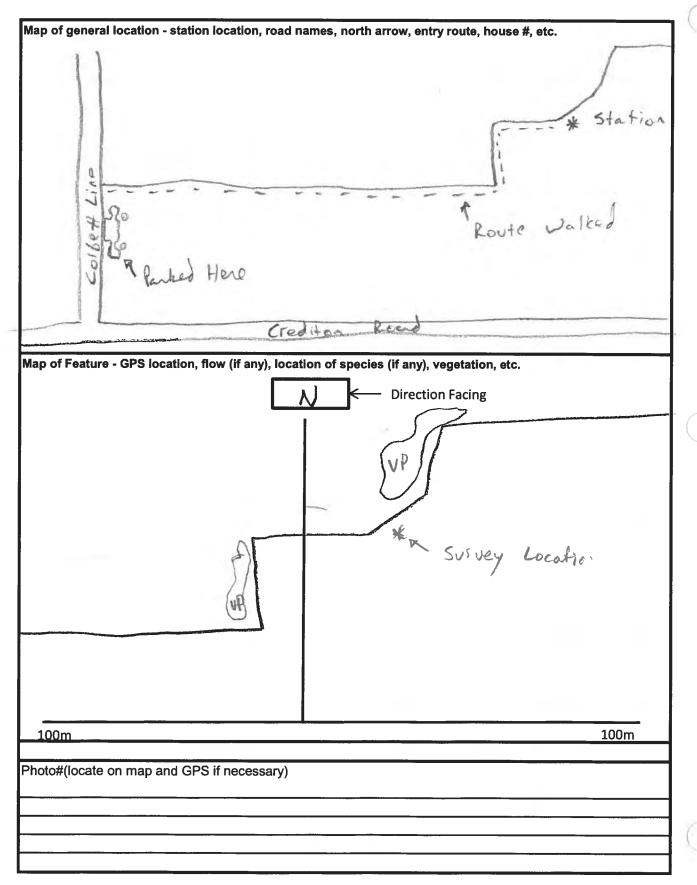
\* Feature # refers to assigned AWO/ AWE EOS ID. This # will be used on call sheet & salamander forms

\*\* Of total percent cover (surface and canopy), select top 4 and estimate percent of their cover.

If no water present then no amphibian or salamander sheet completed

Pools created by tractor/ATV etc. ruts that are not naturalized are not considered vernal pool habitat

# AECOM



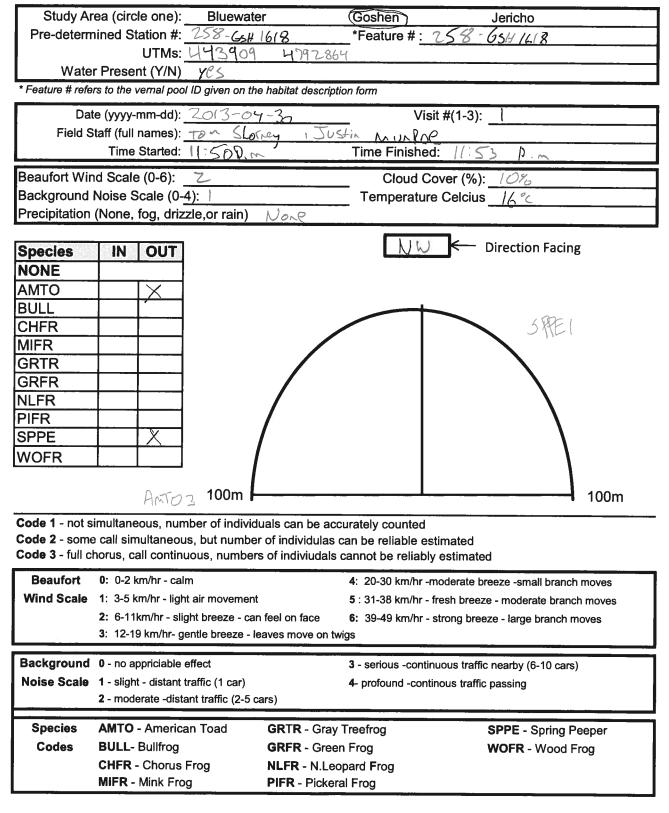
## Salamander Area Search Survey Form

# AECOM

Study Area (circle one)		Bluewater		Goshen	)	Jericho
Pre-determined Station #				Feature # 1	: 258	GSH1618
UTMs:	443935	, 47928	73			
Data(vees mm dd):	7-17-0	11- 711				
Date(yyyy-mm-dd):						
Field Staff (full name): Weather Conditions:	Tom	horney	+	LOD MI	Ken	
Weather Conditions:	Show,	5°C 20			- 0	
Time Started:	2:30 P.	m	Time Finis	ned: Biod	pl.m.	
Water Present Y/N)	Yes		Vernal por	ol depth (m)	200	~
vernal Pool width (m)	15.0			l length (m)	BOM	
			ronarr oo	inoligar (iii)	50 10	·
Vegetation Comments:	Green	Ash de	induras	Site	o (SW	02-2)
Vegetation Comments: (Dominant, % cover etc)	Fra Dem	80%	Ulm An	- 10%	Acen	x Free 109
	- II		<u>,</u>		, , , , , , , , , , , , , , , , , , , ,	
O Amphibians Observe	ed	NO	1			
Amphibian Species	Life Stage <sup>2</sup>	Number <sup>3</sup>	Search	Type <sup>4</sup>	Size <sup>5</sup>	Comments/GPS
	Life ouge	Indition	Jearci	Туре	5128	2
		· · · · · · · · · · · · · · · · · · ·				
					Market Market Barrie	
			-			
		THE REAL PROPERTY AND THE REAL PROPERTY AND				
	and the second s					
and the second se						
				k		
Photo # Lo	ocation/or Sub	ject	Photo #		Location/	or Subject
				Training and	and the all all the state of a state of the	
			Constant of Carl and Announce and Anno			
		TARK PROPERTY AND THE PARTY AND THE				
	- 3 Million Part of the Association of the part					
						<u></u>
comments (ex: egg masses	to have GPS	)				
			dana a	1 weitin	. Vont	
	B)	marg 6	I MARAAA	JAN AW		
<u> </u>						· · · · · · · · · · · · · · · · · · ·

- <sup>2</sup> Adult or larvae or egg masses
- <sup>3</sup> Number of individuals (aduits or larvae) or egg masses
- <sup>4</sup> Overturned logs, D-ring dipnet, observation
- <sup>5</sup> Size of individual (adult or larvae) or egg masses (cm)

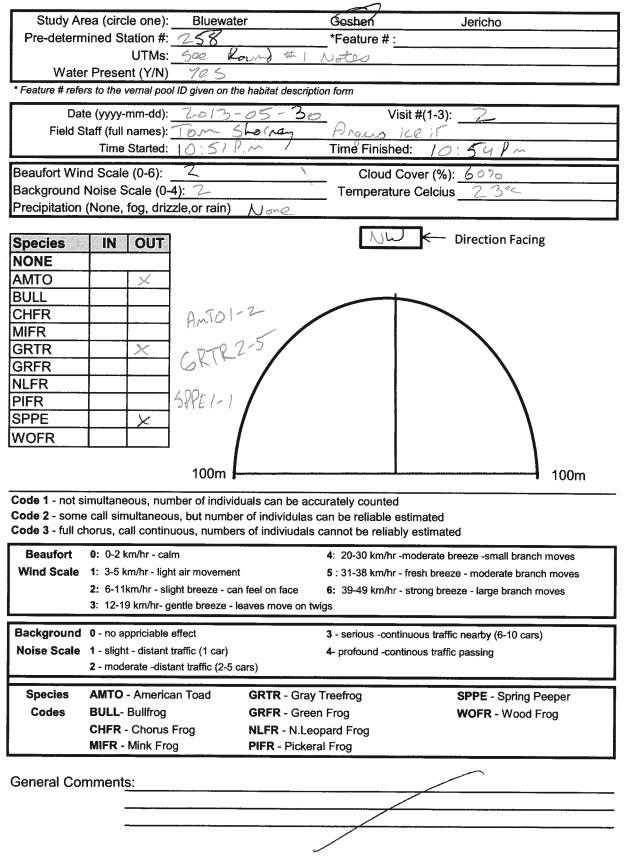
# A\_COM



General Comments:







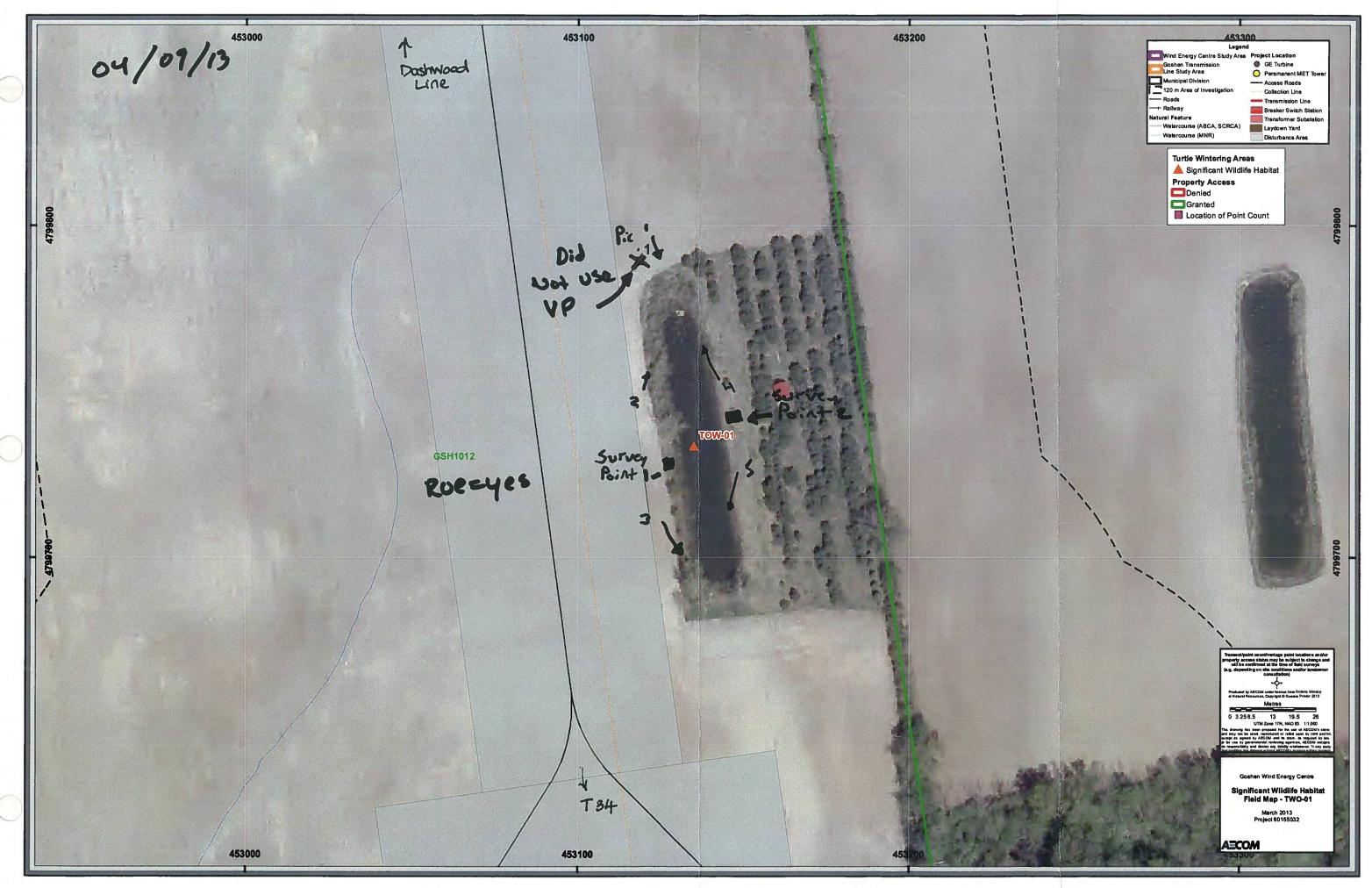
C



Study Area (circle one):       Ellewater       (Goshen)       Jericho         Pre-determined Station #:       GSH_U(1)       Feature # : 2.5.2         "Water Present (VN)       Y         *Padro # Infests to the verap local D given on the habitat description form         Date (vyyy-rm-dd):       2013-0(e-19       Visit #(1-3):         Field Statif (Vill names):       III def for + Regund Carmichaet       III Sole         Background Noise Scale (0-6):       Cloud Cover (%):       OT/L         Background Noise Scale (0-6):       Cloud Cover (%):       OT/L         Species       IN       OUT       Temperature Celcius       III deg         MONE       Amro       Duff       Direction Facing       OT/L         MONE       Vorget       IIII deg       IIIII       OT/L       Temperature Celcius       III deg         Species       IN       OUT       Other       Direction Facing       OT/L       Tree         MIRE       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	-		
UTMs:       UTMs:         * Feature & refease to the worst pool ID given on the habital description form         Date (yyyy-rmm-dd):       2013 - 0(c - 19 + Round Corrinichce (Line)         Field Staff (full names):       Time Stated:         Time Stated:       Time Stated:         Background Noise Scale (0-9):       Cloud Cover (%):         Background Noise Scale (0-4):       O         Precipitation (None, fog, drizzle, or rain)       No ne         Species       IN         MIR       Mile         BULL       ULL         CHFR       IDOM         NORE       AMTO         NULL       UDM         Direction Facing       MM         MIFR       IDOM         NORE       IDOM         NoRE       IDOM         NoRE       IDOM         Vorter       IDOM         Octot 1 - not simultaneous, number of Individuals can be accurately counted         Code 2 - some call simultaneous, but numbers of Individuals can be accurately counted         Code 3 - individuals can be accurately counted         Code 3 - full chorus, call continuous, numbers of Individuals can be accurately counted         Code 3 - individuals can be accurately counted         Code 3 - full chorus, call continuous, numbers of Individu	Study Are	rea (circle one): Bluewater (Goshen) Jericho	
Water Present (YN)         * Fedure is refers to the vernal pool to given on the habitat description form         Date (yyy-mm-dd): 2013 - 0(c - 19         Field Staff (full names): Till defon + Rayna Carmichaet         Beaufort Wind Scale (0-6):       Cloud Cover (%):         Beaufort Wind Scale (0-6):       Cloud Cover (%):         Beaufort Wind Scale (0-6):       Cloud Cover (%):         Precipitation (None, fog, drizzle, or rain)       No ne         Species       IN         NONE       AMTO         MIFR       GRTR         GRTR       GRTR         NLFR       UN         PliR       100m         Code 1 - not simultaneous, number of individuals can be accurately counted         Code 2 - some call simultaneous, but number of individuals can be accurately counted         Code 3 - into torus, call continuous, numbers of individuals can be accurately counted         Code 3 - into torus, call continuous, numbers of individuals can be accurately counted         Code 3 - into torus, call contingib there: - can feel on face       5: 31-38 km/hr - feel breaze - moderate branch moves         2: 0-11 km/hr - gentle breaze - large branch moves       3: 0- 28 km/hr - can feel on face       5: 34-98 km/hr - feel breaze - large branch moves         3: 12-19 km/hr - gentle breaze - large some on twigs       3: - serious - continuous traffic nearby (S-10 care)	Pre-determ	nined Station #: GSH 1618 *Feature #: 258	
* Feature # refers to the varial pool (D given on the habital description form         Date (yyyy-mm-dd): 2013 - 0(6 - 19 + Round Carmichage)         Time Started:       11(35)         Time Started:       11(35)         Beaufort Wind Scale (0-6):       Cloud Cover (%):         Background Noise Scale (0-4):       O         Precipitation (None, fog, drizzle, or rain)       No ne         Species       IN         MNONE       Variation (None, fog, drizzle, or rain)         AMTO       Image: None (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         MONE       Variation (None, fog, drizzle, or rain)         More       Variation (None, fog, drizzle, or rain)         More       Variation (None, fog, drizzle, or rain)         Mile Carta       Variation (None, fog, drizzle, or rain)         More       Variation (None, fog, drizzle, or rain)         More			
Date (yyy-rm-d):       2013-06-19       Visit #(1-3):         Field Staff (Minames):       Time Finished:       11;35         Beaufort Wind Scale (0-6):       O       Cloud Cover (%):       0%         Background Noise Scale (0-4):       O       Temperature Celcius       11/decq.         Precipitation (None, fog, drizzle, or rain)       None       Direction Facing         MNTO       MIC       Mile       Direction Facing         MNTO       MIR       Mino       Mile       Direction Facing         WORR       V       None       0       Tree         Species       IN       OUT       OUT       Out       Tree         NONE       V       None       0       Tree       Tree         Species       IN       OUT       OUT       Out       Tree         MIFR       GRFR       Interview       100m       Tree         100m       100m       100m       Tree       Tree         Code 1 - not simultaneous, numbers of Individuals can be reliable estimated       Edge 2: some call simultaneous, but numbers of Individuals can be reliable estimated         Code 2 - some call simultaneous, but numbers of Individuals can be reliable estimated       Edge 2: Some call simultaneous, but numbers of Individuals can be reliable estinated	Water	r Present (Y/N)	
Date (yyy-rm-d):       2013-06-19       Visit #(1-3):         Field Staff (Minames):       Time Finished:       11;35         Beaufort Wind Scale (0-6):       O       Cloud Cover (%):       0%         Background Noise Scale (0-4):       O       Temperature Celcius       11/decq.         Precipitation (None, fog, drizzle, or rain)       None       Direction Facing         MNTO       MIC       Mile       Direction Facing         MNTO       MIR       Mino       Mile       Direction Facing         WORR       V       None       0       Tree         Species       IN       OUT       OUT       Out       Tree         NONE       V       None       0       Tree       Tree         Species       IN       OUT       OUT       Out       Tree         MIFR       GRFR       Interview       100m       Tree         100m       100m       100m       Tree       Tree         Code 1 - not simultaneous, numbers of Individuals can be reliable estimated       Edge 2: some call simultaneous, but numbers of Individuals can be reliable estimated         Code 2 - some call simultaneous, but numbers of Individuals can be reliable estimated       Edge 2: Some call simultaneous, but numbers of Individuals can be reliable estinated			
Field Staff (full names):       Till def on t Rayna Carmichaet         Beaufort Wind Scale (0-6):       O         Beakground Noise Scale (0-4):       O         Precipitation (None, fog, drizzle,or rain)       None         Species       IN       OUT         NONE       Value         MITC       Bull       Direction Facing         NONE       Value       O         NONE       Value       O         NIFR       O       O         RFR       O       O         NUFR       O       O         VoFR       O	pain.		
Time Started:       11.33       Time Finished:       1.36         Beaufort Wind Scale (0-6):       Cloud Cover (%):       0.74         Background Noise Scale (0-4):       O       Temperature Celcius       11.dcq         Precipitation (None, fog, drizzle,or rain)       No ne       Direction Facing         Species       IN       OUT       O       Temperature Celcius       11.dcq         AMTO       BULL       O       O       Temperature Celcius       0.74         BULL       O       O       Temperature Celcius       0.74       O       0.74         MIFR       O       O       O       Temperature Celcius       0.74       O       0.74         MIFR       O       O       O       O       O       0.74       O       0.74         NUE       O       O       O       O       O       O       O       0.74       Tree         Species       Individuals can be accurately counted       Code 2 - some call simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneo			
Beaufort Wind Scale (0-6):       O       Cloud Cover (%):       O*/	Field St		
Background Noise Scale (0-4):       O       Temperature Celcius       Udeq		Time Started:	
Background Noise Scale (0-4):       O       Temperature Celcius       Udeq         Precipitation (None, fog, drizzle,or rain)       None       Direction Facing         Species       IN       OUT       Direction Facing         AMTO       Bull       Chiff       Direction Facing         CHFR       Here       Chiff       Chiff       Chiff         GRTR       Code       Code<	Beaufort Win	nd Scale (0-6): Cloud Cover (%): 0 %	
Precipitation (None, fog, drizzle, or rain)       No he         Species       IN       OUT         AMTO       BULL       Direction Facing         CHFR       MIR       GRTR         MIFR       GRTR       GRTR         PIPR       Direction Facing       Get Cut         NUFR       MUTO       Get Cut         VOFR       Direction Facing       Get Cut         VOFR       Direction Facing       Get Cut         Vor FR       Direction Facing       Get Cut         Code 1 - not simultaneous, number of individuals can be accurately counted       Tree         Code 2 - some call simultaneous, numbers of individuals can be accurately counted       Set Simultaneous         Beaufort       0: 0.2 km/hr - calm       4: 20-30 km/hr - moderate breaze - small branch moves         2: 6-11 km/hr - slight breaze - c	Background I		
Species       IN       OUT         NONE       Amto         MATO       Chick of the second sec	-		
Species       IV       Corr         AMTO       BULL       GRTR         BULL       GRTR       GRTR         GRTR       GRTR       GRTR         SPPE       WOFR       OF Could         WOFR       100m       OF Could         Code 1 - not simultaneous, number of individuals can be accurately counted       OF Could         Code 2 - some call simultaneous, but number of individuals can be reliable estimated       100m         Code 3 - full chorus, call continuous, numbers of individuals can be reliable estimated       Code 3 - full chorus, call continuous, numbers of individuals cannot be reliable estimated         Beaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr - moderate breaze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breaze - large branch moves         3: 12-19 km/hr - gentle breaze - large some on twigs       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4 - profound -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (2-5 cars)       3 - serious -continuous traffic nearby (6-10 cars)         Species       AMTO - American Toad       GRTR - Grean Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       WOFR - Wood Frog <td>L</td> <td></td> <td></td>	L		
NONE         AMTO         BULL         CHFR         MIFR         GRTR         GRFR         NLFR         PIFR         SPPE         WOFR         00m         Code 1 - not simultaneous, number of individuals can be accurately counted         Code 2 - some call simultaneous, but number of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals can be reliable estimated         Beaufort       0: 0-2 km/hr - calm         4: 20-30 km/hr - moderate breaze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement         5: 31:-38 km/hr - reds breaze - moderate breaze haves         8: 12-19 km/hr - gentle breaze - can feel on face       6: 39-49 km/hr - strong breaze - large branch moves         3: 12-19 km/hr - gentle breaze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4 - profound -continuous traffic harsing         2 - moderate -distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Greap Treag       WOFR - Wood Frog       MF	Species	NW Colum	
AMTO       BULL         CHFR       GRTR         MIFR       GRTR         GRFR       Interfere         PIFR       SPPE         WOFR       Interfere         WOFR       Interfere         Own       Interfere         Code 1 - not simultaneous, number of individuals can be accurately counted       Interfere         Code 2 - some call simultaneous, number of individuals can be reliable estimated       Interfere         Code 2 - some call simultaneous, numbers of individuals can be reliable estimated       Interfere         Code 3 - full chorus, call continuous, numbers of individuals can be reliable estimated       Interfere         Wind Scale       1: 3-5 km/hr - calm       4: 20-30 km/hr - moderate breaze - small branch moves         2: 6:11km/hr - sight air movement       5: 31-38 km/hr - fresh breaze - large branch moves         3: 12-19 km/hr - gentle breaze - can feel on face       6: 39-49 km/hr - strong breaze - large branch moves         3: 12-19 km/hr - gentle breaze - laaves move on twigs       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4 - profound -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (2-5 cars)       Species         Species       AMTO - American Toad       GRTR - Gray Treefrog			
BULL       CHFR         MIFR       GRTR         GRTR       GRTR         PIFR       DOm         SPPE       00m         WOFR       100m         Code 1 - not simultaneous, number of individuals can be accurately counted       00m         Code 1 - not simultaneous, number of individuals can be accurately counted       00m         Code 2 - some call simultaneous, but number of individuals can be reliable estimated       00m         Code 3 - full chorus, call continuous, numbers of individuals can be reliable estimated       00m         Beaufort       0: 0: 0/2 km/hr - calm       4: 20-30 km/hr - moderate breeze - small branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - small branch moves         3: 12-19 km/hr - glight breeze - can feel on face       6: 39-49 km/hr - strong breeze - small branch moves         3: 12-19 km/hr - elight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - elight breeze - leaves move on twigs       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4 - profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Green Frog       WOFR - Wood Frog         Codes <t< td=""><td></td><td></td><td></td></t<>			
CHFR       MIFR         GRTR       GRTR         GRTR       GRTR         GRTR       GRTR         PIFR       DOm         WOFR       00m         Code 1 - not simultaneous, number of individuals can be accurately counted         Code 2 - some call simultaneous, but number of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliable estimated         Beaufort       0: 0: 0: 2 km/hr - calm         4: 20-30 km/hr - moderate breeze - small branch moves         2: 6-11 km/hr - light breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12: 19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic passing         2 - moderate - distant traffic (1 car)       4 - profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       Species       AMTO - American Toad         Species       AMTO - American Toad       GRTR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - NLeopard Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       WOFR - Wood Frog			
MIFR       GRTR         GRFR       GRFR         NLFR       PIFR         PIFR       Image: Construct of the structure			
GRFR       Image: Construction of the second o	the second second second second second second second second second second second second second second second se	GRIR	
GRFR       Image: Construction of the second o			
NLFR       PIFR         SPPE       100m         WOFR       100m         Code 1 - not simultaneous, number of individuals can be accurately counted       100m         Code 2 - some call simultaneous, number of individuals can be accurately counted       100m         Code 3 - full chorus, call continuous, number of individuals can be reliable estimated       100m         Seaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr -moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11 km/hr - selight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4 - profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL - Builfrog       GRFR - Green Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       WOFR - Wood Frog         General Comments:       Own Mir F - NiL ID bcaSect On recording <td></td> <td></td> <td></td>			
PIFR       Image: SpPE       <			
SPPE       Image: Construction of the second s			
100m       100m         Code 1 - not simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneous, but number of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliable estimated         Beaufort       0: 0-2 km/hr - calm         4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement         5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       3 - serious -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)         Species       AMTO - American Toad       GRTR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       SPPE - Spring Peeper         Codes       Bull - Mink Frog       PIFR - Pickeral Frog       WOFR - Wood Frog         <			
100m       100m         Code 1 - not simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneous, but number of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliable estimated         Beaufort       0: 0-2 km/hr - calm         4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement         5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       MOFR - Wood Frog       MIFR - Mink Frog       PIFR - Pickeral Frog	SPPE		-
100m       100m         Code 1 - not simultaneous, number of individuals can be accurately counted       Code 2 - some call simultaneous, but number of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliable estimated         Beaufort       0: 0-2 km/hr - calm         4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement         5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       3 - serious -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)         Species       AMTO - American Toad       GRTR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       SPPE - Spring Peeper         Codes       Bull - Mink Frog       PIFR - Pickeral Frog       WOFR - Wood Frog         <	WOFR		ree
Tourner for individuals can be accurately counted         Code 1 - not simultaneous, number of individuals can be accurately counted         Code 2 - some call simultaneous, but number of individuals can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliably estimated         Beaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr -moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr- gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL- Bullfrog       GRFR - Green Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       SPPE - Spring Peeper         General Comments:       Will       ID       backgect on recording			
Code 2 - some call simultaneous, but number of individulas can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliably estimated         Beaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continous traffic passing         2 - moderate -distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL - Bullfrog       GRFR - Green Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       Secol On Teccording		100m 100m	
Code 2 - some call simultaneous, but number of individulas can be reliable estimated         Code 3 - full chorus, call continuous, numbers of individuals cannot be reliably estimated         Beaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continous traffic passing         2 - moderate -distant traffic (2-5 cars)       Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL - Bullfrog       GRFR - Green Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       Secol On Teccording			
Code 3 - full chorus, call continuous, numbers of indiviudals cannot be reliably estimated         Beaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background         Background         0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continous traffic passing         2 - moderate - distant traffic (2-5 cars)       2       Species       AMTO - American Toad         GRTR - Greay Treefrog       SPPE - Spring Peeper       Wood Frog         Codes       BULL- Bullfrog       GRTR - Grean Frog       WOFR - Wood Frog         MIFR - Mink Frog       PIFR - Ni.Leopard Frog       MIFR - Wink Frog       PIFR - Pickeral Frog         General Comments: Owl III ID based on recording -		•	
Beaufort       0: 0-2 km/hr - calm       4: 20-30 km/hr - moderate breeze - small branch moves         Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr - gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       3         Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL- Builfrog       GRFR - Green Frog       WOFR - Wood Frog         MIFR - Chorus Frog       NLFR - N.Leopard Frog       MIFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog       General Comments: Owl - Will ID based on recording - Wood Frog			
Wind Scale       1: 3-5 km/hr - light air movement       5: 31-38 km/hr - fresh breeze - moderate branch moves         2: 6-11km/hr - slight breeze - can feel on face       6: 39-49 km/hr - strong breeze - large branch moves         3: 12-19 km/hr- gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continuous traffic passing         2 - moderate - distant traffic (2-5 cars)       2 - moderate - distant traffic (2-5 cars)         Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL- Bullfrog       GRFR - Green Frog       WOFR - Wood Frog         MIFR - Chorus Frog       NLFR - N.Leopard Frog       MIFR - Mink Frog       PIFR - Pickeral Frog         General Comments:       Out       WIII ID basect On recording       Antercording		chorus, can continuous, numbers of individuals cannot be reliably estimated	
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3: 12-19 km/hr- gentle breeze - leaves move on twigs         Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4 - profound -continous traffic passing         2 - moderate -distant traffic (2-5 cars)         Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL - Bullfrog       GRFR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog         MIFR - Mink Frog       PIFR - Pickeral Frog	Wind Scale	1: 3-5 km/hr - light air movement       5 : 31-38 km/hr - fresh breeze - moderate branch moves	
Background       0 - no appriciable effect       3 - serious -continuous traffic nearby (6-10 cars)         Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continous traffic passing         2 - moderate -distant traffic (2-5 cars)       4- profound -continous traffic passing         Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL- Bullfrog       GRFR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog         MIFR - Mink Frog       PIFR - Pickeral Frog         General Comments:       Out		2: 6-11km/hr - slight breeze - can feel on face 6: 39-49 km/hr - strong breeze - large branch moves	
Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continous traffic passing         2 - moderate - distant traffic (2-5 cars)       4- profound -continous traffic passing         Species       AMTO - American Toad       GRTR - Gray Treefrog         Species       BULL- Builfrog       GRFR - Green Frog       WOFR - Wood Frog         Codes       BULL- Builfrog       NLFR - N.Leopard Frog         MIFR - Chorus Frog       PIFR - Pickeral Frog         General Comments:       Out       Will ID based on recording		3: 12-19 km/hr- gentle breeze - leaves move on twigs	
Noise Scale       1 - slight - distant traffic (1 car)       4- profound -continous traffic passing         2 - moderate - distant traffic (2-5 cars)       4- profound -continous traffic passing         Species       AMTO - American Toad       GRTR - Gray Treefrog         Species       BULL- Builfrog       GRFR - Green Frog       WOFR - Wood Frog         Codes       BULL- Builfrog       NLFR - N.Leopard Frog         MIFR - Chorus Frog       PIFR - Pickeral Frog         General Comments:       Out       Will ID based on recording	Dealers 1		
2 - moderate - distant traffic (2-5 cars)         Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL- Bulifrog       GRFR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       MIFR - Mink Frog       PIFR - Pickeral Frog         General Comments:       Out       Will ID based on recording - Units of the second se	£ -		
Species       AMTO - American Toad       GRTR - Gray Treefrog       SPPE - Spring Peeper         Codes       BULL- Builfrog       GRFR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       MIFR - Mink Frog       PIFR - Pickeral Frog         General Comments:       Out       Will ID based on recording       Here on the second sec	Noise Scale		
Codes       BULL- Builfrog       GRFR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       WIFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog         General Comments:       Out       Out		2 - moderate -distant traffic (2-5 cars)	
Codes       BULL- Builfrog       GRFR - Green Frog       WOFR - Wood Frog         CHFR - Chorus Frog       NLFR - N.Leopard Frog       WIFR - Wood Frog         MIFR - Mink Frog       PIFR - Pickeral Frog         General Comments:       Out       Out	Species	AMTO - American Toad GRTR - Grav Treefrog SPPF - Spring Peeper	
CHFR - Chorus Frog MIFR - Mink Frog       NLFR - N.Leopard Frog PIFR - Pickeral Frog         General Comments:       Oull - Will ID based on recording - Ould			
MIFR - Mink Frog     PIFR - Pickeral Frog       General Comments:     Owl II - Will ID based on recording - Output			
General Comments: Owl 1 - will ID based on recording.			
	Constal Ca	monter Abill - will ID becal an reportable	
Flying around us / stopped calling once we left.	General Co	omments: Own in the house of recording	
rying around us i stopped calling once we let t.		Thursday allowed up I changed calling and the	
		riging around us ( stopped calling once we let +	•



Appendix B3. Turtle Wintering Area Evaluation of Significance Surveys



# **Turtle Wintering Area Survey Form**

Study Area:	Gospen in		Obs	servers: Jon Show	ey + Jess Piette
	TWO-01				1
Fill in survey	form for each van	tage point. Vantag	e Point Num	ber:	and the second second second
Vantage Po	int UTM		Dat	e: 04/09/13	
Easting: 🌵	53125 No	rthing: 479972	Stai	rt Time: 8:15am	End Time: Q: 35a-
Weather Co	onditions				
Temperatur	e (C <u>°): 5°</u>	Wind (Dir.):	NE	Wind (B	.S.) <u>: 1</u>
Cloud Cover	(%): 100%	Percipitatio	n: Nore		
Description Agrin	of Local Habitat Co	onditions and Adja	cent Land Us as web	e: Las plantation	to the East
Description	es observed during of Turtles Observe	d		No If yes, fi	
Species	UTMs	Length Sex	#	Behaviour/ Descript	ion of visible traits
None					
			·		
					· · · · · · · · · · · · · · · · · · ·
	·				
	·····				
Additional N -Forger - July n * loca	day with of observe ommended VP	cooler temps any moved due	ta por	Visibility	
Photo Log	<u> </u>				
Photo ID	Description (loss	tions direction of	convotion -	ta \	

Photo ID	Decription (locations, direction, observation, etc.)
Picl	Too many Shrubs at Vantoge Point 1 - Will have to move
2	View Joing North on the West side
3	View loving South on the west side

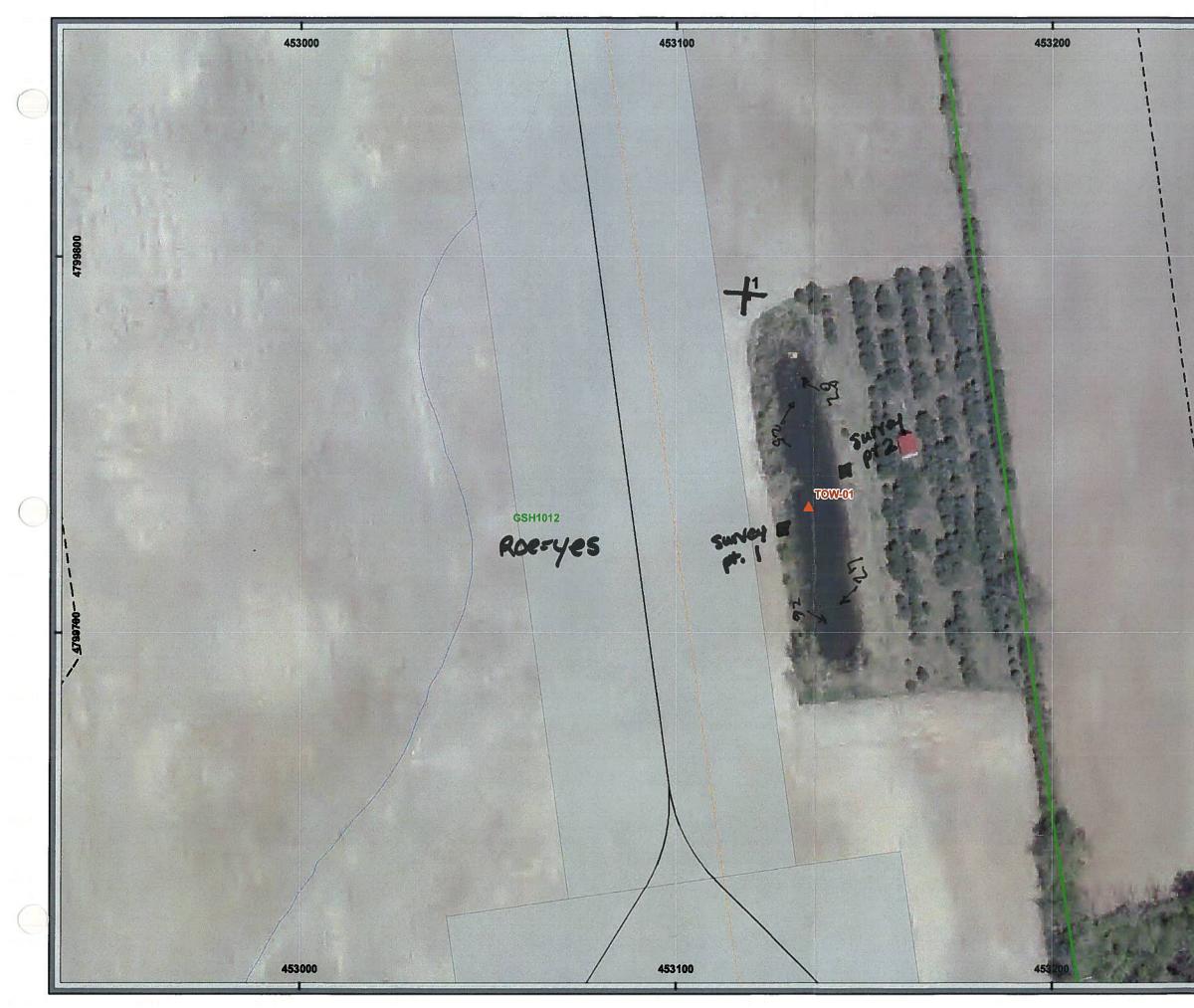


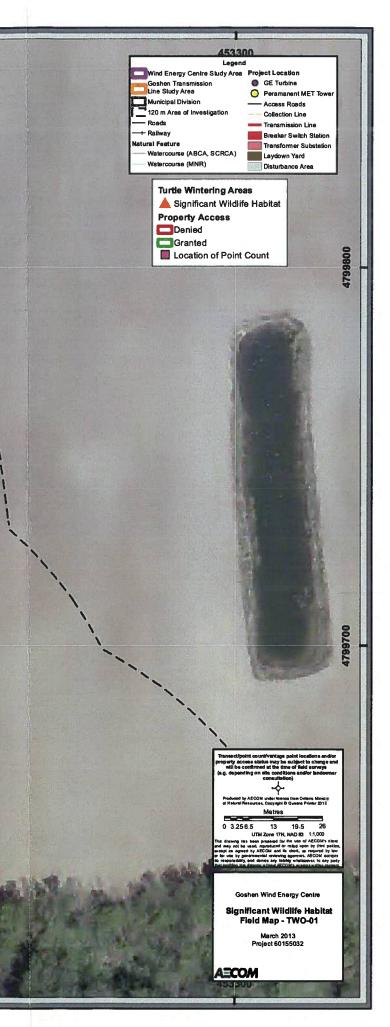
# **Turtle Wintering Area Survey Form**

Study Area: 6	shen				Obser	vers: Tom Shorney + Jess Piette		
Feature ID: T						Showing 1 SESS Preile		
	rm for each vantage p	oint. Var	ntage Po	oint N	lumbe	r: 2		
	Vantage Point UTM 17T Date: 04/09/13							
	Easting: 453148 Northing: 4799721 Start Time: 8:37a~ End Time: 8:57ar							
Weather Conditions								
Temperature (	Temperature (C°): 2°C Wind (Dir.): NE Wind (B.S.):							
Cloud Cover (%	Temperature (C°): 2°CWind (Dir.): NEWind (B.S.): 1Cloud Cover (%): 100%Percipitation: None							
Description of Local Habitat Conditions and Adjacent Land Use: - A Combinistion of Agriculture / Plantation Surrounding Part - hr								
Description of	observed during moni Turtles Observed		_	es/N	-	No If yes, fill in the table below.		
Species	UTMs	Length	Sex		#	Behaviour/ Description of visible traits		
None								
<u></u>	····		<u> </u>					
						·····		
		1						
		1						
Additional Not	es with No Tur	tles (	obser	ied				
		1001						

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Photo ID	Decription (locations, direction, observation, etc.)	
Ч	View of Pond howking Wonth on East Side.	
5	View of looking South on East side	





# **Turtle Wintering Area Survey Form**

Study Area: Goshen		Observer	S: Tom Shorney + JESS Piette
Feature ID: Two-01			······································
Fill in survey form for each v	antage point. Vantage Po	oint Number:	VPI
Vantage Point UTM		Date: 🔿	5/01/2013
Easting: 453127	Northing: 4799727	Start Tim	e: 10:05 an. End Time: 10: 25an
Weather Conditions			
Temperature (C°): 18°C	Wind (Dir.):	SE	Wind (B.S.): 니
Cloud Cover (%): 10%	Percipitation:	Nonp	

### Description of Local Habitat Conditions and Adjacent Land Use:

- dear Ski	es-ideal	basking.				
- Unknown	sorenes	susand	along -	Posally	turth	
- Anicultural	fand an	mountin.	]	)		
0		J				

# Turtle species observed during monitoring period (Yes/No):

 $\mathcal{N}_{0}$  . If yes, fill in the table below.

Description of Turtles Observed	Descri	ption of	<b>Turtles</b>	Observed
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Species	UTMs	L	ength	Sex	#	Behaviour/ Description of visible traits
		X				
		/				
	e					

#### **Additional Notes**

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ycatite うふ

Photo Log		
Photo ID	Decription (locations, direction, observation, etc.)	
25	lond - South	
26	Pond - North	



10:27 am -> 10:49 am

27/ South 28 North

17T 4531 49 4799716

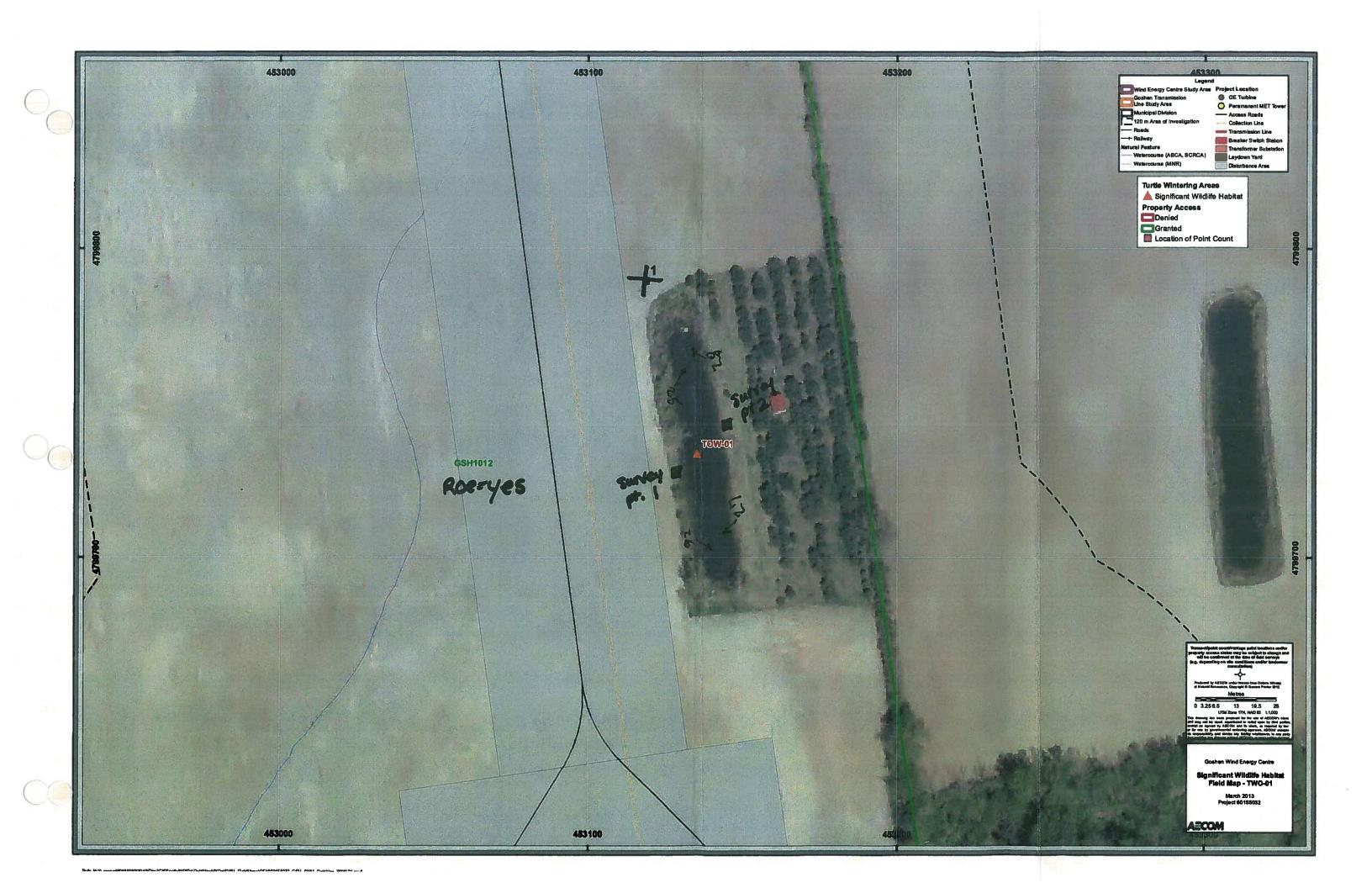
Species: Red Winged Blackhit - Ami chan - Piclered prog - Ami Tood - No. Flicker - Am. Robin - Flycable Sp.

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Study Area:	Gosten			Obser	rvers: Ton Shows, + JESS Piette
	TWO-01				
	form for each van	tage point. Var	ntage Po	oint Numbe	er: VPZ
Vantage Poi	nt UTM			Date:	05/01/2013
Easting: 453149 Northing: 4799716					Time: 10:27an End Time: 10:49an
Veather Co					
emperature	e (C <u>°): /8°</u> ~	Wind (D	Dir.):	SE	Wind (B.S.): <i>닉</i>
loud Cover	(%): 10%	Percipit	ation:	Nore	
- Ag	of Local Habitat C	Plantation	Sar	roudu	- fond
escription	es observed durin of Turtles Observe	ed			$N_{6}$ . If yes, fill in the table below.
pecies	UTMs	Length	Sex	#	Behaviour/ Description of visible traits
					<u>/</u>
<u> </u>					
					1
				×	
· · · · · · · · · · · · · · · · · · ·					-
- 10 - E-1	~				
Additional N	lotes	Į		2	
- Red - Market - Red - Market - Red - Market - Red - Market - Market - Red - Red - Market - Red - Market - Red - Market - Red - Market - Red - Market - Red - Market - Red - Market - Red - Market - Red - Market - Red - Red - Market - Red - R	Spines dise (14 4) Blackling tion sp	med. An crow	- Pic	karet f	og, Am Tood, No. Flicker, Am. Ro

F	Photo ID	Decription (locations, direction, observation, etc.)
	27	South - Pend
(F) (	28	North - Paro



## \*Kound #3 \*

## **Turtle Wintering Area Survey Form**

Feature ID: T	W0-0			ervers: Tom Stormen + Jess Pich				
Fill in survey fo	rm for each van	tage point. Vantag	ge Point Num	Dint Number:				
/antage Point	UTM See Row	nd #1 Notes	Date	: hay 15, 2013				
Easting:		orthing:	Star	e: Nary 15, 2013 t Time: 12:00 P.M. End Time: 17				
Neather Condi	itions	<u>.</u>						
remperature (C	C°): Z/40	Wind (Dir.)	: Su	Wind (B.S.) <u>: /</u>				
Cloud Cover (%	): Or <sub>6</sub>	Percipitatio	on: None					
Description of Adjucent - Foliato	Local Habitat Co Land use on Ven tal	onditions and Adja Dgricultura in mithen a	nd along	e: fond out				
-	observed during Turtles Observe		· ·	.If yes, fill in the table below				
inted Tustle		Length Sex		Behaviour/ Description of visible traits				
I US FIE		5cm -	- 2_	Basking on Wooden Planks				
	<u></u>							
	1							
			<u> </u>					
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Additional Not	L. 1 3	indy						
;	,	indy						
- tyt	,	indy						
;	Decription (loc	ations, direction, o	bservation, et	tc.)				

115 - North 117 - Knith

AECOM

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Study Area:	Sosler			Obse	ervers: Tom Shorney + Jess Piette			
Feature ID: 7	W0-01				·			
	form for each vant				er: 2			
Vantage Poin	t UTM See Row	N I Z Note	2	Date	: May 15, 2013			
Easting: Northing:				Start	Time: 12 22 P. End Time: 12:42 Pm.			
Weather Con								
Temperature	(C <u>°): Z1 °c</u> %): ⊙%	Wind (Dir.	): <u> </u>	<u> </u>				
Cloud Cover (	%): 0%	Percipitat	on: <sub>A</sub>	bre				
	f Local Habitat Co cent land use			na Use				
•	s observed during		od (Yes/I	No):	$\mathcal{N}_{\mathcal{O}}$ . If yes, fill in the table below.			
Description of Species	Description of Turtles Observed			#	Behaviour/ Description of visible traits			
				-				
				/	f			
	_							
			-4-	<u>.</u>				
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Additional No	otes	II						
	trendy win	I	<u> </u>					

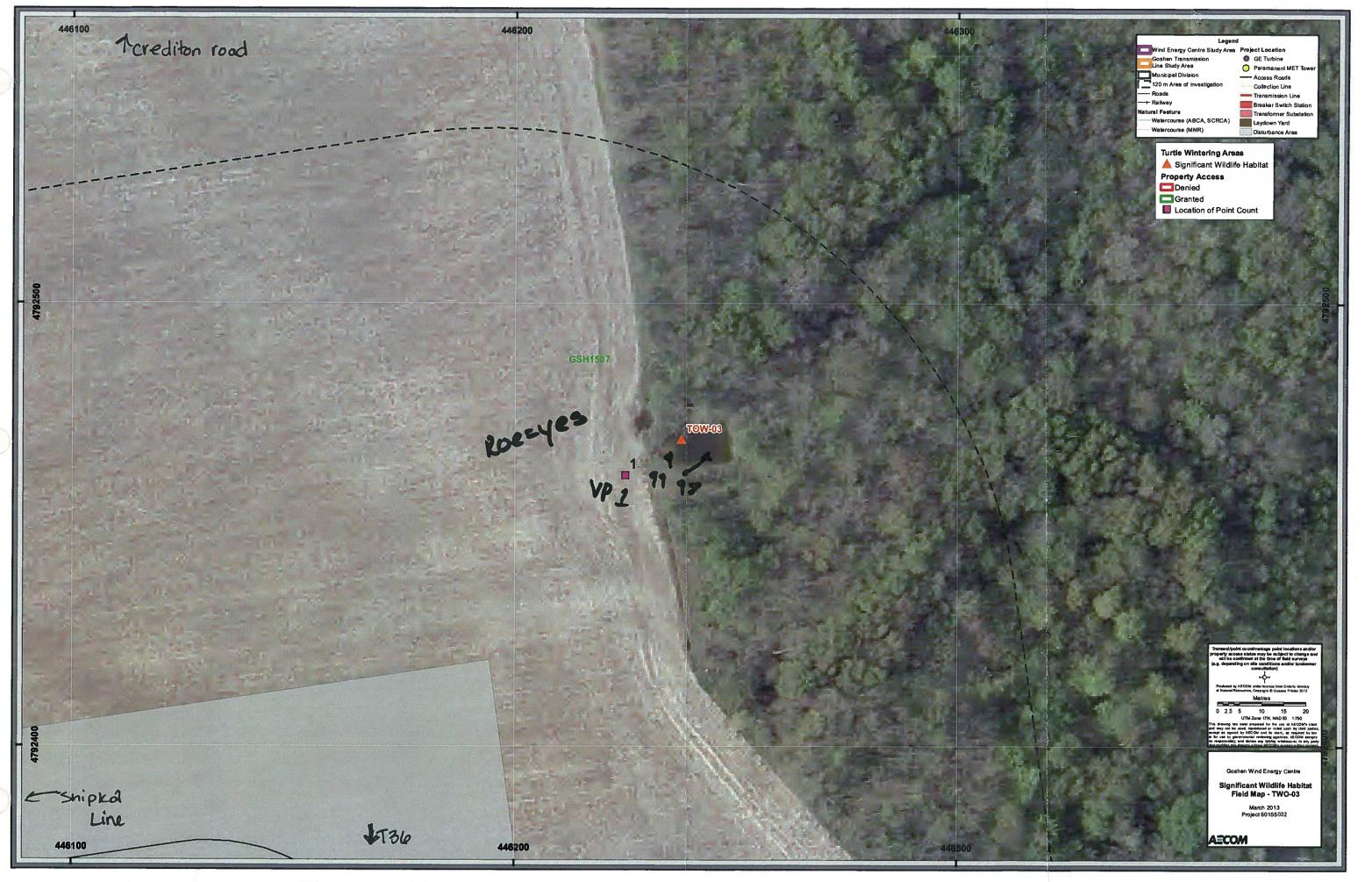
 Photo Log

 Photo ID
 Decription (locations, direction, observation, etc.)

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 North Pation of Pand

 114
 South Portion of Pand





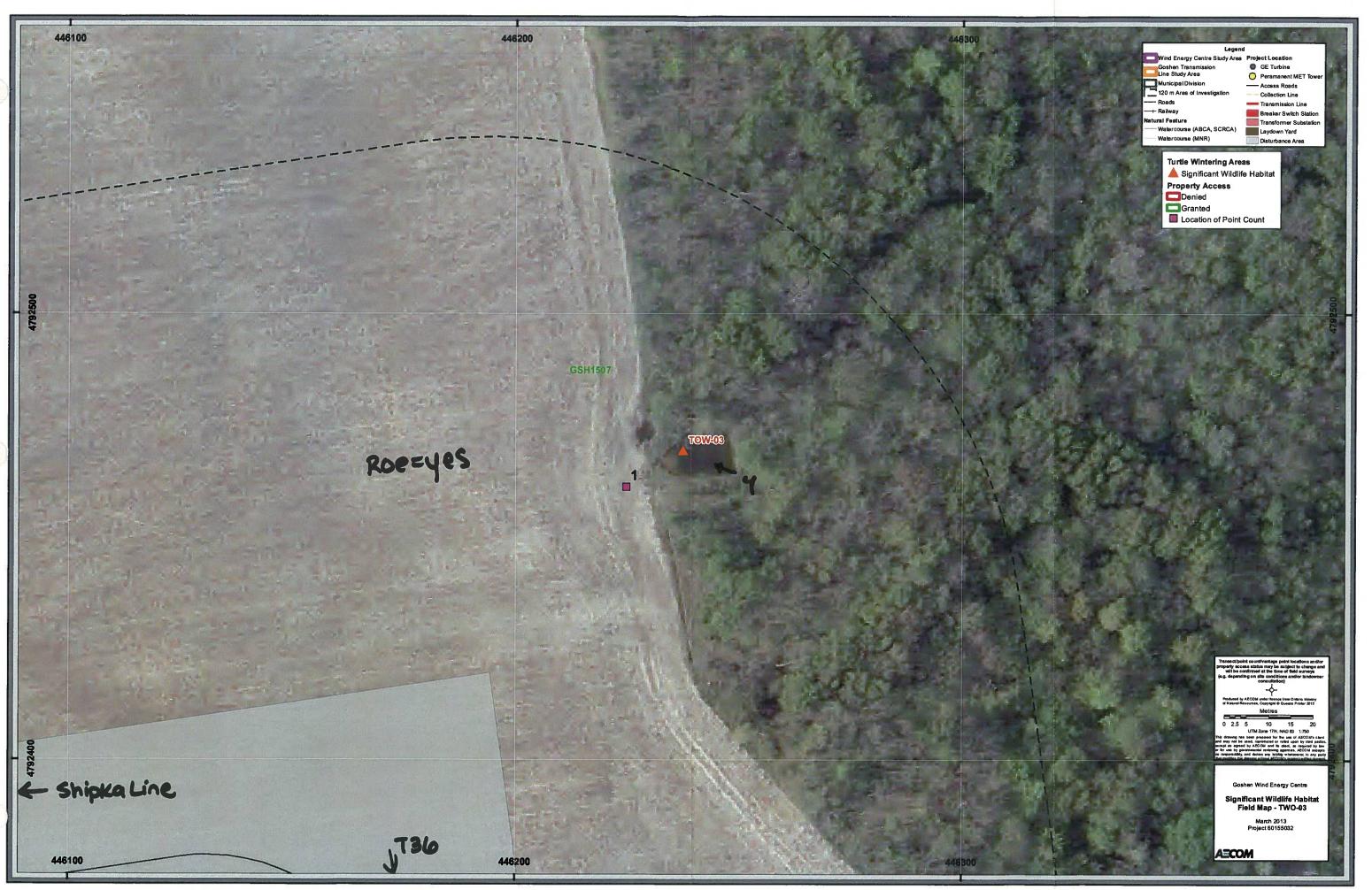
35

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Study Area:	Gasten			Obs	ervers: Ton Shone	+ Tess Pioto		
Feature ID:				Observers: Tom Shormey + JESS Pietto				
	form for each vanta	ige point. Van	tage Po	oint Numt	per:			
Vantage Poir		:04/16/13						
Easting: 446239 Northing: 4792466					Time: 4:40 P.M	End Time: 5:05 pm		
Weather Conditions								
Temperature	(C°): 17°C	Wind (D	ir.):	NW	Wind (B	.S.): Z		
Cloud Cover	(%): 5%	Percipita	ation:	None				
Description of	ornling land	nditions and A <u>a</u> <u>Comber</u>	djacen ation	t Land Use	e: griadha an	Denduon		
Description o	s observed during r of Turtles Observed		•	es/No):	If yes, fi	ll in the table below.		
Species	UTMs	Length	Sex	#	Behaviour/ Descript	ion of visible traits		
<i></i>								
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				-				
Additional No Spacies 	Sharp-Shinned ins popers insted midhikh - howed lark	have ? , Pleshe	fro gold	in tool	Vicker, Turke	y Multure,		
Photo Log		. <u></u>						

Photo ID	Decription (locations, direction, observation, etc.)
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Path: N: 10-secom60155032120 10/Fine/GISSpatlat/MXDist/Rekt/Map/NXDistSWH\_Rekt/Maps/GSH60155032\_GSH\_SWH\_Rekt/Map\_TOW-03.mxd

Study Area: Go Seen       Observers: Tom Shake + Jess Pi         Feature ID: TWO-03       Fill in survey form for each vantage point. Vantage Point Number: VPI         Vantage Point UTM See Low + + 1 Weles       Date: 05/03/2013         Easting:       Northing:         Start Time: 9:00 area       End Time: 9:         Weather Conditions       Start Time: 9:00 area       End Time: 9:         Temperature (C1): /6"C       Wind (Dir.):       Start Time: 9:00 area       End Time: 9:         Observer(%): 10 - 602       Percipitation: None       Wind (B.S.): 3       Cloud Cover (%): 10 - 602       Percipitation: None         Description of Local Habitat Conditions and Adjacent Land Use:       -	040
Vartage Point UTM 3cc found # 1 Notes       Date: 05/03/2013         Easting:       Northing:         Weather Conditions       Start Time: 9:00 a End Tim	- ur C
Easting:       Northing:       Start Time: 9:00 a       End	
Easting:       Northing:       Start Time: 9: 00 a       End Time: 9:         Weather Conditions       Temperature (C*): /6*C       Wind (Dir.):       Security       Wind (B.S.): 3         Cloud Cover (%): 40 - 6070       Percipitation:       None       None         Description of Local Habitat Conditions and Adjacent Land Use:       -       -       Aug.       -         -       Aug.       Aug.       -       -       -       -       -         Turtle species observed during monitoring period (Yes/No):       No       .       .       .       .       .         Species       UTMs       Length       Sex       #       Behaviour/ Description of visible traits         -       -       -       -       -       -       .       .       .         -       -       -       -       -       -       .	
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# **Appendix C**

Vascular Plant Species List

BOTANICAL NAME		COMMON NAME	Coefficient of Conservatistm	Wetness Index	Weediness Index	Provincial Status	OMNR Status	COSEWIC Status	Global Status	Local Status Lambton County	Local Status Huron County	Date of Site Invesigation Natural Area	16-Apr-13	16-Apr-13	16-Apr-13 227
			Oldham et al	Oldham et al	Oldham et al	Newmaster			Newmaster	Tiedje 2004	Oldham 1993	ELC Community	CUW1	CUP3	СЛМ
GYMNOSPERMS		CONIFERS													
Pinaceae		Pine Family													
Picea	abies	Norway Spruce		5	-1	SE3			G?					U	
Pinus	strobus	Eastern White Pine	4	3		S5			G5	L3	х			F	
Apiaceae		Carrot or Parsley Family													
Daucus	carota	Wild Carrot		5	-2	SE5			G?		I				U
Asteraceae		Composite or Aster Family													
Arctium	minus	Common Burdock		5	-2	SE5			G?T?		I		R		
Symphyotrichum	species	Aster Species											R		
Solidago	species	Goldenrod Species											R		U
Taraxacum	officinale	Common Dandelion		3	-2	SE5			G5		I		R		R
Brassicaceae		Mustard Family													
Alliaria	petiolata	Garlic Mustard		0	-3	SE5			G5		I		R		
Cornaceae		Dogwood Family													
Cornus	racemosa	Grey dogwood	2	-2		S5			G5?		х		U		
Dipsacaceae		Teasel Family													
Dipsacus	fullonum ssp. sylvestris	Wild Teasel		5	-1	SE5			G?T?		I		R		U
Fagaceae		Beech Family													
Quercus	macrocarpa	Bur Oak	5	1		S5			G5		х		F		
Guttiferae		St. John's-wort Family													
Hypericum	perforatum	Common St. John's-wort		5	-3	SE5			G?		I				R
Juglandaceae		Walnut Family													
Carya	ovata var. ovata	Shagbark Hickory	6	3		S5			G5				R		
Oleaceae		Olive Family													
Fraxinus	pennsylvanica	Green Ash	3	-3		S5			G5	С			U		
Rosaceae		Rose Family													
Crataegus	species	Hawthorn species											F		
Rubiaceae		Madder Family													
Galium	asprellum	Rough Bedstraw	6	5		S5			G5				R		
Salicaceae		Willow Family													
Salix X	rubens	Hybrid Crack Willow		-4	-3	SE4			НҮВ				R		
Ulmaceae		Elm Family													
Ulmus	americana	White Elm	3	-2		S5			G5?		х				R
MONOCOTYLEDONS		MONOCOTS					_								
Poaceae		Grass Family													
Dactylis	glomerata	Orchard Grass		3	-1	SE5			G?		I		U		U
Poa	species	Grass Species											F		
Phalaris	arundinacea	Reed Canary Grass	0	-4		S5			G5		х				F



# **Appendix D**

Goshen Wind Energy Centre – Waterfowl (Tundra Swan) Stopover and Staging Areas (Terrestrial) Pre-construction Evaluation of Significance Survey Results Letter (AECOM, 2013)



AECOM 300 – 300 Town Centre Boulevard Markham, ON, Canada L3R 5Z6 www.aecom.com

905 477 8400 tel 905 477 1456 fax

June 27, 2013

Amy Cameron Renewable Energy Operations Team Ministry of Natural Resources 300 Water Street, 4<sup>th</sup> Floor, South Tower Peterborough, Ontario K9J 8M5

Dear Ms. Cameron:

#### Project No: 60155032

#### Regarding: Goshen Wind Energy Centre – Waterfowl (Tundra Swan) Stopover and Staging Areas (Terrestrial) Pre-construction Evaluation of Significance Survey Results

We are pleased to provide you with this letter documenting the results of the pre-construction surveys conducted to evaluate the significance of candidate significant Waterfowl (Tundra Swan) Stopover and Staging Areas (Terrestrial) features WSST-15 and WSST-36 identified in the Goshen Wind Energy Centre Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013) completed on behalf of Goshen Wind, Inc.

The Ministry of Natural Resources (MNR) issued a confirmation letter on January 15, 2013 stating that the Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013) for the Goshen Wind Energy Centre (hereafter referred to as the Project) indicating that the information available was insufficient to support the development of Turbines 9, 46, 47 and 82. Therein, MNR indicated that candidate significant waterfowl stopover and staging habitats WSST-15 (near Turbine 9) and WSST-36 (near Turbines 46, 47 and 82) require additional wildlife surveys and information about potential negative environmental effects. The intent of this letter is to provide the determination of significance of candidate significant Waterfowl (Tundra Swan) Stopover and Staging Areas (Terrestrial) for features WSST-15 and WSST-36 based on results of pre-construction surveys completed in March 2013.

#### Methods

Habitat within the Goshen Wind Energy Centre was identified using a number of sources including site investigations, information provided by residents during public open houses, the Goshen Wind Energy Centre Avian Use Monitoring Report – 2010 (Golder Associates, 2011) and preliminary Tundra Swan migration surveys completed by AECOM in March 2012.

When a resident indicated that they had observed Tundra Swan within the Project Study Area, the location, approximate number of Tundra Swans observed, condition of the site when the observation was made (i.e. was it flooded, were forage crops present and if so what type) and observations related to whether site was used annually was obtained. In some instances, additional follow up



information was provided by landowners indicating new observations of Tundra Swans at the locations they had previously identified at an open house, or additional locations where they had observed Tundra Swans. AECOM biologists conducted site visits with willing residents where they travelled together to locations where Tundra Swans had been observed, to confirm the location and delineate the boundaries of areas that are prone to flooding.

The information presented in the Goshen Wind Energy Centre Avian Use Monitoring Report – 2010 (Golder Associates, 2011) was collected through the completion of a roadside survey where all roads within the Project Study Area were driven, with frequent stops made to survey fields and other habitats for birds. The shore of Lake Huron on the westernmost edge of the Avian Study Area was also surveyed. Fields and Lake Huron were scanned using a high power spotting scope and good quality binoculars, and all birds were identified and recorded.

The preliminary Tundra Swan migration surveys completed by AECOM in 2012 were conducted on three occasions approximately one week apart during the peak Tundra Swan migratory period in March 2012. All roads within the Goshen Wind Energy Study Area were driven, with frequent stops made to visually search fields and other habitats for Tundra Swans. To the extent possible, surveys were conducted under calm, clear weather conditions. Weather conditions (wind, cloud cover, temperature), start time and end time were recorded on all survey dates. Surveys were conducted between sunrise and noon, during the most active period for Tundra Swans. During the surveys, all waterfowl observed via binoculars and spotting scopes were recorded (i.e., at their approximate GPS point or by recording the location on a map so as to minimize disturbance), identified, and their age (adult or immature), and behaviour noted.

Due to the exceptionally mild and dry weather conditions experienced during the winter and spring of 2012, the information collected from the surveys during this period was not considered to be indicative of a typical Tundra Swan migration season. In particular, residents indicated that locations which typically flood and are used by Tundra Swans annually did not flood during the migration season in 2012. In an attempt to compensate for this, additional habitat mapping to delineate the approximate boundaries of flooded agricultural land within the Project Study Area was completed in the spring of 2012. Site visits to areas where Tundra Swan had been observed were completed and any signs of flooding (i.e. dark soils, piles of sticks or straw, depressions, topography, etc.) were recorded and mapped. The information collected during these field investigations, together with interpretation of ortho imagery (i.e. where dark soils were visible), was used to delineate the boundaries of the candidate Tundra Swan Stopover and Staging Habitats as presented in the Goshen Wind Energy Centre Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013). Due to the unusually dry spring in 2012, these boundaries do not represent actual observations of flooded areas but rather estimations based on field observations and interpretation of ortho imagery, as described above. A commitment was made within the Goshen Wind Energy Centre Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013) to complete additional pre-construction evaluation of significance surveys in order to confirm the significance of tow features (WSST-15 and WSST-36).

Pre-construction surveys were conducted over a three week period between March 12 and March 28, 2013 to evaluate the significance of candidate significant Waterfowl (Tundra Swan) Stopover and Staging Areas (Terrestrial) features WSST-15 and WSST-36, following the methods described in Section 4.2.3.1 of the Natural Heritage Assessment and Environmental Impact Study Report



(AECOM, 2013) with the following modification. The survey intensity was increased from three to six visits by conducting surveys twice per week in order to improve the accuracy of boundary delineation and ensure the peak Tundra Swan migration was captured for these candidate significant wildlife habitat features.

One survey station was placed per 0.5 km of candidate Tundra Swan stopover and staging habitat and was monitored for a minimum of 15 minutes. The GPS co-ordinates of each survey station were collected on the first visit and all additional surveys were completed from the same locations. Surveys were completed between sunrise and noon under calm, clear weather conditions, to the extent that was possible. Weather conditions (wind, cloud cover, temperature), start time and end time were recorded during each survey. Binoculars and a spotting scope were used at each survey location to observe waterfowl and record their number, location, age and behaviour (i.e. flight paths) of Tundra Swans. Pre-construction surveys were undertaken by a qualified Biologist; qualification of the field personnel is provided in Attachment 1. Detailed field notes are provided in Attachment 2.

Features were evaluated to determine whether they meet MNR (2011) criteria for significance based on the number of Tundra Swan observed (i.e. flooded agricultural fields with waste grains that are occupied by aggregations of 100 or more Tundra Swans with evidence of annual use).

Since the 2013 Tundra Swan migration period occurred under more typical climatic conditions, the habitat which had previously been delineated at these locations was refined based on the observations made during the 2013 pre-construction surveys. The boundaries of these features were delineated by identifying the outer limit of the flooded field area that was observed to be used (at least in some portion) by Tundra Swans or the outer limit of the area (not necessarily flooded) observed to be occupied by Tundra Swans that was adjacent the flooded area, which ever was larger. A 300 m buffer was then applied to this area and considered to form the boundary of the significant wildlife habitat.

#### **Results and Discussion**

A total of six visits took place during the pre-construction survey period between March 12 and March 28, 2013 at each candidate Significant Waterfowl (Tundra Swan) Stopover and Staging Area (Terrestrial) feature WSST-15 and WSST-36. The results of these surveys are individually discussed below.

#### WSST-15

During the pre-construction evaluation of significance surveys, no evidence of annual spring flooding or Tundra Swans were observed in agricultural fields at this feature. A total of 63 and 79 Tundra Swans flew over WSST-15 on March 26 and 28, 2013 respectively; however, none of the observed flyovers departed from or landed in the agricultural fields in or adjacent to the feature. A detailed summary of the survey results is provided in Table 1.

During Tundra Swan migration surveys completed in March 2012, more than 1860 Tundra Swans were observed feeding in corn stubble at this location. No flooding was observed in the field at that time. During the 2013 surveys, the fields within this feature were comprised primarily of tilled soil or winter wheat but not corn. These observations are consistent with the general observation made



through surveys conducted by AECOM and reported anecdotally by local residents that Tundra Swans preferentially feed in agricultural fields containing waste corn that have not been ploughed under. Their occurrence in fields which are not flooded is therefore influenced by agricultural practices and crop rotation cycles. Similarly, in the Long Point area, Tundra Swans tend to spend more time feeding in agricultural fields planted with corn the previous year, as waste corn contains a high carbohydrate content which facilitates fat deposition that is necessary for Tundra Swans to continue their spring migration (Petrie et al., 2002). The absence of this preferred food source, as well as the absence of flooding, appears to have contributed to the absence of Tundra Swans at this location in 2013. In addition the spring of 2012 was exceptionally early and dry, therefore hardly any flooding was present in the agricultural fields that normally flood each spring. As a result Tundra Swans did not concentrate in their usual fields and appeared to be more dispersed. Consequently we believe that the high numbers of swans present in this feature in 2012 is not typical.

Based on these results of the 2013 evaluation of significance survey, WSST-15 is not considered Significant Wildlife Habitat as it does not satisfy the criteria of significance prescribed in the Significant Wildlife Habitat Technical Guide (SWHTG) Ecoregion 7E Criterion Schedule (MNR, 2011), which requires the presence of a flooded agricultural field with waste grains used annually by 100 or more Tundra Swans. Therefore mitigation measures and monitoring commitments described in the Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013) for this feature need not be applied, and the proposed Turbine 9 is not located within 120 m of a Significant Waterfowl (Tundra Swan) Stopover and Staging Area (Terrestrial).

Date	Time	Weather Conditions	Number of Waterfowl Observed	Flooding Observed	Comments
March 12, 2013	11:00 am to 11:50 am	Temp: -1°C Wind Direction: S Cloud Cover: 100% Beaufort Scale: 2/3 Precipitation: Light Snow	0 – Tundra Swan	No flooding observed within or adjacent to WSST-15	No Tundra Swans observed
March 14, 2013	10:43 am to 11:30 am	Temp: -1°C Wind Direction: N Cloud Cover: 60% Beaufort Scale: 3 Precipitation: None	0 – Tundra Swan	No flooding observed within or adjacent to WSST-15	No Tundra Swans observed
March 19, 2013	10:30 am to 11:35 am	Temp: -2°C Wind Direction: SW Cloud Cover: 100% Beaufort Scale: 3 Precipitation: Snow	0 – Tundra Swan	No flooding observed within or adjacent to WSST-15	No Tundra Swans observed
March 21, 2013	10:40 am to 11:35 am	Temp: -5°C Wind Direction: E Cloud Cover: 100% Beaufort Scale: 3 Precipitation: Snow	0 – Tundra Swan	No flooding observed within or adjacent to WSST-15	No Tundra Swans observed
March 26, 2013	10:50 am to 11:45 am	Temp: 1°C Wind Direction: NE Cloud Cover: 100% Beaufort Scale: 2 Precipitation: None	63 – Tundra Swan 12 – Canada Goose	No flooding observed within or adjacent to WSST-15	Three groups of 18, 22 and 23 Tundra Swans observed flying north over the site.

#### Table 1. WSST-15 Pre-construction Survey Results

Date	Time	Weather Conditions	Number of Waterfowl Observed	Flooding Observed	Comments
March 28, 2013	10:15 am to 11:05 am	Temp: 3°C Wind Direction: NW Cloud Cover: 100% Beaufort Scale: 2 Precipitation: None	79 – Tundra Swan 23 – Canada Goose	No flooding observed within or adjacent to WSST-15	Three groups of 11, 41 and 15 Tundra Swans observed flying northeast over the site. One group of 12 Tundra Swan observed flying northwest over the site.

#### <u>WSST-36</u>

During the 2013 pre-construction evaluation of significance surveys, more than 370 Tundra Swans were observed feeding in two locations of flooded agricultural fields with waste grains within feature WSST-36. A detailed summary of the survey results is provided in Table 2.

No Tundra Swans were observed in this location during the 2012 Tundra Swan migration surveys; however, local residents have reported this as an area that is typically used by Tundra Swans during the annual spring migration. Although the area typically floods in the early spring, it did not flood in 2012, which likely accounts for the absence of Tundra Swans in this location during the 2012 survey. Based on these observations, WSST-36 is confirmed as Significant Wildlife Habitat as it satisfies the criteria of significance prescribed in the SWHTG Ecoregion 7E Criterion Schedule (MNR, 2011).

Due to the lack of flooding in 2012, the boundaries of this candidate significant wildlife habitat feature were delineated in the Natural Heritage Assessment (AECOM, 2013) though air photo interpretation and the extent of potential flooding estimated through a field visit. The boundaries of this Significant Wildlife Habitat feature were further refined using the 2013 evaluation of significance survey results by applying a 300 m buffer to the flooded areas that were occupied by 100 or more Tundra Swans (refer to Figure 1). These refined boundaries more closely reflect the location where residents have reported annual use by Tundra Swans.

Based on the refined habitat boundary, only Turbine 46 is located within 120 m of feature WSST-36, and this turbine is outside the 300 m buffer area associated with this habitat. Therefore only Turbine 46 is required to receive the mitigation measures and post-construction monitoring commitments described in the Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013). However, due to proximity of Turbine 46 to WSST-36 and its location between the two flooded areas comprising this feature, there may be increased potential for collision or displacement of Tundra Swans to occur as a result of this turbine. The significance of these potential effects is difficult to accurately predict due to the lack of available scientific data on the impacts of wind turbines on Tundra Swans.

Turbines 47 and 82, which were previously described as being within feature WSST-36 in the Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013), are now located more than 120 m from the refined boundary of this feature and thus need not receive mitigation measures or post-construction monitoring associated with Tundra Swans.



In addition to the Tundra Swans recorded in the flooded agricultural fields within WSST-36, approximately 280 Tundra Swans in several flocks were observed flying over the site on March 26, 2013. The approximate flight paths of these flocks are documented on Figure 1. Generally the observed Tundra Swans did not land in or depart from any of the agricultural fields within feature WSST-36. However, one group of 26 Tundra Swans was documented flying towards WSST-36 from the south and landing within the flooded fields on March 12, 2013.

The majority of the Tundra Swans flying over appeared to approach the feature from the west and south. Tundra Swans flying from the west avoided an existing transmission line corridor extending north and south along the middle of agricultural fields, approximately 800 m east of Goshen Line, by either turning north and flying parallel to the transmission line corridor or flying straight over it and continuing on east. Several of these flight paths were in close proximity to the proposed locations of Turbines 47, 82 and 48; however, these Turbines are more than 120 m away from the refined boundaries of the confirmed significant feature WSST-36. None of the Tundra Swan flying over landed in the agricultural fields, and flight paths alone are not used as a criterion to delineate this type of Significant Wildlife Habitat based on the SWHTG Ecoregion 7E Criterion Schedule (MNR, 2011). Nevertheless, observations from this survey suggest that Tundra Swans are capable of identifying tall infrastructures from a distance and adjusting their flight paths accordingly to avoid potential collisions; thus, it is highly likely that they will avoid Turbines should they be in their flight paths.

It should also be noted that the purpose of these pre-construction surveys was to record Tundra Swan activity solely within the general vicinity of features WSST-15 and WSST-36 and did not include extensive investigations or recording of Tundra Swan activity for the entire Project Study Area. Flight paths at this location were recorded as incidental observations and were spatially limited to the extent of distances visible from each vantage point at feature WSST-36. Therefore, flight paths recorded at this location do not necessarily represent a significantly concentrated area of Tundra Swans movement in relation to the entire Project Study Area. Flocks of Tundra Swans can be expected to fly over any parts of Project Study Area during their migrations.

Date	Time	Weather Conditions	Number of Waterfowl Observed	Flooding Observed	Comments
March 12, 2013	7:56 am to 10:19 am	Temp: 2°C Wind Direction: S Cloud Cover: 100% Beaufort Scale: 2 Precipitation: None	<b>144 – Tundra Swan</b> 6 – Canada Goose 34 – Mallard 20 – Northern Pintail 8 – Unidentified Duck 20 - American Widgeon	Flooding observed at three locations shallow flooding north and south of Crediton Road east of the agricultural drain, north and south of South Road to east and west of agricultural drain, and approximately 500 m north of Mount Carmel Drive and 250 m east of Goshen Line.	All Tundra Swans observed within and adjacent the flooded portion of the field to the north and south of South Road. Of the 144 Tundra Swans observed, a group of 26 Tundra Swans flew from the south during the survey and landed in this area.

Table 2.	WSST-36 Pre-construction Survey Results
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### AECOM

Date	Time	Weather Conditions	Number of Waterfowl Observed	Flooding Observed	Comments
March 14, 2013	8:20 am to 10:05 am	Temp: -2°C Wind Direction: N Cloud Cover: 60% Beaufort Scale: 3 Precipitation: None	<b>230 – Tundra Swan</b> 36 – Mallard 12 – Canada Goose	Flooding observed at two locations north of South Road to the west of the agricultural drain and south of South Road to east of the agricultural drain, and approximately 500 m north of Mount Carmel Drive and 250 m east of Goshen Line.	Two groups of Tundra Swans observed at two locations within WSST- 36; over 100 Tundra Swans observed in the flooded area south of South Road, and 130 Tundra Swans observed in the flooded area located approximately 500 m north of Mount Carmel Drive and 250 m east of Goshen Line.
March 19, 2013	8:23 am to 10:15 am	Temp: -3°C Wind Direction: SW Cloud Cover: 100% Beaufort Scale: 3 Precipitation: Light Snow	0 – Tundra Swan 1 – Canada Goose 10 – Unidentified Duck	Flooding observed approximately 500 m north of Mount Carmel Drive and 250 m east of Goshen Line.	No Tundra Swans Observed
March 21, 2013	9:55 am to 10:10 am	Temp: -5°C Wind Direction: E Cloud Cover: 100% Beaufort Scale: 3 Precipitation: Snow	0 – Tundra Swan 2 - Mallard	Flooding observed approximately 500 m north of Mount Carmel Drive and 250 m east of Goshen Line.	No Tundra Swans Observed
March 26, 2013	9:30 am	Temp: 1°C Wind Direction: NE Cloud Cover: 100% Beaufort Scale: 1 Precipitation: None	<b>280 – Tundra Swan</b> 9 - Mallard	Flooding observed approximately 500 m north of Mount Carmel Drive and 250 m east of Goshen Line.	Approximately 280 Tundra Swan observed flying north and northeast over the site in 14 groups ranging in size from 3 to 42 birds. Predominate direction was north and northeast. Several groups observed approaching transmission lines that bisect site and turning north once within 500 m to 1 km of tower structures.
March 28, 2013	8:00 am	Temp: 1°C Wind Direction: W Cloud Cover: 100% Beaufort Scale: 1/2 Precipitation: None	0 – Tundra Swan 8 – Mallard 36 – Unidentified Duck	No flooding observed within or adjacent WSST-36	No Tundra Swans Observed

#### Incidental Observations

In addition to the detailed surveys completed at WSST-15 and WSST-36 incidental Tundra Swan observations were also recorded at two other locations. One group of approximately 250 Tundra Swans was observed in a field with waste grains and no evidence of annual spring flooding located 500 m southwest of the intersection of Goshen Line and Kirkton Road. Another group of approximately 200 Tundra Swans was recorded in an agricultural field with waste grains and no flooding located 250 to 1000 m southeast of the intersection of Mollard Line and South Road. Neither of these fields were flooded and therefore do not satisfy the criteria of significance as prescribed by the SWHTG Ecoregion 7E Criterion Schedule (MNR, 2011).



It is noted that the type of waste grain present within the fields at the time of Tundra Swan migrations plays an important role in the selection of feeding areas. Observations completed over the past two migration seasons indicate that while Tundra Swan can be found in fields containing winter wheat and soy bean waste crop, their preference appears to be corn as a waste grain. However, it cannot be guaranteed that the same type of crop will be planted in the same field from year to year and therefore the location of feeding areas for Tundra Swans may change from one year to another. Spring flooding is a more consistent and predictable natural condition and therefore a better indication of areas likely to be used regularly by staging Tundra Swans than crop type alone.

#### Summary

The results of the pre-construction surveys confirm that Waterfowl (Tundra Swan) Stopover and Staging Area (Terrestrial) feature WSST-36 is Significant Wildlife Habitat. The boundaries of this Significant Wildlife Habitat were refined based on the observed locations of flooded agricultural fields with waste grains occupied by 100 or more Tundra Swans during the surveys conducted between March 12 and March 28, 2013. As a result, Turbine 46 is located within 120 m of the Significant Wildlife Habitat and must receive the mitigation measures and post-construction monitoring as described in Section 5.7.3 of the Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013).

Feature WSST-15 is confirmed as not Significant Wildlife Habitat as it does not satisfy the criteria of significance as prescribed by the SWHTG Ecoregion 7E Criterion Schedule (MNR, 2011) which requires the presence of a flooded agricultural field with waste grains used annually by 100 or more Tundra Swans. Consequently, the mitigation measures and monitoring commitments described in Section 5.7.3 of the Natural Heritage Assessment and Environmental Impact Study Report (AECOM, 2013) for this feature need not be applied.

Should you have any questions or concerns regarding the information contained herein, please do not hesitate to contact the undersigned.

Sincerely, **AECOM Canada Ltd.** 

James Kamstra, B.Sc., M.E.S Senior Ecologist James.Kamstra@aecom.com

OH:mm Attach

#### References

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Goshen Wind Energy Centre Natural Heritage Assessment and Environmental Impact Study Report. Prepared for NextEra Energy Canada, ULC. January 2013.



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