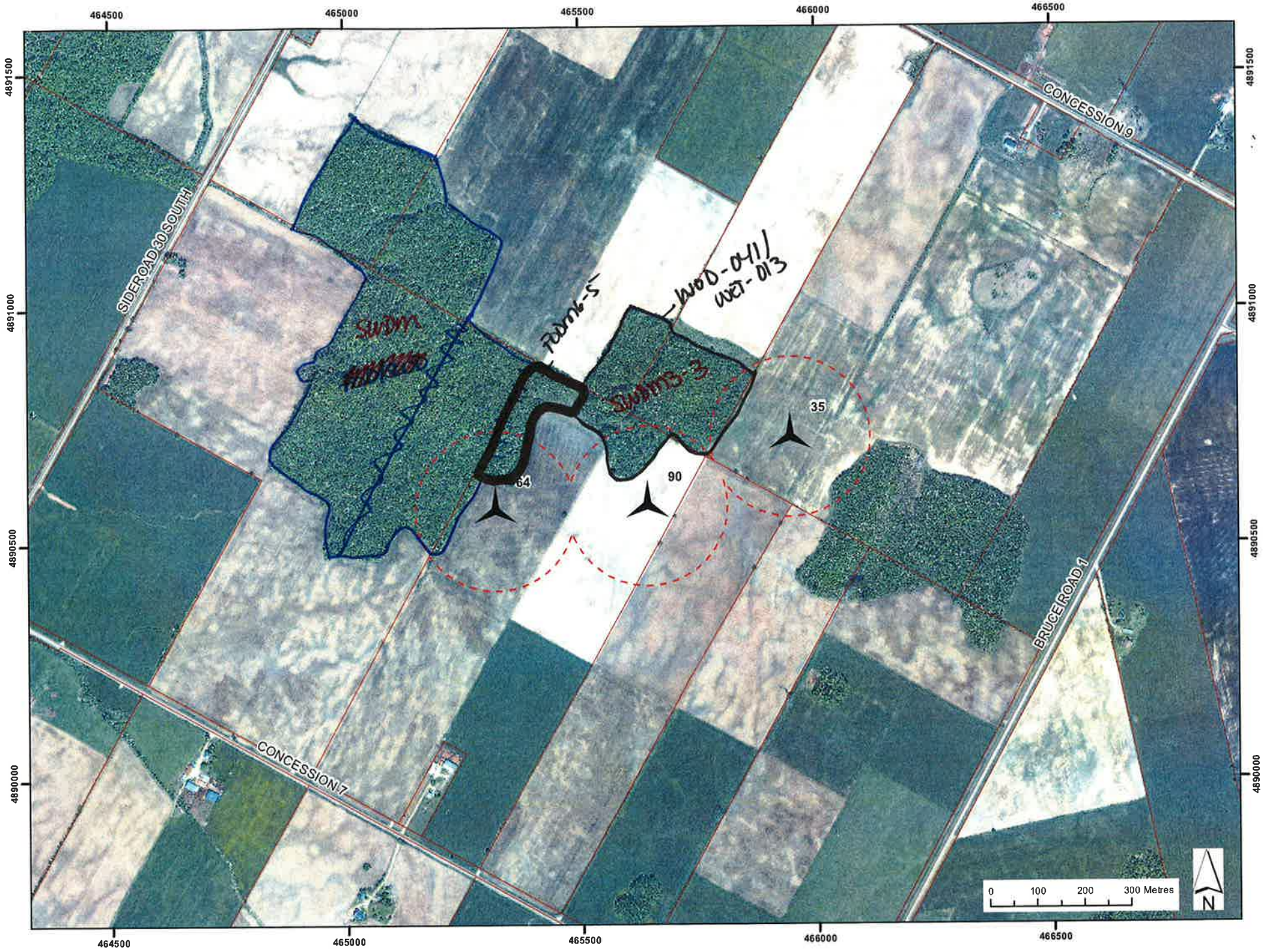
WET-012, WET-013

WOD-041

Oct 7, 2011
CLH, KJW




464500
465000
465500
466000
466500
4891500
4891000
4890500
4890000
SIDEROAD 30 SOUTH
CONCESSION 9
CONCESSION 7
BRUCE ROAD 1
SWDM3-3
35
64
90
0 100 200 300 Metres
N

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Arrow

Project #: 1275

Date: Dec 1. 2011

Observer(s): JRW, AMD

Woodland ID (WOD- 041) #WOD-041 ANEST-013 *WEST-038*

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1	1		17T 0465575 4890751	
Plot 2	1		17T 0465578 4890743	
Plot 3	11(2)		17T 0465594 4890678	
Plot 4	0		17T 0465615 4890703	
Plot 5	0		17T 0465612 4890715	
Plot 6	11(2)		17T 0465679 4890732	
Plot 7				
Plot 8				
Plot 9	total snags	6		
Plot 10	snags/ha	20		
Plot 11				
Plot 12	BMA-023			
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: _____

Project #: _____

Date: _____

Observer(s): _____

Woodland ID (WOD- _____)

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1				
Plot 2				
Plot 3				
Plot 4				
Plot 5				
Plot 6				
Plot 7				
Plot 8				
Plot 9				
Plot 10				
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Arrow
Project #: 1275
Date: Oct 27/ Dec 1 /11
Observer(s): KNP, JRW / JRW / AMD

Start Time _____ End Time _____

Woodland ID (WOD- 041) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	0		
Plot 2	0		
Plot 3	0	KNP / JRW	
Plot 4	0		
Plot 5	1		
Plot 6	1		
Plot 7	1	JRW / AMD	
Plot 8	2		
Plot 9	0		
Plot 10	0		
Plot 11	1		
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24		combined both communities for analysis in office Jan 12/12	
Plot 25			
Plot 26			PST
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

BMA-023

Final Wodland Tally 7

Formula: Total # Snags / (# Plots x 0.05ha)

= 7/(11x0.05) = 12.73

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Airway	1275
Polygon: C	AWDI-041
UTM:	
Date: Oct 7 2011	**Time:** 1600
Surveyor(s): CLH, KSW	
Weather: Sunny 20°C 0%CC Wind 3 Bar 5	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Dark-eyed Junco	OB		*						
B	Red-tailed Hawk	VO		*						
B	Turkey Vulture	OB		*						
B	Wild Turkey		Feather	*						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Airway	
Polygon: C	
UTM:	
Date: Oct 7 2011	**Time:** 1600
Surveyor(s): CLH, KSW	
Weather: Sunny 20°C 0% CC Wind 3 Bar 5	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- X Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 3

Site:	Atmow WF 1275
Polygon:	WOD-044 (T101)
UTM:	
Date:	Oct 26, 2011 (&Oct. 27) Time: 16:48 (8:30)
Surveyor(s):	CLH, KJW
Weather:	showers, 6°C, 100% CC, wind 3/NW

oct. 27: overcast, 3°C, 100% CC, wind 3/NW

Community Classification

	Vegetation Type:	FODM6-5 Fresh-Moist Sugar Maple - Hardwood Deciduous Forest
	Inclusion:	
X	Complex:	SWAM2-1 Black Ash Mineral Deciduous Swamp

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mn	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar Maple > Red Maple > White Elm > Trembling Aspen > Basswood
2	Sub-canopy	3	3	Blue Beech > Sugar Maple > White Elm > Black Ash
3	Understorey	4 S	2	White Elm > Choke Cherry > Wild Raisin > American Beech
4	Groundcover	6 1	1	Choke Cherry > White Elm > Bracken > Strawberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	O	< 10	O	10 - 24	O	25 - 50	N	> 50
Deadfall/Logs	A	< 10	O	10 - 24	O	25 - 50	R	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 3

PLANT SPECIES LIST

Site:	Atmow WF 1275
Polygon:	WOD-044 (T101)
UTM:	
Date:	Oct. 26, 2011 (&Oct 27) Time: 10:45 (8:30)
Surveyor(s):	CLH, KJW
Weather:	showers, 6°C, 100% CC, wind 3/NW

oct 27: overcast, 3°C, 100% CC, wind 3/NW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Trembling Aspen	D				
Basswood	O	O	O	O	
American Beech		O	O	O	
Red Maple	D				
Sugar Maple	A	O	O	O	
Yellow Birch	O	O	O		
Blue Beech		A	O		
Black Cherry	O	O			
E. Hemlock		O	O		
Ironwood	D				
White Elm	O	O	O	O	
White Ash	O				
Hawthorn sp.			O	O	
Green Ash		O			
Nannyberry				O	
Common Red Raspberry				O	
Prickly Gooseberry				O	
Choke Cherry				O	O
Alpine Blackberry				O	
Wild Raisin	O			O	O

Species	Layer 1	2	3	4	Sample
American Elm				O	
Clinton Aster				O	
Bracken			O		
Red Raspberry				O	
Dandelion				O	
Common Strawberry				O	
Barren Strawberry				O	
Hobblebush				O	
Int. Wood Fern				O	
Sharp-lobed Hepatica				O	
Pan Trident Bitter					
Heal-all				O	
Three-leaved Goldthread				O	
Virginia Waterleaf				O	
Stinging Nettle			O		
Christmas Fern				O	
Moss sp				O	

Wildlife and Other Notes

Modified ELC Community Description

Soils	1	2	3
Position:	L		
Aspect:	80°		
%	5		
Type:	(Anglica		
Class:	0		

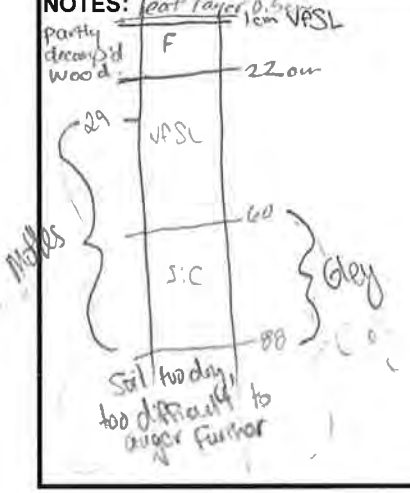
Strata: Texture VF	SL		
Depth	1cm		
Strata: Texture	F		
Depth	22cm		
Strata: Texture VF	SL		
Depth	60cm		
Strata: Texture	SiC		
Depth	88		
Effective Texture	SL		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	29cm		
Gley	60cm		
Bedrock	—		
Water table	—		
Carbonates			
Depth of Organics	22.5cm		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	5		

Polygon: FODMU-5 WOD-OLH (T101-T5)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES: leaf layer 0.5cm VFSL



IT 04/13/04

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: WET-024 S1	(WET-024)
UTM:	
Date: Oct 26, 2011	**Time:** 13:20
Surveyor(s): CLH, KSW	
Weather: 6°C, CC100%, Wind 3, No precip.	

Community Classification

Vegetation Type:	SWTM 2-1 Red-osier Dogwood Mineral Deciduous Thicket Swamp.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	X Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	Green Ash > Yellow Birch
2	Sub-canopy	3	2	White Elm > Green Ash > Freeman's maple > Basswood.
3	Understorey	4	4	Red Osier > Spotted Jewelweed > Reed Canary > Turtlehead.
4	Groundcover	4	3	Sensitive fern > Calico Aster > Bittersweet Nightshade > Carex sp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow UF 1275

Polygon: WET-024-S1 (T101) in WOD-044

UTM:

Date: Oct. 26, 2011 (& Oct. 27) **Time:** 13:20 (8:30)

Surveyor(s): KJW, CLH

Weather: showers, 6°C, 100% CC, wind 3/NW

Oct. 27: overcast, 3°C, 100% CC, wind 3/NW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Red Osier Dogwood			O		
Narrow-leaved Meadowsweet			O		
Nannyberry			O		
Yellow Birch	R				
White Elderberry			O		
Swamp Red Currant			O		
Freeman's Maple		R			
Wild Raisin			O		
White Elm		O			
Riverbank Grape			O		
Dwarf Raspberry				O	
White Willow			O		
Bebb's Willow		R			
Basswood		R			
Green Ash	O	O	O		

Species	Layer 1	2	3	4	Sample
Sensitive fern				O	
Turtlehead			O		
Yellow Flag Iris				O	
Flat-topped Goldenrod			O		
Calico Aster			O	O	
Spotted Touch-me-not			O		
Marginal Wood Fern				O	
Carex sp.				O	
Meadow horsetail				O	
Northern Bugleweed				O	
Bittersweet Nightshade			O	O	
Reed Canary Grass			O		
Poa palustris			O		
Hellebore				O	
Blue Flag Iris				O	
Carex crinita			O		
Carex stipata			O		
Bladder Sedge				O	
Wild Parsnip				R	
Moss sp.				O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

w(WOD-044)

Wetland Vegetation Communities

Project Name: Arnaw **Project #:** 1275
Observer(s): CLH, KJW
Date: Oct 26, 2011 **Time (24h):** 13:20
Field #: WET-014 (TIDI) **Weather:** Precipitation: none Temp (°C): 6
Map Code: S1 Wind Speed & Direction: 3 km NW Cloud %: 100
Wetland Type: Swamp **Site Type:** P **Dominant Form:** ts (S, ts)
% Open Water: 0 % **ELC Code:** SWTM2-1
Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	yellow birch, freemans maple, green ash, basswood, white elm
c	
dc (dh) ds	dead whit elm (710 90)
(ts)	red osier dogwood > white willow, nannyberry, bebb's willow
ls	
(gc)	Sensitive fern, water parsnip, blue flag iris, turtlehead
(ne)	Carex crinita, bladder sedge
be	
re	
ff	
f	
su	
m	moss sp.

Soil type: S; C | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial): ↓ See attached Soils Form (S2).

Wildlife Notes: ↓ See attached Wildlife Form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Flooded due to recent heavy rains

WET-014
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow 1275
Polygon:	WET-024 52 AWOD-044
UTM:	
Date:	Oct 26 2011 Time: 13:20
Surveyor(s):	CLH, KJW
Weather:	6°C No precip. Cc 100%. Wind 3 from NW

Community Classification

Vegetation Type:	SWDM2-1 Black Ash mineral Deciduous Swamp
Inclusion:	
Complex:	

Polygon Description

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

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Black Ash > White Elm > Green Ash > Freeman's maple
2	Sub-canopy	3	3	Black Ash > Trembling Aspen > Yellow Birch > White Elm
3	Understorey	4/5	3	Red Osier > Poa Palustris > Reed Canary > Swamp Red Currant
4	Groundcover	6	3	Sensitive fern > Hop Sedge > Calico Aster > Dwarf Raspberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	O	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow UF 1275

Polygon: WET-024 S2 (T101) & (WOD-044) *

UTM:

Date: Oct. 26 2011 (& Oct 27) Time: 14:20 (8:30)

Surveyor(s): KJW, CLH

Weather: showers, 6°C, 100% CC, wind 3/NW

Oct 27 overcast, 3°C, 100% CC, wind 2/NW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's Maple	O				
White Elm	O	O			
Blue Beech		R			
Bristly Greenbrier				R	
Black Ash	A	A			
White Elderberry			O		
Common Red Raspberry			O		
Yellow Birch		O			
Red Osier Dogwood			O		
Narrow-leaved Meadowsweet			O		
Nannyberry			O		
Trembling Aspen		D			
White Willow		R	O		
Wild Raisin			O		
Swamp Red Currant			O		
Dwarf Raspberry				O	
Green Ash	O				

Species	Layer 1	2	3	4	Sample
Marginal (Virginia) Fern				O	
Royal Fern				O	
Calico Aster			O	O	
Yellow Avens				O	
Sensitive Fern				O	
Poa palustris			O		
Yellow Flag Iris				O	
Goldthread				O	
Bittersweet Nightshade			O		
Hay Sedge				O	
Water Parsnip				O	
Elymus riparius			R		
Woodland Strawberry				O	
Northern Bedstraw				O	
Large-leaved Avens				O	
Blue Flag Iris				O	
Boneset			R		
Heal-all				O	
Carex sp.				O	
Meadow Horsetail				O	
Canada Goldenrod			O		
Northern Willowherb				R	
Reed Canary Grass			O		

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(D WOD-044)

Wetland Vegetation Communities

Project Name: Arnow	**Project #:** 1275
Observer(s): CLH, KJW	
Date: Oct 26, 2011	**Time (24h):** 12:20
Field #: WET-024 (TAG)	**Weather:** Precipitation: none Temp (°C): 6
Map Code: S2	Wind Speed & Direction: 3 fr. NW Cloud %: 100
Wetland Type: Swamp	**Site Type:** P / I **Dominant Form:** h (S,b)
% Open Water: 90	**ELC Code:** SWDM3-1
Photos: 1180 - 1231	

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	~~black ash~~, white elm, yellow birch, freeman's maple, blue beech
c	
dc,dh,ds	
ts	red osier
ls	narrow-leaved meadowsweet, common red raspberry
gc	sensitive fern, royal fern, goldthread, water parsnip, N. bugleweed, boneset
ne	~~Poa palustris~~ > hop sedge, reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: S;C Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

↓ See attached Soils form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Flooded due to recent heavy rain
No permanent water.

WET-024
S2

Modified ELC Community Description

S2

Soils	1	2	3
Position:	5		
Aspect:	/		
%	/		
Type:	Simple		
Class:	A		

Strata:	Texture	O.M.S		
	Depth +	11cm		
Strata:	Texture	SiC		
	Depth	91		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles	0cm		
	Gley	0cm		
	Bedrock	/		
	Water table +	19cm		
	Carbonates	None		
Depth of Organics		11cm		
Pore Size Disc #1		/		
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

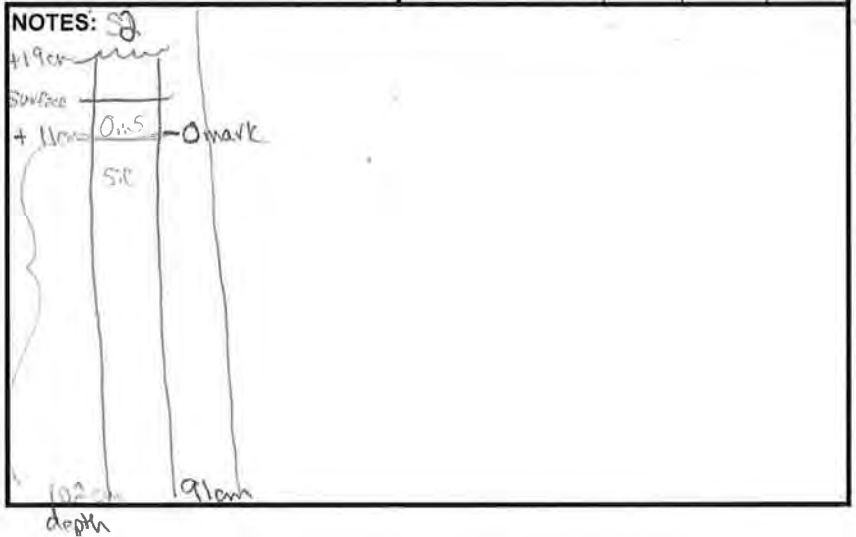
Polygon: WET-024 (7101)

~~WOD044~~

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES: S2



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site: Arrow	1275
Polygon: WET-024 S3	WOD-044
UTM:	
Date: Oct 26 2011	Time: 16:00
Surveyor(s): CLH, KJW	
Weather: 6°C, CC100%, No precip, Wind 3 & NW.	

Community Classification

Vegetation Type:	SWDM2-2 Green Ash mineral Deciduous Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
X Treed	Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	3	Green Ash > Trembling Aspen >> White Willow > White Elm
2	Sub-canopy	3	4	Green Ash > Trembling Aspen > White Elm
3	Understorey	4/5	4	Red Osier > Salix petiolaris > Reed Canary > Wild Raisin
4	Groundcover	6/7	2	Calico Aster > Swamp Buttercup > Carex sp. > Bittersweet Nightshade

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		X Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow WF 1275

Polygon: WET-024 S3 (T101) & WOD-044

UTM:

Date: Oct 26 2011 Time: 16:00

Surveyor(s): KJW, CLH

Weather: showers, 6°C, 100% CC, wind 3/NW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Trembling Aspen	O	O			
Red Osier Dogwood			O		
Swamp Red Currant			O		
Wild Raisin			O		
Common Red Raspberry			O		
Salix petiolaris			O		
White Elm	R	O	O		
White Willow	O				
Green Ash	O	O			
Narrow-leaved Meadowsweet			O		

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

(WOD 044)

Project Name: Arrow WF **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 26 2011 **Time (24h):** 16:00

Field #: WET-024 (7101,75) **Weather:** Precipitation: none Temp (°C): 6

Map Code: S3 Wind Speed & Direction: 3 & NW Cloud %: 100

Wetland Type: Swamp **Site Type:** P/I **Dominant Form:** h. (S,h)

% Open Water: 0 **ELC Code:** SWDM3-2.

Photos: 1230-1234 - Mosaic of S3 and MEMM4

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, trembling aspen, white willow, white elm
c	
dc,dh,ds	
(ts)	red osier ? Salix petiolaris
ls	common red raspberry, narrow leaved meadowsweet
gc	tall meadow rue, turtlehead, tufted loosestrife, swamp buttercup
(ne)	reed canary grass, rice cut grass
be	
re	dark green bulrush, typha latifolia
ff	
f	
su	
m	

Soil type: S, C | Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

WET-014
S3

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WOD-044 ✱

Project Name: Arrow **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct. 26 2011 **Time (24h):** 14:16

Field #: WET-024 (T101) **Weather:** Precipitation: none **Temp (°C):** 6

Map Code: M1 Wind Speed & Direction: 3 Pr NW **Cloud %:** 100

Wetland Type: Marsh **Site Type:** P. **Dominant Form:** ne (M, ne)

% Open Water: 0 % **ELC Code:** MAMM 1-3

Photos: 180 - 1230

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	(Salix sp. - 7 red osier, wild raisin).
ls	
gc	
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: Si C Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

No access Under Power Lines.

WET-024
M1

No. 392

Armow — Oct 26, 2021

Wetland Assessment — CLH, KJW

6°C, cc 100%, Wind 3, No precip.

WET-024 / ~~WOD-044~~ OR WET-014

4 Communities (S1, S2, S3, M1).

S1: 4 forms >25% cover.

ts red osier dogwood, white willow

dh dead white elm >10%

gc sensitive fern

ne Carex crinita

Soils: Mineral

Site Type: Palustrine

S2: 4 forms >25% cover

h black ash > white elm

ts red osier

J. L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com

2.2.

SS 3 forms > 25% cover:

h green ash, trembling aspen

bs red osier, Salix petiolaris

ne reed canary grass.

Soils: mineral - SiC.

Site Type: largely Palustrine, some isolated in SW.

MI: 1 form > 25% cover

ne reed canary

No site access

Soils presumed mineral (SiC)

Site Type Palustrine.

Open Water Type: No open water.

Fish habitat: absent.

Rare species observed: none.

Surrounding land Use <1:5km: row crop

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: T101 Meadow 1	(WOD-044)
UTM: 17T 0467002 4899046	
Date: Oct 26 2011	Time: 15:15
Surveyor(s): CLH KJW	
Weather: no precip. 6°C. 100% CC. Wind 3 from NW	

Community Classification

Vegetation Type:	ME mineral fresh-moist herb graminoid Ecosite
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	X Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	1	Green Ash
3	Understorey	4/3	4	Flat-topped Bushy goldenrod > Wild Carrot > Green Ash > N.G. Aster
4	Groundcover	4	4	Smooth Brome > Spotted Knapweed > Common Strawberry > Carex blanda

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site: Arrow	
Polygon: T101	Meadow 1
UTM:	
Date: Oct 26 2011	Time: 15:15
Surveyor(s): CLH, KJW	
Weather: No precip. 6°C 100% CC	Wind 3 fr. NW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Trembling Aspen			R		
Wild Raisin			R	R	
White Willow			R		
Green Ash		R	O		

Species	Layer 1	2	3	4	Sample
New England Aster			O		
Timothy			O		
Spotted Knapweed				A	
Flat-topped Bushy Goldenrod				A	
Smooth Brome				A	
Wild Carrot				O	
Common Strawberry				O	
Poa pratensis			O		
Dandelion				O	
Ribgrass				O	
Common St. Johnswort			O		
Agrimony			R		
Common Evening Primrose			O		
Canada Goldenrod			O		
Carex blanda				O	
Scottish Bulrush			R		
Narrow-lvd Meadowsweet				R	
Orchard Grass			R		
Red Clover				O	
Aster lanceolatus			O		
Heal-All				O	

Wildlife and Other Notes

Photo 180~1233

Modified ELC Community Description

WOD-044

Soils	1	2	3
Position:	T		
Aspect:	/		
%	0		
Type:	Simple		
Class:	A		

Strata:	Texture	SCL		
	Depth	16 cm		
Strata:	Texture	SC		
	Depth	122 cm		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	16		
	Gley	16		
	Bedrock	/		
	Water table	8 cm		
	Carbonates	40cm		
Depth of Organics		/		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		0		

Polygon: Meadow 1 (7101)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Some microhigh/low variation

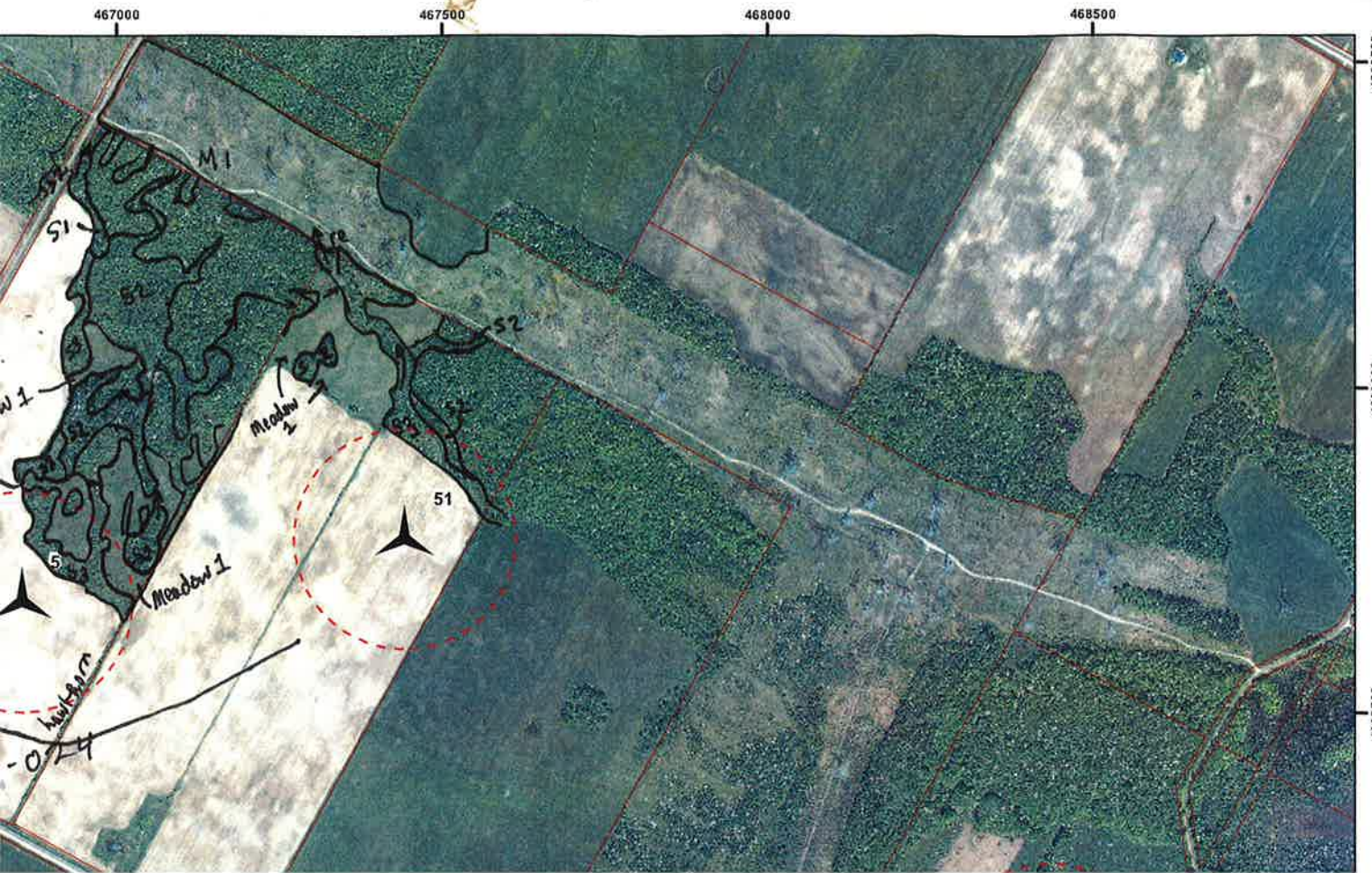
some slightly wetter depressions

Water in hole at 8cm

Carbonate 40cm

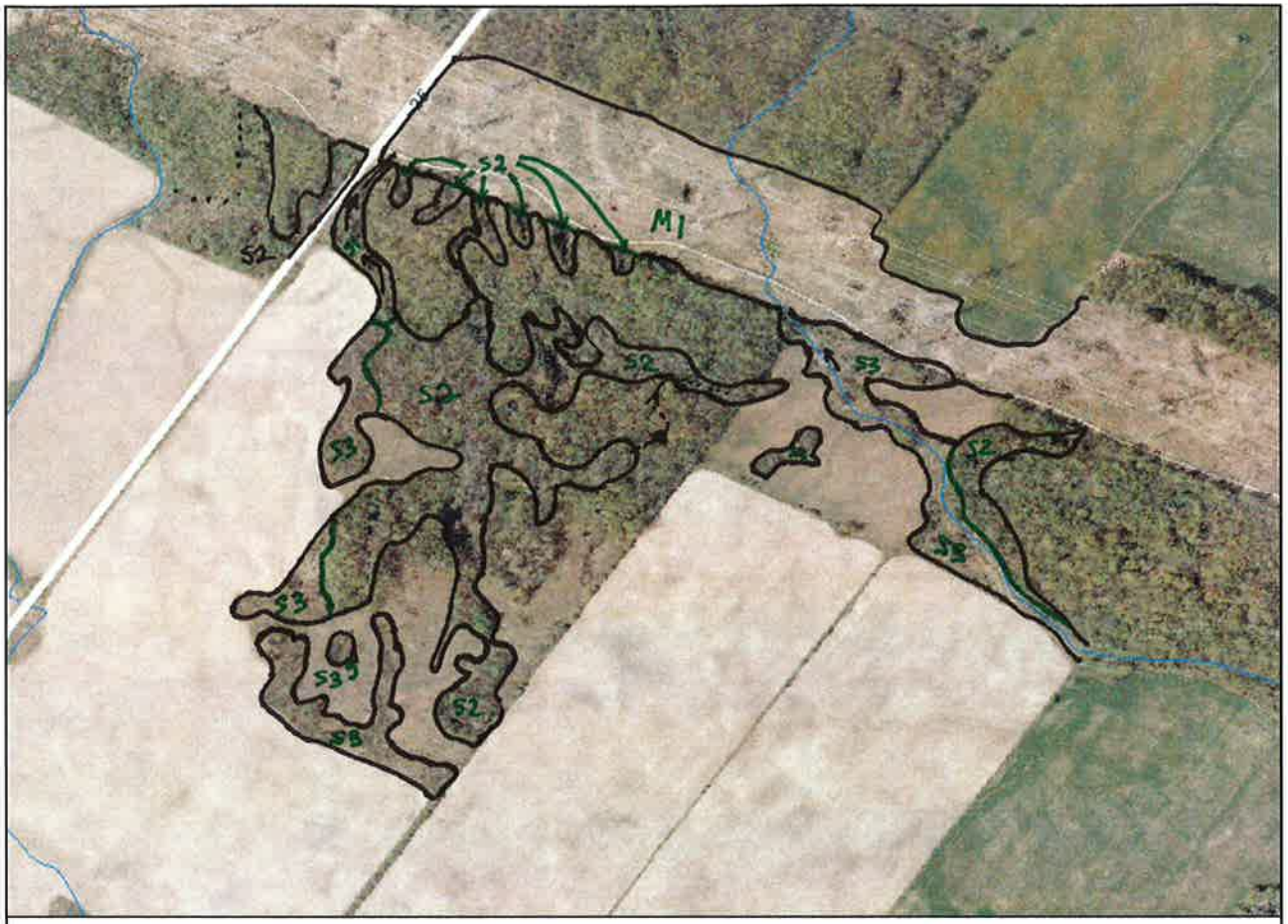


Inc - WOD-044


467000
467500
468000
468500
4899500
4899000
4898500
M1
S1
S2
Meadow 1
51
5
Meadow 1
buffer

X WOD-044 X

T101, T5, T51 Wetlands (WET-024)



Map centre: 44° 14' 38.1" N, 81° 24' 39.0" W

Map created: November 1, 2011

0 100 200 300 400 m

Scale: 1:8,500

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AG
S1, S2, S3
M1 as is
WET-024
wetlands

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WOD-044

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: ZAP MOW WK
Project #: 1275
Date: 20/10/2011
Observer(s): WGW. MEG

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	17 T UTM	Comments
WOD-045	1	0		0467602 4998935	
	2	3		0467565 4899247	
	3	1		0467555 4898971	
	4	2		0467536 4899005	
	5	2		0467514 4899023	
	6	1		0467501 4899048	
	7	0		0467521 4899060	
	8	0		0467547 4899046	
	9	0		0467563 4899048	
	10	2		0467597 4899023	
WOD-044	1	0		0467250, 4899241	
	2	3		0467221, 4899214	regular use
	3	0		0467157 4899200	
	4	3		0467102, 4899201	
	5	0		0467099, 4899207	
	6	4		0467093, 4899253	
	7	0		0467048, 4899277	
	8	1		0467018, 4899270	
	9	0		0466983 4899317	
	10	0		0466979 4899362	
WOD-045	total snags	11			
	snags/ha	22			
WOD-044	total snags	11			
	snags/ha	22			
* WOD-044/045 combined = total				snags = 11+11 = 22 / 20×0.05 = 22 snag/ha	
	BMP-013				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARNOLD WF 1275
Polygon:	WET-024, WOD-044 (T101)
UTM:	
Date:	Oct 26, 2011 **Time:** 13:20
Surveyor(s):	KJW, CLH
Weather:	showers, 6°C, 100% CC, wind 3/NW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Downy Woodpecker	VO		2						
B	Wild Turkey	DP	feathers	1						
H	Spring Peeper	VO		1						
B	American Robin	OB		2						
B	Dark-eyed Junco	OB		2						
M	White-tail Deer	BI	bed, tracks	3						
M	Raccoon	SC		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARNOLD WF 1275
Polygon:	WET-024 (T101)
UTM:	
Date:	Oct. 26, 2011 **Time:** 13:20
Surveyor(s):	KJW, CLH
Weather:	showers, 6°C, 100% CC, wind 3/NW

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ✓ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ✓ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

WOD-044

Site:	WOD - 044 Approx within Lennox Thickbirch 3!.. 101
Polygon:	A
UTM:	0466437 4895805
Date:	Oct 20/11 **Time:** 11:00pm
Surveyor(s):	MES, [illegible]
Weather:	Temp 10°C Wind SE 10 precip: none WE 3

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
H	Leopard frog	OB		1						
H	Wood frog	OB		1						
H	Green frog	OB		1						
B	Crow	VO		2						
H	Spring peeper	VO		1						
B	[illegible]	OB		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- [X] Deciduous Forest
- [ ] Mixed Forest
- [ ] Coniferous Forest
- [ ] Marsh
- [ ] Swamp
- [ ] Bog
- [ ] Fen
- [ ] Water (Shallow & Open)
- [ ] Meadow
- [ ] Tallgrass Prairie
- [ ] Thicket
- [ ] Savannah
- [ ] Woodland
- [ ] Valley (Describe Below)
- [ ] Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- [ ] Spring Flooded Field
- [ ] Stick Nest (Raptors, Herons)
- [ ] Snag (Raptors, Herons)
- [ ] Tree Cavity Nest (Ducks)
- [ ] Seep/Spring (Turkeys/Grouse)
- [ ] Cliffs/Banks

Bats
- [ ] Cave Entrance
- [ ] Mine Shaft
- [ ] Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- [ ] Snag
- [ ] Burrow
- [ ] Den
- [ ] Tree Cavity
- [ ] Fallen Log

Deer/Moose
- [ ] Seep/Spring
- [ ] Mineral Lick

Snakes
- [ ] Burrow
- [ ] Fallen Rotting Log
- [ ] Old Well
- [ ] Rock Pile/Stone Wall
- [ ] Organics Pile
- [ ] Log Pile
- [ ] Karst
- [ ] Broken/Fissured Rock
- [ ] Old Foundation
- [ ] Old Bridge/Concrete Culvert

Amphibians and Turtles
- [X] Vernal Pool/Woodland Pond (Amphibian Breeding)
- [ ] Sand (Turtle Nesting)
- [ ] Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- [ ] Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Woodland pond AWD-022	0467130, 4899149	0.5ha woodland pond - wetland plants
this feature is actually a wetland, not vernal pool		

Describe Valley (depth, geomorphological traits):

Additional Details:

evidence of deer activity → 6 white tail buck ground scrape/rub.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

12/15/11

Site: Arnow	
Polygon: WOD-045 (TSI)	~~WOD-044~~
UTM:	
Date: Oct 27 2011	Time: 09:55
Surveyor(s): CLH, KTG	
Weather: 100%, CC 3°C Wind 4 SW/NW No precip	

Community Classification

Vegetation Type:	FOD M5-2 Dry-Fresh Sugar Maple - American Beech Deciduous Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar Maple > White Ash > Black Cherry > Trembling Aspen > American Beech
2	Sub-canopy	3	3	Sugar Maple > White Elm > American Beech > Eastern Hemlock
3	Understorey	4	2	American Beech > Sugar Maple > White Elm > Choke Cherry
4	Groundcover	6	2	Sugar Maple > White Elm > Choke Cherry > Ar[illegible]

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	O	> 50
Snags	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Deadfall/Logs	O	< 10	O	10 - 24	O	25 - 50	N	> 50

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

Community Age	Pioneer	Young	Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow WF 1275	
Polygon: WOD-045 (TSI)	
UTM:	
Date: Oct 27, 2011	Time: 9:55
Surveyor(s): KTG, CLH	
Weather: overcast, 3°C, 100%CC, wind 4/NW	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	A	A	O	O	
White Elm	O	O	O	O	
Yellow Birch		O			
Trembling Aspen	O				
Eastern Hemlock		O	O		
American Beech	O	O	O	O	
Black Cherry	O	O			
White Ash	O	O			
Allegheny Blackberry			O		
Choke Cherry			O	O	

Species	Layer 1	2	3	4	Sample
Meadow Horsetail				O	
Bracken Fern			O		
Woodland Strawberry				O	
Agrimony				O	
Hyal - all				O	
Three-leaved Goldthread				O	
Hellebore				O	
Calico Aster				O	
Christmas Fern				R	

Wildlife and Other Notes

Similar community as upland forest in WOD-044, more upland x typical Sugar maple - beech.

Some large examples of Beech + Sugar maple, some are dead. (>50 cm DBH)

WOD-044

T101, T5, T51 Woodlands



Map centre: 44° 14' 38.1" N, 81° 24' 39.0" W

Map created: November 1, 2011

0 100 200 300 400 m

Scale: 1:8,500

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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N S

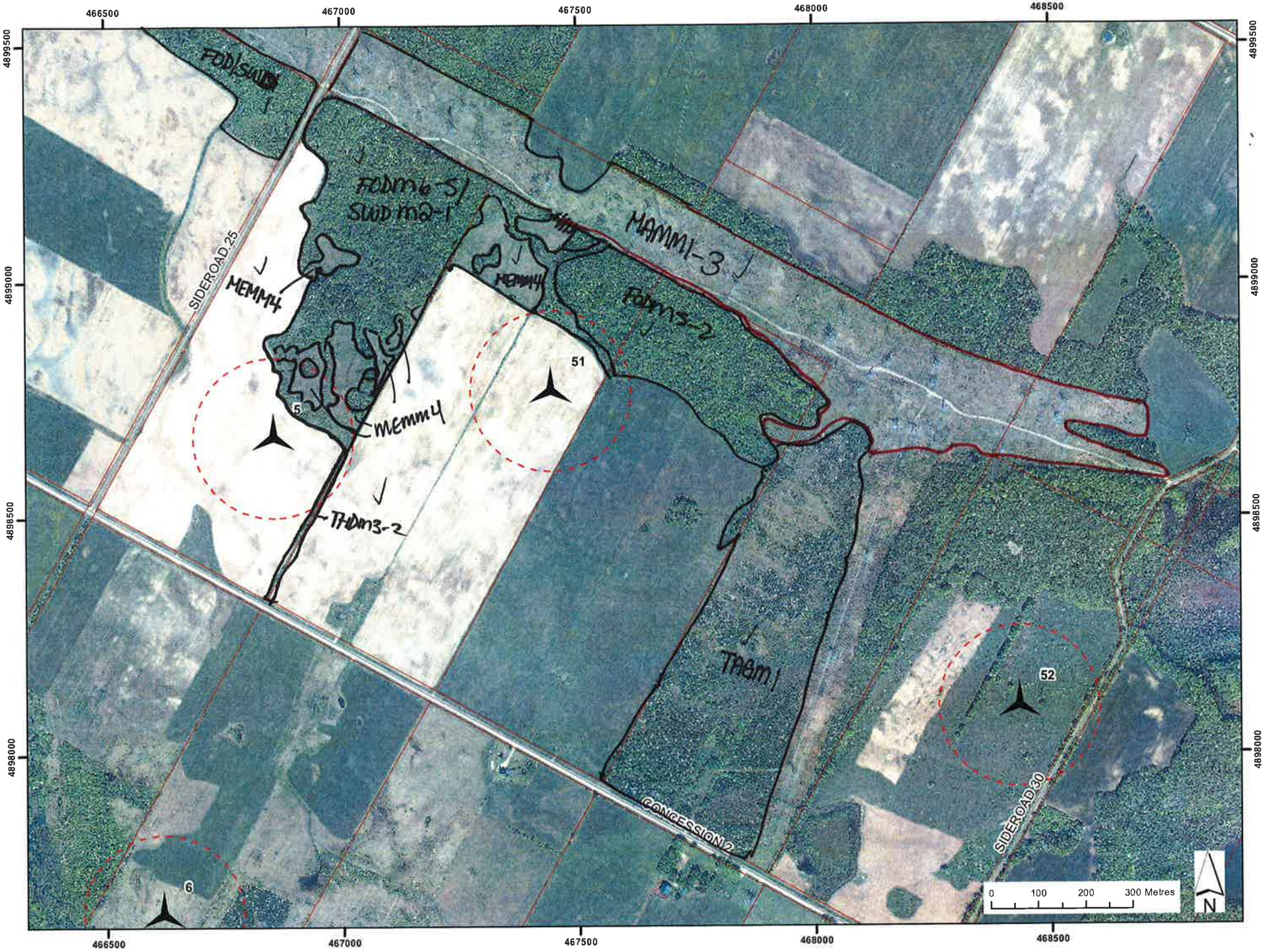
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W*WOD-044*


466500
467000
467500
468000
468500
4899500
4899000
4898500
4898000
FODM6-5/
SWDM2-1
MAMM1-3
MEMM4
FODM3-2
SIDEROAD 25
51
5
MEMM4
THDM3-2
THAM1
52
6
CONCESSION 2
SIDEROAD 30
0
100
200
300 Metres
N

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armour WF 1275
Polygon:	WET-024, WOD-044 (T101), WOD-045 (TS1)
UTM:	
Date:	Oct 27 2011 **Time:** 8:30
Surveyor(s):	KSW, CLH
Weather:	overcast, 3°C, 100% CC, Wind 3/NW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Golden-crowned Kinglet	OB+VO		~10						
B	Canada Goose	VO		4						
B	American Crow	VO		~25						
M	White-tail Deer	SI	rub trees	**						
B	American Goldfinch	OB		~5						
B	Blue Jay	VO		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armour WF 1275
Polygon:	WET-024 (T101)
UTM:	
Date:	Oct 27 2011 **Time:** 8:30
Surveyor(s):	KSW, CLH
Weather:	overcast, 3°C, 100% CC, Wind 3/NW

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ✓ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ✓ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

+ WK (WOD-044) ✱

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: ✱Airport WK
Project #: 1275
Date: 20/10/2011
Observer(s): JGW-MEG

Weather: 9°C, Wind 4 NW, CC = 100%, No precip. 5pm.

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM 17 T	Comments
WOD-045	1	0		0467602 4898935	
	2	3		0467565 4898947	
	3	1		0467555 4898971	
	4	✱2		0467536 4899005	
	5	✱2		0467514 4899023	
	6	1		0467501 4899042	
	7	0		0467521 4899060	
	8	0		0467547 4899046	
	9	0		0467563 4899048	
	10	✱2		0467597 4899025	
WOD-044	1	0		0467250, 4899241	
	2	3		0467221, 4899214	regular use
	3	0		0467157 4899200	
	4	3		0467102, 4899201	
	5	0		0467099, 4899207	
	6	4		0467093, 4899253	
	7	0		0467048, 4899277	
	8	1		0467018, 4899270	
	9	0		✱ 0466983, 4899317	
	10	0		0466979, 4899362	
WOD-045 total snags	11				
WOD-045 snags/ha	22				
WOD-044 total snags	11				
WOD-044 snags/ha	22				
		WOD-044/045 combined		total snags = 22/(20×0.05) =	22 snags/ha

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

incl W* WOD-044 *

Site: Arnow	1275
Polygon: Con 2/SR 30	(E of WOD-044)
UTM:	
Date: Jan 8 2017	Time:
Surveyor(s): CLH	
Weather: -2°C, CC 95%, Wind 2/SE No precip	

Community Classification

Vegetation Type:	THAM4-1 Native Deciduous Regeneration Thicket
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	X Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	X Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	white ash
2	Sub-canopy	3	3	hawthorn sp., staghorn sumac, > apple sp.
3	Understorey	4	4	orchard grass = other grasses spp. > staghorn sumac, > red osier
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	X Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	
Polygon: Con 2/SR 30	
UTM:	
Date: Jan 8 2017	Time:
Surveyor(s): CLH	
Weather: -2°C, CC 95%, Wind 2/SE No precip	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer (710 2-10 0.5-2 <0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		O			
staghorn sumac		O	O		
red osier			R		
orchard grass			A		
grass spp.			A		
white ash	R				
apple sp.		O			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

roadside assessment.

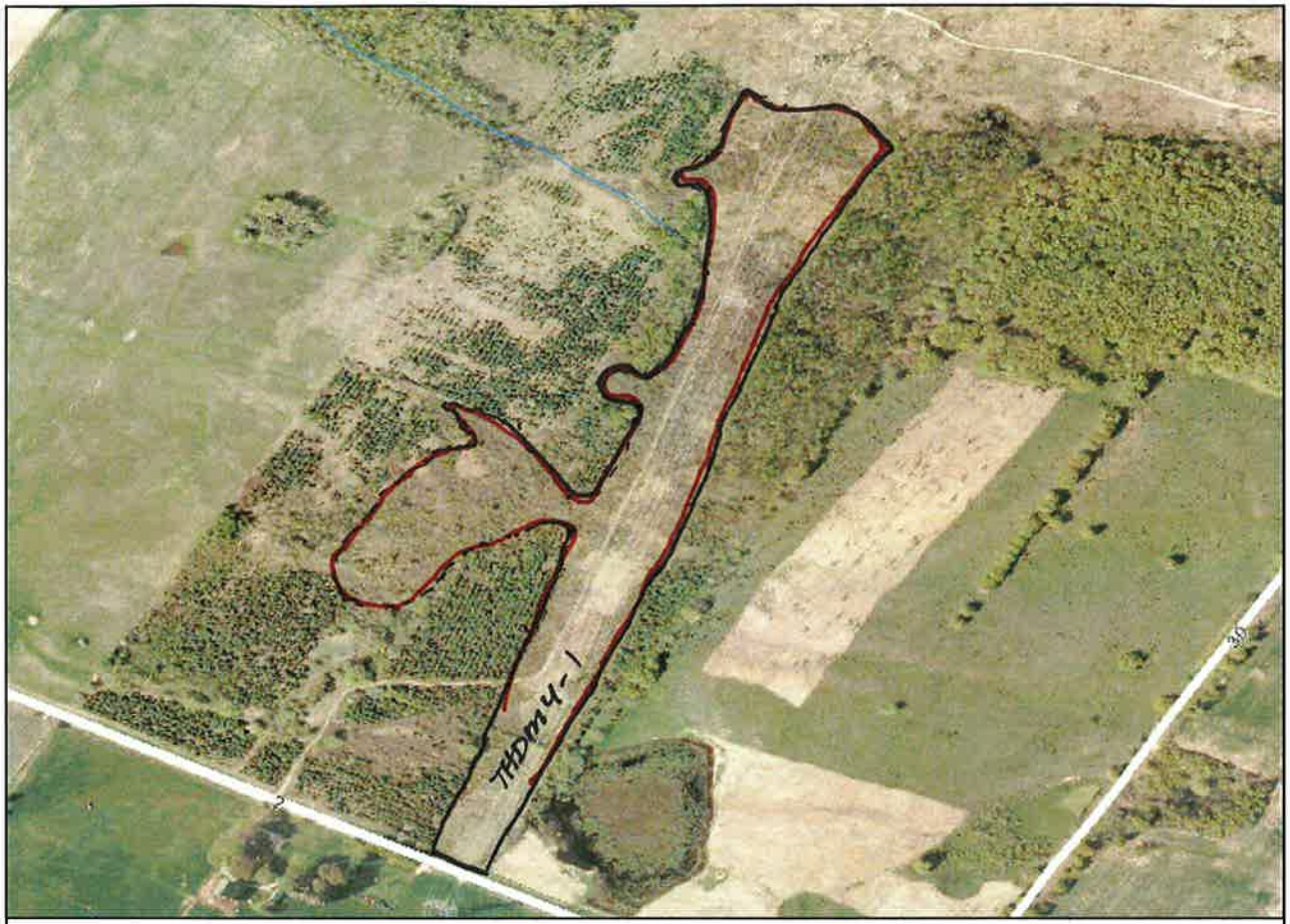
hydro corridor

Photo DSC_0082

Jan 8 2012
CLH

E of WOD-044.

Concession 2 / Sideroad 30



Map centre: 44° 14' 11.6" N, 81° 24' 00.9" W

Map created: January 12, 2012

0 100 200 300 400 m

Scale: 1:8,500

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province
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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow ARND-050	1275
Polygon: WOD-042 (T97)	
UTM:	
Date: Oct 25 2011	Time: 13.45
Surveyor(s): CLH, KJW	
Weather: rain, 100% CC, 11°C, Wind 2.	

Community Classification

Vegetation Type:	FODM10-5 Fresh-Moist Sugar maple - Hardwood
Inclusion:	Deciduous Forest
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
[X] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[ ] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min.	[ ] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thicket
History	[ ] Basic Bedrock	[ ] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[X] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[ ] Swamp	[ ] Woodland
[ ] Cultural		[X] Roll. Upland	[ ] Bluff	[ ] Fen	[X] Forest
	Site	[ ] Cliff		[ ] Bog	[ ] Plantation

Cover	Site	Plant Form		
[ ] Open	[ ] Open Water	[ ] Planktion	[ ] Forb	[ ] Coniferous
[ ] Shrub	[ ] Shallow Water	[ ] Submerged	[ ] Lichen	[ ] Mixed
[X] Treed	[X] Surficial Dep.	[ ] Floating-Lvd	[ ] Bryophyte	
	[ ] Bedrock	[ ] Graminoid	[X] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar maple > Black cherry > White Elm > American Beech
2	Sub-canopy	3	2	Sugar maple > American Beech > Black Cherry
3	Understorey	4 3	1	Chokecherry > Red Raspberry > Nannyberry
4	Groundcover	4	1	Chokecherry > Creeping Charlie

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	0	< 10	0	10 - 24	0	25 - 50	N	> 50
Snags	0	< 10	0	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	0	< 10	0	10 - 24	N	25 - 50	N	> 50

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

Community Age	[ ]	Pioneer	[ ]	Young	[X]	Mid-age	[ ]	Mature	[ ]	Old Growth

PLANT SPECIES LIST

Site: Armow	1275
Polygon: WOD-042	
UTM:	
Date: Oct 25 2011	Time: 13:45
Surveyor(s): CLH, KJW	
Weather: rain, 100% CC, 11°C, Wind 2.	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar maple	A	D			
Black Cherry	O	O			
White Elm	O				
American Beech	O	O			
Eastern Hemlock	O	O			
Nannyberry			O		
Red Raspberry			O		
Chokecherry			O	O	

Species	Layer 1	2	3	4	Sample
Creeping Charlie				O	

Wildlife and Other Notes

See attached Soils Sheet.
Moisture Regime -> 5

Modified ELC Community Description

~~WOD-050~~

Soils	1	2	3
Position:	3		
Aspect:	270		
%	2		
Type:	Complex		
Class:	5		

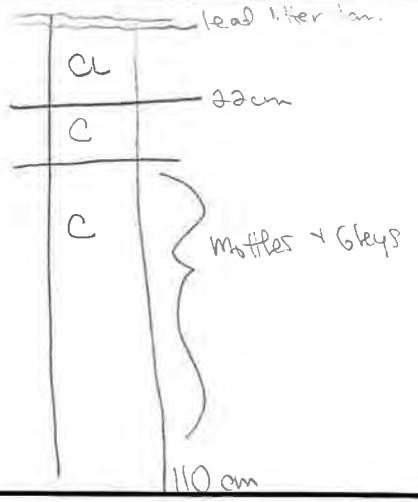
Polygon: WOD-042

Strata: Texture	CL		
Depth	22 cm		
Strata: Texture	C		
Depth	38cm		
Strata: Texture	C		
Depth	110cm		
Strata: Texture			
Depth			
Effective Texture	C		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	38cm		
Gley	38cm		
Bedrock	/		
Water table	/		
Carbonates	86cm		
Depth of Organics	1cm		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	5		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(WOD-050)

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 25 2011 **Time (24h):** 1210

Field #: WET-022 (WET) **Weather:** Precipitation: none Temp (°C): 11

Map Code: S1 Wind Speed & Direction: 2 W Cloud %: 100

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h (S,h)

% Open Water: 2% Type I **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash > trembling aspen, white elm, freeman's maple
c	
dc,dh,ds	<10% white elm
(ts)	red-osier > wild raisin, viburnum trilobum, shining willow, bebb's willow
ls	common red raspberry, narrow leaved meadowsweet
(gc)	calico aster > sensitive fern
ne	poa palustris, reed canary grass, fox sedge, Carex lupulina
be	
re	dark green bulrush, soft-stemmed bulrush
ff	
f	
su	
m	moss sp.

Soil type: Silty Clay Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None.

Wildlife Notes:

See attached soil form

See attached wildlife form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-019
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

W WOD-050 E

Site:	Arnow VF 1275
Polygon:	WO22-S1 (T97)
UTM:	
Date:	Oct. 25 2011
Time:	12:10
Surveyor(s):	KJW CLH
Weather:	overcast, 11°C 100% CC, wind 2/W

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Green Ash	O	D	O		
Viburnum trilobum			R		
Red Osier Dogwood			A		
Trembling Aspen	O	O	O	O	
White Elm			O		R
Shining Willow			O	O	
Common Red Raspberry					O
Narrow-leaved Meadowsweet				O	
Freeman's Maple	R		O	O	
Wild Raisin				O	
Hawthorn sp.				R	R
Black Cherry				O	
Maple leaved Viburnum					R
Apple				O	
Choke Cherry				R	
Red Maple	R				
Allegheny Blackberry				O	
Bebb's Willow				R	

Species	Layer 1	2	3	4	Sample
Calico Aster				A	
Poa palustris			O		
Dark Green Bulrush			O		
Reed Canary Grass			O		
Flat-topped [illegible]			O		
Heal-all				O	
[illegible] Strawberry				O	
Fox Sedge				O	
Soft stemmed Bulrush			O		
Carex lupulina				O	
Yarrow				R	
Common Dandelion				R	
Bracken Fern			O		
New England Aster			R		
Solidago gigantea			O		
Coltsfoot				R	
Large-leaved Avens				R	
Meadow Horsetail				O	
Sensitive Fern				O	
Agrimony				O	
Common St. John's Wort				R	
Creeping Charlie				R	
Violet sp.				O	
Moss sp.				O	

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

in WOD-050

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1875

Observer(s): CLH, KJW

Date: Oct 25 2011 **Time (24h):** 13:00

Field #: WET-022 **Weather:** Precipitation: none Temp (°C): 11

Map Code: S2 Wind Speed & Direction: 2 W Cloud %: 100

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h (S,h)

% Open Water: 2 % Type 1 **ELC Code:** SWDM3-3

Photos: 100-0709

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Swamp maple, green ash, white elm, black cherry
c	
dc,dh,ds	
ts	red osier dogwood, wild raisin, nannyberry
ls	Swamp red currant
(gc)	Sensitive fern, northern bugleweed, royal fern, bittersweet nightshade
(ne)	Poa palustris ? Carex lupulina
be	
re	
ff	
f	
su	
(m)	moss

Soil type: Silty Clay Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None observed.

See attached Soils form

Wildlife Notes: See attached Wildlife form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-019
S2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arrow WF 1275 in WOD-050
Polygon:	WO22-52 (T97)
UTM:	
Date:	Oct 25, 2011 **Time:** 13:00
Surveyor(s):	KJW, CLH
Weather:	overcast, 11°C, 100% CC, wind 2/W

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer photo 100-0763

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's Maple	O	O	O	O	
Red Osier Dogwood			O		
Black Cherry			O		
Wild Raisin			O		
White Elm		O	O	O	
Green Ash	O	O	O	O	
White Elderberry			O		
Swamp Red Currant			R		
Nannyberry			R		
Spicebush			R		

Species	Layer 1	2	3	4	Sample
Royal Fern				O	
Bladder Sedge				O	
Woodland Strawberry				O	
Calico Aster				O	
Northern Bugleweed				O	
Meadow Horsetail				O	
Blue Flag Iris				O	
Bittersweet Nightshade				O	
Herb Robert				O	
Lance-leaved Avens				O	
Spotted Jewelweed				O	
Foamflower				O	
Fern sp.				O	Y
Poa palustris			O		
Carex lupulina				O	
Sensitive Fern				O	
Water Parsnip				R	
Carex crinita			R		
Moss sp.				O	

Modified ELC Community Description

Page __ of __

in WOD-050

Soils	1	2	3
Position:	5		
Aspect:	/		
%	0		
Type:	Complex		
Class	9		

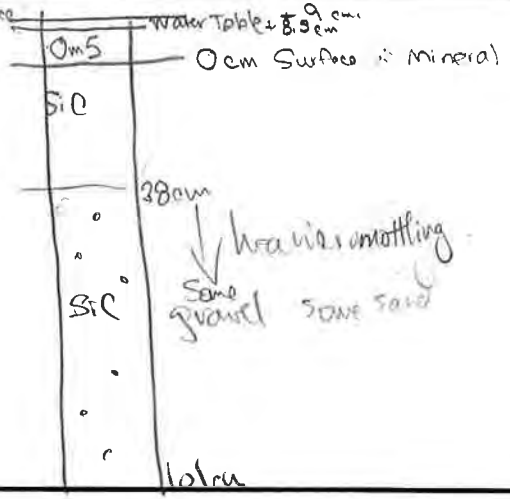
Polygon: WET-022 (197) *WET-019*

Strata:	Texture	SiC		
	Depth	38		
Strata:	Texture	SiC		
	Depth	Till cm		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	0cm		
	Gley	0cm		
	Bedrock	—		
	Water table	+8.5cm		
	Carbonates	Bl		
Depth of Organics		9cm		
Pore Size Disc #1		/		
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



No. 392
J. L. DARLING CORP. TACOMA, WA 98424-1017
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ALL-WEATHER WRITING PAPER

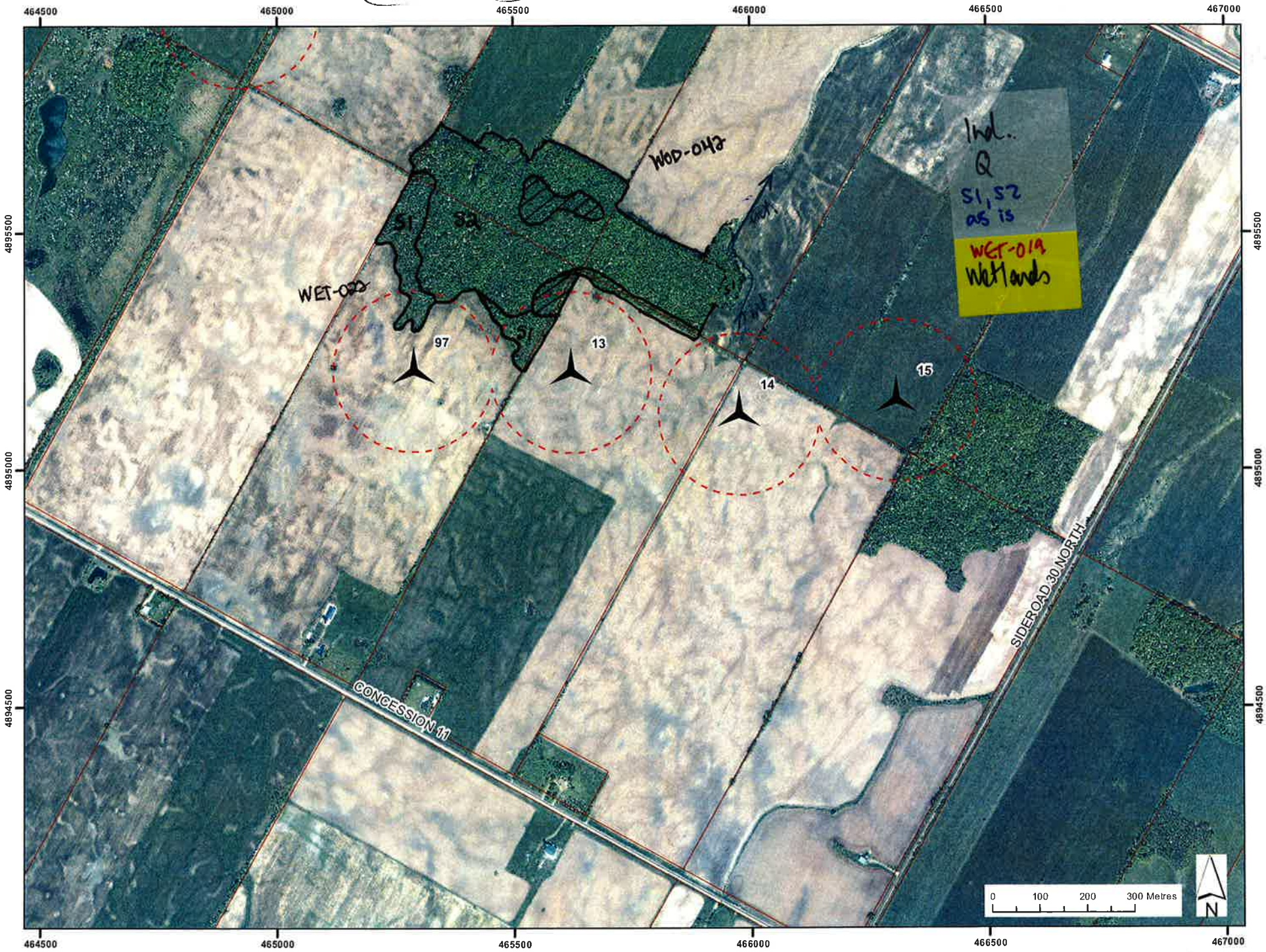
Arrow *WOD-070* 1-2.
Wetland Assessment Oct. 25 2011
CLH, KRW

11°, No precip. winds, CC 100%.
(changed to rain).

WET-022 *WET-019*
2 Communities (S1, S2)

S1: 3 Forms >25% cover
h green ash, trembling aspen
ts red osier, wild raisin
gc calico aster, sensitive fern
Soils: mineral, SiC.
Site Type: Palustrine

S2: 4 Forms >25% cover
h Freeman's maple
gc sensitive fern
ne Poa palustris, hop sedge
m moss sp.
Soils. OmS 9cm over Silty Clay (mineral)
Effective Texture SiC MR 6.
Site Type: Palustrine
Open Water Type: No perm open water
Fish Habitat: Absent.


(WOD-050)
464500
465000
465500
466000
466500
467000
4895500
4895000
4894500
WOD-042
Ind..
Q
51, 52
as is
WET-019
Wetlands
WET-023
51
32
97
13
14
15
CONCESSION 11
SIDEROAD 30 NORTH
0
100
200
300 Metres
N
= upland

X WOD-050 X

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow Wind Farms
Project #: 1275
Date: Oct 20/11
Observer(s): WGW, MEE

Weather: 9°C, wind=0, CC=100%, moderate sun

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-042	1	~~04~~ X 1		0465613 4895466	used
	2	1		0465593 4895478	~~4000~~ cavities
	3	1		0465512 4895402	full of cavities
	4	1		0465531 4895462	
	5	1		0465571 4895441	lots of cavities
	6	2		0465510 4895417	
	7	2		0465479 4895382	
	8	0		0465438 4895413	
	9	Ø 1		0465392 4895424	
	10	0		0465332 4895397	
total snags	12				
snags/ha	24				
BMA-016					

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold UF 1275
Polygon:	W022 (T97) * WOD-050 *
UTM:	
Date:	Oct 25, 2011 Time: 12:10
Surveyor(s):	EJW, CLH
Weather:	overcast, 100% CC, 11°C, wind 2/W

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Kinglet sp.	VO		**						
B	American Robin	VO		*						
B	American Goldfinch	VO		*						
B	Black-capped Chickadee	VO		**						
M	Black Squirrel	OB		*						
H	Spring Peeper	VO		**						
B	American Crow	VO		*						
B	Hermit Thrush	OB		*						
H	Leopard Frog	OB		*						
B	Mallard Duck	OB	standing water in field	motor						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold UF 1275
Polygon:	W022 (T97)
UTM:	
Date:	Oct 25, 2011 Time: 12:10
Surveyor(s):	EJW, CLH
Weather:	overcast, 11°C, 100% CC, wind 2/W

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ✓ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ✓ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Woodland Pond	0465364 / 4895588	approx 10x20m, unknown depth photo 100 - 0764
Woodland Pond	0465397 / 4895459	approx 10x40m, unknown depth

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

(WOD-059)

Site:	Arrow WF
Polygon:	(T112) WOD-050
UTM:	17T 0465382 4895819
Date:	Dec. 7/11 Time: 15:50
Surveyor(s):	AMD, ALW
Weather:	-1°C, 80% CC, wind 1 from SW

Community Classification

Vegetation Type:	Swamp Maple Mineral Deciduous Swamp (SWDM3-3)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	4	freeman's maple > green ash > white elm
2	Sub-canopy	3	3	green ash > freeman's maple > wild raisin
3	Understorey	4	3	red osier dogwood > wild raisin
4	Groundcover	5-7	3	wood strawberry > reed canary grass > dandelion

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
trembling aspen	R	R			
red osier dogwood			A	O	
hawthorn sp.		R	R		
freeman's maple	O	O	R		
green ash	O	O	O		
wh. elm	O	O			
common apple		R	R		
wild raisin		O	O		

Species	Layer 1	2	3	4	Sample
wood strawberry				O	
yarrow				R	
avens sp.				R	
dandelion				O	
hpal all				R	
aster sp.				R	
canada goldenrod				R	
reed canary grass				O	

Wildlife and Other Notes

- photo 1138
- Standing water almost throughout entire swamp polygon

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	S		
Aspect:	180		
%	0-0.5%		
Type:	S		
Class:	A		

Polygon: WOP-050 (T112)

Strata: Texture	SiC			
Depth	20-80			
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Effective Texture	SiC			
Surface Stoniness	-			
Surface Rockiness	-			
Depth to:				
Mottles	5Ymeasured from below (organics)			
Gley	-			
Bedrock	-			
Water table	A			
Carbonates	-			
Depth of Organics	20			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	6			

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- could not auger past 80 cm due to heavy clays

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WOD-050

Wetland Vegetation Communities

Project Name: Armow WF **Project #:** 1275

Observer(s): AMD

Date: Dec. 7/11 **Time (24h):** 15:50

Field #: WET - /WOD-050 **Weather:** Precipitation: None Temp (°C): -1°C

Map Code: S1 Wind Speed & Direction: 1 / SW Cloud %: 80

Wetland Type: Swamp. **Site Type:** P **Dominant Form:** treed (S,h)

% Open Water: 0% **ELC Code:** SWDM3-3

Photos: 1138

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	freeman's maple (35%) green ash (35%) white elm (20%) trembling aspen (10%)
c	
dc,dh,ds	
(ts)	wild raisin (25%), red osier dogwood (30%), hawthorn sp
ls	red [illegible] (35%)
gc	woodland strawberry, dandelion, canada goldenrod, heal all
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: S; C | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-019
S3

notes
see over →



T112

flows

S1: inflow absent, intermittent outflow

* WD-050 *


trees cleared, now row crops, currently tilled + bare.
abandoned residential
No longer exists.
urvey
© 2011 Cnes/Spot Image
Image © 2011 DigitalGlobe
Google earth

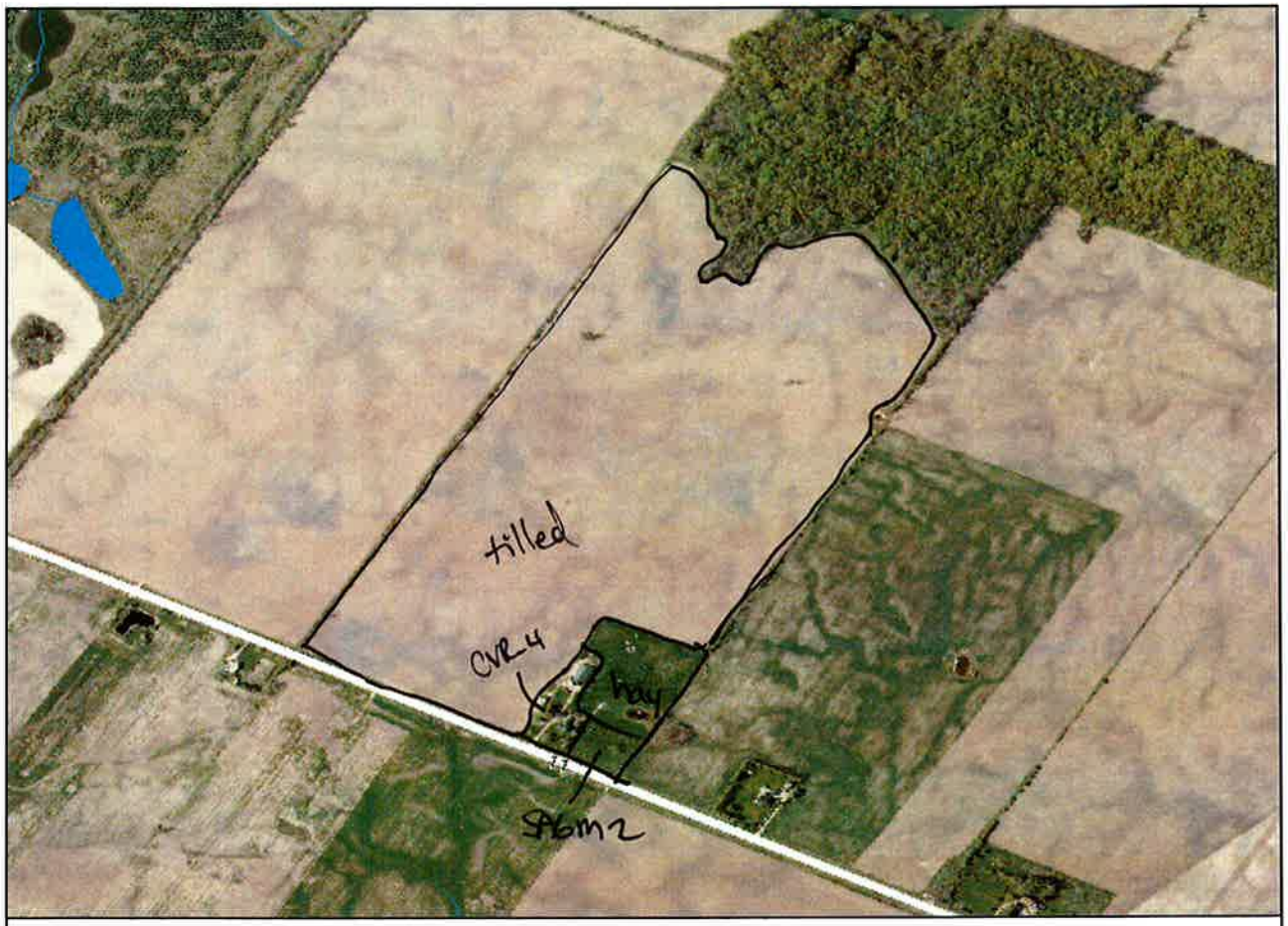
T112

* WOD-050 *

(South of WDD-0502)

Jan 8 2012 2:24pm
CUT

Concession 11 / Sideroad 30N



Map centre: 44° 12' 27.4" N, 81° 26' 08.9" W

Map created: January 10, 2012

0 200 400 600 800 m

Scale: 1:11,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

tilled = 0.46m1
hay = 0.96m2

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Ontario

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Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Arrow WF

Project #: 1275

Date: December 7, 2011

Observer(s): AMD, HLW

Start Time 16:25 End Time 16:50

Woodland ID (WOD-DEO(TH2)) Weather Conditions: -1°C, 80% cloud cover, wind 1 from SW

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17 T)	Comments
Plot 1	0	E: 0465372 N: 4895798	
Plot 2	0	E: 0465379 N: 4895848	
Plot 3	0	E: 0465395 N: 4895826	
Plot 4			
Plot 5			
Plot 6			
Plot 7			
Plot 8			
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Final Wodland Tally

Formula: Total # Snags / (# Plots x 0.05ha)

= 0 / (3 x 0.05) = 0 snags/ha

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: AmDW

Project #: 1275

Date: Oct 20/Dec 7

Observer(s): WSW/AmD, HLW

Start Time _____ End Time _____

Woodland ID (WOD- 050) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	2		
Plot 2	1		
Plot 3	1		
Plot 4	1		
Plot 5	1	(WSW)	
Plot 6	2		
Plot 7	3		
Plot 8	0		
Plot 9	1		
Plot 10	0		
Plot 11	0	AmD/HLW	
Plot 12	0		
Plot 13	0		
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

BMA - 016

Final Wodland Tally 12

Formula: Total # Snags / (# Plots x 0.05ha)

= 12/(13x0.05) = 18

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow NE
Polygon:	WOD-050
UTM:	17T 0485382 4895819
Date:	December 7, 2011 **Time:** 15:50
Surveyor(s):	AMD, HLW
Weather:	-1°c, 80% cloud cover, wind & frost 5hr

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	None									

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats
___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose
___ Seep/Spring
___ Mineral Lick

Snakes
___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles
___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow WF
Polygon:	WOD-051 (E of T15)
UTM:	17T 0466571 4894938
Date:	Dec. 8/11 Time: 8:30
Surveyor(s):	AMD, HLW
Weather:	-1°C, Sunny w clouds, 50% cc, wind 3/SW

Community Classification

Vegetation Type:	Dry-Fresh Sugar Maple-White Ash Decid. Forest (FOD M5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	Sugar maple > white ash > basswood
2	Sub-canopy	2	4	Sugar maple > white ash > basswood
3	Understorey	3	3	Sugar maple > basswood > white ash = choke cherry
4	Groundcover	5-7	2	Xmas fern > avens sp. > wood strawberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags	R	< 10	N	10 - 24	R	25 - 50	R	> 50
Deadfall/Logs	R	< 10	O	10 - 24	R	25 - 50	R	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
choke cherry			O	O	
sugar maple	A	A	A		
basswood	O		A		
red osier dogwood				R	
trembling aspen	R	R			
white elm	R	R	R		
black cherry		R	R		
beech			R	R	
poisonivy (vine)			O		
white ash	O	O	O		
green ash			R	R	
ironwood			R		

Species	Layer 1	2	3	4	Sample
wood strawberry				R	
Xmas fern				O	
avens sp.				O	
Spinulose woodfern				R	
herb robert				O	
blue cohosh				R	

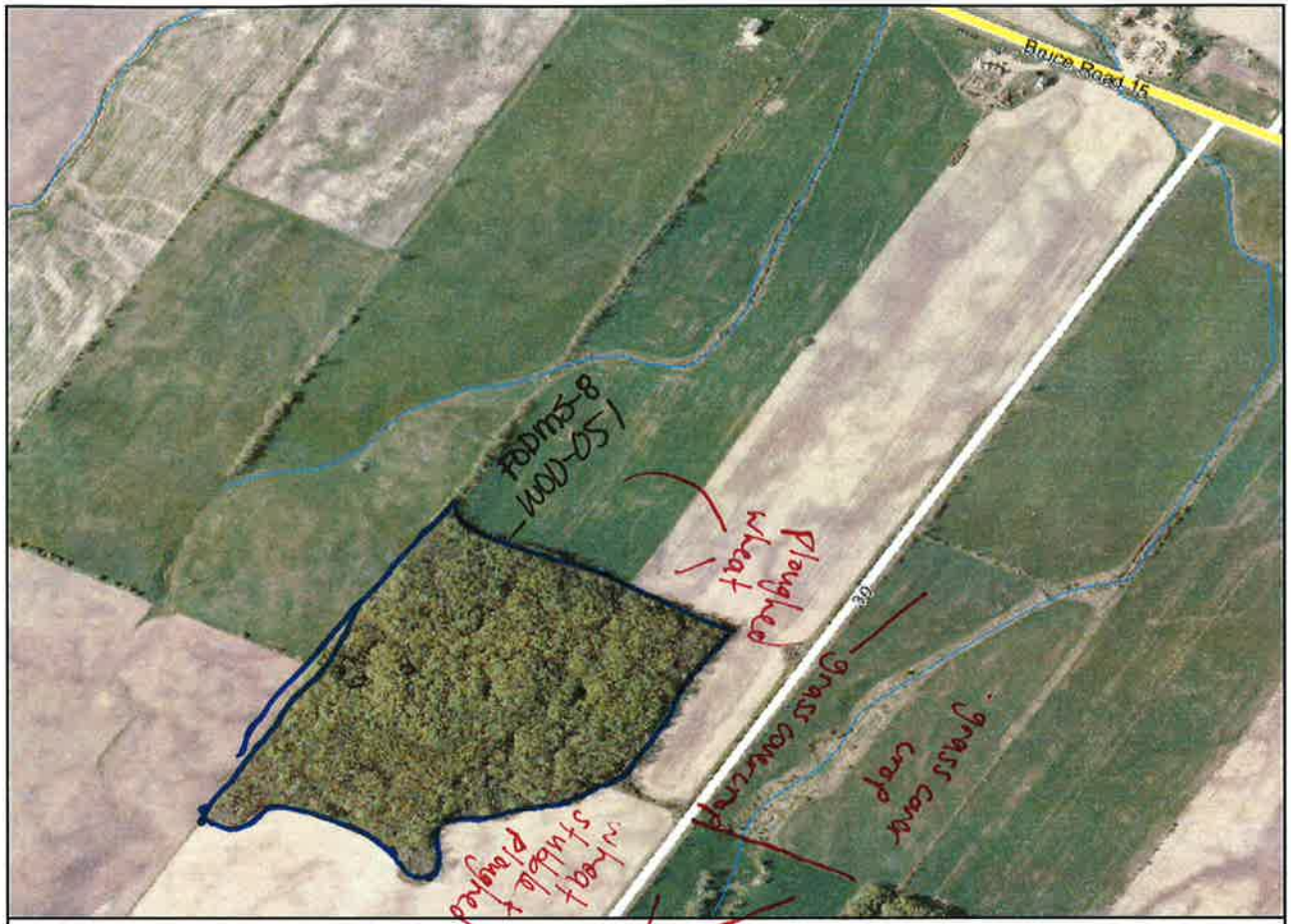
Wildlife and Other Notes

WOD-051

- some areas of pooling water, likely as a result of recent snow melt (roughly 6 areas, <50 m² in area)
  - ↳ would appear to support amphibian breeding, i.e. vernal pools
- photo 1139, basswood snag, ~60 cm dbh
- photo 1140 of polygon

X WOD-051

MET Tower (EOF T15)



Map centre: 44° 12' 36.5" N, 81° 25' 02.8" W

Map created: December 5, 2011

Scale: 1:9,500

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest
or Swamp Communities

Project Name: Arrow WF
Project #: 1275
Date: December 8, 2011
Observer(s): AMO, HLW

Start Time 8:39 End Time 9:17

Woodland ID (WOD- 051) (E of T15) Weather Conditions: -1°C, 50% cloudcover, wind 3/4

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17T)	Comments
Plot 1	0	0465416 4895831	
Plot 2	0	0466562 4894894	
Plot 3	0	0466612 4894940	
Plot 4	0	0466630 4894990	
Plot 5	2	0466638 4895028	
Plot 6	0	0466588 4895049	
Plot 7	0	0466547 4895042	
Plot 8	1	0466501 4895013	
Plot 9	0	0466466 4895061	
Plot 10	0	0466426 4894979	
Plot 11	0	0466404 4894937	
Plot 12	0	0466407 4894901	
Plot 13	0	0466483 4894872	
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Final Wodland Tally

Formula: Total # Snags / (# Plots x 0.05ha)

= 3 / (13 x 0.05) = 4.6 snags/ha

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Aymont WF
Polygon:	WOD-051 (E of T15)
UTM:	0466613 4894892
Date:	December 8, 2021 **Time:** 8:39
Surveyor(s):	AMD, HLW
Weather:	-1°c, 80% cloud cover, wind 3/4 from SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. Crow	VO/OB								
M	WH.-tailed Deer	SC								

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Aymont WF
Polygon:	WOD-051 (E of T15)
UTM:	0466613 4894892
Date:	December 8, 2021 **Time:**
Surveyor(s):	AMD, HLW
Weather:	-1°c, 80% cloud cover, wind 3/4

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ✓ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Rock pile	0466593 4894872	Agricultural rock pile located > 50m from turbine road ∴ OSWH

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 8

Site:	1275 Arrow
Polygon:	WOD-A (66) ☆WOD-052☆
UTM:	17T 0459598 4889549
Date:	27 Oct 2011 Time: 10:30
Surveyor(s):	KNP, JRW
Weather:	3°C, 100% cc overcast, windspeed 2 from W no precipitation

Community Classification

Vegetation Type:	Fresh-moist Sugar Maple - Hardwood deciduous forest (FODM6-5)
X Inclusion:	Maple mineral deciduous swamp (SWDM3)
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Planktion	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Sugar maple > White ash > trembling aspen = black cherry > Am. Beech
2	Sub-canopy	3	4	Sugar maple > Am. Beech > basswood = black cherry > White ash
3	Understorey	4	3	American beech > sugar maple
4	Groundcover	4	3	avens sp. > [illegible] > [illegible]

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	D	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	A	< 10	A	10 - 24	R	25 - 50	M	> 50

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

Community Age	Pioneer	Young	✓ Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 8

PLANT SPECIES LIST

Site:	
Polygon:	See page 1
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	A		O	O	
basswood	O				
white elm	A			A	
trembling aspen	O				
Am beech	O		O		
black cherry	O	O	O		
Ash					
hop hornbeam		O	R		
black walnut		R			
Freeman's maple	O				
yellow birch	R	R			
green ash	O				
White Elm			O		
white birch			O		
buckthorn			R		
red osier dogwood			O	R	

Species	Layer 1	2	3	4	Sample
red raspberry			O	O	
rose sp				O	
aster sp				A	
golden rod sp				O	
wild carrot				R	
velvet leaf				R	
sensitive fern				R	
currant sp				O	
riverbank grape				O	
bloodroot				R	
xmas fern				O	
bainberry sp				R	
hemlock			R	R	
avens sp.				O	
sedge sp.				R	
pennsylvannia sedge				R	
club moss sp.				R	
wild leek				R	
horsetail sp				R	
plaintain-leaved sedge				R	
sedge sp ?				R	
blue cohosh ?				R	
wild strawberry				R	

Wildlife and Other Notes

☆Inclusion no longer included as per wetland site visit (See Subsequent notes Nov 1/11). ☆

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

* WOD-052*

Site:	1275 Armow
Polygon:	WOD-A (66)
UTM:	
Date:	Oct 27 2011 — Time: 12:19
Surveyor(s):	JRW, KNP
Weather:	3°C, overcast

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
✓ Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	✓ Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
✓ Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
✓ Treed	Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Soils	1	2	3
Position:	5		
Aspect:	270		
%	5		
Type:	S		
Class	D		

Pore Pattern				
4	Strata: A	Texture	SiL		
		Depth	13		
5	Strata: B	Texture	SiCL		
		Depth	37		
5	Strata: C	Texture	SiC		
		Depth	120		
	Strata:	Texture			
		Depth			
	Effective Texture		SiC		
	Surface Stoniness		0		
	Surface Rockiness		0		
	Depth to:				
		Mottles	16		
		Gley	39		
		Bedrock	—		
		Water table	23		
		Carbonates	32		
	Depth of Organics		*		
	Pore Size Disc #1		—		
	Pore Size Disc #2		—		
	Pore Size Disc #3		—		
	Moisture Regime		6		

Polygon: WOD-A (66)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

UTM "SWAMP"
- 17T 0459890
4889590

* Simple (s) for soil sample but general terrain is complex.

+ litter fall organics ± 2cm

WOD-052

p8of8

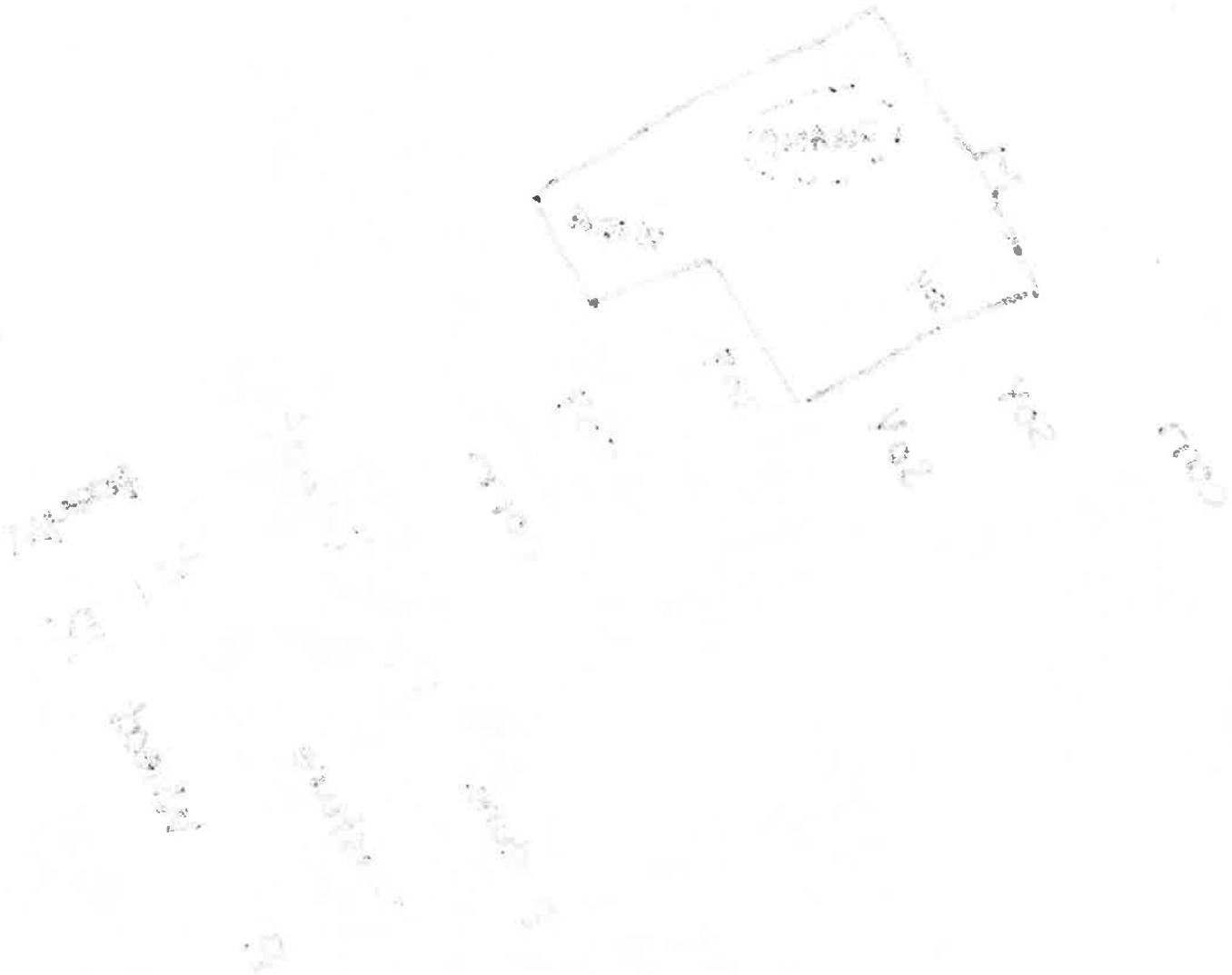


UP = ungrazed pasture

Incidental list:

Road side:

Northern Harrier



WOD-052

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow
Project #: 1275
Date: Oct 27
Observer(s): JRW, KMP

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Accuracy Comments
WOD-A766	1	0		17T 0459632 4889591	±5m
WOD-A766	2	0		17T 0459631 4889584	±10m
WOD-A766	3	0		17T 0459654 4889577	±6m *
WOD-A766	4	1		17T 0459679 4889623	±6m (25-27cm DBH)
WOD A766	5	2		17T 0459756 4889664	13±m with cavities
WODA-766	6	0		17T 0459787 4889665	±8m
WODA-766	7	1 ? *		17T 0459908 4889586	±8m
WODA-766	8	2		17T 0459587 4889568	±8m
WODA-766	9	0		17T 0459921 4889481	±9m
WODA-766	10	0		17T 0459913 4889443	±11
total snags	5				
snags/ha	10				
RMA-017					

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

* few small snags @ ~7cm dbh
* not sure if 100% dead

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: _____
Project #: _____
Date: _____
Observer(s): _____

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page 5 of 8

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow
Polygon:	WODA-T166 WOD-052
UTM:	17 T 0459598 4889549
Date:	Oct 27, 2011 **Time:** 10 30
Surveyor(s):	JRM, KNP
Weather:	Overcast 3°C wind 2

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am Crow	VO		1						
B	BCCH	VO		1						
M	Deer	TK		1						
M	Raccoon	TK		1						
B	Bird Starlings	VO	heard in	>10						
B	Cedar Waxwing	VO	Arrow	1						
B	Hairy Woodpecker	OB		2						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page 6 of 8

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ✓ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ✓ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ✓ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Log piles	17T 0459598 4889549	Log piles, 2 large
small pond (puddle)	17T 0459804 4889708	vernal pooling

AWO-025

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

In WOD-052

Site:	Armow WF
Polygon:	T66 + T82 (SWDM3) WET-033
UTM:	17 T
Date:	Nov. 1/11 **Time:** 12:45
Surveyor(s):	AMD, PWD
Weather:	12°C, Sunny w/ cloudy periods, CC. 40%, Wind 3 from SW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
smooth blackberry			O	O	
wh. elm		A	A		
wh. elderberry			R	O	
sugar maple	A	A			
basswood	O	O			
black cherry	O	O			
ribes Prickly gooseberry			O	O	✓
ribes cynosbati			R	R	
yellow birch		R			
Red maple		R			
trembling aspen	R				

Species	Layer 1	2	3	4	Sample
aster lateriflorium (calicos)				R	
xmas fern				A	
plantain leaved sedge				O	
spinulose woodfern				O	
dwarf raspberry				R	
clearweed				R	
moonseed				O	
moss spp				O	
barren strawberry				A	
helleborine				R	
agrimony				R	
sensitive fern				R	
ranunculus sp				R	
blue cohosh				R	
viola sp				R	
avens sp				R	
foamflower				R	
maidenhair fern				R	
partridge berry				R	✓
field horsetail				R	
sharp lobe hepatica					

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour / WOD-052
Polygon:	WET-033
UTM:	
Date:	Nov 1, 2011 Time: 12:45
Surveyor(s):	PWD, AMD
Weather:	Sunny 12°C, 10% cc, no rain, wind S/SW

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	4		
Aspect:	330		
%	05-2		
Type:	S		
Class:	B		

Strata:	Texture	SCL		
	Depth	80		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SCL		
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles	55		
	Gley	76		
	Bedrock	/		
	Water table	12		
	Carbonates			
Depth of Organics		20		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		4		

Polygon: WET-033

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

EWOD-05aX


459000
459500
460000
460500
461000
461500
4890000
4889500
4889000
4888500
Note that this area is abundant in Acer saccharum. As a facultative [illegible] species it does suggest [illegible]
CONCESSION 5
SIDEROAD 20
NORTH LINE
BERVIE SIDEROAD
66
82
49
50
0 100 200 300 Metres
N

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armour WF (1275)
Polygon:	T66 + TX2 (SWDM3) WET-033 X WOD-052X
UTM:	
Date:	Nov. 1/11 **Time:** 12:45
Surveyor(s):	PWD, AMD
Weather:	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	coyote	SC		1						
M	wh. tailed deer	TK		1						
B	red-tailed hawk	OB/NO		1						
B	ring billed gull	OB		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WET-033
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
X Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

X Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Swamp	see other pts	- this represents entire feature
vernal pool	17T 0459869 4899786	- some pooling might support amphib. breeding

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Arrow
Polygon:	WOD-C (73) ★ WOD-054 ★
UTM:	
Date:	27 Oct 2011
Time:	16:06
Surveyor(s):	KNP, JRW
Weather:	5°C, 75% cc, overcast, breezy 3 from W

Community Classification

Vegetation Type:	Fresh-moist sugar maple-hardwood deciduous forest	(FODM6-5)
X Inclusion:	Red-osier dogwood mineral deciduous thicket	(SWTM2-1)
Complex:		

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Sugar Maple > W. Ash > Am. Beech > black cherry
2	Sub-canopy	3	3	Sugar Maple > W. Ash > Am. Beech > black cherry
3	Understorey	4/5	3	Sugar maple > W. ash > Am. Beech > red osier dogwood
4	Groundcover		3	black raspberry > Zig Zag goldenrod > wild st. (cleavers)

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	R	> 50
Snags	O	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	A	A			
White Ash	A	A			
black cherry	O	O			
basswood	R	R			
yellow birch	R	R			
Wild brookbean		O			
Am. Beech	O	O	O		
Trem. Aspen	O	R			
Hemlock	R	R			
red osier dogwood					

Species	Layer 1	2	3	4	Sample
black raspberry				C	
riverbank grape				O	
rose sp.				R	
Currant sp.				R	
herb robert				O	
Zig Zag goldenrod				D	
Christmas fern				R	
hemlock				R	
blue cohosh				R	
wild strawberry				O	
sensitive fern				O	
bunchberry				R	
bittersweet nightshade				O	
avens sp.					
sedge sp.				R	
red raspberry				O	
maple sp.				O	

Wildlife and Other Notes

Evidence of logging / forest management (stumps)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

> WOD-054 X

Site:	1275 ATMOS.
Polygon:	WOD-C (73)
UTM:	17T 0459555 4899190 (Sample point / thicket swamp)
Date:	27 Oct 2011 Time: 16:00
Surveyor(s):	KNP, JRW
Weather:	5°C, 75% CC, Wind Speed 3 from W, 0 precipitation

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub		Surficial Dep	Submerged	Lichen	Mixed
Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Soils	1	2	3
Position	4		
Aspect:	200°		
%	4		
Type:	C		
Class:	C		

Pore pattern 4 5

		1	2	3
Strata:	Texture	A	SiL	
	Depth	16		
Strata:	Texture	B	SiC	
	Depth	80		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	15		
	Gley	—		
	Bedrock	—		
	Water table	—		
	Carbonates	38		
Depth of Organics		3cm		
Pore Size Disc #1		—		
Pore Size Disc #2		—		
Pore Size Disc #3		—		
Moisture Regime		5		

Polygon: WOD-C (73)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

* could not auger past point but suspect horizon (bottom) goes to 120cm
* Soil sample taken in FOMO-5 community

WOD-054

P7 of 9



(WOD-054)

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrow
Project #: 1275
Date: Oct 27 11
Observer(s): JRW, KNP

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WODC-T73	1	0		17T 0459602 4899262	
"	2	3		17T 0459585 4899262	
"	3	1		17T 0459566 4899223	
"	4	0		17T 0459567 4899188	
"	5	0		17T 0459529 4899186	
"	6	0		17T 0459560 4899153	
"	7	0		17T 0459517 4899160	
"	8	0		17T 0459490 4899154	
"	9	0		17T 0459453 4899103	
"	10	0		17T 0459401 4899038	
Total snags	4				
Snags/ha	8				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: _____
Project #: _____
Date: _____
Observer(s): _____

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow
Polygon:	WOD-C-T73 / WOD-054
UTM:	
Date:	Oct 27 2011 **Time:** 4:04
Surveyor(s):	JRW KMP
Weather:	5°C, 75% c.c, wind 3

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	AMGO	VO		2						
	BLJA	VO		1						
	Red-tailed Hawk	VO		2						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

✓ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Vernal pool AWO-027	MT 0459480 4899017	with snag in middle

Describe Valley (depth, geomorphological traits):

Additional Details:

T73

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in WoD-054

Project Name: Arnow WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov. 1, 2011 **Time (24h):** 14:25

Field #: WET-034 **Weather:** Precipitation: None Temp (°C): 10

Map Code: S1 Wind Speed & Direction: 3/SW Cloud %: 75

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Shrub (S,ts)

% Open Water: 0% **ELC Code:** SWTM2-1 R.O. Dogwood Min Deerd. Thicket Swamp.

Photos: 100-1639

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Black Ash, White Elm
c	
dc,dh,ds	
(ts)	Red Osier Dogwood 30%, White Elderberry, tartarian honeysuckle
ls	Riverbank grape, prickly gooseberry
(gc)	Sensitive Fern 25%, False Nettle 15%, Woolgrass, Christmas Fern, Aster lateriflorum.
ne	
be	
re	woolgrass
ff	
f	
su	
m	

Soil type: SiCL MR6 Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None observed

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Fish habitat: absent, but suitable amphibian breeding habitat present ✓
80% pooled water, centered, not deep

WET-013
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow WF (Turbine 73) in (WOD-054)

Polygon: WET-034

UTM:

Date: Nov. 1/11 Time: 14:25

Surveyor(s): PWD, AMD

Weather: Sunny w cloudy periods, 15°C, CC 75%, wind 3 from SW.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red osier dogwood			A	A	
cuberas idaeus			O	O	
Prickly Gooseberry				R	✓ vest PWD
wh. elm.	R	O			
black ash	O	O			
riverbank grape			O	O	
tartarian honeysuckle			R		
wh. elder			R	O	

Species	Layer 1	2	3	4	Sample
Sensitive fern				A	
woolgrass				O	
xmas fern				O	
false nettle				A	
dewberry				R	
carex sp.				R	✓
spinulose woodfern				R	
moss sp.				R	
carex				R	✓
carex				R	✓
aster lateriflora				O	
herb robert				R	
bitter nightshade				R	
kidney leaf violet				R	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

(WOD-054)

Site:	Armow WF (Turbine 73)
Polygon:	WET-034
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub		Surficial Dep	Submerged	Lichen	Mixed
Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	4		
Aspect:	160		
%	2-5		
Type:	S		
Class:	C		

Strata:	Texture	SiCL		
	Depth	57		
Strata:	Texture	vfSCL		
	Depth	105		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiCL		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	23		
	Gley	40		
	Bedrock	/		
	Water table	3		
	Carbonates	96		
Depth of Organics		23		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WET-034 (T73)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Rocky fragments at 105cm.

T73

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in(WOD-054)

Wetland Vegetation Communities

Project Name: Armour WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov. 1, 2011 **Time (24h):** 15:20

Field #: WET-035 **Weather:** Precipitation: None Temp (°C): 10

Map Code: S2 Wind Speed & Direction: 2/SW Cloud %: 30

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Shrub (S, ts)

% Open Water: 0% **ELC Code:** SWTM2-1 RO Dogwood Min Decid Thicket Swamp

Photos: 100-1040, 1039

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	White Elm, Black Ash
c	
dc,dh,ds	
(ts)	Red Osier Dogwood 25% Bebb's Willow
ls	Red Raspberry
gc	Sensitive Fern, Moss sp., Bitter Nightshade, Spin. Wood fern, Calico Aster
ne	
be	
(re)	woolgrass 25%
ff	
f	
su	
m	

Soil type: C MR6 Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None Observed

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Fish habitat: absent, but suitable amphibian breeding habitat present WET-013
25% pooled water, sporadic, shallow S2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow WF (WOD-054)

Polygon: WET-035 (T73)

UTM:

Date: Nov. 1/11 Time: 15:20

Surveyor(s): PWD, AMD

Weather: wind 2 from SW, 10°C, Sunny, ~ clouds, 30% CC

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
black ash	O	R			
rubus idaeus			O	O	
bebb's willow		O	O		
wh. elm		O	O		
red osier dogwood			A	A	
ironwood		R			

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

(WOD-054)

Site:	1275 Armour
Polygon:	WET-035
UTM:	
Date:	Nov. 1, 2011
Time:	15:20
Surveyor(s):	PWD, AMD
Weather:	10°C 30% cc Wind 7/SW

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub		Surficial Dep.	Submerged	Lichen	Mixed
Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	4		
Aspect:	280		
%	0.5-2		
Type:	S		
Class:	B		

Strata: Texture	C			
Depth	105			
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Effective Texture	C			
Surface Stoniness	0			
Surface Rockiness	0			
Depth to:				
Mottles	14			
Gley	31			
Bedrock	/			
Water table	0			
Carbonates	96			
Depth of Organics	8			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	6			

Polygon: WET-035

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Very tight clay.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

54

☆WOD-2012☆

Site:	1275 Arnew WF
Polygon:	WOD 6 (T73 E. side of Sdrd 10)
UTM:	
Date:	Nov 1 2011 — Time: 16:00
Surveyor(s):	PWD, AMD
Weather:	Sunny, 9°C, 30% cc, wind 3/SW

Community Classification

Vegetation Type:	FOMM6-1 Fresh-Moist Sugar Maple-Hemlock Mixed Forest.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep.	Submerged	Lichen	X Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	Deciduous	

☆No wetlands visible from roadside.

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Sugar Maple > Am. Beech >> E. Hemlock > White Ash
2	Sub-canopy	2	2	" " " "
3	Understorey	3	2	White Ash > Sugar Maple > Am. Beech > White Elm
4	Groundcover	6	2	Aster sp. > Christmas Fern > Horsetail sp. >> Zig Zag Goldenrod

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	O	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

☆Completed on roadside (E of Sdrd 10)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site: Armow WF	X X
Polygon: WOD-G (T73)(E. side of sdrd 10) (WOD-054)	
UTM:	
Date: Nov. 1/11	**Time:** 16:00
Surveyor(s): PWD, AMD	
Weather: Wind 3 from SW, 30% CC, sunny w clouds, 9°C	

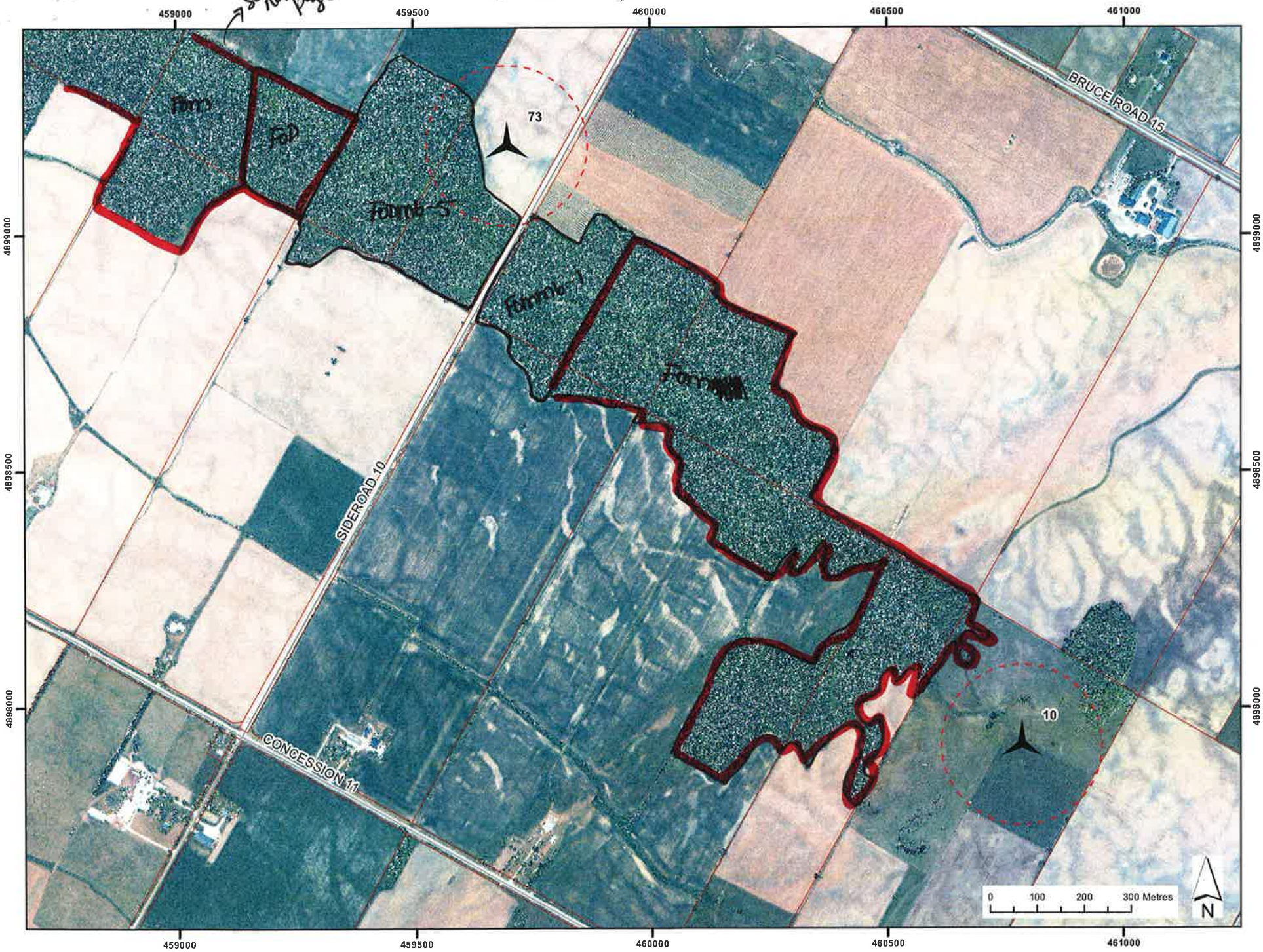
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

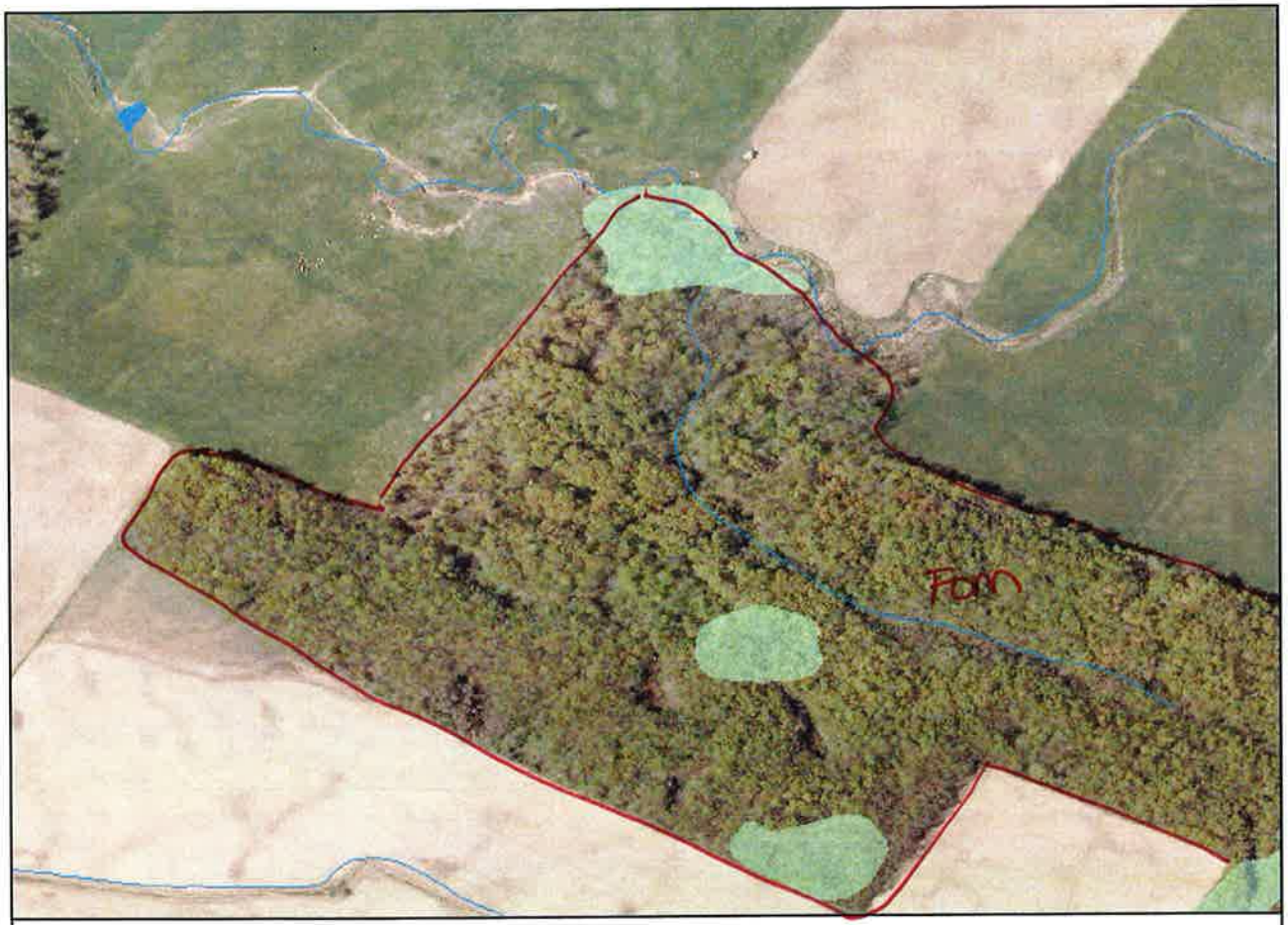
Species	Layer 1	2	3	4	Sample
hemlock	R	R	O		
beech	O	O			
sugar maple	O	O			
basswood	R	R			
wh. ash	R	R			
red osier dogwood				R	
wh. elm			R		
trembling aspen	R				
hawthorn sp.				R	

Species	Layer 1	2	3	4	Sample
newengland aster				R	
tall goldenrod				R	
Xmas fern				O	
horsetail sp.				O	
zigzag goldenrod				O	
aster sp.				O	

(WD-054)


459000
459500
460000
460500
461000
4899000
4898500
4898000
BRUCE ROAD 15
SIDEROAD 10
CONCESSION 11
73
10
0 100 200 300 Metres
N

WOD-054



Map centre: 44° 14' 54.8" N, 81° 31' 09.8" W

Map created: January 5, 2012

0 100 200 300 400 m

Scale: 1:6,700

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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N S

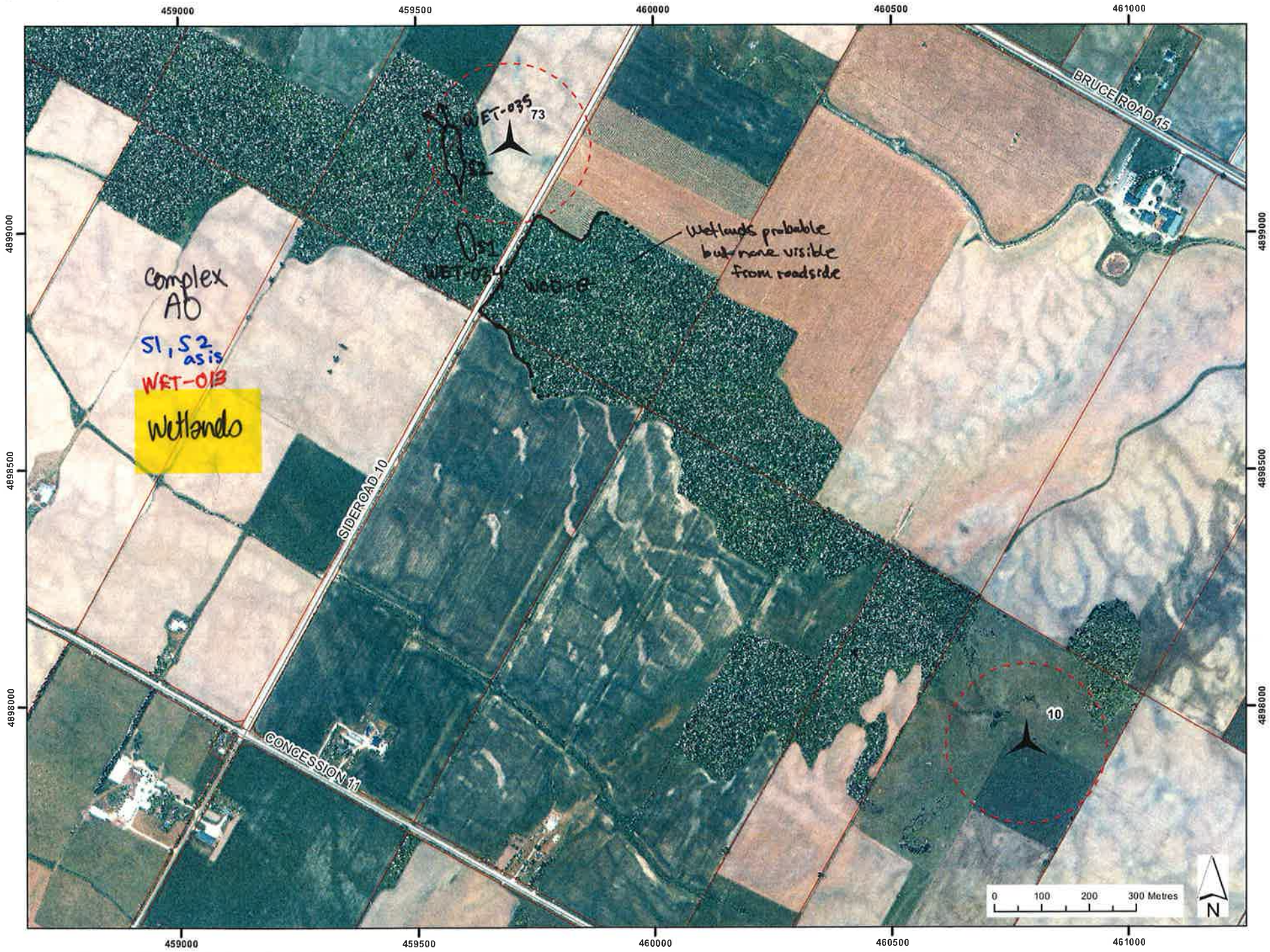
Ontario

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(WOD-054)


459000
459500
460000
460500
461000
4899000
4898500
4898000
BRUCE ROAD 15
SIDEROAD 10
CONCESSION 11
WET-035
73
WET-034
WET-033
Wetlands probable but none visible from roadside
Complex A0
S1, S2 as is
WET-013
Wetlands
10
0
100
200
300 Metres
N

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. (WOD-054)

Page __ of __

Site:	Armow WF (Turbine 73)
Polygon:	WET-034
UTM:	
Date:	Nov. 1/11 **Time:**
Surveyor(s):	
Weather:	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am crow	VO		1						
H	Garter snake	OB	Photo 1041D	1						
B	black cap chickadee	VO		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Page __ of __

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- X Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- X Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Swamp		- representing entire feature
Snag	17T 0459595 4898998	- many (~50) woodpecker holes, photo 1041

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

(WOD-054) Page __ of __

Site:	Armow WF
Polygon:	WET-035 (T73)
UTM:	
Date:	Nov 1/11 **Time:** 15:20
Surveyor(s):	PWD, AMD
Weather:	Wind 2 from SW, 10°C, Sunny w clouds, 30% CC

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	bl. capuhicadea	VO		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Page __ of __

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- [X] Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Swamp		- representing entire feature

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

-See map in WOD 055

Site:	1275 Arrow
Polygon:	WoD - E (T11) #WOD-055
UTM:	
Date:	28 Oct 2011 Time: 14:13
Surveyor(s):	KNP, JRW
Weather:	8°C, 40% cc, windspeed 2 from W No precipitation

Community Classification

Vegetation Type:	Fresh moist sugar Maple - Hemlock Mixed forest (FOMM6-1)
Inclusion:	
X Complex:	Maple mineral deciduous swamp (SWDM3)

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Sugar maple > Am. Beech > hemlock > W. Elm
2	Sub-canopy	3	3	Sugar maple > Am. Beech > hemlock > w. elm + hophornbeam
3	Understorey	1½	3	Sugar maple > Am. Beech > w. elm = basswood
4	Groundcover	½	3	Black raspberry > Sugar maple > barren strawberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	R	> 50
Snags	O	< 10	R	10 - 24	R	25 - 50	R	> 50
Deadfall/Logs	O	< 10	O	10 - 24	O	25 - 50	R	> 50

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

Community Age	Pioneer	Young	Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	See page 1
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	A	A	A	O	
hemlock	O	O			
Green ash	O				
Apple sp.		R			
White elm	O	O	R		
Silver maple	O	O			
Freeman's maple	O	O			
hop hornbeam		O			
cherry sp.	R	R			
Am. Beech	O	O	O		
basswood	O	R	R		

Species	Layer 1	2	3	4	Sample
Red maple				C	
White cedar				R	
Aliens sp.				O	
horsetail sp.				R	
fern sp.				O	
dark dry fern				O	
herb robert				R	
enchanter's nightshade				R	
Wild strawberry				O	
barren strawberry				C	
Black raspberry				O	

Wildlife and Other Notes

Lowland ash deciduous swamp

Complex site of upland maple mixed forest and lowland maple deciduous swamp

Forb Meadow inclusion

Reed canary grass. Cleared Meadow marsh is anthropogenic (water channel)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

WOD 055

Site:	1275 Armow
Polygon:	WOD - E (T11)
UTM:	17T 0462580 4837183 ±6m
Date:	28 OCT 2011 Time: 14:40
Surveyor(s):	KNP JRW
Weather:	8°C, 40% CC (windspeed 3 from W

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	3		
Aspect:	180		
%	5		
Type:	C		
Class:	D		

Strata:	Texture	SiCL		
	Depth	15		
Strata:	Texture	SiC		
	Depth	39		
Strata:	Texture	SiC		
	Depth	100		
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	21		
	Gley	41		
	Bedrock	—		
	Water table	45		
	Carbonates	39		
Depth of Organics		2		
Pore Size Disc #1		—		
Pore Size Disc #2		—		
Pore Size Disc #3		—		
Moisture Regime				

Polygon:
WOD - E (T11)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- Could not auger past 100cm due to dense substrate. Auger would spin but not penetrate deeper
- 2 cm detritus above mineral substrate


462000
462500
463000
463500
4897500
4897000
4896500
4896000
BRUCE ROAD 15
SIDEROAD 20
CONCESSION 11
WD-E
WD-F
11
91
69
99
92
Silver Maple
0
100
200
300 Metres
N

WD-075

WOD-E (T11)

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities
(WOD-055)

Project Name: Arrow
Project #: 1215
Date: 2022
Observer(s):

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD E	1	1		17T 0462629 4897332	Hemlock
"	2	0		17T 0462605 4897325	
"	3	0		17T 0462577 4897266	
"	4	0		17T 0462592 4897196	
"	5	0		17T 0462574 4897198	
"	6	0		17T 0462530 4897150	
"	7	0		17T 0462459 4897150	
"	8	1		17T 0462421 4897134	
"	9	0		17T 0462343 4897156	
"	10	0		17T 0462319 4897122	
"					
total snags	2				
snags/ha	4				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow
Polygon:	WOD-E
UTM:	
Date:	Oct 28, 2011 **Time:** 14:13
Surveyor(s):	JRW KNP
Weather:	8°C, cc=95%, wind=2, precip on/off light rain

WOD-055

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Cedar Waxwing	VO		1						
B	Red-tailed Hawk	VO		1						
B	Am. Goldfinch	VO		2						
B	BCCH	VO		3						
M	Deer	TK		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ✓ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ✓ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ✓ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
WODF SNAG	17 T 446 3071 6m 489 7194	very large 250cm DBH, DIC 00 at large cavity @ top of snag.

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

In *WOD-055*

Wetland Vegetation Communities

Project Name: Armour WF **Project #:** 1275

Observer(s): PWD, AMS

Date: Nov 2 2011 **Time (24h):** 13:50

Field #: WET-044 **Weather:** Precipitation: None Temp (°C): 13

Map Code: M4 Wind Speed & Direction: 4/SW Cloud %40

Wetland Type: Marsh **Site Type:** I **Dominant Form:** Graminoid (M, ne)

% Open Water: 0% **ELC Code:** MAMM 1-3 Reed Canary Graminoid Mix Mead Marsh

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	Salix Sp., Red Osier Dogwood.
ls	
gc	Calico Aster, Grass-leaved goldenrod Canada Goldenrod
(ne)	reed canary grass 70%
be	
(re)	wool grass, broad-leaved cattail 25%
ff	
f	
su	
m	

Soil type: SiC | MR6 | Organic [ ] | Mineral [X]

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: absent, amph. breeding habitat may be present WET-015

* Typ-2? Open water area is small relative to wetland

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site: Arrow WF	
Polygon: WET-041 (T11)	~ WOD-055
UTM:	
Date: Nov. 2/11	Time: 13:50
Surveyor(s): AMD, PWD	
Weather: wind 4 from SW, 13°C, Sunny, 40% CC	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
willow sp.			R	R	
red osier dogwood				R	

Species	Layer 1	2	3	4	Sample
broad leaf cattail				A	
reed canary grass				D	
calico aster				R	
solidago graminifolia				R	
canada goldenrod				R	
woolgrass				O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(WOD-055)

Wetland Vegetation Communities

Project Name: Arrow WR		**Project #:** 1275	
Observer(s): PWB AMD			
Date: Nov 2 2011	**Time (24h):** 12:20		
Field #: WET-039	**Weather:** Precipitation: None	Temp (°C): 13	
Map Code: S6	Wind Speed & Direction: 3/SW	Cloud %: 0	
Wetland Type: Swamp	**Site Type:** P I	**Dominant Form:** Treed (S,h)	
% Open Water: 0%	**ELC Code:** SWDM3-1 Red Maple Min. Deciid. Swamp		
Photos: 100 - 1050			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Red Maple 60% Green Ash 25%
c	
dc,dh,ds	
ts	
ls	
gc	Aveno sp., Aster sp., Moss sp.
ne	
be	
re	
ff	
f	
su	
m	

Soil type: SiC	MR6	Organic [ ]	Mineral [X]

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None Observed	

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Fish habitat: absent

WET-015
S1 C

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities in (WOD-055)

Project Name: Armour WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 2 2011 **Time (24h):** 13.00

Field #: WET-040 **Weather:** Precipitation: None Temp (°C): 13

Map Code: S7 Wind Speed & Direction: 4/SW Cloud %: 0

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Treed (S,h)

% Open Water: 0% **ELC Code:** SWDM3-2 Swamp Maple Mineral Dec. Swamp

Photos: 100 - 1052

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Freeman's Maple 50%, Red Maple, Green Ash, Yellow Birch
c	E. Hemlock
dc,dh,ds	
ts	Wild Raisin, Hawthorn sp., spicebush
ls	Canada Yew
gc	Intermediate Wood Fern, Herb Robert, Royal Fern, Fowl Mannagrass, Sensitive Fern, Spin. Wood Fern
ne	Blue Flag Iris, Carex intumescens
be	
re	
ff	
f	
su	
m	

Soil type: See ELC | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

Leopard Frog
Spring Peeper

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Fish habitat: absent, very likely amph breeding habitat. 5% pooled water, very sporadic and shallow

WET-015
SG - D

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnaw WF
Polygon:	WET-040 w(WOD-055)
UTM:	
Date:	Nov. 2/11 **Time:** 13:00
Surveyor(s):	PWD, AMD
Weather:	wind 4 from SW, 13°C, Sunny, 0% CC.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
spicebush			R		
red maple	A	A	A		
freemans maple	O	R			
wh. elm		O	O		
green ash	O	O			
basswood	R	R			
hawthorn sp.		R	R	R	
~~wh. elderberry~~					
wild raisin		R	O		
yellow birch	O	R	R		
wh. elderberry		·	A	O	
hemlock	O	O	R		
sugar maple	R	R			
beech	R	R			
canada yew				O	

Species	Layer 1	2	3	4	Sample
intermediate wood fern				A	
fringed loosestrife				R	
meadow horsetail				R	
herb robert				O	
wood strawberry				R	
royal fern				O	
foamflower				O	
blue flag iris				O	
barren strawberry				R	
poison ivy				R	
hellebore				R	
spinulose wood fern				A	
carex intumescens				O	
spotted jewelweed				O	
sensitive fern				A	
water cress				R	
false nettle				R	
dwarf raspberry				R	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in (WOD 055)

Project Name: Armour WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 2 2011 **Time (24h):** 12:40

Field #: WET-089 **Weather:** Precipitation: None Temp (°C): 13

Map Code: MS SB Wind Speed & Direction: 3/SW Cloud %: 0

Wetland Type: Marsh Swamp **Site Type:** D I **Dominant Form:** Treed (surrounding OA)

% Open Water: 80% Type 6 **ELC Code:** SWDM2-2 Gr Ash Mineral Treed Swamp. (S, h)

Photos: 100 - 1081

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 30% Red Maple 25%
c	
dc,dh,ds	
ts	
ls	common red raspberry
gc	
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: SiC LIRG Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):
None Observed

Wildlife Notes:
Leopard frog
Am. Goldfinch

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

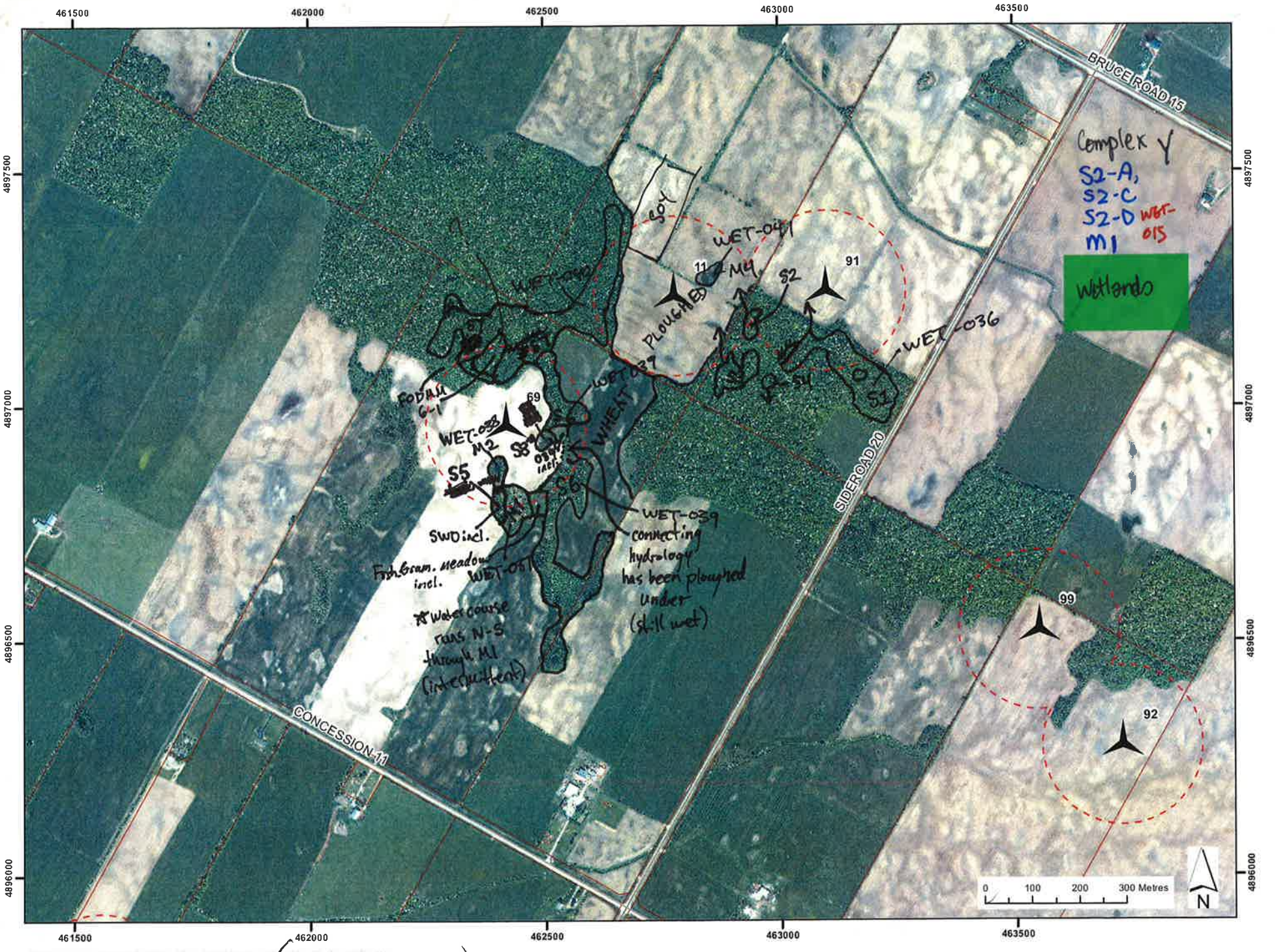
Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

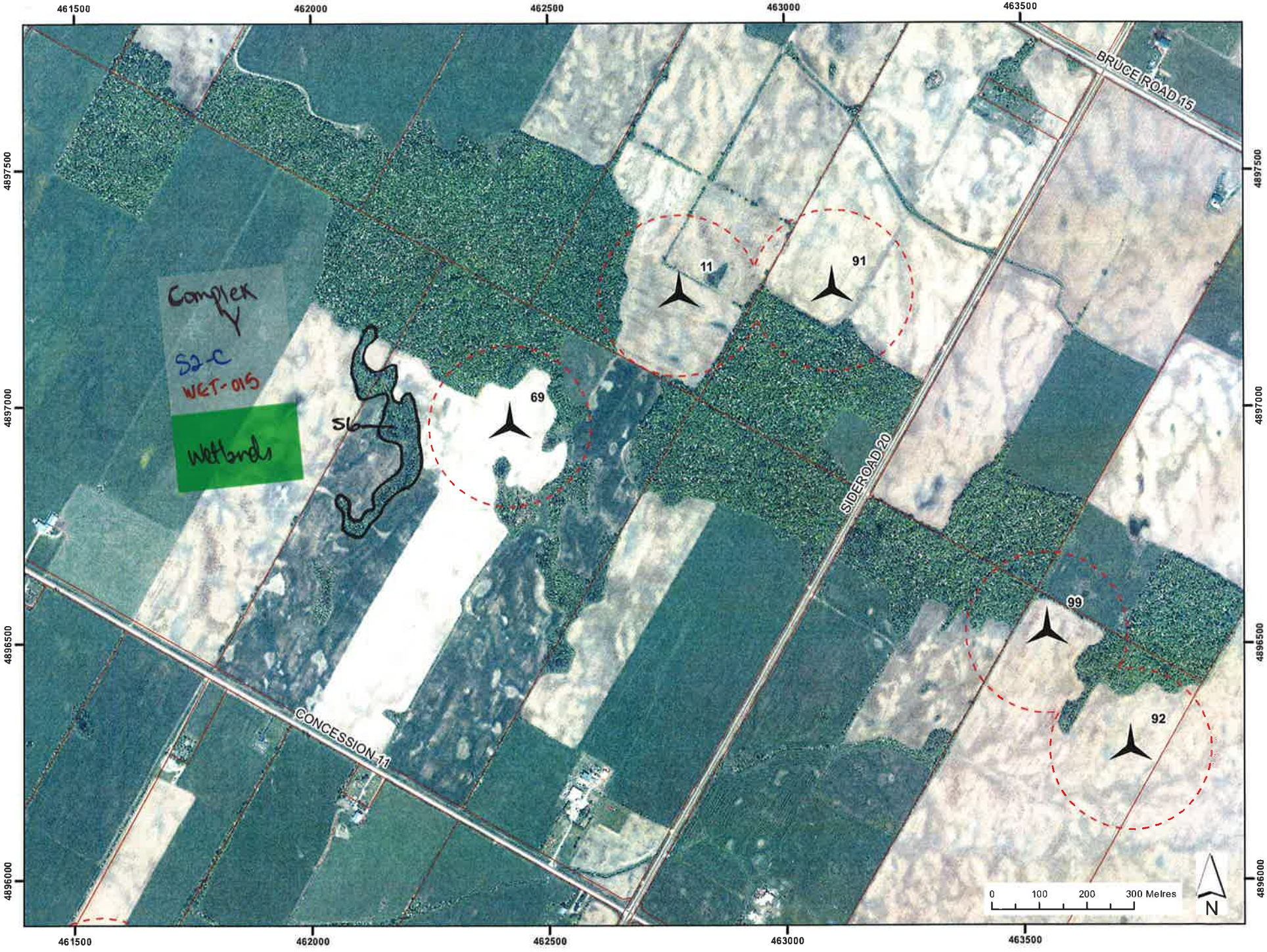
Fish habitat: absent, amphibian breeding habitat present

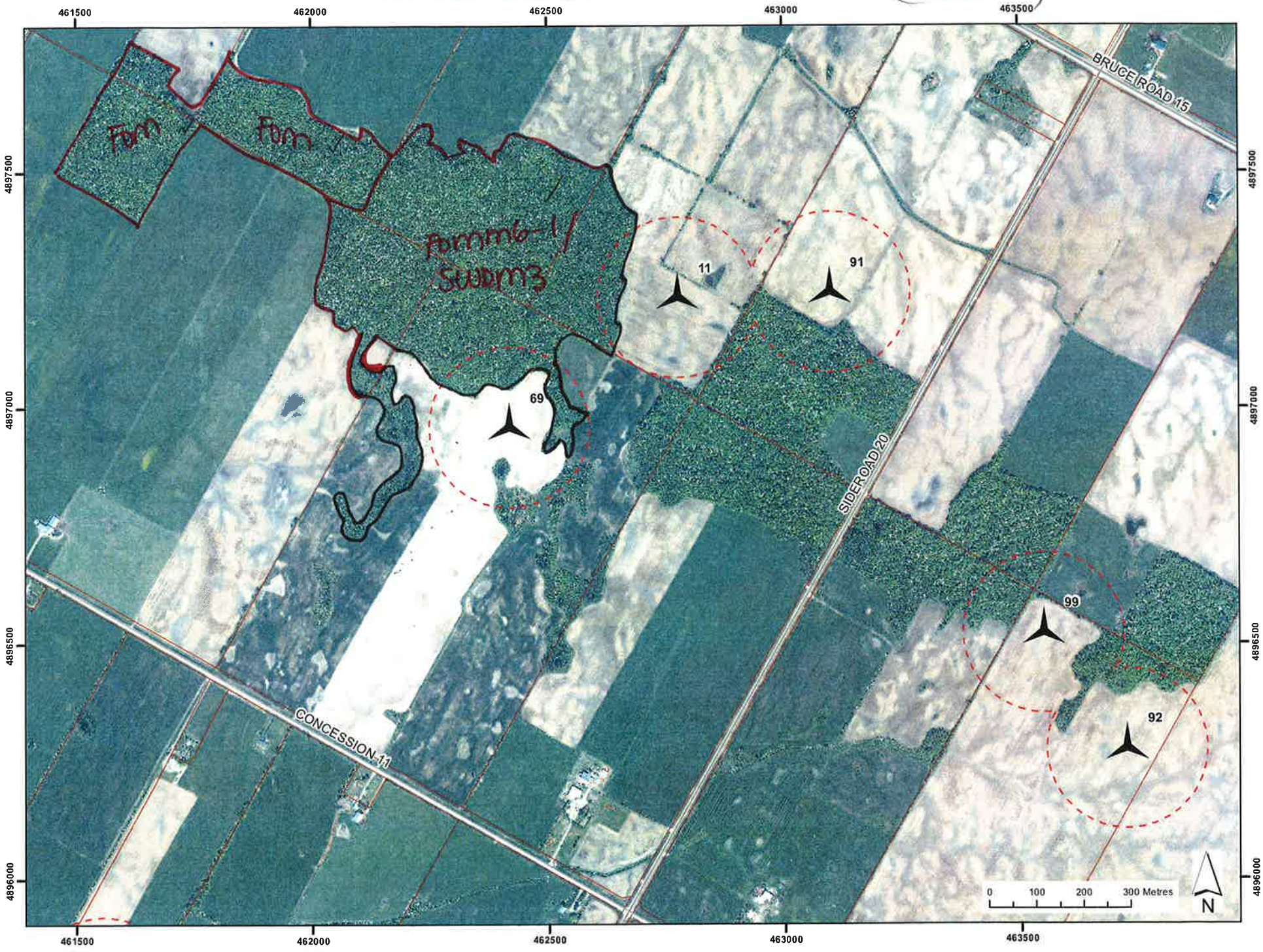
WET-015
SJ - A


461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
BRUCE ROAD 15
SIDEROAD 20
CONCESSION 11
Complex Y
S2-A,
S2-C
S2-D WET-015
M1
Wetlands
WET-041
WET-036
WET-037
WET-033
WET-039
connecting hydrology has been ploughed under (still wet)
SWD incl.
Fresh-Gram. meadow incl.
WET-051
Watercourse runs N-S through M1 (intermittent)
PLOUGHED
FODDER
WHEAT
11
69
91
99
92
0 100 200 300 Metres
N

(WOD-055)

WOD - 055
wetland S6=SWDM3-1




— Actual
Aerial interp.
WOD-055
461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
BRUCE ROAD 15
SIDEROAD 20
CONCESSION 11
11
91
69
99
92
0 100 200 300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 8

Site:	1275 Armow
Polygon:	WOD - D (53, 54) ~~WOD-057~~
UTM:	
Date:	28 Oct 2011 Time: 10:20
Surveyor(s):	KNP JRW
Weather:	3°C, 60% cc, windspeed 1 from W No precipitation

Community Classification

Vegetation Type:	D
~~Inclusion:~~	Maple Mineral Deciduous swamp (SWDM3)
X Complex:	Fresh-moist Sugar Maple - Hardwood Deciduous Forest (FODM6-5)
	Red-osier dogwood mineral deciduous thicket swamp (SWTM2-1)

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Sugar maple > Freeman's Maple > Am. Beech
2	Sub-canopy	3	4	Sugar Maple > Am. Beech > Freeman's Maple
3	Understorey	4/5	3	Sugar Maple > dogwood sp. > Am. Beech
4	Groundcover	6/7	3	Zig zag goldenrod > black raspberry > Sugar Maple

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	R	> 50
Snags	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Deadfall/Logs	O	< 10	O	10 - 24	O	25 - 50	R	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site:	
Polygon:	See page 1
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	A	A	A	O	
Freeman's Maple	O	O	O		
White Elm	O	O			
Yellow birch	O	R			
Hop hornbeam	R	O			
hemlock		O			
Am. Beech	D	O	O		
Basswood	R	O			
Green Ash	O	O			
White birch		R			
Large toothed poplar		R			
Silver maple	O	O			
~~All-leaved dogwood~~			D		
chokecherry			O		
early meadow rue				O	

Species	Layer 1	2	3	4	Sample
wild strawberry				O	
black raspberry				A	
currant sp.				O	
Zig zag goldenrod				A	
Christmas fern				O	
calico aster				O	
horsetail sp.				O	
fern sp.				O	
sensitive fern				O	
bittersweet nightshade				R	
spotted jewelweed				R	
round-lobed Hepatica				O	
partridgeberry				O	*
Bunchberry				O	*?
blue cohosh				R	
meadow rue				R	
royal fern				R	
white baneberry				O	
red raspberry				O	
herb robert				O	
beech drops				O	
Carex plantaginea				O	
bloodroot				O	

Wildlife and Other Notes

Maple syrup operation in upland areas

Site is ~~Maple~~ forest/swamp complex.

Forest - Sugar maple/Beech

Swamp - Freeman's/Silver Maple/dogwood sp.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Arrow
Polygon:	WOD-D (53, 54) *WOD-057
UTM:	
Date:	28 Oct 2011 Time: 10:30
Surveyor(s):	KNP, JRW
Weather:	3°C, Cc (60%) Windspeed 1 from W

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Soils	1	2	3
Position:	3		
Aspect:	180°		
%	3		
Type:	C		
Class:	D		

Pace Pioneers

5	Strata: Texture	CL		
	Depth	23		
5	Strata: Texture	SiCL		
	Depth	45		
5	Strata: Texture	SiC		
	Depth	120		
	Strata: Texture			
	Depth			
	Effective Texture	SiC		
	Surface Stoniness	0		
	Surface Rockiness	0		
	Depth to:			
	Mottles	38		
	Gley	—		
	Bedrock	—		
	Water table	38		
	Carbonates	—		
	Depth of Organics	2-3		
	Pore Size Disc #1	—		
	Pore Size Disc #2	—		
	Pore Size Disc #3	—		
	Moisture Regime	5		

Polygon: WOD-D (53, 54)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Organics (mostly detritus) 2-3cm above mineral substrate

(WOD-057)


459000
459500
460000
460500
461000
4902500
4902000
4901500
4901000
HIGHWAY 21
CONCESSION 2
SIDEROAD 10
53
54
WOD-057
0 100 200 300 Metres
N

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: [illegible]
Project #: 1275
Date: Oct 25
Observer(s): JAW, KN

WOD-057 *

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-D	1	3		17T 0459974 4901131	1 tree with 2 cavities (woodpecker)
WOD D	2	2		17T 0459921 4901110	2 cavities (1 trunk)
WOD D	3	1		17T 0459894 4901141	1 cavity (1 trunk)
WOD D	4	1		17T 0459766 4901246	
WOD D	5	4		17T 0459646 4901312	
WOD D	6	0		17T 0459645 4901354	
WOD D	7	1		17T 0459620 4901405	
WOD D	8	0		17T 0459589 4901474	
WOD D	9	3		17T 0459459 4901549	
WOD D	10	2		17T 0459439 4901533	Pic-160
Total snags	17				
snags/ha	34				

BRMA-019

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

* only just outside #3 with cavities

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name:
Project #:
Date:
Observer(s):

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. X WOD-057 X

Site:	Armoin
Polygon:	WOD-D 753 +754
UTM:	
Date:	Oct 28, 2011 Time: 10:20
Surveyor(s):	JRW, KNP
Weather:	3°C, cc = 75%, precip = 0 rained night before, wind = 1

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue jay	VO		2						
B	Am. Crow	VO		3						
B	Robin	VO		2						
B	Am. Goldfinch	VO		3						
B	Cedar waxwing	VO		1						
B	Birch	VO		1						
B	Downy Woodpecker	VO		1						
B	Nuthatch	VO		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats
- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose
- ___ Seep/Spring
- ___ Mineral Lick

Snakes
- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles
- ✓ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Snags	17T 0459951 4901129	Potential bat habitat
Snag	17T 0459751 4901238	DIC 159 - large snag w cavities
BMA-019		

Describe Valley (depth, geomorphological traits):

photo of woodlot. - 00153
wetland inclusion - 00154 - UTM 0459953 4901131

Additional Details:

photos # on BB - Kincardine - 20111028 - 00151
- 00152
* pooling & amphibian habitat throughout WOD-D.
- lots of wetland inclusions

AWO-030

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

X WOD-057 *

Site: Arrow	1275
Polygon: WET-032 , WOD-D	(153, 54)
UTM:	
Date: Oct 28 , 2011	Time: 13:45
Surveyor(s): CLH, KJN	
Weather: 5°C, showers, 90% cc, Wind 2.	

Community Classification

Vegetation Type:	
Inclusion:	
X Complex:	SWDM4-2 White Elm mineral Deciduous Swamp.

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
X Treed	Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	White Elm > Yellow Birch
2	Sub-canopy	3	4	White Elm > Green Ash > Yellow Birch > Shining Willow
3	Understorey	4/5	2	Red Osier > Spotted Jewelweed > Woolgrass > Reed Canarygrass
4	Groundcover	4	4	Sensitive Fern > Hop Sedge > Bittersweet Nightshade > Swamp Beggar-ticks

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

17 WOD-057

Site:	Arnon WF 1275
Polygon:	WET 032-S1 (TS3+TS4)
UTM:	
Date:	Oct 28, 2011 — Time: 13:45
Surveyor(s):	EJG, CLH
Weather:	Showers, 5°C, 90% CC, W, 3 25E

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Red Osier Dogwood			O		
White Elm	O	O	O		
Common Red Raspberry			O		
Green Ash		O	O		
Wild Raisin			O		
Eastern Hemlock		R			
White Elder berry			O		
Shining Willow		O			
Viburnum trilobum				R	
Swamp Red Currant			O		
Willow Sp.	R	O			

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Spotted Jewelweed			O		
Sensitive Fern				A	
Bracken Fern				O	
Lake Bryan Bulrush			O		
Calico Aster			O		
Carex sp.				O	
Heath Aster				O	
Woodland Strawberry				O	
Moonseed			R		
Hop Sedge				O	
Water Parsnip				O	
Poa palustris			O		
Canada (Goldenrod)			O		
False Nettle				O	
Cinnulose Wood Fern				O	
Mild Water Pepper				O	
Woolgrass			O		
Swamp Bagger-tick				O	

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

(WOD-057)

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CH. KW

Date: Oct. 28, 2011 **Time (24h):** 13:45

Field #: ~~WET-038~~ (TS3) **Weather:** Precipitation: showers Temp (°C): 5

Map Code: S1 Wind Speed & Direction: 2 SE Cloud %: 90

Wetland Type: Swamp. **Site Type:** P, I **Dominant Form:** h (S,h)

% Open Water: 0% perm. **ELC Code:** SWDM4-2.

Photos: 182 – 1293 small wetland area 182 – 1296

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	white elm, green ash, yellow birch
c	e. hemlock
dc,dh,ds	
(ts)	red osier, wild raisin, shining willow
ls	common red raspberry, white elderberry, viburnum trilobum
(gc)	sensitive fern, spotted, joe pye weed.
ne	reed canary grass, hop sedge, poa palustris
be	
re	dark green rushes, wool grass
ff	
f	
su	
m	

Soil type: SiC + Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes: See attached SAR form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Modified ELC Community Description

1m + WOD-057 *

Soils	S1	2	3
Position:	S		
Aspect:	—		
%	0		
Type:	S.mdr		
Class:	A		

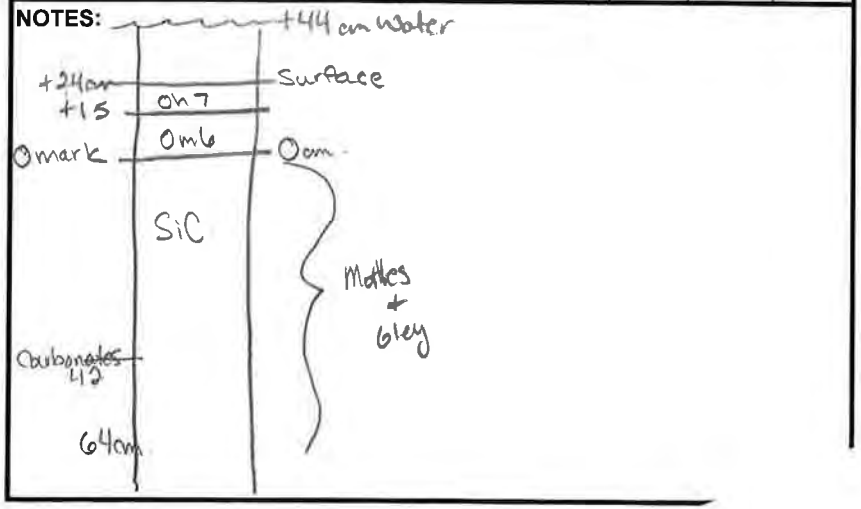
Polygon: WET-032 (TS3a 54)

Strata: Texture	Oh7		
Depth +	24cm		
Strata: Texture	Om6		
Depth +	15 cm		
Strata: Texture	SiC		
Depth	64cm		
Strata: Texture			
Depth			
Effective Texture	SiC		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	0cm		
Gley	0cm		
Bedrock	—		
Water table	+44		
Carbonates	42cm		
Depth of Organics	24cm		
Pore Size Disc #1	—		
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: WET-032, WOO-057	(TS3, S4)
UTM:	
Date: Oct 28 2011	**Time:** 14:15
Surveyor(s): CLH, KJW	
Weather: showers, 5°C, Wind 2, 100%	

Community Classification

Vegetation Type:	
[ ] **Inclusion:**	
[X] **Complex:**	SWDM3-3 Swamp maple Mineral Deciduous Swamp

Polygon Description

System	Substrate	Topo Feature		Community	
[ ] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[X] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min	[ ] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thicket
History	[ ] Basic Bedrock	[ ] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[X] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[X] Swamp	[ ] Woodland
[ ] Cultural		[X] Roll. Upland	[ ] Bluff	[ ] Fen	[ ] Forest
	Site	[ ] Cliff		[ ] Bog	[ ] Plantation

Cover		Plant Form		
[ ] Open	[ ] Open Water	[ ] Plankton	[ ] Forb	[ ] Coniferous
[ ] Shrub	[X] Shallow Water	[ ] Submerged	[ ] Lichen	[ ] Mixed
[X] Treed	[ ] Surficial Dep.	[ ] Floating-Lvd.	[ ] Bryophyte	
	[ ] Bedrock	[ ] Graminoid	[X] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Swamp maple >> White Elm > Yellow Birch
2	Sub-canopy	3	0	—
3	Understorey	4/5	2	Red osier > Swamp Red Currant > Yellow Birch > Wild Raisin
4	Groundcover	6/7	1	Calico Aster > Hop Sedge > Water Parsnip > Sensitive Fern

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	O	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	[ ]	Pioneer	[ ]	Young	[ ]	Mid-age	[X]	Mature	[ ]	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armour WF 1275
Polygon:	WET 032-S2 (TS3+TS4) / 1n WOD-057 *
UTM:	
Date:	Oct 28 2011 **Time:** 14:15
Surveyor(s):	KJW CLH
Weather:	Showers, 5°C, 80% CC, wind 21SE

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's Maple	A				
Yellow Birch	R		O		
White Elm	O				
[illegible]			O		
Wild Raisin			O		
Swamp Red Currant*			O		
Dwarf Raspberry				O	

Species	Layer 1	2	3	4	Sample
Carex sp.				O	
Sensitive Fern				O	
Calico Aster				O	
Meadow Horsetail				O	
Water Parsnip				O	
Hop Sedge				O	
Northern Bugleweed				R	
Foamflower				R	
Moss sp.					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WOD-057

Project Name: Arnow **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 28 2011 **Time (24h):** 14:15

Field #: WET-032 (15) **Weather:** Precipitation: showers Temp (°C): 5

Map Code: 52 Wind Speed & Direction: 2 SE Cloud %: 80

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h (S,h)

% Open Water: 0% perm. **ELC Code:** SODM3-3

Photos: 182-1294

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	freeman's maple, yellow birch, white elm
c	
dc,dh,ds	
ts	red osier dogwood, wild raisin
ls	
gc	dwarf raspberry, sensitive fern, calico aster, foamflower, N. bugleweed
ne	hop sedge
be	
re	
ff	
f	
su	
m	

Soil type: SiC. Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

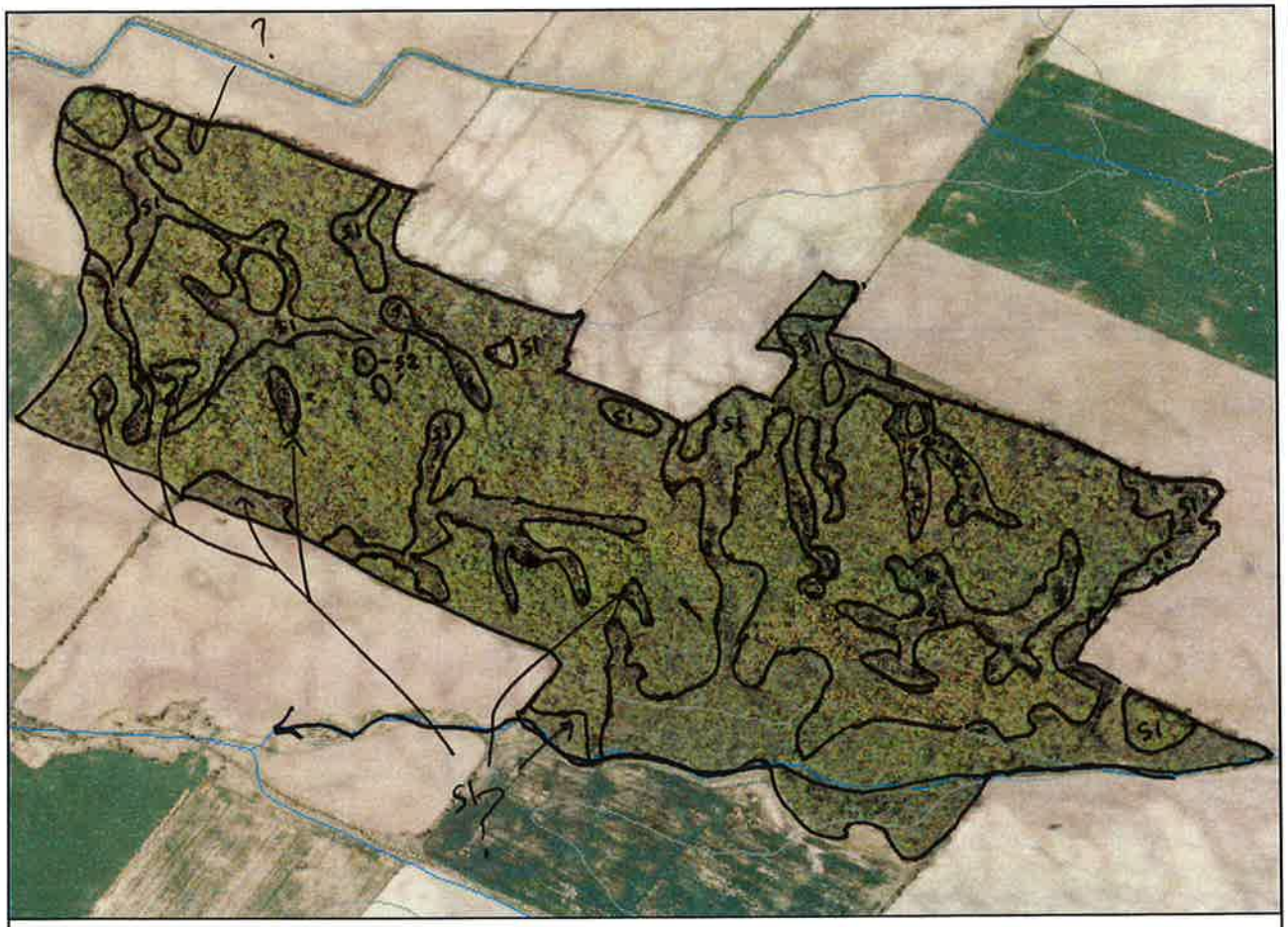
WET-012
52

(WID 057)


459000
459500
460000
460500
461000
4902500
4902000
4901500
4901000
HIGHWAY 21
CONCESSION 2
SIDEROAD 10
53
54
soy
soy
soy
soy
51
52
wetlands continues on adjacent properties
ne
0
100
200
300 Metres
N

In(WOD057)

T53, T54 Wetlands (WET-037)



Map centre: 44° 15' 43.5" N, 81° 30' 07.8" W

Map created: November 2, 2011

0 100 200 300 400 m

Scale: 1:8,900

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AC WET-012
S1, S2 as is
wetlands

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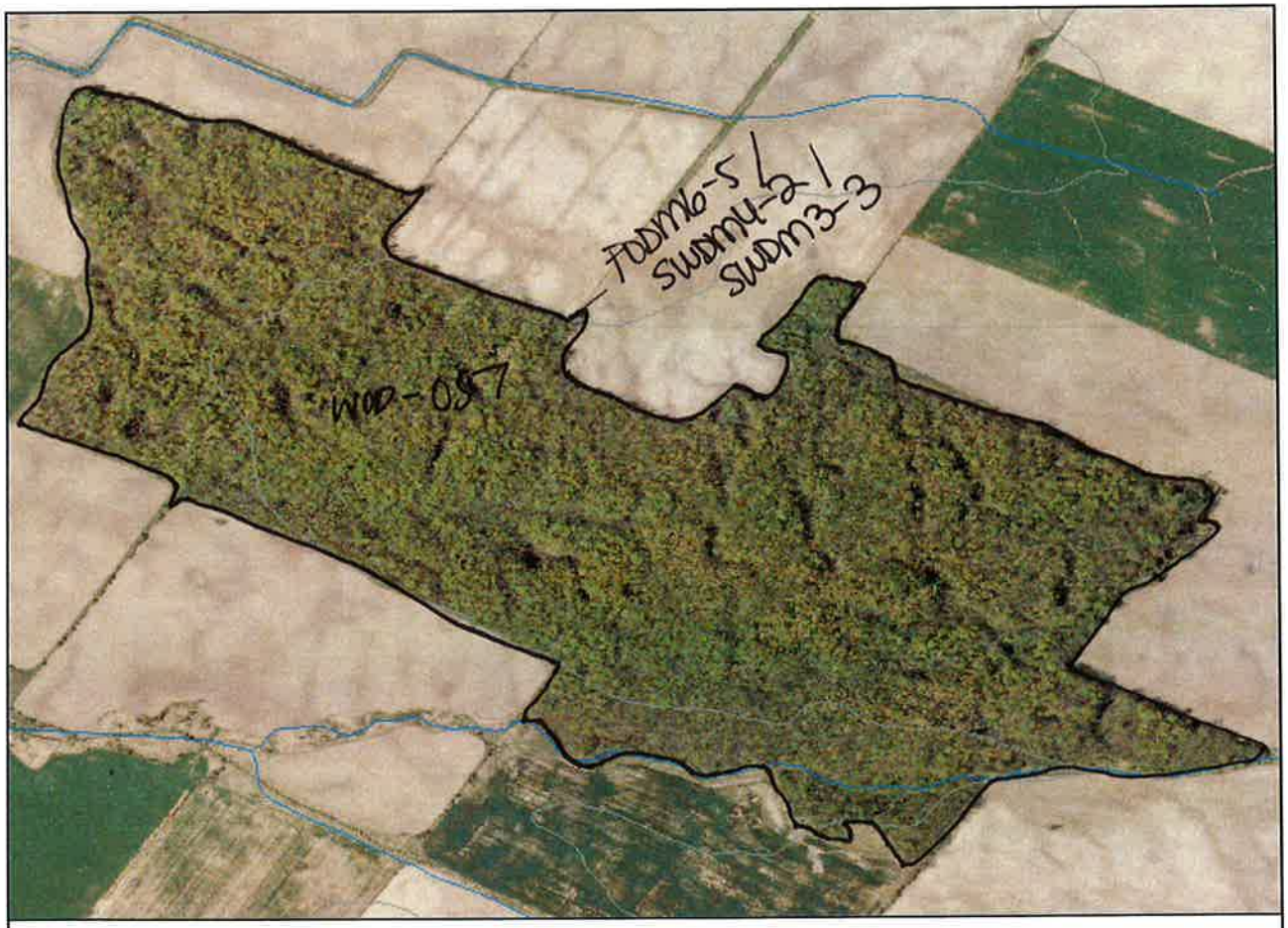
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Ontario

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(mWOD-057)

T53, T54



Map centre: 44° 15' 43.5" N, 81° 30' 07.8" W

Map created: November 2, 2011

0 100 200 300 400 m

Scale: 1:8,900

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold WF 1275
Polygon:	WET-032 / WOD057 (T53+T54)
UTM:	
Date:	Oct. 28, 2011 **Time:** 13:25
Surveyor(s):	KJW, CLH
Weather:	showers, 5°C, 90% CC, wind 2/SE

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue Jay	VO		**						
B	Horned Lark	OB		**						
B	Black-capped Chickadee	VO		*						
M	White tailed Deer	CA	skull	*						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold WF 1275
Polygon:	WET 032 (T53+T54)
UTM:	
Date:	Oct. 28, 2011 **Time:** 13:25
Surveyor(s):	KJW, CLH
Weather:	showers, 5°C, 90% CC, wind 2/SE

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: WOD-050 (T58)	~~WOD-059~~
UTM:	
Date: Oct 27, 2011	Time: 13:50
Surveyor(s): CLH, KSW	
Weather: 0°C CC100%, no precip W. 3 From NW	

Community Classification

Vegetation Type:	FODM5-8 Dry-Fresh Sugar maple - White Ash Deciduous Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
[X] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[ ] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min.	[ ] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thicket
History	[ ] Basic Bedrock	[X] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[X] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[ ] Swamp	[ ] Woodland
[ ] Cultural		[X] Roll. Upland	[ ] Bluff	[ ] Fen	[ ] Forest
	Site	[ ] Cliff		[ ] Bog	[ ] Plantation

Cover		Plant Form		
[ ] Open	[ ] Open Water	[ ] Plankton	[ ] Forb	[ ] Coniferous
[ ] Shrub	[ ] Shallow Water	[ ] Submerged	[ ] Lichen	[ ] Mixed
[X] Treed	[X] Surficial Dep	[ ] Floating-Lvd	[ ] Bryophyte	
	[ ] Bedrock	[ ] Graminoid	[ ] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar Maple > White Ash > [redacted]
2	Sub-canopy	3	3	Sugar Maple > American Beech > White Birch > White Elm
3	Understorey	4/5		
4	Groundcover	6		

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	0	< 10	0	10 - 24	0	25 - 50	0	> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young		Mid-age	[X]	Mature	Old Growth

PLANT SPECIES LIST

Site: Arnow	
Polygon: WOD-050	
UTM:	
Date: Oct 27 2011	Time: 13:50
Surveyor(s): CLH, KSW	
Weather: 5°C, CC 100%, No precip. Wind 3 From NW.	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	A	D			
White Birch		O			
American Beech	O	O	O		
White Elm		O			
E. Hemlock.		O	O		
Black Cherry	O				
White Ash	O				
Basswood			R		
Wild Raisin.					
Choke cherry					

Species	Layer 1	2	3	4	Sample
Bracken					
Canada Yew					
Christmas Fern					
Dryopteris sp.					
Calico Aster					
1					

Wildlife and Other Notes

Roadside. No site access.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	
Polygon: WET-025 (T52)	//(WOD 059)
UTM:	
Date: Oct 27, 2011	Time: 12:00
Surveyor(s): CLH, KJW	
Weather: 3°C, CC100%, Wind 3 NW No precip.	

Community Classification

Vegetation Type:	BOSD2-1 Leatherleaf Shrub Kettle Bog
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	/ Fen	Forest
	Site	Cliff		X Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	1	Winterberry > White Birch
3	Understorey	4/5	4	Leatherleaf > Grass sp. > Slender Willow
4	Groundcover	6/7	4	Sphagnum spp > Rice Cutgrass > Am. Burreed

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow WF 1275	WTNOD-059 X
Polygon: WET-025-B1	
UTM:	
Date: Oct 27, 2011	**Time:** 12:00
Surveyor(s): KJW, CLH	
Weather: Overcast 3°C, 100% CC, wind 3/NW	

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Leatherleaf			D		
White Birch		R			
Winterberry		R			
Slender willow			R		

Species	Layer 1	2	3	4	Sample
Sphagnum Moss sp.				O	
Sphagnum sp. 2				O	
Blue Flag Iris				R	
American bur-reed				R	
Rice Cutgrass				O	
Grass sp.			O		
Wool grass			R		
Quaking Aspen			R		

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities ..(WOD-059)

Project Name: Arrow		**Project #:** 1275	
Observer(s): CLH, KJW			
Date: Oct 27 2011	**Time (24h):** 11:15		
Field #: WET-025	**Weather:** Precipitation: none	Temp (°C): 3	
Map Code: B1	Wind Speed & Direction: 4 from NW	Cloud %: 100	
Wetland Type: Bog	**Site Type:** I	**Dominant Form:** ls, m. (B, ls)	
% Open Water: 0%	**ELC Code:** BOSD2-1		
Photos: 1241 - 1240, 1237			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white birch
c	
dc,dh,ds	
ts	winterberry, slender willow
ls	leatherleaf.
gc	
ne	carex pseudo-cyperus, rice cut grass, american bur reed
be	
re	woolgrass
ff	
f	
su	
m	Sphagnum spp.

Soil type: | Organic ☒ | Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
↳ See attached Wildlife Form

Soil Sample not possible due to very high water levels

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Note: Soil Sample conducted on alternate date (Nov. 4).

WET-003 B1

Modified ELC Community Description

Page __ of __

~~WOD-059~~

Soils	B1 1	2	3
Position:	(o		
Aspect:	/		
%	0		
Type	Simple		
Class	A		

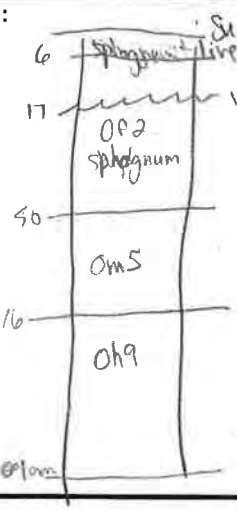
Polygon: WET-025 (152)

Strata: Texture	Of 1		
Depth	1cm		
Strata: Texture	Of2		
Depth	50		
Strata: Texture	Om5		
Depth	76		
Strata: Texture	Oh9		
Depth	100cm		
Effective Texture			
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	/		
Gley	/		
Bedrock	/		
Water table	17cm		
Carbonates	—		
Depth of Organics	100+		
Pore Size Disc #1	/		
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	8		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



Nov. 4 2011
Cloudy, NGM.
8°C, Wind 2 Calm 2%
No precip.
16:00 - 16:45.

Auger done on slope of a hummock



Some low areas between hummocks contain up to ~5cm water. It has been very wet lately.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: WET-025 S1	In WOD-055
UTM:	
Date: Oct 27 2011	Time: 11:45
Surveyor(s): CLH, KJW	
Weather: 3°C, 100% CC, Wind 3, No precip	

Community Classification

Vegetation Type:	SWTO2-3 Slender Willow Dogwood Deciduous Thicket Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	0	—
3	Understorey	4/5	4	Salix petiolaris > Leatherleaf > Winterberry > narrow-leaf meadow sweet
4	Groundcover	6/7	1	Sphagnum sp > Sensitive Fern > American Burreed.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ____of____

Site:	Arnow 1275
Polygon:	WET-025-S1 / in / WOD-059
UTM:	
Date:	Oct 27 2011 **Time:** 11:45
Surveyor(s):	KJW, CLH
Weather:	overcast 2°C 100% CC, wind 3/NW

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Leatherleaf			O		
Slender Willow			A		
Narrow-leaved Meadowsweet			O		
Winterberry			O		

Species	Layer 1	2	3	4	Sample
Soft-stemmed Bulrush			O		
American Bur-reed				O	
Sensitive Fern				O	
Blue Flag Iris			O		
Sphagnum sp				O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities (WOD-059)

Project Name: [redacted]	**Project #:** 1275
Observer(s): [redacted]	
Date: Oct 27 2011	**Time (24h):** 11:45
Field #: WET-025	**Weather:** Precipitation: none Temp (°C): 3
Map Code: S1	Wind Speed & Direction: 4 from NW Cloud %: 100
Wetland Type: [redacted]amp	**Site Type:** Isolated **Dominant Form:** ts (S,ts)
% Open Water: (0 %	**ELC Code:** SWTO2-3
Photos: 1181 - 1246	

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	Salix spp., winterberry
(ls)	leatherleaf, narrow-leaved meadowsweet
gc	sensitive fern
ne	american bur reed
be	
re	soft-stemmed bulrush
ff	
f	
su	
m	sphagnum sp.

Soil type: | Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
Soil Sample Not Possible Due to very high water levels
↳ See attached Wildlife form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Leatherleaf growing at base of shrubs on top of hummocks.

WET-003
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnow
Polygon:	WET-025 ml / (WOD-057)
UTM:	
Date:	Oct 27 2011 — Time: 11:15
Surveyor(s):	CLH, KTW
Weather:	3°C, 100% CC, no precip, Wind 3

Community Classification

Vegetation Type:	MAS01-2 Bulrush Organic Shallow marsh Type
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	5	1	White Willow
3	Understorey	4 5	3	Softstem Bulrush >> three-Square > Typha angustifolia > Typha latifolia >
4	Groundcover	6 7	3	Lemna minor > Pond Lily sp > mild Water Pepper > Nodd Bur > Goldenrod

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF 1275
Polygon:	WET-025-M1 / in (WOD-054)
UTM:	
Date:	Oct 27, 2011 **Time:** 11:15
Surveyor(s):	KSW CLH
Weather:	overcast 3°C 100% CC wind 3 NW

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Willow		R			
Slender Willow			R		

Species	Layer 1	2	3	4	Sample
Mild Water Pepper				O	
Nodding Bur Marigold				O	
Soft Stemmed Bulrush			O		
Eleocharis sp.				O	
Blue Flag Iris				O	
Northern Bugleweed				R	
Spotted Jewelweed				R	
Typha angustifolia			R		
Typha latifolia			R		
Bittersweet Nightshade				O	
Water Smartweed				O	
American Burreed				O	
Pond Lily sp.				O	
~~Three Square~~			R		
Lemna minor				O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in (WOD 059)

Wetland Vegetation Communities

Project Name: Arrowhead	**Project #:** 1275
Observer(s): CW, KJW	
Date: Oct 27, 2011	**Time (24h):** 11:15
Field #: WET-095	**Weather:** Precipitation: none Temp (°C): 3
Map Code: M1	Wind Speed & Direction: 3 from NW Cloud %: 100
Wetland Type: marsh	**Site Type:** I **Dominant Form:** robust emergents (re)
% Open Water: 60	**ELC Code:** MAJOC-8 (M, re)
Photos: 181 - 1247	

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	white willow, slender willow
ls	
gc	nodding bur marigold, bittersweet nightshade, northern bugleweed
ne	American bur reed
be	water smartweed
(re)	Softstem Bulrush, typha latifolia, typha angustifolia
ff	lemna minor
f	pond lily sp.
su	
m	

Soil type:		Organic ☒	Mineral ☐
Rare Species (Local, Regional, Provincial):		**Wildlife Notes:** Soil Sample not possible due to very high water levels. In center of marsh, sink to at least knee depth in substrate until resting on what is likely the top of the mineral layer.	

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-003

M1

Arrow WP
Wetland Assessment

Oct 27 2011
CAH, KJW

3°C, CC100%, Wind 3/NW, No precip

WET-025 Isolated Wetland. *WET-003*
(By WOD-059)

3 Communities

M1: 1 form 75% cover
re Softstem bulrush

Soils: Sample not possible due to high water level. In center of marsh, sunk to at least knee depth in substrate until resting on what was likely the top of the mineral layer → Organic.

S1: 2 forms >75% cover
6s Salix petiolaris
1s Leatherleaf

Soils: Organic.

B1: 2 forms >75% cover
1s Leatherleaf
m. Sphagnum spp.

Soils: 50 cm of fibric Sphagnum peat over 26 more cm of am, down to an additional 33 cm of Oh.

No. 392
J.L. DARLING CORP TACOMA, WA 98424-1017
www.RiteintheRain.com

2.7.
Open water type: Type 4 (partly Type 5 - open water mostly occurs in a central area in the marsh, however there are areas of open water interspersed in the Swamp and in narrow parts of the marsh.)

Rare species observed: None observed.
Surrounding land use (0.5km:
row crop, pasture, abandoned ag land, deciduous forest, coniferous forest, abandoned quarry, fence rows with deep cover, terrain appreciably undulating / hilly


(WOD-059)
WOD-059
466500
467000
467500
468000
468500
4899500
4899000
4898500
4898000
SIDEROAD 25
CONCESSION 2
SIDEROAD 30
5
51
6
52
Ind.
AP
MI
SI
BI
WET-003
Wetland
woodland boundary
Bog
HR
tilled
Wheat clover
WOD-050
WET 026
No Wetland
Photo 181-1248
0
100
200
300 Metres
N

(WOD 059)

WOD-059



Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

WOD-059 Page 1 of 2

Site:	ARMOW WF 1275
Polygon:	WET-025 (TS2) Bog Community
UTM:	
Date:	Nov. 4/11 **Time:** 16:00
Surveyor(s):	NGM, CLH
Weather:	Wind: 2, Temp: 8°C, C.C.: 15%

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	Raccoon Scat	X		+						
B	Am. Crow	X		1						
M	red Squirrel	X		1						
B	Am. Redstart	V		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Page 2 of 2

Site:	
Polygon:	
UTM:	See Sheet 1
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
X Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARMOW 1275
Polygon:	WET-025 (WOD-059)
UTM:	
Date:	Oct 27, 2011 **Time:** 11:15
Surveyor(s):	KJW CLH
Weather:	overcast, 3°C, 100% CC, wind 3/NW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Sandhill Crane	NO		**						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARMOW 1275
Polygon:	WET-025
UTM:	
Date:	Oct. 27, 2011 **Time:** 11:15
Surveyor(s):	KJW CLH
Weather:	overcast, 3°C, 100% CC, wind 3/NW

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ✓ Marsh
- ✓ Swamp
- ✓ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armaw WF 1275
Polygon:	WOD - 063 (CTIO(2)) ☆WDD-059☆
UTM:	
Date:	Nov. 4 2011 Time: 14 15
Surveyor(s):	DLH, NGM
Weather:	8°C, Sunny, CC 50%, Wind 3

Community Classification

Vegetation Type:		WDm 4-2 White Ash Deciduous Woodland
X	Inclusion:	WDm5-1 Fresh-Moist Poplar Deciduous Woodland
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	X Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep.	Submerged	Lichen	Mixed
Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	Pin Cherry
2	Sub-canopy	3	3	White Ash > Sugar Maple > Apple > White Elm
3	Understorey	4 5	4	Orchard Grass > Smooth Brome > White Ash > Hawthorn sp.
4	Groundcover	6 7	3	Heath Aster > Gray Goldenrod > Yarrow > Common Speedwell

40%

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7 <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site:	Armaw WF
Polygon:	
UTM:	
Date:	Nov 4 2011 Time: 14:15
Surveyor(s):	DLH, NGM
Weather:	8°C, Sunny, CC 50%, Wind 3

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Hawthorn sp.		R	O		
White Ash		O	O		
Apple		O	O		
Sugar maple		O			
White Elm		O			
Pin Cherry	O				

Species	Layer 1	2	3	4	Sample
Orchard Grass			A		
thimbleweed				R	
Common Speedwell				O	
Heath Aster				O	
Dudbocked Tribina.				O	
Wild Basil				O	
Yarrow				O	
Gray Goldenrod				O	
Smooth Brome			A		
Allegheny Blackberry					

Wildlife and Other Notes

Property for assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: Thicket (CT106) ☆ NRR-059 ☆	
UTM:	
Date: Nov 4 2011	Time: 14:00
Surveyor(s): CLH N6M	
Weather: 8°C, CC50%, Wind 3 From N. Sunny.	

Community Classification

Vegetation Type:	THDM3-11 Hawthorn Deciduous Shrub thicket.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	X Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd.	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	3	Hawthorn sp. >> White Ash >> Sugar Maple
3	Understorey	4/5	4	orchard grass > Solidago altissima > Wild carrot > NE Aster
4	Groundcover	5/6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	D	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	X Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	
Polygon: Thicket (CT106)	
UTM:	
Date: NOV. 4 2011	Time: 14:00
Surveyor(s): CLH N6M	
Weather: Sunny, 8°C, CC50%, Wind 3 From N.	

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Hawthorn sp.		D	O		
White Ash		O	O		
Sugar maple		R			

Species	Layer 1	2	3	4	Sample
Orchard Grass			D		
NE Aster			O		
Wild Carrot			O		
Solidago altissima			O		

Wildlife and Other Notes

Property line adjacent

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow
Polygon: W60-063 *WOD-059* (T106)
UTM:
Date: Nov 4 2011 Time: 14:20
Surveyor(s): CLH, Nbm
Weather: 8°C, Sunny, 100%, wind 3

Community Classification

Vegetation Type: FOMS-1 Dry-Fresh Sugar maple Deciduous Forest.
Inclusion:
Complex:

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover	Open Water	Plant Form		
Open	Shallow Water	Plankton	Forb	Coniferous
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
X Treed	Bedrock	Floating-Lvd	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar maple
2	Sub-canopy	3	2.	Sugar maple >> Am. Beech
3	Understorey	4/5		not visible
4	Groundcover	6/7		not visible

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

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	R	> 50	
Snags		< 10		10 - 24		25 - 50		> 50	> not visible
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50	

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow
Polygon: W60-063 (T106)
UTM:
Date: Nov. 4 2011 Time: 14:20
Surveyor(s): CLH, NBm
Weather: 8°C, Sunny, 100% Wind 3

Layers: 1=canopy (10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)
Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar maple	D	A			
Am. Beech		R			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

No site access
property line assessment.
*See WOD-059 for wildlife info near transect 91

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

× WOD-059 ×

Site: Arrow WF	1275
Polygon: WET-046	WET-047 × TL06
UTM: 17T 0468508 4896781	
Date: Nov. 4 2011	Time: 14:45
Surveyor(s): CLH, N6rm	
Weather: 8°C, No precip. Wind 3/N CC50%	

Community Classification

Vegetation Type:	SWC01-2 White Cedar - Conifer
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	White Cedar > Tamarack > Trembling Aspen > White Elm
2	Sub-canopy	3	3	White Cedar > White Elm > Tamarack
3	Understorey	4 5	2	Gray Dogwood > Purple-stem Aster > White Elderberry > Canada Blue Joint
4	Groundcover	6 7	2	Creeping Buttercup > Crested Shield Fern

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow WF	
Polygon: WET-046	
UTM:	
Date: Nov. 4 2011	Time: 1445
Surveyor(s): CLH, N6rm.	
Weather: 8°C, No precip. Wind 3 CC50%	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White cedar	A	O			
tamarack	O	O			
trembling aspen	O				
White elm	O	O			
red osier			R		
Gray dogwood			O		
White elderberry			O		

Species	Layer 1	2	3	4	Sample
Canada blue joint			O		
Creeping buttercup				A	
purple-stem aster			O		
Crested shield fern				O	

Wildlife and Other Notes

access only to a very small portion on the edge.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

~~WET-047~~ in WD-003 059

Project Name: Arrow **Project #:** 1275

Observer(s): CLH

Date: Nov 4 2011 **Time (24h):** 14:45

Field #: WET-046 **Weather:** Precipitation: None Temp (°C): 8

Map Code: S1 Wind Speed & Direction: 3 N Cloud %: 50

Wetland Type: Swamp. **Site Type:** R **Dominant Form:** c (S, c)

% Open Water: 0%. **ELC Code:** SWCO 1-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	trembling aspen, white elm
c	white cedar, tamarack.
dc;dh,ds	
ts	
ls	
gc	creeping buttercup, purple stemmed aster, crested shield fern.
ne	canada bluejoint
be	
re	
ff	
f	
su	
m	

Soil type: Om Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
See attached Soils Form.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Modified ELC Community Description

WX WOD-059*

Soils

	1	2	3
Position:	L		
Aspect:	90°		
%	1		
Type:	Simple		
Class:			

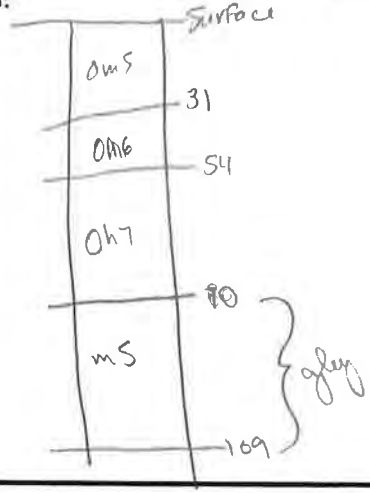
Strata: Texture	Om5		
Depth	31		
Strata: Texture	Oh6		
Depth	54		
Strata: Texture	Oh7		
Depth	90		
Strata: Texture	mS		
Depth	109		
Effective Texture	Om		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	/		
Gley	70		
Bedrock	/		
Water table	45cm		
Carbonates	106		
Depth of Organics	70cm		
Pore Size Disc #1	/		
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	7		

Polygon: ★WET-OH7★ WET-OM6 (T106)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: WET-046	*WET-047* (WOD-059)
UTM: 17T 0468487 4896670	
Date: Nov. 4 2011	Time: 14:30
Surveyor(s): CLH	
Weather: 8°C, Sunny, Wind 3	CC 50%.

Community Classification

Vegetation Type:	MAMO2-2 Joe Pye Weed Forb Organic
Inclusion:	Meadow Marsh.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	X Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	0	—
3	Understorey	1/2	4	Spotted Joe Pye Weed > Boreal > Reed Canary.
4	Groundcover	1/2		not visible.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	A	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age	Pioneer	Young	Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	
Polygon: WET-046	
UTM:	
Date: Nov. 4 2011	Time: 14 30
Surveyor(s): CLH, NGM	
Weather: 8°C, Sunny, Wind 3	CC 50%

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Tamarack	R				
Red Osier			R		
Typha sp.			R		

Species	Layer 1	2	3	4	Sample
Spotted Joe Pye Weed			A		
Boreal			A		
Reed Canary			A		

Other Notes (Landowner Contact, General Notes, etc.)

No site access.

5_7

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow WF **Project #:** 1275 WOD-059

Observer(s): CH, NBM

Date: Nov. 4, 2011 **Time (24h):** 14:30

Field #: WET-046 **Weather:** Precipitation: None Temp (°C): 8

Map Code: M1 Wind Speed & Direction: 3 N Cloud %: 50

Wetland Type: Marsh **Site Type:** R **Dominant Form:** gc (Mgc)

% Open Water: 0% open. **ELC Code:** MAMO2-2.

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	tamarack
dc dh ds	dead white ced ar, white elm (10%)
ts	red osier dogwood
ls	
gc	spotted joe-pye weed, bracket
ne	reed canary grass
be	
re	Typha sp.
ff	
f	
su	
m	

Soil type: Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

property line assessment only
No site access

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-004

M3

Arrow WF 1275

Wetland Assessment CLH, NGM

8°C, Wind 3 <50%, No precip Nov 4 2014

WET-046 *WET-0044 [redacted] (in WOD 059)

2 communities identified in the field.

~~Part of~~ Glanamis Bog PSW

S1: 1 form 75% cover

c: white cedar, tamarack.

Soils: 0 m. See attached soils form.

Site Type Riverine

M1: 3 forms 75% cover

gc : Spotted joe-pye weed, & bonesset

dc/dh : White cedar, white elm

ne reed canary.

Soils: assumed Organic (no site access)

Site Type Riverine.

Open Water Type: 0% none.

Fish Habitat: None.

Rare species observed: none

Surrounding Land Use Within 1.5km: row crops, abandoned ag, pasture, deciduous forest, terrain appreciably undulating/hilly, fencerows with deep cover, abandoned quarry.

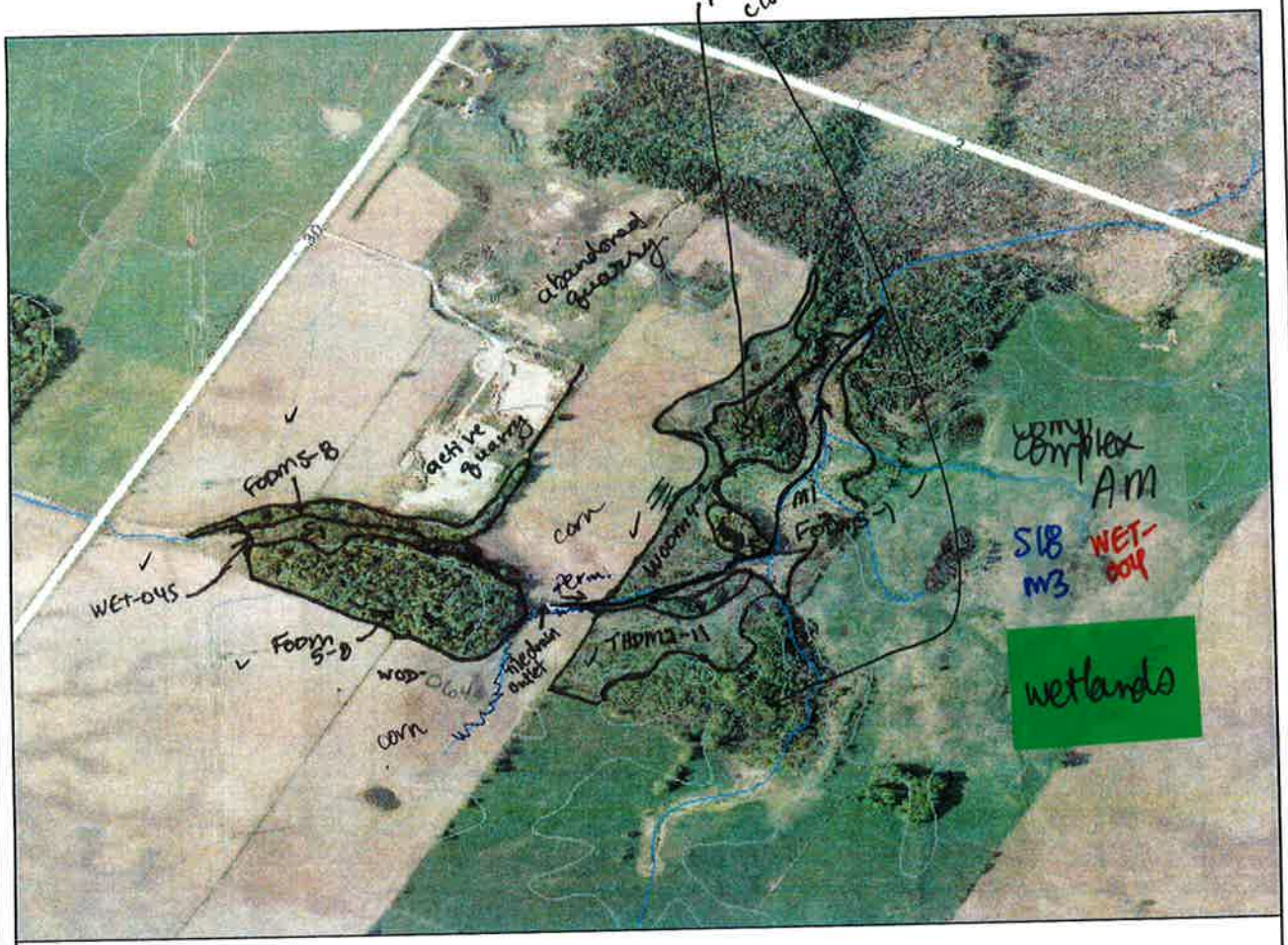
No. 392
J.L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com
ALL WEATHER WRITING PAPER

(WOD 059)

T106

WOD-059

need to close polygons



Map centre: 44° 13' 21.4" N, 81° 23' 43.8" W

Map created: November 2, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

@ tile drain outlet, this is a permanent inflow. permanent flows through or out of wl community.

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Ontario

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WOD-059

WOD-059

Glammis Bog



Map centre: 44° 13' 58.4" N, 81° 23' 12.0" W

Map created: January 5, 2012

0 200 400 600 800 m

Scale: 1:13,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	WOD-J (T16) ★ WOD-060 ★
UTM:	17T 0456495 4898234
Date:	Nov 3/11 Time: 16:30
Surveyor(s):	PWD, AMD
Weather:	8°C, Cloudy, 50% CC, wind 2 from SW

Community Classification

Vegetation Type:		Dry-Fresh Sugar maple-Beech Decid Forest (FODM5-2)
X	Inclusion: (1)	Dry-Fresh mixed Meadow (MEMM3)
	Complex: (2)	Hawthorn Decid Shrub Thicket (THDM2-11) ~~★~~ (not wetland)

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Rivenne	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	Sugar maple > Am beech > wh ash > black cherry
2	Sub-canopy	2	4	Sugarmaple > Am. beech > wh ash > black cherry
3	Understorey	3	4	Sugarmaple > Am beech > ironwood
4	Groundcover	5-7	3	wild strawberry > calico aster > tall goldenrod

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags	R	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___ of ___

PLANT SPECIES LIST

Site:	Arrow WF
Polygon:	WOD-J
UTM:	17T 0456495 4898234
Date:	Nov 3/11 Time: 16:30
Surveyor(s):	PWD, AMD
Weather:	8°C

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar maple	A	A	A		
Am beech	A	A	A		
ironwood		O	O	O	
basswood	R	R			
wh ash	O	O	O		
wh elm		R	R		
black raspberry				R	
hemlock	R	R			
rubus idaeus			O	O	
red elderberry			R		
alt.-leaf dogwood			R		
yellow birch	R	R			
black cherry	O	O	O		
choke cherry			O		
Hawthorn sp.		R	O	O	
Fragaria GR				D	
wild carrot				O	
Cricket Grass				O	
Goldenrod sp.				O	
Rosa GR				D	
orchard grass				O	

Species	Layer 1	2	3	4	Sample
viola sp.				R	
blue cohosh				O	
bittersweet nightshade				O	
hellebore				R	
zig zag GR				O	
herb robert				O	
Spotted jewelweed				R	
buttercup sp.				R	
colts foot				R	
hempnettle				R	
avens sp.				O	
curled dock				R	
tall goldenrod				A	
dandelion				R	
tall meadow rue				R	
meadow horsetail				R	
wild strawberry				A	
orchard grass				R	
calico aster				A	
Carex blanda				R	

(1) mixed meadow inc

(2)

Wildlife and Other Notes

- cow skull in forest
- dead racoon in adjacent field to SE, appeared fresh

★ completed by property line

1275 Arrow WF

can't see on map

T16/T17



- Stream meanders throughout eastern portion of forest (flowing SW)
- no wetlands present (some riparian)

WOD-060

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. WOD-060

Site:	Armow WF
Polygon:	WOD-J (T16)
UTM:	17T 045 6495 4898234
Date:	Nov. 3/11 **Time:** 16:30
Surveyor(s):	PWD, AMD
Weather:	8°C, Cloudy, 50% CC, wind 2 from SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	raccoon	OB	in canopy	11						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	See header On page 1
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
X Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
X Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

X Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Snag > 20 cm dbh	17T 0456379 4898259	-Several >20cm in same area (4)
vernal pool	17T 0456383 4898309	- inflow from N
vernal pool	17T 0456240 4898319	- no in or out flow
Snag >20 cm dbh	17T 0456245 4898369	- maple
rock pile	17T 0456594 4898223	- @ corner of field, forest + creek

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	South of T17 (Riparian Thicket / Meadow) / WOD-060
UTM:	
Date:	Nov 24 2011 — Time: 11:45
Surveyor(s):	PWD
Weather:	Cloudy, 6°C, wind 2/SE, 100% C.C no rain.

Community Classification

	Vegetation Type:	THDM2-11 Hawthorn Dec. Shrub Thicket.
X	Inclusion:	MEGM3-5 Smooth Brome Graminoid Meadow Type
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	? Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	1	Sugar Maple = White Ash
2	Sub-canopy	3	2	Hawthorn > Apple >> Basswood
3	Understorey	4	2	Hawthorn > Apple
4	Groundcover	5	4	Reed Canary > Smooth Brome > Quack Grass > Wild Carrot

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	R	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Hawthorn sp.		A	A			Cirsium vulgare				R	
Malus sp.		O	O			Acer saccharum	R				
Basswood		R				White Ash	R				
Smooth Brome				O							
Reed Canary Grass				O							
Orchard Grass				R							
Quack Grass				O							
Tall White Aster				O							
Melilotus alba				R							
Solidago gigantea				O							
Solidago altissima				O							
Wild Strawberry				O							
Dandelion				R							
Prunella vulgaris				O							
Daucus carota				O							
Euthamia graminifolia				O							
Hypericum perfoliatum				O							
Plantago lanceolata				O							
Cirsium arvense				R							
Arctium lappa				R							
Dk Gr. Bulrush				O							
Tall Meadow Rue				O							
Agrostis sp.				O							

Wildlife and Other Notes

Photo 0647 - Not Wetland!
Stickleback in watercourse
Bird nests in hawthorns.

T17

(WOD-060)



Google earth

feet 1000

meters 500

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Armow WF
Polygon:	WOD-H ★WOD-061★
UTM:	
Date:	Nov. 3/11 Time: 10:50
Surveyor(s):	PWD, AMD
Weather:	7°C, rain on+off,

Community Classification

Vegetation Type:		FODM5-2 Dry-Fresh Sugar Maple - Beech Decid. Forest
X	Inclusion: →	Gram. meadow MEMM3
	Complex: →	Regen Ash incl: FODM4-2

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
Site		Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	\ Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	sugar maple > beech > bl. cherry = wh ash
2	Sub-canopy	2	4	sugar maple > beech > bl cherry = wh. ash
3	Understorey	3	3	Sugar maple > beech > wh. ash
4	Groundcover	5-7	2	civens sp. > herb robert > aster spp

- little groundcover observed

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	O	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	WOD-H
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
alt. leaf dogwood			R		
trembling aspen		R	R		
sugar maple	A	A	O		
Am. beech	O	O	O		
rubus idaeus			O	O	
wh. cedar		R	R		
black cherry	O	O	R	O	
english hawthorn		R			
wh. ash	O	O	O		
Sorbus aucuparia sp.		R			✓PWD
wh. elm		R	R		
ironwood		R			
com. barberry				R	
river bank grape			O	O	
White Ash		D	D		
Trembling Aspen			R		
Cdn Alder				O	

Ash. Regen Incl.

Species	Layer 1	2	3	4	Sample
hypericum perforatum				R	
lance leaved aster				R	
hemp nettle				R	
helleborine				R	
wh. bane berry				R	
agrimony				O	
Xmas fern				R	
blue cohosh				O	
avens sp.				O	
Spinulose woodfern				R	
calico aster				O	
herb robert				O	
graminoid meadow inclusion					←
fleabane sp.				O	
rubus idaeus				O	
reed canary grass				A	
cow vetch				O	
rubus allegheniensis				O	
field horsetail				O	
wild carrot				O	
solidago graminifolia				O	
bull thistle				R	
com. milkweed				R	
red clover				R	
com. mullein				R	
ox eye daisy				O	
can. thistle				O	
yellow evening primrose				O	
wild strawberry				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

in WOD-061

Site:	Armow
Polygon:	WET-045 (T103) ~~WET-021A~~
UTM:	
Date:	NOV 3/11 Time: 11:05
Surveyor(s):	PWD, NMD
Weather:	

Community Classification

	Vegetation Type:	Freeman's maple mineral deciduous swamp (SWDM3-3)
X	Inclusion:	meadow marsh - graminoid (MAMM1-3)
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super canopy~~			
1	Canopy	1	4	freeman's maple > green ash >> red maple
2	Sub-canopy	2	4	freeman's maple > green ash > red maple = white elm
3	Understorey	3	3	freeman's maple > green ash > red osier dogwood
4	Groundcover	5-7	3	lance leaved aster > wild strawberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	O	> 50
Snags	R	< 10	R	10 - 24	O	25 - 50	R	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	R	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

Modified ELC Community Description

Page __ of __

S2 swamp M2 marsh

Soils

	1	2	3
Position:	S		
Aspect:	—		
%	O	SAME	
Type:	S	S SOILS	
Class:	A		
Strata: Texture	CL		
Depth	74		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	CL	CL	
Surface Stoniness	O		
Surface Rockiness	O		
Depth to:			
Mottles	29		
Gley	53		
Bedrock	—		
Water table	O		
Carbonates	—		
Depth of Organics	26		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6	6	

Polygon: WET-045 (T103)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Course fragments at 60cm

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

ADJACENT TO WET-045 — in WOD-08-61

Project Name: Armow WF		**Project #:** 1275	
Observer(s): PWD, AMD			
Date: Nov 3 2011	**Time (24h):** 11:30		
Field #: WET-045	**Weather:** Precipitation: Light	Temp (°C): 7	
Map Code: M2	Wind Speed & Direction: 2/N	Cloud %: 100	
Wetland Type: Marsh	**Site Type:** P	**Dominant Form:** Graminoid (Meadow)	
% Open Water: < 01%	**ELC Code:** MAMM1-3 Reed Canary Gram. Mix Meadow Marsh		
Photos: 100-1059			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash, freeman's maple
c	
dc,dh,ds	
ts	Salix eriocephala, Salix exigua, wild raisin, red osier dogwood
ls	
gc	sensitive fern, lance leaved aster, flat-topped goldenrod
(ne)	Reed Canary Grass 85%, Narrow leaved cattail, soft rush
be	
re	dark green bulrush, wool grass,
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒
cl	MR6		

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None Observed	

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Fish habitat: absent

5% pooled water at edge of swamp (<2m deep, ↗ 40cm).

M2b
WET-021

* polygon is a continuation of S7 swamp, but broken by hydro line

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

~~WET-081~~ ~~MWOD-061~~

Project Name: Arrow WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 3, 2011 **Time (24h):** 11:05

Field #: WET-045 **Weather:** Precipitation: Light Temp (°C): 7

Map Code: S2 Wind Speed & Direction: 2/N Cloud %: 100

Wetland Type: Swamp **Site Type:** PI **Dominant Form:** Treed (S,h)

% Open Water: 10% **ELC Code:** SWDM3-3 Swamp Maple Min Decid. Swamp.

Photos: 100-1057

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple 40%, Green Ash 25%, Red Maple
c	
dc,dh,ds	
ts	Red Osier Dogwood, Wild Raisin
ls	Red Raspberry, broad leaved meadowsweet
gc	Sensitive fern, Aneas sp. Lance-leaved Aster, wild strawberry
ne	Reed Canary Grass, carex lupulina, carex viridula, 3 way sedge
be	
re	
ff	
f	
su	
m	

Soil type: CL MR6 Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None Observed	

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: absent, amphibian breeding habitat present

S237
WET-021

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WET-045 (T103) ★ WET-021 in WOD-010 ★
UTM:	
Date:	Nov 3/11
Time:	11:05
Surveyor(s):	PWD, AMD
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freemans maple	A	A	A		
green ash	O	O	O		
red maple	R	R	R		
Broad-leaved meadowsweet				R	✓PWD
red osier dogwood			R	R	
rubus idaeus			R	R	
wild raisin			R		

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	
Polygon:	WET-046 / WOD-061*
UTM:	
Date:	NOV 3/11 Time: 12:05
Surveyor(s):	PMD, AMD
Weather:	

Community Classification

Vegetation Type:	SWDM3-3
Inclusion:	
Complex:	

Polygon Description

System		Substrate		Topo Feature			Community		
	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
X	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min	X	Bottomland		Alvar		River		Prairie
History			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
X	Natural		Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
	Cultural		Carb. Bedrock		Tableland		Sand Dune	X	Swamp		Woodland
		Site			Roll Upland		Bluff		Fen		Forest
					Cliff				Bog		Plantation

Cover		Site	Plant Form		
	Open		Open Water	Plankton	Forb	Coniferous
	Shrub	X	Shallow Water	Submerged	Lichen	Mixed
X	Treed		Surficial Dep	Floating-Lvd	Bryophyte	
			Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	freeman's maple > red maple = green ash
2	Sub-canopy	2	4	freeman's maple > red maple = green ash
3	Understorey	3	4	freeman's maple > red maple = green ash
4	Groundcover	5-7	4	green ash > lance leaved aster > avens sp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Snags	O	< 10	R	10 - 24	O	25 - 50	O	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	4		
Aspect:	340°		
%	0.5-2		
Type:	S		
Class:	B		

Strata:	Texture	SCL	(vf)	
	Depth	16-80		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SCL	(vf)	
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles	18		
	Gley	60		
	Bedrock	/		
	Water table	5		
	Carbonates	62		
Depth of Organics		16		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WET-046

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- Organic is humic
- large maple snags (>50 cm dbh) somewhat abundant, many living w woodpecker holes

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

in WoD 061

Wetland Vegetation Communities

Project Name: Atmow wf **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov. 3, 2011 **Time (24h):** 12:05

Field #: WET-046 **Weather:** Precipitation: Light Temp (°C): 7

Map Code: S3 Wind Speed & Direction: 2/N Cloud %: 100

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Treed (S,h)

% Open Water: Trace % **ELC Code:** SWDM3-3 Swamp Maple Mix Decid. Swamp

Photos: 100 - 1060

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple 60% Red Maple 25%, green Ash
c	
dc,dh,ds	
ts	wild raisin, white elderberry
ls	Red Raspberry
gc	Herb Robert, Bitter Nightshade, Spinulose Woodfern, Aster sp., Lance-leaved Aster.
ne	Three-way Sedge
be	
re	
ff	
f	
su	
m	

Soil type: vf SCL MR6 Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None Observed	

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: absent, amphibian breeding habitat may be present
5% pooled water

5237
WET-021

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour WF	
Polygon: WET-046 (T103)	/LWOD-06/
UTM:	
Date: Nov 3/11	**Time:** 12:05
Surveyor(s): PWD, AMD	
Weather:	

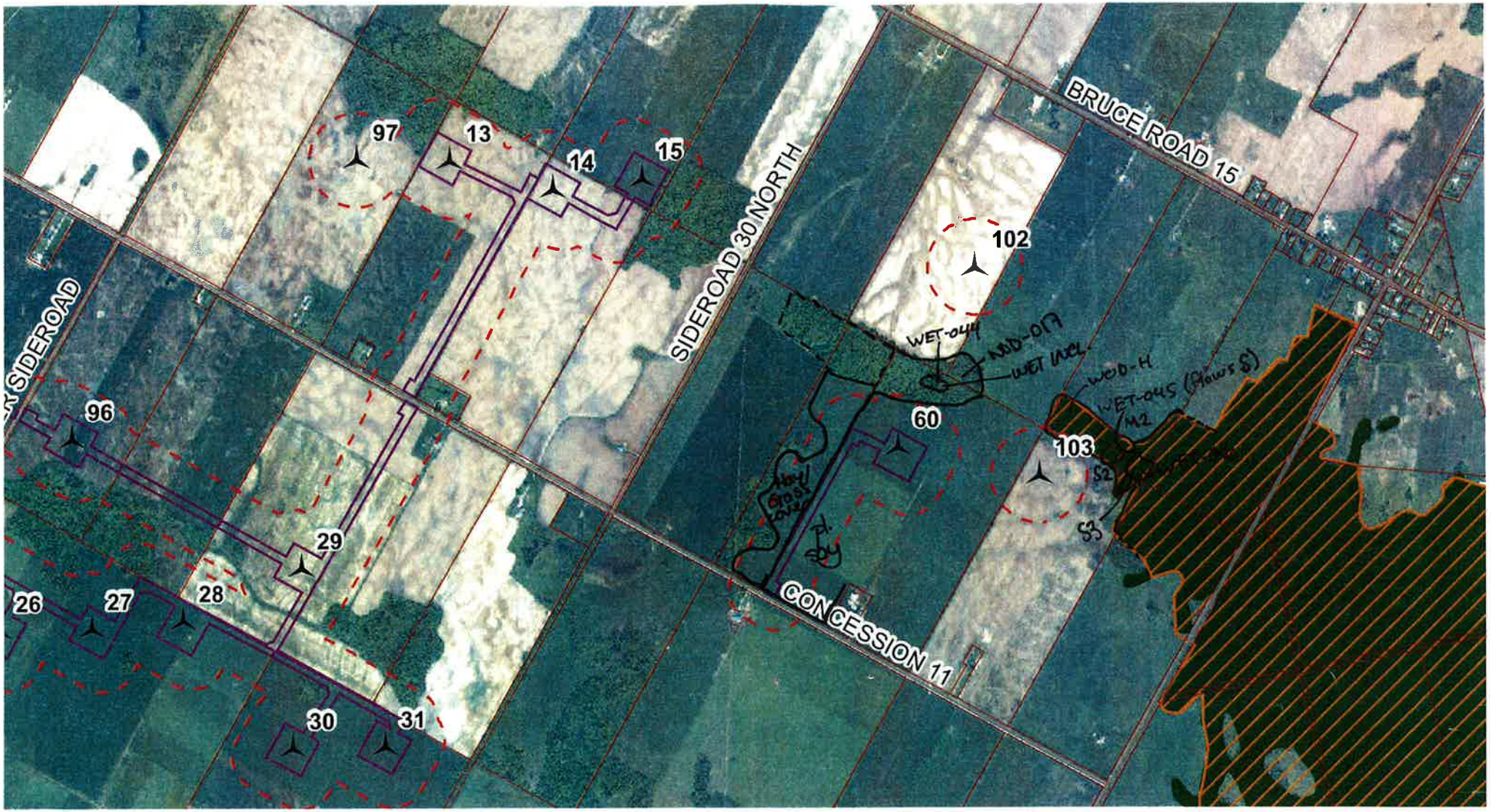
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freemans maple	A	A	A		
red maple	O	O	O		
narrow leaf meadowsweet				R	
rubus idaeus			O	O	
green ash	O	O	O	A	
wh. elm		R	R	R	
wild raisin			R		
wh elderberry		R	R		

Species	Layer 1	2	3	4	Sample
herb robert				O	
turtle head				R	
early meadow rue				R	
bitter nightshade				O	
spinulose wood fern				O	
avens sp.				O	
blue flag iris				R	
lance leaved aster				O	
2 way sedge				O	
carex intumescens				O	
royal fern				R	
helleborine				R	
dwarf raspberry				R	

WOD-019 Copy


BRUCE ROAD 15
SIDEROAD 30 NORTH
W SIDEROAD
CONCESSION 11
97
13
14
15
102
96
60
103
29
26
27
28
30
31
WET-044
WOD-017
WET INCL
WOD-H
WET-045 (Hawks 8)
M2
S2
S3

(WOD-061)



Google earth

feet 4000
km 1

Complex O

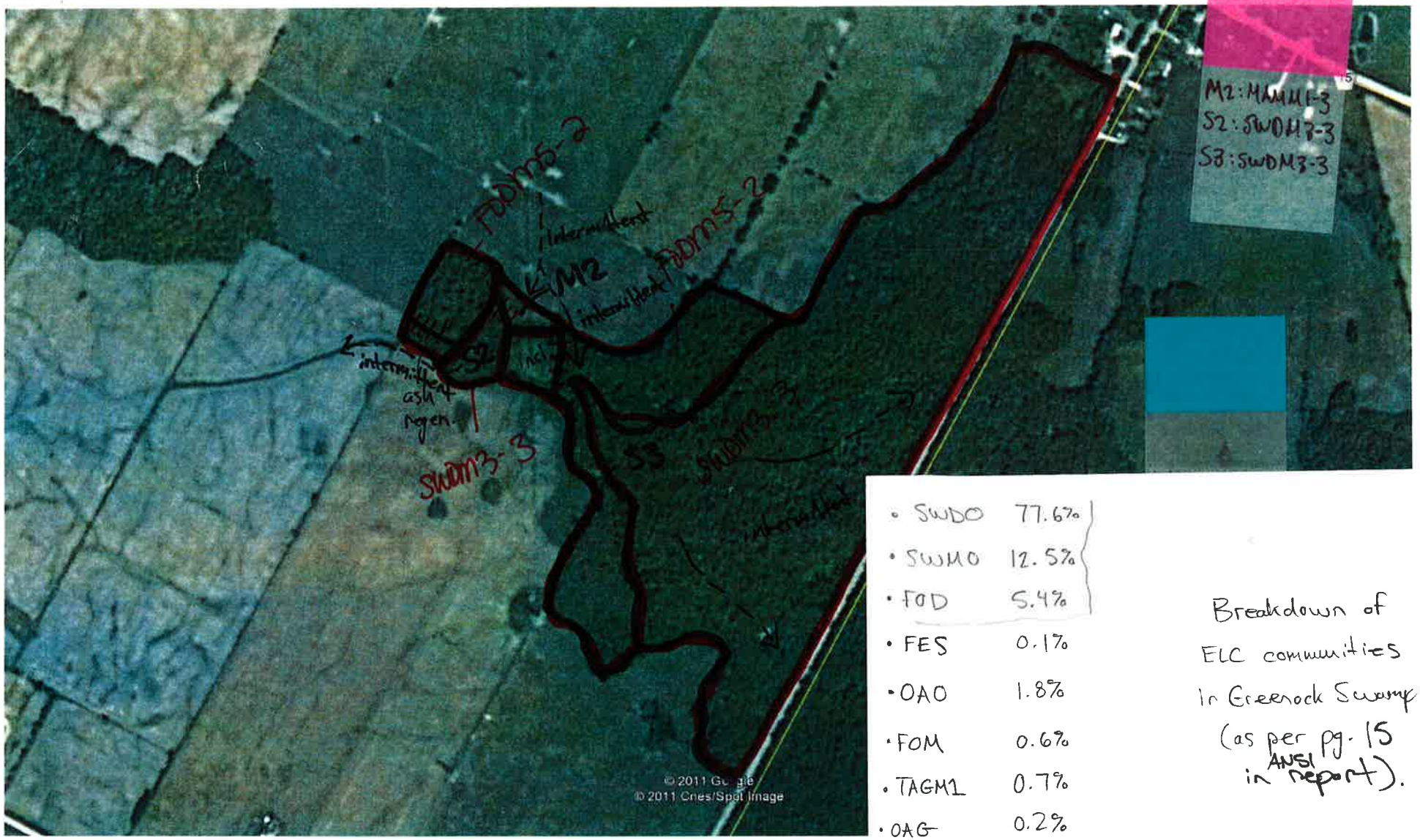
S237 WET-021
M26

Wetlands


M1
WET-044
WET-010
A14
Rugby
S2
S3
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WOD-061 A

(WOD-061)



Google earth

feet
km

• SWDO	77.6%
• SWMO	12.5%
• FOD	5.4%
• FES	0.1%
• OAO	1.8%
• FOM	0.6%
• TAGM1	0.7%
• OAG	0.2%
• CVR	0.6%

Breakdown of ELC communities in Greenock Swamp (as per pg. 15 ANSI report).

~~WOD-061~~

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrow WF
Project #: 1275
Date: Nov. 3, 2011
Observer(s): PWD, AMD

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-H	1	1 (140cm dbh, 6 stem)		17T 0468063 4894071	Coarse/holes in maple
	2	2 - hemlock + ree 70cm - fence 65cm		17T 0468085 4894121	long, large crevice in live maple tree
	3	0		17T 0468023 4894159	Upland Acer-Betula-Fraxinus-Quercus
	4	0		17T 0468014 4894106	
	5	0		17T 0467872 4894169	
	6	0		17T 0467869 4894212	
	7	0		17T 0467830 4894227	
	8	2 coarse maple 70cm		17T 0467832 4894255	2 maples with [illegible]
	9	0		17T 0467800 4894277	
	10	0		17T 0467778 4894249	
10 snags/ha		BMH - WOD			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WOD-H *WOD-061*
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	white tail deer	SC	inclusion	1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow WF
Polygon:	WOD - H
UTM:	
Date:	Nov. 3/11 **Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
_X_ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

Other:

_X_ deer rub (antlers

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
deer rub	17T 0467767 4894236	- from antlers
log pile	17T 0467980 4894146	- page wire fencing mixed in

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WET-045 (T103) ~NPT-051 ~ NDD-061
UTM:	
Date:	Nov. 3/11 **Time:** 11:05
Surveyor(s):	
Weather:	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- X Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- X Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- X Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- X Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Snag (>20cm dbh)	17T 0467876 4894208	- several snags, one observed w large cavity
vernal pool	same as above	- appears to support amphib. breeding
Swamp		- representing entire feature
Fallen rotting log	same as above	- fallen maple

AND-035

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WET-046 & WOD-061
UTM:	
Date:	Nov 3/11 **Time:**
Surveyor(s):	
Weather:	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	blue jay	V6		III						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WET-046
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- X Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- X Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Snag >20 cm dbh	17T 0468046 4894091	- w large cavity @ bottom

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow
Polygon: WOD-064 (T106)
UTM:
Date: Nov. 4 2011 Time: 13:00
Surveyor(s): CLH, N6M
Weather: 8°C, Wind 3 from N, CC50%, No precip

Community Classification

Vegetation Type:	Forest 5-8 Dry-Fresh Sugar maple White Ash Deciduous Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar Maple > White Ash > Black Cherry > Am. Beech
2	Sub-canopy	3	2	Sugar Maple > White Elm > White Ash > Am. Beech
3	Understorey	4/5	3	Alt-lvd Dogwood > Choke Cherry > White Elderberry > Agrimony
4	Groundcover	6/7	1	Herb Robert > Common Strawberry > Prickly Rose > Cow Parsley

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

Size Class Analysis	O	< 10	O	10 - 24	A	25 - 50	R	> 50
Snags	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow
Polygon: WOD-064 (T106)
UTM:
Date: Nov. 4 2011 Time: 13:00
Surveyor(s): CLH, N6M
Weather: 8°C, Wind 5 from N, CC50% Sunny

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	D	O			
White Elm		O			
Am. Beech	R	O			
Black Cherry	O	O		O	
White Ash	O	O			
White Elderberry			O	O	
Alt-lvd Dogwood		O	O		
Choke Cherry			O		

Species	Layer 1	2	3	4	Sample
Burdock				O	
Red Raspberry				O	
Herb Robert				O	
Common Strawberry			V	O	
Wild Basil				O	
Dandelion				O	
Orchard Grass				O	
Prickly Rose				O	
Bittersweet Nightshade				O	
Calico Aster				O	
White Baneberry				R	
Agrimony			R		
Spinulose Wood Fern				R	

Wildlife and Other Notes

Pileated Woodpecker. OB CI).
See wildlife sheet

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: WOD-064 WET-045	(1106)
UTM:	
Date: Nov 4 2011	Time: 13 15
Surveyor(s): CLH, NGM	
Weather: 8°C, Sunny, CC50%, Wind 3 from W	

Community Classification

	Vegetation Type:	SWMO1-1 White Cedar - Hardwood Organic
	Inclusion:	Mixed Swamp Type
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	3	White Cedar > Yellow Birch
3	Understorey	4/5	4	Spotted Joe-Pye weed > Typha latifolia > Boneset > Wool-grass
4	Groundcover	4/5	4	Poa palustris > Sensitive fern > Moss > meadow Horsetail

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7 <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site: Arrow	
Polygon: WOD-064 WET-045	
UTM:	
Date: Nov 4 2011	Time: 13:15
Surveyor(s): CLH, NGM	
Weather: 8°C, sunny, CC50%, Wind 3 W.	

Layers: 7.0 2-1.0 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Cedar	O				
White Elderberry			O		
Rhodora			O		
Yellow Birch	O				

Species	Layer 1	2	3	4	Sample
Typha latifolia			A		
Sp. Joe-Pye			A		
Sensitive fern				A	
Poa palustris				A	
Wool-grass			O		
Great Lobelia			O		
Boneset			O		
Red Osier				O	
Reed canary			R		
Ostrich fern			O		
Crested Shield fern			O		
Meadow Horsetail				O	
Hairy willow-herb			R		
Creeping Buttercup					
Violet sp.					
Moss sp.				A	

Wildlife and Other Notes

Mostly from the property line - no access.
Many deer tracks noted in the organic soil.

Modified ELC Community Description

Soils

S1

	1	2	3
Position:	B		
Aspect:	/		
%	0		
Type:	Simple		
Class:	A		

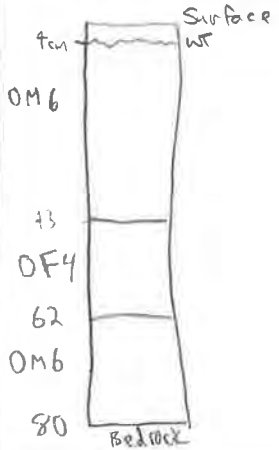
		1	2	3
Strata:	Texture	OM6		
	Depth	43cm		
Strata:	Texture	OF4		
	Depth	50cm		
Strata:	Texture	OM6		
	Depth	62cm		
Strata:	Texture	SiC		
	Depth	80		
Effective Texture		OM		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	62cm		
	Gley	62 cm		
	Bedrock	80cm		
	Water table	4cm		
	Carbonates	—		
Depth of Organics		62cm		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7		

Polygon: WOD-064 WET-045 (1 hole)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



WET-006
S1

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in (WD-064)

Wetland Vegetation Communities

Project Name: Armow	**Project #:** 1275	
Observer(s): CLH, NGM		
Date: Nov. 4 2011	**Time (24h):** 1315	
Field #: WET-045	**Weather:** Precipitation: none	Temp (°C): 8
Map Code: S1	Wind Speed & Direction: 3 /N	Cloud %: 50
Wetland Type: Swamp	**Site Type:** P	**Dominant Form:** h, c
% Open Water: 0 %	**ELC Code:** SWM01-1	
Photos:		

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	yellow birch
(c)	white cedar
dc,dh,ds	
ts	red osier dogwood
ls	red raspberry
(gc)	Spotted Joe-pye, sensitive fern, boneset, meadow horsetail
(ne)	Poa palustris
be	
(re)	typha latifolia, woolgrass
ff	
f	
su	
(m)	Moss sp.

Soil type:	Om	Organic ☒	Mineral ☐

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

No. 392

1-1

Arrow WF /WOD-064 1275

Wetland Assessment CCH, NGM.

8°C, No precip CC 50%. Wind 3. Nov. 4 2011

WET-045 & WET-006

1 Community.

SI: 6 Forms 725% cover

h yellow birch

c white cedar

gc spotted joe-pye weed, sensitive fern

ne Poa palustris

bre typha latifolia

m moss sp.

Soils: 43cm Om6 over Of to 50cm over Om6 to 62cm over Sic to 80cm.

Open Water Type: No open water

Fish Habitat: None.

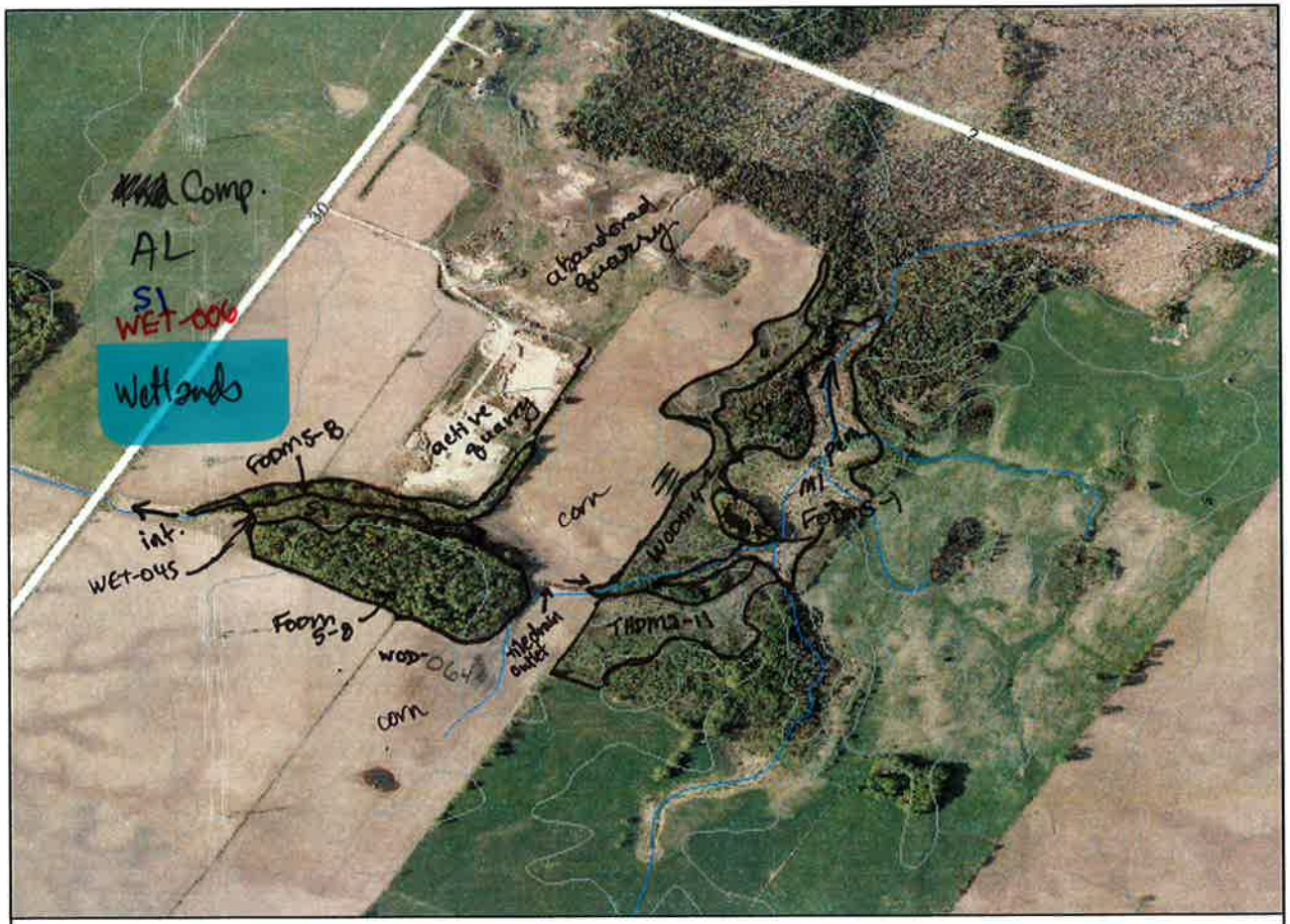
Rare Species Observed: None

Surrounding Land Use within 1.5 km: row crop, deciduous forest, terrain appreciably undulating/hilly, abandoned ag land, pasture, fencerows with deep cover, abandoned quarry.

J. L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com

WOD-064

T106



Map centre: 44° 13' 21.4" N, 81° 23' 43.8" W

Map created: November 2, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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~~WOD-064~~

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: ARMOW WF
Project #: 1275
Date: NOV. 4/11
Observer(s): NGM

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD- [redacted]	1	••		17T 0459009 4895053
WOD- (T108)	2	0 —		17T 0458911 4895156
WOD- "	3	0 —		17T 0458821 4895089
WOD- "	4	0 —		17T 0458820 4895106
WOD- "	5	0 —		17T 0458827 4895028
WOD- "	6	0 —		17T 0458778 4895004
WOD- "	7	0 —		17T 0458765 4895015
WOD- "	8	••		17T 0458695 4894988
WOD- "	9	0 —		17T 0458658 4894986
WOD- "	10	0 —		17T 0458620 4894954
WOD-				
WOD - FODMS-8	1	∴		17T 0458782 4894665 arc 7m
WOD - FODMS-8	2	∴		17T 0458760 4894688
WOD - DCH (T106)	1	•		17T 0468156 4896455
"	2	••		17T 0468181 4896450
"	3	0 —		17T 0468203 4896477
"	4	••		17T 0468177 4896485
"	5	0 —	total = 6	17T 0468168 4896511
			snags = 24	
			/ha	
		RMA-021		

T108

T106

Mostly Haw Thorn

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page 1 of 2

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARMOW 1275
Polygon:	T106 WO1-064
UTM:	
Date:	NOV. 4/11 **Time:** 13:15
Surveyor(s):	NGM, CLH
Weather:	Temp: 8°C, Wind N 4, C.C: 40%

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue Jay	V		1						
B	Northern Shrike	X		1						
B	Golden crowned kinglet	X		1						
M	Raccoon Scat	X		-						
B	Golden crowned Kinglet	X		1						
M	E. Chipmunk	X		1						
B	Am. Goldfinch	X		1						
B	Am. crow	X		III						
B	Black-capped chickadee	X		II						
B	Pileated Woodpecker	X		1						
M	White-tailed Deer	X	WET-065	tracks						
B	Downy Woodpecker	X		1						
B	Red-tailed Hawk	X		1						
B	Blue Jay	X		III						
M	Red Squirrel	X		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page 2 of 2

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	See Sheet 1
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats
___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose
___ Seep/Spring
___ Mineral Lick

Snakes
___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles
___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
see Bat habitat assessment		
Swamp inclusion	amphibian breeding AWO-033	Not grad. conveyed W/ bats/reptiles/ treepipit + flammulated

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Armaw WF
Polygon:	LMD-067 (T80)
UTM:	17T 0456546 4891997
Date:	Dec. 2/11 Time: 11:55
Surveyor(s):	AMO, JRW
Weather:	Wind 2 from SW, -2°C, 85% CC

Community Classification

Vegetation Type:	Dry-Fresh Sugar maple Beech Decid. Forest (FOOMS-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	sugar maple > beech = wh. ash.
2	Sub-canopy	2	4	sugar maple > wh. ash > beech
3	Understorey	3	2	ironwood = sugar maple > wh. ash
4	Groundcover	5-7	1	aster + goldenrod spp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags	N	< 10	N	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
sugar maple	A	A	A		
ironwood	-	R	A		
beech	O	O			
hemlock	R	R			
wh. ash	O	O	O	O	
ind. barberry					
blackthorn		R	R		
alleghany blackberry				R	
sp. prickly gooseberry				R	
rubus idaeus				R	

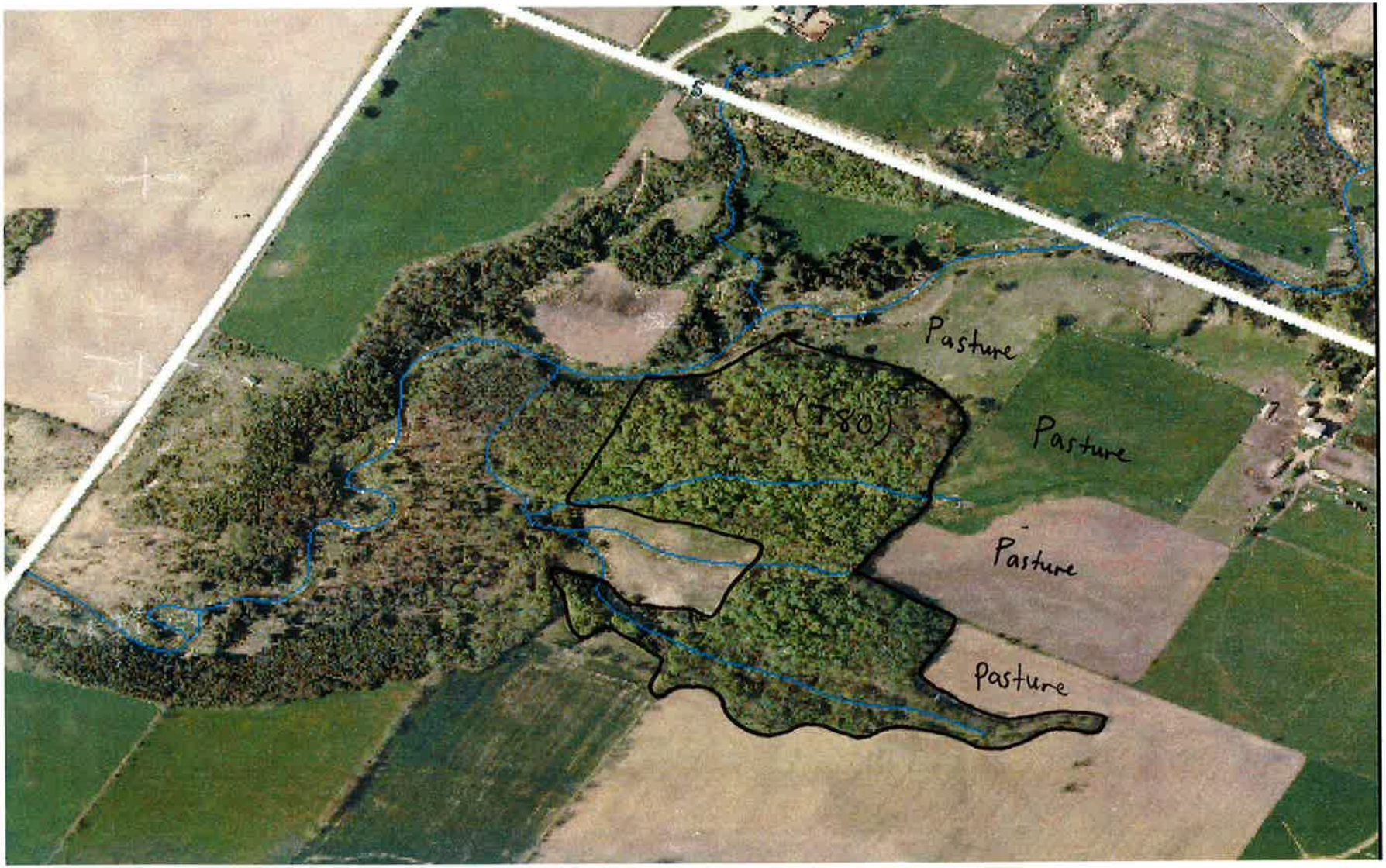
Species	Layer 1	2	3	4	Sample
aster spp.				R	
goldenrod spp.				R	

Wildlife and Other Notes

- photo 1121
- ☆ Confirmed previous ELC as now have property access
- recent snow has covered majority of groundcover
- ephemeral watercourse running thru forest from field to the E
- cattle using forest, northern section adjacent to ~~field~~ pasture to the N
  - ↳ evidence of cattle grazing on understory woody veg.

T80

WOD-067



Coll

Loc

Rive
20K

Lak
20K

Pro

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest
or Swamp Communities

Project Name: ArrowWF
Project #: 1215
Date: Dec 2, 2011
Observer(s): JRW, AMD

Woodland ID (WOD- 067) (T80)

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1	0		17T 0456597 4892007	
Plot 2	0		17T 0456580 4891990	
Plot 3	0		17T 0456555 4892001	
Plot 4	0		17T 0456539 4892020	
Plot 5	0		17T 0456555 4892058	
Plot 6	0		17T 0456517 4892065	
Plot 7	1		17T 0456465 4892066	
Plot 8	0		17T 0456505 4892040	
Plot 9	0		17T 0456529 4892044	
Plot 10	0		17T 0456518 4891993	
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15	Total Snags	1		
Plot 16	Snags / Ha	2		
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest
or Swamp Communities

Project Name: _____
Project #: _____
Date: _____
Observer(s): _____

Woodland ID (WOD- _____)

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1				
Plot 2				
Plot 3				
Plot 4				
Plot 5				
Plot 6				
Plot 7				
Plot 8				
Plot 9				
Plot 10				
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow WF 1275
Polygon:	T80 * WOD-067 A
UTM:	17T 0456546 4891997
Date:	Dec 2, 2011 **Time:** 11:55
Surveyor(s):	JRW AMD
Weather:	-2°C, wind 2 SW, CC = 85%

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	none observed.									

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats
- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose
- ___ Seep/Spring
- ___ Mineral Lick

Snakes
- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles
- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	WOD-067 (T80)
UTM:	17T 0456734 4891642
Date:	Nov. 17/11 — Time: 13:00
Surveyor(s):	AMD, NCM
Weather:	Cloudy w light snow, 2°C, wind 3 from SW, 100% CC

Community Classification

Vegetation Type:	Dry-Fresh Sugar Maple-White Ash Decid. Forest (FODM5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	4	Sugar maple > wh. ash = ironwood
2	Sub-canopy	3	4	ironwood > sugar maple = wh. ash
3	Understorey	4	2	Am. beech
4	Groundcover	5-7	2	dandelion

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	R	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

same
- as per adjacent accessible woodlot
- not viewable

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-067

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- viewed from a distance of ~100m (no property access)
- very little understory visible

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	~~BF~~ WOD-067
UTM:	17T 0456724 4891642
Date:	Nov. 17/11
Time:	13:00
Surveyor(s):	AMD, NGM
Weather:	Cloudy w lightsnow, 2°C, wind 3 from SW, 100% CC.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
wh. ash	A	A	–	–	
ironwood	A	D	–	–	
Sugar maple	A	A	–	–	
hemlock	R	R	–	–	
Am beech	R	R	–	–	
yellow birch	R	R	–	–	

Species	Layer 1	2	3	4	Sample
dandelion	–	–	–	A	



T80

WOD-067

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

WOD-067

Site:	ARMOW WF – No site access
Polygon:	WOD-067
UTM:	17T 0456734 4991672
Date:	Nov. 17/21 **Time:** 13:00
Surveyor(s):	Nam, AMD
Weather:	cloudy (100%), wind 3 SW, Temp 2°C

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue Jay	X		1						
B	Am. Crow	X		1						
B	Am. Goldfinch	X		1						
B	Hairy WP	X		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	SPE sleet 1
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- [X] Deciduous Forest
- [ ] Mixed Forest
- [ ] Coniferous Forest
- [ ] Marsh
- [ ] Swamp
- [ ] Bog
- [ ] Fen
- [ ] Water (Shallow & Open)
- [ ] Meadow
- [ ] Tallgrass Prairie
- [ ] Thicket
- [ ] Savannah
- [ ] Woodland
- [ ] Valley (Describe Below)
- [ ] Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- [ ] Spring Flooded Field
- [ ] Stick Nest (Raptors, Herons)
- [ ] Snag (Raptors, Herons)
- [ ] Tree Cavity Nest (Ducks)
- [ ] Seep/Spring (Turkeys/Grouse)
- [ ] Cliffs/Banks

Bats

- [ ] Cave Entrance
- [ ] Mine Shaft
- [ ] Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- [ ] Snag
- [ ] Burrow
- [ ] Den
- [ ] Tree Cavity
- [ ] Fallen Log

Deer/Moose

- [ ] Seep/Spring
- [ ] Mineral Lick

Snakes

- [ ] Burrow
- [ ] Fallen Rotting Log
- [ ] Old Well
- [ ] Rock Pile/Stone Wall
- [ ] Organics Pile
- [ ] Log Pile
- [ ] Karst
- [ ] Broken/Fissured Rock
- [ ] Old Foundation
- [ ] Old Bridge/Concrete Culvert

Amphibians and Turtles

- [ ] Vernal Pool/Woodland Pond (Amphibian Breeding)
- [ ] Sand (Turtle Nesting)
- [ ] Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- [ ] Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
No access to area of interest to do habitat		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armow WF
Polygon:	Drain 1 (TG8) (next to MDD-067) *
UTM:	17T 0456977 4891176
Date:	Nov. 17/11 Time: 14:00
Surveyor(s):	AMD, NGM
Weather:	Light snow, overcast, ~~3~~ 1°C, wind 4 from SW

Community Classification

Vegetation Type:	Reed-Canary Grass Graminoid Meadow (MECM3-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	X Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	~~Canopy~~			
2	~~Sub-canopy~~			
3	Understorey	4	1	hawthorn sp. > Salix exigua
4	Groundcover	5-7	4	reed canary grass > broad leaf > tall goldenrod > typha

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R < 10	N 10 - 24	N 25 - 50	N > 50
Snags	N < 10	N 10 - 24	N 25 - 50	N > 50
Deadfall/Logs	N < 10	N 10 - 24	N 25 - 50	N > 50

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

Community Age	X	Pioneer		Young		Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils

	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: Drain 1

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- photos 100 - 1076, 1077
- very small meadow in riparian area of farm drain
  - ↳ dominated by reed canary grass

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

(WOD-067)

Page ____of____

Site:	Armow WF
Polygon:	Drain 1
UTM:	17 T 0456977 4891176 (rock pile also @ this location)
Date:	Nov. 17/11
Time:	14:00
Surveyor(s):	AMD, NGM
Weather:	Light Snow, Overcast, 1°C, wind 4 from SW

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.			R		
willow exigua			R		

Species	Layer 1	2	3	4	Sample
reed canary grass				D	
common burdock				R	
broad leaf typha				O	
tall goldenrod				O	
canada goldenrod				R	
wild carrot				R	
common milkweed				R	
lance leaved aster				O	check

WOD-067

Drain 1



T68

WUD-067



T68

Wildlife Observation Form
NATURAL RESOURCE SOLUTIONS INC.

(WOD-067) Page 1 of 1

Site:	ARMOW WF
Polygon:	Drain 1
UTM:	17T 0456977 4991176
Date:	Nov. 17 **Time:** 14:00
Surveyor(s):	NOM, AMD
Weather:	wind 4 SW, Temp 1°C, C.C. 100%, light flurries

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. Tree Sparrow	X		1						
B	Blue Jay	X		1						
B	Herring Gull	X		1						
B	Ring-billed Gull	X		1						
B	Am. Crow	X		1						

Faunal Type Codes (TY)
B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds
SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxiety Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife
OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form
NATURAL RESOURCE SOLUTIONS INC.

Page 2 of 2

Site:	
Polygon:	See Sheet 1
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)
Habitats and Habitat Features are independent of wildlife observations

Habitat Type
___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats
___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose
___ Seep/Spring
___ Mineral Lick

Snakes
___ Burrow
___ Fallen Rotting Log
___ Old Well
X Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles
___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Snake Hibernacula SNH-010	17T 0456977 4991176	Rock pile near drain ~6m x 2m
No longer considered candidate.		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: SR10/N Line Poly E *WOD-067*	
UTM:	
Date: Jan 8 2012	Time: 16:57
Surveyor(s): CLH	
Weather: -10C, 60% cc, Wind 2/SE No precip	

Community Classification

Vegetation Type:	FOCM2-2 Dry-Fresh White Cedar Coniferous Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	X Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	2	White cedar > White Ash
2	Sub-canopy	3	4	White cedar >> Hawthorn sp.
3	Understorey	4 5		not visible
4	Groundcover	6 7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: SR10/N Line Poly E	
UTM:	
Date: Jan 8 2012	Time: 16:57
Surveyor(s): CLH	
Weather: -10C, 60% cc, Wind 2/SE No precip	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 1.0 2.10 as-2 to.s

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White cedar	O	D			
White Ash	O				
hawthorn sp.		O			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow WF	1275
Polygon: SR10/N Line Poly B	* WOD-067 *
UTM:	
Date: Jan 8 2012	Time: 16:45
Surveyor(s): CH	
Weather: -1°C, CC 60%, Wind 2/SE No precip	

Community Classification

Vegetation Type:	Swmm2-1 Dry-Fresh Hawthorn - White Cedar Mixed Savannah
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	X Parent Mtn. Soil	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	X Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	3	hawthorn sp. = white ash > white cedar >> E. red cedar
3	Understorey	4 5	3	White cedar = White ash
4	Groundcover	6 7	4	orchard grass > common juniper

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	1275
Polygon: SR10/N Line Poly B	
UTM:	
Date: Jan 8 2012	Time: 16:45
Surveyor(s): CH	
Weather: -1°, CC 60%, Wind 2/SE No precip	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 1: 10 2: 2-10 3: 0.5-2 4: <0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white cedar		O	O		
white ash		O	D		
common juniper				A	
orchard grass				A	
E. red cedar		R			
hawthorn sp.		D			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

DSC_0094, 0095

Site: Armow	1275
Polygon: SR10/N Line Poly C	*WOD-067*
UTM:	
Date: Jan 8 2012	Time: 16:50
Surveyor(s): CLH	
Weather: -1°C, CC60%, Wind 2/SE, No precip	

Community Classification

Vegetation Type:	THDM5 Fresh-Moist Deciduous Thicket
Inclusion:	Ecosite
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
[X] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[ ] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min.	[X] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[X] Thicket
History	[ ] Basic Bedrock	[ ] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[X] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[ ] Swamp	[ ] Woodland
[ ] Cultural		[ ] Roll. Upland	[ ] Bluff	[ ] Fen	[ ] Forest
	Site	[ ] Cliff		[ ] Bog	[ ] Plantation

Cover		Open Water	Plant Form		
[ ] Open	[ ] Shallow Water	[ ] Plankton	[ ] Forb	[ ] Coniferous
[X] Shrub	[X] Surficial Dep.	[ ] Submerged	[ ] Lichen	[ ] Mixed
[ ] Treed	[ ] Bedrock	[ ] Floating-Lvd.	[ ] Bryophyte	
		[ ] Graminoid	[X] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	3	hawthorn sp. = willow sp. > white cedar
3	Understorey	3/4	4	orchard grass > reed canary > white cedar
4	Groundcover	6/7		not visible

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

Size Class Analysis	A	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	[X]	Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site: Armow	1275
Polygon: SR10/N Line Poly C	
UTM:	
Date: Jan 8 2012	Time: 16:50
Surveyor(s): CLH	
Weather: -1°C, CC60%, Wind 2/SE, No precip	

Layers: >10 (1=canopy) 2-10 (2=sub-canopy) 0.5-2 (3=understorey) <0.5 (4=ground layer)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		O			
Willow sp.		O			
reed canary			O		
Orchard grass			A		
White cedar		O	O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside assessment
Willows, cedars, Hawthorns are < 5m tall
Wetland species are < 50% of composition.
∴ not wetland.

DSC_0098

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow	1275
Polygon: SR 10/N Line Poly D	* WOD-067 *
UTM:	
Date: Jan 8 2017	Time: 16:55
Surveyor(s): CLH	
Weather: -10C, 60% CC, Wind 2/SE	No precip

Community Classification

Vegetation Type:	TAGm1 Coniferous Plantation
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	X Coniferous
Shrub		X Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	red pine > white spruce.
3	Understorey	4/5	1	red pine > white spruce
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow	1275
Polygon: SR10/N Line Poly D	
UTM:	
Date: Jan 8 2017	Time: 16:55
Surveyor(s): CLH	
Weather: -10C, 60% CC, Wind 2/SE	No precip

Layers: 7 10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red pine		D	O		
white spruce		O	O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #
contains a house, shed, driveway (CVR-4)
house is new.
Trees ~3m tall
DSC_0095.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow	1275
Polygon: SR10/N Line Poly A	*W01)-067*
UTM:	
Date: Jan 8 2012	Time: 16:40
Surveyor(s): CLH	
Weather: -1°C, CC 60%, wind 2/SE, NO precip.	

Community Classification

Vegetation Type:	MEGM3-6 Orchard Grass Graminoid meadow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	X Parent Mat. Some	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	0	—
3	Understorey	4	1	teasel
4	Groundcover	5	4	orchard grass > spotted knapweed > wild carrot > bull thistle

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	X	Pioneer		Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site: Armow	1275
Polygon: SR10/N Line Poly A	
UTM:	
Date: Jan 8 2012	Time: 16:40
Surveyor(s): CLH	
Weather: -1°C, CC 60%, Wind 2/SE No precip.	

Layers: 710 2-10 0.5-2 <0.5 — 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
wild carrot				O	
orchard grass				D	
spotted knapweed				O	
smooth brome				R	
teasel			R		
bull thistle				O	
hawthorn sp.				R	
common juniper				R	

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment.

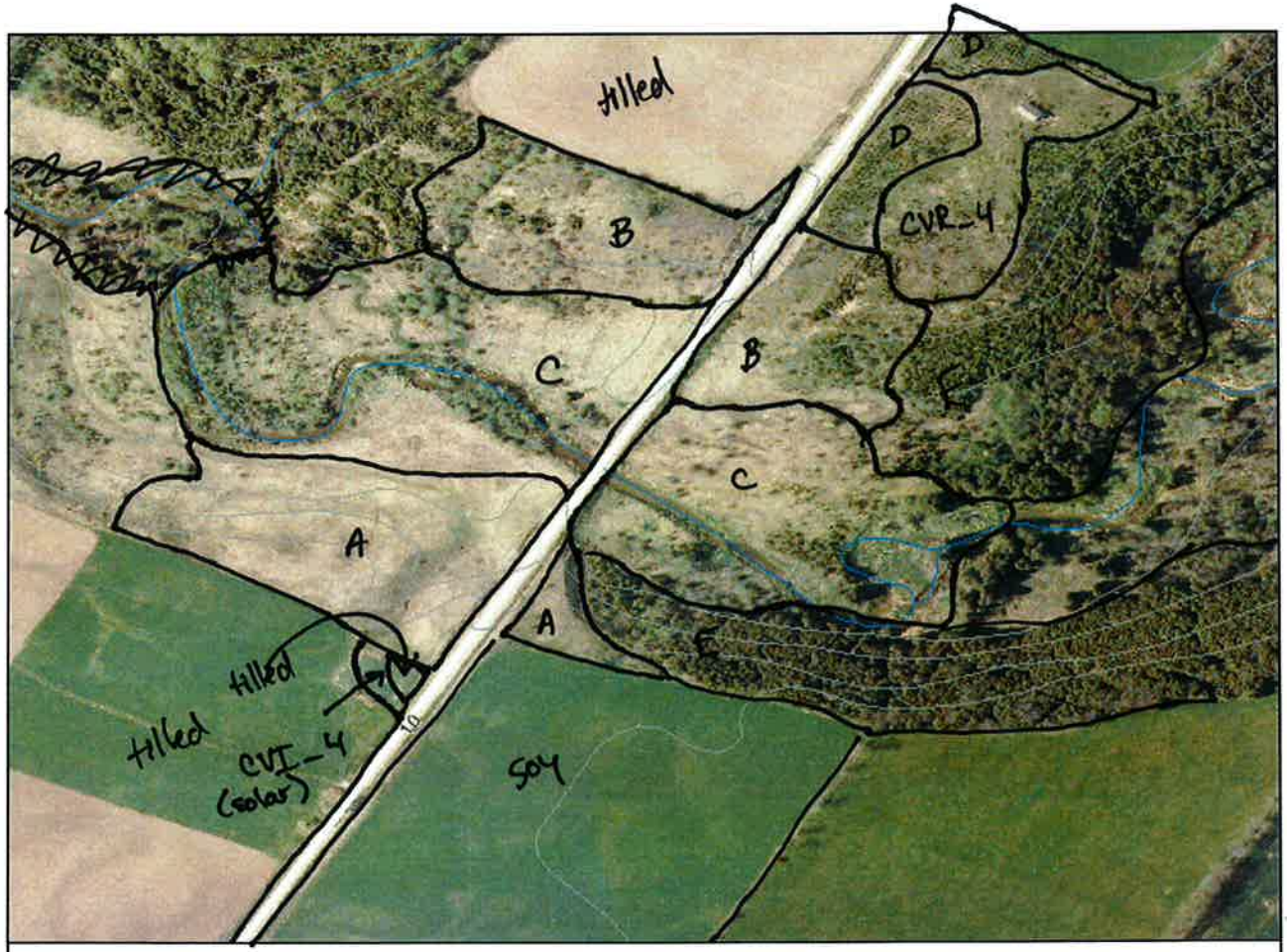
DSC_0094 / 0096

(WOD-067)

map 1

Jan 8 2012
CUT

Sideroad 10/ North Line



Map centre: 44° 10' 42.5" N, 81° 33' 12.9" W

Map created: January 9, 2012

0 90 180 270 360 m

Scale: 1:5,100

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

filled = OAOM1 = SOY
A = MEAM3-6
B = SUMM2-1
C = THDM5
D = TAOM1
E = FOCM2-2

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Ontario

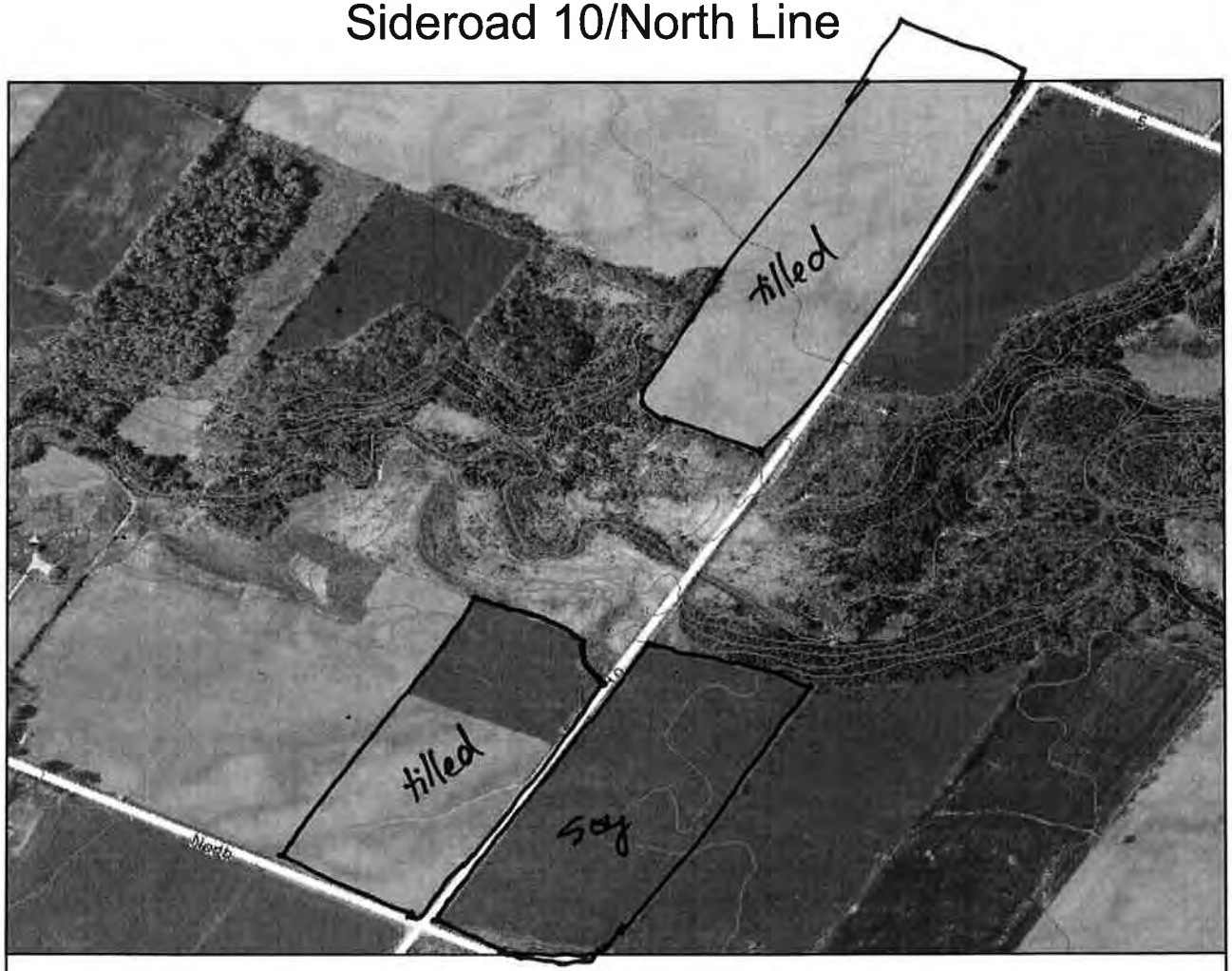
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(WOD-067)

map 2

Jan 8 2012
cut

Sideroad 10/North Line



0 200 400 600 800 m

Map centre: 44° 10' 45.6" N, 81° 33' 18.0" W

Map created: January 9, 2012

Scale: 1:11,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

tilled/soy = OAGM1

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnaw WF ~~WD-072~~ ~~WET-057~~
Polygon:	WOD-073 – poss. wetland (TH)
UTM:	17T 0464193 4898562
Date:	Nov. 18/11 Time: 8:20 am
Surveyor(s):	NGM, AMD
Weather:	Temp: 2°C, wind 4 S, CC: 40%, no precip

Community Classification

Vegetation Type:	Green Ash Mineral Deciduous Swamp (SWDM2-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	X Woodland
Cultural	no access	Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	3	Green Ash
2	Sub-canopy	3	2	Green Ash > T. Aspen = Maple Sp.
3	Understorey	4	2	Willow Sp.
4	Groundcover	5	4	Reed Canary Grass > Canada Goldenrod = Aster Sp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES: – roadside ELC

- Green Ash Swamp - fairly open
- standing water visible.
- May be a wetland but no land access so unsure – likely a wetland
- photo 1089

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armon WF
Polygon:	WOD-073 – likely a wetland ~~WOD-072~~
UTM:	17T 0464193 4898562
Date:	Nov. 18/11
Time:	8:30 am
Surveyor(s):	NGM, AMD
Weather:	Temp: 2°C, wind 4 S, C.C: 40%, no precip

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Green Ash	D	A	–	–	
Trembling Aspen	–	O	–	–	
Willow Sp	–	–	R	–	
Maple Sp	–	O	–	–	
Red Osier Dogwood	–	–	R	–	
Aster Sp.	–	–	–	O	
Reed Canary Grass	–	–	–	D	
Common Apple	–	R	–	–	
Wild Grass	–	–	–	O	
Canada Goldenrod	–	–	–	O	

Species	Layer 1	2	3	4	Sample

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample

Species	Layer 1	2	3	4	Sample

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

* completed by roadside

Site:	Armour WF
Polygon:	WOD-072 (TH) *WET-010
UTM:	17T 0464162 4898560
Date:	Nov. 18/11 Time: 8:30
Surveyor(s):	AMD, NGM
Weather:	2°C, wind 2 from W, 90% CC, cloudy w some sunny periods

Community Classification

Vegetation Type:	SWDM2-2
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic ?	Lacustrine	Talus	Lake	Barren
Wetland ?	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket ?
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
X Treed	Bedrock	Floating-Lvd.	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	4	green ash > freeman's maple = sugar maple > Am. beech = trembling aspen.
2	Sub-canopy	3	3	green ash > freeman's maple = sugar maple = bass wood.
3	Understorey	4	3	wild raisin > red osier dogwood.
4	Groundcover	5-7	2	Calico aster

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	O	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth
			X		

Modified ELC Community Description Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-072

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- species composition could lead to wetland designation - difficult to classify from roadside
  - ↳ areas of green ash + freeman's maple, also sugar maple - beech - hemlock.
- ↳ would need site access to determine for certain
- groundcover difficult to see w recent snow.
- photo 1090
- → possible inclusions or complex

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-072*
UTM:	17T 0464162 4898560
Date:	Nov. 18/11
Time:	8:30
Surveyor(s):	AMD, NGM.
Weather:	2°C, wind 2 from W, 90% CC, cloudy w some sunny periods

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hemlock	R	R			
red osier dogwood			R	R	
trembling aspen	R	R			
basswood		O	R		
black cherry		R			
willow sp.			R		
green ash	O	O			
hawthorn sp.			R		
wild raisin			R		
Am. beech	R	R			
rubus idaeus				O	
freemans maple	O	O			
sugar maple	O	O			
wh. elm		R			
wh. ash	R	R			

Species	Layer 1	2	3	4	Sample
reed canary grass				R	
bracken fern				R	
tall goldenrod				D	
grass-leaved goldenrod				O	
orchard grass				R	
hemp nettle				D	
calico aster				A	
lance leaf aster				O	

W (WOD-072)

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Part of WOD-072, N of SR 20

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): PWD

Date: Nov. 23, 2011 **Time (24h):** 16:45

Field #: SR 20 bA Bruce 15 Point 2 **Weather:** Precipitation: None Temp (°C): 1

Map Code: S1 Wind Speed & Direction: 2/SE Cloud %: 90

Wetland Type: Treed Swamp **Site Type:** P **Dominant Form:** Treed (S,h)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos: 0632

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash 35% White Elm 10%
c	
dc,dh,ds	
ts	Willow sp 5%
ls	Red Osier Dogwood 5%
gc	
ne	Narrow-leaved Cattail 20%
be	
re	
ff	
f	
su	
m	

Soil type: unknown Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None observed

Wildlife Notes: None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

S1 WET-010

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Part of WOD-072, E of SR 20

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): PWD

Date: Nov 23, 2011 **Time (24h):** 16:50

Field #: (as per left) **Weather:** Precipitation: None Temp (°C): 1

Map Code: S2 Wind Speed & Direction: 2/SE Cloud %: 90

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Treed (S,h)

% Open Water: 0 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash (40%), Red Maple 15%
c	
dc,dh,ds	
ts	Hawthorn 5%
ls	
gc	
ne	Reed Canary Grass (90%)
be	
re	
ff	
f	
su	
m	

Soil type: unknown Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None observed

Wildlife Notes: None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

S3 WET-010


WOD-072
464000
464500
465000
465500
466000
4899000
4898500
4898000
4897500
SIDEROAD 20
CONCESSION 2
BRUCE ROAD 15
56
ploughed bare
hay
WOD-071
ploughed bare
WOD-073
ploughed bare
hay
green ash swamp
hay
soybean stubble
WOD-075/ WET-048
WOD-073
ploughed bare
grass meadow marsh
pasture
0 100 200 300 Metres
N
C: Corn


464000
464500
465000
465500
466000
4899000
4898500
4898000
4897500
SIDEROAD 20
CONCESSION 2
BRUCE ROAD 15
S1
S2
56
4
Complex
AH
S1, S3
WET-010
Wetland
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armow
Polygon:	WOD-xxiii (WOD-072)
UTM:	
Date:	Nov 11 2011 — Time: 14:45
Surveyor(s):	PWD NGM
Weather:	

Community Classification

	Vegetation Type:	FODM8-1 Fresh-Moist Poplar Dec. Forest Type.
X	Inclusion:	SWDM2-2 Green Ash Min. Dec. Swamp Type.
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
	Open Water	Plankton	Forb	Coniferous
Open	Shallow Water	Submerged	Lichen	X Mixed
Shrub	X Surficial Dep	Floating-Lvd.	Bryophyte	
X Treed	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	
2	Sub-canopy	3	3	
3	Understorey	4	3	
4	Groundcover	6	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

This doesn't need to be considered wet (Poplar)

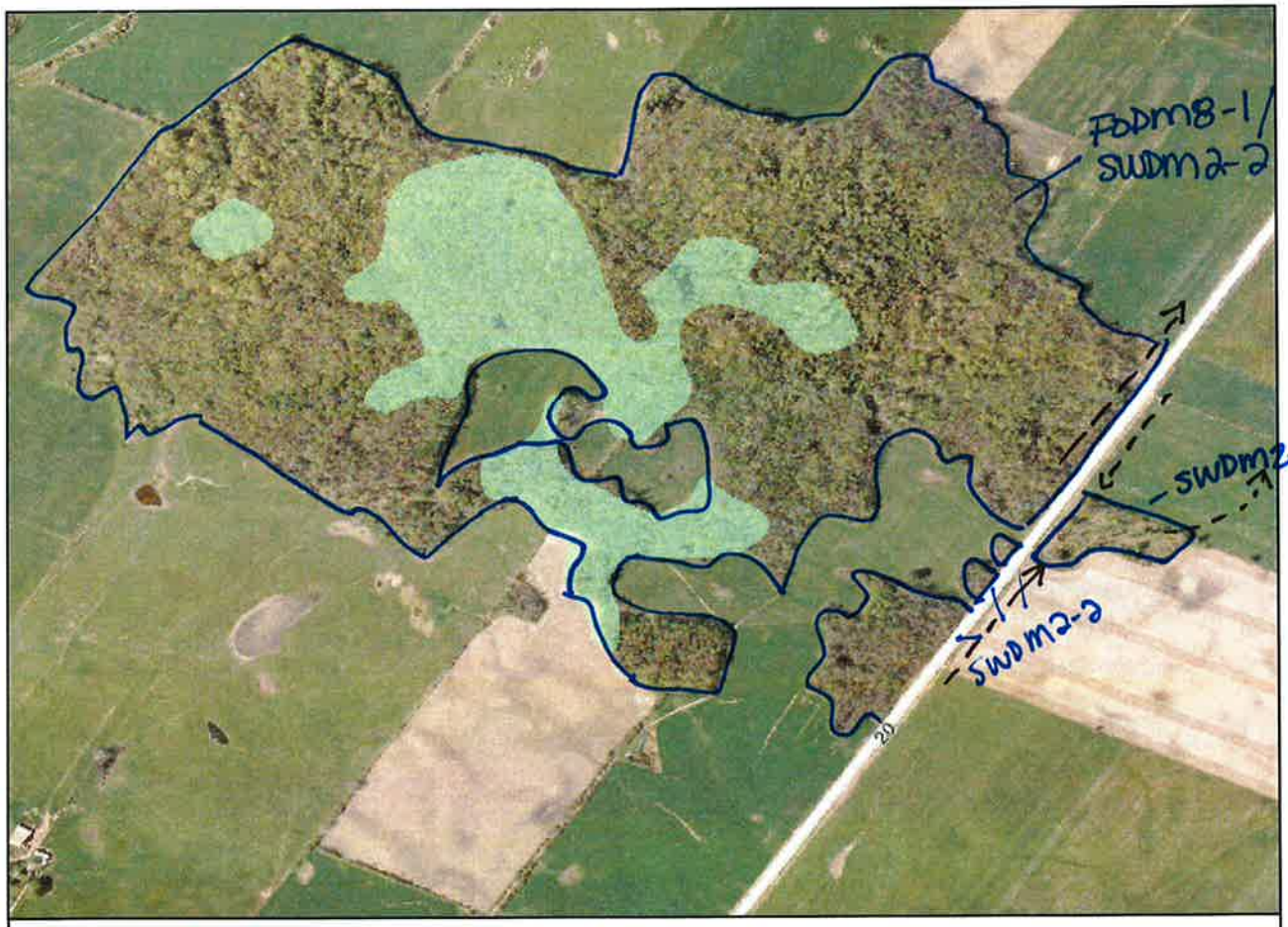
WET already ID'd

NOTES:

Completed roadside

Poplar sp
Ash sp.
Hemlock
Nanny berry

WOD-072



Map centre: 44° 14' 24.6" N, 81° 27' 13.1" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:9,700

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page 1 of 1

* Property like ELC

Site:	Armow WF
Polygon:	WOD-074 & WET-058
UTM:	17T 0464613 4898709
Date:	Nov. 18 Time: 11:30
Surveyor(s):	NGM, AMD
Weather:	1°C, wind 4 from W, 60% CC

Community Classification

Vegetation Type:	Green Ash Mineral Deciduous Swamp ? (SWDM2-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland ?	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp ?	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	4	Ash sp. ≫ Maple Sp. > Am. Beech = trembling aspen
2	Sub-canopy	3	4	Ash sp. > Maple sp. > Ironwood > Comm. Apple
3	Understorey	4	2	Wild raisin = red osier dogwood = red raspberry
4	Groundcover	S/T	2	Smooth brome = orchard grass → on edge of woodlot

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	—	< 10	R	10 - 24	—	25 - 50	—	> 50
Deadfall/Logs	—	< 10	—	10 - 24	—	25 - 50	—	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon: WOD-074

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Photo #1088

- likely Green Ash (found along edge - likely throughout) - ∴ likely green ash swamp
- unable to assess snags due to no site access
- very little ground cover visible.
- need property access to confirm classification.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

-green ash found along property line, likely green ash throughout.

Site:	Armow WF
Polygon:	WOD-[redacted]074 (T4) ANET-058
UTM:	17T 0464613 4898709
Date:	Nov. 18/11 — Time: 11:30
Surveyor(s):	AMD, NGM
Weather:	1°C, wind 4 from W, 60% CC.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hemlock	R	R	-		
red osier dogwood			O		
trembling aspen	R				
ash sp. (green)	D	A			
ironwood		O			
wild raisin			O		
rubus idaeus			O	O	
A. beech	R				
maple sp.	O	O			
choke cherry			R		
common apple		R			

Species	Layer 1	2	3	4	Sample
reedcanary grass				R	
grass leaf goldenrod				O	
tall goldenrod				O	
smooth brome				O	
orchard grass				O	

} 2 farm field edge of woodlot

0

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample

Species	Layer 1	2	3	4	Sample

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WET-058 (INWD-074)

Project Name: Atwood **Project #:** 1273

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 08:40

Field #: T4 (NW of) **Weather:** Precipitation: None Temp (°C): 2

Map Code: S1 Wind Speed & Direction: 2/SE Cloud %: 100

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Treed (S,h)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash (45%), White Elm 10%
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Unknown Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None Observed.

Wildlife Notes:

Eastern Cottontail

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

S1-

WET-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-059 (isolated) ☐ (WOD-074)

Wetland Vegetation Communities

Project Name: Arnow **Project #:** 1276

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 08:10

Field #: T4 (north of) **Weather:** Precipitation: None Temp (°C): 2

Map Code: M1 Wind Speed & Direction: 2/SE Cloud %: 100

Wetland Type: Marsh **Site Type:** I **Dominant Form:** Graminoid (M, ne)

% Open Water: 0% **ELC Code:** MAMM1-3

Photos: 0633

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
(ne)	Reed Canary Grass 95%, Soft Rush 4%
be	Polygonum 1%
re	
ff	
f	
su	
m	

Soil type: See ELC Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None Observed

Wildlife Notes: American Crow X

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

ML-A WET-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-058 (in WOD-074)

Wetland Vegetation Communities

Project Name: Arnow **Project #:** 1275

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 08:30

Field #: T4 (NW of) **Weather:** Precipitation: None Temp (°C): 2

Map Code: M2 Wind Speed & Direction: 2/SE Cloud %: 100

Wetland Type: Marsh **Site Type:** P **Dominant Form:** Graminoid. (M, ne)

% Open Water: 0% **ELC Code:** MAMM1-16

Photos: –

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 10%
c	
dc,dh,ds	
ts	Red Osier Dogwood 3%
ls	Sambucus sp. 1%
gc	Aster sp. 5%, Sensitive Fern 5%
(ne)	Grass sp (60%)
be	
re	
ff	
f	
su	
m	

Soil type: Unknown Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial): None Observed

Wildlife Notes: None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

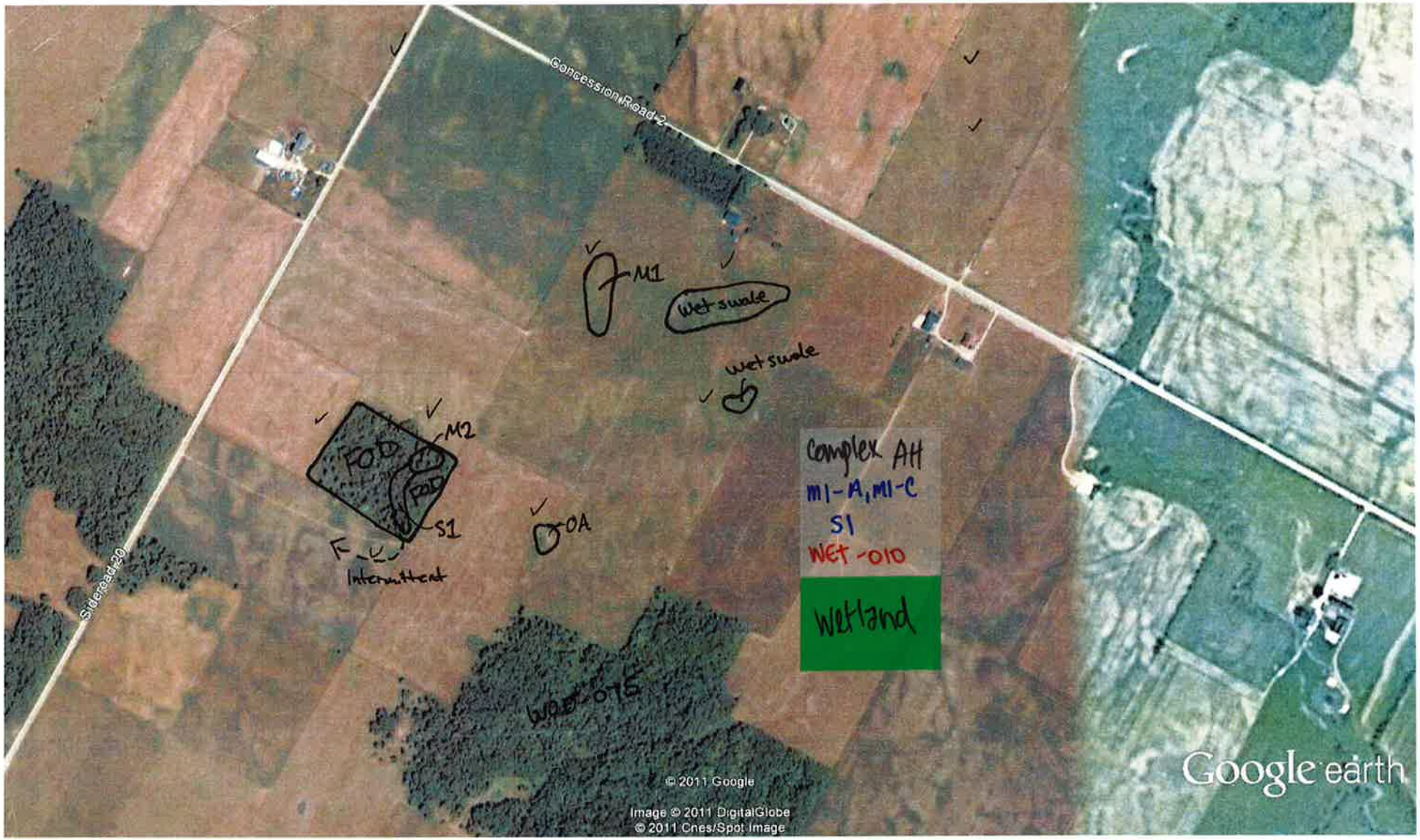
ML-C WET-010


(WOD-074)
464000
464500
465000
465500
466000
4899000
4898500
4898000
4897500
SIDEROAD 20
CONCESSION 2
BRUCE ROAD 15
56
hay
ploughed bare
WOD-072
ploughed bare
hay
ploughed bare
green ash swamp
hay
soybean stubble
hay
WOD-075/ WET-048
WOD-073
ploughed bare
gram. meadow marsh
pasture, low
0 100 200 300 Metres
N

C: Corn

T04

WOD-074



Google earth

feet 5000

km 1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of _

staging area E of Glamis Bog, swamp community

Site:	Arrow W1
Polygon:	W01-076
UTM:	17T 0469890 4897041
Date:	Dec. 9/11 Time: 15:10
Surveyor(s):	AMO, HLW
Weather:	-1°C, 50% cloudcover, wind 2/SW

Community Classification

Vegetation Type:	Swamp Maple Organic Decid. Swamp. (SWD02-3)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
	Open Water			
Open	Shallow Water	Plankton	Forb	Coniferous
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
X Treed	Bedrock	Floating-Lvd.	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*~~1~~	~~Super-canopy~~			
1	Canopy	1	4	freeman's maple > green ash > wh. elm = trembling aspen
2	Sub-canopy	2	4	freeman's maple = green ash > trembling aspen > wh. elm
3	Understorey	3	3	freeman's maple = green ash > wh. cedar
4	Groundcover	5-7	2	reed Canary grass = red osier dogwood

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags	R	< 10	O	10 - 24	O	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of ___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
black ash		R	R		
>25 green ash	A	A	A		
>25 freeman's maple	A	A	A		
sugar maple	R				
yellow birch	R				
>25 red osier dogwood			O	A	
wh. cedar		R	O		
trembling aspen	O	O			
wh. elm	O	O			
wild raisin			O	O	
wh. elderberry			R	R	
rubus idaeus			O	O	
gray dogwood				R	
willow sp.	R				

Species	Layer 1	2	3	4	Sample
sensitive fern				R	
>25 reed canary grass				O	
~~willow sp.~~					
aster sp.				O	
goldenrod sp.				O	

Wildlife and Other Notes

- downy/hairy woodpecker observed foraging
- photo 1177, 1178
- some areas ~ 15 cm standing water
- very gravely soils - former gravel pit to North

staging area east of Glammis Bog

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armow WF **Project #:** 1275

Observer(s): AMO, HLW

Date: Dec 9/11 **Time (24h):** 15:10

Field #: WOD-076 **Weather:** Precipitation: none Temp (°C): -1

Map Code: S1 Wind Speed & Direction: 2 / SW Cloud %: 50

Wetland Type: swamp **Site Type:** Pal **Dominant Form:** treed, deciduous (h)

% Open Water: 0% **ELC Code:** SWD02-3

Photos: 1177, 1178

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	freeman's maple, green ash, black ash, yellow birch
c	white cedar
dc,dh,ds	
(ts)	red osier dogwood, wild raisin, willow sp.
ls	white elderberry, rubus idaeus
gc	sensitive fern, aster sp., goldenrod sp.
(ne)	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: O Organic [X] Mineral [ ]

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

- woodpecker observed foraging @ top of large (>50 cm dbh) snag

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

S16

WET-004

See notes over →

Modified ELC Community Description

Page 5 of __

Staging area east of Glammis Bog, Swamp

Soils	1	2	3
Position:	S		
Aspect:	0-0,5		
%	340		
Type:	S		
Class:	A		

Polygon: WOD-076

Strata: Texture	SiC		
Depth	40-55		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	Organic		
Surface Stoniness	2		
Surface Rockiness	—		
Depth to:			
Mottles	42 (measured from below organics)		
Gley	—		
Bedrock	—		
Water table	surface		
Carbonates			
Depth of Organics	40		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	7-9		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- mineral soil is gravely (former gravel pit closely to the N), could not auger past 55 cm
- gley colored material @ beginning of mineral horizon, blueish-grey in color, unsure if actually gley
- organic soil

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

* roadside ELC

Site:	Armow WF
Polygon:	WOD-076
UTM:	17T 0470312 4897054
Date:	Nov. 18/11 — Time: 13:00
Surveyor(s):	NGM, AMD
Weather:	Temp 2°C, wind W 4, C.C. 100%, No precip

Community Classification

Vegetation Type:	Dry-Fresh Sugar maple-White Ash Decid. Forest (FOOMS5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll, Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Sugar Maple
2	Sub-canopy	2	3	Sugar Maple ≥ White Ash = white Birch = Am. beach
3	Understorey	3	3	Alternate leaved dogwood > Viburnum opulus
4	Groundcover	5-7	3	Wood strawberry > calico Aster = Grass.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	R	> 50
Snags	—	< 10	—	10 - 24	—	25 - 50	—	> 50
Deadfall/Logs	O	< 10	R	10 - 24	—	25 - 50	—	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-076

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES: Photo # 1091

- completed from roadside (Bruce Rd 1)
- very Sugar Maple dominant
- wooded area to NW of aggregate pit + ploughed area appears to be same species composition as wooded areas directly adjacent to Bruce Rd 1
  - ↳ cannot confirm, no site access, assessed through binoculars.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-076
UTM:	17T 0470312 4997054
Date:	Nov. 18/11 — **Time:** 12:40
Surveyor(s):	AmD, NCrM
Weather:	2°C, wind 4 from W, 100% CC.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
sugar maple	D	D			
viburnum opulus			R		
black cherry		R			
alt. leaf dogwood			O		
red osier dogwood				R	
wh. birch		O			
wh. ash		O	O	O	
Am. beech		O	R		
trembling aspen	R				
hemlock	R				

Species	Layer 1	2	3	4	Sample
grass leaf goldenrod				O	
reed canary grass				R	
wood strawberry				O	
hemp nettle				R	
tall goldenrod				R	
calico aster				O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arm ow **Project #:** 1275

Observer(s): CH

Date: Jan. 24 2011 **Time (24h):** Desktop.

Field #: **Weather:** Precipitation: / Temp (°C): /

Map Code: Wind Speed & Direction: / Cloud %: /

Wetland Type: Swamp **Site Type:** I **Dominant Form:** C (S,C)

% Open Water: 0 **ELC Code:** SWMM5-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Populus sp.
(c)	tamarack
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes: WSI on ANSIS map. Topographically upslope of main wetland area.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

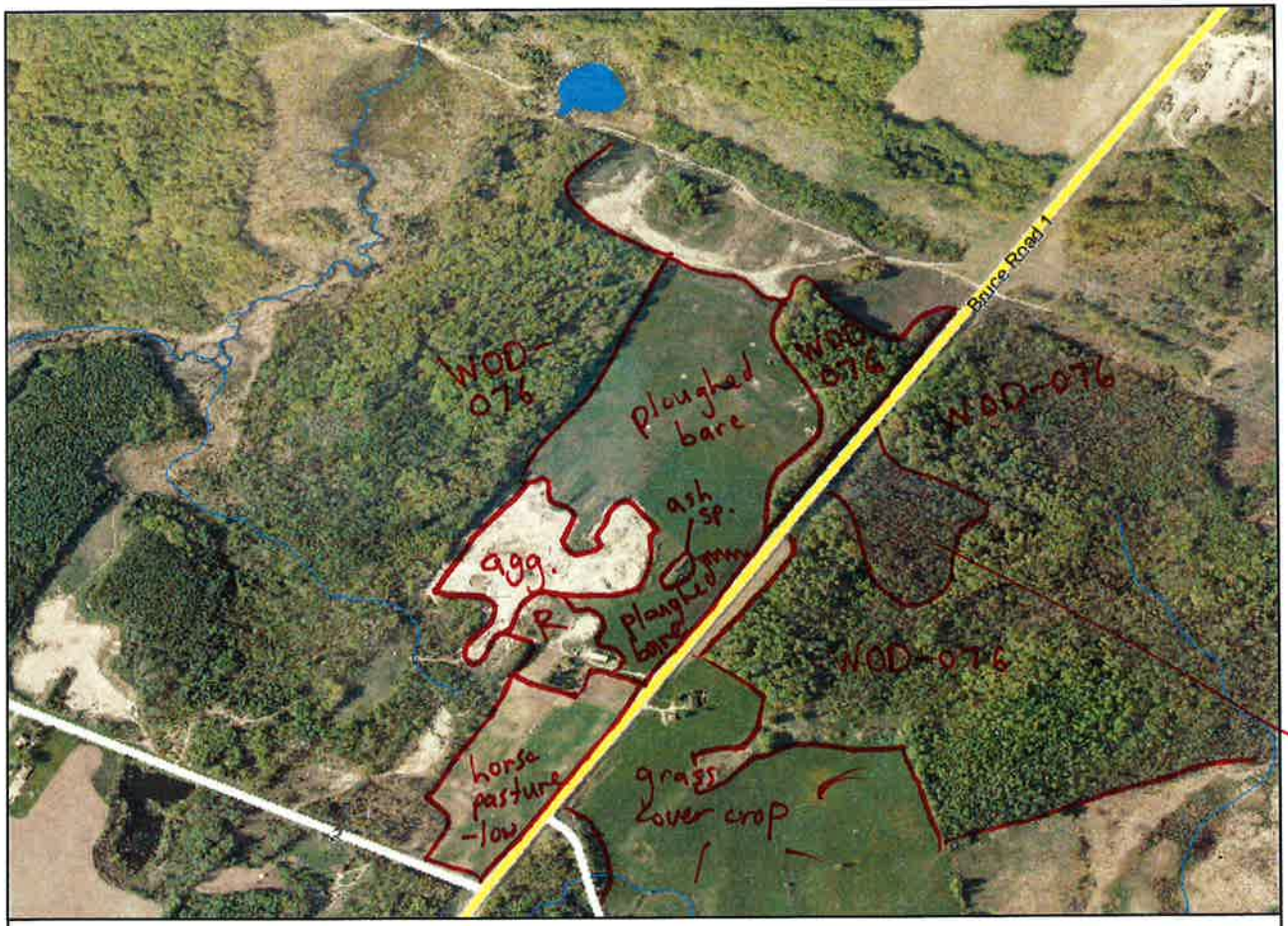
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Desktop analysis
No wetland was observed from the property line (sugar maple forest only)

519

-WOD-016

Staging Area East of Glammis Bog



Map centre: 44° 13' 41.8" N, 81° 22' 25.2" W

Map created: November 16, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

agg. aggregate.
R: residential

WOD-077/WET-049

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*WOD-016

Staging Area East of Glammis Bog



Map centre: 44° 13' 41.8" N, 81° 22' 25.2" W

Map created: November 16, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Staging area complex AM

flows

S1: inflow absent, intermittent outflow

S16

WET-004

Wetland

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WOD-076 CLH desktop

West of CR1 Staging Area



Map centre: 44° 13' 41.9" N, 81° 22' 38.1" W

Map created: January 24, 2012

0 60 120 180 240 m

Scale: 1:3,400

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

WET-004

S19

wetland

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8/14/2009 7:00:00 pm
7:00:00 pm
7:00:00 pm
Ontario Geological Survey
Concession Road 2
FOD/
SWD
Sideroad 20 N
Concession Road 14
© 2011 Cnes/Spot Image
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Google earth

WOD-076

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Arrow WF

Project #: 1275

Date: Dec 9/2011

Start Time 2:55 End Time 3:33

Observer(s): ADM, HLW

Woodland ID (WOD- 176) Weather Conditions: -1°C, 80% cloud cover, wind 2 Staging Area E of Highway 5 Reg

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone:)		Comments
Plot 1	0	0469914	4897057	
Plot 2	0	0469784	4897060	
Plot 3	0	0469874	4897026	
Plot 4	2	0469879	4896999	
Plot 5	0	0469907	4897000	
Plot 6	0	0469928	4897025	
Plot 7	0	0469861	4897067	
Plot 8	0	0469901	4896993	
Plot 9	0	0469866	4896942	
Plot 10	0	0469888	4896924	
Plot 11	0	0469865	4896912	
Plot 12	0	0469841	4896885	
Plot 13	0	0469853	4896873	
Plot 14	1	0469929	4896841	
Plot 15	1	0469826	4896957	Photo 1179
Plot 16	0	0469807	4896809	
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Final Wodland Tally

Formula: Total # Snags / (# Plots x 0.05ha)

= 4 / (16 x 0.05) = 5 snags/ha

Wildlife Observation Form

Page 3 of _

NATURAL RESOURCE SOLUTIONS INC.

Site:	Avonmore WF
Polygon:	WD-076 (Staging Area East of Glen Mills Blvd)
UTM:	
Date:	Dec. 9/2011 **Time:** 2:55
Surveyor(s):	ADM, HCW
Weather:	-1°C, 50% cloud cover, wind 2/SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. Crow	VO		1						
B	Wh-tailed Deer	TK		1						
B	Red-capped chickadee	OB/VO		1						
B	Hairy or downy woodpecker	OB		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page 4 of _

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ✓ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armow WF
Polygon:	WOD-078 X
UTM:	17 T 0463401 ~~4889~~ 4889856
Date:	Dec 8/11 — Time: 15:30
Surveyor(s):	AMD, HLW
Weather:	1°C, 70% CC, wind 4 from SW, cloudy w some sun

Community Classification

	Vegetation Type:	Dry-Fresh Sugar Maple-White Ash Decid. Forest (FODM5-8)
	Inclusion:	
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community	
X	Terrestrial		Organic		Lacustrine	Talus	Lake	Barren
	Wetland	X	Mineral Soil		Riverine	Crevice/Cave	Pond	Meadow
	Aquatic		Parent Min.		Bottomland	Alvar	River	Prairie
			Acidic Bedrock		Terrace	Rockland	Stream	Thicket
History			Basic Bedrock		Valley Slope	Beach/Bar	Marsh	Savannah
X	Natural		Carb. Bedrock	X	Tableland	Sand Dune	Swamp	Woodland
	Cultural				Roll Upland	Bluff	Fen	X Forest
		Site			Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
	Open	Shallow Water	Plankton	Forb	Coniferous
	Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
X	Treed	Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	sugar maple > white ash > basswood
2	Sub-canopy	2	4	Sugar maple > white ash > basswood
3	Understorey	3	3	hawthorn sp. > choke cherry
4	Groundcover	5-7		- none observed

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

} not observed from property line

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
sugar maple	A	A									
white ash	O	O									
beech	R	R									
basswood	O	O									
choke cherry		R	R								
hawthorn sp.		D	O								
wh. elm	R	R									

Wildlife and Other Notes

* completed from property line abutting T110/T111 landowner - photo 1152

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arman WF
Polygon:	WOD-078/WET-050
UTM:	17T 0463211 4890083
Date:	Nov. 18/11 Time: 14:30
Surveyor(s):	NBM, AMD
Weather:	Temp: 2°C, Wind SW 6, C.C. 75%

Community Classification

	Vegetation Type:	Green Ash Mineral Deciduous Swamp (SWDM2-2)
X	Inclusion:	FOCM3-2
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
~~Terrestrial~~	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	? Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	~~Beach/Bar~~	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		~~Roll-Upland~~	Bluff	Fen	~~Forest~~
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			Green Ash > T. Aspen
2	Sub-canopy			Green Ash > T. Aspen
3	Understorey		—	
4	Groundcover		—	Reed canary grass (at edge)

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	—	< 10	—	10 - 24	—	25 - 50	—	> 50
Deadfall/Logs	—	< 10	—	10 - 24	—	25 - 50	—	> 50

} could not assess

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

Community Age		Pioneer		Young		Mid-age		Mature	Old Growth

Modified ELC Community Description

Soils	1	2	3
Position			
Aspect:			
%			
Type:			
Class:			

Polygon:

Strata:	Texture		
	Depth		
Strata:	Texture		
	Depth		
Strata:	Texture		
	Depth		
Strata:	Texture		
	Depth		
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
	Mottles		
	Gley		
	Bedrock		
	Water table		
	Carbonates		
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Tree Tally

Species	Tally 1	Tally 2	Tally 3

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arrow WF
Polygon:	WOD-078 / WET-050
UTM:	17T 0463211 4890083
Date:	Nov. 18/11 **Time:** 14:30
Surveyor(s):	AMD, NGM
Weather:	2°C, wind 6 from SW, 75% CC

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	D	D			
trembling aspen	R	R			
freeman's maple	R	R			

Species	Layer 1	2	3	4	Sample
reed canary grass				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	(T111) next to UDD-078
UTM:	17T 0463936 4989970
Date:	Dec 8/11 — Time: 15:45
Surveyor(s):	AMD, HLW
Weather:	10C, 70% CC, wind 4 from SW, cloudy w/ some sun

Community Classification

	Vegetation Type:	Dry-Fresh (Graminoid) meadow (MEGM3)
	Inclusion:	
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community	
X	Terrestrial		Organic		Lacustrine	Talus	Lake	Barren
	Wetland	X	Mineral Soil		Riverine	Crevice/Cave	Pond	X Meadow
	Aquatic		Parent Min.		Bottomland	Alvar	River	Prairie
			Acidic Bedrock		Terrace	Rockland	Stream	Thicket
History			Basic Bedrock		Valley Slope	Beach/Bar	Marsh	Savannah
X	Natural		Carb. Bedrock		Tableland	Sand Dune	Swamp	Woodland
	Cultural			X	Roll Upland	Bluff	Fen	Forest
		Site			Cliff		Bog	Plantation

Cover		Site		Plant Form			
X	Open		Open Water		Plankton	Forb	Coniferous
	Shrub	X	Shallow Water		Submerged	Lichen	Mixed
	Treed		Surficial Dep.		Floating-Lvd	Bryophyte	
			Bedrock	X	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
~~1~~	~~Super-canopy~~			
1	~~Canopy~~			
2	Sub-canopy	3	1	hawthorn sp
3	Understorey	4	2	hawthorn sp
4	Groundcover	5-7	4	Smooth brome > wild carrot > reed canary grass

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		R	R		

Species	Layer 1	2	3	4	Sample
wild carrot				O	
reed canary grass				O	
Common bulrush				R	
Smooth brome				O	

Wildlife and Other Notes

- possibly used as cattle pasture

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in WOD-078*

Project Name: Armow WF **Project #:** 1275

Observer(s): AMD, HLW

Date: Dec. 8/11 **Time (24h):** 15:30

Field #: WOD-078 **Weather:** Precipitation: None Temp (°C): 1

Map Code: S1 Wind Speed & Direction: 4/SW Cloud %: 70

Wetland Type: Swamp **Site Type:** R **Dominant Form:** treed (S,h) deciduous trees

% Open Water: Ø **ELC Code:** SWDMZ-2

Photos: 1152

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, freeman's maple, trembling aspen
c	
dc,dh,ds	
ts	
ls	
gc	
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: S, C | Organic ☐ Mineral ☒ (likely)

Rare Species (Local, Regional, Provincial):
none observed

Wildlife Notes:
None observed

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

*assessed from property line, no property access

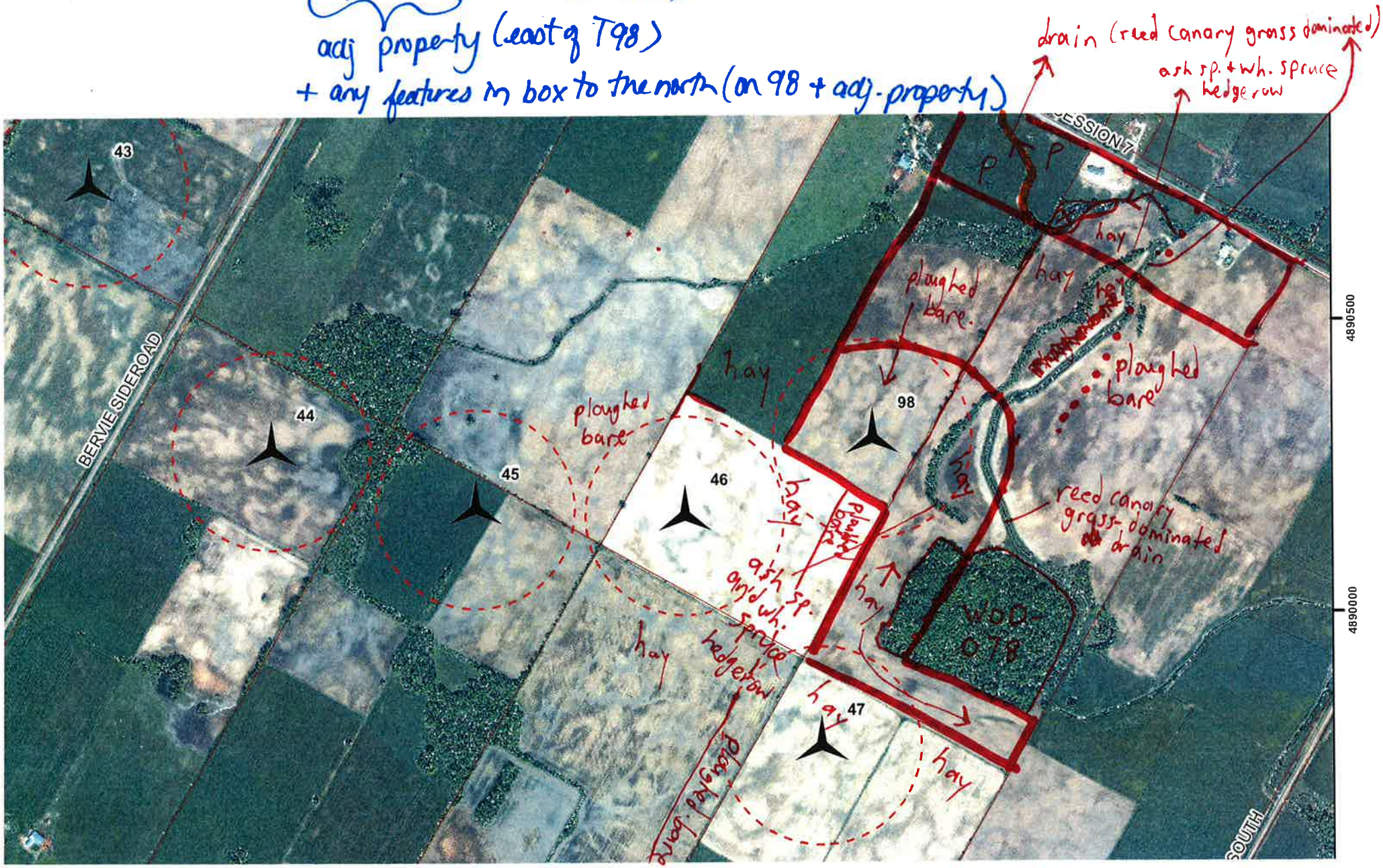
WET-035
S1

landuse, ELC, wet. eval, ~~bot mgt. catchment~~, ~~etc~~

adj property (east of T98)

+ any features in box to the north (on 98 + adj. property)

P: pasture (<15 cm tall)



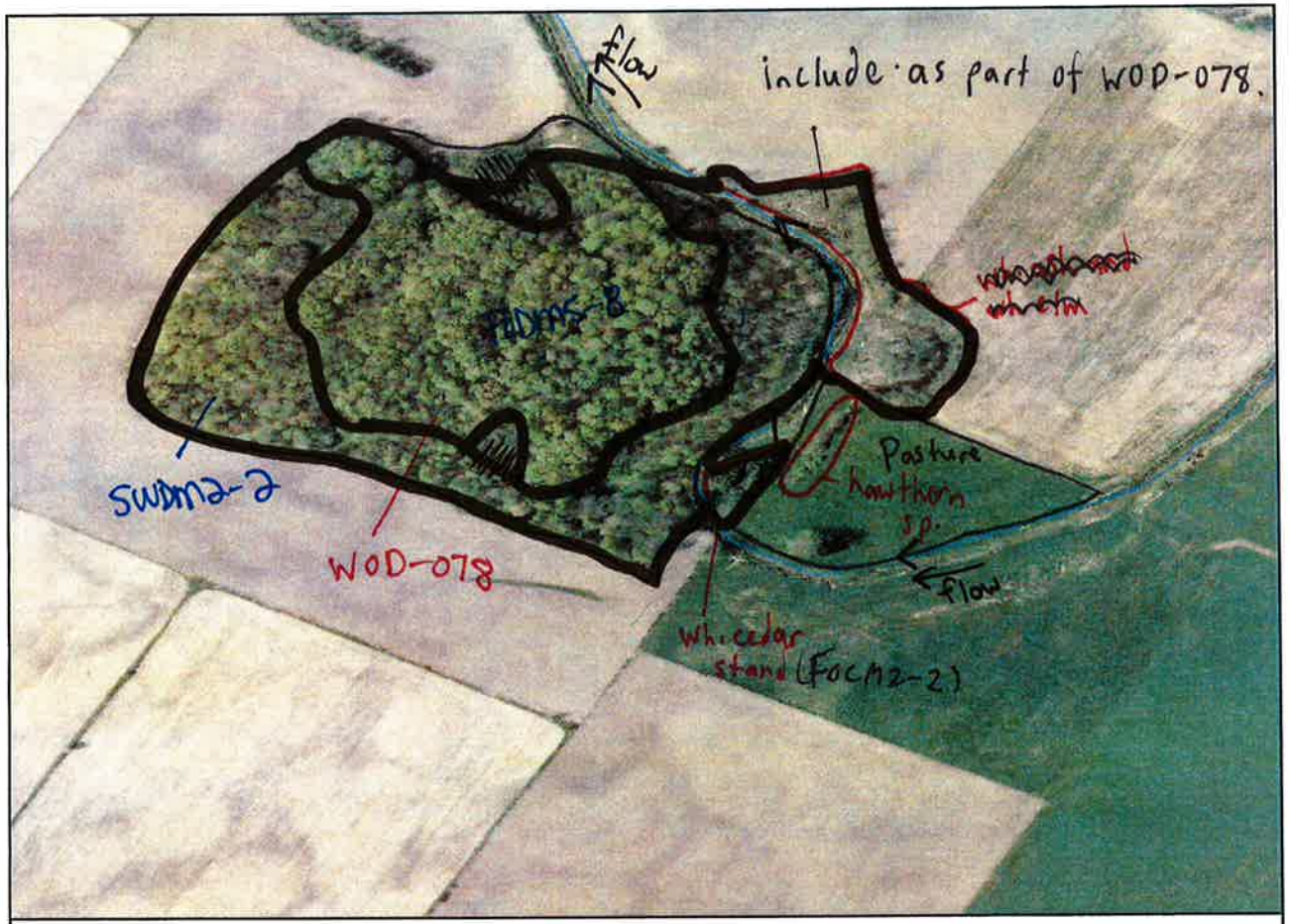
W (WOD-078)

X: drain riparian zone
- ash sp. and planted wh. pines (appear planted)
- some manicured lawn from landowner to N

MAP 22

(WOD-078)

N of T47



Map centre: 44° 09' 40.9" N, 81° 27' 29.2" W

Map created: December 5, 2011

0 80 160 240 320 m

Scale: 1:4,700

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

flows

SWDM2-2: permanent inflow and outflow, shown w black arrows on watercourse.

Ind. ff

SI

WET-035

Wetland

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WLWOD078

T111 Land use



0 100 200 300 400 m

Map centre: 44° 09' 52.1" N, 81° 27' 09.0" W

Map created: December 5, 2011

Scale: 1:8,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

P: pasture

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Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	HWMCW WF
Polygon:	WOD-TK
UTM:	17T 0463401 4889856
Date:	December 8, 2021 **Time:** 15:30
Surveyor(s):	ADM, TLW
Weather:	1°C, 70% cloud cover, wind LT from SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

* ELC completed adjacent to woodlot, no access
(E: 0463404 N: 4889844)
- Photo 1152

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page 1 of 2

* Roadside ELC (see WOD-76 THF map)

Site: Arnow WF
Polygon: WOD-076. ★WOD-099★
UTM: 17T 0470312 4897054
Date: Nov. 18/11 Time: 13:00
Surveyor(s): NGM, AMD
Weather: Temp 2°C, wind W 4, C.C. 100%, No precip

Community Classification

Vegetation Type: Dry-Fresh Sugar maple-White Ash Decid Forest (TOOMS-8)
Inclusion:
Complex:

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Sugar Maple
2	Sub-canopy	2	3	Sugar Maple ≥ White Ash = White Birch = Am. beech
3	Understorey	3	3	Beech. ironwood. dogwood > Viburnum opulus
4	Groundcover	5-7	3	Wood strawberry > Calico Aster = Grass. Goldenrod sp.

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

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	R	> 50
Snags	—	< 10	—	10 - 24	—	25 - 50	—	> 50
Deadfall/Logs	O	< 10	R	10 - 24	—	25 - 50	—	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Page 2 of 2

Soils

	1	2	3
Position			
Aspect:			
%			
Type			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-076

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES: Photo # 1091

- completed from roadside (Bruce Rd 1)
- very Sugar Maple dominant
- wooded area to NW of aggregate pit + ploughed area appears to be same species composition as wooded areas directly adjacent to Bruce Rd 1
  - ↳ cannot confirm, no site access, assessed through binoculars.

★ Community on W side of Bruce Rd 1 confirmed w/property access

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

(See WOD-076/077 for map)

Site:	Armow WF
Polygon:	WOD-076 ~~WOD-079~~
UTM:	17T 0470312 4997054
Date:	Nov. 18/11
Time:	12:40
Surveyor(s):	AmD, NCrM
Weather:	2°C, wind 4 from W, 100% CC

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
sugar maple	D	D			
Viburnum opulus			R		
black cherry		R			
alt. leaf dogwood			O		
red osier dogwood				R	
wh. birch		O			
wh. ash		O	O	O	
Am. beech		O	R		
trembling aspen	R				
hemlock	R				

Species	Layer 1	2	3	4	Sample
grass leaf goldenrod				O	
reed canary grass				R	
woodstrawberry				O	
hemp nettle				R	
tall goldenrod				R	
calico aster				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

* Roadside ELC

Site:	ARMOW WF * WOD-079 *
Polygon:	WOD-077/WET-049
UTM:	17T 0470429 4897256
Date:	Nov. 18/11 Time: 13:20
Surveyor(s):	N6M, AMD
Weather:	2°C ~~Sunny & cloudy periods~~, wind 4 from SW, 100% CC.

Community Classification

Vegetation Type:	Green Ash Deciduous Swamp (SWDM2-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	/ Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural	X unknown	Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Green Ash > Freeman's Maple
2	Sub-canopy	2	4	Green Ash > Freeman's Maple > white cedar
3	Understorey	3		- did not observe
4	Groundcover	5-7	2	Reed Canary Grass > Colt's Foot

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis		< 10		10 - 24	O	25 - 50	R	> 50
Snags	—	< 10	—	10 - 24	—	25 - 50	—	> 50
Deadfall/Logs	—	< 10	—	10 - 24	—	25 - 50	—	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-077/WET-049

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- Roadside ELC
- Appears to be Freeman's Maple/Green Ash swamp based on habitat, w Freeman's Maple
- Standing water pockets visible
- very little ground cover other than Reed Canary

Photo # 1092

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-077/WET-049 & WOD-079
UTM:	17T 0470429 4897256
Date:	Nov. 18/11
Time:	13:20
Surveyor(s):	AMO, NGM
Weather:	2°C, wind 4 from SW, 100% CC

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
wh. birch		R			
green ash	A	A			
freemans maple	O	O			
yellow birch		R			
wh. cedar		R			

Species	Layer 1	2	3	4	Sample
reed canary grass				A	
coltsfoot				R	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

w(WOD-079)

Project Name: Arrow **Project #:** 1275

Observer(s): PWD

Date: Nov 24, 2011 **Time (24h):** 10:00

Field #: WOD077 / WET049 **Weather:** Precipitation: None Temp (°C): 3

Map Code: S1 Wind Speed & Direction: 2/SE Cloud %: 100

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Treed (S, h)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos: 0645

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Maple sp. (25%) Green Ash (25%) Yellow Birch 15% White Elm 5%
c	E. Hemlock 1% E. White Cedar 1%
dc,dh,ds	
ts	
ls	
gc	Fern sp. 1% Sensitive Fern 1%
ne	Sedge sp. 1% Canary reed gr. (25%)
be	
re	
ff	
f	
su	
m	

Soil type: Unknown Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **si**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

WET-005

S1

• pooled water 30%

(WOD 079)

Staging Area East of Glammis Bog



Map centre: 44° 13' 41.8" N, 81° 22' 25.2" W

Map created: November 16, 2011

0 200 400 600 800 m

Scale: 1:12,000

Ind. AN

S1

WET-005

wetland

WOD-077/WET-049

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

agg. aggregate.
R: residential

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w(WOD-079) Arrow WF

Staging area east of Bruce Rd 1 (2)



Map centre: 44° 13' 42.9" N, 81° 22' 15.0" W

Map created: November 22, 2011

0 100 200 300 400 m

Scale: 1:6,300

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

Nov 24/11
PND
WOD-77/WET-049
wetland delineation

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IV(WOD-079)

FODm5-8

WOD-079



Map centre: 44° 13' 23.2" N, 81° 21' 43.5" W

Map created: January 6, 2012

0 200 400 600 800 m

Scale: 1:14,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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(WOD-079)

WOD-079(2)



Map centre: 44° 12' 49.0" N, 81° 21' 13.6" W

Map created: January 6, 2012

0 200 400 600 800 m

Scale: 1:14,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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N S

Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Armaw WF
Polygon:	(WOD-082 (S of T66)(2)
UTM:	17T 0459708 4889162
Date:	Dec. 2/11 Time: 13:15
Surveyor(s):	AMD, JRW
Weather:	1°C, 90% cc, wind 3 from SW

Community Classification

Vegetation Type:	Fresh - Moist Willow Lowland Decid. Forest (FODM7-3)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	X Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	X Woodland
Cultural		Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	green ash > willow sp. = wh. elm
2	Sub-canopy	2	3	green ash = willow sp. > wh. elm.
3	Understorey	3	3	hawthorn sp. = willow > riverbank grape
4	Groundcover	5-7	3	reed canary grass > goldenrod spp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.			O		
maybe - willow sp.	O	O	O		
crack - wild raisin			R		
wh. elm	O	R			
green ash	A	O			
wh. ash	R	R	R		
red osier dogwood			D	D	
black cherry		R			
riverbank grape			O	O	
maybe exigua - willow sp.			O		

Species	Layer 1	2	3	4	Sample
Com. burdock				R	
goldenrod spp.				O	
reed canary grass				O	

Wildlife and Other Notes

- riparian veg. managed (cut) and placed in piles @ field edge
- polygon is riparian area of small natural watercourse, hawthorn, green ash and willow dominated
- 1122, 1123, 1124 (photos)
- recent snow covering groundcover

Desktop

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): CLH

Date: Apr 19 2012 **Time (24h):**

Field #: **Weather:** Precipitation: Temp (°C):

Map Code: S Wind Speed & Direction: Cloud %:

Wetland Type: Swamp **Site Type:** R **Dominant Form:** h (s,h)

% Open Water: Type 1 (stream) **ELC Code:** FODM7-3

Photos: <5%.

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, willow sp.
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

CANSIS soils - clay loam variable alluvial (bottomland)

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

S1

WET-045

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Armow WF
Polygon:	(S of TGG)(1) (WOD -082)
UTM:	17T 0459493 4889126
Date:	Dec. 2/11 **Time:** 12:55
Surveyor(s):	AMD, JRW
Weather:	1°C, 90% CC, wind 3 from SW

Community Classification

Vegetation Type:	Hawthorn Deciduous Shrub Thicket (THDM2-11)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	X Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	X Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	-		
1	Canopy	2	2	willow sp = wh. elm = green ash
2	Sub-canopy	3	3	hawthorn sp.
3	Understorey	4	3	hawthorn sp >> riverbank grape > wild raisin
4	Groundcover	5-7	2	tall goldenrod = goldenrod and aster spp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
willow sp	R	R	R		
hawthorn sp		A	A		
wh elm	R	R			
wild raisin			O		
riverbank grape			O	O	
green ash	R	R			

Species	Layer 1	2	3	4	Sample
tall goldenrod				O	
common milkweed				R	
aster spp.				O	
goldenrod spp				O	

Wildlife and Other Notes

- riparian area of small natural watercourse
- some riparian veg (woody) has been cut recently - appears managed
  - placed in large piles, identified as possible wildlife habitat, not included in deadfall analysis
- 1125, 1126 (photos)

(WOD-082)


Ontario
Ontario Geological Survey
no longer exists
no longer exists
THOMAS
1
2
1
1
same as (1)
same as
1
1
1

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities SOFT66 (No. 2)

Woodland ID (WOD- 082 *)

Project Name: ArrowWF

Project #: 1275

Date: Dec 2, 2011

Observer(s): JRW, AMD

* Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	17T UTM	Comments
Plot 1	0		0459625 4889165	
Plot 2	0		0459650 4889153	
Plot 3	0		0459684 4889132	
Plot 4	0		0459734 4889136	
Plot 5	1		0459864 4889172	
Plot 6				
Plot 7				
Plot 8				
Plot 9				
Plot 10				
Plot 11				
Plot 12	total snags	1		
Plot 13	snags/ha.	4		
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

* Riparian zone has all been torn-up! Almost no standing veg. left (see notes on ELC forms)
* snow + 1ft of mud to hard to get close to riparian area

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Woodland ID (WOD- _____)

Project Name: _____

Project #: _____

Date: _____

Observer(s): _____

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1				
Plot 2				
Plot 3				
Plot 4				
Plot 5				
Plot 6				
Plot 7				
Plot 8				
Plot 9				
Plot 10				
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armour WF * NOD-082 *
Polygon:	ST-66
UTM:	17T 0459708 4889162
Date:	Dec 2, 2011 **Time:** 13:00
Surveyor(s):	JRW, AMD
Weather:	1°C, CC=90%, wind 3, SW-W, no precip, snow on ground

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue Jay	VO		2						
B	BCCH	VO		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ✓ Thicket
- ___ Savannah
- ✓ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ✓ Organics Pile
- ✓ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Wood piles along creek	17T 0459520 4889117	2 large wood/organic piles. Photo #1127

Describe Valley (depth, geomorphological traits):

Additional Details:

*wood piles/brush piles all along creek.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armour WF
Polygon:	WOD-084 * WET-011 * S1
UTM:	
Date:	OCT 6, 2011 Time: 11 06 - 17:00
Surveyor(s):	CH, KSW
Weather:	

Community Classification

Vegetation Type:	SWDM4-5 Dry-Fresh Mineral Deciduous Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			Freeman's maple = trembling aspen > white elm = green ash
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's maple	O	A	O	O	
Green Ash	O	O	O		
Trembling aspen	O	O			
White Elm	O				

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

* this woodland was completed at same time as WOD-016. S1 communities from wetland evaluation are consistent from this woodland + WOD-016. See data sheets associated w/ WOD-016 for detailed species list + map. Surveyed from property line

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

N (WOD-016)

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH, KSW

Date: Oct 6 2011 **Time (24h):** 14:06

Field #: WET-006 **Weather:** Precipitation: None **Temp (°C):** 20°

Map Code: S2 **Wind Speed & Direction:** 2 **Cloud %:** 0

Wetland Type: Swamp **Site Type:** Isolated **Dominant Form:** ts (tall shrub)

% Open Water: 0 % **ELC Code:** SWTO2 Willow Organic Deciduous Thicket Swamp

Photos: DSC-0949, 0948

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm, Freeman's maple.
c	
dc,dh,ds	
ts	Salix petiolaris, Salix lucida, wild raisin, salix bebbiana
ls	Swamp rose, narrow-leaved meadowsweet
gc	false nettle, swamp beggarticks, bidens tripartita, northern bugleweed
ne	
be	
re	water parsnip.
ff	
f	
su	
m	

Soil type: Organic 0f2 | Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Surrounding area drains to this community. But surrounding area is also wetland of Palustrine

WET-011
S2

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH, KSW

Date: Oct 6 2011 **Time (24h):** 14:06 - 14:00

Field #: WET-006 S1 **Weather:** Precipitation: None **Temp (°C):** 20

Map Code: S1 **Wind Speed & Direction:** 2 **Cloud %:** 0

Wetland Type: Swamp **Site Type:** Palustrine **Dominant Form:** h (deciduous trees)

% Open Water: 2 % **ELC Code:** SWDM 4-5 Poplar Mineral Deciduous Swamp

Photos: DSC-0950 ⇒ Woodland Pond

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple, trembling aspen / white elm, green ash, trembling aspen
c	white cedar
dc,dh,ds	
(ts)	red osier, wild raisin / winterberry, salix bebbiana, spicebush
ls	prickly gooseberry, black raspberry
(gc)	equisetum hyemale, dwarf raspberry, fringed loosestrife, woodland strawberry
ne	scouring rush, bladder sedge
be	
re	
ff	
f	
su	
(m)	moss sp.

Soil type: S:L | Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Woodland Pond containing water. No inflows. High bank on SE side, low organic on NW side. Outflows from this pond apparent due to presence of channels. Drainage is NW towards S2 community.

WET-011
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

(T 3) in WOD-016

Site:	Armour WF 1275
Polygon:	WET 006 S1
UTM:	
Date:	Oct 6, 2011 **Time:** 7:04
Surveyor(s):	KW CLH
Weather:	Sunny, 10°C, 07cc, wind 2

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's Maple	O	A	O	O	
Wild Raisin			O		
Green Ash	O	O	O		
Dwarf Raspberry				O	
Black Raspberry				R	
Red Osier Dogwood			O	O	
Swamp Rose			O		
Eastern White Cedar		O	O	O	
Hawthorn sp.		O			
Bebb's Willow		R			1
Trembling Aspen	O	O			
Riverbank Grape		O	O	O	
White Elm	O		O	O	
Winterberry		O	O		2✓
Alternate-leaved Dogwood			R		
Spicebush			O		

Species	Layer 1	2	3	4	Sample
Sensitive Fern				O	
Bladder Sedge				O	
Woodland Strawberry				O	
Poison Ivy				O	
Calla Aster				O	
Agrimony				O	
Common Dandelion				O	
Flat-topped White Aster			R		
Heal-all				O	
Common Milkweed			R		
Canada Goldenrod			O		
New England Aster			O		
Scouring Rush				O	
Narrow-leaved Meadowsweet			O		
Prickly Gooseberry				O	
Spreading Wood Fern				O	
Shinleaf				O	
Crested Wood Fern				R	
Fringed Loosestrife				O	
Common Speedwell				O	
Meadow Horsetail				R	
Moss Sp.				A	

Armow WF — w WOD — Oct. 6/7 20

Oct 6: Sunny 20℃, Wind 2 CC0%. — CLH, KJW

Oct 7: Sunny, 12°C, wind 1 CC 0%.

WET-006 — W(WOD-016) — WET-011*.

Palustrine Wetland.

S1

4 forms >25% cover → deciduous trees, dominant form

h	freeman's maple, trembling aspen
Es	red osier dogwood, wild raisin
gc	equisetum hyemale, dwarf raspberry
m	moss sp.

Contains a small woodland pond. Contains water → No inflows. High bank on SE side, low bank on NW side. Outflows from this pond are apparent due to presence of channels on the NW side. Drainage throughout the community is NW towards S1 community. 1T 0462809 4899461

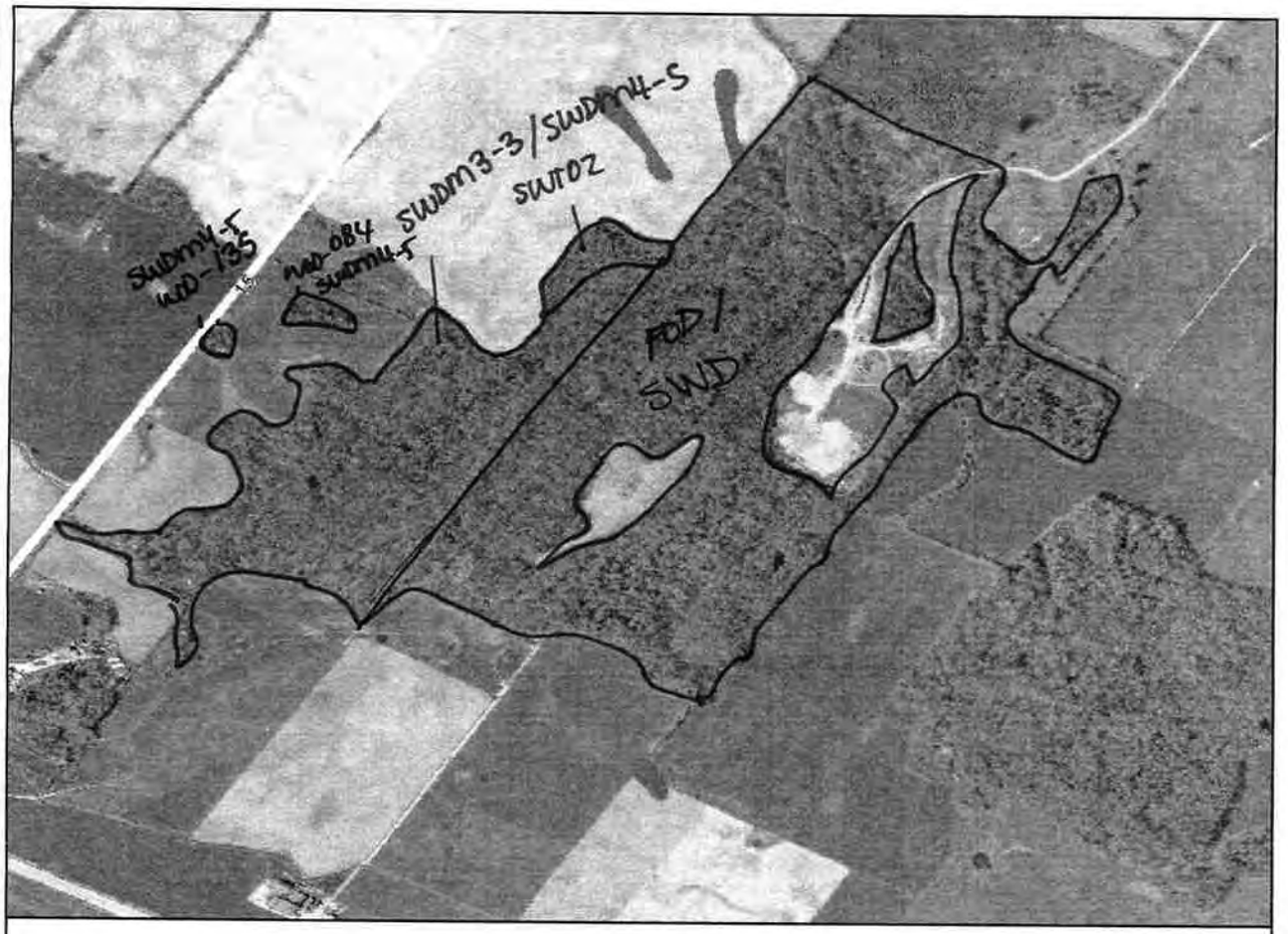
Approximately 6m x 3m in size.

Soil:

WOD - 016

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

WOD-016



Map centre: 44° 14' 44.5" N, 81° 27' 53.4" W

Map created: December 29, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AD S6 general SWP poly.

Wetlands WET-011

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N S

Ontario

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WOD 016

462000

4900000

SIDEROAD 10

CONCESSION 2

ditch → NO connecting flows

Complex AD

S1-S6

Wetland

Perm.

55
55

1
1

2

3
3

S1

WET-008

#7

WET-007

#8

WET-006

S4

S3

S2

SIDEROAD 15

BRUCE ROAD 15

462000

4900000

Armow Wind Farm

Field Map

Legend

- Project Area (Sept 30, 2011)
- Proposed Turbine (L04)
- Proposed Turbine (L02)
- Highway
- Primary Road
- Secondary Road
- Proposed Infrastructure
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

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Imagery provided by: Golder Associates, 2011

Project: 1275
Date: Tuesday, October 11, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:10,000

N

0 200 400 600 Metres

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Airview
Polygon:	WOD-iv (WOD-087) + (WOD-086)
UTM:	
Date: Nov 10 2011	Time: 15:00
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	FODM6-1 Fresh-Moist Sugar Maple Lowland Ash Dec. Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Ash sp. > Maple sp.
2	Sub-canopy	3	3	Ash sp. > Maple sp. ≫ White Pine > White Birch
3	Understorey	4	2	Ash sp. > Crataegus sp.
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample

Desktop

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arnaud **Project #:** 1275

Observer(s): CLH

Date: April 9 2012 **Time (24h):**

Field #: **Weather:** Precipitation: Temp (°C):

Map Code: S6 Wind Speed & Direction: Cloud %:

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h

% Open Water: 0 **ELC Code:** FODM6-1

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Ash sp.
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

no site access
CANSIS soils: sandy loam
clay loam.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

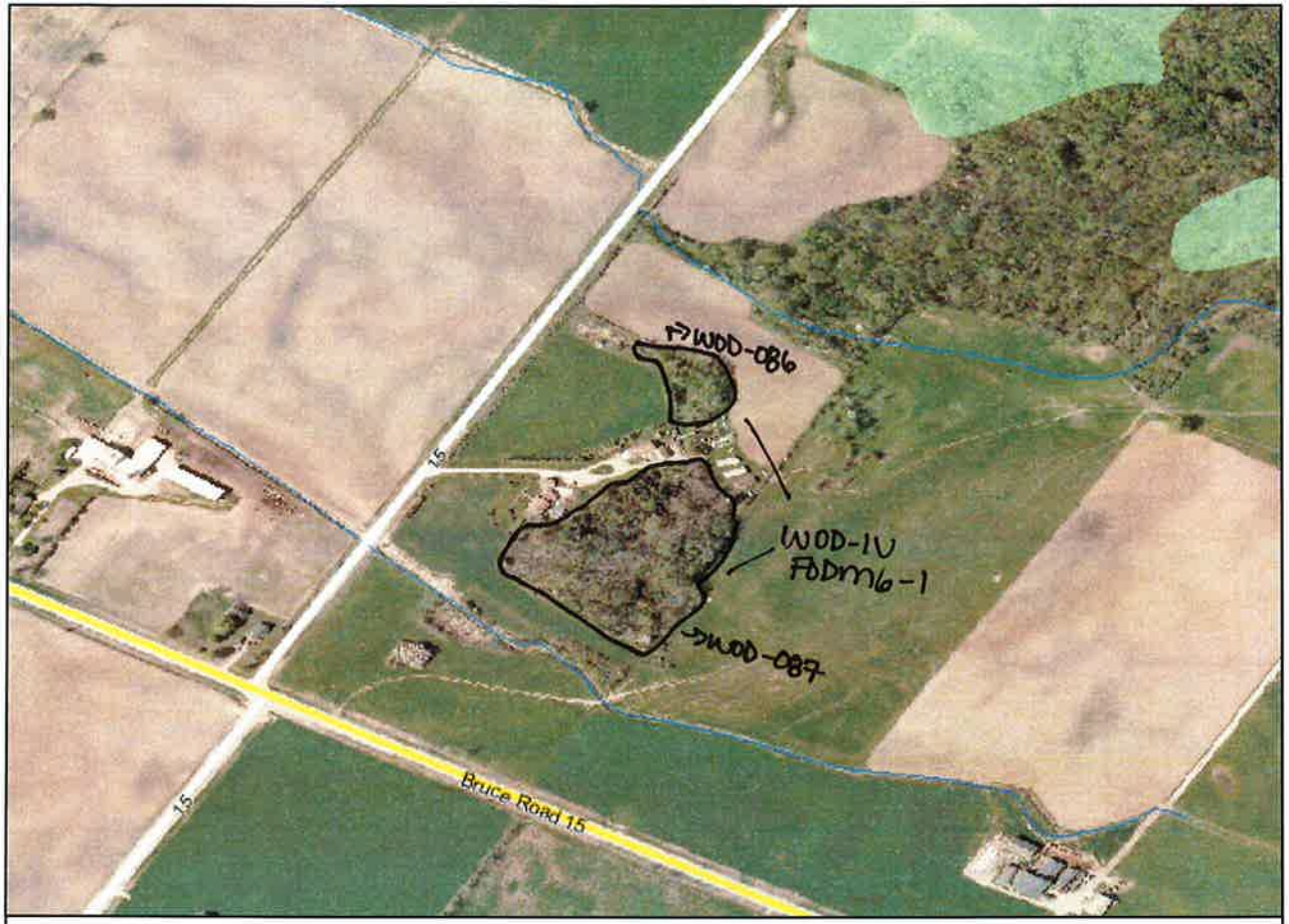
Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

S7

WET-011
WOP-087

WOD-087



Map centre: 44° 14' 33.9" N, 81° 28' 25.0" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:7,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

WET-011
S7

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: WET-049 B 51	#WOD-088
UTM:	
Date: Nov 5 2011	Time: 15 26
Surveyor(s): CLH	
Weather: 10°C CC 5% Wind 4/N	No precip

Community Classification

Vegetation Type:	SWDM4-2 White Elm mineral Deciduous
Inclusion:	Swamp
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
X Treed	Bedrock	Floating-Lvd	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	white elm > green ash
2	Sub-canopy	3	4	white elm > green ash > hawthorn sp.
3	Understorey	4/5	3	hawthorn sp > wild raisin
4	Groundcover	6/7	1	not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis		0	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags			< 10		10 - 24		25 - 50		> 50
Deadfall/Logs			< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

roadside assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	1275
Polygon: WET-049 B S1	*WOD-088*
UTM:	
Date: NOV 5 2011	**Time:** 15:26
Surveyor(s): CH	
Weather: 10° 90% Wind 4/N No precip.	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white elm	D	A			
green ash		O			
hawthorn sp			O		
wild raisin			O		

Species	Layer 1	2	3	4	Sample

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH

Date: Nov 5 2011 **Time (24h):** 15:26

Field #: WET-049 *1 WOD -088 **Weather:** Precipitation: None Temp (°C): 10

Map Code: S1 * Wind Speed & Direction: 4 / N Cloud %: 5

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h (S,h)

% Open Water: 0% perm. **ELC Code:** SWDM 4-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm., green ash, hawthorn sp
c	
dc,dh,ds	
ts	wild raisin
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; F=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric, **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

roadside assessment.

WET-012
S4

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: B	Contiguous to WET-049 * WOD-088*
UTM:	
Date: Nov 5 2011	Time: 15:30
Surveyor(s): CH	
Weather: 10°C, 5% CC	Wind 4/N Nopreep

Community Classification

Vegetation Type:	TAGM1 Coniferous plantation
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy		0	—
1	Canopy	2	2	green ash
2	Sub-canopy	3	4	white pine 77 green ash
3	Understorey	4 3		not visible
4	Groundcover	6 7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

Not visible

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	1275
Polygon: B contiguous to WET-049 * WOD-088 *	
UTM:	
Date: Nov 5 2011	Time: 15:30
Surveyor(s): CLH	
Weather: 10°C, 52% cc, Wind 4/N No precip	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	Layer 2	Layer 3	Layer 4	Sample
green ash	O	D			
white pine		D			
other species not visible					

Species	Layer 1	Layer 2	Layer 3	Layer 4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

White pine is very thick and 20m tall. very dense (not naturalized). ash likely grew up with it or was succeeding when pine was planted.

roadside assessment

CLH

Based on the texture of aerial photography and the characteristics of the woodland to the west (T53 + 54), this woodland is very likely to contain a heavy component of white elm swamp with some ridges of upland forest. However, it appears the wetland habitat dominates. Due to a lack of access and slight differences in texture from the woodland to the west (differences in textures are not as noticeable as here) these upland areas cannot be confidently separated. Inaccuracies in the area of the wetland would not be so large as to significantly alter the evaluation score.

W (WOD-088)

J. L. DARLING CORP. TACOMA, WA
www.RiteInTheRain.com

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

W(WOD-088)

Site: Armaw	1275
Polygon: WET-032 (T53, T54)	53 * WOD-057 *
UTM:	▷Not Woodland
Date: NOV. 5 2011	Time: 15:54
Surveyor(s): CLH	
Weather: 10°C CC5% Wind 3/N No precip.	

Community Classification

Vegetation Type:	SWTM 3-6 Mixed Willow Mineral
Inclusion:	Deciduous Thicket Swamp.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	X Shallow Water	Plankton	Forb	Coniferous
X Shrub	Surficial Dep	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	2	green ash > white elm
3	Understorey	4/5	4	willow sp. > Salix eriocephala > reed canary > red osier
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WET-032 (TS3, TS4)	53 *WOD-087* ↳not woodland
UTM:	
Date: Nov 5 2011	Time: 15:54
Surveyor(s): CLH	
Weather: 10°C, CC5%, Wind 3/N No precip.	

w(WOD-088)

Layers: >10 1=canopy; 2-10 2=sub-canopy; 0.5-2 3=understorey; <0.5 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
willow sp.			A		
Salix eriocephala			O		
white elm		O			
green ash		O	O		
red osier			O		

Species	Layer 1	2	3	4	Sample
reed canary			O		

Other Notes (Landowner Contact, General Notes, etc.)

N. Shrike observed

roadside assessment

53
WET-012

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armour **Project #:** 1275 in WOD-088

Observer(s): CLH

Date: Nov 5 2011 **Time (24h):** 1554

Field #: WET-032 (TS3,S4) **Weather:** Precipitation: None Temp (°C): 10

Map Code: S3 Wind Speed & Direction: 3 /N Cloud %: 5

Wetland Type: Swamp **Site Type:** I + P. **Dominant Form:** ts. (S, ts)

% Open Water: 0 **ELC Code:** SWTM3-6

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm, green ash
c	
dc,dh,ds	
(ts)	willow sp., Salix eriocephala, red osier dogwood
ls	
gc	
(ne)	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

roadside assessment

WET-012
S3

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: HR 2	* (WOD-088) *
UTM:	
Date: NOV. 5 2011	Time: 15:15
Surveyor(s): CLH	
Weather: 10°C, CC5%, Wind 3/N, No precip	

Community Classification

Vegetation Type:	TAGMS Fencerow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	hawthorn sp.
3	Understorey	4 5	0	—
4	Groundcover	6 7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis		< 10		10 - 24		25 - 50		> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: HR 2	
UTM:	
Date: Nov 5 2011	Time: 15:15
Surveyor(s): CLH	
Weather: 10°C, CC5%, Wind 3/N, No precip.	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 710 2-10 0.5-2 <0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		A			
Layer 4 species not visible					

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

roadside assessment

ELC Community Description (Part A)

Metadata

Site: Arnaud	-WWOD-088
Polygon: Meadow D	
UTM:	
Date: Nov 5 2011	Time: 15:20
Surveyor(s): CLH	
Weather: 10°C, CC 5%. Wind 3/N	

Community Classification

Vegetation Type:	MEGM 4-1 Open Graminoid Meadow Type
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Mtn	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Fern	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	0	—
2	Sub-canopy	3	0	—
3	Understorey	4/5	4	orchard grass > timothy > canada goldenrod
4	Groundcover	6/7	?	Not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 1m 5 1 - 0.5m 6: 0.5 - 0.2m 7 <0.2m

Cover Codes: 0 none 1 0 10% 2 10 - 25 3 25 - 60% 4 >60%

Size Class Analysis	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

roadside assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

WGWOD-088) 1275

Site: Arnow	
Polygon: meadow	
UTM:	
Date: Nov 5 2011	Time: 16:10
Surveyor(s): cut	
Weather: 10°C, cc 5%, wind 3/N ND precip.	

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
orchard grass			A		
canada goldenrod			R		
timothy			O		
other species not visible					

Species	Layer 1	2	3	4	Sample

ELC Community Description (Part A)

Metadata

Site: Arnprior	1275
Polygon: HR1	W (WOD-088)
UTM:	
Date: Nov. 5 2011	Time: 15:15
Surveyor(s): CLH	
Weather: 10°, CC 5%, Wind 3/N	No precip

Community Classification

Vegetation Type:	TAGM5 Fernorm
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Gravel/Cave	Pond	Meadow
Aquatic	Parent Mtn	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	0	—
2	Sub-canopy	3	4	white ash > hawthorn sp. > apple > white elm
3	Understorey	4/5	0	—
4	Groundcover	6/7	?	not visible

HT Codes: 1: >25m 2: 25 - 10m 3 10 - 2m 4 2 - 1m 5 1 - 0.5m 6: 0.5 - 0.2m 7 <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnaud 1275

Polygon: HR1

UTM: W(WOD-088)

Date: Nov. 5 2011 Time: 1550

Surveyor(s): CLH

Weather: 10°C (C5)o, Wind 3/N No precip

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White ash		O			
hawthorn sp		O			
apple		O			
White elm		R			
Other species not visible					

(WOD-088)

Nov 5 2011
CLH

Concession 2 and Sideroad 10



Map centre: 44° 15' 34.4" N, 81° 28' 47.3" W

Map created: January 4, 2012

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AC WET-053 054 012

wetlands

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Ontario

WET-028?

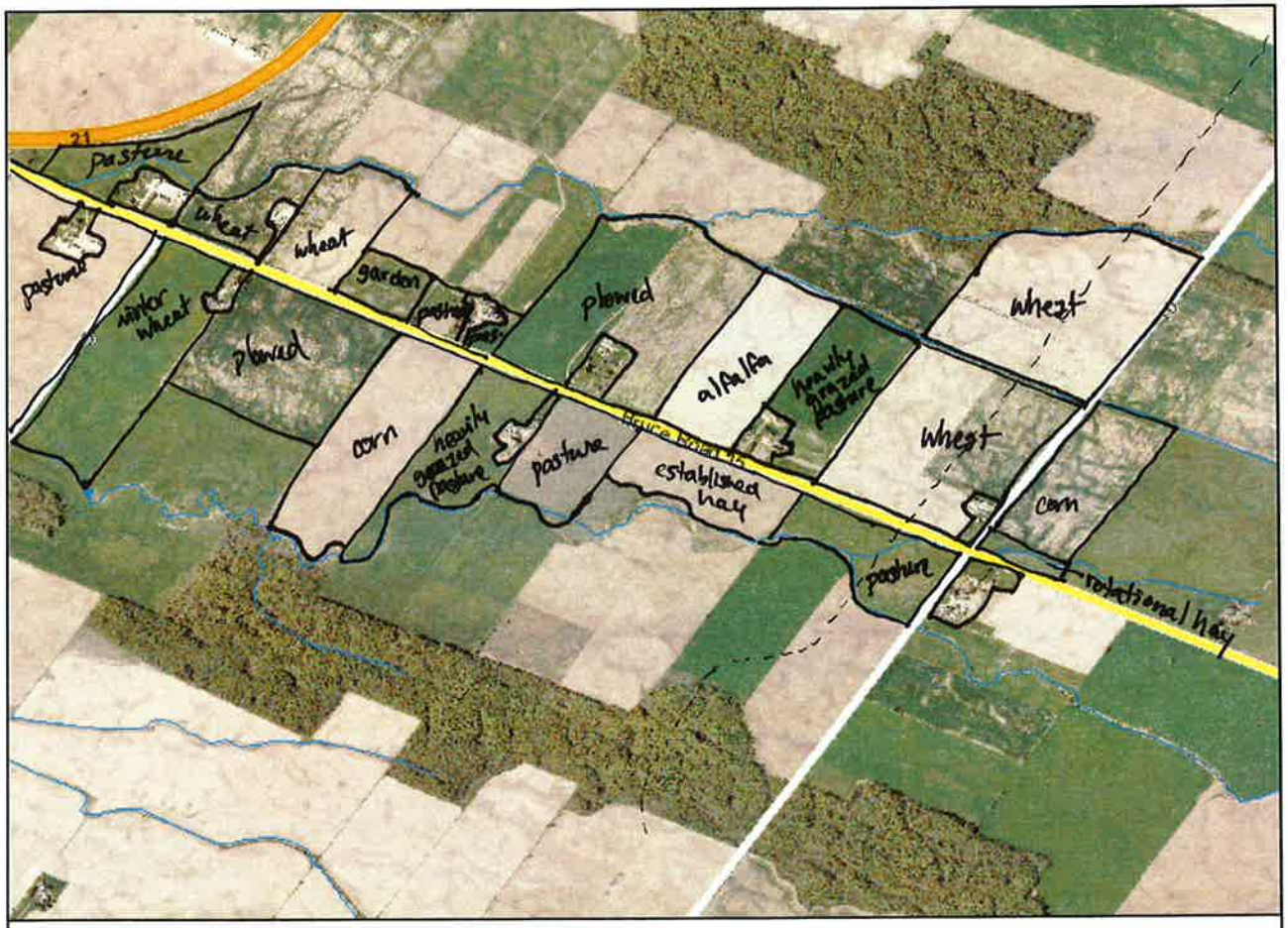
D = MEGM4-1
woodland with WET-049 intermixed with TAGM1

HR1 = TAGM5
HR2 = TAGM5 ✓

(WOD-088)

Nov 5 2011
cut

Bruce Rd 15 and Sideroad 10



Map centre: 44° 15' 08.1" N, 81° 30' 30.1" W

Map created: January 4, 2012

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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ELC Community Description (Part A)

Metadata

Site:	Arnow 1275
Polygon:	WET-047 (A) *WOD-089*
UTM:	
Date:	NOV 5 2011 Time: 14:48
Surveyor(s):	CLH
Weather:	10°, No precip, Wind 3/N ccs%

Community Classification

Vegetation Type:	SWDM3-3 Swamp Maple mineral Deciduous Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Cleeve/Cave	Pond	Meadow
Aquatic	Parent Mat.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Rolling Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	4	Freeman's maple >> Green Ash > Trembling Aspen > White Elm.
2	Sub-canopy	3	3	White Elm > Green Ash > Balsam Poplar > White Birch
3	Understorey	4	3	Wild Raisin > Reed Canary > Red Osier > Balsam Poplar
4	Groundcover	7		agrimony (nothing else visible)

HT Codes: 1 >25m 2: 25 - 10m 3 10 - 2m 4: 2 - 1m 5 1 - 0.5m 6 0.5 - 0.2m 7 <0.2m

Cover Codes: 0 none 1: 0 - 10% 2 10 - 25 3 25 - 60% 4 >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	O	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnold W	
Polygon: WET 047 (A)	WOD-089
UTM:	
Date: Nov 5 2011	Time: 14:48
Surveyor(s): CLH	
Weather: 10°C, No precip. Wind S/W CCS%	

Layers: 710 2-10 0.5-2 60.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	O				
white elm	O	A			
trembling aspen	O				
Freeman's maple	A				
white cedar		R	R		
balsam poplar		O	O		
white birch		O			
white spruce			R		
white pine		R			
shining willow			R		
white elderberry			R		
wild raisin			O		
red osier			O		

Species	Layer 1	2	3	4	Sample
reed canary			O		
agrimony				O	
phragmites			R		
Typha latifolia			R		

Wildlife and Other Notes

roadside survey.
Cons. 2.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow	**Project #:** 1275	~~X~~ ~~X~~ in (WOD-082)
Observer(s): CLH		
Date: Nov 5 2011	**Time (24h):** 14:48	
Field #: WET-047 (A)	**Weather:** Precipitation: None	Temp (°C): 10
Map Code: S1	Wind Speed & Direction: 3 /N	Cloud %: 5
Wetland Type: Swamp	**Site Type:** I **Dominant Form:** h (S,h)	
% Open Water: 0% approx	ELC Code: SWDM3-3	
Photos:		

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple, green ash, white elm, trembling aspen
c	white spruce
dc,dh,ds	
(ts)	wild raisin, shining willow, white elderberry, red osier dogwood
ls	
gc	agrimony
ne	reed canary grass
be	
re	Typha latifolia, phragmites australis,
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

WET-002

S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: A meadow	
UTM:	@ (WOD-089)*
Date: Nov 5 2011	Time: 14:30
Surveyor(s): CLH	
Weather: No precip. 5% CC 10°C, Wind 3/N.	

Community Classification

Vegetation Type:	MEGm3 Dry Fresh Graminoid Meadow.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Mtn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	1	White ash
3	Understorey	4/5	0	—
4	Groundcover	6/7	4	orchard grass

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: A meadow.	
UTM:	
Date: Nov 5 2011	Time: 14:50
Surveyor(s): CLH	
Weather: No precip. 5% CC 10° Wind 3/N	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
orchard grass				A	
white ash		R			
other species not visible					

Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

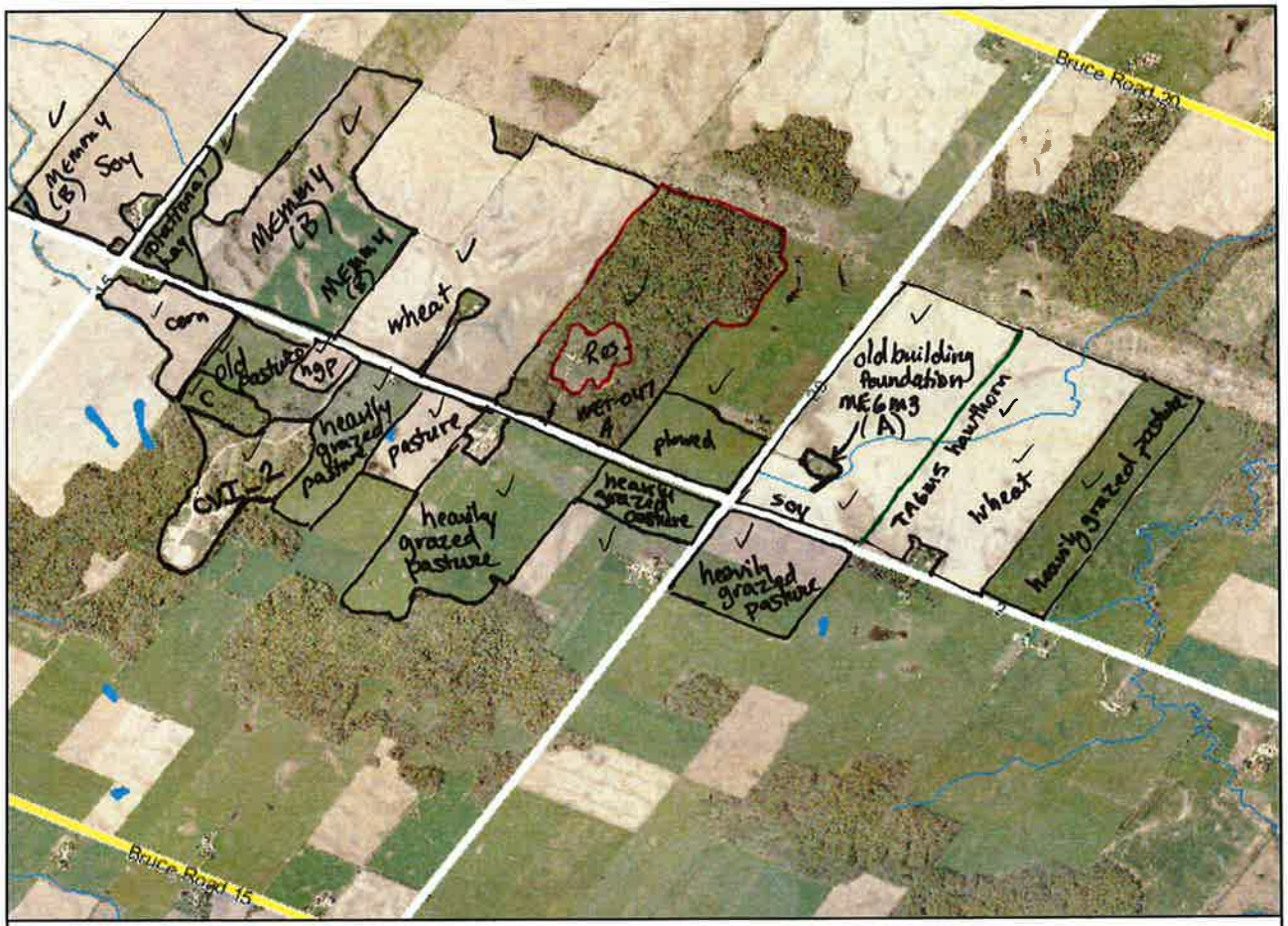
roadside survey

old building foundation (office: 17T 0464980 4899622)

- old yard turned to meadow.

9 wetlands complexed in memmy (B) shown on attached map ← WOD-089 → Nov 5 2011 CLH

Concession 2 and Sideroad 20



Map centre: 44° 14' 57.5" N, 81° 26' 43.0" W

Map created: January 4, 2012

0 500 1,000 1,500 2,000 m

Scale: 1:29,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AF

S1 ✓ WET-002

Wetlands

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources (OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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WET-047 = SWDM3-3
B = memmy 4
MEGM3 (A) = MEGM3

C = THDM2-6
hgp = heavily grazed pasture

CVI_2 Disposal + Recycle = Landfill
Res = CVR_4

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Armour 1775
Polygon: Concession 2
UTM: W (WOD-089)
Date: Nov 5 2011 Time: 1430 -
Surveyor(s):
Weather: CC 5%, 10°C, Wind 3/N No precip.

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	N. Harrier	OB		1						
B	Blackbird sp.	OB		50						
"	"	OB		20						
B	N. Shrike	OB		1						
B	Blue Jay	OB		1						
B	Am Crow	OB		1						

Faunal Type Codes (TY)
B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)
Breeding Birds
SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife
OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Armour
Polygon: Concession 2
UTM:
Date: Nov 5 2011 Time: 1430 -
Surveyor(s): CLH
Weather: CC 5%, 10°C, Wind 3/N, No precip

Wildlife Habitat (Check all that apply AND record UTM / mark on map)
Habitats and Habitat Features are independent of wildlife observations

Habitat Type
___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats
___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose
___ Seep/Spring
___ Mineral Lick

Snakes
___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
X Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles
___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM (desktop)	Description
old foundation (outside of barn WOD-089)	464977 4899621	old house - barn foundations located in meadow A.
old crumbling barn (outside of WOD)	463559 4900299	old barn near some wetlands in an ag field

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

WET-067 ~~(WOD-089)~~*

Wetland Vegetation Communities

Project Name: Armour **Project #:** 1275

Observer(s): PWD

Date: Nov 24, 2011 **Time (24h):** 14:10

Field #: West of T109 **Weather:** Precipitation: None Temp (°C): 6

Map Code: M1 Wind Speed & Direction: 2/SE Cloud %: 100

Wetland Type: Marsh **Site Type:** I **Dominant Form:** Graminoid (M,ne)

% Open Water: 40 (edge) **ELC Code:** MAMM1-3 Reed Canary Grass Mix Mead. Marsh

Photos: 0649

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
(ne)	Reed Canary Grass (75%) Soft Rush 1%
be	
re	
ff	
f	
su	
m	

Soil type: Unknown | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

* Not in proj area.

WET-002
M1

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

WET-068

Wetland Vegetation Communities

Project Name: Armour **Project #:** 1275

Observer(s): PWD

Date: Nov. 24, 2011 **Time (24h):** 14:15

Field #: West of T109 **Weather:** Precipitation: None Temp (°C): 6

Map Code: M2 Wind Speed & Direction: 2/SE Cloud %: 100

Wetland Type: Marsh I **Site Type:** **Dominant Form:** Graminoid (m,ne)

% Open Water: 20 (edge) **ELC Code:** MAMM1-3 Reed Canary Grass Mix Mead. Marsh

Photos: 0649 (background)

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 5% Salix sp. 3% White Elm 2%
c	
dc,dh,ds	
ts	
ls	
gc	
(ne)	Reed Canary Grass (75%)
be	
re	
ff	
f	
su	
m	

Soil type: Unknown | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

None

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

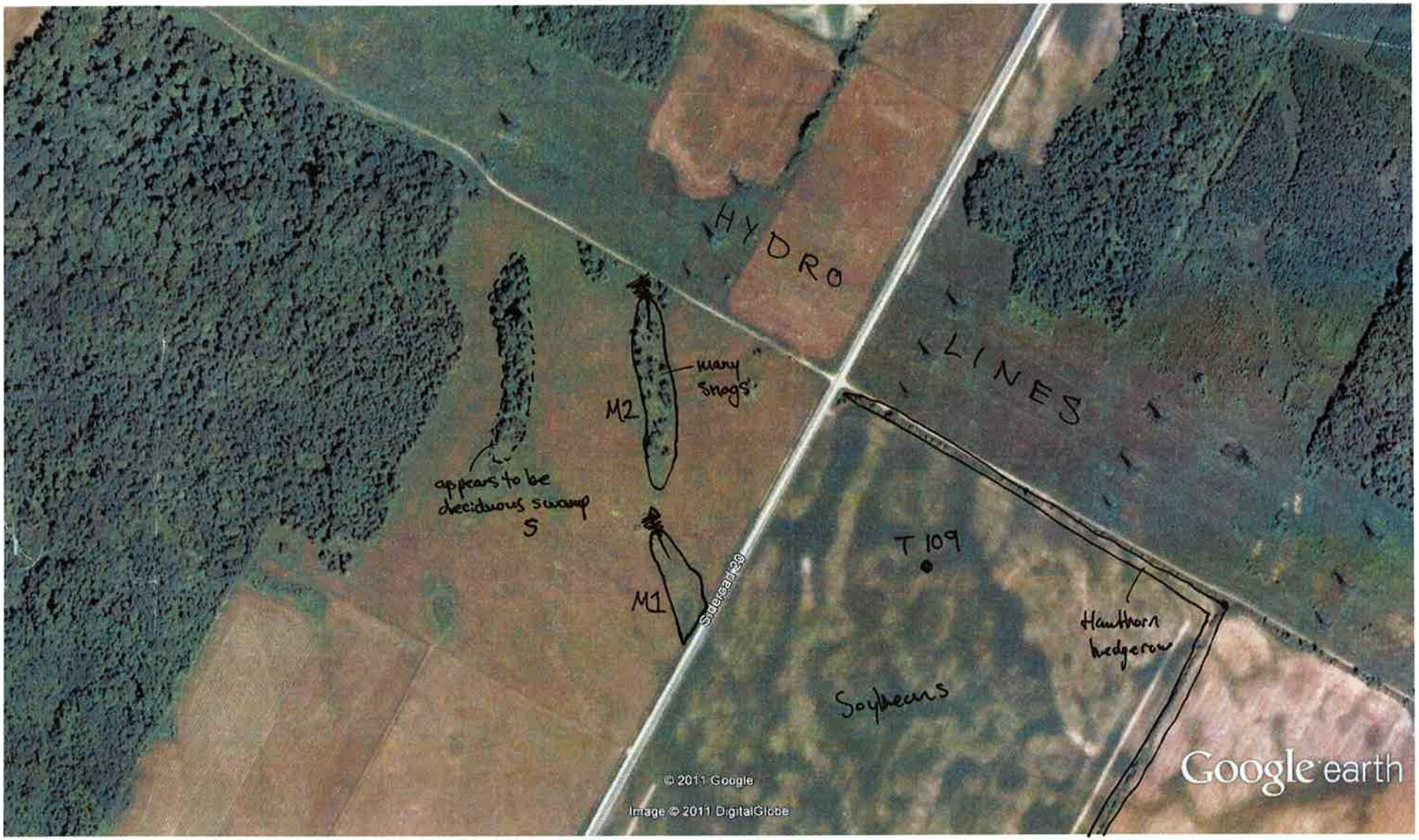
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-002

M1

T109

TW (WOD-089)



Google earth

feet
meters
2000
800

Complex
AE
S1 WGT-
M1 002

Wetland

* Not in proj. area

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Ammw WF
Polygon:	WOD-090
UTM:	
Date:	Nov 2/11 — Time:
Surveyor(s):	PWD, AmD
Weather:	13°C, 0%CC, wind=3 from SW, sunny

Community Classification

Vegetation Type:		SWDM3-1
	Inclusion:	
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
✓ Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	3	green ash > red maple >> freeman's maple
2	Sub-canopy	3	4	green ash > red maple > white elm
3	Understorey	4	3	[illegible]
4	Groundcover	5	3	spinulose wood fern > avens sp > scaly stem aster

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	A	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow WF	
Polygon: WOD-090	
UTM:	
Date: NOV 2/11	**Time:**
Surveyor(s): PWD, AMD	
Weather: 13°C, 0%CC, wind = 3 from SW, sunny	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red maple	A	A			
green ash	A	A			
Freeman's maple	R				
wild raisin		O	O		
white elm		O	O		
pl. raspberry				R	
hawthorn sp.				R	
rubus idaeus			R	R	
red osier dogwood			R	R	
choke cherry			R		

Species	Layer 1	2	3	4	Sample
calico aster				O	
queens sp.				A	
wood strawberry				O	
spinulose wood fern				A	
new england aster				R	
red currant grand				O	
dandelion				R	
herb robert				R	

PWD/MMD
Nov2111
WOD-090



See Wetland 56 in WOD-055 for wetland data sheet

(WOD-090)


461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
S1: SWMM2-2
S2: SWDM2-2
S3: SWDM3-1
S4: SWDM3-1
S5: SWDM3-1
S6: SWDM3-1
S7: SWDM3-3
M1: MAMM3-1
M2: MAMM1-3
M3: SWDM2-2
M4: MAMM1-3
WET-040
WET-041
WET-036
WET-037
WET-038
WET-039
WET-051
WET-052
M1
M2
M4
S1
S2
S4
S5
S6
S7
S8
S9
S10
11
69
91
92
99
PLOUGHED
WHEAT
SOD
SWD incl.
Fish & gram. meadow incl.
A Watercourse runs N-S through M1 (intermittent)
WET-039 connecting hydrology has been ploughed under (still wet)
SIDEROAD 20
CONCESSION 11
0
100
200
300 Metres
N
Complex Y
S1-A,
S2-C
S2-D
M1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Arman WF
Polygon:	WET-037 (T69) ☆WOD-091☆
UTM:	
Date:	Nov. 2/11 Time: 11:00
Surveyor(s):	PWD, AMD
Weather:	11°C, Sunny, wind 3 from SW, CC 10%

Community Classification

	Vegetation Type:	SWDM3-1 Red Maple Mix Dec Swamp.
X	Inclusion:	MAMM3-1 Mixed Mix Meadow Marsh
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
[illegible]	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	[illegible]	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	3	green ash = red maple >> freemans maple
2	Sub-canopy	3	3	green ash = red maple >> freemans maple
3	Understorey	4	2	red osier dogwood
4	Groundcover	5-7	2	reed canary grass > Spinulose wood fern

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	WET-037
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

mineral marsh inclusion

Species	Layer 1	2	3	4	Sample
red osier dogwood			O		
green ash		O			
willow sp.			R		
rubus idaeus				R	
wh. elm		R			
wild raisin			R		
green ash	A	A			
freeman maple	R	R			
red maple	A	A			
red osier dogwood			O	O	

Species	Layer 1	2	3	4	Sample
reed canary grass				D	
solidago graminifolia				A	
soft rush				O	
common milkweed				R	
wool grass				O	
narrow leaf cattail				R	
blue flag iris				R	
tall goldenrod				R	
wild carrot				R	
blue flag iris				R	
reed canary grass				O	
calico aster				R	
spinulose wood fern				O	
tall goldenrod				O	
solidago graminifolia				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Aerowood @ (WOD-091)
Polygon:	WET-037
UTM:	
Date:	Nov 2, 2011 — Time: 11:05
Surveyor(s):	PWD, AMD
Weather:	

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	6	5	
Aspect:	-	-	
%	0	0	
Type:	S	S	
Class:	A	A	
Strata: Texture	SiC	SiC	
Depth	59	64	
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	SiC	SiC	
Surface Stoniness	0	0	
Surface Rockiness	0	0	
Depth to:			
Mottles	27	20	
Gley	45	28	
Bedrock	-	-	
Water table	-	2	
Carbonates	-	-	
Depth of Organics	6	4	
Pore Size Disc #1	-	-	
Pore Size Disc #2	-	-	
Pore Size Disc #3	-	-	
Moisture Regime	6	6	

Polygon: WET-037

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- Some open water observed in mineral marsh
- sample 1 refers to mineral marsh inclusion
- sample 2 refers to green ash - red maple swamp

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arnew WF **Project #:** 1275

Observer(s): PWD AMD

Date: Nov 2 2011 **Time (24h):** 11:05 in (WOD-091)

Field #: WET-037 **Weather:** Precipitation: None Temp (°C): 11

Map Code: M1 Wind Speed & Direction: 3/SW Cloud %: 10

Wetland Type: Marsh **Site Type:** I **Dominant Form:** Graminoid (M, ne)

% Open Water: 0% **ELC Code:** MAMM3-1 Mixed Min Meadow Marsh

Photos: 100-1047

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash, white elm
c	
dc,dh,ds	
ts	Red Osier Dogwood, willow sp
ls	Red Raspberry
gc	Grass-leaved Goldenrod, common milkweed, wild carrot
(ne)	Reed Canary Grass 80%, Narrow-leaf cattail, blue flag iris, soft rush
be	
re	woolgrass
ff	
f	
su	
m	

Soil type: SiC | MR 6 | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):
None Observed

Wildlife Notes:
W. Chorus Frog
Leopard Frog

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: Absent
10% pooled water (and intermittent water course)

WET-015
M1

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

★WET-039★ in WUD09

Project Name: Armour WF **Project #:** 1275

Observer(s): PWD AMD

Date: Nov 2 2011 **Time (24h):** 11:40

Field #: WET-037 **Weather:** Precipitation: None Temp (°C): 11

Map Code: S5 Wind Speed & Direction: 3/SW Cloud %: 10

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (S,h)

% Open Water: ~1% **ELC Code:** SWDM3-1 Red Maple Mineral Decid Swamp

Photos: 100 - 1049

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Red Maple 60% Green Ash 25%, freeman's maple
c	
dc,dh,ds	
ts	Red Osier Dogwood
ls	
gc	Goldenrod sp., calico aster, flat topped goldenrod,
ne	Reed Canary grass, blue flag iris
be	
re	
ff	
f	
su	
m	

Soil type: S:C MR6 Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial): None Observed

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: absent

25% pooled water, very shallow

WET-015

S2-C

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armow / @ (WOD-091)
Polygon:	WET-038
UTM:	
Date:	Nov 2 2011 — Time: 12:06
Surveyor(s):	PWD, AMS
Weather:	

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	4		
Aspect:	180		
%	0.5-2		
Type:	S		
Class	B		

Strata:	Texture	SiC		
	Depth	80		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	21		
	Gley	24		
	Bedrock	—		
	Water table	0		
	Carbonates	—		
Depth of Organics		3		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WET-038

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armour WF
Polygon:	WET-038 (T69) / (WOD-091)
UTM:	
Date:	Nov. 2/11 — Time: 12:00
Surveyor(s):	PWD, AMD
Weather:	

Community Classification

Vegetation Type:	MAMM1-3 Reed Canary Graminoid Min. Meadow Marsh
Inclusion:	
Complex:	

Polygon Description

System		Substrate		Topo Feature			Community		
	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
X	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min	X	Bottomland		Alvar		River		Prairie
			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
History			Basic Bedrock		Valley Slope		Beach/Bar	X	Marsh		Savannah
X	Natural		Carb. Bedrock		Tableland		Sand Dune		Swamp		Woodland
	Cultural				Roll. Upland		Bluff		Fen		Forest
		Site			Cliff				Bog		Plantation

Cover		Site		Plant Form					
X	Open	X	Shallow Water		Plankton		Forb		Coniferous
	Shrub	X	Surficial Dep		Submerged		Lichen		Mixed
X	Treed – surrounds OA		Bedrock		Floating-Lvd		Bryophyte		
				X	Graminoid		Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	2	green ash > red maple
2	Sub-canopy	3	2	green ash > red maple
3	Understorey	4	2	hawthorn sp. > wild raisin > willow sp.
4	Groundcover	5-7	3	reed canary grass > woolgrass > avens sp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ___of___

Site:	Armour WF
Polygon:	WET-038
UTM:	
Date:	Nov. 2/11 — Time: 12:00
Surveyor(s):	PWD, AMD
Weather:	11°C, Sunny, wind 4 from SW, 10% CC.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	O	O	R		
red osier dogwood			O		
red maple	O	O	R		
freeman maple	R				
hawthorn sp.			O		
rubus idaeus			R	R	
wild raisin			O		
willow sp.			O		

Species	Layer 1	2	3	4	Sample
reed canary grass				A	
woolgrass				O	
moss sp				O	
calico aster				O	
bitter nightshade				R	
water parsley				R	
avens sp.				O	
solidago graminifolia				O	
curled dock				R	

NATURAL RESOURCE SOLUTIONS INC. (in CWOD-091)
Aquatic, Terrestrial and Wetland Biologists

WET-039 (in WOD-055)

Wetland Vegetation Communities

Project Name: Arthur's WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 2 2011 **Time (24h):** 12:00

Field #: WET-038 **Weather:** Precipitation: None Temp (°C): 11

Map Code: M2 Wind Speed & Direction: 3/SW Cloud %: 10

Wetland Type: Marsh **Site Type:** I **Dominant Form:** narrow emergent (ne)

% Open Water: 75 Type 4 **ELC Code:** MAMM1-3 Reed Canary Graminoid Min. Meadow Marsh

Photos: 100-1048

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash 25%, red maple, Freeman's maple
c	
dc,dh,ds	
ts	Wild Raisin, Willow sp., Hawthorn sp., red osier dogwood
ls	Red Raspberry
gc	Bitter nightshade, Aster sp., curled dock, grass-leaved goldenrod.
(ne)	Reed Canary Grass 25%
be	
re	wool grass
ff	
f	
su	
m	

Soil type: SiC | MR6 | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):
None Observed.

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

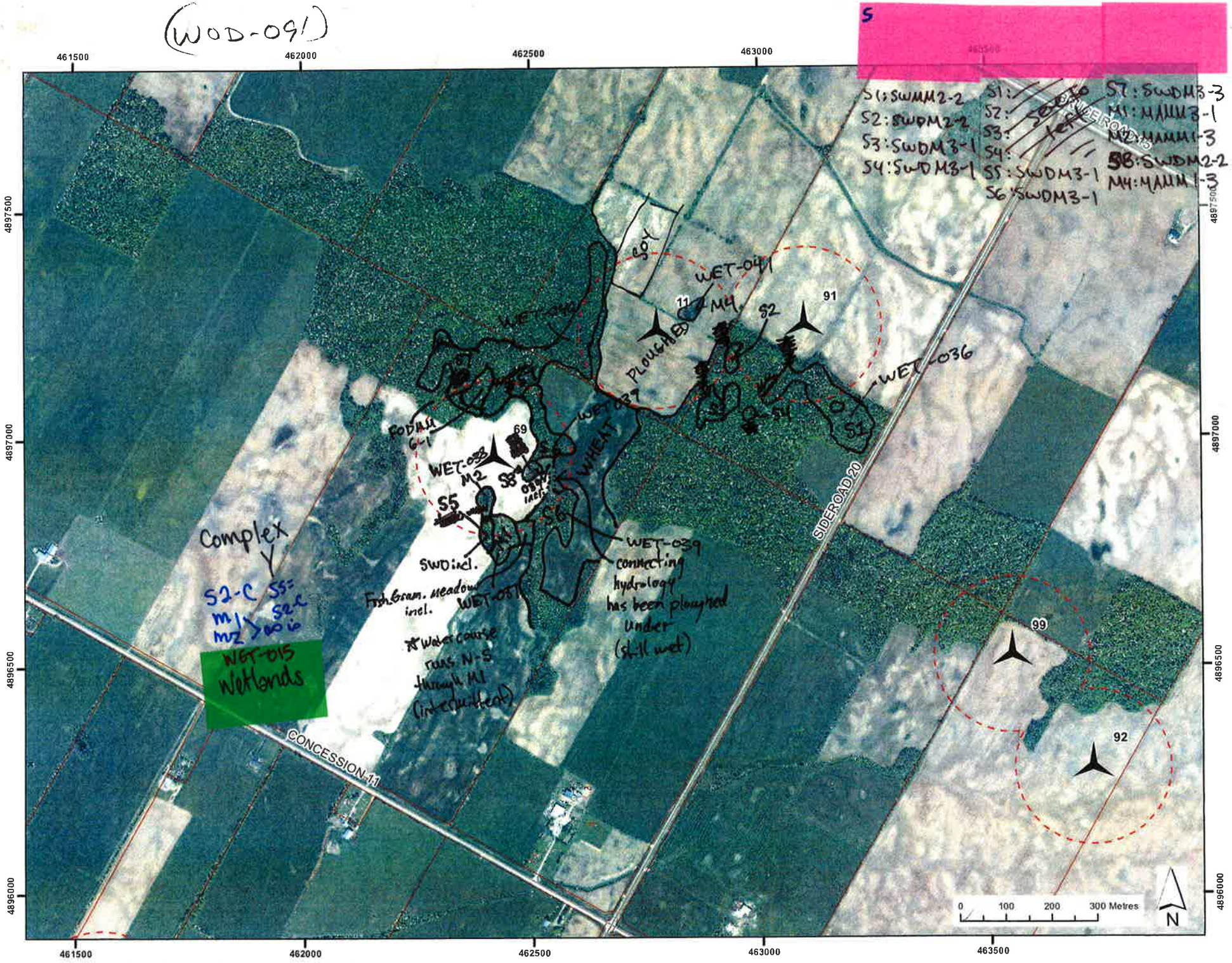
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: absent, amphibian breeding habitat present.

& Does Type 4 open water apply to a small marsh (<2 ha)? open water is centered but limited

M2
WET-015

(WOD-091)


S
461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
S1: SWMM2-2
S2: SWDM2-2
S3: SWDM3-1
S4: SWDM3-1
S1:
S2:
S3:
S4:
S5: SWDM3-1
S6: SWDM3-1
S7: SWDM3-3
M1: MMM3-1
M2: MMM1-3
S8: SWDM2-2
M4: MMM1-3
SIDEROAD 15
SIDEROAD 20
CONCESSION 11
WET-041
WET-036
WET-039
WET-038
WET-037
WET-035
WET-034
WET-033
WET-031
WET-015
Wetlands
Complex Y
S2-C S5-
M1 M2 S2-C
WHEAT
PLOUGHED
SOY
FODDER
SWD incl.
Fish/Gram. meadow incl.
Water course runs N-S through M1 (intermittent)
WET-039 connecting hydrology has been ploughed under (still wet)
11
69
91
99
92
0 100 200 300 Metres
N

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow WF
Polygon:	WEF-037 (T69) (WOD-091)
UTM:	
Date:	Nov. 2/11 **Time:** 11:05
Surveyor(s):	
Weather:	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	gull sp.	OB		1						
B	Am. crow	OB		1						
H	western chorus frog	VO	check ✓	1						
B	Am. woodcock	OB		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
X Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
marsh		- representing entire feature

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	1275 Acushnet
Polygon:	WET-038 (T69) / X (WOD-091 *)
UTM:	
Date:	Nov 12 2011 **Time:** 12:00
Surveyor(s):	PWD AHD
Weather:	

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	wh. tail deer	TK		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WET-038 (T69)
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
X Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

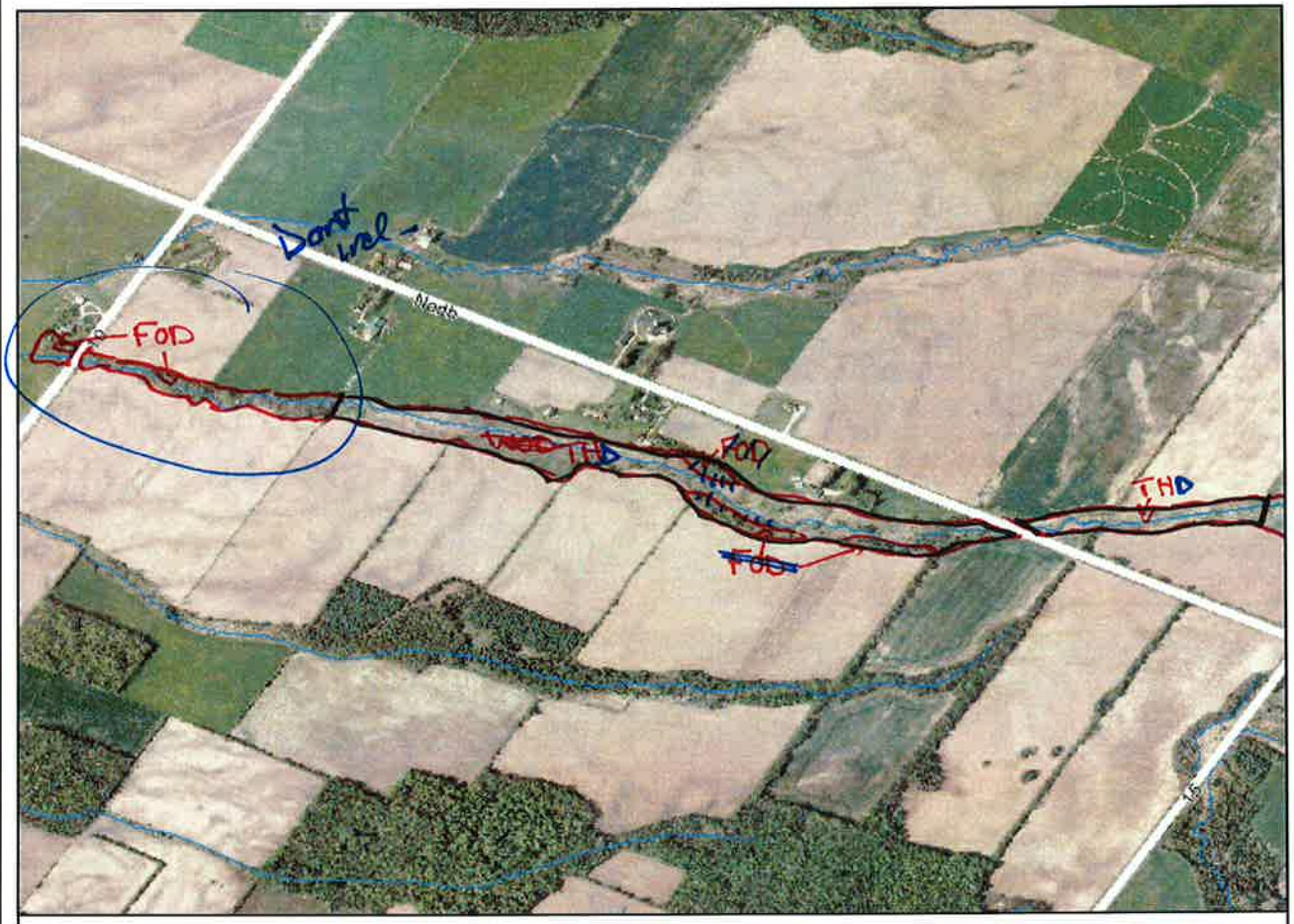
Habitat Feature:	UTM	Description
marsh		-representing entire feature
AWD-028		

Describe Valley (depth, geomorphological traits):

Additional Details:

(WOD-091)

Armow_NLine_Stream



Map centre: 44° 10' 06.0" N, 81° 32' 54.9" W

Map created: January 11, 2012

0 300 600 900 1,200 m

Scale: 1:16,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arnaw WF
Polygon:	WET-039 (T69) ☆WD-092☆
UTM:	N
Date:	Nov. 2/11
Time:	12:20
Surveyor(s):	
Weather:	13°C, 0% CC, wind 3 from SW, Sunny

Community Classification

	Vegetation Type:	~~red maple/green ash swamp~~ SWDM3-1
X	Inclusion:	SWDM2-2
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	3	green ash > red maple >> freemans maple
2	Sub-canopy	3	4	green ash > red maple > wh. elm.
3	Understorey	4	3	wild raisin > wh. elm.
4	Groundcover	5-7	3	spinulose wood fern > avens sp. > calico aster

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	R	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ____of____

Site:	Arnaw WF
Polygon:	WET-039
UTM:	
Date:	Nov 2/11
Time:	12:20
Surveyor(s):	PWD, AMD
Weather:	13°C, 0% CC, wind 3 from SW, Sunny

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red maple	A	A			
green ash	A	A			
freemans maple	R				
wild raisin		O	O		
wh. elm		O	O		
black raspberry				R	
hawthorn sp.				R	
rubus idaeus			R	R	
red osier dogwood			R	R	
choke cherry			R		
green ash	O	O	R		
crack willow	R				
hawthorn sp.			R		
red osier dogwood			R	R	
rubus idaeus				R	
wh. elm		R	R		

mineral marsh inclusion

Species	Layer 1	2	3	4	Sample
calico aster				O	
avens sp.				A	
wood strawberry				O	
spinulose wood fern				A	
new england aster				R	
reed canary grass				O	
dandelion				R	
herb robert				R	
graminoid mineral meadow (fresh) ←					
solidago graminifolia				O	
aster sp.				A	
new england aster				O	
reed canary grass				D	
reed canary grass				D	
solidago graminifolia				O	

mineral marsh inclusion

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WET-039
UTM:	~~WOD-092~~
Date:	Nov 2, 2014
Time:	12:20
Surveyor(s):	PWD, AHD
Weather:	

Community Classification

Vegetation Type:	
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	S6 1	M3 2	3
Position:	4	4	
Aspect:	0	270	
%	0.5-2	2-5	
Type:	S	S	
Class:	B	C	
Strata: Texture	SiC	SiC	
Depth	51	70	
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	SiC	SiC	
Surface Stoniness	Ø	Ø	
Surface Rockiness	Ø	Ø	
Depth to:			
Mottles	15	18	
Gley	29	30	
Bedrock	/	/	
Water table	2	6	
Carbonates	/	/	
Depth of Organics	5	4	
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6	6	

Polygon: WET-039

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

original data sheet w/ [illegible] package

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armour WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 2 2011 **Time (24h):** 12:40 – in (WOD-092)

Field #: WET-089 **Weather:** Precipitation: None Temp (°C): 13

Map Code: W3 S8 Wind Speed & Direction: 3/SW Cloud %: 0

Wetland Type: ~~Marsh~~ Swamp **Site Type:** Peatland **Dominant Form:** Treed (surrounding OA)

% Open Water: 80 Type 6 **ELC Code:** SWDM2-2 Gr Ash Mineral Treed Swamp.

Photos: 100 - 1051

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 30% Red Maple 25%
c	
dc,dh,ds	
ts	
ls	common red raspberry
gc	
ne	reed Canary grass
be	
re	
ff	
f	
su	
m	

Soil type: SiC | WR6 | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):
None Observed

Wildlife Notes:
Leopard frog
Am. Goldfinch

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; F=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Fish habitat: absent, amphibian breeding habitat present

SD-D
WET-015

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arnow WF **Project #:** 1275

Observer(s): PWD AMD

Date: Nov 2 2021 **Time (24h):** 12:20 - in (WOD-098)

Field #: WET-039 **Weather:** Precipitation: None Temp (°C): 13

Map Code: S6 Wind Speed & Direction: 3/SW Cloud %: 0

Wetland Type: Swamp **Site Type:** P **Dominant Form:** Treed

% Open Water: 0% **ELC Code:** SWDM3-1 Red Maple Min. Deriv. Swamp

Photos: 100-1050

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Red Maple 60%, Green Ash 25%, white elm
c	
dc,dh,ds	
ts	red osier dogwood, choke cherry, hawthorn sp, wild raisin
ls	common red raspberry, black raspberry
gc	calico aster, spinulose wood fern, herb robert, avens sp
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: SiC MR6 Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None Observed	

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

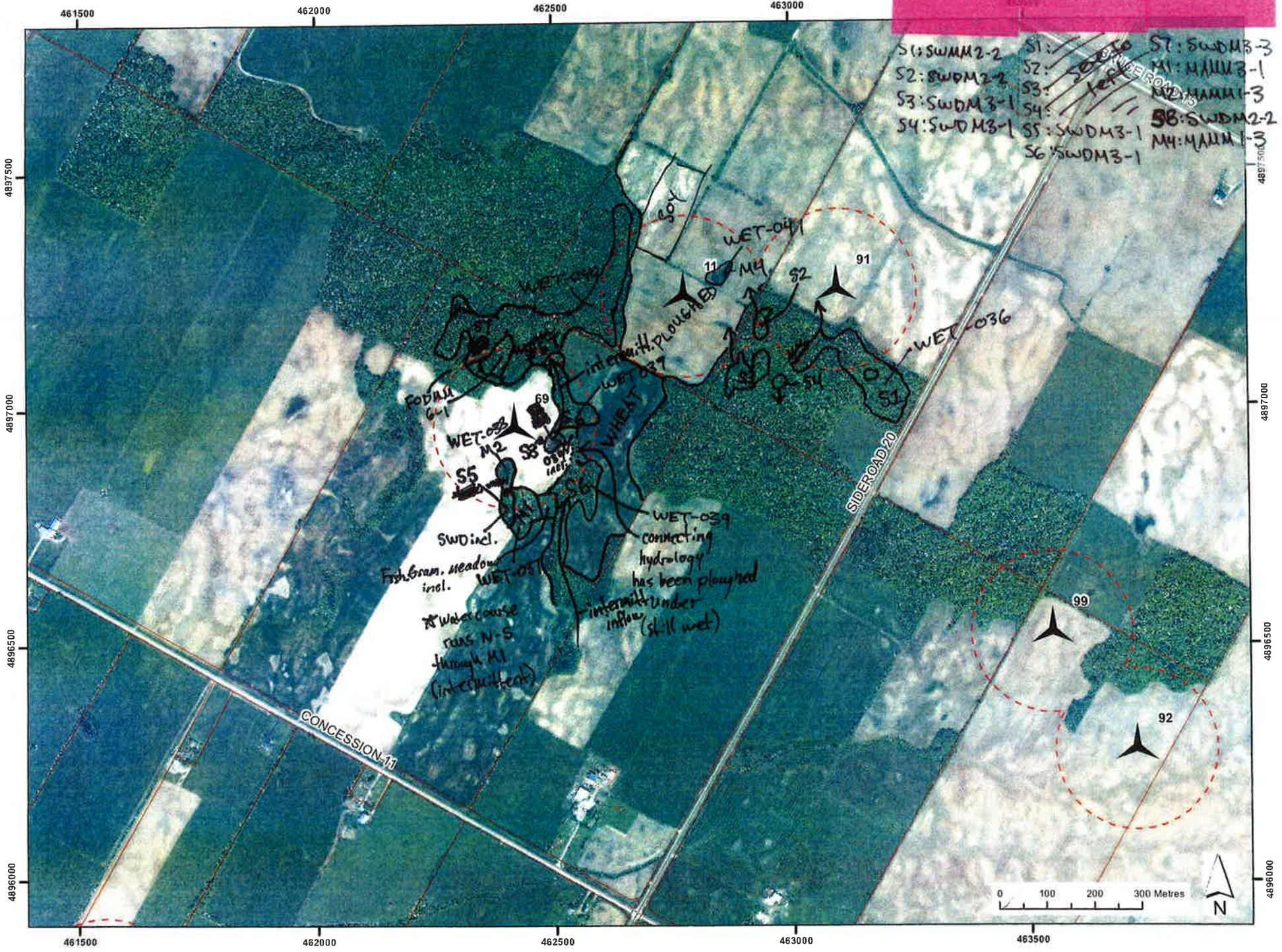
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Fish habitat: absent

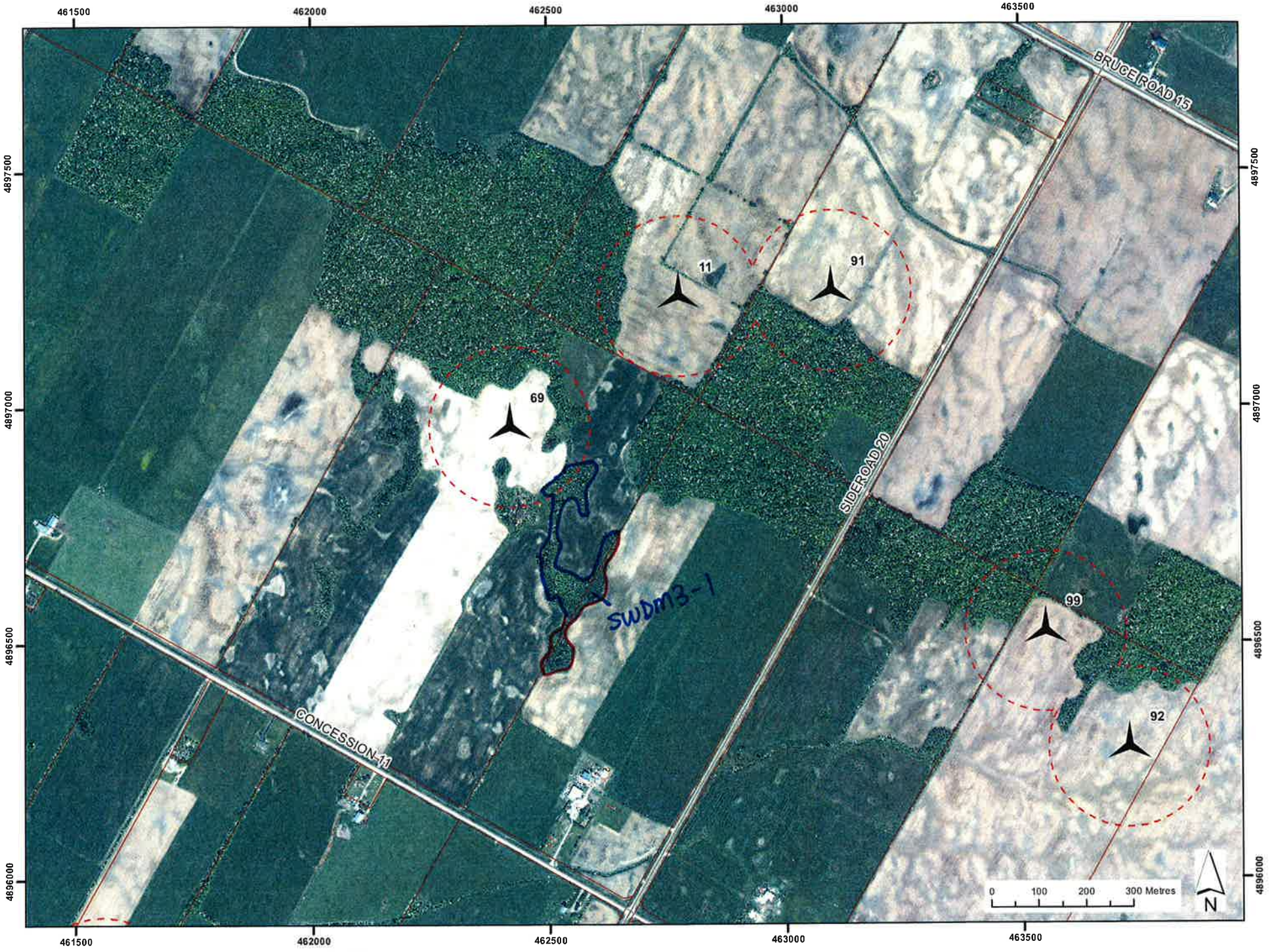
SD.C WET-015

Original data sheet - 055 package.

(WOD-092)


461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
S1: SWMM2-2
S2: SWDM2-2
S3: SWDM3-1
S4: SWDM3-1
S5: SWDM3-1
S6: SWDM3-1
S7: SWDM3-3
M1: MAMM3-1
M2: MAMM1-3
S8: SWDM2-2
M4: MAMM1-3
SIDEROAD 20
CONCESSION 11
WET-041
WET-036
WET-039
WET-037
WET-038
WHEAT
PLOUGHED
intermit.
intermit. under
inflow
connecting
hydrology
has been ploughed
(still wet)
SWD incl.
Fresh-Gram. meadow
incl.
Watercourse
runs N-S
through M1
(intermittent)
FODM1
6-1
91
92
99
11
69
0
100
200
300 Metres
N

WOD-092


461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
BRUCE ROAD 15
SIDEROAD 20
CONCESSION 11
11
91
69
99
92
SWDM3-1
0
100
200
300 Metres
N

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	1275 Arrow
Polygon:	WET-039 (T69) – (WOD-092)
UTM:	
Date:	Nov 2, 2011 **Time:** 12:20
Surveyor(s):	PwD, AMD
Weather:	

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
H	leopard frog	OB		11						
B	gull sp.	OB		1						
M	wh. tail deer	TK		1						
B	Am. crow	OB		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- X Marsh
- X Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Swamp		-representing entire feature
marsh		-inclusion within swamp

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

ID as (WOD-093)

Site: Armow	1275
Polygon: Conc 2/SR 25 Poly (1) (prev. identified as WOD-093 but not a woodland)	
UTM:	
Date: Jan 8 2011	Time: 1255
Surveyor(s): CLH	
Weather: -2°C, No precip, Cc 95%, Wind 2/SE	

Community Classification

Vegetation Type:	SUDM3-4 Hawthorn Deciduous Savannah Ecosite.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	X Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	White Elm > Oak sp.
2	Sub-canopy	3	4	Hawthorn sp >> White Elm > Ash sp.
3	Understorey	4/5	3	Reed Canary > Goldenrod sp.
4	Groundcover	5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	R	25 - 50 (1)	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow	1275
Polygon: Conc 2/SR 25 Poly (2)	
UTM:	
Date: Jan 8 2011	Time: 1255
Surveyor(s): CLH	
Weather: -2°C, No precip, Cc 95% Wind 2/SE	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 1 0 | 2-10 | 0.5-2 | <0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Hawthorn sp.		D			
White Elm	R	O			
Ash sp.		O			
Oak sp.	R				
Goldenrod sp.			O		
Reed Canary			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Cover of trees above hawthorns is ~25%.

Dense hawthorns is occasional taller trees, found along a watercourse (no open meadow type habitat at all)

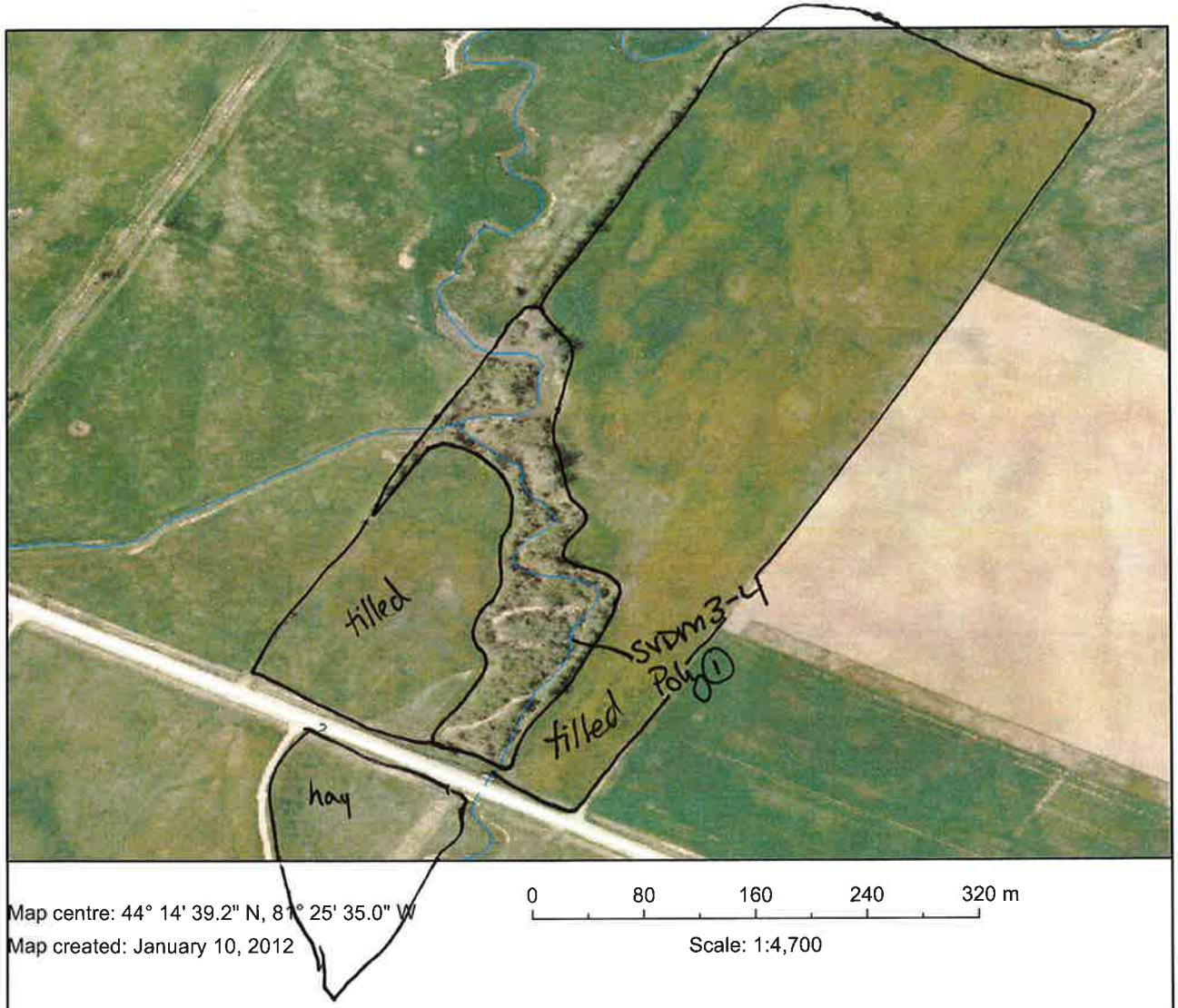
Roadside Assessment *

DSC_0080.

Jan 8 2012 CLH

as WOD-093

Concession 2 / Sideroad 25



Map centre: 44° 14' 39.2" N, 81° 25' 35.0" W

Map created: January 10, 2012

0 80 160 240 320 m

Scale: 1:4,700

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

tilled = OAhm1
hay = OAhm2

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

12/30/11

~~WOD-DO15~~

Site:	Armour NF
Polygon:	T107/T46 - see map WOD-081 / WET-069
UTM:	
Date:	Nov. 29/11 Time: 13:00
Surveyor(s):	AMD PWT
Weather:	3°C, Rain continuous, Wind from SW, 100% CC.

Community Classification

Vegetation Type:	Green Ash Mineral Deciduous Swamp (SWDM2-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	green ash >> freeman's maple
2	Sub-canopy	2	4	green ash > freeman's maple > wh. elm.
3	Understorey	3	3	green ash > freeman's maple
4	Groundcover	5-7	2	reed canary grass >

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	A	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES: ~~X~~completed from roadside - Con 11

- Swamp community type evident @ roadside - would need property access to confirm extent of wetland
- Soils assumed mineral in composition
- photo: 0669

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

12/30/11

Site:	Armow WF AMOD-095
Polygon:	(T107/T60) WDD-081/WET-069
UTM:	17T 0466585 4893783
Date:	Nov. 29/11 **Time:** 13:00
Surveyor(s):	AMD, PWD
Weather:	3°C, Rain, wind 1 from SW, 100% CC

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	A	A	A		
freemans maple	O	O	O		
wh. elm		O			
hawthorn sp.			R		
redosier dogwood			O		

Species	Layer 1	2	3	4	Sample
reed canary grass				A	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	575 Arwow ★
Polygon:	WOD-vi: (WDD-095) (ET107)
UTM:	
Date:	Nov 10 2011 — Time: 15:30
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	SWDM2-2 & Ash Mineral Dec. Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Green Ash > Red Maple > White Elm
2	Sub-canopy	2	3	"
3	Understorey	3	3	"
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young		Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

Incompleted roadside ★

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

WET-069/WOD-081

MWD-095 ☆

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 29, 2011 **Time (24h):** 13:00

Field #: Roadside WODT107/T60 **Weather:** Precipitation: Light Temp (°C): 3

Map Code: S1 Wind Speed & Direction: 1/SW Cloud %: 100

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (S,h) h deciduous

% Open Water: 0% **ELC Code:** SWDM2-2

Photos: 0669

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash (60%) Freeman's Maple (25%) White Elm 5%
c	
dc,dh,ds	
ts	Hawthorn sp. 1%, red osier dogwood
ls	
gc	
ne	Reed Canary Grass 5%
be	
re	
ff	
f	
su	
m	

Soil type: Unknown Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

- one snag visible, 25cm dbh, peeling bark only

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

- Pooled water across most of treed area

WET-020

S1-B

WD-095



T107/T60

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Arnold WF
Polygon:	WOD-0916
UTM:	
Date:	001 5/11 Time: 3:05pm
Surveyor(s):	SAG, MEE
Weather:	23°C, 0%cc, no precip, wind=2 km/h W

Community Classification

Vegetation Type:	FOD
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

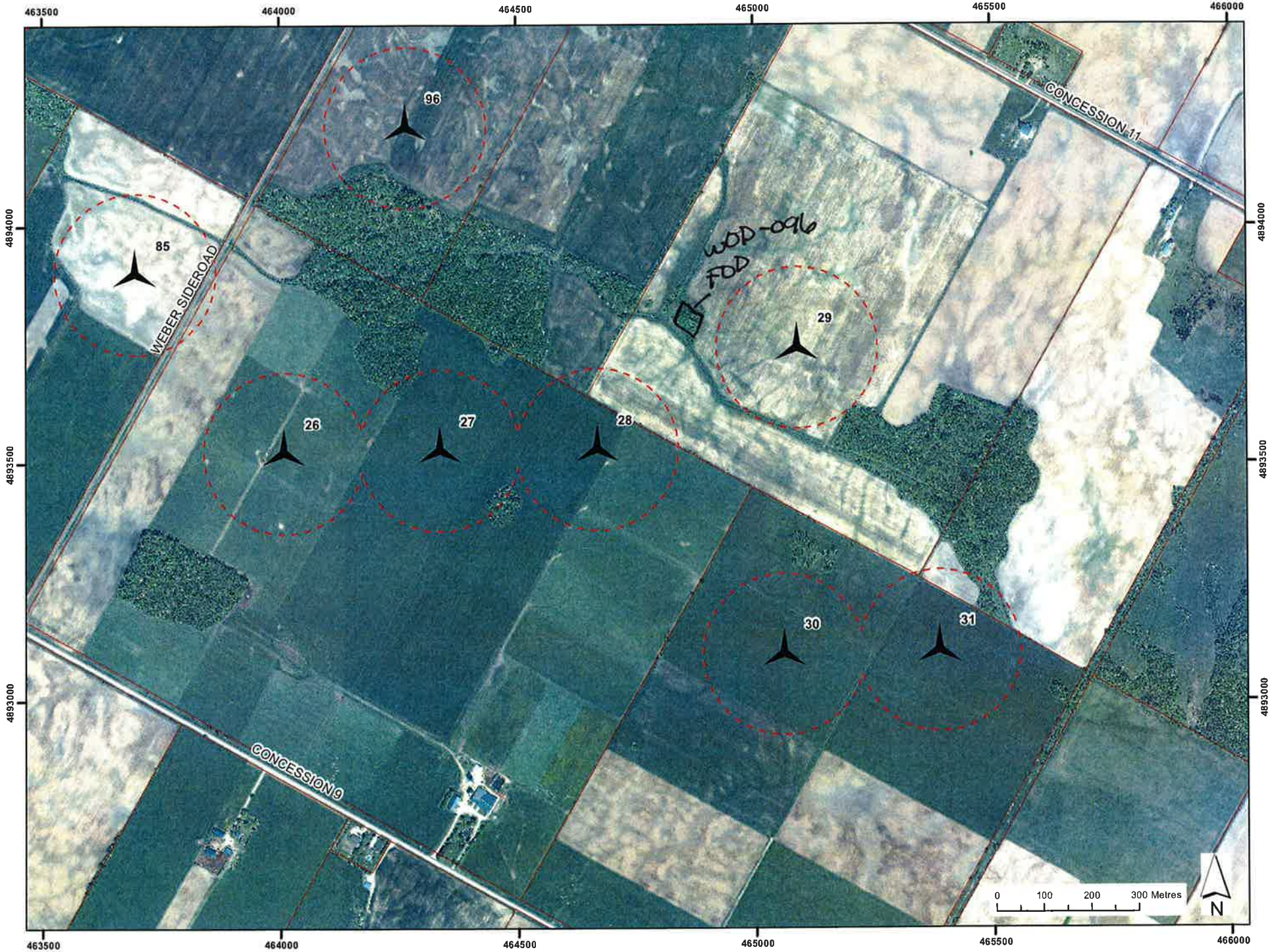
PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample


463500
464000
464500
465000
465500
466000
4894000
4893500
4893000
96
85
26
27
28
29
30
31
WEBER SIDEROAD
CONCESSION 11
CONCESSION 9
WOP-096
FOP
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow WF
Polygon:	WOD-099 (E of T111)
UTM:	17T 0463805 4889679
Date:	Dec. 9/11 — Time: 10:30
Surveyor(s):	AMD, HLW
Weather:	-1°C, 70% CC, wind 1 from W

Community Classification

Vegetation Type:	Mineral Deciduous Swamp (SWDM)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	D	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
wh. pine			O		
maple sp.	A	A			
ash sp.	A	A			
trembling aspen	O	O			

Species	Layer 1	2	3	4	Sample
reed canary grass			O		

Wildlife and Other Notes - identified as wetland on LIO mapping.

- no access, completed from roadside
- white pine @ finger of woodland touching sideroad 30
- maple and ash species were only trees visible from roadside, access required for accurate assessment

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armow WF **Project #:** 1275

Observer(s): AMD, HLW

Date: Dec. 9/11 **Time (24h):** 16:30

Field #: WOD-099 **Weather:** Precipitation: None Temp (°C): -1

Map Code: S1 Wind Speed & Direction: 1/W Cloud %: 70

Wetland Type: Swamp **Site Type:** R **Dominant Form:** treedh.(S,h)

% Open Water: 0 **ELC Code:** SWDM

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, freeman's maple
c	white pine
dc,dh,ds	
ts	
ls	
gc	
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: SiC | Organic [X] | Mineral [X] (likely)

Rare Species (Local, Regional, Provincial):
None observed

Wildlife Notes:
None observed
Soils mapping indicates ~70% Org.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

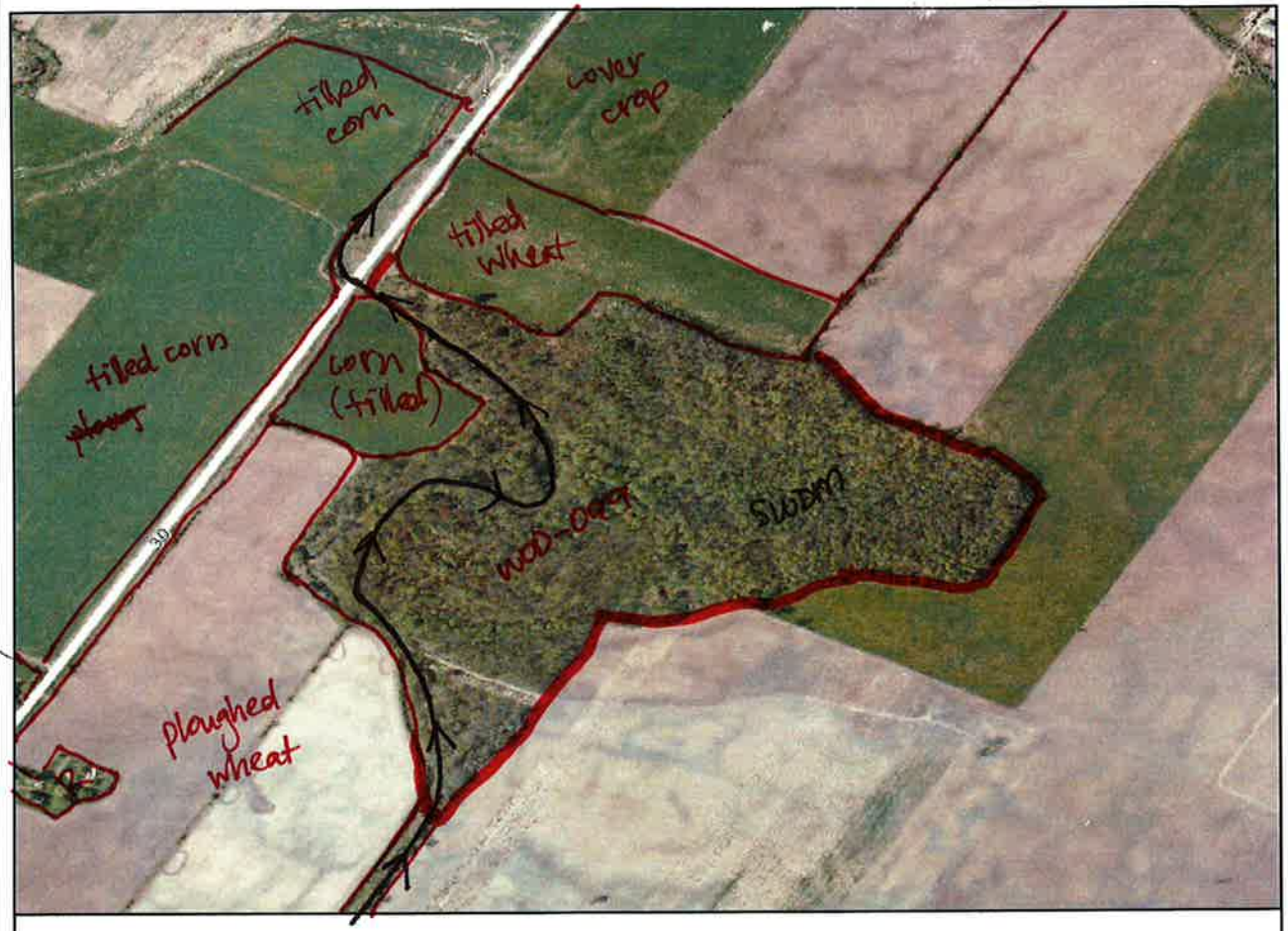
Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

*assessed from roadside

T111 (east of). WOD-099



Map centre: 44° 09' 26.4" N, 81° 26' 57.3" W

Map created: November 22, 2011

0 100 200 300 400 m

Scale: 1:9,300

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

(waiting on access)

Ind. II

S1

WET-034

Wetland

flows

SWDM: flow direction marked on map in black marker

↳ permanent inflow and outflow

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

~~ARMW-100~~ 12/29/11

Site:	Armow WF
Polygon:	(N of T44) ~~ARMW-082~~ / WET-036
UTM:	17T 0462170 4890682
Date:	Dec. 2/11 Time: 10:30
Surveyor(s):	AMD, JRW
Weather:	90% CC, 0°C, wind 2 from SW, past snow event

Community Classification

	Vegetation Type:	Green Ash Mineral Deciduous Swamp (SWDM2-2)
	Inclusion:	
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community			
	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
X	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Mn.		Bottomland		Alvar		River		Prairie
			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
History			Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
X	Natural		Carb. Bedrock	X	Tableland		Sand Dune	X	Swamp		Woodland
	Cultural				Roll. Upland		Bluff		Fen		Forest
		Site			Cliff				Bog		Plantation

Cover		Open Water	Plant Form			
	Open		Shallow Water		Plankton		Forb		Coniferous
	Shrub	X	Surficial Dep.		Submerged		Lichen		Mixed
X	Treed		Bedrock		Floating-Lvd.		Bryophyte		
					Graminoid	X	Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	4	green ash >> freemans maple = wh. elm
2	Sub-canopy	3	4	green ash > freeman's maple > wh. elm
3	Understorey	4	3	red osier dogwood = wild raisin
4	Groundcover	5-7	2	reed canary grass = goldenrod and aster spp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	D	A	A		
freemans maple	R	O			
riverbank grape				O	
wild raisin			O		
trembling aspen	R				
hawthorn sp.					
red osier dogwood			O		
willow sp.	R				
wh. elm	R	R			

Species	Layer 1	2	3	4	Sample
avens sp				R	
reed canary grass				R	
aster spp.				R	
goldenrod spp.				R	

Wildlife and Other Notes

- recent snow covering groundcover
- photo 1120

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	6		
Aspect:	340		
%	0.5		
Type:	S		
Class:	A		

Strata: A	Texture	SiCL		
	Depth	26-105 → 0 to 79.		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiCL		
Surface Stoniness		-		
Surface Rockiness		-		
Depth to:				
	Mottles	6 * measured from O.		
	Gley	-		
	Bedrock	-		
	Water table	1cm @ surface.		
	Carbonates	45cm		
Depth of Organics		+26cm		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

W (WOD-100) *

Polygon: WET-073 (N of T44)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

*trace gravel @ 50cm.

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

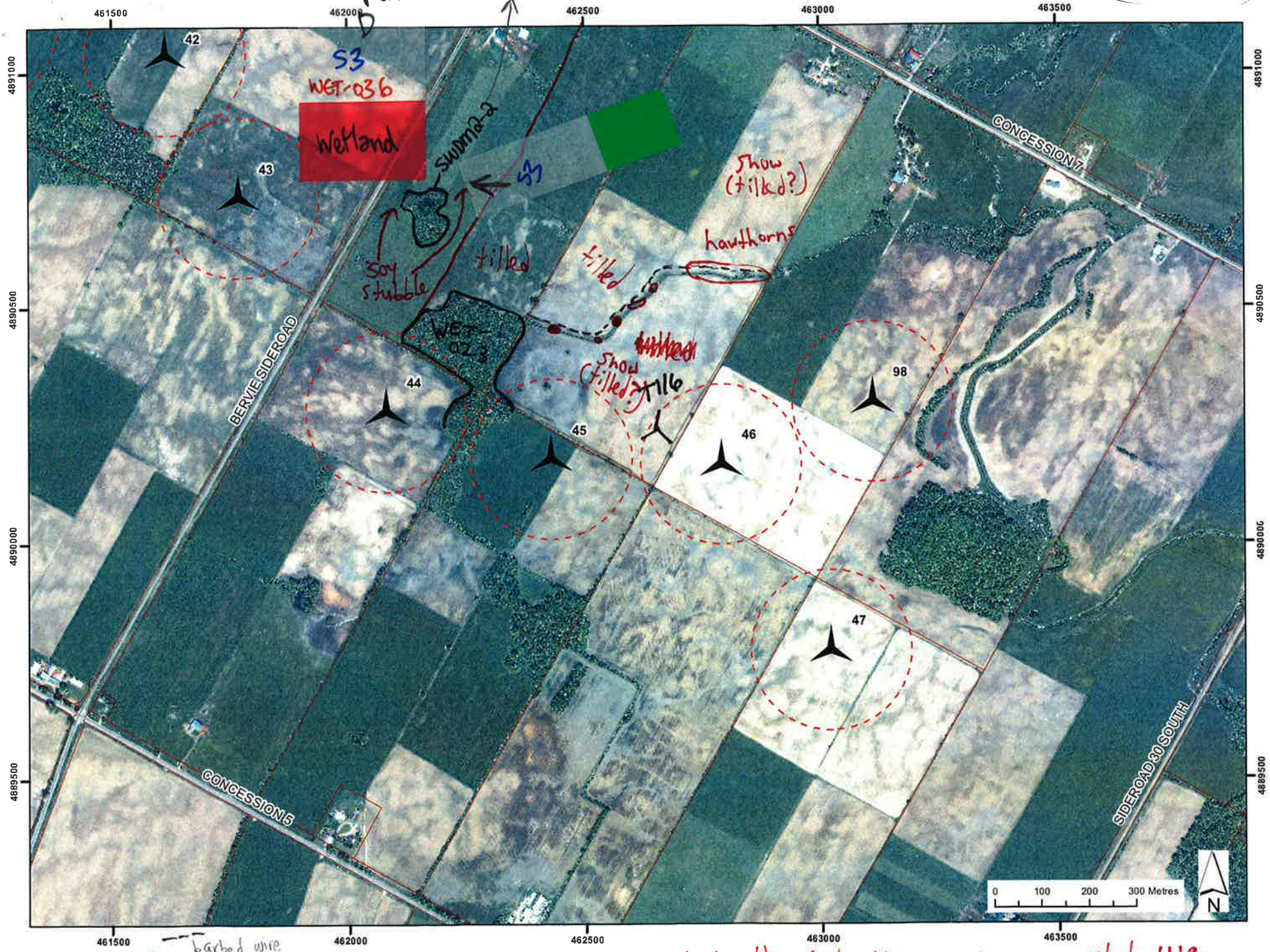
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



Ash sp. { 0 - trees < 25 dbh
White Elm { ● - tree > 25 DBH

- drain on T116 property consist of goldenrods, hawthorns, reed canary grass
- no other constraints to crossing observed

Photo 1119

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Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armow WF **Project #:** 1275
Observer(s): AMD, JRW
Date: Dec. 2/11 **Time (24h):** 10:30
Field #: WOD-180 **Weather:** Precipitation: None Temp (°C): 0
Map Code: S3 Wind Speed & Direction: 2/SW Cloud %: 90
Wetland Type: Swamp **Site Type:** I **Dominant Form:** treed (S,h) deciduous trees
% Open Water: 0 **ELC Code:** SWDM2-2
Photos: 1120

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, freeman's maple, trembling aspen, white elm
c	
dc,dh,ds	
ts	wild raisin, hawthorn sp., red osier dogwood
ls	~~red osier dogwood~~
gc	avens sp., aster sp., goldenrod sp
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: SCL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):
None observed.

Wildlife Notes:
See wildlife observation form

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

WET-036
S3

see notes over →

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest or Swamp Communities

Woodland ID (WOD- 083) (WOD- N-TH4)

Project Name: Arrow WF
Project #: 1275
Date: Dec 2 2011
Observer(s): JRW, AMD

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1	0		17T 0462216 4890647	
Plot 2	0		17T 0462200 4890662	
Plot 3	0		17T 0462168 4890693	
Plot 4	2		17T 0462156 4890700	
Plot 5				
Plot 6				
Plot 7	Total Snags	2		
Plot 8	Snags / ha	10		
Plot 9	BMA-027			
Plot 10				
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest or Swamp Communities

Woodland ID (WOD-_____)

Project Name: _____
Project #: _____
Date: _____
Observer(s): _____

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1				
Plot 2				
Plot 3				
Plot 4				
Plot 5				
Plot 6				
Plot 7				
Plot 8				
Plot 9				
Plot 10				
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

* - Snags identified in plot 4 were only 2 seen in entire woodlot

Wildlife Observation Form

Page __ of __

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Site:	Armau WF
Polygon:	N-T44
UTM:	17T 0462170 4890682 WOD-083/WET-73 / WOD-100
Date:	DEC 2.2011 **Time:** 10 30
Surveyor(s):	JRW, AMD
Weather:	0°C cc = 90% no-precip but melting snow from trees Wind 2. SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	unknown	VO		1						
B	RCCH	VO		3						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

mixed forest, W of cattail marsh

Site:	Aymow WF
Polygon:	WD-107 (5 of 78) W of cattail marsh
UTM:	17T 0458656 4889545
Date:	December 8, 2011 Time: 16:53 (WD-107)
Surveyor(s):	[redacted], HLN, AMD
Weather:	0°C, 100% cloud cover, Snow, wind 2 from SW

Community Classification

Vegetation Type:	Dry-Fresh White Pine - Hardwood Mixed Forest (FOMM2-3)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
✓ Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	✓ Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
✓ Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		✓ Roll. Upland	Bluff	Fen	✓ Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub		Surficial Dep	Submerged	Lichen	✓ Mixed
✓ Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	White Pine > White Spruce > Sugar maple
2	Sub-canopy	3	3	Hawthorne >> White Ash >
3	Understorey	R/S	2	Goldenrod sp >
4	Groundcover	R/S	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	✓ Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Whitespruce	O				
E. white cedar	O				
Sugar Maple	O				
Hawthorne sp		A			
White Pine	A				
White Ash		O			

Species	Layer 1	2	3	4	Sample
Goldenrod sp.			O		

Wildlife and Other Notes

- into 11623 + 11624
- does not appear to be plantation or naturalized Plantation

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

South of T78, cattail marsh

Site:	Armow WF
Polygon:	Ef uxD-107 (south of T78)
UTM:	17T 0458662 4889509
Date:	Dec 9/11 Time: 8:30
Surveyor(s):	AMD, HLW
Weather:	0°c, 100% cloud cover, snow, wind 2 from SW

Community Classification

	Vegetation Type:	Cattail mineral Meadow Marsh (Graminoid) (MAMM1-2)
X	Inclusion:	Dry-Fresh mixed meadow (MEMM3)
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community		
	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
X	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min.	X	Bottomland		Alvar		River		Prairie
			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
History			Basic Bedrock		Valley Slope		Beach/Bar	X	Marsh		Savannah
X	Natural		Carb. Bedrock		Tableland		Sand Dune		Swamp		Woodland
	Cultural				Roll. Upland		Bluff		Fen		Forest
		Site			Cliff				Bog		Plantation

Cover		Site	Plant Form			
X	Open		Open Water		Plankton		Forb		Coniferous
	Shrub	X	Shallow Water		Submerged		Lichen		Mixed
	Treed		Surficial Dep.		Floating-Lvd		Bryophyte		
			Bedrock	X	Graminoid		Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	~~Canopy~~			
2	~~Sub-canopy~~			
3	Understorey	4	4	narrow leaf cattail >> reed canary grass > red osier dogwood
4	Groundcover	5/7	4	narrow leaf cattail >> reed canary grass

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___ of ___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red osier dogwood			R	R	
sugar maple				R	
common apple			R		
hawthorn sp.			R		
wh. elm		R			
wh. cedar				R	

Species	Layer 1	2	3	4	Sample	
narrow leaf cattail			A	A		>25
reed canary grass			O	O		>25
reed canary grass				A		meadow inc.
teasel				R		meadow inc.
aster sp.				O		meadow inc.
tall goldenrod				O		meadow inc.

Wildlife and Other Notes

- inclusion is disturbed area
- cattail meadow marsh almost entirely dominated by typha + reed canary grass
- photo
- marsh collects road runoff - slopes from North Line down into marsh
- Photo 1162

South of T78, cattail marsh

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(E. of WOD-107)

Wetland Vegetation Communities

Project Name: Armow WF **Project #:** 1275

Observer(s): AMD

Date: Dec 9/11 **Time (24h):** 8:30

Field #: **Weather:** Precipitation: Snow Temp (°C): 0

Map Code: M1 Wind Speed & Direction: 2/SW Cloud %: 100

Wetland Type: Marsh **Site Type:** P **Dominant Form:** robust emergents (re)

% Open Water: 0% **ELC Code:** MAMM1-2

Photos: 1162

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	red osier dogwood
ls	
gc	
(ne)	reed canary grass
be	
(re)	narrow leaf cattail
ff	
f	
su	
m	

Soil type: CL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

American crow heard

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-040 M1

See comments over →

Modified ELC Community Description

Page __ of __

South of T78, cattail marsh

Soils	1	2	3
Position:	S		
Aspect:	240		
%	0.5		
Type:	S		
Class:	A		

Polygon: (East of WOD-107)

Strata: Texture	CL		
Depth	10-45		
Strata: Texture	SiC		
Depth	45-70 cm		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	CL		
Surface Stoniness	–		
Surface Rockiness	–		
Depth to:			
Mottles	11		
Gley	–		
Bedrock	–		
Water table	0		
Carbonates	–		
Depth of Organics	0-10		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6		

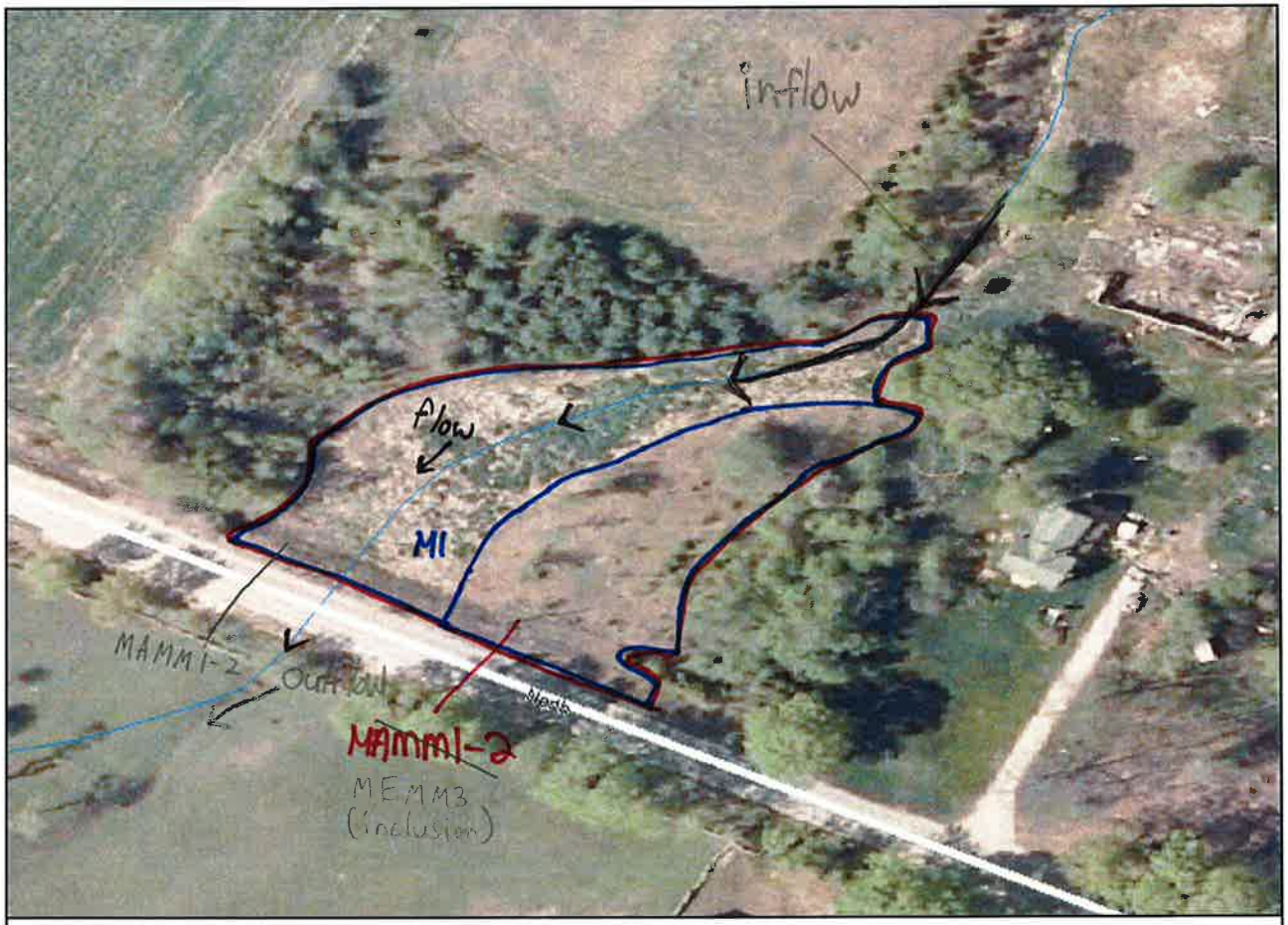
Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

* Difficult to auger past 70 cm due to heavy clay

WOD-107



Map centre: 44° 09' 27.7" N, 81° 30' 59.4" W

Map created: January 6, 2012

0 20 40 60 80 m

Scale: 1:1,300

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

flows

MAMM1-2: intermittent inflow and intermittent outflow, flow direction marked on map in black marker.

Ind. P

MI

WET-040

Wetland

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South of T78



W (WOD-107)

residential

- photo 1154, 1155 of residential area w manitoba maples
- south of North Line completed by roadside.

mixed forest w of cattail marsh

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Avmow WF
Project #: 1275
Date: Dec 01/2011

Start Time 8:15 AM End Time 8:50 AM Observer(s): AMO, HLW

(5 of 78) - W of cattail marsh

Woodland ID (WOD- 107) Weather Conditions: 0°C

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17)	Comments
Plot 1	0	0459900 4992031	
Plot 2	0	0458678 4989558	
Plot 3	0	0458660 4989541	
Plot 4	0	0459652 4989552	
Plot 5	0	0458637 4989535	
Plot 6	0	0458647 4989520	
Plot 7			
Plot 8			
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Final Wodland Tally

Formula: Total # Snags / (# Plots x 0.05ha)

= 0 snags / ha

mixed forest, W of cattail marsh

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Mixed forest
Polygon:	WOD-107 ✗ (sat 78) - W of cattail marsh
UTM:	
Date:	December 8, 2011 **Time:** 16:52
Surveyor(s):	[illegible] TCW, AMD
Weather:	0°C, Snow, 100% cloud cover, wind 2 from SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. Crow	VO		1						
B	Downy Woodpecker	OB		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arnow NF
Polygon:	S of 78 (WOD-108)
UTM:	17T 0458923 4889370
Date:	December 8, 2014 Time: 16:19
Surveyor(s):	[redacted], HLW, AMD
Weather:	2°C, 80% cloud cover, wind 3 from SW

Community Classification

Vegetation Type:	Dry-Fresh White Cedar Conifer Forest (FOCM2-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
✓ Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	✓ Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
✓ Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		✓ Roll. Upland	Bluff	Fen	✓ Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	✓ Coniferous
Shrub	✓ Shallow Water	Submerged	Lichen	Mixed
✓ Treed	Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	3	4	E. White cedar >> White Spruce
2	Sub-canopy	4	2	Hawthorn sp.
3	Understorey	5/6	2	Goldenrod sp. > Aster sp. > Knapweed sp.
4	Groundcover	7	1	Garlic Mustard

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	✓	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
E. White cedar	D				
White Spruce	O				
Red-osier Dogwood			O		
Hawthorne sp.		O			
Knapweed sp.			O		
Reed Canary Grass			O		
Aster sp.			O		
Goldenrod sp.			O		
Sweet cherry	R				
Alternate-leaf Dogwood	R				
Manitoba Maple	O	O			
Red Pine	O				
White Pine	O				

Species	Layer 1	2	3	4	Sample
Garlic Mustard				O	
River bank Grape		O			

Wildlife and Other Notes

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

manitoba maple woodland

Site:	Armour rF
Polygon:	1100-108
UTM:	17T 0458870 4889353
Date:	Dec 9/11
Time:	9 30
Surveyor(s):	AMD, HLW
Weather:	0°C, snow, wind 2/SW, 100% CC

Community Classification

Vegetation Type:	Fresh-Moist Manitoba Maple Decid. Woodland	(WODM5-3)
Inclusion:		
Complex:		

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	X Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	X Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	/	X Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	3	manitoba maple > ash sp
2	Sub-canopy	3	3	manitoba maple > ash sp. > wh. cedar
3	Understorey	4		
4	Groundcover	5-7		

did not observe

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

did not observe

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- watercourse moving through polygon (roughly E-W)
- completed from roadside.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	Arnaud WF
Polygon:	WOD-1DB (manitoba maple woodland)
UTM:	17T 0459870 4989353
Date:	Dec. 9/11 **Time:** 9:30
Surveyor(s):	AMD, HLW
Weather:	0°C, snow, wind 2/SW, 100% CC.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
manitoba maple	O	O			
wh. cedar		R			
ash sp.	O	O			

Species	Layer 1	2	3	4	Sample

Desktop

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arnow **Project #:** 1275

Observer(s): CLH

Date: April 9 2012 **Time (24h):** \

Field #: **Weather:** Precipitation: \ Temp (°C): \

Map Code: S1 Wind Speed & Direction: \ Cloud %: \

Wetland Type: Swamp **Site Type:** R **Dominant Form:** h (S, h)

% Open Water: <5% **ELC Code:** WODMS-3

Photos: Type 1 (stream)

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Manitoba maple
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
No site access
CANSIS soils variable alluvial (Bottomland)

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **si**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic=** >60cm depth over mineral (>10cm over bedrock)**Mineral=** <60cm depth over mineral

WET - 040

S1

WOD-108



Map centre: 44° 09' 22.6" N, 81° 30' 54.7" W

Map created: January 6, 2012

0 30 60 90 120 m

Scale: 1:2,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

WET - 040
51

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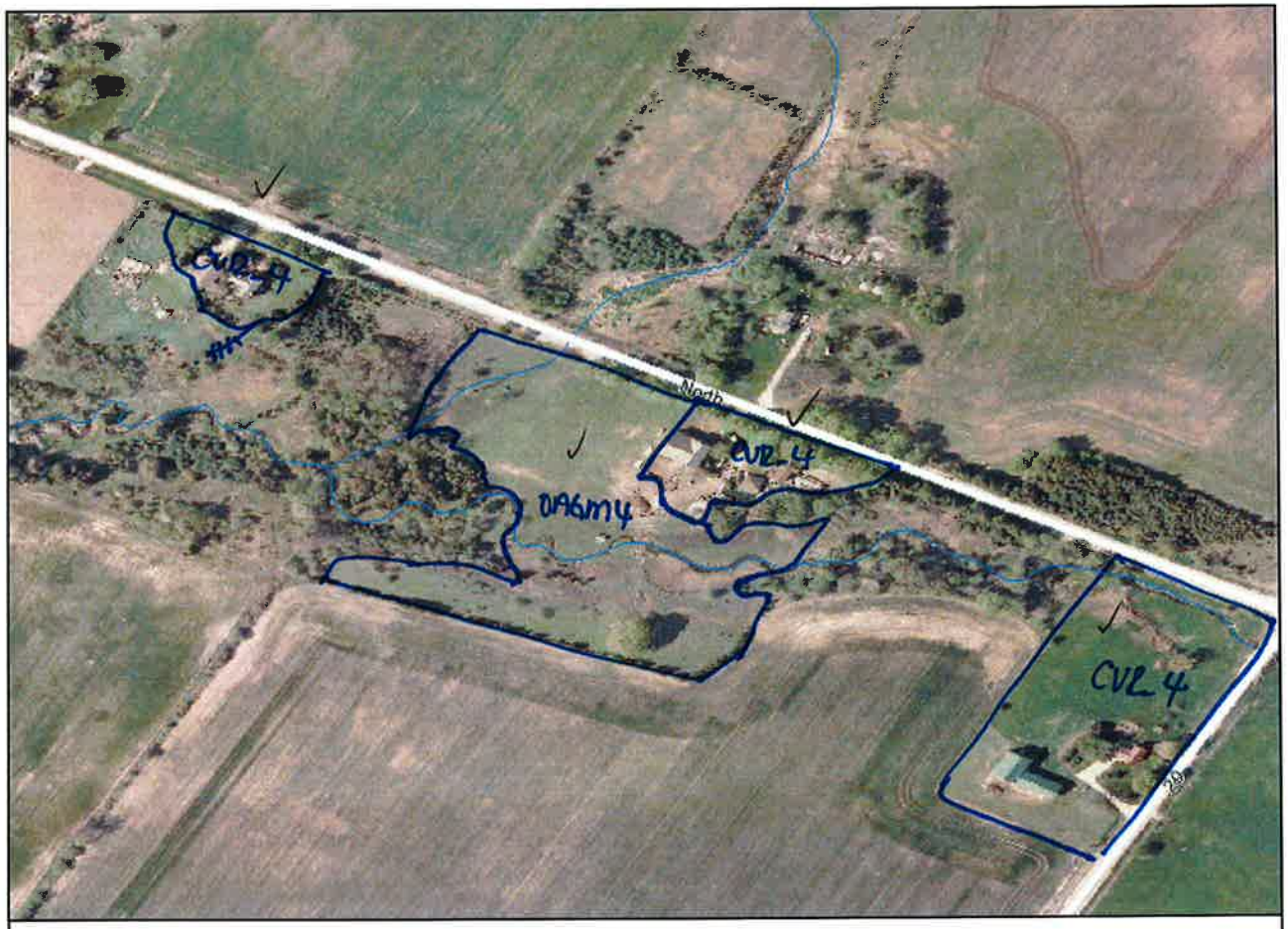
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(WOD-108)



Map centre: 44° 09' 24.3" N, 81° 30' 59.8" W

Map created: January 6, 2012

0 80 160 240 320 m

Scale: 1:4,500

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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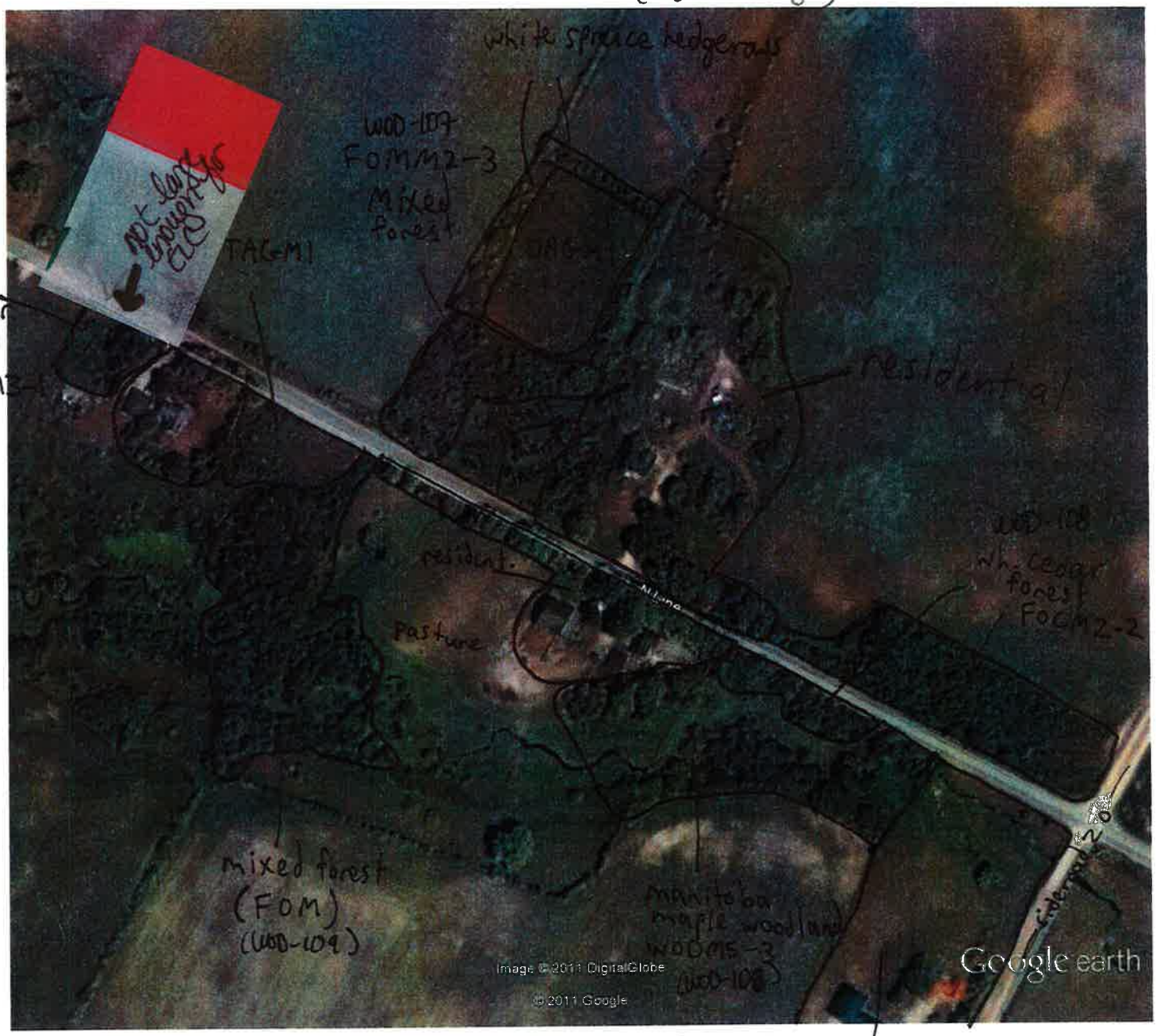
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Ontario

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South of T78

W (WOD-108)



Google earth

feet 1000
meters 300

residential

- photo 1154, 1155 of residential area w manitoba maples
- south of North Line completed by roadside.

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow Int
Polygon:	RDD-108 (S of T78), wh. cedar forest
UTM:	17T 0458923 4889370
Date:	December 8, 2011 **Time:** 16:19
Surveyor(s):	~~AMW~~, KLW, AMD
Weather:	2°C, 80%, cloud cover, wind 3 from SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	white tailed deer	TK		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
✓ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

- No visible snags

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Mixed forest South of North Line Road

Site:	
Polygon:	WOD-109
UTM:	17T 0458600 4889509
Date:	Time:
Surveyor(s):	AMP
Weather:	

From SW

Community Classification

Vegetation Type:	Mixed Forest (FOM)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
✓ Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	✓ Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
✓ Cultural		✓ Roll, Upland	Bluff	Fen	✓ Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	✓ Surficial Dep.	Submerged	Lichen	✓ Mixed
✓ Treed	Bedrock	Floating-Lvd.	Bryophyte	
		Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			Hawthorne sp.
3	Understorey			Knapweed sp. > aster sp.
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis		< 10	✓	10 - 24		25 - 50		> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young	✓	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Pine	O				
Black Locust	O				
White Spruce	O				
White Ash	O				
Trembling Aspen		O			
Manitoba Maple	O				

Species	Layer 1	2	3	4	Sample
Knapweed sp.			O		
Aster sp.			O		

Wildlife and Other Notes

*Completed by roadside

Photo 1165

South of T78 (WOD-109)

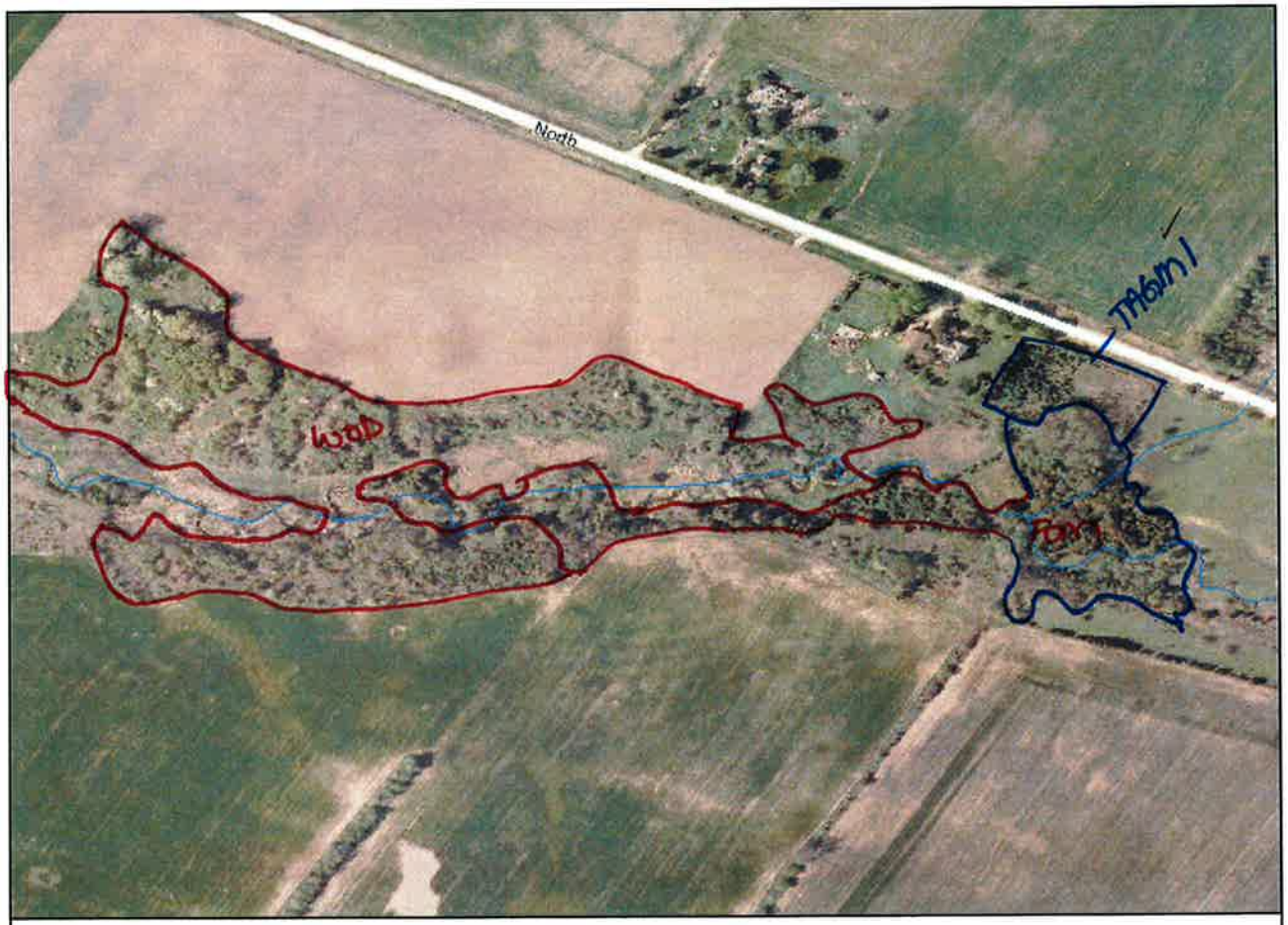


Google earth feet 1000 meters 300

residential

- photo 1154, 1155 of residential area w manitoba maples
- south of North Line completed by roadside.

WOD-109



Map centre: 44° 09' 25.5" N, 81° 31' 14.8" W

Map created: January 6, 2012

0 90 180 270 360 m

Scale: 1:4,900

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

- Aerial
- Roadside

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow	1275
Polygon: SR15/N Line WOD-110 (B)	
UTM:	
Date: Jan 8 2012	Time: 16:27
Surveyor(s): CLH	
Weather: -10C, 60% cc, Wind 2/SE No precip	

Community Classification

Vegetation Type:	FODM11 Naturalized Deciduous
Inclusion:	Hedgerow
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	2	red maple
2	Sub-canopy	3	4	black locust
3	Understorey	4/5	1	white ash
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	O	10 - 24	A	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

PLANT SPECIES LIST

Site: Armow	1275
Polygon: SR15/N Line WOD-110 (B)	
UTM:	
Date: Jan 8 2012	Time: 16:27
Surveyor(s): CLH	
Weather: -10C, 60% cc, Wind 2/SE No precip	

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red maple	O				
black locust		A			
white ash			R		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow 1275
Polygon:	N Line / SR 15 WOD-110 (C)
UTM:	
Date:	Jan 8 2012 Time: 16:29
Surveyor(s):	CLH
Weather:	-10C 60% CC Wind 2/SE No precip

Community Classification

Vegetation Type:	TAGM 5 Fencerow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Red maple
2	Sub-canopy	3	0	—
3	Understorey	4 5	0	—
4	Groundcover	6 7		not inside

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	N	10 - 24	O	25 - 50	O	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

PLANT SPECIES LIST

Site:	Arrow 1275
Polygon:	N Line / SR15 WOD-110
UTM:	
Date:	Jan 8 2012 Time: 16:29
Surveyor(s):	CLH
Weather:	-1°C 60% CC Wind 7/SE No precip

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
planted red maple	D				

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment

planted mature Red Maples

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrnow	1275
Polygon: SR 15 / NLine	WOD-110 (A)
UTM:	
Date: Jan 8 2012	Time: 16:20
Surveyor(s): Cltt	
Weather: -1°C, 60% CC No precip	Wind 2/SE

Community Classification

Vegetation Type:	Foom6-3 Fresh-moist Sugar maple -
Inclusion:	Yellow Birch Deciduous Forest
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
[X] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[ ] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min.	[ ] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thicket
History	[ ] Basic Bedrock	[X] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[X] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[ ] Swamp	[ ] Woodland
[ ] Cultural		[ ] Roll. Upland	[ ] Bluff	[ ] Fen	[X] Forest
	Site	[ ] Cliff		[ ] Bog	[ ] Plantation

Cover		Plant Form		
[ ] Open	[ ] Open Water	[ ] Plankton	[ ] Forb	[ ] Coniferous
[ ] Shrub	[ ] Shallow Water	[ ] Submerged	[ ] Lichen	[ ] Mixed
[X] Treed	[X] Surficial Dep.	[ ] Floating-Lvd.	[ ] Bryophyte	
	[ ] Bedrock	[ ] Graminoid	[X] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	White Ash > Yellow Birch > Sugar maple
2	Sub-canopy	3	3	White Ash > Hawthorn sp. > Black Cherry
3	Understorey	4/5		not visible
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis		< 10		10 - 24	O	25 - 50	N	> 50
Snags	N	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer		Young		Mid-age	[X]	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrnow	1275
Polygon: SR 15/NLine	WOD-110 (A)
UTM:	
Date: Jan 8 2012	Time: 16:20
Surveyor(s): Cltt	
Weather: -1°C, 60% CC, No precip	Wind 2/SE

Layers: 710 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar maple	O				
Whk Ash	A	O			
Hawthorn sp.		O			
Black cherry		R			
Yellow Birch	O				

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment *

DSC-0093, 0090

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow 1275
Polygon:	SR 15/N Line WET-④ Poly A (W(UOD-110)
UTM:	
Date:	Jan 8 2012 Time: 16:24
Surveyor(s):	CLT
Weather:	-10°C 60% CC Wind 7/SE No precip

Community Classification

Vegetation Type:	MAS01-4 Cattail Organic Shallow Marsh
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	X Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	2	willow sp.① > balsam poplar > willow sp.②
3	Understorey	4/5	4	typha latifolia > red osier
4	Groundcover	4/5	1	watercress | others not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

PLANT SPECIES LIST

Site:	Armow 1275
Polygon:	SR 15/N Line WET-④ Poly A
UTM:	
Date:	Jan 8 2012 Time: 16:24
Surveyor(s):	CLT
Weather:	-10°C, 60% CC, Wind 7/SE No precip

Layers: 710 210 0.5-2 <0.5 (1=canopy 2=sub-canopy 3=understorey 4=ground layer)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
typha latifolia			D		
watercress				O	
willow sp①		O			
willow sp②		R			
red osier			O		
balsam poplar		O			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment
Aseep is found at the northern limit of the wetland (this area also connects to the roadside ditch).
DSC_0090, 0091, 0092, 0093

Soil likely organic based on presence of seep, presence of watercress at southern end

5-9

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armour **Project #:** 1275

Observer(s): CLH

Date: Jan 8 2012 **Time (24h):** 16:24

Field #: WET-(4) **Weather:** Precipitation: None Temp (°C): -1

Map Code: Poly A Wind Speed & Direction: 2/SE Cloud %: 60

Wetland Type: Marsh **Site Type:** R **Dominant Form:** re (M, re)

% Open Water: 3% **ELC Code:** MAS01-1

Photos: DSC-0090, 0091, 0092, 0093

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
(re)	typha latifolia
ff	
f	
su	
m	

Soil type: Organic [X] Mineral [ ]

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
Soils likely organic based on presence of a seep (would remain saturated likely for entire year)

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

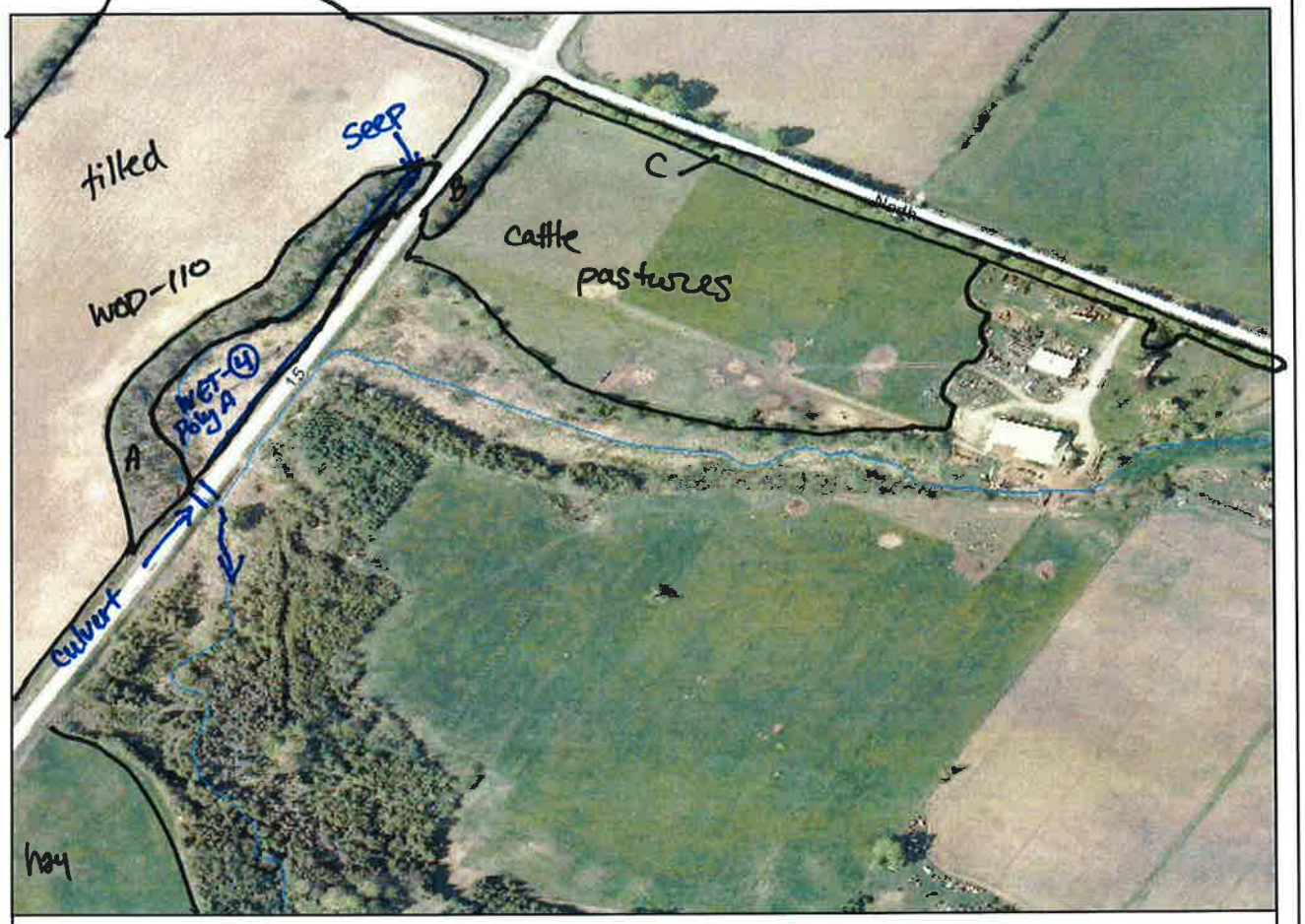
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

roadside survey

M1 WET-048.

(WOD-110)

Sideroad 15 and North Line



Map centre: 44° 09' 43.8" N, 81° 32' 05.0" W

Map created: January 9, 2012

0 90 180 270 360 m

Scale: 1:4,900

Ind. T

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

tilled = OAGM1
A = FODM6-3
wet 4 poly A = MASO1-1
B = FODM11
C = TAGM5
hay = OAGM2
cattle pastures = OAGM4.

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M1
WET-042

Wetland

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnaw WF
Polygon:	WOD-111 (T113, 114, 115)
UTM:	17T 0461612 4888905
Date:	Dec. 9/11 Time: 10:20
Surveyor(s):	AMD, HLW
Weather:	Light Snow, 100% CC, wind 2 from W, 0°C

Community Classification

	Vegetation Type:	Dry-Fresh Sugar Maple-White Ash Decid. Forest (FODM5-8)
	Inclusion:	
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Sugar maple > wh. ash > basswood > beech
2	Sub-canopy	2	4	Sugar maple > wh. ash > basswood > beech
3	Understorey	3	4	Sugar maple > basswood = ironwood
4	Groundcover	5-7	2	chokecherry > wh. ash > Xmas fern

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	A	25 - 50	O	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	R	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
beech	R	O	O		
ironwood		R	O		
sugar maple	A	A	A		
basswood	O	O	O		
wh. elm	R	R			
red osier dogwood				R	
yellow birch	R				
white ash	O	O	O	O	
black cherry		R	R		
white pine	R	R			
red pine	R	R			
white spruce	R				
scots pine		R			
hemlock	R				
wh. elderberry			R		
choke cherry			R	O	

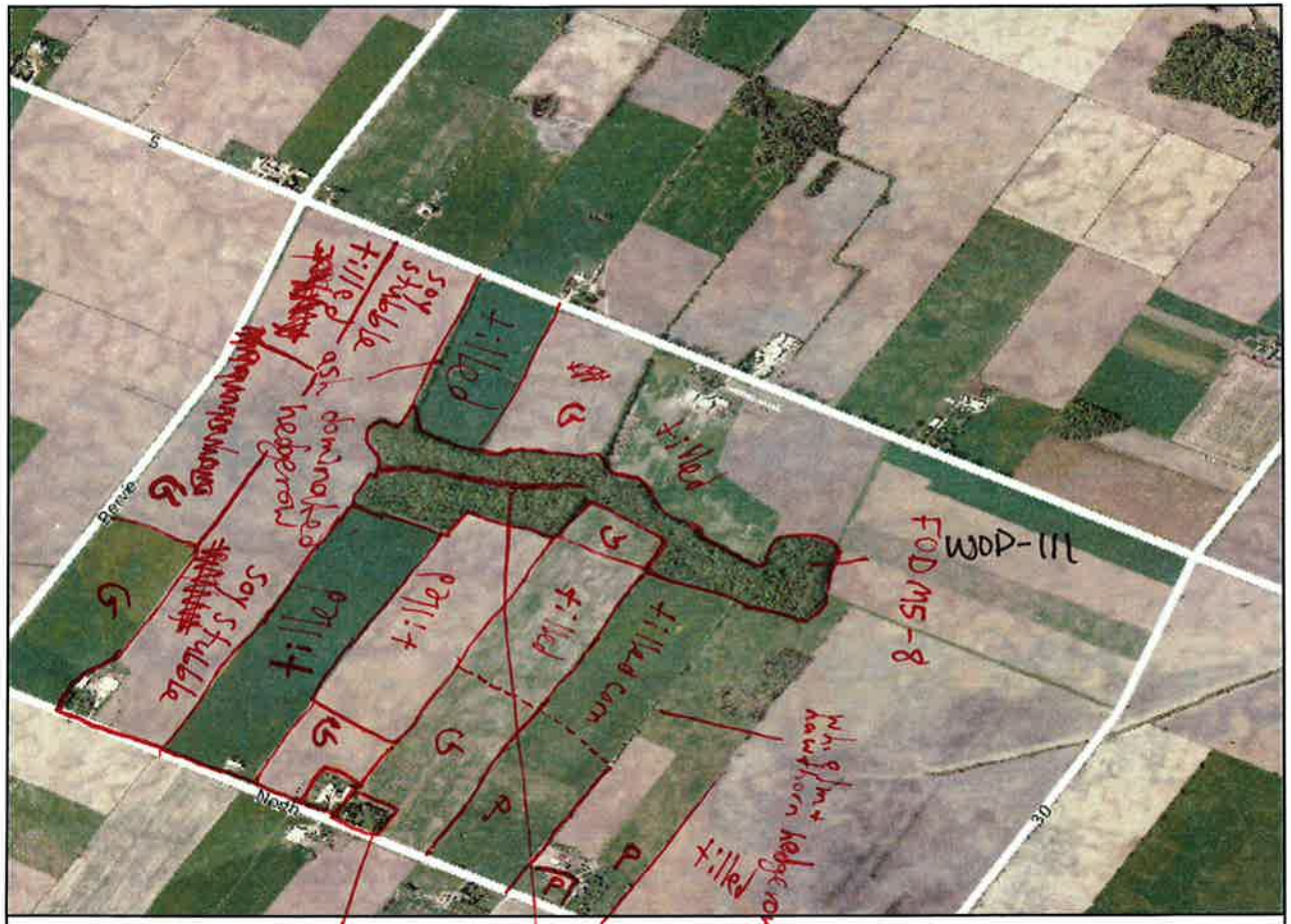
Species	Layer 1	2	3	4	Sample
zig zag goldenrod				R	
avens sp.				R	
teal gall				R	
Xmas fern				R	
blue cohosh				R	
wild leek				R	

Wildlife and Other Notes

- snow covering groundcover - photo 1166, 1167
- small ephemeral (appears to be) watercourse running through woodland
  - ↳ shown roughly on map
- ATV trail is through forest, w culvert (small) going under section of trail

(WOD-111)

T113/ T114/115


tilled
soybeans
tilled
soybeans
tilled
tilled
tilled

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Arrow WF

Project #: 1275

Date: Dec 9/2011

Start Time 10:20 End Time 11:45

T113/114/115

Observer(s): AMD, HLW

Woodland ID (WOD- 111) Weather Conditions: 5°C, snow, 100%, light SW, wind 3

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone:)	Comments
Plot 1	0	0461598 4989916	
Plot 2	0	0466651 4988901	
Plot 3	1	0466617 4988863	
Plot 4	0	0466626 4988801	
Plot 5	0	0466673 4988791	
Plot 6	0	0466720 4988879	
Plot 7	0	0466776 4988816	
Plot 8	1	0466321 4988801	
Plot 9	0	0466885 4988826	
Plot 10	0	0466968 4988802	
Plot 11	0	0466754 4988862	
Plot 12	0	0466863 4988864	
Plot 13	0	0466719 4988920	
Plot 14	0	0466695 4988930	
Plot 15	0	0466652 4988940	
Plot 16	0	0466641 4988919	
Plot 17	0	0466599 4988977	
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Final Wodland Tally

Formula: Total # Snags / (# Plots x 0.05ha)

= 2 / (17 x 0.05) ≈ 2.4 snags/ha

Wildlife Observation Form
NATURAL RESOURCE SOLUTIONS INC.

X WOD-111K

Site:	Kinnow WF
Polygon:	WOD-111 (T113, 114, 115)
UTM:	17T 0461612 4988905
Date:	December 9, 2011 **Time:** 10:20
Surveyor(s):	[redacted], HLW, HMD
Weather:	0°C, Snow, wind 8, 100% cloud cover

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	E. columbiana	TK		1						
B	Bird sp.	NO		2						

Faunal Type Codes (TY)
B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds
SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife
OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form
NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)
Habitats and Habitat Features are independent of wildlife observations

Habitat Type
- [x] Deciduous Forest
- [ ] Mixed Forest
- [ ] Coniferous Forest
- [ ] Marsh
- [ ] Swamp
- [ ] Bog
- [ ] Fen
- [ ] Water (Shallow & Open)
- [ ] Meadow
- [ ] Tallgrass Prairie
- [ ] Thicket
- [ ] Savannah
- [ ] Woodland
- [ ] Valley (Describe Below)
- [ ] Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- [ ] Spring Flooded Field
- [ ] Stick Nest (Raptors, Herons)
- [ ] Snag (Raptors, Herons)
- [ ] Tree Cavity Nest (Ducks)
- [ ] Seep/Spring (Turkeys/Grouse)
- [ ] Cliffs/Banks

Bats
- [ ] Cave Entrance
- [ ] Mine Shaft
- [x] Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- [ ] Snag
- [ ] Burrow
- [ ] Den
- [ ] Tree Cavity
- [ ] Fallen Log

Deer/Moose
- [ ] Seep/Spring
- [ ] Mineral Lick

Snakes
- [ ] Burrow
- [ ] Fallen Rotting Log
- [ ] Old Well
- [ ] Rock Pile/Stone Wall
- [ ] Organics Pile
- [x] Log Pile
- [ ] Karst
- [ ] Broken/Fissured Rock
- [ ] Old Foundation
- [ ] Old Bridge/Concrete Culvert

Amphibians and Turtles
- [ ] Vernal Pool/Woodland Pond (Amphibian Breeding)
- [ ] Sand (Turtle Nesting)
- [ ] Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- [ ] Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Cuttings pile	0461892 4988580	Large pile @ edge of woodlot

Describe Valley (depth, geomorphological traits):

Additional Details:
Photo 1168 - Pile of cuttings

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Atmow
Polygon:	WOD-xxvii (WOD-112)
UTM:	
Date:	Nov 11 2011
Time:	15:30
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:		SWDM2-2 Gc. Ash Mineral Dec. Swamp
	Inclusion:	
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community			
X	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
?	Wetland		Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min.		Bottomland		Alvar		River		Prairie
			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
History			Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
X	Natural		Carb. Bedrock		Tableland		Sand Dune	X	Swamp		Woodland
	Cultural			X	Roll. Upland		Bluff		Fen		Forest
		Site			Cliff				Bog		Plantation

Cover		Site	Plant Form				
	Open		Open Water		Plankton		Forb		Coniferous
	Shrub	X	Surficial Dep		Submerged		Lichen		Mixed
X	Treed		Bedrock		Floating-Lvd.		Bryophyte		
					Graminoid	X	Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	
2	Sub-canopy	3	2	
3	Understorey	4	4	
4	Groundcover	6	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	N	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Ash sp
Maple sp.
Poplar sp.

Swamp?

Woodside Survey

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow WF **Project #:** 1275

Observer(s): PWD, NGM

Date: Nov. 11, 2011 **Time (24h):** 15:30

Field #: **Weather:** Precipitation: None Temp (°C):

Map Code: WOD-112 Wind Speed & Direction: Cloud %:

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (S, h)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash 50%, Freeman's Maple 25%
c	
dc,dh,ds	
ts	Hawthorn sp.
ls	Red Raspberry
gc	Common Burdock
ne	
be	
re	
ff	
f	
su	
m	

Soil type: unknown Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):
None observed

Wildlife Notes:
None observed.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

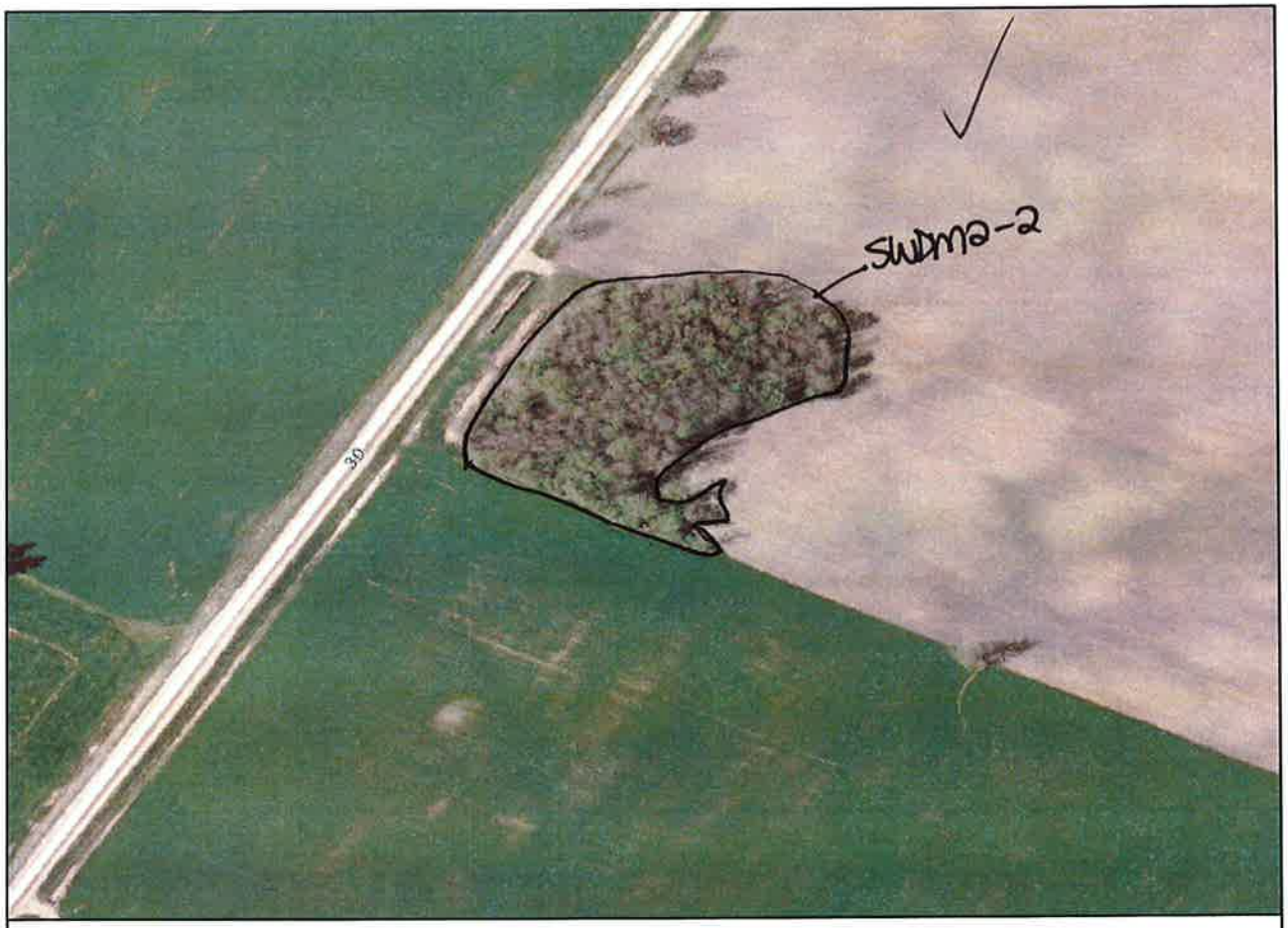
Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

roadside assessment

WET-031 S1

WOD-112 ← added to WOD layer (0.756 Ha)



Map centre: 44° 10' 11.1" N, 81° 26' 36.7" W

Map created: December 30, 2011

0 50 100 150 200 m

Scale: 1:3,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex E
S1 WET-031
Wetland

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WOD-XiVB (WOD-113)
UTM:	
Date: Nov 10 2011	Time: 16:20
Surveyor(s):	DWD NGM
Weather:	

Community Classification

Vegetation Type:	FOMM6-2 Fresh-Moist Hemlock - Hardwood Mixed Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Ash sp. >> Am. Beech > E. Hemlock > Bur Oak
2	Sub-canopy	3	3	"
3	Understorey	4	3	"
4	Groundcover	5	2	Aster sp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	C	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

Completed roadside

Desktop

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow		**Project #:** 1275	
Observer(s): CLH			
Date: April 9 2012	**Time (24h):** \		
Field #:	**Weather:** Precipitation: \	Temp (°C): \	
Map Code: S1	Wind Speed & Direction: \	Cloud %: \	
Wetland Type: Swamp	**Site Type:** P	**Dominant Form:** h.	
% Open Water: 0.	**ELC Code:** Fomm 6-2		
Photos:			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Ash sp.
c	E-Hemlock
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

No site access
ORNSIS soil mapping: clay loam

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

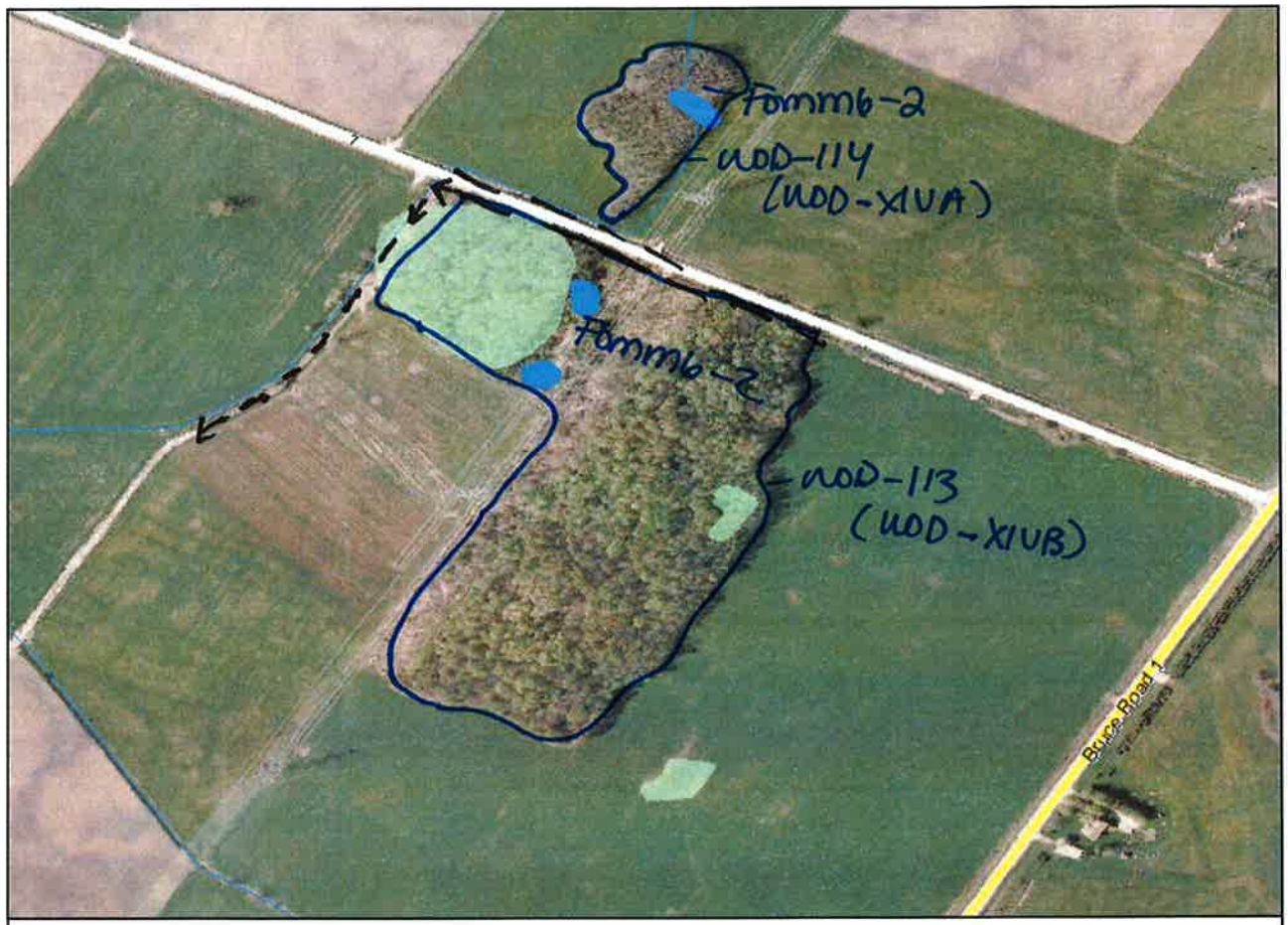
Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **si**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

S1

WET- 044

WOD-113/WOD-114



Map centre: 44° 09' 25.9" N, 81° 25' 48.5" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:6,400

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

WET-044
S1

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WOD-XIVA (WOD-114)
UTM:	
Date:	Nov 10 2011
Time:	16:20
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	FOMM6-2 Fresh-Moist Hemlock - Hardwood Mixed Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Ash sp. >> Am. Beech > E. Hemlock > Bur Oak
2	Sub-canopy	3	3	"
3	Understorey	4	3	"
4	Groundcover	5	2	Aster sp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample

Desktop.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275.

Observer(s): CLH

Date: April 9 2012 **Time (24h):**

Field #: **Weather:** Precipitation: Temp (°C):

Map Code: S1 Wind Speed & Direction: Cloud %:

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h

% Open Water: 0 **ELC Code:** FOMM6-2.

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Ash sp.
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

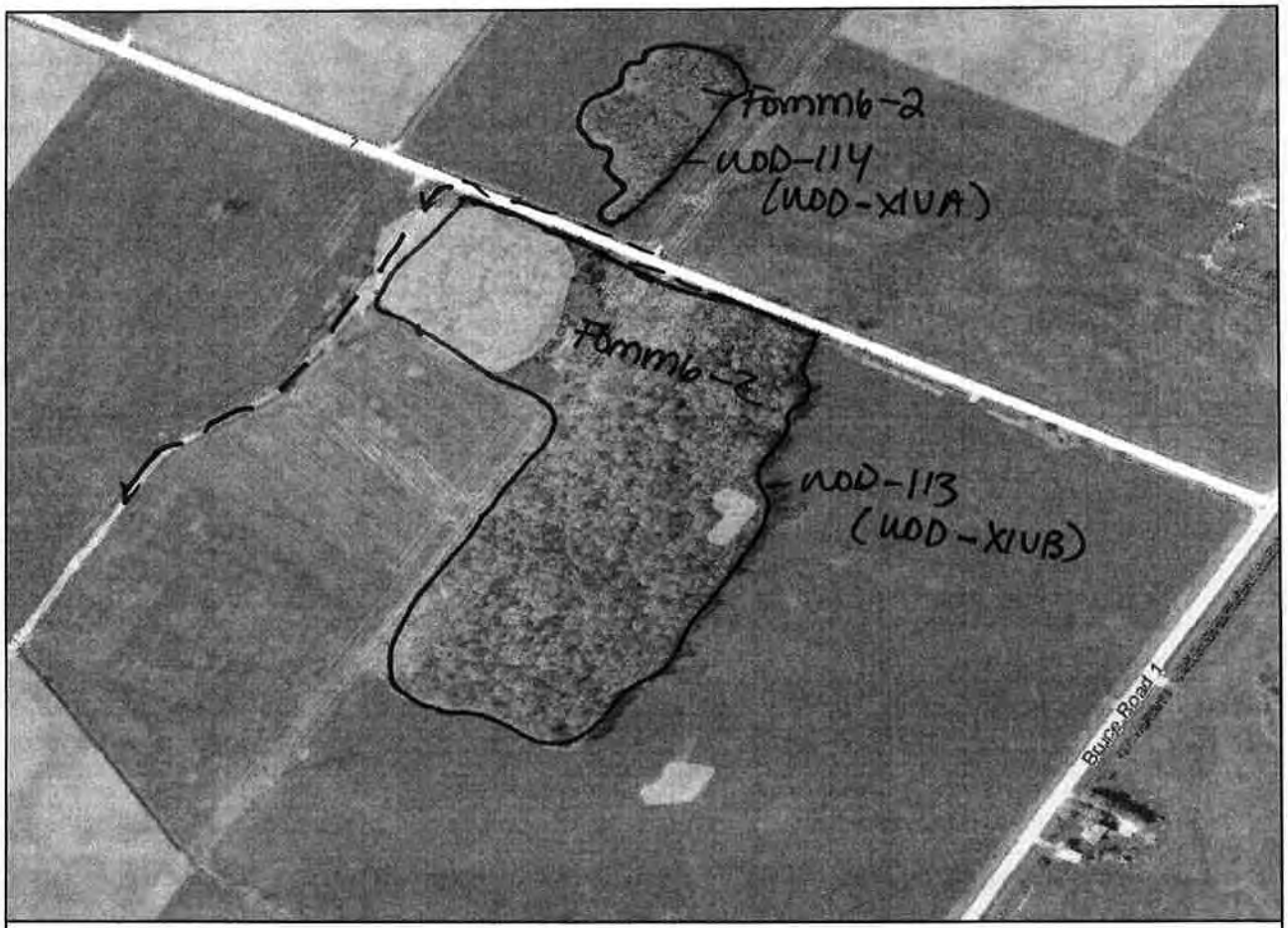
Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

S1

WET-044
WOD-114

WOD-113/WOD-114



Map centre: 44° 09' 25.9" N, 81° 25' 48.5" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:6,400

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: WOD-115 / WET-(3) Poly E	WET-04109 53-B
UTM:	
Date: Jan 8 2012	Time: 16:00
Surveyor(s): CLH	
Weather: -19°, 70% CC, Wind 2/SE Nopreip	

Community Classification

Vegetation Type:	SWDM3 Maple Mineral Deciduous Swamp Ecosite.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	soft maple = ash sp. >> trembling aspen
2	Sub-canopy	3	0	—
3	Understorey	4	2	reed canary > red osier
4	Groundcover	5		

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	✓	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WOD-115 / WET-(3) Poly E	
UTM:	
Date: Jan 8 2012	Time: 16:00
Surveyor(s): CLH	
Weather: -19, 70% CC, Wind 2/SE Nopreip	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer (7 10 2-10 0.5-2 <0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Softmaple sp.	O										
red osier			O								
ash sp.	O										
trembling aspen	R										
reed canary			O								

Other Notes (Landowner Contact, General Notes, etc.)

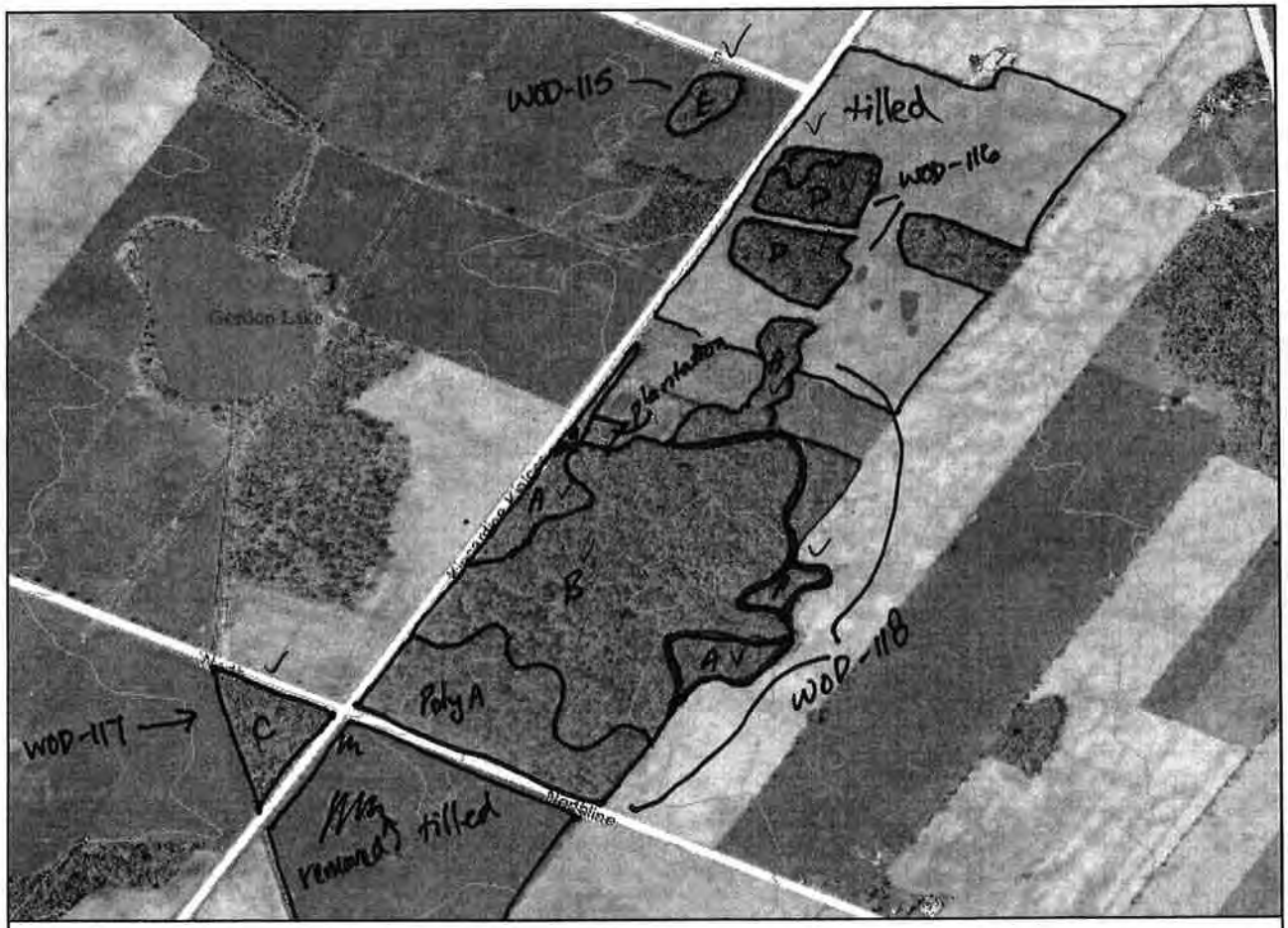
Roadside Assessment #

Jan 8 2012 CH

Copy

Kincardine-Kinloss and North Line

WET-3



Map centre: 44° 08' 01.6" N, 81° 26' 25.0" W

Map created: January 9, 2012

0 200 400 600 800 m

Scale: 1:15,000

Legend

Contours

Freeways

Highways

Arterial Road

Collector Ro

Local Roads

Rivers and Streams 20K

Lakes and Ponds 20K

Province

A = S1
B = S2-A
C = S2-B
F = S3-A
D = S3-B
E = S3-B

aerial interp

A = SWBM4-5
B = SWBM4
plantation = TMMM1
C = SWBM4-5
F = SWBM4-3
D = SWBM3
E = SWBM3

Complex V
S1
S2-A
S2-B
S3-A
S3-B

WET 04

wetlands

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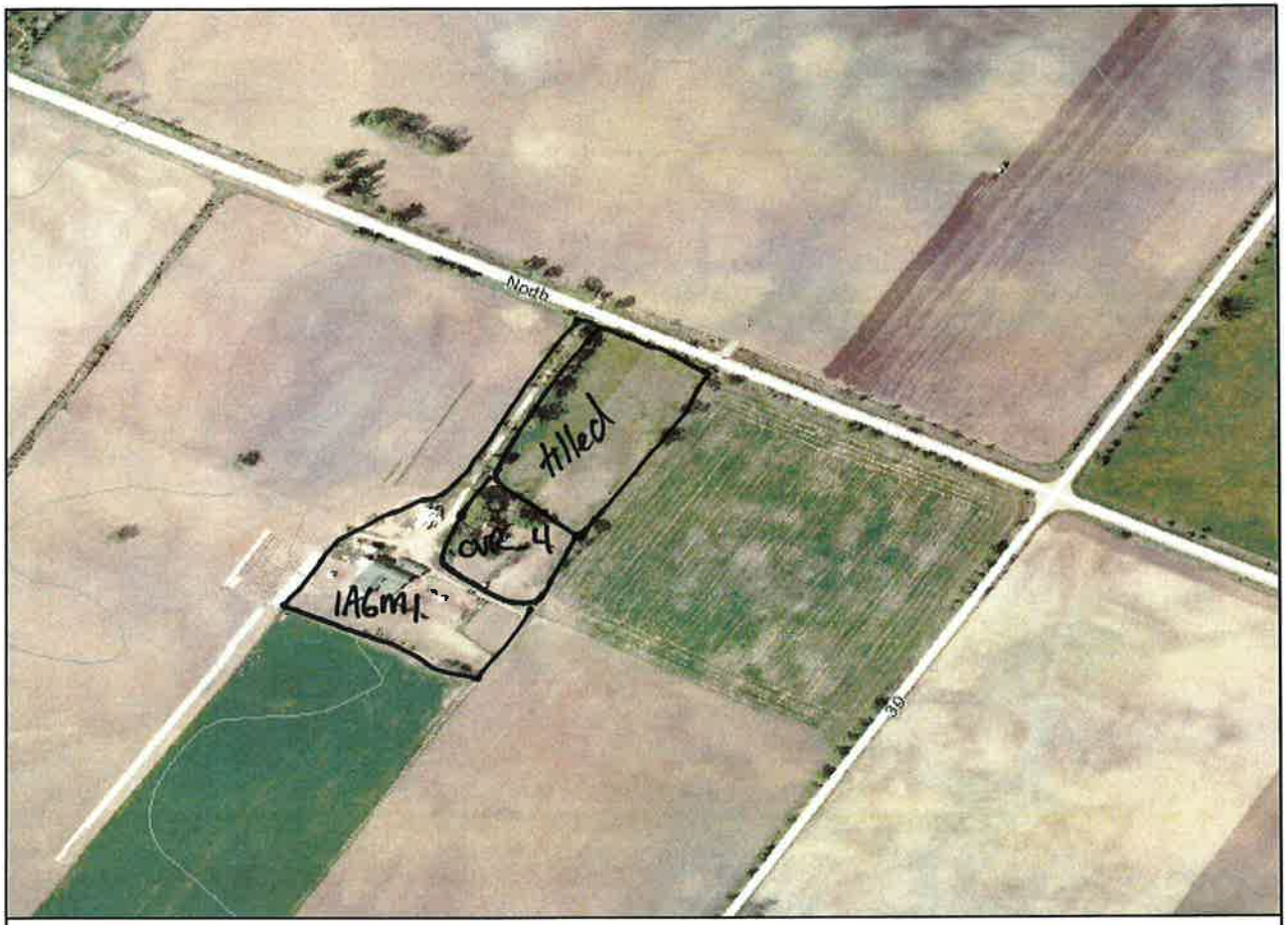
Ontario

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Jan 8 2012
CLH

North Line and Sideroad 30

AMD -115



Map centre: 44° 08' 17.7" N, 81° 28' 15.9" W

Map created: January 9, 2012

0 100 200 300 400 m

Scale: 1:5,500

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

filled - 1A6m1

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 12 of 19

Site: Arnold	1275
Polygon: WOD-116 / WET-(3) PolyF	
UTM:	
Date: Jan 8 2012	Time: 15:45
Surveyor(s): CLH	
Weather: -1°C, CC 70%, Wind 2/SE No precip.	

Community Classification

Vegetation Type:	SWDM11-3 White Birch-Poplar mineral
Inclusion:	Deciduous Swamp
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	ash sp. > white birch > balsam poplar > white elm
2	Sub-canopy	3	1	ash sp
3	Understorey	4	1	ash sp.
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page 13 of 19

PLANT SPECIES LIST

Site: Arnold	
Polygon: WOD-116 / WET-(3) PolyF	
UTM:	
Date: Jan 8 2012	Time: 15:45
Surveyor(s): CLH	
Weather: -1°C, 70% CC, Wind 2/SE No precip.	

Layers: 710 2-10 0.5-2 <0.5 (1=canopy 2=sub-canopy 3=understorey 4=ground layer)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white birch	A				
balsam poplar	D				
white elm	O				
ash sp.	A	D	6		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #1
(See map w/ WOD-115)

14-19

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arnow **Project #:** 1275 (WOD-116)

Observer(s): CLH

Date: Jan 8 2012 **Time (24h):** 15:45

Field #: WET-(3) **Weather:** Precipitation: None Temp (°C): -1

Map Code: 90hy F (53-A) **Wind Speed & Direction:** 2 / SE **Cloud %:** 70

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h (S,h)

% Open Water: 0 % **ELC Code:** SWDM4-3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	ash sp., white birch, balsam poplar, white elm
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒ ?

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment #. WET-041
S3 h
-A

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: WRD-116 / WET-③ Poly D	
UTM:	
Date: Jan 8 2012	Time: 15:52
Surveyor(s): CLH	
Weather: -1°C, 70% CC, Wind 2/SE No precip	

Community Classification

Vegetation Type:	SWDM3 Maple Mineral Deciduous
Inclusion:	Swamp Ecosite
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	soft maple = ash sp. > trembling aspen
2	Sub-canopy	3	0	—
3	Understorey	4/5	2	reed canary > red osier
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	1275
Polygon: WRD-116 / WET-③ Poly D	
UTM:	
Date: Jan 8 2012	Time: 15:52
Surveyor(s): CLH	
Weather: -1°C 70% CC Wind 2/SE No precip	

Layers: 7m 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
trembling aspen	O				
soft maple	A				
ash sp.	A				
reed canary			O		
red osier			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

17 – 19

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in * WOD-116 *

Project Name: Armow		**Project #:** 1275	
Observer(s): CLH			
Date: Jan 8 2011	**Time (24h):** 15:52		
Field #: WET-(3)	**Weather:** Precipitation: none	Temp (°C):	-1
Map Code: Poly D/E	Wind Speed & Direction: 2/SE	Cloud %:	70
Wetland Type: Swamp	**Site Type:** I	**Dominant Form:**	h (S,h)
% Open Water: 0 %	**ELC Code:** SWDm3		
Photos:			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Soft maple, ash sp., trembling aspen
c	
dc,dh,ds	
ts	red osier dogwood
ls	
gc	
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Roadside Assessment of WET-041

E is the same community + S3 h composition as D. -B

Jan 8 2012 CH Copy

Kincardine-Kinloss and North Line

WET-3



Map centre: 44° 08' 01.6" N, 81° 26' 25.0" W

Map created: January 9, 2012

0 200 400 600 800 m

Scale: 1:15,000

Legend

Contours

Freeways

Highways

Arterial Road

Collector Rol

Local Roads

Rivers and Streams 20K

Lakes and Ponds 20K

Province

A = S1
B = S2-A
C = S2-B
F = S3-A
D = S3-B
E = S3-B

aerial interp

A = SWDM4-5
B = SWDM4
plantation = TMM1
C = SWDM4-5
F = SWDM4-3
D = SWDM3
E = SWDM3

Complex V
S1
S2-A
S2-B
S3-A
S3-B

WET-OP

wetlands

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: WOD - 117 / WET - (3) Poly C	
UTM:	
Date: Jan 8 2012	Time: 15:08
Surveyor(s): CLH	
Weather: -1°C, cc 95%, Wind 7/SE Nopreip	

Community Classification

Vegetation Type:	SWDM 4-5 Poplar mineral Deciduous Swamp.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll, Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	2	balsam poplar > white elm
2	Sub-canopy	3	4	balsam poplar > wild raisin > white elm > white cedar
3	Understorey	3 4	3	riverbank grape > red osier > red canary
4	Groundcover	6 7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	O	< 10	O	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	A	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WOD - 117 / WET - (3) Poly C	
UTM:	
Date: Jan 8 2012	Time: 15:08
Surveyor(s): CLH	
Weather: -10C, 95%CC, Wind 2/SE NO preip	

Layers: 1=canopy (7to) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
balsam poplar	O	A			
Viburnum opulus		O			
Phragmites aus.		R			
white cedar		O			
riverbank grape			A		
wild raisin		A			
red osier			R		
reed canary			O		
hawthorn sp.		R			
white elm	O	O			
willow sp.		R			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside assessment * Red Squirrel obs.

Some clearing has taken place in NW corner recently (of shrub/hay area) (see map in WOD-117)

11_19

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

* In WOD-117 *

Project Name: Armow **Project #:** 1275

Observer(s): CHT

Date: Jan 8 2012 **Time (24h):** 15:08

Field #: WET-(3) **Weather:** Precipitation: None Temp (°C): -1

Map Code: Poly C (52B) Wind Speed & Direction: 2/SE Cloud %: 70

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h (S, h)

% Open Water: 0 % **ELC Code:** SWDM4-5.

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	balsam poplar, white elm, willow sp, hawthorn sp
c	white cedar
dc,dh,ds	
(ts)	wild raisin, viburnum opulus, red osier dogwood
ls	
gc	river bank grape
ne	reed canary grass
be	
re	phragmites australis
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog, F=fen

Site Type: L=lacustrine; **P**=palustrine; R=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand, **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Roadside Assessment.

WET-041

S2 h

ts

-B

WOD-117

Jan 8 2012 CH Copy

Kincardine-Kinloss and North Line

WET-088 (3)



Map centre: 44° 08' 01.6" N, 81° 26' 25.0" W

Map created: January 9, 2012

0 200 400 600 800 m

Scale: 1:15,000

Legend

Contours

Freeways

Highways

Arterial Road

Collector Ro

Local Roads

Rivers and Streams 20K

Lakes and Ponds 20K

Province

A = S1
B = S2-A
C = S2-B
F = S3-A
D = S3-B
E = S3-B

aerial interp

A = SWDM4-5
B = SWDM4
plantation = [illegible]
C = SWDM4-5
F = [illegible]
D = SWDM3
E = SWDM3

Complex V
S1
S2-A
S2-B
S3-A
S3-B
WET
OUT

wetlands

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnow 1275.
Polygon:	WOD-118
UTM:	
Date:	Jan 8 2012
Time:	15:00
Surveyor(s):	CLH
Weather:	-1°C, 95% CC, Wind 2/SE, No precip.

Community Classification

Vegetation Type:	TAbm1 Coniferous Plantation.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	white pine
3	Understorey	4/5	0	—
4	Groundcover	1/2		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	6	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site:	Arnow 1275
Polygon:	WOD-118
UTM:	
Date:	Jan 8 2012
Time:	15:00
Surveyor(s):	CLH
Weather:	-1°C, 95% CC, Wind 2/SE No precip

Layers: 710 210 052 CO5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
white pine		D									

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: WOD-118/WET-③	Poly A
UTM:	
Date: Jan 8 2012	Time: 14 39
Surveyor(s): CLH	
Weather: -1°, 95% CC, Wind 2/SE	No precip

Community Classification

Vegetation Type:	SWDM4-5 Poplar Mineral Deciduous
Inclusion:	Swamp.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll, Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	ash sp. = balsam poplar > white elm
2	Sub-canopy	3	4	balsam poplar > ash sp. > wild raisin > white cedar
3	Understorey	4 3	4	red osier > reed canary > willow sp. > riverbank grape
4	Groundcover	5 6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	N	> 50
Snags	N	< 10	O	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WOD-118/WET-③	
UTM:	
Date: Jan 8 2012	Time: 14:39
Surveyor(s): CLH	
Weather: -1°C, 95% CC, Wind 2/SE	No precip

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
balsam poplar	A	A			
ash sp.	A	A			
riverbank grape			R		
willow sp.			O		
red osier			A		
reed canary			O		
white elm	R				
wild raisin		A			
common buckthorn			R		
white pine (planted)		O			
white cedar		O			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.
(see map w/ WOD-115)

3_19

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

In WOD-118*

Project Name: Armow **Project #:** 1275

Observer(s): CLH

Date: Jan 8 2012 **Time (24h):** 14:39

Field #: WET-(3) **Weather:** Precipitation: None Temp (°C): -1

Map Code: Poly A (S1) Wind Speed & Direction: 2 / SE Cloud %: 95

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h (S,h)

% Open Water: 0 % **ELC Code:** SWDM4-5

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	balsam poplar, ash sp., white elm
c	white pine, white cedar
dc,dh,ds	
(ts)	red osier, wild raisin,
ls	willow sp., common buckthorn
gc	riverbank grape
(ne)	reed canary grass,
be	
re	
ff	
f	
su	
m	

Soil type: ☐ Organic ☒ Mineral

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment*. WET-041 S1 h ts ne

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: WOD-118/WET-③ PolyB	
UTM: —	
Date: Jan 8 2012	Time: 14:50
Surveyor(s): CLH	
Weather: -1°C, 95% CC, Wind 2/SE No precip	

Community Classification

Vegetation Type:	SWDM4 maple Mineral Deciduous Swamp
Inclusion:	Ecosite.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	soft maple sp. >> white elm > ash sp
2	Sub-canopy	3	2	soft maple >> wild raisin > white cedar
3	Understorey	4/3	3	red osier > reed canary > typha latifolia
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	O	10 - 24	A	25 - 50	O	> 50
Snags	R	< 10	O	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

PLANT SPECIES LIST

Site: Arnow	
Polygon: WOD-118/WET③ PolyB	
UTM:	
Date: Jan 8 2012	Time: 14:50
Surveyor(s): CLH	
Weather: -1°C, 95% CC, wind 2/SE No precip.	

Layers: 710 (1=canopy) 2-10 (2=sub-canopy) 0.5-2 (3=understorey) <0.5 (4=ground layer)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
white elm	O										
Soft maple sp.	D	O									
reed canary			O								
typha latifolia			R								
red osier			A								
Am Beech (atypical - slight hump in topog.)	R										
wild raisin		R									
white cedar		R									
ash sp.	O										

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment of several elm snags (< 25 cm dbh)

6 — 19

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in WOD-118

Project Name: Armow		**Project #:** 1275	
Observer(s): CLH			
Date: Jan 8 2012	**Time (24h):** 14:50		
Field #: WET-(3)	**Weather:** Precipitation: None	Temp (°C): -1	
Map Code: Poly B (S2A)	Wind Speed & Direction: 2 / SE	Cloud %: 95	
Wetland Type: Swamp	**Site Type:** I	**Dominant Form:** h (S, h)	
% Open Water: 0 %	**ELC Code:** SWDM4		
Photos:			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	soft maple, white elm, American beech, ash sp.
c	white cedar
dc,dh,ds	
(ts)	reed osier, wild raisin
ls	
gc	
ne	reed canary grass
be	
re	typha latifolia
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; **IS**=isolated

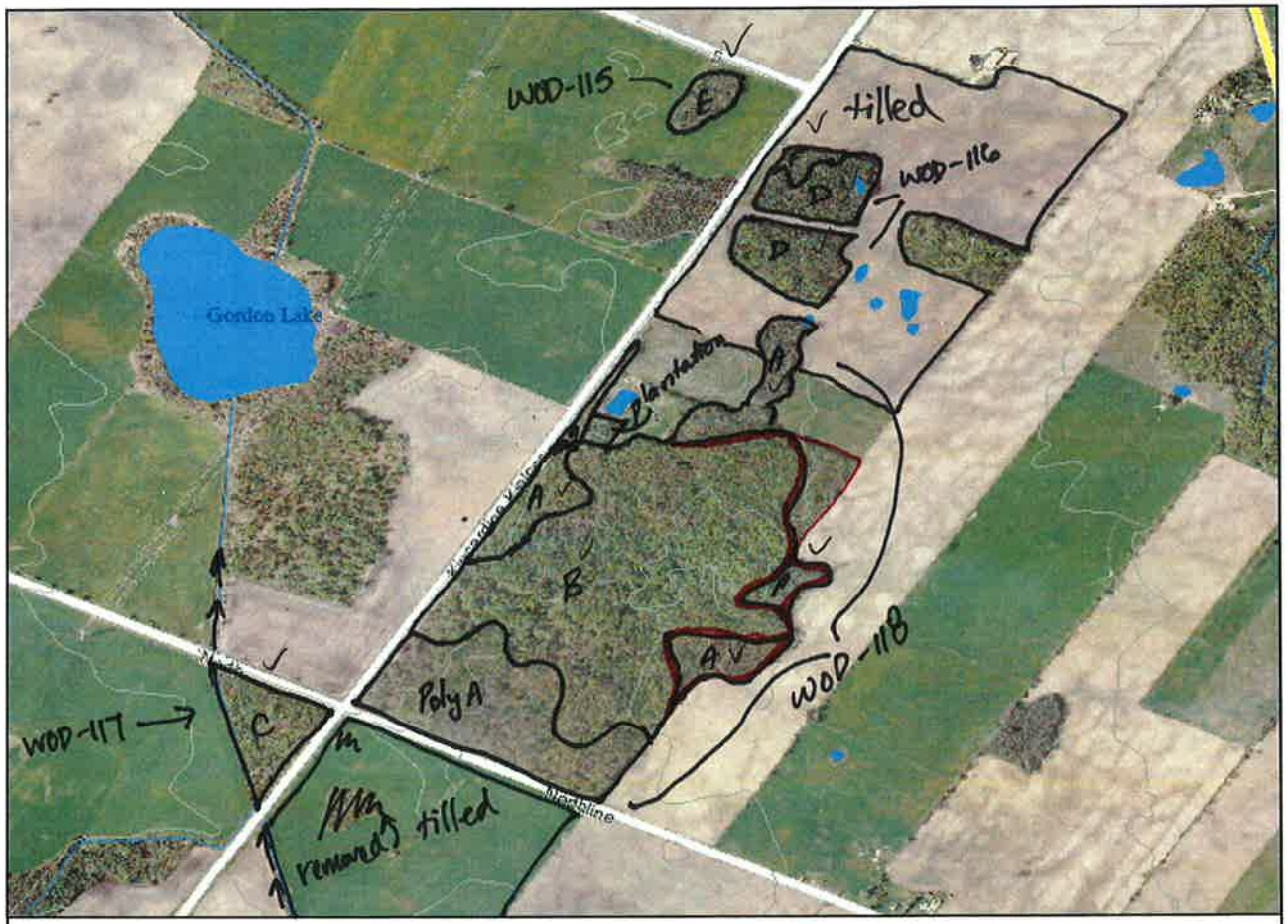
Soil type: **cl**=clay/loam; **sl**=silt/loam; l=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment WET-041 S2-A h ts

Jan 8 2012 CH

Kincardine-Kinloss and North Line

WET-3



Map centre: 44° 08' 01.6" N, 81° 26' 25.0" W

Map created: January 9, 2012

0 200 400 600 800 m

Scale: 1:15,000

Legend

Contour

Freeway

Highway

Arterial

Collector

Local R

Rivers and Streams 20K

Lakes and Ponds 20K

Province

A = S1
B = S2-A
C = S2-B
F = S3-A
D = S3-B
E = S3-B

aerial interp

A = SWDM4-S
B = SWDM4
plantation = TAOM1
C = SWDM4-S
F = SWDM4-3
D = SWDM3
E = SWDM3

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow 1275
Polygon:	WOD-119 Poly E
UTM:	
Date:	Jan 8 2012 Time: 14:20
Surveyor(s):	CLH
Weather:	-10°C CC 95% Wind 2/SE No precip

Community Classification

Vegetation Type:	TAGM1 Coniferous Plantation
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub		Surficial Dep.	Submerged	Lichen	Mixed
Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	White Spruce > White Pine
3	Understorey	4 5	3	White Spruce > Tamarack
4	Groundcover	6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arrow
Polygon:	WOD-119 Poly E
UTM:	
Date:	Jan 8 2012 Time: 14:20
Surveyor(s):	CLH
Weather:	-1°C 95% CC Wind 2/SE No precip

Layers: 7.0 2-10 0.5-2 0.0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white spruce		D	D		
white pine		O			
tamarack			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow	12.75
Polygon: WOD-119 / WET-(2) PdyD	
UTM:	
Date: Jan. 8 2012	Time: 14:15
Surveyor(s): CEH	
Weather: -1°C, 95% CC Wind 2/SE No precip	

Community Classification

Vegetation Type:	SWDM3 maple mineral Deciduous
Inclusion:	Swamp Ecosite
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	
1	Canopy	2	4	soft maple > ash sp.
2	Sub-canopy	3		not visible
3	Understorey	4/5	4	red osier
4	Groundcover	6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	A	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age	Pioneer	Young	Mid-age	X Mature	Old Growth

PLANT SPECIES LIST

Site: Armow	12.75
Polygon: WOD-119 / WET (2) PdyD	
UTM:	
Date: Jan 8 2012	Time: 1415
Surveyor(s): CEH	
Weather: -1°C, 95% CC Wind 2/SE No precip	

Layers: 7.0 2-10 0.5-2 0.05
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Soft maple sp.	D				
ash sp.	O				
red osier			D		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment *.
- map for this woodland is in WOD-122 package

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NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

* WOD #119 *

Project Name: Arrow Project #: 1275
Observer(s): CLH
Date: Jan 8 2012 Time (24h): 1415
Field #: WET-(2) Weather: Precipitation: None Temp (°C): -1
Map Code: PolyD (S2) Wind Speed & Direction: 2 / NE Cloud %: 95
Wetland Type: Swamp Site Type: P Dominant Form: h (S,h)
% Open Water: 0 % ELC Code: SWDM3
Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	soft maple sp., ash sp
c	
dc,dh,ds	
(ts)	red osier
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒ ?

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Roadside Assessment *. S2 WET-033

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnaw	1275
Polygon: WOD-119 / WET-(2) Poly F	
UTM:	
Date: Jan 8 2012	Time: 14:25
Surveyor(s): CLH	
Weather: -1°C 95%CC Wind 7/SE No precip	

Community Classification

Vegetation Type:	SWDM2 Ash Mineral Deciduous Swamp Ecosite
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
[X] Wetland	[X] Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
[X] Natural	Carb. Bedrock	Tableland	Sand Dune	[X] Swamp	Woodland
Cultural		[X] Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous	
Shrub	Shallow Water	Submerged	Lichen	Mixed	
[X] Treed	[X] Surficial Dep.	Floating-Lvd.	Bryophyte		
	Bedrock	Graminoid	[X] Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	Ash sp.
2	Sub-canopy	3	4	Ash sp. >> white elm
3	Understorey	4	2	reed canary grass
4	Groundcover	5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	[X] Young	Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site: Arnaw	1275
Polygon: WOD-119 / WET (2) Poly F	
UTM:	
Date: Jan 8 2012	Time: 14:25
Surveyor(s): CLH	
Weather: -1°C 95%CC Wind 7/SE No precip	

Layers: 7/0 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Ash sp.	O	A			
white elm		O			
reed canary			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside assessment #.
Deer tracks.

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NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

* WOD #119 *

Project Name: Arnow **Project #:** 1275

Observer(s): CLH

Date: Jan 8 2012 **Time (24h):** 14:25

Field #: WET-(2) **Weather:** Precipitation: None Temp (°C): -1

Map Code: Poly F (53) **Wind Speed & Direction:** 2/SE **Cloud %:** 95

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h (S,h)

% Open Water: 0% **ELC Code:** SWOM2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	ash sp., white elm
c	
dc,dh,ds	
ts	
ls	
gc	
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒ ?

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment

53 WET-033

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	
Polygon: WOD-119 / WET-2 Poly 6	
UTM:	
Date: Jan 8 / 2012	Time: 14:30
Surveyor(s): CLH	
Weather: -1°C, 95% CC, Wind 7/SE No precip.	

Community Classification

Vegetation Type:	SWDM3 Maple Mineral Deciduous
Inclusion:	Swamp Ecosite.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
X Treed	Bedrock	Floating-Lvd.	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	soft maple sp > ash sp > white elm
2	Sub-canopy	3	3	ash sp > white elm
3	Understorey	4/5	4	red osier > burdock > reed canary.
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	N	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	A	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WOD-119 / WET-2 Poly 6	
UTM:	
Date: Jan 8 2012	Time: 14:30
Surveyor(s): CLH	
Weather: -1°C, 95% CC, Wind 7/SE No precip.	

Layers: 710 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white elm		O			
ash sp.	R	A			
red osier			D		
white spruce		O			
reed canary			R		
soft maple sp.	A				
burdock			O		

planted

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

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NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

* WOD #119 *

Wetland Vegetation Communities

Project Name: Armour **Project #:** 1275

Observer(s): CLH

Date: Jan 8 2012 **Time (24h):** 14:30

Field #: WET-(2) **Weather:** Precipitation: None Temp (°C): -1

Map Code: Poly G (52) **Wind Speed & Direction:** 2 / SE **Cloud %:** 95

Wetland Type: Swamp **Site Type:** P **Dominant Form:** h (5,h)

% Open Water: 0% **ELC Code:** SWDM3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Soft maple, white elm, ash sp.,
c	white spruce
dc,dh,ds	
(ts)	red osier
ls	
gc	burdock
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Roadside Assessment of WET-033
NOTE Same community desc. as Poly D. (same community) 52

X WOD -119 ~~-122~~ X

Copy

CR 1 / Concession 7

WET-2



Map centre: 44° 09' 15.0" N, 81° 25' 39.2" W

Map created: January 10, 2012

0 100 200 300 400 m

Scale: 1:7,900

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Code

Ontario

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

(A/B/C) – could not see aerial photo. interpreted as same community (SWDM2)

D = SWDM3
E = TAGM1
F = SWDM2
G = SWDM3

Complex
U
S1, S2, S3
WET-033

Wetlands

This map should not be relied on [illegible] or of routes or locations, nor as a g[illegible]
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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow
Polygon:	WOD-120
UTM:	
Date:	Jan 8/12
Time:	14:04
Surveyor(s):	CLH
Weather:	-1 95%RC Wind 2/SE no precip.

Community Classification

Vegetation Type:	SWDM2 Ash mineral Deciduous Swamp Ecosite
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Ash sp.
2	Sub-canopy	3		not visible
3	Understorey	4	3	reed canary, red osier
4	Groundcover	5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	O	10 - 24	O	25 - 50	N	> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Ash sp.	D				
red osier			O		
reed canary			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

* Roadside assessment. Farm + fencerow block view of this woodland; however, it appears to be the same as WOD-122 based on tree tops.

See WOD-122 ELC sheet + map for more information

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow *WOD-121* 1275
Polygon:	WOD-122 / WET-(2) Poly ART.
UTM:	
Date:	Jan 8 2011 Time: 14:04
Surveyor(s):	CLH
Weather:	-1 95% CC wind 2/SE No precip.

WOD-0123 + -0120 appear to be the same (?) based on tree tips

Community Classification

	Vegetation Type:	Swamp Ash mineral Deciduous Swamp Ecosite.
	Inclusion:	
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Ash sp.
2	Sub-canopy	3		not visible
3	Understorey	4/5	3	red canary > red osier
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	2	10 - 24	O	25 - 50	N	> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible
not visible

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

PLANT SPECIES LIST

Site:	Arrow 1275
Polygon:	WOD-022
UTM:	
Date:	Time: 14:04
Surveyor(s):	CLH
Weather:	-1°C 95% CC wind 2/SE No precip

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Ash sp.	D				
red osier			O		
reed canary			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment * deer tracks.
Planted spruce Arrow blocks view but there are a couple of small gaps.
Farm or fencerow block view of * WOD-0123 and WOD-0120

*see map w/ WOD-122 for map + additional info.

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Modified ELC Community Description Page 1 of 13

Site: Arnow	1275
Polygon: WOD-122 / WET-(2) Poly ART.	
UTM:	
Date: Jan 8 2011	Time: 14:04
Surveyor(s): CLH	
Weather: -1 95% CC wind 2/SE No precip.	

WOD-0123 & -0120 appear to be the same (?) based on tree tips

Community Classification

Vegetation Type:	Swam 2 Ash mineral Deciduous Swamp
Inclusion:	Ecosite.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd.	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Ash sp.
2	Sub-canopy	3		not visible
3	Understorey	4 5	3	reed canary > red osier
4	Groundcover	6 7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	N	> 50
Snags		< 10		10 - 24		25 - 50		> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible
not visible

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 4

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WOD-022	
UTM:	
Date:	Time: 14:04
Surveyor(s): CLH	
Weather: -1 0C 95% CC wind 2/SE No precip	

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Ash sp.	D				
red osier			O		
reed canary			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment * deer tracks.
Planted spruce fencerow blocks view but there are a couple of small gaps.
Farm = fencerow block view of * WOD-0123 and WOD-0120

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in * WOD-122 *

Project Name: Arrow **Project #:** 1275

Observer(s): CLH

Date: Jan 8 2011 **Time (24h):** 14:04

Field #: WET-(2) **Weather:** Precipitation: None Temp (°C): -1

Map Code: A, B, C. (S1) Wind Speed & Direction: 2/SE Cloud %: 95

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h (S,h)

% Open Water: 0 % **ELC Code:** SWDM2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Ash sp.
c	
dc,dh,ds	
(ts)	reed osier
ls	
gc	
(ne)	reed canary.
be	
re	
ff	
f	
su	
m	

Soil type: | Organic ☐ | Mineral ☒ ?

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment *.

WET-033 S1

overflow outlet from (A) (NW side) - flows west (intermittent) but this flow dissipates into the field.

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Modified ELC Community Description Page 1 of 2

Site:	Arrow 1275
Polygon:	CR1 / Con 7 HR1 (next to WOD-188)
UTM:	
Date:	Jan 8 2011 **Time:** 14:02
Surveyor(s):	CLH
Weather:	-1°C, 95% cc, wind 7/SE No precip.

Community Classification

Vegetation Type:	TA6m5. Fencerow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
[X] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[ ] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min.	[ ] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thicket
History	[ ] Basic Bedrock	[ ] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[ ] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[ ] Swamp	[ ] Woodland
[X] Cultural		[X] Roll. Upland	[ ] Bluff	[ ] Fen	[ ] Forest
	Site	[ ] Cliff		[ ] Bog	[X] Plantation

→ Fencerow

Cover		Plant Form		
[ ] Open	[ ] Open Water	[ ] Plankton	[ ] Forb	[X] Coniferous
[ ] Shrub	[ ] Shallow Water	[ ] Submerged	[ ] Lichen	[ ] Mixed
[X] Treed	[X] Surficial Dep.	[ ] Floating-Lvd.	[ ] Bryophyte	
	[ ] Bedrock	[ ] Graminoid	[ ] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	O	—
1	Canopy	2	O	—
2	Sub-canopy	3	4	White spruce (>6m high)
3	Understorey	4 5	O	—
4	Groundcover	6 7	4	grasses. very short.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	A	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	[ ]	Pioneer	[ ]	Young	[ ]	Mid-age	[ ]	Mature	[ ] Old Growth

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Modified ELC Community Description Page 2 of 2

PLANT SPECIES LIST

Site:	Arrow
Polygon:	CR1 / Con 7. HR1
UTM:	
Date:	Jan 8 2011 **Time:** 14:02
Surveyor(s):	CLH
Weather:	-1 95% cc, wind 2/SE No precip

Layers: 1=canopy 7-10 2=sub-canopy 2-10 3=understorey 0.5-2 4=ground layer 0-0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white spruce		D			
grass spp.				D	

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment of Planted Doublerow of white spruce (blocks view of forests behind)

X WOD-122 X

CR 1 / Concession 7

WET-2



Map centre: 44° 09' 15.0" N, 81° 25' 39.2" W

Map created: January 10, 2012

0 100 200 300 400 m

Scale: 1:7,900

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

(A/B/C) – could not see aerial photo. interpreted as same community (SWDM2)

D = SWDM3
E = TAGM1
F = SWDM2
G = SWDM3

Complex U

S1, S2, S3

WET-033

Wetlands

Code

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Modified ELC Community Description Page __ of __

Site:	Arrow
Polygon:	WOD-123
UTM:	
Date:	12/8/12 Time: 14:04
Surveyor(s):	CLH
Weather:	-1, 95%OC, wind 2 SE, no precip

Community Classification

Vegetation Type:	SWDMA Ash mineral Deciduous Swamp Ecosite
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Ash sp.
2	Sub-canopy	3		not visible
3	Understorey	4		Ground canopy = red osier
4	Groundcover	5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	X > 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Ash sp.	D				
red osier			O		
ground canopy			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

*Roadside assessment
Farm + fencerow block view of this woodland.
Appears to be the same as WOD-122
based on tree tips
See WOD-122 ELC sheet + map for more information

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site: Armow WF (WLWOD-132)
Polygon: WOD-065 (T39)
UTM: 17T 0460159 4891412
Date: Nov. 17/11 Time: 11:00
Surveyor(s): AMD, NGM
Weather: 2°C, Sunny w/cloudy periods, 40% CC, wind 4 from SW, light snow

Community Classification

Vegetation Type:	Dry-Fresh Sugar Maple - White Ash Decid. Forest (FODM5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
~~**	Super-canopy~~			
1	Canopy	1	4	Sugar maple > wh. ash > Am. beech
2	Sub-canopy	2	4	Sugar maple > wh. ash = ironwood
3	Understorey	3	3	Sugar maple = wh. ash > ironwood
4	Groundcover	5-7	2	Zig zag goldenrod > round lobe hepatica > xmas fern

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

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	N	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils

	1	2	3
Position:			
Aspect:			
%			
Type:			
Class			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-065

Tree Tally

Species	Tally 1	Tally 2	Tally 3

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-065 (WOD 132)
UTM:	17T 0460159 4891412
Date:	Nov. 17/11 Time: 11:00
Surveyor(s):	AMD, NCM
Weather:	2°C, Sunny w cloudy periods, 40% CC, wind 4 from SW light snow

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hemlock	R	R			
sugar maple	D	D	A		
Am. beech	R	R			
ironwood		O	O		
prickly gooseberry				O	
wh. ash	O	O	A		
rubus idaeus				O	
chokecherry			O		
red elderberry			O		
black cherry		R	R		
common blackberry				O	
mult. flora rose			R		
alt. leaf dogwood			R		
wh. elm		R	R		
red maple	R				

Species	Layer 1	2	3	4	Sample
round lobe hepatica				O	
zigzag goldenrod				O	
Xmas fern				O	
blue cohosh				O	
calico aster				O	
tall goldenrod				R	
reed canary grass				R	
dandelion				R	
calicoaster				O	
tall white lettuce				R	
wild leek				R	
helleborine				R	
herb robert				R	
avens sp.				R	
intermediate wood fern				O	
bitter nightshade				R	
wood strawberry				R	
viola sp.				R	
wh. baneberry				R	
plantain leaf sedge				R	

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Modified ELC Community Description

Page __ of __

*Completed from roadside

PAST 01/19/12

Site:	Armour WF
Polygon:	WOD-066 ~~AMD-065~~ *WOD-132
UTM:	17T 0460042 4991320
Date:	Nov. 17/11 Time: 11:30
Surveyor(s):	AMD, NCrM
Weather:	2°C, light flurries, wind 4 from SW, 60% CC.

Community Classification

Vegetation Type:	Dry-Fresh Sugar Maple-Beech Decid Forest (FODMS-2)	*MUCT-OSSP
X Inclusion: (2)	(1) reed canary meadow marsh, mineral graminoid (MAMM1-3)	
~~Complex~~:	(2) hawthorn thicket, deciduous shrub (THDM2-11)	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	Sugar maple > Am. beech = wh. ash
2	Sub-canopy	2	3	Sugar maple > Am. beech > wh. ash
3	Understorey	3		
4	Groundcover	5-7		

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	O	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon: WOD-066

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- completed from roadside
- appears as the same community as WOD-065 across Con. 20
- lots of snags >25 cm dbh @ roadside
- reed canary grass meadow marsh - as per roadside assessment - may not be considered marsh upon further assessment
- drain running through sit, from WOD-065, under sideroad 20

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site: Armour WF — WOD-132

Polygon: WOD-066 ~~WOD-065~~

UTM: 17T 046004Z 4891320

Date: Nov. 17/11 Time: 11:30

Surveyor(s): AMD, NGM

Weather: 2°C, light flurries, wind 4 from SW, 60% CC

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Crack willow	R				
Am. beech	O	O			
Sugar maple	A	A			
wh. ash	O	R			
reed canary grass				D	
tall goldenrod				O	
reed-canary grass				A	
Orchard grass				O	
Smooth brome				R	
hawthorn sp.			O		
Xmas fern				R	
reed canary grass				O	

suspected but not confirmed

meadow marsh inc.

hawthorn thicket inc.

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

~~WOD-132~~

Project Name: Armow	**Project #:** 1275	
Observer(s): PWD	★WOD-065 / WET-055★	
Date: Nov 23, 2011	**Time (24h):** 13:50	
Field #: WOD-066	**Weather:** Precipitation: None	Temp (°C): 3
Map Code: M1	Wind Speed & Direction: 2 / SE	Cloud %: 75
Wetland Type: Marsh	**Site Type:** R	**Dominant Form:** Graminoid (M, ne)
% Open Water: 0%	**ELC Code:** MAMM1-3	
Photos: 0623, 0624		

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Crack willow
c	
dc,dh,ds	
ts	
ls	
gc	Goldenrod sp. 25%
ne	Reed Canary Grass 60%
be	
re	
ff	
f	
su	
m	

Soil type: Unknown | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

American Crow

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

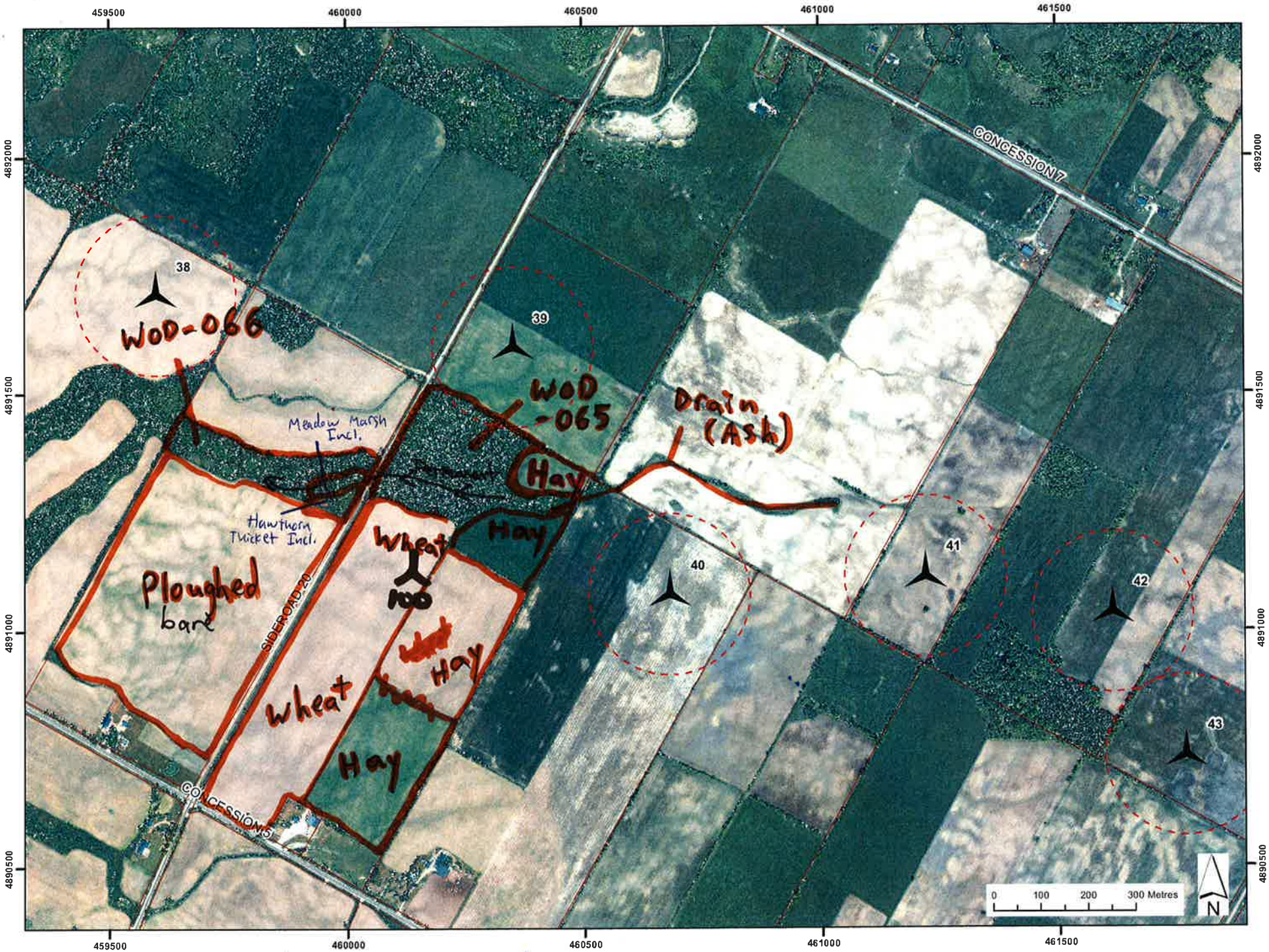
Shallow, narrow watercourse (photo 0624)

roadside assessment.

M1

WET-038

(WOD-132)

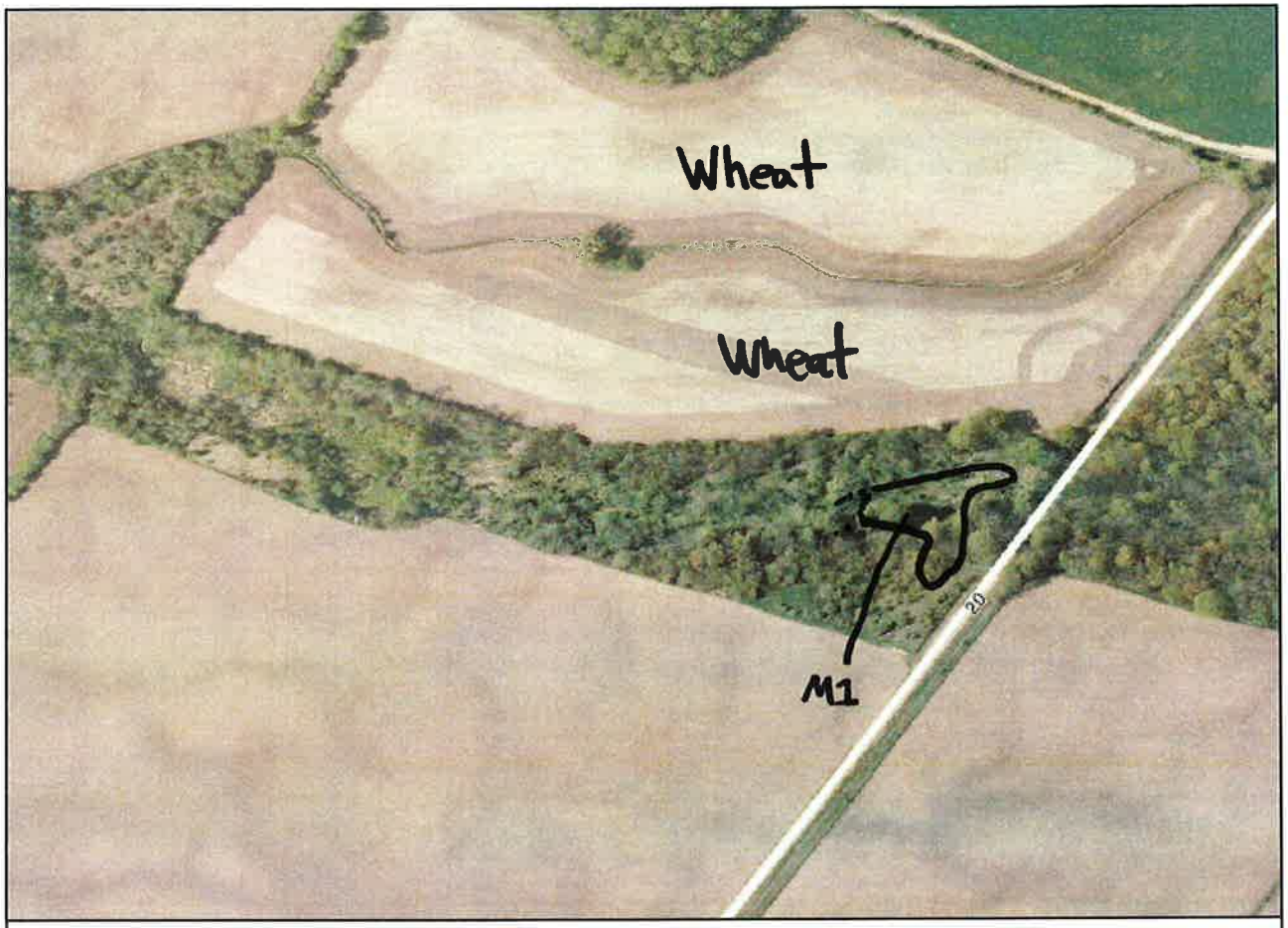


W: ploughed wheat

(WOD 132)

✓

T100



Map centre: 44° 10' 27.5" N, 81° 30' 06.9" W

Map created: November 22, 2011

0 80 160 240 320 m

Scale: 1:4,500

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

Ind. B

M1 on ND

WET-038

wetland

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N

S

Ontario

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WOD-132*

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow WF
Project #: 1275
Date: Nov. 17/11
Observer(s): NGM

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-065	1	3		17T 0460149 4891344	
	2	0		17T 0460176 4891357	
	3	1		17T 0460176 4891393	
	4	2		17T 0460171 4891395	
	5	1		17T 0460161 4891410	
total snags	7				
Snags/ha	28				
BMA-065		BMA-065			
✓	incl.				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

(WOD-132*)

Site:	Armon WF
Polygon:	WOD-65
UTM:	17T 0460159 4891412
Date:	Nov. 17/11 **Time:** 11.00
Surveyor(s):	NGM, AMD
Weather:	Wind 4 SW, Temp: 2°C, CL, 40%

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. crow	X		IIII						
B	Black-capped Ch.	X		#1						
B	Am. Goldfinch	X		11						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	see sheet 1
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- [X] Deciduous Forest
- [ ] Mixed Forest
- [ ] Coniferous Forest
- [ ] Marsh
- [ ] Swamp
- [ ] Bog
- [ ] Fen
- [ ] Water (Shallow & Open)
- [ ] Meadow
- [ ] Tallgrass Prairie
- [ ] Thicket
- [ ] Savannah
- [ ] Woodland
- [ ] Valley (Describe Below)
- [ ] Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- [ ] Spring Flooded Field
- [X] Stick Nest (Raptors, Herons)
- [ ] Snag (Raptors, Herons)
- [ ] Tree Cavity Nest (Ducks)
- [ ] Seep/Spring (Turkeys/Grouse)
- [ ] Cliffs/Banks

Bats
- [ ] Cave Entrance
- [ ] Mine Shaft
- [ ] Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- [ ] Snag
- [ ] Burrow
- [ ] Den
- [ ] Tree Cavity
- [ ] Fallen Log

Deer/Moose
- [ ] Seep/Spring
- [ ] Mineral Lick

Snakes
- [ ] Burrow
- [ ] Fallen Rotting Log
- [ ] Old Well
- [ ] Rock Pile/Stone Wall
- [ ] Organics Pile
- [ ] Log Pile
- [ ] Karst
- [ ] Broken/Fissured Rock
- [ ] Old Foundation
- [ ] Old Bridge/Concrete Culvert

Amphibians and Turtles
- [ ] Vernal Pool/Woodland Pond (Amphibian Breeding)
- [ ] Sand (Turtle Nesting)
- [ ] Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- [ ] Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
see Bat habitat form (back of page)		
Stick nest	17T 0460320 4891371	Possible raptor/crow nest in black cherry

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page 1 of 2

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow WF
Polygon:	WAD-066 - roadside AWD-065a
UTM:	17T 0460042 4891320
Date:	Nov 17/11 **Time:** 11:30
Surveyor(s):	N&M
Weather:	Wind SW, Temp: 2°C, C.C; 60%, light flurries

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. crow	X		1						
B	Blue Jay	X		1						
B	Hairy Woodpecker	X		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page 2 of 2

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	See Sheet 1
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
___ Thicket
___ Savannah
___ Woodland
___ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats
___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose
___ Seep/Spring
___ Mineral Lick

Snakes
___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles
___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnprior	
Polygon: Con 2 / SR 20 WOD ①	WOD-124 *
UTM:	
Date: Jan 8 2011	Time: 12:42
Surveyor(s): CH	
Weather: -3°C, 95% cc, No precip, Wind 2 / SE	

Community Classification

Vegetation Type:	TAGM1 Coniferous Plantation
X Inclusion:	SWTM2-1 Red Osier Dogwood mineral Deciduous thicket Swamp.
Complex:	

Woodland also contains FOD (not visible from road)

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	6	—
1	Canopy	2	1	Sugar maple
2	Sub-canopy	3	4	White Pine >> Scots Pine >> White Elm
3	Understorey	3 4	1	Ash sp.
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	R	25 - 50	O	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnprior	
Polygon: Con. 2 / SR 20 Poly (1)	
UTM:	
Date: Jan 8 2011	Time: 12:42
Surveyor(s): CH	
Weather: -3° 95% cc	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 1 = 10 | 2 = 2-10 | 3 = 0.5-2 | 4 = <0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Pine		D			
Scots Pine		O			
Sugar maple	O				
Ash sp.			R		
White Elm		R			
Incl:					
Red Osier			D		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment *.
North edge is an old sugar maple hedgerow (typically ~50-60cm DBH) with a couple of younger white elm.
Inclusion of red-osier swamp in SW corner.

DSC-0079

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow	**Project #:** 1275	in (WOD-124)
Observer(s): CLA		
Date: Jan 8 2011	**Time (24h):** 1242	
Field #: WET-A Conc 1/ SR 20	**Weather:** Precipitation:	Temp (°C):
Map Code: S1	Wind Speed & Direction:	Cloud %:
Wetland Type: Swamp	**Site Type:** I **Dominant Form:** ts (S, ts)	
% Open Water: 0 %	**ELC Code:** Swtm2-1	
Photos: DSC-0079	CLA camera	

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	red osier
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

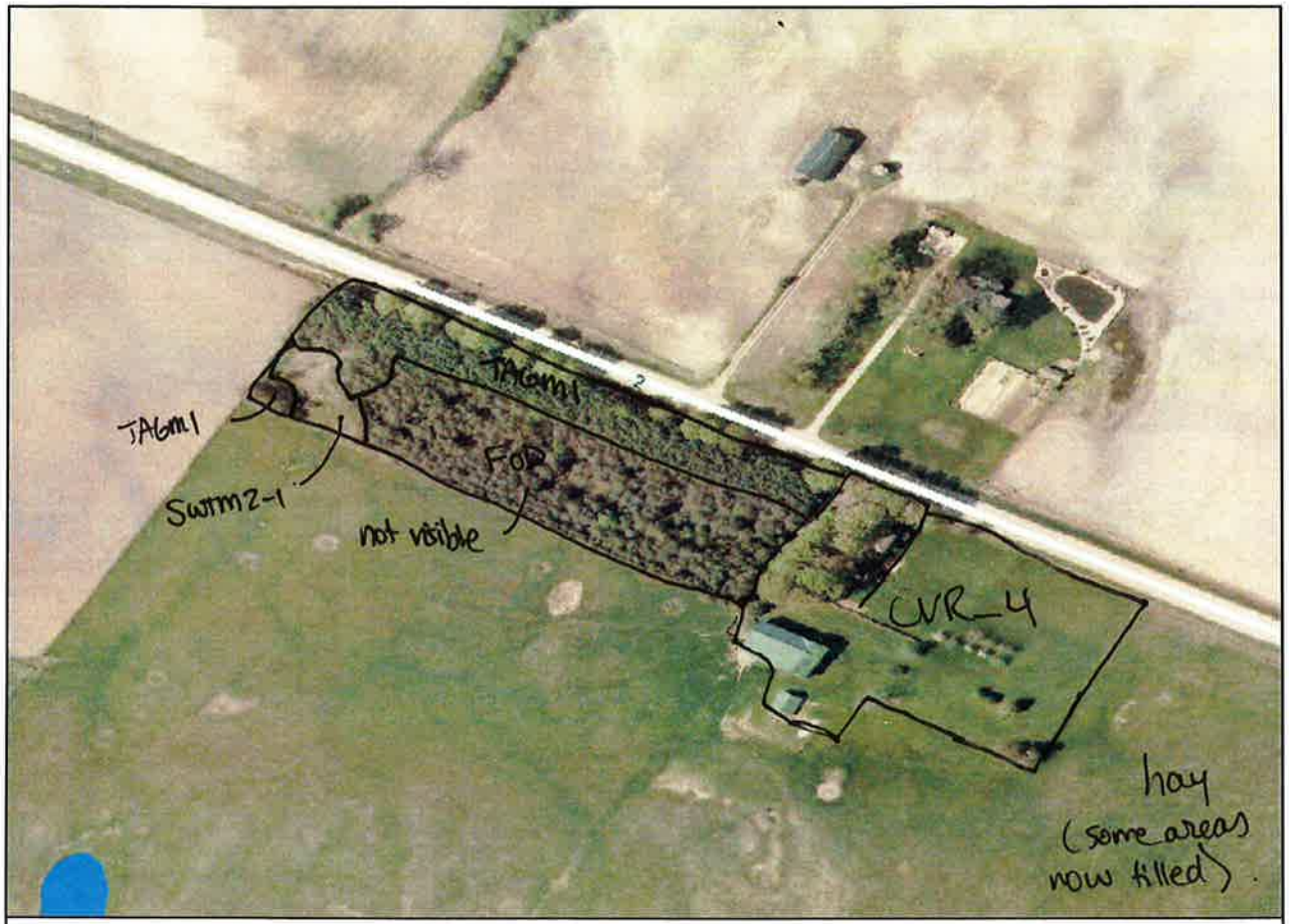
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Roadside Assessment

(WOD-124)

WOD ①

Concession 2 / Sideroad 20



Map centre: 44° 14' 43.2" N, 81° 26' 10.7" W

Map created: January 10, 2012

0 60 120 180 240 m

Scale: 1:3,300

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N

S

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

hay (some areas now tilled) - OAGm1

Complex
AH
S3
WET-OLD
Wetland

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Arnaw 1
Polygon:	WOD-XXIV (NDD-123)
UTM:	
Date:	Nov 11 2011 — Time: 14:55
Surveyor(s):	PWH NGM
Weather:	

Community Classification

Vegetation Type:	FODM7-2 Fresh-Moist Sug. Ash-Hardwood Dec. Forest
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	? Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
X Treed	Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	
2	Sub-canopy	3	3	
3	Understorey	4	4	
4	Groundcover	6	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Ash sp (G?)
Poplar sp

Northern Shrike at Roadside.

* Completed roadside

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WOD-XXV (WOD-125)
UTM:	
Date:	Nov 11 2011
Time:	15:05
Surveyor(s):	PWD NGM
Weather:	

Community Classification

	Vegetation Type:	FODM7-2 Fresh-Moist Gr. Ash Hardwood Lowland Dec Forest.
X	Inclusion:	SWMM4-1 Gr. Ash Hemlock Mineral Mixed Swamp (cannot define only from road).
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	
2	Sub-canopy	3	3	
3	Understorey	4	4	
4	Groundcover	6	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	G	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position			
Aspect:			
%			
Type:			
Class:			

Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total			
Basal Area			
Snags			

NOTES:

Ash sp
Poplar sp.
Black Spruce
E. Hemlock

See WOD-XXIV for size class etc

* Completed roadside *

Desktop Analysis

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

W WOD 0 125

Wetland Vegetation Communities

Project Name: Armour **Project #:** 1275

Observer(s): CH

Date: Jan 27 2012 **Time (24h):** Desktop

Field #: WET-014 **Weather:** Precipitation: / Temp (°C): /

Map Code: S4 Wind Speed & Direction: / Cloud %: /

Wetland Type: Swamp **Site Type:** P F **Dominant Form:** h (S,h)

% Open Water: 0 % **ELC Code:** SWMM4-1

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Ash sp., poplar sp.
c	Black spruce, E. hemlock
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

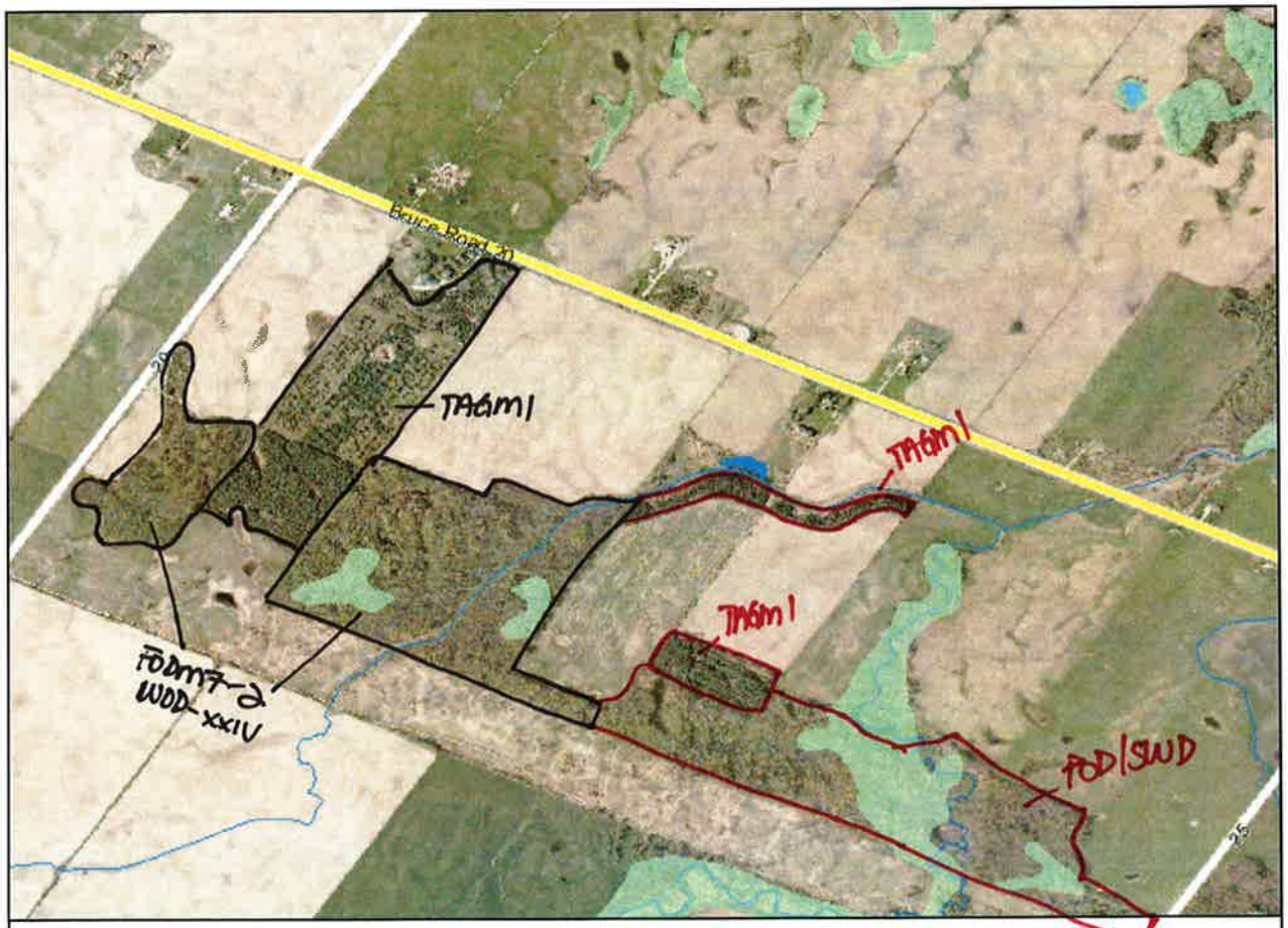
Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-014

S4

WOD-125



Map centre: 44° 15' 29.5" N, 81° 25' 22.3" W

Map created: December 29, 2011

0 300 600 900 1,200 m

Scale: 1:16,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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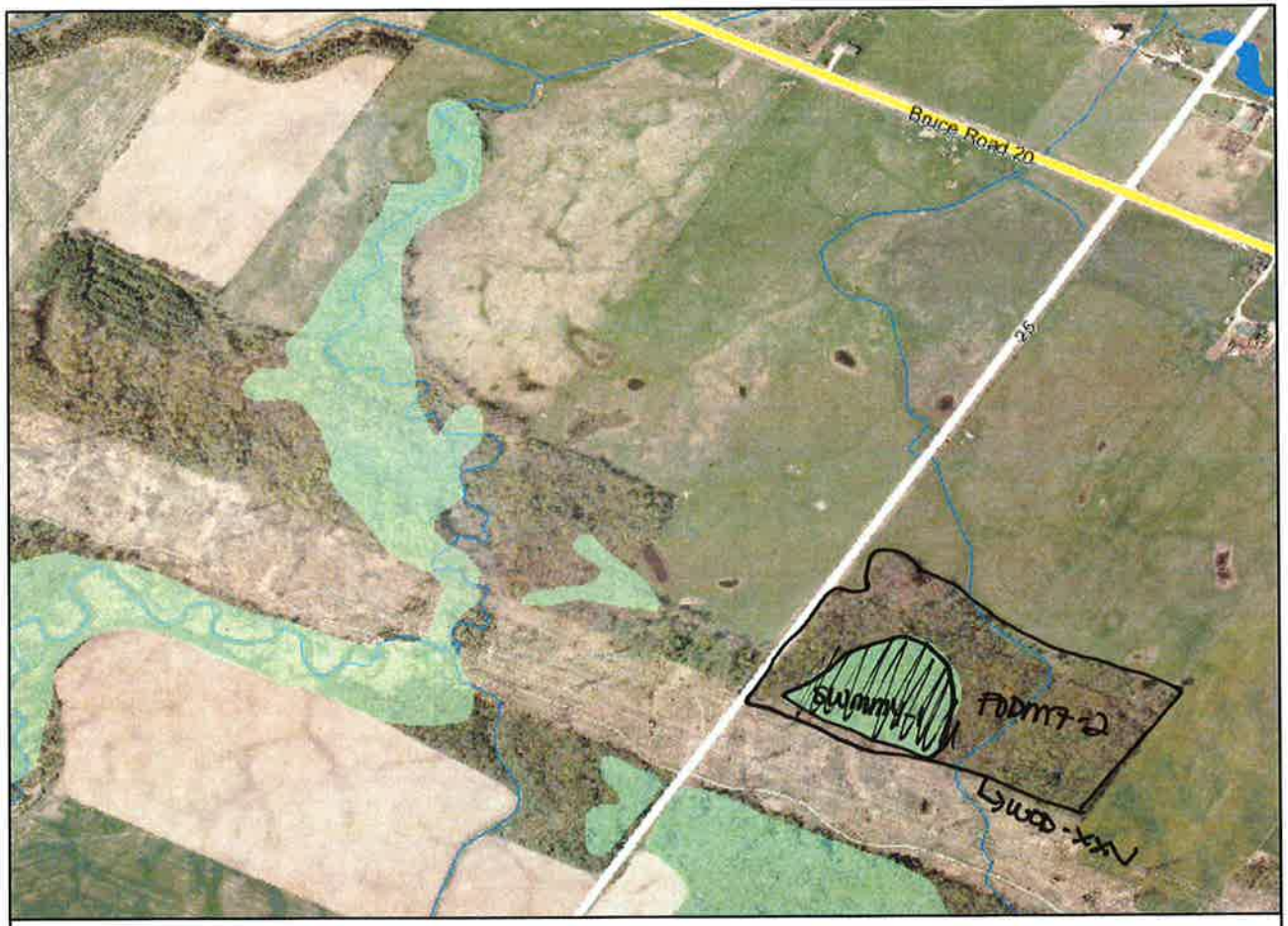
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WOD-125(2)



Map centre: 44° 15' 05.5" N, 81° 24' 51.2" W

Map created: December 29, 2011

0 200 400 600 800 m

Scale: 1:11,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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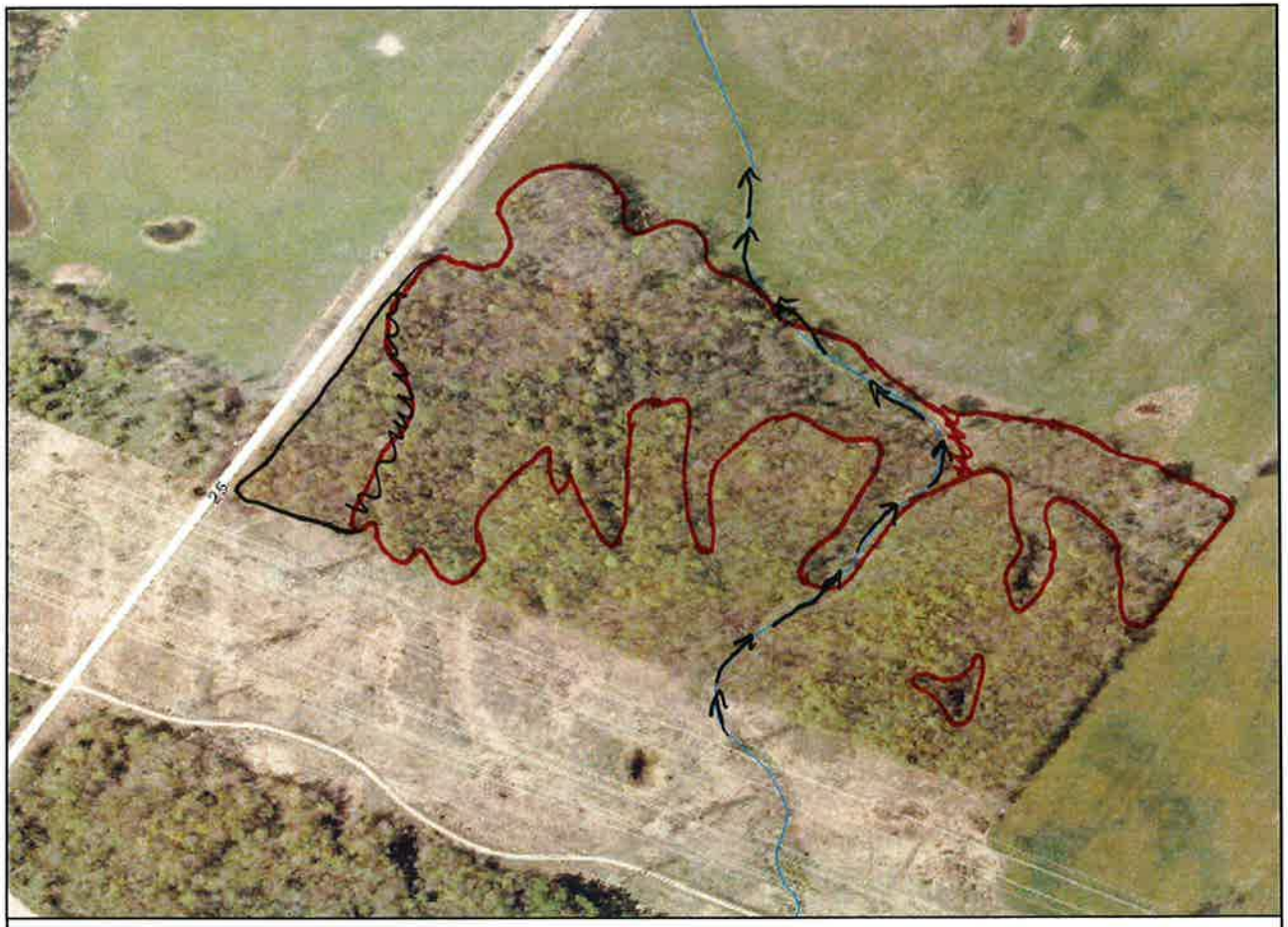
Ontario

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TWOOD 125

CLH Jan 27 2012
Desktop Delineation

WET-014



Map centre: 44° 14' 54.7" N, 81° 24' 37.2" W

Map created: January 27, 2012

0 80 160 240 320 m

Scale: 1:4,600

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

→ → intermittent

WET-014
54

Wetland

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Ontario

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Desktop.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH

Date: April 11 2012 **Time (24h):**

Field #: WOD-125 **Weather:** Precipitation: Temp (°C):

Map Code: SS Wind Speed & Direction: Cloud %:

Wetland Type: Swamp **Site Type:** R **Dominant Form:** h (S, h)

% Open Water: 0 **ELC Code:** FODm7-2 (SWDm2-2)

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash x Populus sp., soft maple
c	
dc,dh,ds	
ts	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

no site access
ANSIS Soils: clay loam, variable alluvial lowland

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

SS WET-014

Desktop

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CH

Date: April 11 202 **Time (24h):** —

Field #: WOD-125 **Weather:** Precipitation: — Temp (°C):

Map Code: 35 Wind Speed & Direction: — Cloud %:

Wetland Type: Marsh **Site Type:** I **Dominant Form:** ne

% Open Water: 10% (pond) **ELC Code:** MAMM 1-3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
(ne)	reed canary grass.
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
no site access
CANSIS soils: clay loam.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

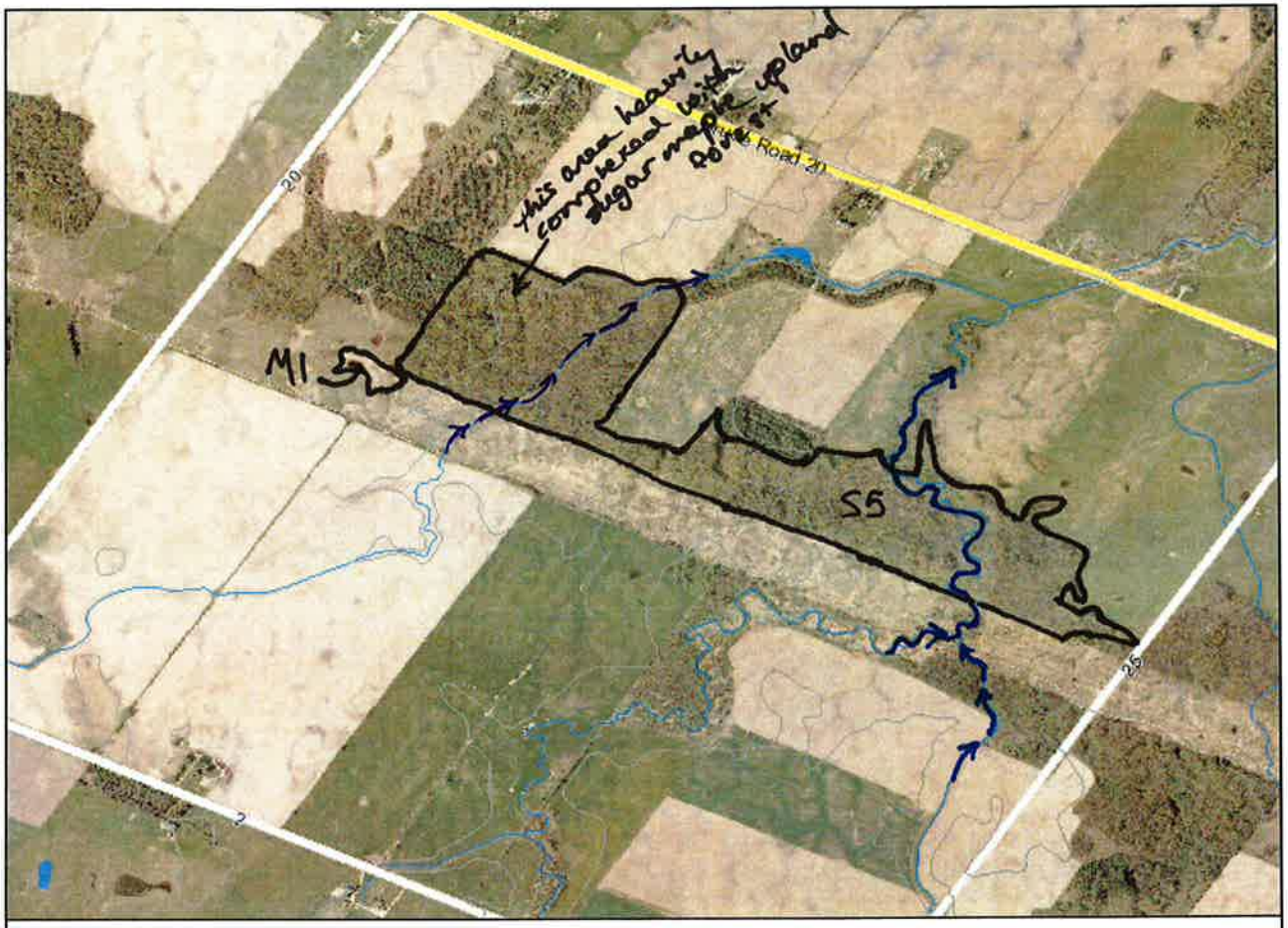
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

M1

WET-014

April 11 2012 CLH
Desktop Delineation

WOD-125



Map centre: 44° 15' 11.4" N, 81° 25' 27.9" W

Map created: April 11, 2012

0 300 600 900 1,200 m

Scale: 1:19,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Aerial interpretation (Desktop)

→ → intermittent

→ permanent

WET-014

S5

Wetland

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Armow WF (NEWMDD-125)
Polygon:	(Hydro corridor E of 109)
UTM:	
Date:	December 9, 2011 Time: 16:11
Surveyor(s):	AMD, HLW
Weather:	-1°c, 100% cloud cover, wind 2

Community Classification

Vegetation Type:	Fresh Moist Open Graminoid Meadow (MEGM4-1)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
✓ Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	✓ Mineral Soil	Riverine	Crevice/Cave	Pond	✓ Meadow
Aquatic	Parent Min.	✓ Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
✓ Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
✓ Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
✓ Treed	✓ Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	✓ Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	~~Canopy~~			
2	Sub-canopy	3	1	hawthorn sp. > wh. elm
3	Understorey	4	2	hawthorn sp. > Common apple
4	Groundcover	5-7	4	reed canary grass > red osier dogwood

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		R	R	R	
wild raisin			R		
Common apple			R		
wh. elm		R			
red osier dogwood			R	O	

Species	Layer 1	2	3	4	Sample
Smooth brome				O	
reed canary grass				D	
wild carrot				R	
Common burdock				R	
mullein				R	
aster sp.				R	
goldenrod sp.				O	

Wildlife and Other Notes

- photo 1180

Modified ELC Community Description

Page __ of __

Hydro corridor E of 7109

Soils	1	2	3
Position:	4		
Aspect:	220		
%	2		
Type:	S		
Class:	B		

Strata: Texture	SiC		
Depth	5-35		
Strata: Texture	SiCL	X Trace	gravel.
Depth	35-100	encountered	
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	SiC		
Surface Stoniness	-		
Surface Rockiness	-		
Depth to:			
Mottles	35		
Gley	-		
Bedrock	-		
Water table	0		
Carbonates	-		
Depth of Organics	0-5		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	5		

Polygon:

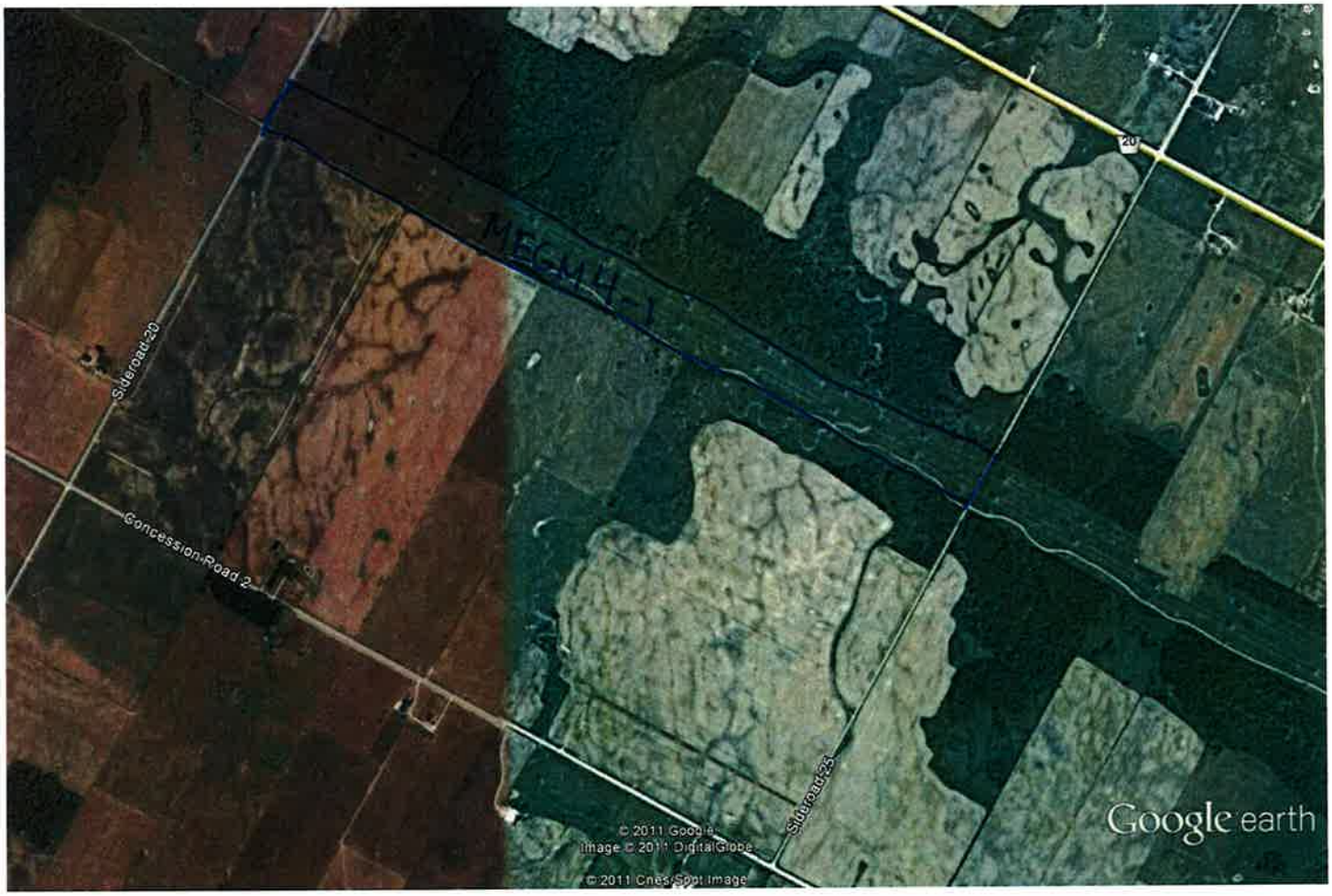
Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- Photo 11/80
- Need to fill out ELC as per previous hydro corridor

WOD-125



Google earth

miles 1
km 1

(WOD-185)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Acnow
Polygon:	WOD-vi (WOD-126)
UTM:	
Date: Nov 10 2011	Time: 15:25
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	Dry-Fr. Ash Hardwood FODM4-2
Inclusion:	Dry-Fr. Mixed Meadow MFMM3
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	1	Ash sp.
2	Sub-canopy	3	3	Ash sp.
3	Understorey	4	2	Ash sp. >> Malus sp.
4	Groundcover	5	2	Orchard Grass > Canada Goldenrod

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	N	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

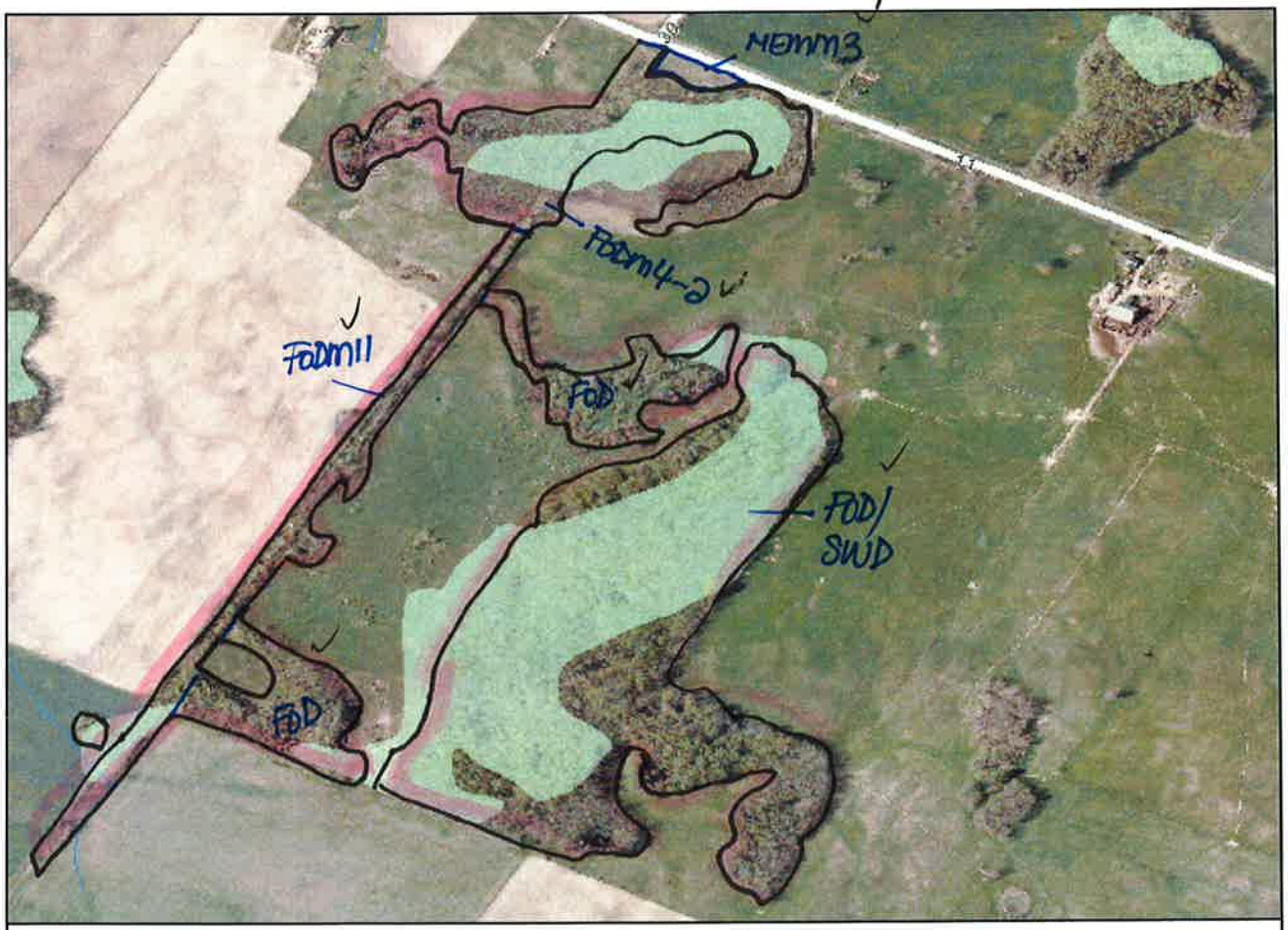
Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

X Completed roadside

WOD-126



Map centre: 44° 11' 33.8" N, 81° 25' 23.6" W

Map created: December 30, 2011

0 100 200 300 400 m

Scale: 1:9,700

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province
- Aerial

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N S

Ontario

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ELC Community Description (Part A)

Metadata

Site: Arnold	1275
Polygon: WET-048 S1	#WOD-127X
UTM:	
Date: Nov 5 2011	Time: 15:25
Surveyor(s): CLH	
Weather: 10°C, CC 5%, w:d 3/N, No precip.	

Community Classification

Vegetation Type:	Swsm2-2 Green Ash Mineral Deciduous
Inclusion:	Swamp Type
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Fern	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
X Treed	Surficial Dep.	Floating Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	1	green ash
2	Sub-canopy	3	4	green ash > willow sp. > balsam poplar > Salix petiolaris
3	Understorey	5	2	red osier
4	Groundcover	6/7	?	not visible

HT Codes: 1 >25m 2: 25 - 10m 3: 10 - 2m 4: 2 1m 5 1 - 0.5m 6 0.5 0.2m 7 <0.2m

Cover Codes: 0:none 1: 0 10% 2: 10 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer		Young		Mid-age		Mature		Old Growth

Roadside assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour 1275

Polygon: WET-048 51 TW (WOD 127)

UTM:

Date: Nov 5 2011 Time: 15 25

Surveyor(s): CLH

Weather: 10°C, CC5%, Wind 3/N No precip.

Layers: 1=canopy (7m) 2=sub-canopy (7-10) 3=understorey (0.5-7) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	R	A			
balsam poplar		O			
willow sp.		O			
Salix petiolaris		O			
red osier			O		

Species	Layer 1	2	3	4	Sample

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in (WOD 127)

Project Name: Armow **Project #:** 1275

Observer(s): CLH

Date: Nov 5 2011 **Time (24h):** 15 10

Field #: WET-049 **Weather:** Precipitation: None Temp (°C): 10

Map Code: S1 Wind Speed & Direction: -3 / N Cloud %: 5

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h. (S,b)

% Open Water: 0% perm. **ELC Code:** SWDM2-2.

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash + willow sp / balsam-poplar
c	
dc,dh,ds	
ts	Willow sp. + red osier / Salix petiolaris
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

roadside assessment

WET-001 S1

ELC Community Description (Part A)

Metadata

Site:	Armaw
Polygon:	WET-048 m1 in (WOD-127)
UTM:	
Date:	Nov. 5 2011 Time: 15:20
Surveyor(s):	CLH
Weather:	10°, CC5%, Wind 3/N No precip

Community Classification

Vegetation Type:	MAmm1-3 Reed Canary Grass Graminoid
Inclusion:	Mineral meadow marsh.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	0	—
2	Sub-canopy	3	1	willow sp.
3	Understorey	4/3	4	reed canary grass > narrowleaved cattail
4	Groundcover	5	?	not visible

HT Codes: 1 >25m 2: 25 - 10m 3 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6 0.5 0.2m 7 <0.2m

Cover Codes: 0 none 1 0 10% 2: 10 - 25 3: 25 - 60% 4 >60%

Size Class Analysis	R < 10	N 10 - 24	N 25 - 50	N > 50
Snags	N < 10	N 10 - 24	N 25 - 50	N > 50
Deadfall/Logs	N < 10	N 10 - 24	N 25 - 50	N > 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

Roadside assessment.
Complex of community in field

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnaw
Polygon:	WET-048 m1 / (WOD-127)
UTM:	
Date:	Nov 5 2011
Time:	15:20
Surveyor(s):	CH
Weather:	10°C, CC 50%, Wind 3/N No precip

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
willow sp.					
other species not visible					

Species	Layer 1	2	3	4	Sample
reed canary			A		
Typha angustifolia			A		

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

(in WOD-127)

Project Name: Armour		**Project #:** 1275	
Observer(s): CLH	(in WOD 127)		
Date: Nov 5 2011	**Time (24h):** 15:06		
Field #: WET-04R	**Weather:** Precipitation: None	Temp (°C): 10	
Map Code: M1	Wind Speed & Direction: 3 / N	Cloud %: 5	
Wetland Type: Marsh	**Site Type:** I	**Dominant Form:** ne	(Mjne)
% Open Water: 0% perm	**ELC Code:** MAMM1-3		
Photos:			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	willow sp.
ls	
gc	
(ne)	reed - canary grass
be	
(re)	narrow-leaved cattail
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

roadside assessment

WET-001 M1

ELC Community Description (Part A)

Metadata

Site: Arnow	1275
Polygon: Meadow (8)	YWOD-127X
UTM:	
Date: Nov 5 2011	Time: 5:00
Surveyor(s): CLH	
Weather: 5 2 0 C	10° No precip Wind S/N

Community Classification

Vegetation Type:	MEMM4 Fresh-moist Mixed Meadow Ecosite
Inclusion:	
X Complex:	WET-048

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Mtn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	X Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	0	—
2	Sub-canopy	3	0	—
3	Understorey	4/5	4	Canada goldenrod > orchard grass
4	Groundcover	4/5	?	Not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N < 10	N 10 - 24	N 25 - 50	N > 50
Snags	N < 10	N 10 - 24	N 25 - 50	N > 50
Deadfall/Logs	N < 10	N 10 - 24	N 25 - 50	N > 50

Abundance Codes: N None R Rare O Occasional A Abundant

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

abandoned agricultural fields.
Complex of small wetland units found within

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow 1275

Polygon: Meadow (B) WOD-127

UTM:

Date: Time: 15:06

Surveyor(s): CLH

Weather: 5%CC, 10°C, No precip Wind 3 / N.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

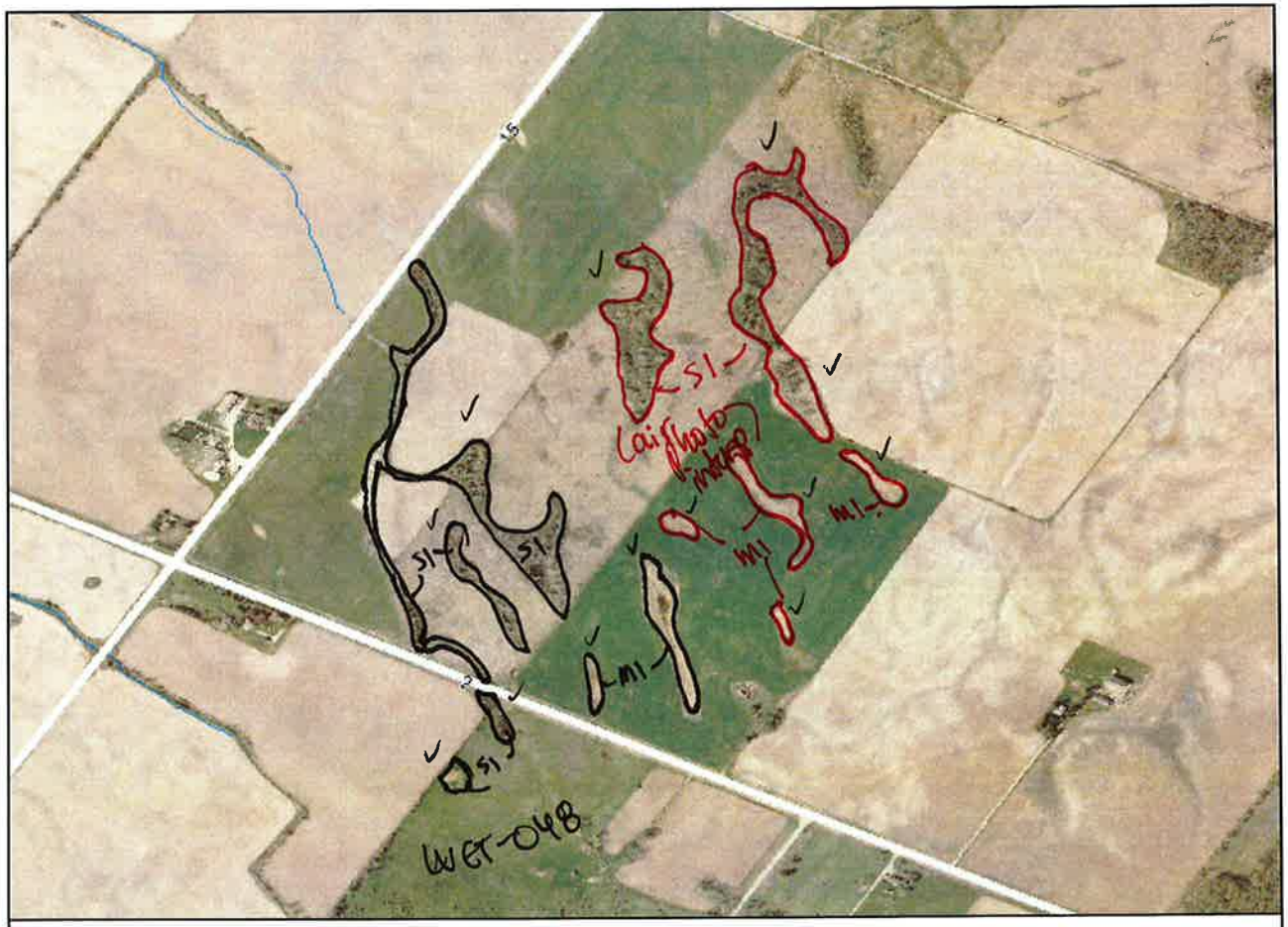
Species	Layer 1	2	3	4	Sample
Canada goldenrod			O		
orchard grass			O		
other species not visible					

Species	Layer 1	2	3	4	Sample

(WOD 127)

Nov 5 2011
CLH

Concession 2 and Sideroad 15



Map centre: 44° 15' 29.4" N, 81° 27' 28.1" W

Map created: January 4, 2012

0 200 400 600 800 m

Scale: 1:11,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AE

MI
SI as is
WET-001

Wetlands

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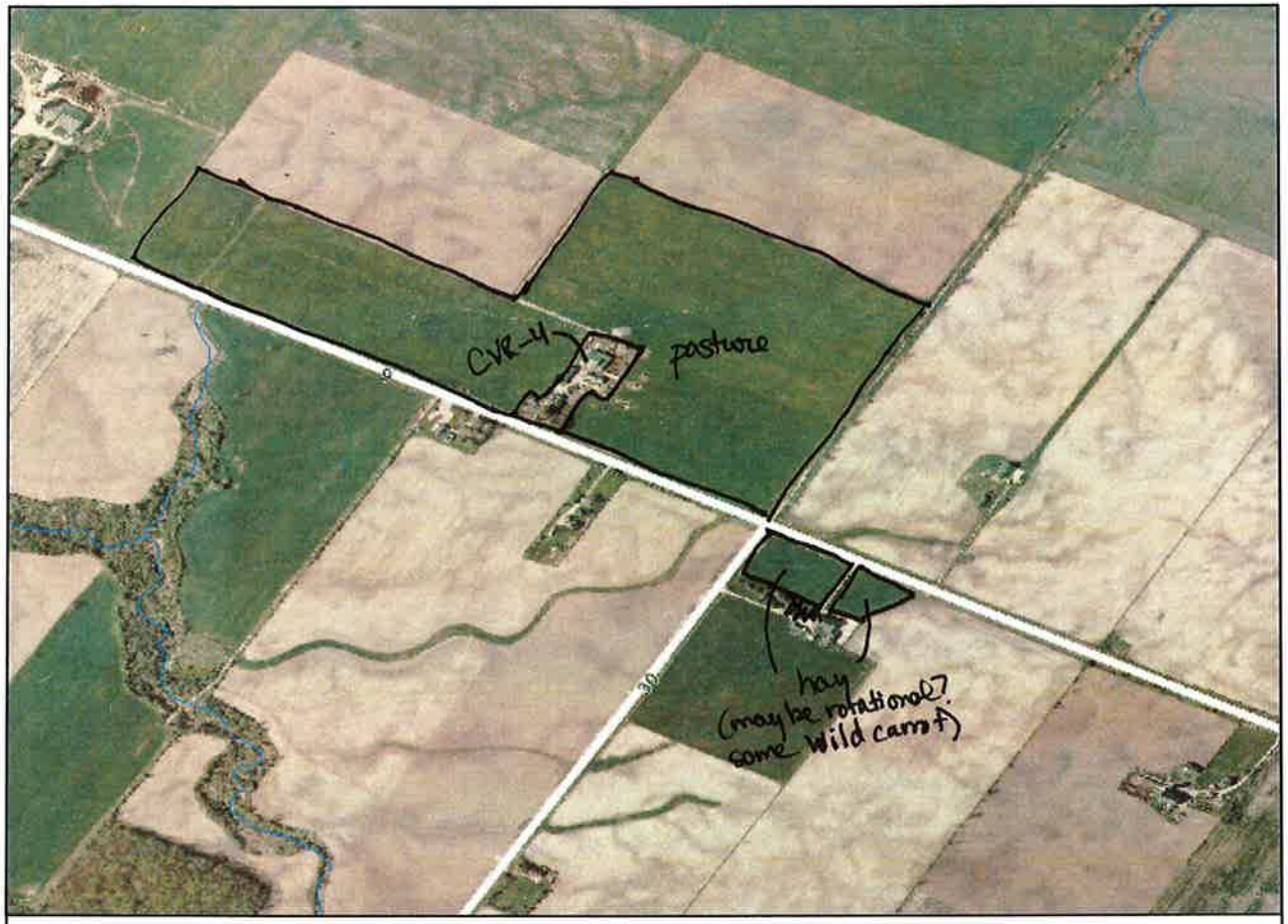
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WQ 27

Jan 8 2012
CLH

Concession 9 / Sideroad 30



Map centre: 44° 10' 57.9" N, 81° 26' 13.2" W

Map created: January 10, 2012

0 200 400 600 800 m

Scale: 1:11,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

hay (may be rotational) = ORGYN
pasture = ORGYNY

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

hydro corridor N of T2

Site:	Armow WF (next to WCD-127)
Polygon:	
UTM:	17T 0463094 4901614
Date:	Dec. 7/11 Time: 14:30
Surveyor(s):	AMD, HLW
Weather:	−1°C, 80% CC, wind 1 from SW

Community Classification

Vegetation Type:	Fresh-Moist Open Graminoid Meadow (MEGM4-1)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	~~Canopy~~			
2	Sub-canopy	3	1	hawthorn sp > wh. elm
3	Understorey	4	2	hawthorn sp > Common apple
4	Groundcover	5-7	4	reed canary grass >> red osier dogwood

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	X Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp		R	R	R	
wild raisin			R		
red osier dogwood			R	O	
wh. elm		R			
common apple			R	●	

Species	Layer 1	2	3	4	Sample
smooth brome				O	
reed canary grass				D	
wild carrot				R	
common burdock				R	
mullein				R	
aster sp.				R	
goldenrod sp.				O	

Wildlife and Other Notes

- photos 1133, 1134, 1135
-

Modified ELC Community Description

Page __ of __

(WOD 127)

Hydro corridor N of T2

Soils

	1	2	3
Position:	6		
Aspect:	270		
%	0		
Type:	S		
Class:	A		

Strata:	Texture	CL		
	Depth	0-29		
Strata:	Texture	SiC		
	Depth	29-65		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		—		
Surface Rockiness		—		
Depth to:				
	Mottles	35	(measured from above organics)	
	Gley	—		
	Bedrock	—		
	Water table	—		
	Carbonates	29	(measured from above organics)	
Depth of Organics		3		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		5		

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- heavy clay content @ 65 cm, could not auger past
- does not appear to be a wetland, water table below lowest auger depth @ 65 cm

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Avmow INF
Polygon:	(No # T2) (WOD 127)*
UTM:	17T 0463702 4901239
Date:	December 7, 2011 Time: 14:45
Surveyor(s):	AMD, HLW
Weather:	1°C, 80% cloud cover, wind 1 from SW

Community Classification

Vegetation Type:	MEMM4 (Fresh-moist Mixed Meadow)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
✓ Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	✓ Mineral Soil	Riverine	Crevice/Cave	Pond	✓ Meadow
Aquatic	Parent Min	✓ Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
✓ Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
✓ Open	Open Water	Plankton	✗ Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	✗ Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	✗ Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	~~Canopy~~			
2	Sub-canopy	3		green ash > hawthorn sp.
3	Understorey	4	3	Red-osier Dogwood >
4	Groundcover	5-7		reed canary grass

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis		< 10		10 - 24		25 - 50		> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	✓	Young		Mid-age		Mature		Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position			
Aspect:			
%			
Type:			
Class:			

Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

* Completed roadside - hydro road @ far north end of property

ELC ID
(Assigned upon entry to database)

Page ____of____

PLANT SPECIES LIST

Metadata

Site: Arnona WF

Polygon: (N of T2) (W WOD 127)

UTM:

Date: December 7, 2011 **Time:** 14:45

Surveyor(s): AMD, HLW

Weather: -1°c, 80% C.C., wind 1 from SW, no precip

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

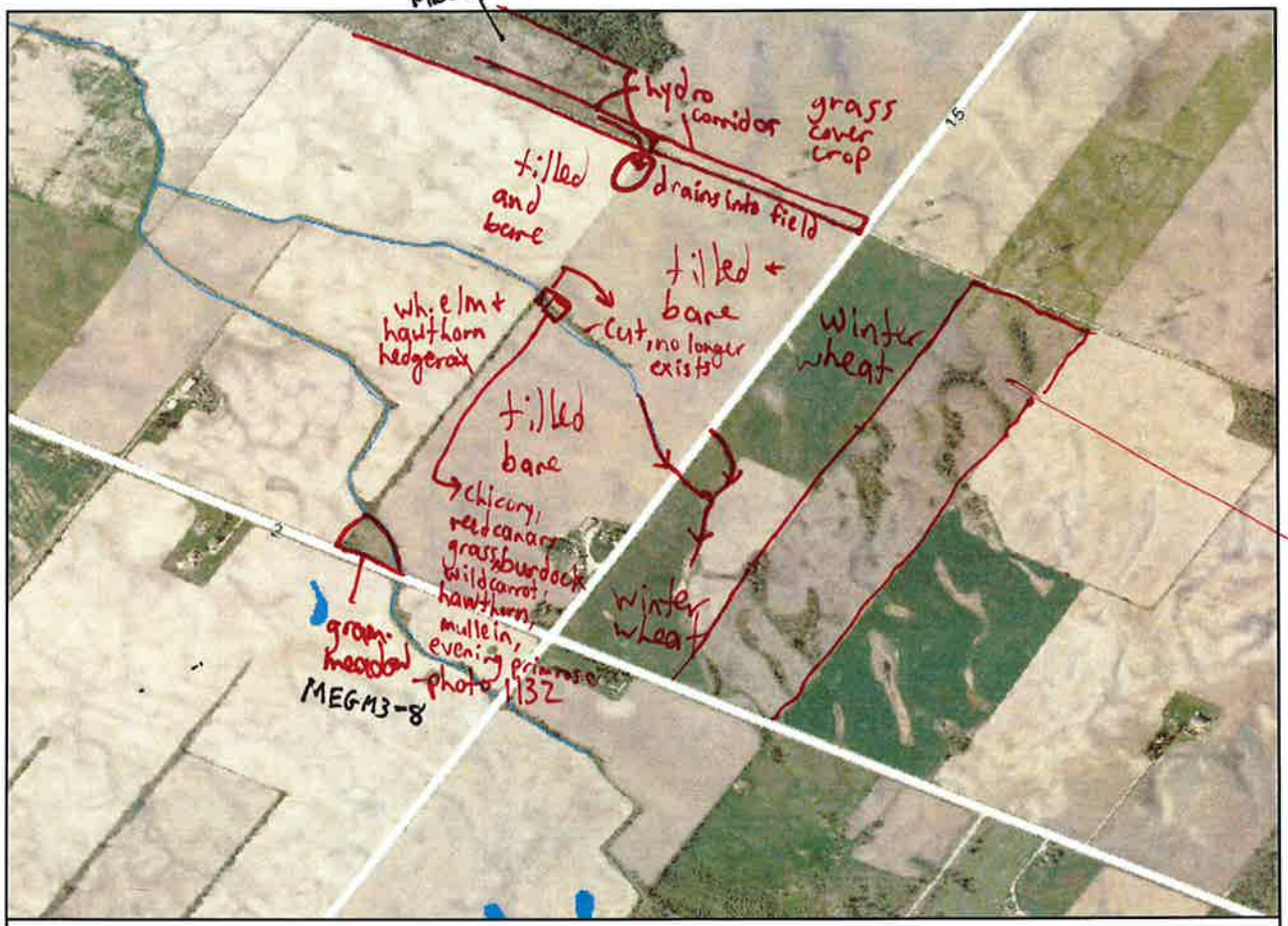
Species	Layer 1	2	3	4	Sample
Green Ash		O			
Hawthorn sp		O			

Species	Layer 1	2	3	4	Sample
Red osier dogwood			A		
reed canary grass			D	D	

Source of common names: _____

(WOD-127)

Disturbance N of T2



Map centre: 44° 15' 37.0" N, 81° 27' 44.8" W

Map created: December 5, 2011

0 300 600 900 1,200 m

Scale: 1:16,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

mixed meadow, ~~w~~ wooded treed portions, not farmed, naturalizing (MEMM4)

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ELC Community Description (Part A)

Page 1 of 2

COPY

Metadata

Site: Arnaw ★WOD-159 1275
Polygon: WET-048 51 ★WOD-127X
UTM:
Date: Nov 5 2011 Time: 15:25
Surveyor(s): CLH
Weather: 10°C, CC5%, wind 3/N. No precip.

Community Classification

Vegetation Type: SWDM1-2 Green Ash Mineral Deciduous Swamp Type
Inclusion:
Complex:

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
X Treed	Surficial Dep	Floating Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
1	Canopy	2	1	green ash
2	Sub-canopy	3	4	green ash ? willow sp. ? balsam poplar ? Salix petiolaris
3	Understorey	3	2	red osier
4	Groundcover	?	?	not visible

HT Codes: 1 >25m 2: 25 - 10m 3 10 - 2m 4 2 - 1m 5 1 - 0.5m 6 0.5 - 0.2m 7 <0.2m

Cover Codes: 0:none 1 0 - 10% 2 10 25 3: 25 - 60% 4 >60%

Size Class Analysis	A	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

Abundance Codes N None R Rare O Occasional A Abundant

Community Age		Pioneer		Young		Mid-age		Mature		Old Growth

Roadside assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page 2 of 2

Site: Arnaw 1275
Polygon: WET-048 51
UTM:
Date: Nov 5 2011 Time: 15 25
Surveyor(s): CLH
Weather: 10°C, CC5%, wind 3/N No precip.

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer
Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
green ash	R	A			
balsam poplar		O			
willow sp.		O			
Salix petiolaris		O			
red osier			O		

Species	Layer 1	2	3	4	Sample

copy

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WOD-129

Project Name: Armow **Project #:** 1275

Observer(s): CLH

Date: Nov 5 2011 **Time (24h):** 15 10

Field #: WET-048 **Weather:** Precipitation: None Temp (°C): 10

Map Code: S1 Wind Speed & Direction: 3 / N Cloud %: 5

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h (S,h)

% Open Water: 0% perm. **ELC Code:** SWPM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash > willow sp / balsam poplar
c	
dc,dh,ds	
ts	willow sp > red osier / Salix petiolaris
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

roods.de assessment

S1

(refer to WOD-127 for wetland complex info) Complex A(E).

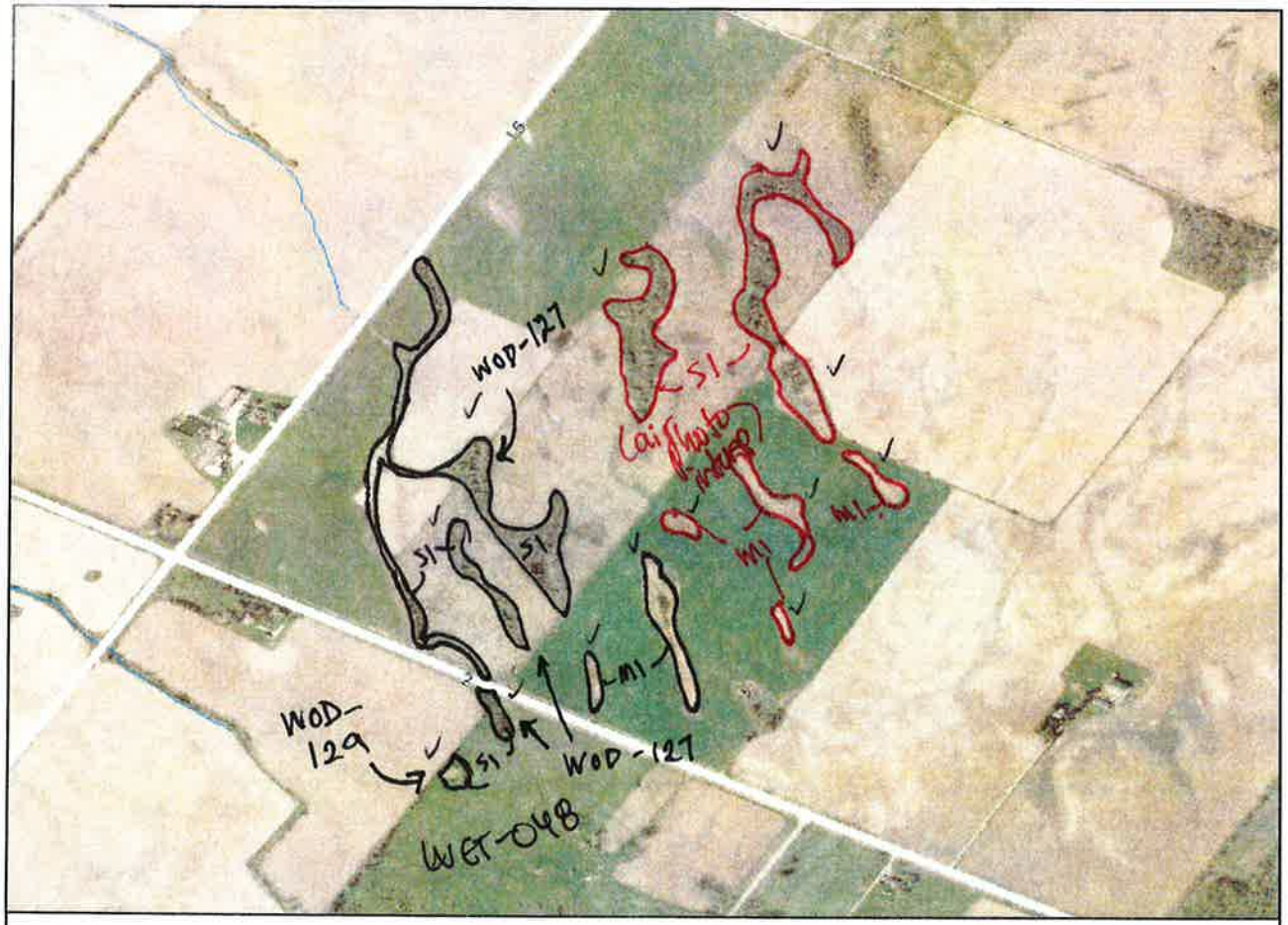
WET-001

The furthest south Black SI needs to be a diff woodland

(WOD-129)

Nov 5 2011
CLH

Concession 2 and Sideroad 15



Map centre: 44° 15' 29.4" N, 81° 27' 28.1" W

Map created: January 4, 2012

0 200 400 600 800 m

Scale: 1:11,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Complex AE

M SI as is

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnaud WF
Polygon:	WOD-130
UTM:	
Date:	NOV 10/11
Time:	16:40
Surveyor(s):	RWD, NAM
Weather:	

Community Classification

	Vegetation Type:	FODM3-1 Dry Fresh Poplar Forest
X	Inclusion:	FOCM2-2
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	3	Tremb. aspen > Ash sp.
2	Sub-canopy	3	4	Tremb. aspen > Ash sp. >> E white cedar
3	Understorey	4	3	
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	C	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

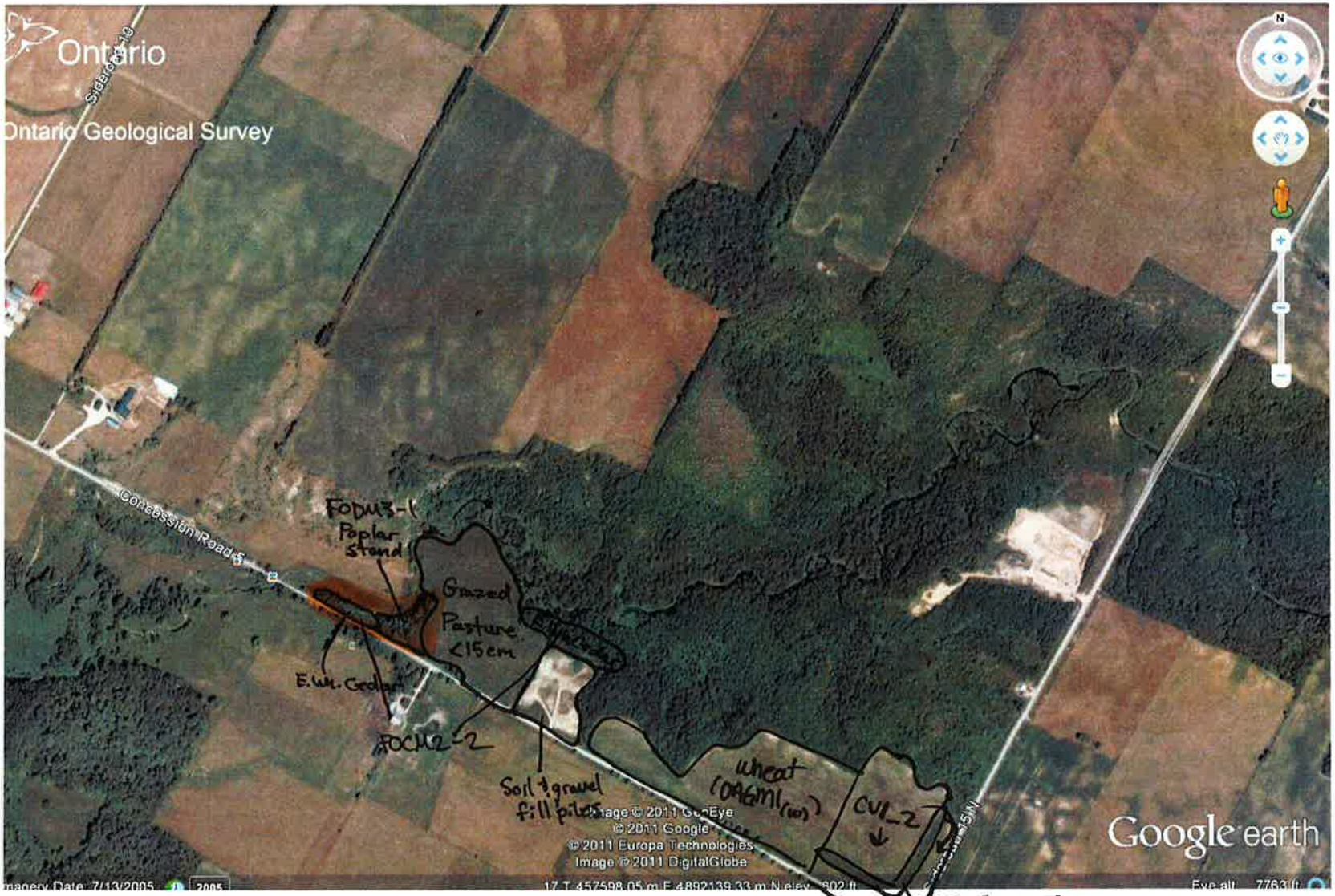
PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample



South of T79

WOD-130

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow WF
Polygon:	WOD-P31
UTM:	
Date:	Jan 19/12
Time:	Desktop
Surveyor(s):	PNT
Weather:	

Community Classification

Vegetation Type:		Deciduous Forest (FOD)
	Inclusion:	
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community			
X	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min.		Bottomland		Alvar		River		Prairie
			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
History			Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
X	Natural		Carb. Bedrock		Tableland		Sand Dune		Swamp		Woodland
	Cultural				Roll. Upland		Bluff		Fen	X	Forest
		Site			Cliff				Bog		Plantation

Cover			Open Water	Plant Form					
	Open		Shallow Water		Plankton		Forb		Coniferous
	Shrub	X	Surficial Dep.		Submerged		Lichen		Mixed
X	Treed		Bedrock		Floating-Lvd.		Bryophyte		
					Graminoid	X	Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

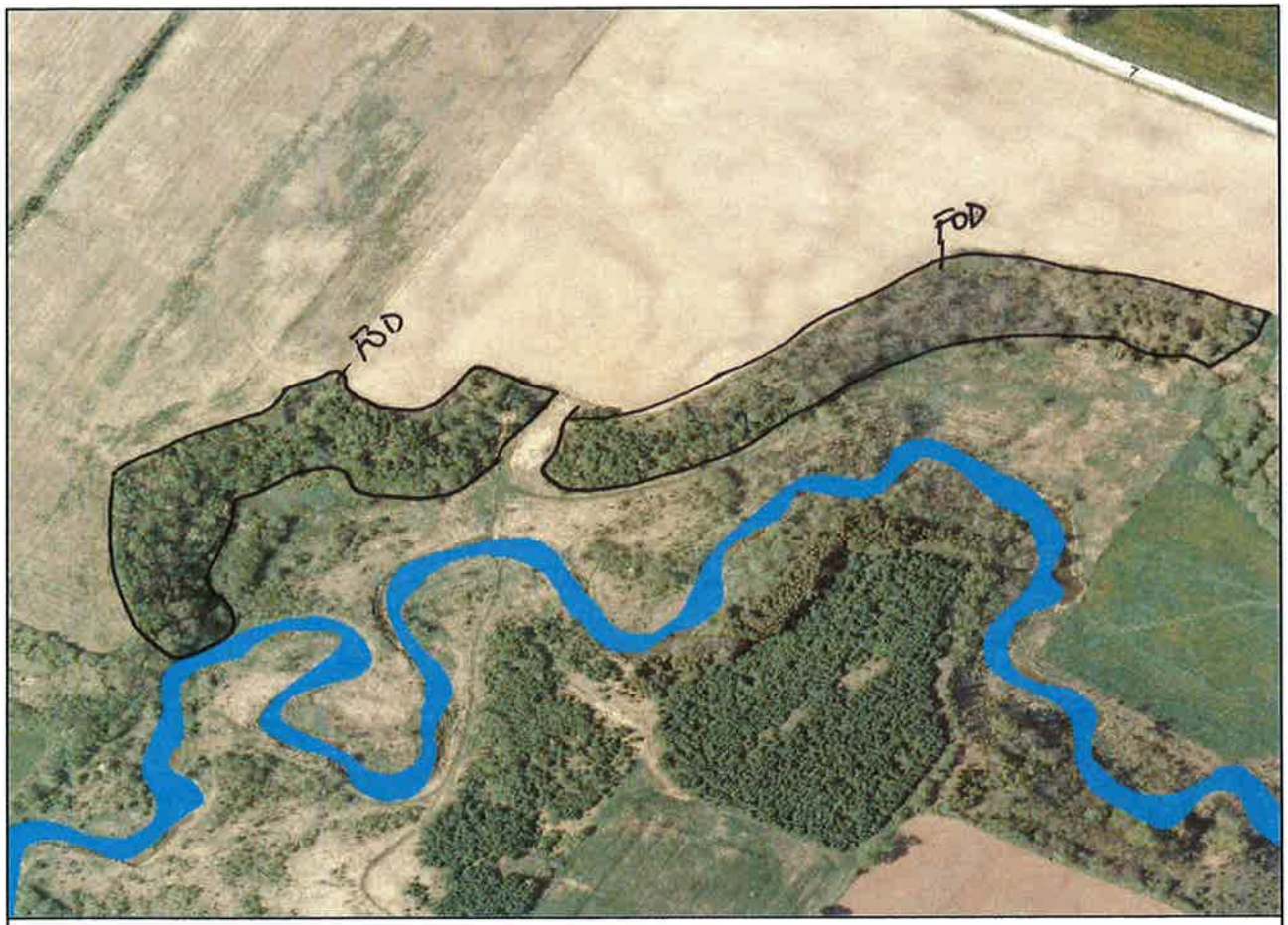
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	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3

WOD-131



Map centre: 44° 11' 01.6" N, 81° 30' 05.0" W

Map created: August 14, 2012

0 90 180 270 360 m

Scale: 1:5,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow WF
Polygon:	WOD-P31
UTM:	
Date:	Jan 19/12
Time:	Desktop
Surveyor(s):	PNT
Weather:	

Community Classification

Vegetation Type:		Deciduous Forest (FOD)
	Inclusion:	
	Complex:	

Polygon Description

System		Substrate		Topo Feature			Community			
X	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min.		Bottomland		Alvar		River		Prairie
			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
History			Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
X	Natural		Carb. Bedrock		Tableland		Sand Dune		Swamp		Woodland
	Cultural				Roll. Upland		Bluff		Fen	X	Forest
		Site			Cliff				Bog		Plantation

Cover			Open Water	Plant Form					
	Open		Shallow Water		Plankton		Forb		Coniferous
	Shrub	X	Surficial Dep.		Submerged		Lichen		Mixed
X	Treed		Bedrock		Floating-Lvd.		Bryophyte		
					Graminoid	X	Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

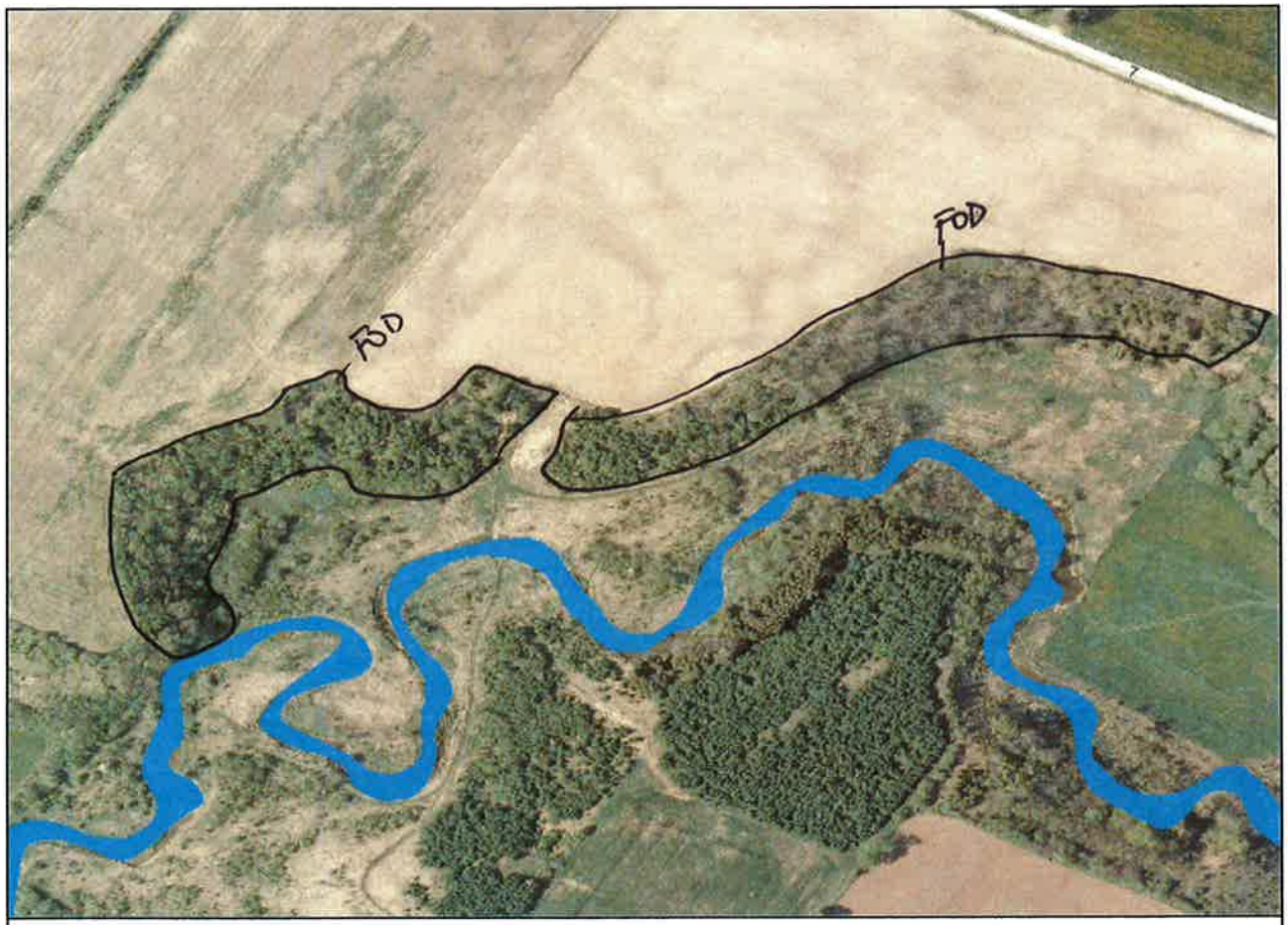
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	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3

WOD-131



Map centre: 44° 11' 01.6" N, 81° 30' 05.0" W

Map created: August 14, 2012

0 90 180 270 360 m

Scale: 1:5,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WOD-xii WOD-133
UTM:	
Date:	Nov 10 2011 Time: 16:15
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	TAGM1 Coniferous Plantation
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	3	4	White Pine
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	X Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
White pine											

Wildlife and Other Notes

Completed roadside.

WOD-133



WOD-133

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Arnold
Polygon:	WOD-XIII WOD-134
UTM:	
Date:	Nov 10 2011 Time: 16:15
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	TAGM1 Coniferous Plantation.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	3	4	Scot's Pine = White Spruce
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Scots Pine											
White spruce											

Wildlife and Other Notes

Completed modified.

WOD-134



WOD-134

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	WOD – 135
UTM:	
Date:	Oct 6/2011
Time:	14:06 – 17:00
Surveyor(s):	CLH, KSW
Weather:	

Community Classification

Vegetation Type:	SWDM 1-3 Polar Mineral
Inclusion:	Deciduous Swamp.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub	X	Surficial Dep	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			Freeman's maple = Trembling aspen > white elm = green ash
2	Sub-canopy			
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Freeman's maple	O	A	O	O							
Green Ash	O	O	O								
Trembling Aspen	O	O									
White Elm	O										

Other Notes (Landowner Contact, General Notes, etc.)

*This woodland was completed at same time as WOD-016, SI communities from wetland evaluation are consistent from this woodland & WOD-016. See data sheets associated w/ WOD-016 for detailed species list & map completed woodside

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

N(WOD-016)

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH, KSW

Date: Oct 6 2011 **Time (24h):** 14:06

Field #: WET/OD6 **Weather:** Precipitation: None **Temp (°C):** 20°

Map Code: S2 **Wind Speed & Direction:** 2 **Cloud %:** 0

Wetland Type: Swamp **Site Type:** Isolated **Dominant Form:** ts (tall shrub)

% Open Water: 0% **ELC Code:** SWTO2 Willow Organic Deciduous Thicket Swamp

Photos: DSC-0949, 0946

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm, Freeman's maple.
c	
dc,dh,ds	
ts	Salix petiolaris, Salix lucida, wild raisin, salix bebbiana
ls	swamp rose, narrow-leaved meadowsweet
gc	false nettle, swamp beggarticks, bidens tripartita, northern bugleweed
ne	
be	
re	water parsnip
ff	
f	
su	
m	

Soil type: Organic | OT2 | Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Surrounding area drains to this community. But surrounding area is also wetland of Palustrine

WET-011
S2

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH, KSW

Date: Oct 6 2011 **Time (24h):** 14:06 - 17:00

Field #: WET-006 S1 **Weather:** Precipitation: None **Temp (°C):** 20

Map Code: S1 **Wind Speed & Direction:** 2 **Cloud %:** 0

Wetland Type: Swamp **Site Type:** Palustrine **Dominant Form:** h (deciduous trees)

% Open Water: 10% **ELC Code:** SWDM4-5 Poplar mineral Deciduous Swamp

Photos: DSC-0950 → Woodland Pond

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	freemans maple, trembling aspen / white elm, green ash, trembling aspen
c	white cedar
dc,dh,ds	
(ts)	red osier, wild raisin / winterberry, salix bebbiana, spicebush
ls	prickly gooseberry, black raspberry
(gc)	equisetum arvense, dwarf raspberry, fringed loosestrife, woodland strawberry
ne	scouring rush, bladder sedge
be	
re	
ff	
f	
su	
(m)	moss sp.

Soil type: S; L | | Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: L=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Woodland Pond contains water. No inflows. High bank on SE side, low bank on NW side. Outflows from this pond apparent due to presence of channels. Drainage is NW towards S2 community.

WET-011
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

(T3) in (WOD-016)

Site:	Armour WF 1275
Polygon:	WET 006 S1
UTM:	
Date:	Oct 6, 2011
Time:	7:04
Surveyor(s):	KJW CLH
Weather:	Sunny, 20's 0% CC, wind 2

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's Maple	O	A	O	O	
Wild Raisin			O		
Green Ash	O	O	O		
Dwarf Raspberry				O	
Black Raspberry				R	
Red Osier Dogwood			O	O	
Swamp Rose			O		
Eastern White Cedar		O	O	O	
Hawthorn sp.		O			
Bebb's Willow		R			1
Trembling Aspen	O	O			
Riverbank Grape		O	O	O	
White Elm	O		O	O	
Winterberry		O	O		2✓
Alternate-leaved Dogwood			R		
Spicebush			O		

Species	Layer 1	2	3	4	Sample
Sensitive Fern				O	
Bladder Sedge				O	
Woodland Strawberry				O	
Poison Ivy				O	
Calico Aster				O	
Agrimony				O	
Common Dandelion				O	
Flat-topped White Aster			R		
Heal-all				O	
Common Milkweed			R		
Canada Goldenrod			O		
New England Aster			O		
Scouring Rush				O	
Narrow-leaved Meadowsweet			O		
Prickly Gooseberry				O	
Spinulose Wood Fern				O	
Shinleaf				O	
Crested Wood Fern				R	
Fringed Loosestrife				O	
Common Speedwell				O	
Meadow Horsetail				R	
Moss sp.				A	

Armow WF wWOD Oct. 6/7 20

Oct 6: Sunny 20°C, Wind 2 CC0%. CLH, KJW

Oct 7: Sunny, 12°C, wind 1 CC 0%.

WET-006 W(WOD-016) WET-011X.

Palustrine wetland.

S1

4 forms >25% cover → deciduous trees, dominant form

h	freeman's maple, trembling aspen
ES	red osier dogwood, wild raisin
gc	equisetum hyemale, dwarf raspberry
m	moss sp.

Contains a small woodland pond. Contains water → No inflows. High bank on SE side, low bank on NW side. outflows from this pond are apparent due to presence of channels on the NW side. Drainage throughout the community is NW towards S1 community. 17T 0462809 4899461

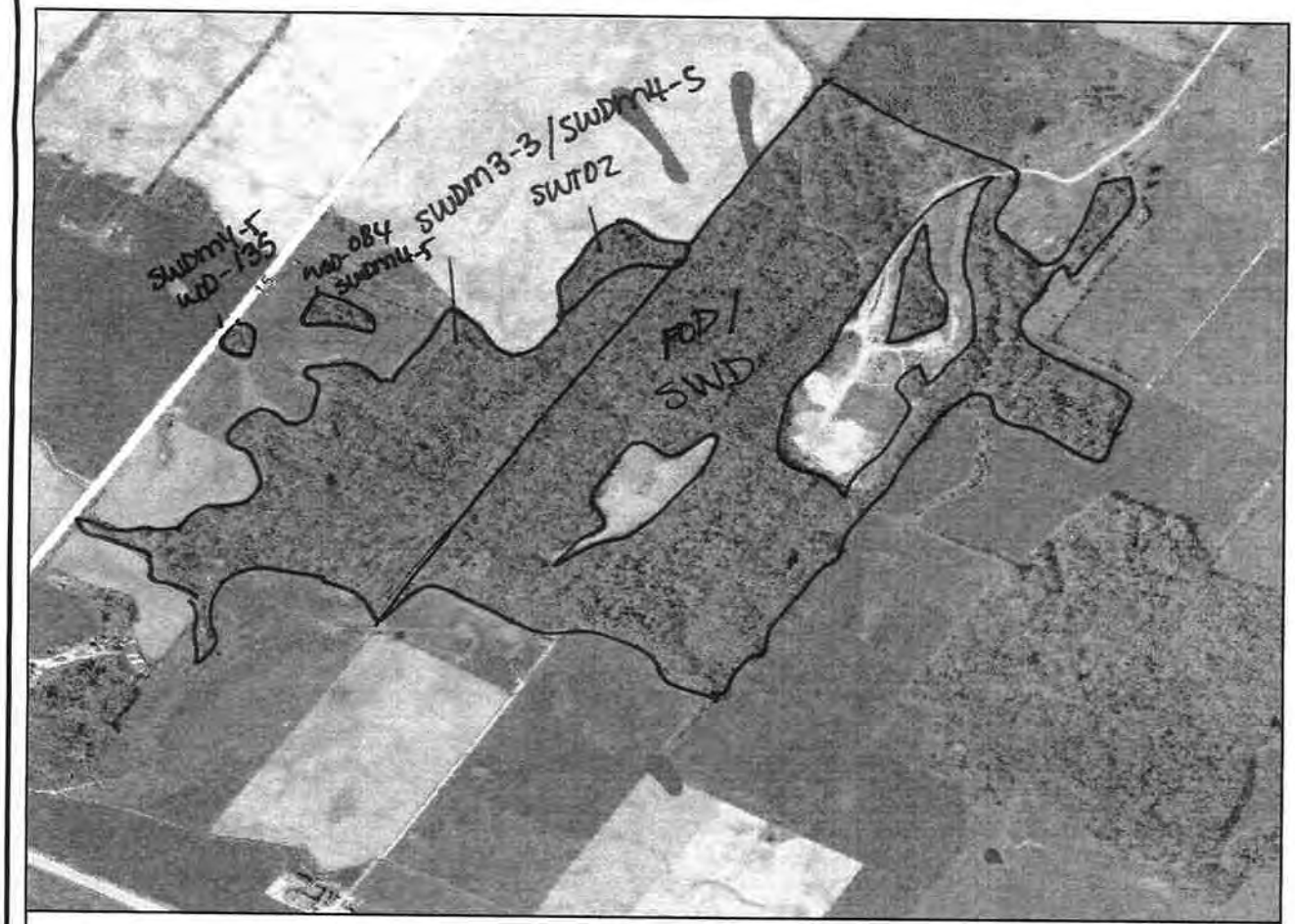
Approximately 6m x 3m in size.

Soil:

WOD - 016

J.L. DARLING CORP TACOMA, WA
www.RiteintheRain.com

WOD-016



Map centre: 44° 14' 44.5" N, 81° 27' 53.4" W

Map created: December 29, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex AD S6 amend SWP poly.

Wetlands WET-011

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Ontario

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WOD 016

462000

4900000

SIDEROAD 10

CONCESSION 2

SIDEROAD 15

BRUCE ROAD 15

ditch → NO connecting flows

Complex AD S1-S6

Wetland

Perm.

55
55

1
1

2

3
3

S1 WET-008 #7

WET-007 #8

WET-006

S1

S4

S2

overland flow

culvert

Armow Wind Farm

Field Map

Legend

- Project Area (Sept 30, 2011)
- Proposed Turbine (L04)
- Proposed Turbine (L02)
- Highway
- Primary Road
- Secondary Road
- Proposed Infrastructure
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

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Imagery provided by: Golder Associates, 2011

Project: 1275
Date: Tuesday, October 11, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:10,000

0 200 400 600 Metres

N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow 1275
Polygon:	1100 - 1300
UTM:	
Date:	Oct 12, 2011 — Time: 16:15
Surveyor(s):	PWD, KJW
Weather:	17°C, rain, 100% OC, wind 3/5

Community Classification

Vegetation Type:	FODMS-8
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll, Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
Open		Shallow Water	Plankton	Forb	Coniferous
Shrub		X Surficial Dep.	Submerged	Lichen	Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy			Sugar maple > white ash > basswood
2	Sub-canopy			sugar maple > white ash > basswood
3	Understorey			
4	Groundcover			

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

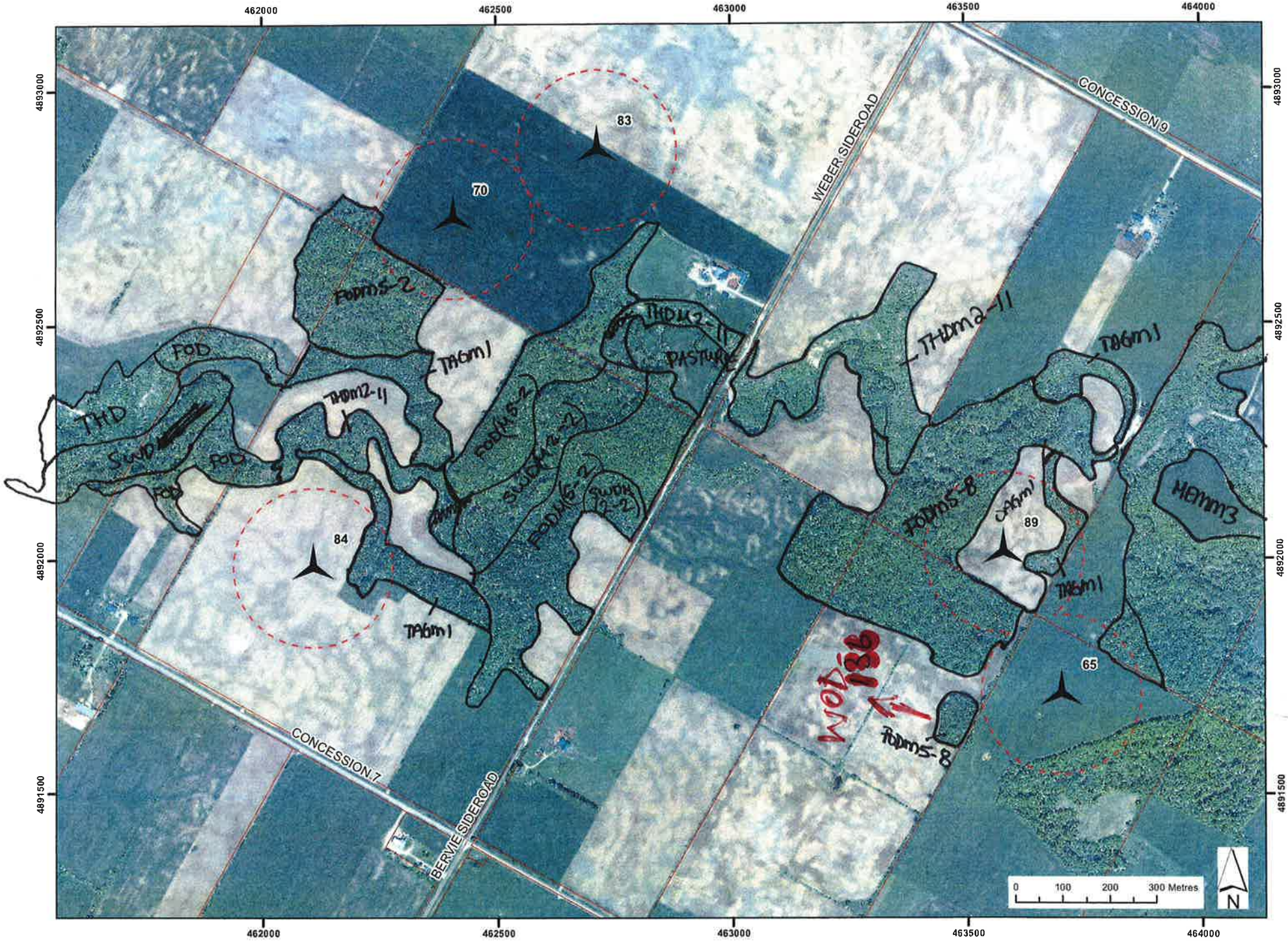
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Sugar maple	A	A	O	O							
white ash	A	A	O	O							
white elm	R	O	O	O							
Basswood	O	O	O	O							

Other Notes (Landowner Contact, General Notes, etc.)

Surveyed from property line -> Same composition as WOD-138


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
WEBER SIDEROAD
CONCESSION 9
CONCESSION 7
BERVIE SIDEROAD
83
70
84
89
65
FODm5-2
THDm2-11
TAGm1
FOD
THD
SWD
PASTURE
FODm5-8
MEMm3
weak
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Armour (T165)
Polygon:	WOD033 ~~WOD-040~~ AMND-138
UTM:	
Date:	Oct. 12, 2011 Time: 16:00
Surveyor(s):	PWD, KJW
Weather:	17°C, Rain, 100% c.c. Wind 3/5

Community Classification

	Vegetation Type:	Mixed Forest FOM5-8 Dry-Fresh Sugar Maple-Deciduous Forest Type
X	Inclusion:	Meadow MEMM4 White Ash
X	Inclusion Complex:	Hemlock-Beech Forest FOMM3

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Sugar Maple > White Ash > Basswood >> E. Hemlock
2	Sub-canopy	3	2	Sugar Maple > White Ash > Basswood > White Elm
3	Understorey	5	1	Ostrich fern > Alt. dogwood > Hawthorn sp.
4	Groundcover	6	2	Zig Zag Goldenrod > Herb Robert > Woodland Strawberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	O	> 50
Snags	O	< 10	O	10 - 24	O	25 - 50	O	> 50
Deadfall/Logs	O	< 10	O	10 - 24	R	25 - 50	R	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnaw 1275
Polygon:	WOD-033 WOD-1384
UTM:	
Date:	Oct. 17, 2011 **Time:** 15:30
Surveyor(s):	KJO, PWD
Weather:	Cloudy w/ showers, 17°C, 100% CC, Wind 3/5

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Ash	A	A	O	O	
White Elm	R	O	O	O	
Sugar Maple	A	A	O	O	
Common Red Raspberry			O		
Choke Cherry			O		
Prickly Gooseberry			O	O	
Basswood	O	O	O	O	
Hop Hornbeam		O	O		
Hawthorn sp.		O	O		
Eastern Hemlock	O	O	O	O	
Blue Beech		R	R		
Red Osier Dogwood			O		
Choke Cherry			O		
Alternate-leaved Dogwood		O	O		
White Pine	R	R			
White Birch					
American Beech					
MEADOW INCLUSION:					
Canada Goldenrod			A	A	
Common Blackberry			O	O	
Grass spp.			O	O	
White Ash		R	R		
Red Osier Dogwood			O		
Common Red Raspberry			O	O	
Common St. John's Wort				O	

Species	Layer 1	2	3	4	Sample
Zig Zag Goldenrod				O	
Wild Sarsaparilla				O	
Blue-stemmed Goldenrod				O	
Poison Ivy				O	
Wild Columbine				O	
Common Dandelion				O	
orange-fruited Horse Gentian				R	
Woodland Strawberry				O	
Herb Robert				O	
Hellebore sp.				O	
Yellow Avens				R	
Rough Avens				R	
Turtlehead				R	
Bittersweet Nightshade				O	
Ostrich Fern				O	
White Vervain				O	
Calico Aster				O	
Spotted Jewelweed				O	
Wild Ginger				O	
Spinulose Shield Fern				O	
Interrupted Fern				O	
Lions Foot				O	
Sensitive Fern				O	
Colts Foot				R	
Blue Cohosh				O	
Plantain-leaved Sedge				R	
Red Raspberry				O	
Pennsylvania Sedge				O	
Thyme-Leaved Speedwell				O	
MOSS sp.				O	

IMRG 171-1092

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

cont. from 032

Site:	
Polygon: WOD-033	TNOD-138
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

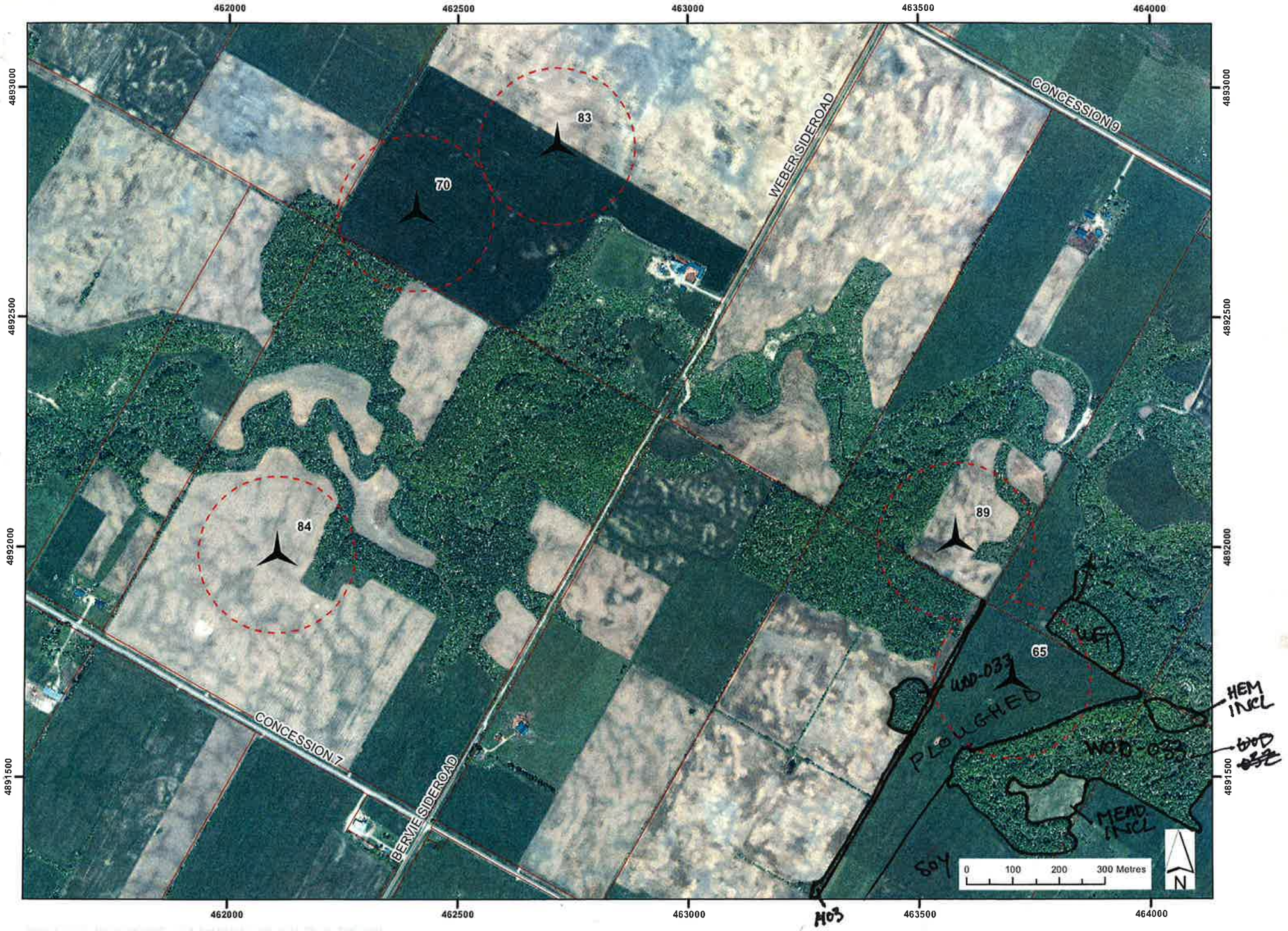
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Hayscented fern		O	O		
Smooth Gooseberry				O	
HEMLOCK INCLUSION					
Eastern Hemlock	A	A			
American Beech	O	O			
Christmas Fern				O	
Lion's Foot				O	
Sugar Maple	O	O			

Species	Layer 1	2	3	4	Sample

WOD-138


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
CONCESSION 9
WEBER SIDEROAD
CONCESSION 7
BERME SIDEROAD
83
70
84
89
65
WOD-033
PLOUGHED
HEM INCL
WOD-032
MEAD INCL
SOY
0 100 200 300 Metres
N

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow 177
Polygon:	~~WOD 033~~ AWOD-138*
UTM:	
Date:	Oct 17 2011 **Time:** 15:30
Surveyor(s):	KSW, PWD
Weather:	Cloudy w Showers, 17°C, 1009.cc, wind 3/5

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Horned Larks	OB,		~20						
B	Eastern Phoebe	OB,		1						
B	White-throated Sparrow	VO		1						
B	Downy Woodpecker	VO		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow 177
Polygon:	WOD 033
UTM:	
Date:	Oct 17 2011 **Time:** 15:30
Surveyor(s):	KSW, PWD
Weather:	Cloudy w showers, 17°C, 1009.cc, wind 3/5

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ✓ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ✓ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Bat Snag	0463755/4891525 IMPG 1098 & 1099	~70cm DBH old Beech snag w Artist's conch & large cavity near top; dead
Bat Snag	0463752/4891508 IMPG 1096 & 1097	~90cm DBH old Bat Snag w lots of woodpecker holes raccoon den near top; dead
Bat Snag	0463770/4891530 IMPG 1095	~80cm DBH old Beech snag w woodpecker holes & large cavities; dead
Bat Snag	0463775/4891562 IMPG 1093 & 1094	~90cm DBH live snag, Maple Shag w large cavity where branch used to be

All grouped near each other

Describe Valley (depth, geomorphological traits):

Additional Details:

☆WOD-138☆

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow
Project #: 1275
Date: Oct. 12, 2011
Observer(s): PWD, KJW

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-033	1	1		17T 0463652 4891488	1 cavity tree (35cm dbh)
	2	0		17T 0463710 4891513	None
	3	2		17T 0463759 4891526	2 cavity beech (~70cm dbh)
	4	2		17T 0463762 4891566	1 snag (25 dbh), 1 cavity (90cm dbh)
	5	0		17T 0463776 4891604	None
	6	0		17T 0463950 4891602	None
	7	0		17T 0464005 4891557	None
	8	0		17T 0464061 4891633	None
	9	1		17T 0464040 4891701	1 snag (35cm dbh)
	10	0		17T 0463986 4891748	None
total snags	6				
snags/ha	12				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site: Armow WF	☆WOD-138☆
Polygon: WOD-040	
UTM: 17T 0463877 4891827	
Date: Dec 1, 2011	Time: 15:15
Surveyor(s): JRW, AMD	
Weather: Wind 3 from SW, 1°C, 60% CC	

Community Classification

	Vegetation Type:	Dry-Fresh Sugar Maple-Beech Decid. Forest (FODM5-2)
X	Inclusion:	Green Ash Mineral Deciduous Swamp (SWDM2-2) [WET-075]
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	4	Sugar maple > beech > yellow birch > hemlock
2	Sub-canopy	2	4	Sugar maple > beech > ironwood.
3	Understorey	3	3	Sugar maple > beech = ironwood
4	Groundcover	5-7	2	goldenrod spp = aster spp.

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.			R		
riverbank grape				R	
green ash	D	A			
wh. elm	O	O			
wh. ash			R		
red osier dogwood				O	
rubus idaeus				R	
wild raisin			R		
freemans maple	R	R			
green ash	O	O			
wh. ash		R	R		
hawthorn sp.			R		
hemlock	R				
riverbank grape			R	R	
red elderberry			R		
allegheny blackberry				O	
yellow birch	R				
sugar maple	D	A			
ironwood		O	O		
beech	O	O	O		

Species	Layer 1	2	3	4	Sample
tall goldenrod				R	
goldenrod sp.				R	
evening primrose				R	
burdock				R	
sensitive fern				R	
reed canary grass				R	
soft rush				R	
wood strawberry				O	
buttercup sp.				R	
avens sp.				R	
goldenrod sp.				R	
tall goldenrod				R	
aster spp.				R	
zigzag goldenrod				R	

swamp inc.

main veg. type

Wildlife and Other Notes

- woodlot appears managed
- several deer blinds @ woodland/field edges
- photo 1117 sugar maple portion of polygon, photo 1116 swamp inclusion
- ~10-15 cm of snow covering groundcover
- wet pockets (standing water) throughout sugar maple forest likely from recent rains.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

★ WOD-138 ★

Wetland Vegetation Communities

Project Name: Armow WF **Project #:** 1275
Observer(s): AMD (WOD-012)
Date: Dec 8/11 **Time (24h):** 14 30
Field #: **Weather:** Precipitation: None Temp (°C): 1
Map Code: S1 Wind Speed & Direction: 4/SW Cloud %: 95
Wetland Type: Swamp **Site Type:** P **Dominant Form:** deciduous trees (h)
% Open Water: 0% **ELC Code:** SWDM2-2
Photos: 1151

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, white elm, freeman's maple
c	
dc,dh,ds	
(ts)	red osier dogwood, wild raisin, rubus idaeus
ls	
(gc)	sensitive fern, woodland strawberry, buttercup sp
ne	reed canary grass, soft rush
be	
re	
ff	
f	
su	
m	

Soil type: SiCL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):
None observed.

Wildlife Notes:
- American crows heard
- Canada geese flying overhead

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

WET-030
S1

see notes over →

Modified ELC Community Description

Page __ of __

WOD-138

Soils	1	2	3
Position:	L		
Aspect:	250		
%	0-0.5%		
Type:	S		
Class:	A		

Polygon: WOD-040

Strata: Texture	SiCL		
Depth	29-39 → 0-11		
Strata: Texture	SiC		
Depth	39-100 → 11-72		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	SiCL		
Surface Stoniness	—		
Surface Rockiness	—		
Depth to:			
Mottles	1		
Gley	33	measured from	
Bedrock	—	below	
Water table	1	organics	
Carbonates	51		
Depth of Organics	28		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- largely green ash dominated
- photo 1116 – swamp inclusion
- soil sample from swamp inclusion

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Polygon:

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

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Modified ELC Community Description Page __ of __

Site:	Armow WF (WOD-138A)
Polygon:	WOD-040 ([redacted] of T65)
UTM:	17T 0463993 4892292
Date:	Dec. 2/11 Time: 8:30
Surveyor(s):	AMD, JRW
Weather:	90% CC, 0°C, wind 15W, light snow

Community Classification

Vegetation Type:	Hawthorn Deciduous Shrub Thicket (THDM2-11)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	X Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	2	green ash > white elm
2	Sub-canopy	3	4	hawthorn sp. => green ash
3	Understorey	4	3	hawthorn sp. > redosier dogwood
4	Groundcover	5-7	2	goldenrod and aster spp. > reed canary grass

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

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Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
wh. spruce		R	R		
hawthorn sp.		A	A		
green ash	O	O			
wh. cedar		R	R		
wh. elm	O	R			
wh. pine		R	R		
red pine		R			
redosier dogwood			O	O	
sugar maple	R				

Species	Layer 1	2	3	4	Sample
teasel				R	
goldenrod spp				R	
reed canary grass				R	
tall goldenrod				R	
aster spp.				R	

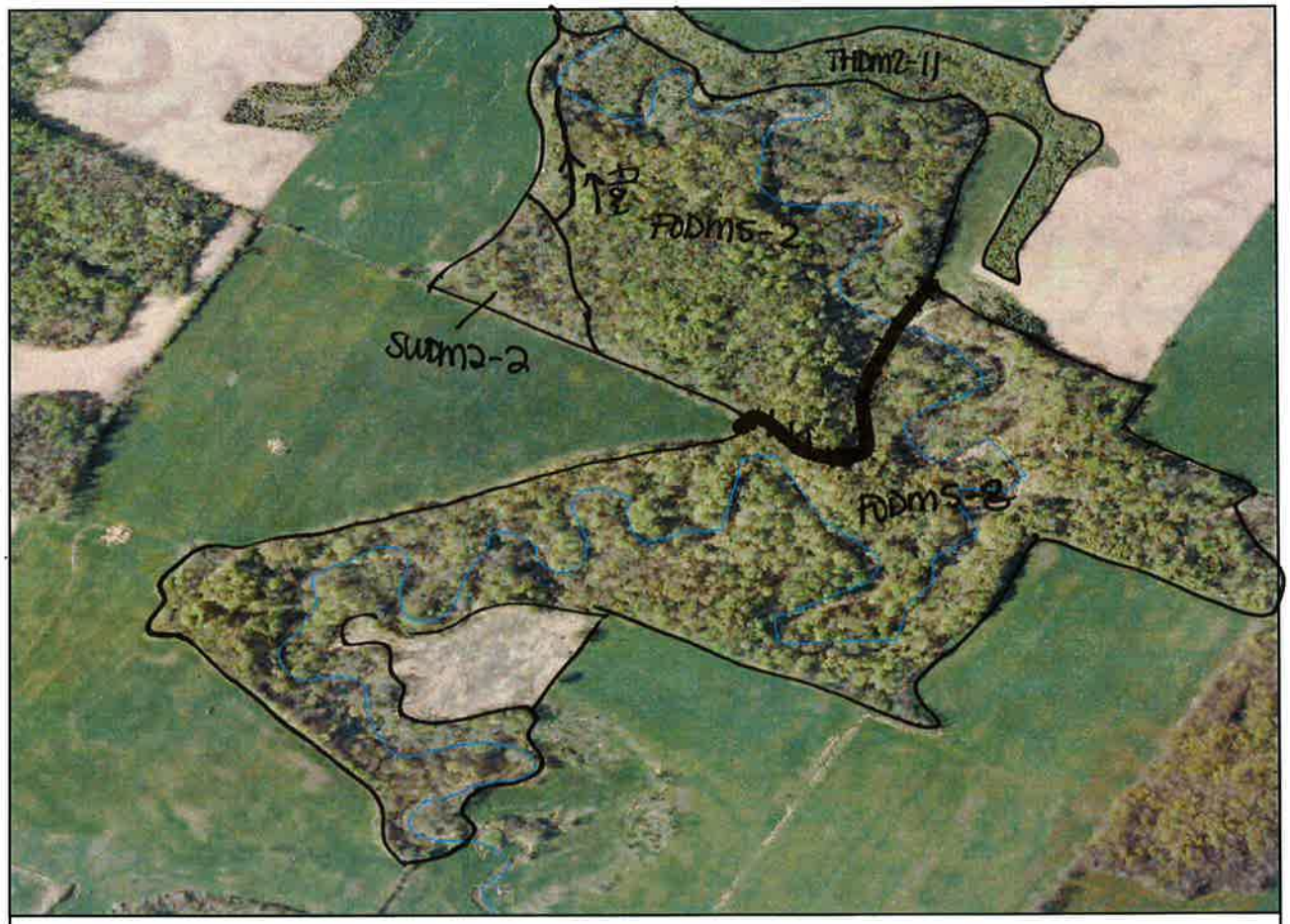
Wildlife and Other Notes

- lots of recent snow (>1 foot), covers most groundcover.
- hawthorn thicket w/ green ash + few white elm - riparian zone of small natural watercourse
- polygon w/ in a valley

- photo 1118
- some coniferous plantings of white pine.

WOD-012

~~WOD-138~~



Map centre: 44° 10' 37.7" N, 81° 27' 05.3" W

Map created: December 30, 2011

0 100 200 300 400 m

Scale: 1:6,900

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

flows

SWDM2-2: inflow absent, intermittent outflow to the N, as indicated on map in black marker.

Ind. L

SI

WET-030

Wetland

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N S

Ontario

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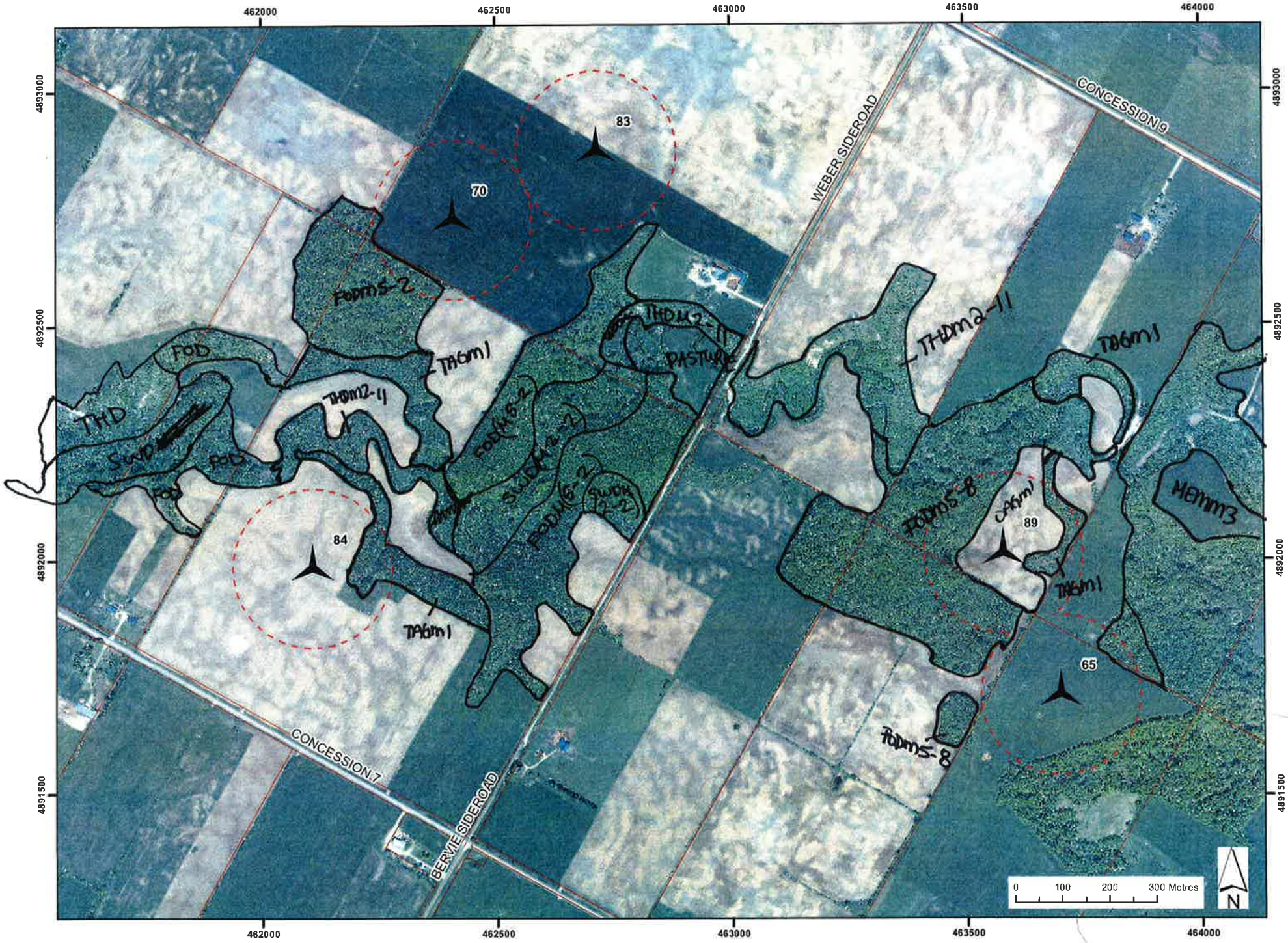
FWDD-138

Google earth

feet 1000
meters 500

North of TGS

#WOD-136


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
WEBER SIDEROAD
CONCESSION 9
CONCESSION 7
BERVIE SIDEROAD
83
70
84
89
65
FODm5-2
THDm2-11
THDm2-11
PASTURE 1
THDm1
FOD
THD
SWD
FOD
THDm2-11
FOD(4-5-2)
SWD(4-2-2)
FOD(4-5-2)
SWD(4-2-2)
THDm1
THDm1
FODm5-8
CAGm1
HEMm3
THDm1
FODm5-8
0 100 200 300 Metres
N

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest or Swamp Communities

WOD-139

Project Name: Arrow WF
Project #: 1275
Date: Dec 1, 2011
Observer(s): JRW, AMD

Woodland ID (WOD- 040)

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1	0		17T 0463820 4891802	
Plot 2	0		17T 0463844 4891792	
Plot 3	0		17T 0463874 4891798	
Plot 4	1 (2)		17T 0463889 4891804	
Plot 5	1		17T 0463912 4891818	
Plot 6	0		17T 0463914 4891782	
Plot 7	0		17T 0463948 4891773	
Plot 8	0		17T 0464000 4891763	
Plot 9	0		17T 0463944 4891820	
Plot 10	0		17T 0463963 4891867	
Plot 11				
Plot 12				
Plot 13	total snags	3		
Plot 14	snags/ha	6		
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: _____
Project #: _____
Date: _____
Observer(s): _____

Woodland ID (WOD- _____)

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1				
Plot 2				
Plot 3				
Plot 4				
Plot 5				
Plot 6				
Plot 7				
Plot 8				
Plot 9				
Plot 10				
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Arrow
Project #: 1275
Date: Dec 1/Oct 12, 2011
Observer(s): JRW, AMD / PWD, KJW

Start Time _____ End Time _____

Woodland ID (WOD- 138) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	0		
Plot 2	0		
Plot 3	0		
Plot 4	3		
Plot 5	1	JRW, AMD	
Plot 6	0		
Plot 7	1	FOD MS-2	
Plot 8	1		
Plot 9	2		
Plot 10	0		
Plot 11	1		
Plot 12	0		
Plot 13	3		
Plot 14	2	PWD, KJW	
Plot 15	0		
Plot 16	0	FOD MS-8	
Plot 17	0		
Plot 18	0		
Plot 19	1		
Plot 20	0		
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Final Wodland Tally 9

Formula: Total # Snags / (# Plots x 0.05ha)

$= 9 / (20 \times 0.05) = 9$ snags/ha.

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow WF ★WOD-138
Polygon:	WOD-040
UTM:	17T 0463877 4891827
Date:	Dec 1, 2011 **Time:** 15:15
Surveyor(s):	JRW, AMD
Weather:	1°C, wind 3, S-SW, CC=60%

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	BCCH	VO		1						
B	Herpn/Wild Tur	TK		?						
B	Ruffed grouse	OB		1	?					
B	Northern flicker	VO		1						
M	Deer	TK		3						
B	Am crow	VO		5						
M	Coyote	TK		1						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats
- ___ Cave Entrance
- ___ Mine Shaft
- ✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose
- ___ Seep/Spring
- ___ Mineral Lick

Snakes
- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ✓ Organics Pile
- ✓ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles
- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Wood pile ★	17T 0463803 4891805	1.5m high log/snag pile

Describe Valley (depth, geomorphological traits):

Additional Details:

*many potential hibernalcum for snakes

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Ammon WF AMWD-138
Polygon:	N of T65
UTM:	17 T 0463993 4892292
Date:	Dec 2. 2011 **Time:** 8:30
Surveyor(s):	JBW, AMD
Weather:	OC, S.S=95%, wind=1, SW light snow

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Downy Woodpk	VO		1						
B	BCCH	VO		2						
B	Am Crow	VO		2						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

___ Deciduous Forest
___ Mixed Forest
___ Coniferous Forest
___ Marsh
___ Swamp
___ Bog
___ Fen
___ Water (Shallow & Open)
___ Meadow
___ Tallgrass Prairie
✓ Thicket
___ Savannah
___ Woodland
✓ Valley (Describe Below)
___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks

Bats

___ Cave Entrance
___ Mine Shaft
___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

___ Snag
___ Burrow
___ Den
___ Tree Cavity
___ Fallen Log

Deer/Moose

___ Seep/Spring
___ Mineral Lick

Snakes

___ Burrow
___ Fallen Rotting Log
___ Old Well
___ Rock Pile/Stone Wall
___ Organics Pile
___ Log Pile
___ Karst
___ Broken/Fissured Rock
___ Old Foundation
___ Old Bridge/Concrete Culvert

Amphibians and Turtles

___ Vernal Pool/Woodland Pond (Amphibian Breeding)
___ Sand (Turtle Nesting)
___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site: 1275 Arnaw	~~AWOD-138~~
Polygon: WOD-XXVI (WOD-012)	
UTM:	
Date: Nov 11 2011	Time: 15:25
Surveyor(s): PWD NGM	
Weather:	

Community Classification

Vegetation Type:	FODM5-8 Dry-Fresh Sugar Maple - White Ash Dec. Forest.
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	1	3	
2	Sub-canopy	2	4	
3	Understorey	3	2	
4	Groundcover	6	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	> 50
Snags	O	< 10		10 - 24		25 - 50	> 50
Deadfall/Logs	O	< 10	O	10 - 24		25 - 50	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture			
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles			
Gley			
Bedrock			
Water table			
Carbonates			
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime			

Polygon:

Tree Tally

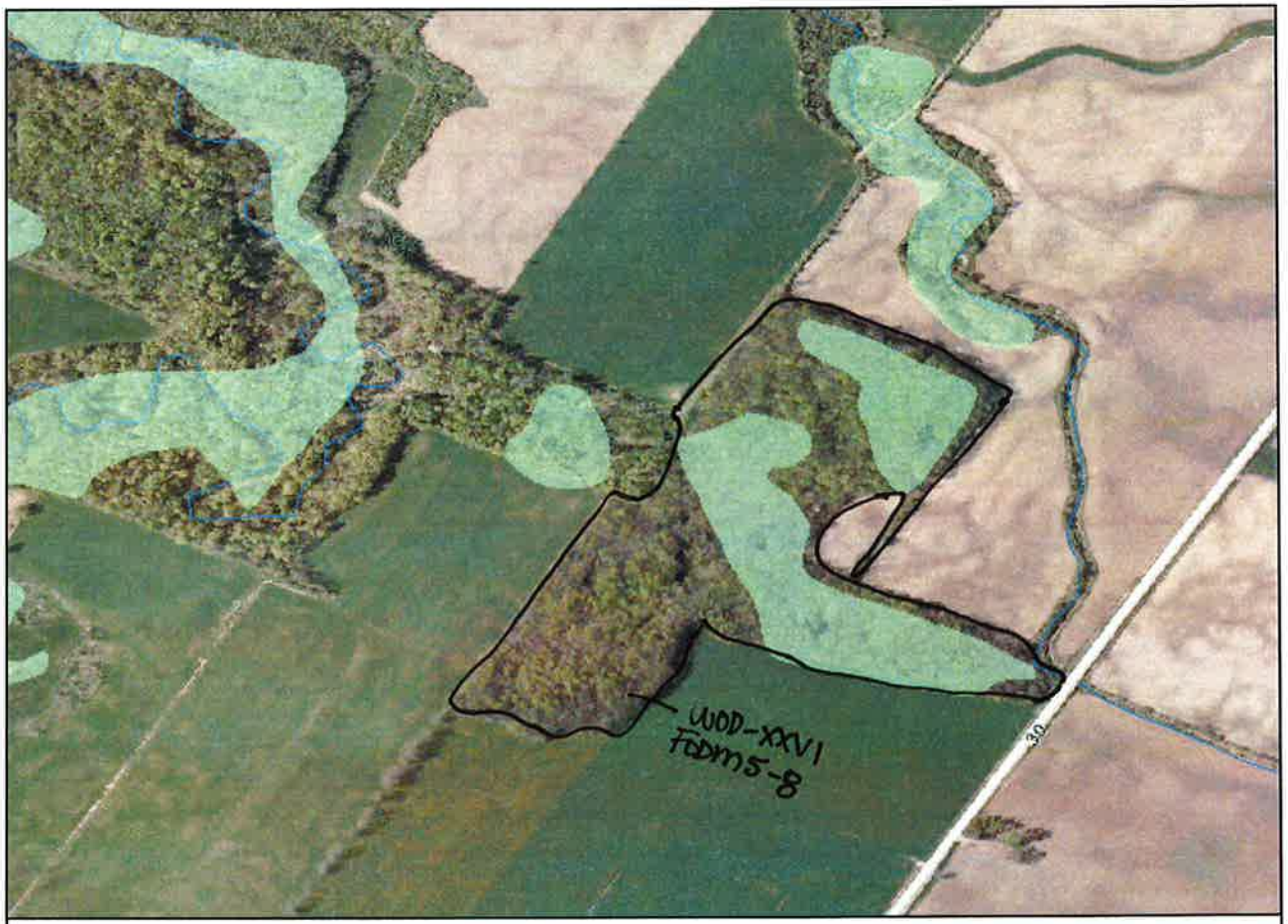
Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Ash sp.
American Beech
Sugar Maple
Eastern Cottonwood
White Elm

WOD-012

* WOD-138



Map centre: 44° 10' 34.0" N, 81° 26' 44.8" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:8,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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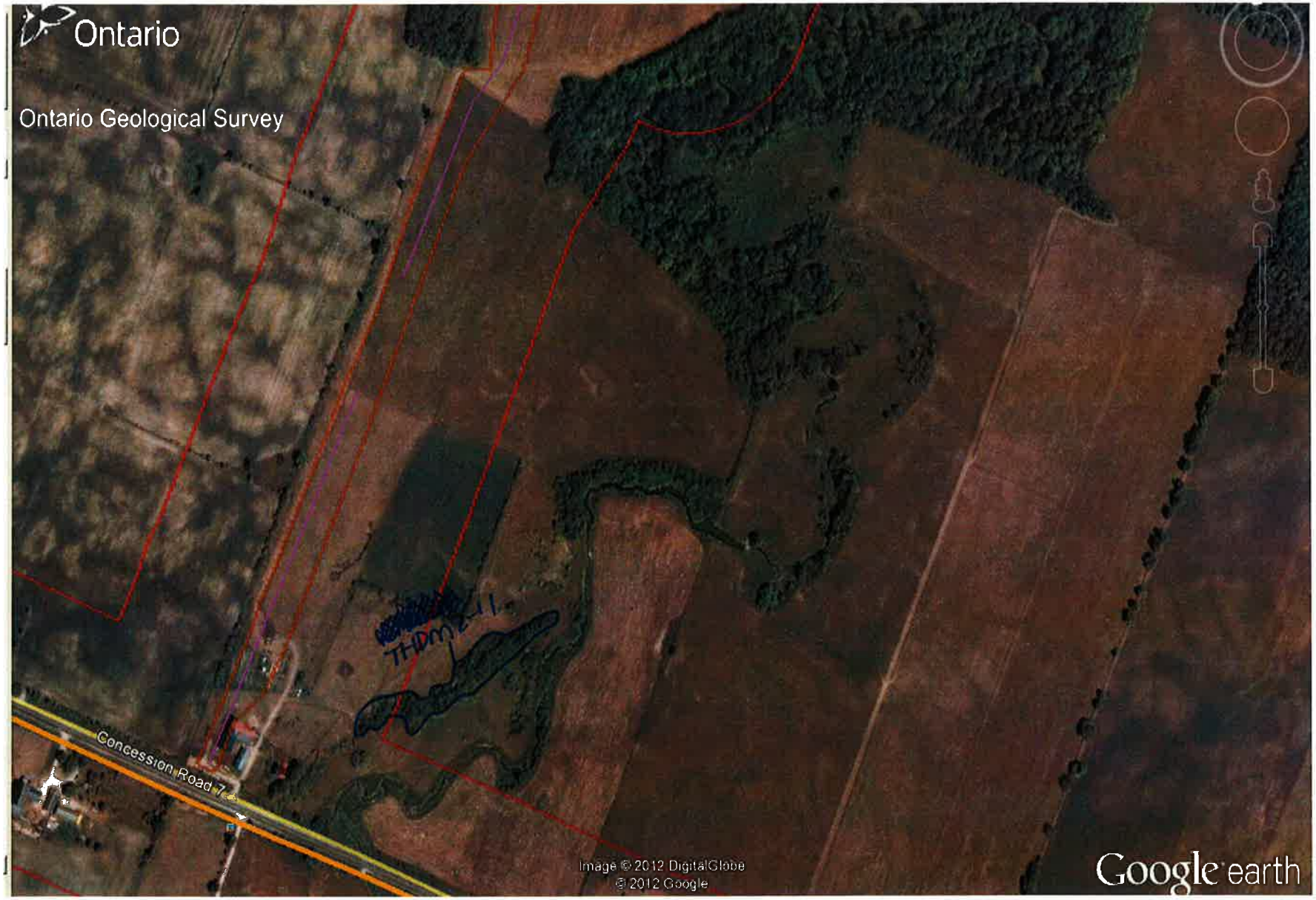
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WOD-138



S. of T65

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

~~WOD-139~~ ~~WOD-059~~ WOD-058 (TSB) 12/29/11

Site:	Arnold VE 1275
Polygon:	WOD-019
UTM:	
Date:	Oct 27 2011 — Time: 13:35
Surveyor(s):	KJW, CLH
Weather:	overcast, 3°C, 100% CC, wind 3/NW

Community Classification

Vegetation Type:	FODm8-8 Dry-Fresh Sugar maple-White Ash Deciduous Forest
X Inclusion:	SWTM8-1
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	Sugar maple > White Ash
2	Sub-canopy	3	4	Sugar Maple > White Ash > White Elm > Ha sp.
3	Understorey	4	1	Wild Raisin > Allegheny Blackberry > Cana Goldenrod
4	Groundcover	4	1	Calico Aster > Agrimony > Red Raspberry

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	R	10 - 24	R	25 - 50	R	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	X Pioneer	Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnold 1275
Polygon:	
UTM:	
Date:	Oct. 27 2011 — Time: 13:35
Surveyor(s):	KJW, CLH
Weather:	overcast, 3°C, 100% CC, wind 3/NW

Layers: 1=canopy >10 m; 2=sub-canopy 2-10 m; 3=understorey 0.5-2 m; 4=ground layer <0.5 m

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	R	A			
Hawthorn sp.		O			
Apple		R			
White Ash	O	O			
White Elm		O	O		
Red Raspberry				O	
Wild Raisin			O	O	
Allegheny Blackberry			O		

Species	Layer 1	2	3	4	Sample
Canada Goldenrod			O		
Calico Aster				O	
Riverbank Grape			O		
Agrimony				O	

Wildlife and Other Notes

on a steepslope.

* communities confirmed during Dec 7/11 site visit when access granted (AMD, HLW)

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

139

~~in (WOD-055)~~

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): CLH, KTW

Date: Oct 27 2011 **Time (24h):** 13:20

Field #: WET-026 (T52) **Weather:** Precipitation: none Temp (°C): 5

Map Code: S1 Wind Speed & Direction: 3/NW Cloud %: 100

Wetland Type: Swamp **Site Type:** I **Dominant Form:** ts (S,ts)

% Open Water: 0% **ELC Code:** SWTM8-1

Photos: 18-1249 AWO-031

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	red osier x wild raisin
ls	Allegheny blackberry
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type: SL | Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

No site access! Roadside. → Boundaries are airphoto delineated with assistance from roadside

WET-031 S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

~~IWOD-057~~ *

Site: Arrow WF 1275	IWOD-139
Polygon: WET-026 (TS2) (roadside)	
UTM:	
Date: Oct 27, 2011	**Time:** 13:20
Surveyor(s): KJW, CH	
Weather: overcast 5°C 100% CC, wind 3/NW	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Eastern Cottonwood	R				
Green Ash		O			
Freeman's Maple		O			
Willow sp.		R			

WOD-139

Modified ELC Community Description

Page __ of __ ~~WOD059~~ (WOD-058)

Soils	1	2	3
Position:	5		
Aspect:	135		
%	0		
Type:	S		
Class:	A		

Polygon: WET-026

Strata:	Texture	SiL		
	Depth	16-45		
Strata:	Texture	SiCL		
	Depth	45-97		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiL		
Surface Stoniness		—		
Surface Rockiness		—		
Depth to:				
	Mottles	18 (measured from under Organics)		
	Gley	—		
	Bedrock	—		
	Water table	Surface		
	Carbonates			
Depth of Organics		16		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- in a depression
- deer scat observed
- small (7.5 cm length) skull observed, partially crushed.
- photo 1129.

*Confirmed ELC + wetland assessment as now native property access - completed soils + bat hab assessments

No. 392

~~WET-059~~ (-1)

Armow WF. Oct 27 2011

Wetland Assessment CLH, KJW

5°C, CC 100%, Wind 3 from NW, No precip.

WET-026 ★WDD-139★

Part of Glammis Bog PSW ↳ WET-004↵

I Community (M1)

S1: I form >25% cover

ts: red osier, wild raisin

Site Type: Isolated.

Soils: Unknown. Presumed mineral
↳ soils SiL, property access obtained.

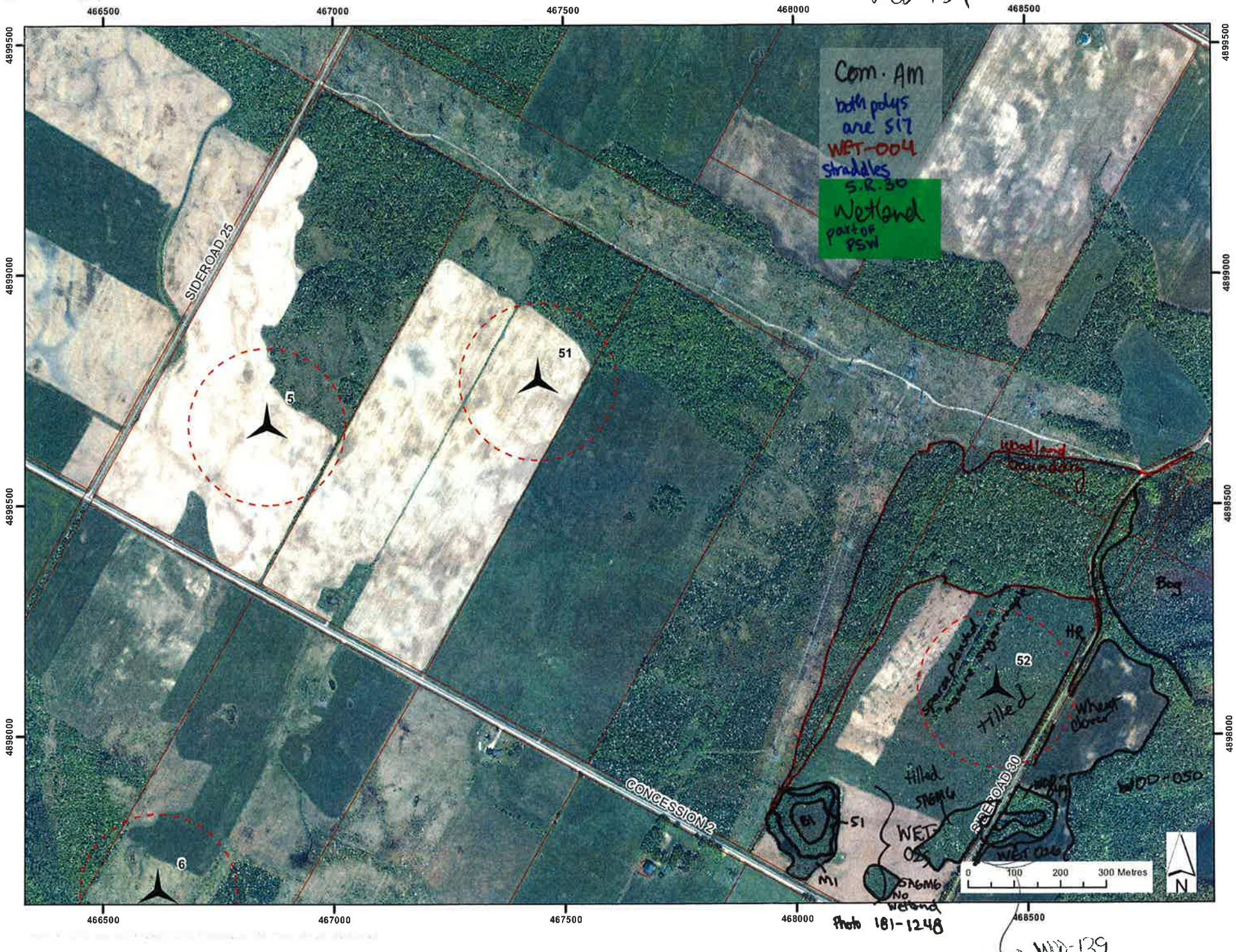
Open Water: 0%.

Fish Habitat: Absent.

Rare Species Observed: None.

Surrounding Land Use (<1 Skm):
pasture, row crop, abandoned ag, deciduous forest, coniferous forest, terrain appreciably hilly (edge of Bog), fencerows with deep cover.

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ALL WEATHER WRITING PAPER


1 WOD-059
WOD-139
466500
467000
467500
468000
468500
4899500
4899000
4898500
4898000
Com. Am
both polys are 517
WET-004
straddles S.R.30
Wetland
part of PSW
SIDEROAD 25
CONCESSION 2
SIDEROAD 30
5
51
52
6
M1
Woodland boundary
Bog
filled
WOD-050
WET-036
No Wetland
0
100
200
300 Metres
N
Photo 181-1248
WOD-139

Candidate Bat Maternity Roost Data Form X WOD-~~09~~ 139 X

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Armow
Project #: 1275
Date: Dec. 7/291

Start Time 11:40am End Time 12:10

Observer(s): AM, DJ, HLW

Woodland ID (WOD-~~09~~ 139) Weather Conditions: -1°c, wind 1 from SW, overcast

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	0	E: 0468486 N: 4897861	
Plot 2	0	E: 0468518 N: 4897849	
Plot 3	1	E: 0468547 N: 4897841	
Plot 4	0	E: 0468526 N: 4897811	
Plot 5	0	E: 0468513 N: 4897804	
Plot 6	0	E: 0468476 N: 4897807	
Plot 7	2	E: 0468455 N: 4897799	
Plot 8	1	E: 0468443 N: 4897797	
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

BMA-024

Final Wodland Tally

Formula: Total # Snags / (# Plots x 0.05ha)

= 4 / (8 x 0.05) = 10 snags/ha

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

x 139 WOD-~~059~~ 9x

Site:	Avmow WF
Polygon:	WET-0261 WOD059
UTM:	17T 0468480 4897844
Date:	December 9, 2011 **Time:** 11:40 AM
Surveyor(s):	AMD, HIW
Weather:	-1°C, Overcast, Wind 1 SW

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	Wh-tailed deer	SP		1						
B	Bird sp.	CAR		2						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	See Page 1
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ✓ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds
- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats
- ___ Cave Entrance
- ___ Mine Shaft
- ✓ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten
- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose
- ___ Seep/Spring
- ___ Mineral Lick

Snakes
- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles
- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates
- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description

Describe Valley (depth, geomorphological traits):

Additional Details:

Photo 1130+1131 : Unidentified bird carcass (1 of 2)

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Modified ELC Community Description Page __ of __

Site:	Arrow WF ~~AWD-140~~
Polygon:	WOD-015 (T112) hedgerow @ former 25 sdrd
UTM:	17T 0465326 4896543
Date:	Dec. 7/11 Time: 15:50
Surveyor(s):	AMD, HLW
Weather:	-1°C, Cloudy w sunny periods, 70% cc, wind 2 from SW

Community Classification

Vegetation Type:	Naturalized Deciduous Hedgerow (FODM11)
Inclusion:	
Complex:	

Polygon Description

System		Substrate		Topo Feature				Community			
X	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
	Wetland	X	Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic		Parent Min.		Bottomland		Alvar		River		Prairie
History			Acidic Bedrock		Terrace		Rockland		Stream		Thicket
X	Natural		Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
	Cultural		Carb. Bedrock	X	Tableland		Sand Dune		Swamp		Woodland
		Site			Roll. Upland		Bluff		Fen	X	Forest
					Cliff				Bog		Plantation

Cover			Open Water	Plant Form					
	Open		Shallow Water		Plankton		Forb		Coniferous
	Shrub	X	Surficial Dep.		Submerged		Lichen		Mixed
X	Treed		Bedrock		Floating-Lvd		Bryophyte		
					Graminoid	X	Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	2	4	white elm > white ash > trembling aspen
2	Sub-canopy	3	4	white elm = hawthorn sp. > white ash > common apple
3	Understorey	4	4	red osier dogwood > hawthorn sp. > wild raisin
4	Groundcover	5-7	3	reed canary grass > wood strawberry > dandelion

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	R	10 - 24	R	25 - 50	R	> 50
Deadfall/Logs	R	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ___of___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		O	O		
wh. elm	A	O			
wh. ash	O	O			
trembling aspen	R				
red osier dogwood			O	O	
wild raisin			O	O	
common apple		O	O		
sugar maple	R	R	R		
green ash	R	R	R		

Species	Layer 1	2	3	4	Sample
reed canary grass				A	
canada goldenrod				O	
chicory				R	
teasel				R	
avens sp				O	
dandelion				O	
wood strawberry				O	
new england aster				O	
tall goldenrod				O	
knapweed sp.				R	
common speedwell				R	
common burdock				R	

Wildlife and Other Notes ~~See map + soils + wildlife info w/ WOD-015~~ Set of datasheets

- forested hedgerow in old lane running through middle - former 25 sideroad
- photo 1136
- old drainage ditch from road on both sides of former road (for part of length)
- does not appear to be wetland - lowland deciduous forest

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armour WF	★WOD-141★
Polygon: WOD-031	★WOD-030 B★
UTM:	
Date: Oct 7 2011	Time: 15:20
Surveyor(s): CLH KJW	
Weather: Sunny 22°C	CC0% Wind 3

Community Classification

Vegetation Type:	SWDO2-1 Red maple Organic Deciduous Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Red Maple > Freeman's Maple > Black Ash >
2	Sub-canopy	3	4	Freeman's Maple > Winterberry > Red Maple > Yellow Birch
3	Understorey	4/5	3	Royal Fern > Cinnamon Fern > Sensitive Fern > Winterberry
4	Groundcover	6/7	3	Moss > Purple Raspberry > Wintergreen > Goldthread

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	B	25 - 50	R	> 50
Snags	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Deadfall/Logs	A	< 10	O	10 - 24	O	25 - 50	R	> 50

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

Community Age		Pioneer		Young		Mid-age	X	Mature	Old Growth

★ Was contiguous to WOD-030 prior to the Hydro cut

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnaud UF 1715	141
Polygon: WET 012 S1	W WOOD
UTM:	
Date: Oct 7, 2011	Time: 1:00
Surveyor(s): KSW, ELH	
Weather: Sunny, 22°C, 0% CC, wind 3 S	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Red osier Dogwood			O		
Marsh Rose			O		
Balsam Poplar	O	O			
Trembling Aspen	O	O		O	
Wild Raisin			O		
Riverbank Grape				R	
White Birch		O			
Freeman's Maple	O	O	O	O	
Winterberry		A	O		
Dwarf Raspberry				O	
Velvet-leaf Blueberry				R	1
Black Ash	O	O	O		
Red maple	O	O		O	
White Elm			O	R	
Tamarack		R			
Hemlock		R			
Spiraea alba			O		
Yellow Birch		O			

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Calico Aster			O		
Carex crinita				R	
Sensitive Fern			O		
Royal Fern			A		
Northern Bugleweed			O		
Carex crinita			O		
Blue Flag Iris			O		
Cinnamon Fern			O		
Sphagnum sp				O	
Moss sp				O	
Marginal Shield Fern				O	
Parathelypteris noveboracensis				R	
Goldthread				O	
Canada Mayflower				R	
Water Parsnip				R	
Huperzia lucidula				R	2
Lycopodium obscurum				R	3
Bittersweet Nightshade				O	
Carex pseudocyperus				R	
Hellebore				R	
Woolgrass			O		
Wintergreen				O	

1-8

8

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

IW WOD-~~030~~ 141

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 13:00

Field #: WET-012 **Weather:** Precipitation: None Temp (°C): 22

Map Code: WET 012 S1 Wind Speed & Direction: 3 from S Cloud %: 0

Wetland Type: Swamp **Site Type:** Isolated **Dominant Form:** ~~fs~~ h (S, h)

% Open Water: 0 **ELC Code:** SWD07-1

Photos: IMPG 168 - 1068

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Red Maple, Black Ash, balsam poplar, yellow birch
c	tamarack, e. hemlock
dc,dh,ds	
ts	Ilex verticillata, red osier dogwood, wild raisin
ls	marsh rose, velvet leaf blueberry
gc	Royal fern, cinnamon fern, sensitive fern, northern bugleweed
ne	reed canary grass, Carex hystericina, carex crinita, carex gracillima
be	
re	wool grass
ff	
f	
su	
m	moss sp., Sphagnum sp.

Soil type: Om Mesic Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):	Wildlife Notes:

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

COPY. Originals with WOD-030.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 14:40

Field #: WET-012 **Weather:** Precipitation: None Temp (°C): 22

Map Code: WET-012 M1 Wind Speed & Direction: 3 from S Cloud %: 0

Wetland Type: Marsh **Site Type:** Isolated **Dominant Form:** ne (M, ne)

% Open Water: 0 **ELC Code:** MAM01-3

Photos: IMPG 163 - 1076

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	~~leatherleaf~~, Marsh rose
gc	
ne	reed canary grass
be	
re	typha latifolia
ff	
f	
su	
m	moss sp.

Soil type: Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
Locally rare: Glyceria canadensis.	

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Adjacent marsh community

Modified ELC Community Description

141

W WOD

Soils	1	2	3
Position:	5		
Aspect:	/		
%	0		
Type:	Sample		
Class:	A		

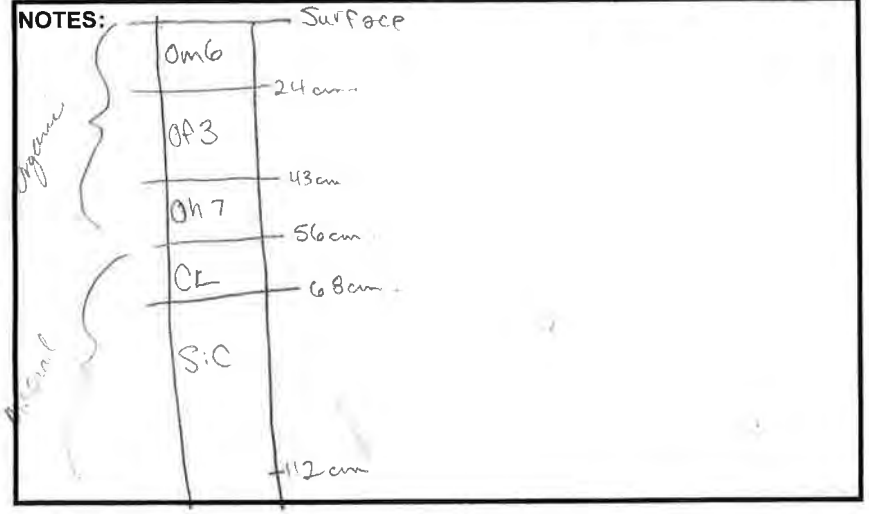
Polygon: WET-012 31

Strata: Texture	Om6		
Depth	24cm		
Strata: Texture	OF3		
Depth	43cm		
Strata: Texture	Oh7		
Depth	56cm		
Strata: Texture	CL		SiC
Depth	68cm		112cm
Effective Texture	Om		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	68cm		
Gley	56 cm		
Bedrock	/		
Water table	34 cm		
Carbonates	68cm		
Depth of Organics	56cm		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	4	7	

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



Arrow WF WOD-030 Oct. 7 2011

Wetland Assessment CH, KJW.

Sunny, 22°C, Wind 3, CC 0%.

WET-012 (T35) in WOD-030

2 Communities (S1, M1) → See attached map.

S1 – 5 forms >25% cover

h Red maple, Black Ash

ts Ilex verticillata

gc Royal fern, Cinnamon fern

ne reed canary grass, Carex hystericina.

m moss sp., Sphagnum sp.

See attached forms for more detailed vegetation description.

Isolated.

Soils: 56 cm of organic (mesic/fibric/and humic layers) over clay loam and silty clay

M1 – 4 forms >25% cover

ls leatherleaf, narrow-leaved meadowsweet

ne reed canary grass

re typha latifolia

m moss sp.

leatherleaf almost exclusively found in one small (<0.5 ha) area in the center of the area →

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www.RiteintheRain.com

cleared for the hydro corridor. This clearing may have altered the local hydrology. Leatherleaf is found only in the portion of the marsh community which is situated in the lowest point. Reed canary grass is still dominant here.

See attached forms for more detailed vegetation description of the community.

Soils: 7 to 20 cm of Organic (fibric, humic, fibric layers)

Rare species: Glyceria canadensis. (Bruce-Grey Plant Committee 2003) Locally rare in Bruce County South of Hwy 21.

No Fish Habitat.

No Open Water.

Surrounding land use within 1.5km: row crop, deciduous forest,

Rotation Film

No 352

"S1" are all SWDM3-3

WOD-141

Oct 7, 2011
CLH, KJW



WOD-030

WOD-0141

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Armaw WF
Project #: 1275
Date: Oct 05, 2011
Observer(s): SAG, MEE

	Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
Oct.05/11	WOD-022	1	2		0463383 4894449
		2	0		0463276 4894459
		3	1		0463284 4894465
WOD-022	total snags 9	4	1		0463286 4894465
	snags/ha 18	5	1		0463316 4894480
		6	0		0463339 4894403
		7	1		0463355 4894467
		8	0		0463379 4894446
		9	1		0463382 4894466
		10	2		0463377 4894484
Oct.05/11	WOD-026	1	1		0464179 4893954
		2	1		0464153 4893955
		3	2		0464146 4893952
WOD-026	total snags 7	4	0		0464143 4893952
	snags/ha 14	5	1		0464143 4893951
		6	0		0464143 4893951
		7	0		0464145 4894004
		8	0		0464164 4894046
		9	1		0464176 4894058
		10	0		0464129 4894003
Oct 06 2011	WOD-0289	1	3		0459079 4889898
		2	2		0459077 4889915
		3	1		0459079 4889923
WOD-029	total snags 18	4	3		0459065 4889913
	snags/ha 36	5	2		0459048 4889924
		6	0		0459053 4889897
		7	1		0459057 4889888
		8	0		0459048 4889879
		9	3		0459050 4889876
		10	3		0459057 4889868
Oct 06/11	WOD-030/ WOD-141	1	1		0466352 4890424
		2	1		0466359 4890431
		3	1		0466325 4890441
WOD-030	total snags 16	4	1		0466325 4890441
	snags/ha 32	5	0		0466286 4890445
		6	2		0466271 4890444
	BMA-0291	7	2		0466287 4890450
	BMA-030	8	2		0466307 4890421
		9	2		0466336 4890381
		10	4		0466349 4890334

- shag over 50 cm Dbh with cavities

- lots of cavities

* Best maternity plots conducted in WOD-030 have been used for WOD-141. This is due to these woodlands functioning as a whole within the last 4 yrs - however there is now a highway cut which has separated the once contiguous woodland. These communities + species composition are the same. The # of snags/site class are very similar. ∴ BMA data

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

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Site:	WOP-030 ☆WOD-144☆
Polygon:	B
UTM:	0466352 4890424
Date:	Oct 06/11 **Time:** 1:05 pm
Surveyor(s):	SAG MEE
Weather:	temp: 21°C, %c.c: 0%, precip: none, W: 1

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Yellow bellied sap sucker	OB		1						
H	Spring peeper	VO		3						
B	broadwinged hawk			1						
B	downy woodpecker	VO		1						
B	chickadee	VO		5						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- [X] Deciduous Forest
- [ ] Mixed Forest
- [ ] Coniferous Forest
- [ ] Marsh
- [ ] Swamp
- [ ] Bog
- [ ] Fen
- [ ] Water (Shallow & Open)
- [ ] Meadow
- [ ] Tallgrass Prairie
- [ ] Thicket
- [ ] Savannah
- [ ] Woodland
- [ ] Valley (Describe Below)
- [ ] Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- [ ] Spring Flooded Field
- [ ] Stick Nest (Raptors, Herons)
- [ ] Snag (Raptors, Herons)
- [ ] Tree Cavity Nest (Ducks)
- [ ] Seep/Spring (Turkeys/Grouse)
- [ ] Cliffs/Banks

Bats

- [ ] Cave Entrance
- [ ] Mine Shaft
- [ ] Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- [ ] Snag
- [X] Burrow
- [ ] Den
- [ ] Tree Cavity
- [ ] Fallen Log

Deer/Moose

- [ ] Seep/Spring
- [ ] Mineral Lick

Snakes

- [ ] Burrow
- [ ] Fallen Rotting Log
- [ ] Old Well
- [ ] Rock Pile/Stone Wall
- [ ] Organics Pile
- [ ] Log Pile
- [ ] Karst
- [ ] Broken/Fissured Rock
- [ ] Old Foundation
- [ ] Old Bridge/Concrete Culvert

Amphibians and Turtles

- [ ] Vernal Pool/Woodland Pond (Amphibian Breeding)
- [ ] Sand (Turtle Nesting)
- [ ] Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- [ ] Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Burrow	D466340 4890346	old tree stump in seasonal wet swamp wetland
↳ may be suitable for fisher/marten, but no tracks/signs observed within general geography of project area.		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow 1275A
Polygon:	A WOD-142
UTM:	
Date:	Aug 10 2012 Time: 10:13
Surveyor(s):	Christy Humphrey, Whitney Moore
Weather:	16°C, Heavy Rain, 100% RC,

Community Classification

Vegetation Type:	SWDM3-3 Swamp Maple Mineral Deciduous Swamp (SWD3-3)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mtn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Freeman maple = Green Ash >> White elm >> Sugar cherry
2	Sub-canopy	3	2	Freeman maple > Green Ash > White elm >> Poison Ivy
3	Understorey	4/5	3	Black Raspberry > Reed canary > Green Ash > Chokecherry
4	Groundcover	6	4	Calico Aster > Poison Ivy > Beech Sp. > Gallium triflorum

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	A	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

Soils	1	2	3
Position	S		
Aspect:	—		
%	—		
Type	Simple		
Class:	A		

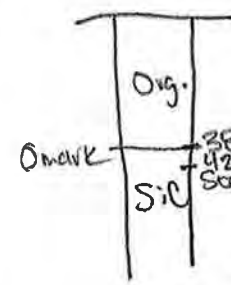
Polygon: A

Strata: Texture	O	(VP not possible)
Depth	+ 38	
Strata: Texture	SiC	
Depth	42	(4cm)
Strata: Texture		
Depth		
Strata: Texture		
Depth		
Effective Texture	SiC	
Surface Stoniness	O	
Surface Rockiness	O	
Depth to:		
Mottles	O	
Gley	O	
Bedrock	—	
Water table	—	
Carbonates		
Depth of Organics	+ 38cm	
Pore Size Disc #1		
Pore Size Disc #2		
Pore Size Disc #3		
Moisture Regime	6	

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:



Soil completed in a depression, one of the "wettest" locations

Soil was completely dry, Ø moisture. Organic estimated— Soil was hard little balls, mixed it with rain & tried to break balls apart to feel organics, definitely a high mineral content here. Soil is black until the sudden change to SiC where mottles & gley are present @ top of this layer.

PLANT SPECIES LIST

Metadata

Site: Arrowhead	1275A
Polygon: A	W60-142
UTM:	
Date: Aug 10 2012	Time: 10:13
Surveyor(s): CH, WMM	
Weather: 11.0°C, Heavy rain, 100% CC, Wind 3 fr NW	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer
Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Freeman's Maple	A	D			
Green Ash	A	O	O		
Sweet Cherry	R				
White Elm	R	O			
Swamp Red Currant			O		
Bittersweet Nightshade				O	
Virginia Creeper				O	
Hawthorn sp.				O	
White Elderberry			O		
Chokecherry			O		
Riverbank Grape			R	R	
Poison Ivy (Climbing)		O	O	A	
Prickly Gooseberry			R		
Black Raspberry			A		

Species	Layer 1	2	3	4	Sample
Road Cavern			O		
Geum sp.				O	
Herb Robert				O	
Garlic mustard				O	
Burdock			O		
Calico Aster				A	
Enchanters Nightshade				O	
Woodland Strawberry				O	
Dandelion				O	
Tall Nettle			R		
Milkweed			O		
Boneset			R		
Galium triflorum				O	
Carex arctata			O		
Carex hystericina				R	
Tall meadow rue			O		
Jack-in-the-pulpit				R	
Bull Thistle				R	
Crested Shield Fern				O	
Ostrich Fern				R	
Common milkweed			O		Photos

Source of common names: Newcomb's

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WET-025

Wetland Vegetation Communities

Project Name: Arrow		**Project #:** 1275A	
Observer(s): CLH, WMM			
Date: Aug 10 2012	**Time (24h):** 10:13		
Field #: A	**Weather:** Precipitation: Heavy Rain	Temp (°C): 16°	
Map Code: S3	Wind Speed & Direction: 3/NW	Cloud %: 100	
Wetland Type: Swamp	**Site Type:** I	**Dominant Form:** h	
% Open Water: 0	**ELC Code:** SWDM3-3 / SWD3-3		
Photos: 369-372			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple[1] = Green Ash[1] (White elm[2], sweet cherry[3])
c	
dc,dh,ds	
ts	
(ls)	black raspberry[1] > chokecherry[2]
(gc)	calico aster[1] > poison ivy[2] Beum sp.[3]
ne	
be	
re	
ff	
f	
su	
m	

Soil type: 20 0> SiC | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):
None obs.

Wildlife Notes:
↓ see soils sheet
0 38cm.
None obs.

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents, **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

1 = dominant
2 = secondary
3 = present

WET-025
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Modified ELC Community Description Page 1 of 3

Site:	Arrow 1275A
Polygon:	B WOD-142
UTM:	
Date:	Aug 10 2012 Time: 11:00 - 12:15
Surveyor(s):	CLH WMM
Weather:	Heavy rain 100% CC 16°C wind 3

Community Classification

Vegetation Type:	SWDM2-2 Green Ash Mineral Deciduous Swamp (SWD2-2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Green Ash > White Elm > Freeman maple > Trembling Aspen
2	Sub-canopy	3	2	Green Ash > White Elm > White Spruce (planted)
3	Understorey	4/3	3	Black Raspberry > Garlic mustard > White Elm > Climbing Poison Ivy
4	Groundcover	6/4	4	Bittersweet Nightshade > Calico Aster > Enchanter's Nightshade > Garlic mustard

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	O	25 - 50	N	> 50
Snags	O	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

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Modified ELC Community Description Page 2 of 3

PLANT SPECIES LIST

Site:	Arrow
Polygon:	B WOD-142
UTM:	
Date:	Aug 10 2012 Time: 11:00
Surveyor(s):	CLH WMM
Weather:	16°C Heavy rain 100% CC wind 3

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Green Ash	D	O	O		
Freeman maple	O		O		
White Elm	O	O	O		
Trembling Aspen	R				
planted -> White Spruce		R	R		
Dwarf Raspberry				O	
Blue Beech		R			
Nannyberry			R		
Hawthorn sp.				O	
White Elderberry			R		
Virginia Creeper				O	
Bittersweet Nightshade				A	
Riverbank Grape				O	
Climbing Poison Ivy			O	O	
Black Raspberry			O		
Swamp Red Currant			R		

Species	Layer 1	2	3	4	Sample
Calico Aster				A	
Reed Canary			O		
Garlic mustard			O	A	
marginal Shield Fern				R	
Burdock			O		
Geum sp.				O	
Enchanter's Nightshade				A	
Gallium triflorum				O	
Orange fruited Horse gentian				R	
N. Bugleweed			R		
Carex arctata				O	
Jack-in-the-pulpit				R	
Marsh Fern				R	
Sensitive Fern				O	
Ostrich Fern				O	
Carex tuckermanii				O	
Crested Shield Fern					

Other Notes (Landowner Contact, General Notes, etc.)

Soils slightly drier than poly A (no vernal pool depressions) but still likely a G

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WET-025

Wetland Vegetation Communities

Project Name: Arrow		**Project #:** 1275A	
Observer(s): CLH WMM			
Date: Aug 10 2012	**Time (24h):** 1100		
Field #: B	**Weather:** Precipitation: Heavy rain	Temp (°C):	16
Map Code: SU	Wind Speed & Direction: 3 / NE	Cloud %:	100
Wetland Type: Swamp	**Site Type:** I	**Dominant Form:** h	
% Open Water: 0	**ELC Code:** SWDM2-2 / SWD2-2		
Photos: 373 - 375			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h) Green ash 1	(white elm 2, freeman maple 3, trembling aspen 4)
c	
dc,dh,ds	
ts	
ls	
(gc) bittersweet nightshade 1	(calico aster 2, enchanter's nightshade 3)
ne	
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
	SC

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees, **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs, **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam, sl=silt/loam, l=limestone, s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Armow	1275A
Polygon: A, B WOD-142	
UTM:	
Date: Aug 10 2012	Time: 10:13
Surveyor(s): Christy Humphrey, Whitney Moore	
Weather: 16°C Heavy rain 100% cc wind 3	

Species Observed — *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	None observed									

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Armow	1275A
Polygon: A, B WOD-142	
UTM:	
Date: Aug 10 2012	Time: 10:13
Surveyor(s): CLH WMM	
Weather: 16°C Heavy rain 100% cc wind 3	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- [X] Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- ___ Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- ___ Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- [✓] Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
VP1	463730 4893296	~15m x 15m. May dry up by mid-July in most or all years (drought this year). Entirely shaded, no logs or emergent vegetation, just some twigs. Photo 371, 372
VP2	463810 4893279	~30m x 15m. Some logs in this depression. Entirely shaded. Likely contains water until mid July most years (drought this year). Photo 373, 374, 375

Describe Valley (depth, geomorphological traits):

Additional Details:

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number :

Project Name: Arrow Project #: 1275A

Start Time 10:13 End Time 12:15 Date: Aug 10 2012 Observer(s): CLH, WMM

Polygon or Area ID (WOD 142) Weather Conditions: Hzy rain 100% cc, 16°C wind 3

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	0	463731 4893347	
Plot 2	0	463714 4893294	
Plot 3	0	463708 4893254	
Plot 4	0	463754 4893230	
Plot 5	0	463792 4893255	
Plot 6	0	463817 4893287	
Plot 7	0	463874 4893277	
Plot 8	0	463885 4893247	
Plot 9	0	463857 4893207	
Plot 10	0	463814 4893193	
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: (3) Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally- = 3/(10 x 0.05) = 3/0.5 = 6.0 >10/ha? Yes (No) If >10/ha: BMA-

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Anglo 2012
cult, wmm

Armow WP – WOD-142



no flaws observed

Armow WP - WOD-142



Map centre: 44° 11' 31.0" N, 81° 26' 53.8" W

Map created: August 9, 2012

0 300 600 900 1,200 m

Scale: 1:16,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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N S

Ontario

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 2

Roadside Assessment

Site: Arnow WF	1275A
Polygon: C & D & F	WOD-143
UTM:	
Date: Aug 10 2012	Time: 850
Surveyor(s): CLH, WMM	
Weather: 16°C, Heavy rain CC 100% Wind 3 from NW	

Community Classification

Vegetation Type:	FODM11 Naturalized Deciduous Hedgerow (FOD5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form			X Hedgerow
Open	Open Water	Plankton	Forb	Coniferous	
Shrub	Shallow Water	Submerged	Lichen	Mixed	
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte		
	Bedrock	Graminoid	X Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar Maple = White Ash > White Elm
2	Sub-canopy	3	4	Hawthorn sp. > Riverbank Grape > Sugar Maple > White Ash
3	Understorey	4/5		not visible
4	Groundcover	4/5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	/	< 10	/	10 - 24	/	25 - 50	/	> 50

not visible

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

Community Age	Pioneer	X Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 2

PLANT SPECIES LIST

Site: Arnow	1275A
Polygon: C, D, F	
UTM:	
Date: Aug 10 2012	Time: 1350
Surveyor(s): CLH WMM	
Weather: 16°C, Heavy rain, CC 100% Wind 3 fr NW	

Layers: 1=canopy (7m) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar maple	O	O			
Riverbank grape		A			
Sweet cherry		O			
White Elm	R				
White Ash	O	O			
Hawthorn sp.		A			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 3

Roadside Assessment

Site: Armow	1275A
Polygon: E	(WOD-143)
UTM:	
Date: Aug 10 2012	Time: 14:30
Surveyor(s): CLH	
Weather: 16°C, steady rain, OC/100%, Wind 3 A- NW.	

Community Classification

Vegetation Type:	MAMM1-2 Cattail Graminoid mineral meadow marsh (MAS2-1)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic ?	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	X Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
History	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
X Natural	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
Cultural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
	Site	Roll. Upland	Bluff	Fen	Forest
		Cliff		Bog	Plantation

Cover	Site	Plant Form		
X Open	Open Water	Plankton	Forb	Coniferous
Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	1	White Elm > Crack Willow
2	Sub-canopy	3	2	White Elm > White Elderberry
3	Understorey	4/5	4	Typha latifolia > Symphyotrichum lanceolatum > Solidago gigantea > Spotted Joe-Pye weed
4	Groundcover	6	—	not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

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

Community Age	Pioneer	Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 3

PLANT SPECIES LIST

Site: Armow	
Polygon: E	
UTM:	
Date: Aug 10 2012	Time: 14:30
Surveyor(s): CLH WWW	
Weather: 16°C Steady rain OC 100% Wind 3 Gr NW	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 7/10 2-10 0.5-2 <0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Typha latifolia			D		
lance-leaved aster			O		
White Elderberry		R			
Spotted Joe-Pye Weed			O		
Solidago gigantea			O		
White Elm	R	R			
Crack Willow	R				
Riverbank Grape			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Sugar maple, Sweet cherry along edges
White Ash, pussy willow

Roadside Assessment

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

3.3

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275 A

Observer(s): CLH

Date: Aug 10 2012 **Time (24h):** 14:30

Field #: E **Weather:** Precipitation: steady rain Temp (°C): 16

Map Code: Wind Speed & Direction: 3/NW Cloud %: 100

Wetland Type: marsh **Site Type:** P **Dominant Form:** re

% Open Water: 0 **ELC Code:** MAMM1-2 / MAS2-1

Photos: 383

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm 3 Crack willow 3
c	
dc,dh,ds	
ts	White elderberry 3
ls	
gc	Symphyotrichum lanceolatum 3 Solidago gigantea 3 Poa sp. 3
ne	
be	
(re)	typha latifolia 1
ff	
f	
su	
m	

Soil type: Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

none observed

Wildlife Notes:

Soils mapping Brookston clay loam.

none observed

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: cl=clay/loam; sl=silt/loam; l=limestone; s=sand; hm=humic/mesic; f=fibric; g=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

1 dominant 2 secondary 3 present

WET-0416 re/m/

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description — Page 1 of 2

Roadside Assessment.

Site: Arnow	1275A
Polygon: G	WSD-143
UTM:	
Date: Aug 10 2012	Time: 14:42
Surveyor(s): CLH	
Weather: 16°C, Steady rain, 100% CC, Wind 3 ANW	

Community Classification

Vegetation Type:	Woodland Fresh-moist White Cedar-Hardwood Mixed Woodland Type (CUW)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	X Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd.	Bryophyte	
		Graminoid	X Deciduous	

X Hedgerow

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	2	White Ash.
2	Sub-canopy	3	3	White Ash = White Cedar > Hawthorn sp > Trembling Aspen
3	Understorey	4/5	2	Chokecherry > White cedar > Riverbank Grape > Hawthorn sp.
4	Groundcover	6		largely not visible

limited view

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	R	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description — Page 2 of

PLANT SPECIES LIST

Site: Arnow	1275A
Polygon: G	
UTM:	
Date: Aug 10 2012	Time: 1442
Surveyor(s): CLH	
Weather: 16°C Steady rain 100% CC Wind 3 Fr. NW.	

Layers: 7/10 2-10 0.5-2 <0.5 — 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Cedar		O	O		
English Hawthorn		D	D		
White Ash	O	O			
Red(?) Pine			R		
Hawthorn sp.		O	O		
Crack Willow			R		
Trembling Aspen		O			
Black Cherry		R			
Slender willow			R		
Elderberry sp.			R		
Riverbank Grape			O		
Chokecherry			O		
Rubus allegheniensis				R	

Species	Layer 1	2	3	4	Sample
Spotted knapweed				O	
Viper's Bugloss				O	
Wild carrot				O	
Gray Goldenrod				O	

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Roadside Assessment

Site: Arnow	1275A
Polygon: H	WSD-143
UTM:	
Date: Aug 10 2012	Time: 14:58
Surveyor(s): CLH	
Weather: 16°C Steady rain 100% CC wind 3 ArNW	

Community Classification

Vegetation Type:	FODMS-8 Dry-Fresh Sugar Maple - White Ash Deciduous Forest (FOD5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	X Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	X Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	----
1	Canopy	2	4	White Ash > Trembling Aspen > Sugar maple > White elm
2	Sub-canopy	3	4	Sugar maple > White Ash > White cedar
3	Understorey	4/5	1	not visible
4	Groundcover	6/7	1	not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	< 10	10 - 24	25 - 50	> 50
Snags	< 10	10 - 24	25 - 50	> 50
Deadfall/Logs	< 10	10 - 24	25 - 50	> 50

not visible

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275A
Polygon: H	
UTM:	
Date: Aug 10 2012	Time: 14:58
Surveyor(s): CLH	
Weather: 16°C, Steady rain, 100% CC, wind 3 ArNW	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 1 0 2-10 0.5-2 <0.5

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Hemlock	R										
Sugar maple	O	O									
White cedar		O									
White Ash	A	O									
Basswood	O										
White Elm	O										
Trembling Aspen	O										
Hawthorn Sp.		R	O								
Riverbank grape			O								

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow 1275A
Polygon:	I
UTM:	
Date:	Aug 10 2012 Time: 15:07
Surveyor(s):	CLH
Weather:	16°C Steady rain 100% CC Wind 3 Fr. NW.

Community Classification

Vegetation Type:	SWMM1 (White Cedar - Hardwood mineral)
Inclusion:	Mixed Swamp (SWM1-1)
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil ?	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	3	Green Ash > White Elm
2	Sub-canopy	3	2	Green Ash >> White Elm > White Cedar.
3	Understorey	4/5	4	Reed Canary > White Cedar > Spotted Joe Pye Red Osier
4	Groundcover	4/5	✓	not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

not visible

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow 1275A
Polygon:	J
UTM:	
Date:	Aug 10 2012 Time: 15:07
Surveyor(s):	CLH
Weather:	16°C Steady rain 100% CC Wind 3 Fr NW

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Cedar		R	O		
Green? Ash	O	A			
White Elm	O	R			
Nannyberry			R		
Red Osier			O		

Species	Layer 1	2	3	4	Sample
Solidago gigantea			O		
Sp. Joe-Pye			O		
Typha latifolia			R		
Reed Canary			A		
	O				

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment
Create runs through from East
Fair amt of water considering the drought → permanent flow.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 3

Roadside Assessment

Site: Arnaw	1275A
Polygon: J	
UTM:	
Date: Aug 10 2012	Time: 14:38
Surveyor(s): CLH	
Weather: 16°C Steady rain 100% Cc Wind 3 SW NW	

Community Classification

Vegetation Type:	MAMM3-1 Mixed mineral meadow marsh (MAM2)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	X Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	6	—
2	Sub-canopy	3	1	Green? Ash > White Cedar
3	Understorey	4 5	4	Reed Canary > Aster sp > Solidago graminea > Typha latifolia
4	Groundcover	6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	R	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page 2 of 3

PLANT SPECIES LIST

Site: Arnaw	1275A
Polygon: J	
UTM:	
Date: Aug 10 2012	Time: 14:38
Surveyor(s): CLH	
Weather: 16°C Steady rain 100% Cc Wind 3 SW NW	

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
White Cedar		R			
Greenish		R			

Species	Layer 1	2	3	4	Sample
Typha latifolia			O		
Solidago gigantea			O		
Phragmites			O		
Reed Canary			O		
Spotted Joe-Pye			O		
Aster sp.			O		

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment
Photo 384

NATURAL RESOURCE SOLUTIONS INC
Aquatic Terrestrial and Wetland Biologists

3_3

Wetland Vegetation Communities

Project Name: Armow		**Project #:** 12-75A	
Observer(s): CLH			
Date: Aug 10 2012	**Time (24h):** 14:38		
Field #: 5	**Weather:** Precipitation: steady rain	Temp (°C): 14:38	
Map Code:	Wind Speed & Direction: 3/NW	Cloud %: 100	
Wetland Type: Marsh	**Site Type:** P	**Dominant Form:** ne	
% Open Water: 0	**ELC Code:** MAmm3-1 / MAM2		
Photos: 384			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash 3
c	white cedar 3
dc,dh,ds	
ts	
ls	
gc	aster sp.1 Solidago gigantea 2
ne	reed canary 1
be	
re	typha latifolia, phragmites
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒
Rare Species (Local, Regional, Provincial): none observed	**Wildlife Notes:** Soils mapping Brookston clay loam none observed.		

SAR observations must also include a specific UTM location.

Forms: h=deciduous trees; c=coniferous trees; **dh, dc, ds**=dead trees/shrubs, **ts**=tall shrubs; **ls**=low shrubs, **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: S=swamp; M=marsh; B=bog; F=fen

Site Type: L=lacustrine; P=palustrine; R=riverine; IS=isolated

Soil type: **cl**=clay/loam, **sl**=silt/loam, **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric, **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

1 dominant 2 secondary 3 present

WET-046 MAM2

Aug 10 2012

CLH, WMM

West of WOD-110



visible boundary

assumed boundary

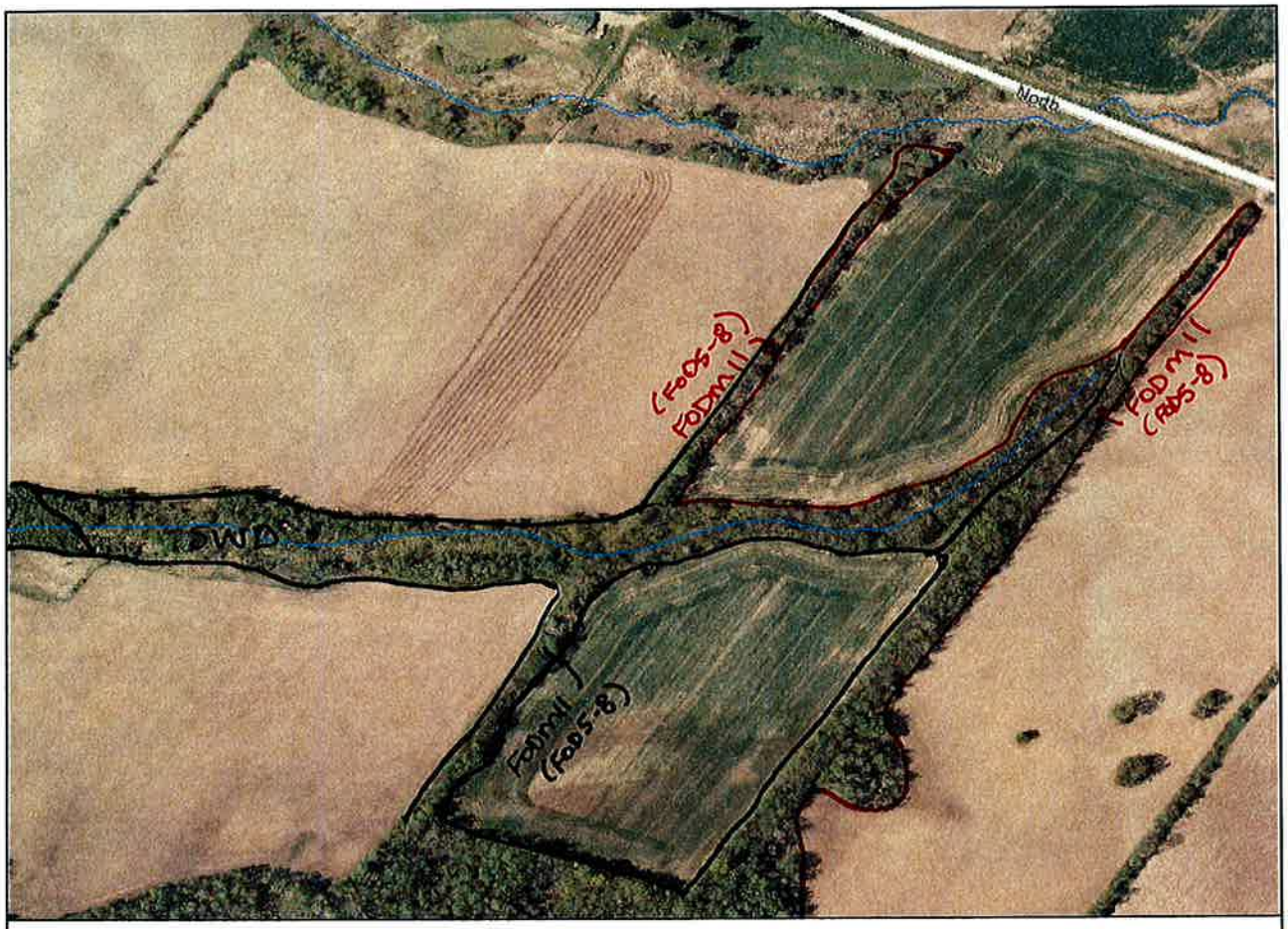
permanent flow

intermittent flow

> direction of flow

Desktop
Aug 14 2012
CLH

WOD-143_N



Map centre: 44° 09' 51.5" N, 81° 32' 41.1" W

Map created: August 14, 2012

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province
- observed boundary Aug 10. 2012 CLH roadside assessment
- Airphoto Interpretation Aug. 14 2012 CLH

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Aug 14 2012
CLH Desktop

WOD-143_~~XX~~E

see 144 map



Map centre: 44° 09' 28.3" N, 81° 32' 33.3" W

Map created: August 14, 2012

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

- observed

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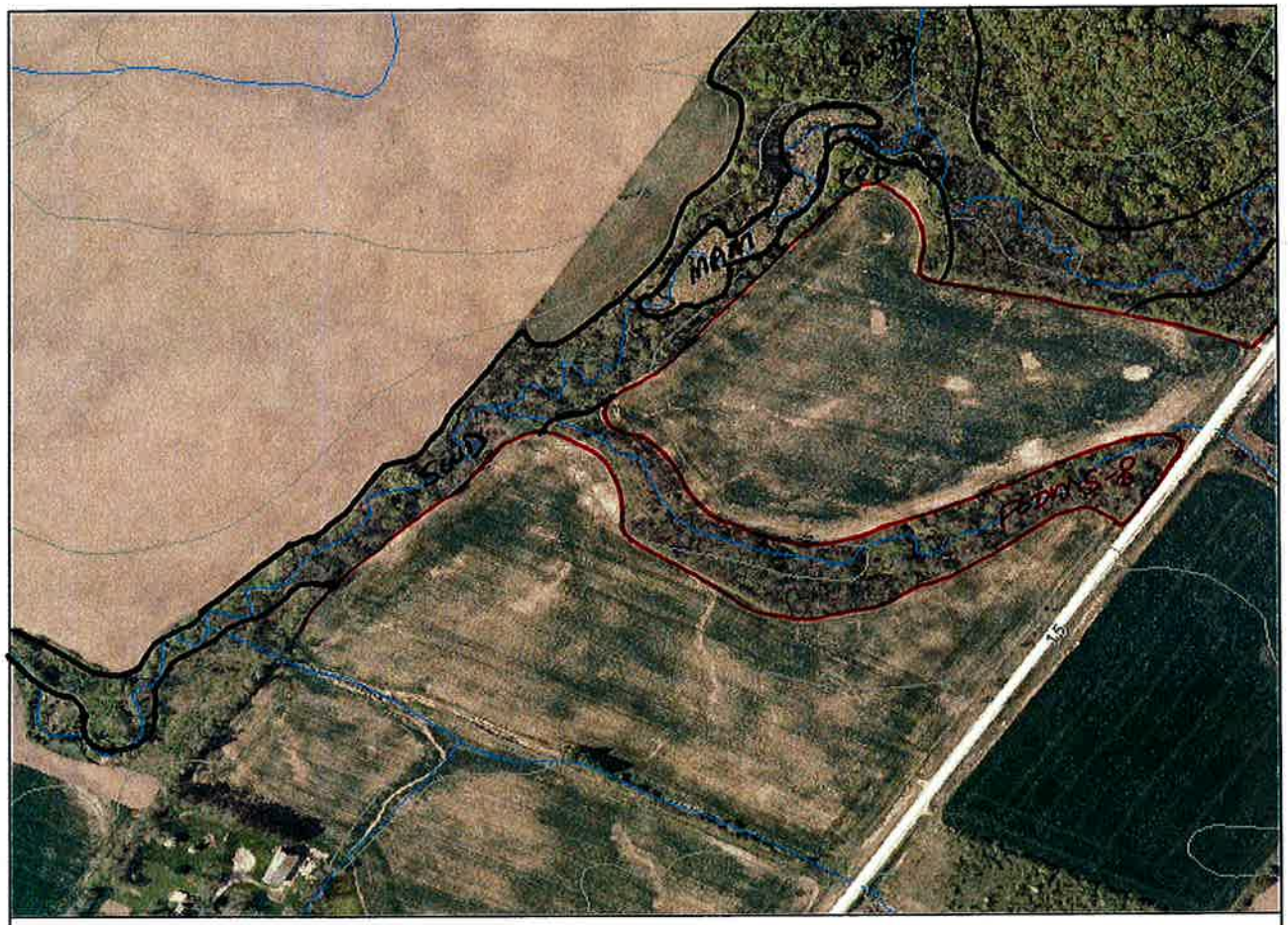
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Aug 14 2012
CLH Desktop

WOD-143_SE



Map centre: 44° 09' 15.2" N, 81° 32' 51.5" W

Map created: August 14, 2012

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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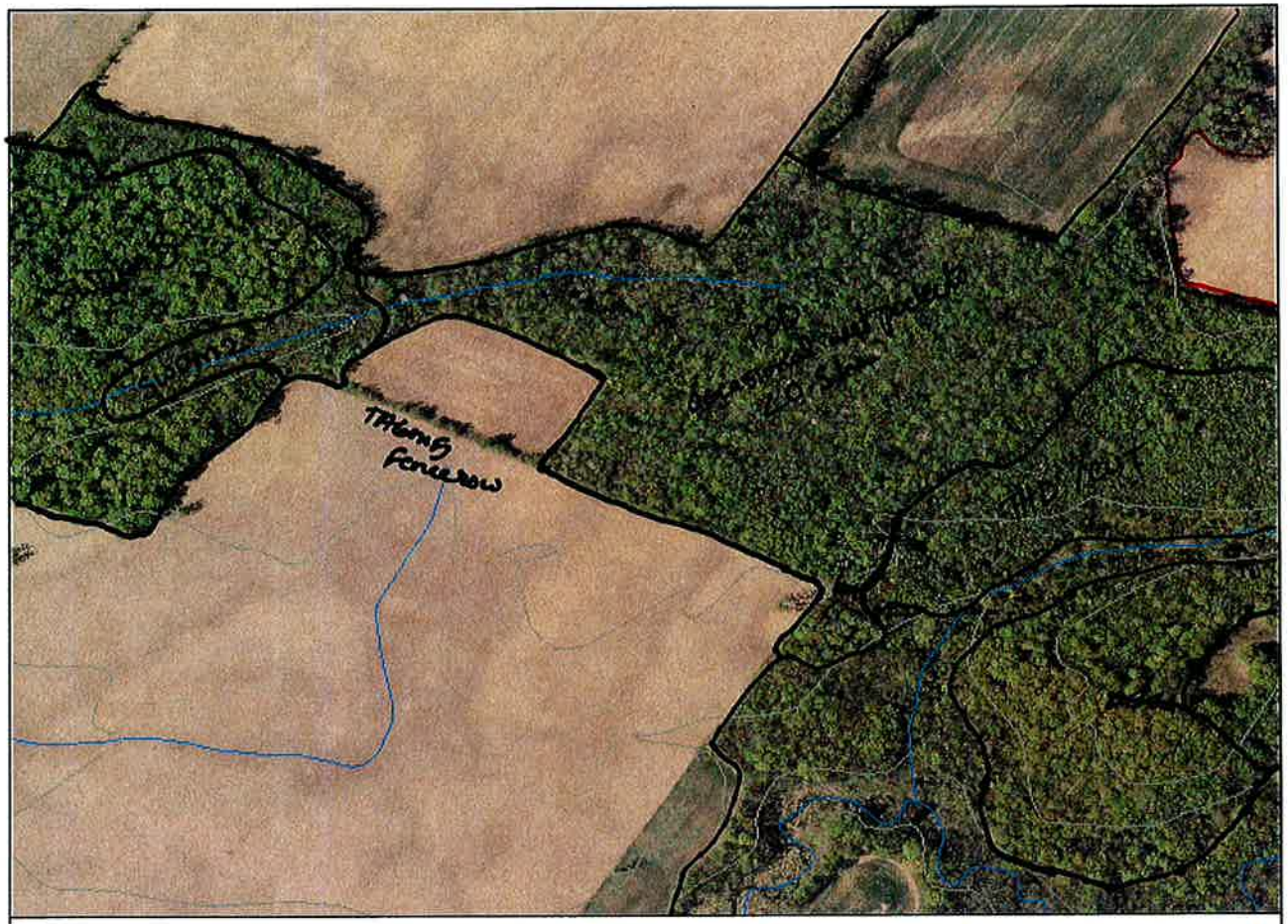
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Aug 14 2012 CLH
Desktop

WOD-143_Centre



Map centre: 44° 09' 33.7" N, 81° 32' 51.4" W

Map created: August 14, 2012

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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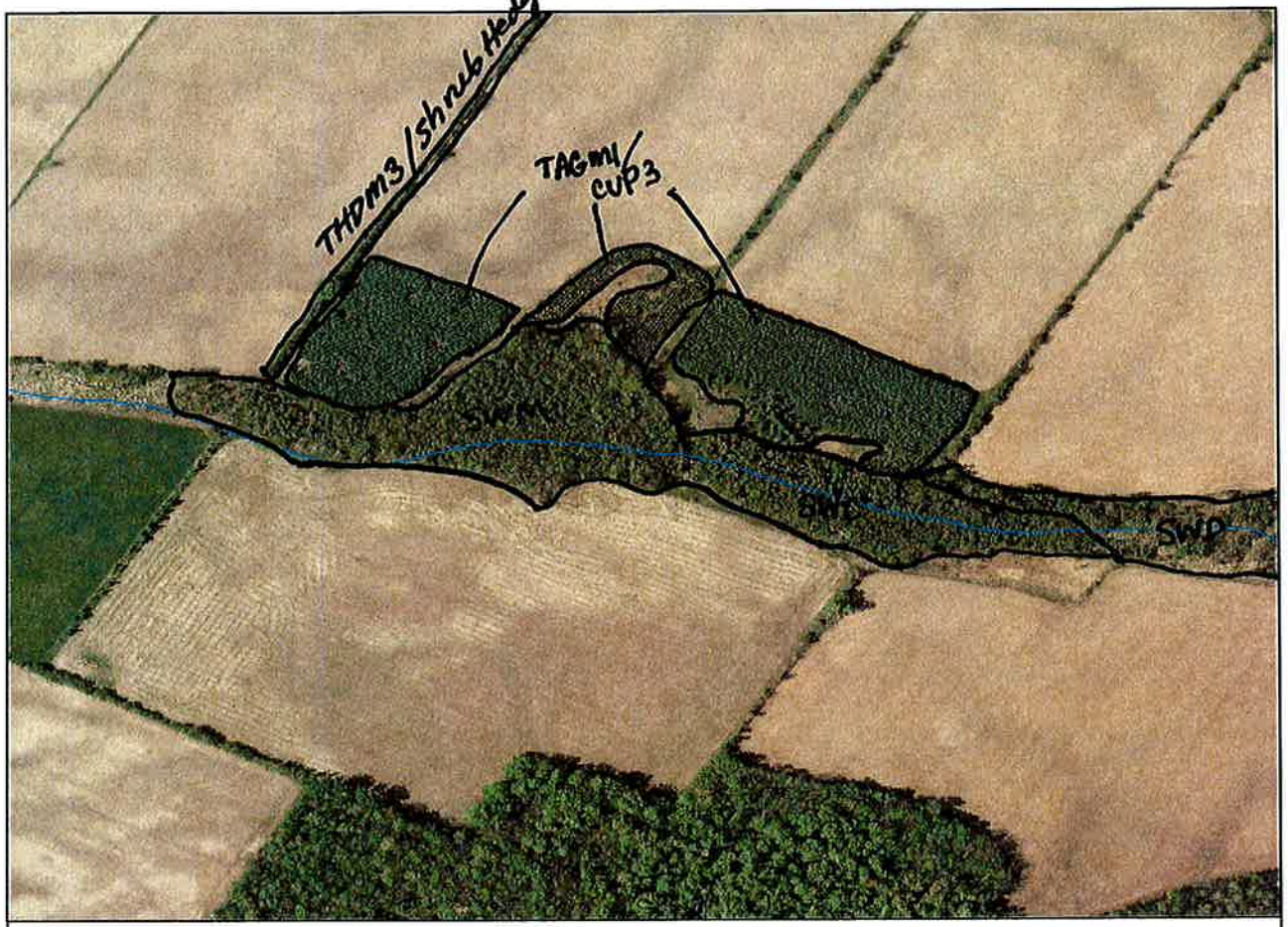
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Air photo interpretation (Desktop)
August 14, 2012 CLH

WOD-143_NW



Map centre: 44° 09' 51.7" N, 81° 33' 09.2" W

Map created: August 14, 2012

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

observed boundary
Aug 10, 2012
CLH roadside assessment

Air photo interpretation
Aug 14 2012 CLH

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Aug 14 2012 edit
Desktop

WOD-143_W



Map centre: 44° 09' 37.7" N, 8[illegible]° 33' 13.4" W

Map created: August 14, 20[illegible]

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 2

Roadside Assessment

Site: Armow WF	1275A
Polygon: C ; D ; F	~~WOD-145~~ WOD-144
UTM:	
Date: Aug 10 2012	Time: 850
Surveyor(s): CLH, WMM	
Weather: 16°C, Heavy rain CC 100% Wind 3 from NW	

Community Classification

Vegetation Type:	FOD5-11 Naturalized Deciduous Hedgerow (FOD5-8)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form			X Hedgerow
Open	Open Water	Plankton	Forb	Coniferous	
Shrub	Shallow Water	Submerged	Lichen	Mixed	
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte		
	Bedrock	Graminoid	X Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	Sugar Maple = White Ash > White Elm
2	Sub-canopy	3	4	Hawthorn sp. > Riverbank Grape > Sugar Maple > White Ash
3	Understorey	4/5		not visible
4	Groundcover	6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	/	< 10	/	10 - 24	/	25 - 50	/	> 50

not visible

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

Community Age	Pioneer	X Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 2

PLANT SPECIES LIST

Site: Armow	1275A
Polygon: C, D, F	
UTM:	
Date: Aug 10 2012	Time: 1350
Surveyor(s): CLH WMM	
Weather: 16°C, Heavy rain, CC 100% Wind 3 from NW	

Layers: 1=canopy (7m) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar maple	O	O			
Riverbank Grape		A			
Sweet Cherry		O			
White Elm	R				
White Ash	O	O			
Hawthorn sp.		A			

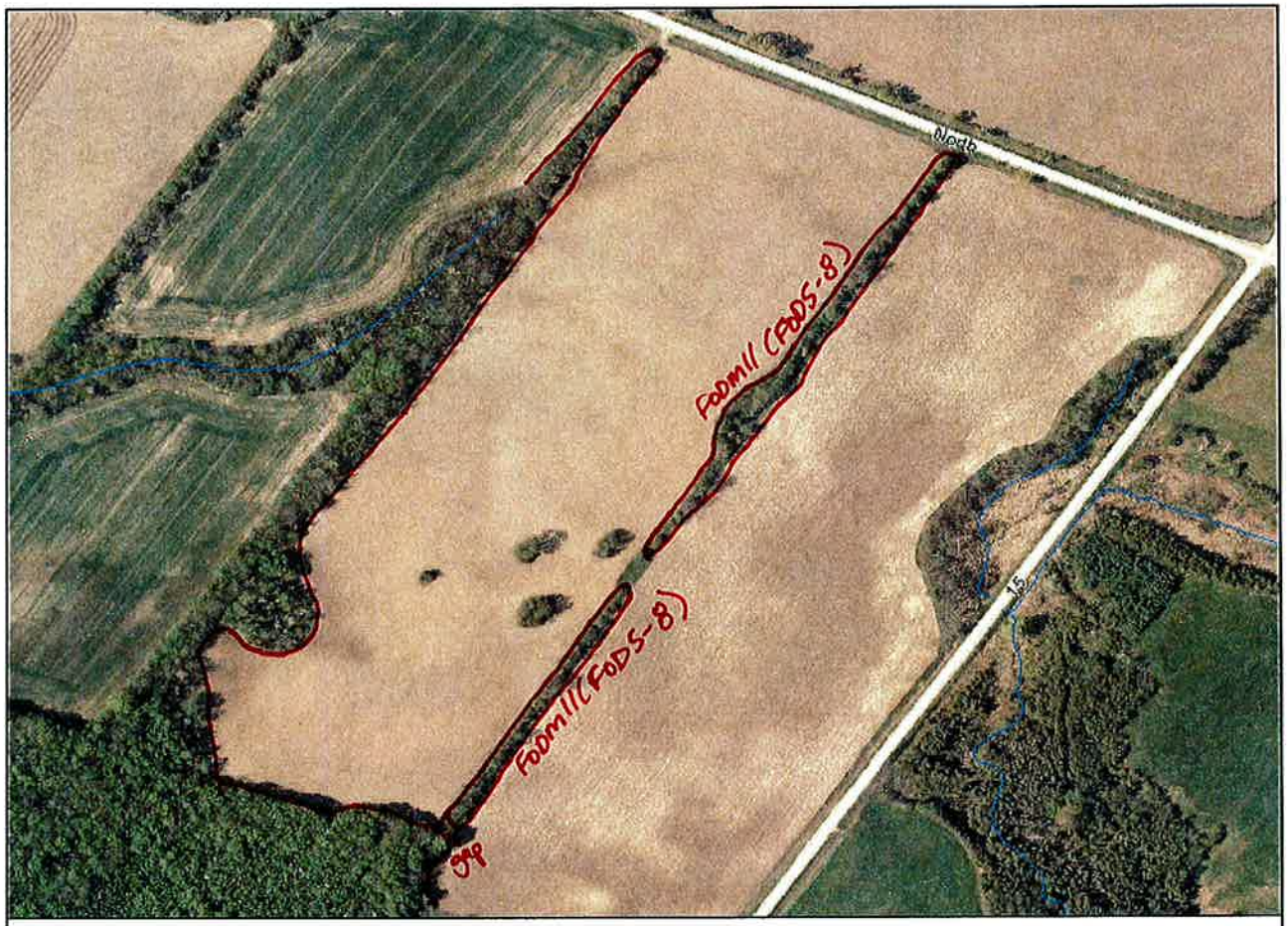
Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment

Aug 14 2012 CLH Desktop

WOD-~~143~~144_NE



Map centre: 44° 09' 47.1" N, 81° 32' 24.6" W

Map created: August 14, 2012

0 100 200 300 400 m

Scale: 1:6,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnaw	1275
Polygon: Con 5/SR305 HR1	
UTM:	
Date: Jan 8 2017	Time: 16:15
Surveyor(s): CLH	
Weather: -1°C, 70% CC, Wind 2/SE No precip.	

Community Classification

Vegetation Type:	TAGMS fence row
Inclusion:	
Complex:	

Polygon Description

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

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	balsam poplar > ash sp.
2	Sub-canopy	3	4	white cedar > balsam poplar > ash sp.
3	Understorey	3 4	2	white cedar > white spruce
4	Groundcover	4		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site: Arnaw	1275
Polygon: Con 5/SR305 HR1	
UTM:	
Date: Jan 8 2017	Time: 16:15
Surveyor(s): CLH	
Weather: -1°, 70% CC, Wind 2/SE No precip	

Layers: 1=canopy (10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
balsam poplar	O	O			
ash sp.	O	O			
white cedar		O	O		
white spruce			R		

Species	Layer 1	2	3	4	Sample
		•			

planted

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

*Not associated w/ woodlands

Jan 8 2012
CH

Concession 5 / Sideroad 30 S



Map centre: 44° 08' 49.0" N, 81° 26' 55.9" W

Map created: January 9, 2012

0 100 200 300 400 m

Scale: 1:6,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

HR1 = TAEMS

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Modified ELC Community Description Page 1 of 4

No larger a woodland - Jan 10./12 NGM

Site:	~~WOA-033~~ (TO)
Polygon:	A
UTM:	0460969, 4897998
Date:	Oct. 14/11 Time: 12:20
Surveyor(s):	SAG, MEE
Weather:	temp 15°C, %occ=100, precip=raining, wi 23

Community Classification

Vegetation Type:	THDM2-11
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Mn.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	X Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	/	n/a	n/a
1	Canopy	2	1	white ash > sugar maple > black cherry > Am. elm
2	Sub-canopy	3	3	hawthorne > white ash > sugar maple > black cherry
3	Understorey	1	1	black cherry > hawthorne > white ash > alternate leaved dogwood
4	Groundcover	1	1	black raspberry = dogwood sp > black cherry > riverbank grape

choke

HT Codes: 1 >25m 2: 25 - 10m 3: 10 - 2m 4 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	A	10 - 24	A	25 - 50	A	> 50
Snags	N	< 10	N	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	R	< 10	O	10 - 24	R	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 4

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
white ash	D	O	A	/	
sugar maple	A	A	/	/	
~~black~~ choke cherry	O	A	D	A	
red maple	R	/	/	/	
Am. elm	O	/	/	/	
Am. beech	O	O	/	/	
apple	/	R	R	/	
yellow birch	R	/	/	/	
basswood	O	O	/	/	
hawthorne	/	D	A	R	
common	/	/	O	O	
buckthorne					
alternate	/	/	O	A	
leaved dogwood					
red osier dogwood	/	/	O	A	
hairy hawthorn	/	/	R	/	

Species	Layer 1	2	3	4	Sample
trillium				R	
virginia				O	
waterleaf					
moonseed				O	
enchanters				R	
nightshade					
agrimony				O	
black raspberry				A	
dandelion	Y			A	
riverbank				O	
grape					
aster sp.				O	
goldenrod sp.				O	
ribes sp.				A	
carex sp.				O	
strawberry				O	
herb Robert	O			O	

Wildlife and Other Notes

separate polygon as dominant sugar maple, ash (white), basswood. Much larger size class analysis as well. However we did not have access to this polygon. This forest polygon is located >120m from the project location.


459000
459500
460000
460500
461000
4899000
4898500
4898000
BRUCE ROAD 15
SIDEROAD 10
CONCESSION 11
73
10
WOD-033
THDM2-11
fallow - T10
*see notes for species
hay (alfa alfa)
hay (")
hay (alfa alfa)
0 100 200 300 Metres
N

Candidate Bat Maternity Roost Data Form
Use this form in Mixed or Deciduous Forest Communities

Project Name: Armaw WF
Project #: 1275
Date: Oct 14 2021
Observer(s): STG, MEE

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments UTM
WOD-032	1	0		0467358 4896866
	2	1		0467375 4896868
	3	1		0467403 4896885
	4	1		0467428 4896891
	5	0		0467397 4896908
	6	0		0467351 4896931
	7	1		0467342 4896951
	8	1		0467327 4896977
	9	1		0467285 4896989
	10	1		0467262 4897013
WOD-033	1	0		0460821 4898034
	2	1		0460994 4898030
	3	0		0460994 4898027
	4	1		0460984 4898044
	5	0		0460964 4898046
	6	1		0460966 4898035
	7	0		0460957 4898031
	8	0		0460954 4898016
	9	1		0460946 4898012
	10	0		0460946 4897998
WOD-032 total snags	7			
WOD-032 snags/ha	14			
WOD-033 total snags	4	Doesn't apply on (using BMA habitat test (doesn't fit criteria)		
WOD-033 snags/ha	8			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots)
Plots = 0.05ha or 12.6m radius
Select plots randomly

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	MOD-0223
Polygon:	A
UTM:	
Date:	Oct. 14/11 **Time:** 12:30 pm
Surveyor(s):	SAG, MEE
Weather:	temp: 15°C, % c.c = 100%, precip: raining/wet lvl = 5

Species Observed *Check for Wildlife Habitat that may be associated with an observation*

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	chickadee	VO		#3						
B	ruby crowned kinglet	OB		5						
H	American Bad	OB		1						
H	spring peeper	VO		2						

Faunal Type Codes (TY)

B=Bird M=Mammal H=Herpetofauna L=Lepidoptera F=Fish D=Dragonfly or Damselfly

Evidence Codes (EV)

Breeding Birds

SH- Suitable Habitat
SM- Singing Male
T- Territory
A- Anxienty Behavior
D- Courtship Display
N- Nest Building
P- Pair
V- Visiting Nest
DD- Distraction Display
NE- Nest with Eggs
AE-Adult entering nest
NU- Used nest
FY- Fledged Young
FS- Food/Fecal Sac

Other Wildlife

OB- Observed
DP- Distinctive Parts
TK- Tracks
VO- Vocalization
HO- House/Den
FE- Feeding Evidence
CA- Carcass/Bones
FY- Eggs or young
SC- Scat
SI- Other Signs (Specify)

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	
UTM:	
Date:	**Time:**
Surveyor(s):	
Weather:	

Wildlife Habitat (Check all that apply AND record UTM / mark on map)

Habitats and Habitat Features are independent of wildlife observations

Habitat Type

- ___ Deciduous Forest
- ___ Mixed Forest
- ___ Coniferous Forest
- ___ Marsh
- ___ Swamp
- ___ Bog
- ___ Fen
- ___ Water (Shallow & Open)
- ___ Meadow
- ___ Tallgrass Prairie
- X Thicket
- ___ Savannah
- ___ Woodland
- ___ Valley (Describe Below)
- ___ Headwater Area (check for Seeps/Springs)

Habitat Features

Birds

- ___ Spring Flooded Field
- ___ Stick Nest (Raptors, Herons)
- ___ Snag (Raptors, Herons)
- ___ Tree Cavity Nest (Ducks)
- ___ Seep/Spring (Turkeys/Grouse)
- ___ Cliffs/Banks

Bats

- ___ Cave Entrance
- ___ Mine Shaft
- ___ Snag (>20cm DBH)

Mink/Otter/Fisher/Marten

- ___ Snag
- ___ Burrow
- ___ Den
- ___ Tree Cavity
- ___ Fallen Log

Deer/Moose

- ___ Seep/Spring
- ___ Mineral Lick

Snakes

- ___ Burrow
- ___ Fallen Rotting Log
- ___ Old Well
- ___ Rock Pile/Stone Wall
- X Organics Pile
- ___ Log Pile
- ___ Karst
- ___ Broken/Fissured Rock
- ___ Old Foundation
- ___ Old Bridge/Concrete Culvert

Amphibians and Turtles

- ___ Vernal Pool/Woodland Pond (Amphibian Breeding)
- ___ Sand (Turtle Nesting)
- ___ Fine/Sandy Gravel (Turtle Nesting)

Invertebrates

- ___ Crayfish Chimney

For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
pile of hay bails		
thicket bush boundary		
organic pile	04 609328 5899725	hay bails piled high inside of bush boundary ~habitat for small animals

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: Con 7/SR 10 HR1	
UTM:	
Date: Jan 8 2012	Time: 17:05
Surveyor(s): CLT	
Weather: -1°C, CC 60%, Wind 2/SE No precip	

Community Classification

Vegetation Type:	TAGMB Fencerow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	X Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	white spruce > white cedar
3	Understorey	4	0	—
4	Groundcover	6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: T10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
White spruce		D									
White cedar		O									

Other Notes (Landowner Contact, General Notes, etc.)

★ Not associated w/ woodlands

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arman 1275
Polygon:	Con 7/SR10 AR2
UTM:	
Date:	Jan 8 2012 Time: 17:07
Surveyor(s):	CLH
Weather:	-19, 60% CC, Wind 2/SE No precip

Community Classification

Vegetation Type:	TAGM5 Fenceow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll /Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	hawthorn sp. 77 ash sp.
3	Understorey	5	0	—
4	Groundcover	5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	X Young	Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
hawthorn sp.		D									
ash sp.		O									

Other Notes (Landowner Contact, General Notes, etc.)

lacks structural variation of naturalized fenceow.
*Not associated w/ woodlands

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnaw 1275
Polygon:	HR 3
UTM:	
Date:	Jan 8 2012 Time: 17:10
Surveyor(s):	CLH
Weather:	-1°C, CC 60%, WND 2/SE No precip.

Community Classification

Vegetation Type:	TAGMS Cenerarow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	3	red maple
2	Sub-canopy	3	4	white cedar = white spruce
3	Understorey	4/5	0	—
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	R	10 - 24	O	25 - 50	M	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 7/0 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
white cedar		O									
white spruce		O									
red maple	O										

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment
*Not associated w/ wetlands

Jan 8 2012
CLM

Concession 7 and Sideroad 10



Map centre: 44° 11' 56.3" N, 81° 32' 11:6" W

Map created: January 9, 2012

0 100 200 300 400 m

Scale: 1:6,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

HR1 + HR2 = 1.16ms
rotational hay = 0.46ms
tilled = 0.46ms
annual row crop = 0.46ms

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N S

Ontario

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Photo of old barn foundation: DSC_0099

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: Con. 9/CR1 WET-①	Poly A (extract WED-097)
UTM:	
Date: Jan 8 2011	Time: 1340
Surveyor(s): CLH	
Weather: -2°C, CC 95%, Wind 2/SE No precip	

Community Classification

Vegetation Type:	SWST04-1 Red Osier Organic Deciduous Thicket Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic ?	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	2	Soft maple
2	Sub-canopy	3	2	Soft maple >> ash sp.
3	Understorey	4/5	4	red osier > willow sp. > reed canary > meadowsweet
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	0	< 10	0	10 - 24	0	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs		< 10		10 - 24		25 - 50		> 50

none visible

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	1275
Polygon: Con 9/CR1 WET-①	
UTM:	
Date: Jan 8 2011	Time: 1340
Surveyor(s): CLH	
Weather: -2°C CC 95%, Wind 2/SE No precip.	

Layers: >10 2-10 0.5-2 <0.5 (1=canopy 2=sub-canopy 3=understorey 4=ground layer)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
red osier			D		
soft maple sp.	O	O			
reed canary			A		
typha angustifolia			O		
meadowsweet			O		
ash sp.		O			
willow sp.			A		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

South side of conc. 9.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275

Observer(s): CLH

Date: Jan. 8 2011 **Time (24h):** 1340 in WOD-097

Field #: WET-(1) **Weather:** Precipitation: None Temp (°C): -2

Map Code: Poly A (51) Wind Speed & Direction: 2 / SE Cloud %: 95

Wetland Type: Swamp **Site Type:** I **Dominant Form:** ts (S, ts)

% Open Water: 0% **ELC Code:** SWT04-1

Photos: DSC_0083, 0084

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	soft maple sp., ash sp.
c	
dc,dh,ds	
(ts)	red osier
ls	willow sp., meadowsweet sp.
gc	
(ne)	reed canary
be	
re	typha angustifolia
ff	
f	
su	
m	

Soil type: ? Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
Soils est. organic based on isolated site, located in a depression, & known organic condition of nearby, similar isolated depressional wetlands

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment *

S1 WET-023

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow

Polygon: Con. 9/CR1 WET-1 Poly B (WOD-097)

UTM:

Date: Jan. 8 2011 Time: 13:55

Surveyor(s): CLH

Weather: -2°C, No precip. 95% CC, wind 7/SE

Community Classification

Vegetation Type:	SWT02 Willow Organic Deciduous
Inclusion:	Thicket Swamp Ecosite.
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	X Organic ?	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	X Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	X Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Open Water	Plant Form		
Open	X Shallow Water	Plankton	Forb	Coniferous
X Shrub	Surficial Dep	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	2	Willow sp. (1)
2	Sub-canopy	3	2	Willow sp. (2)
3	Understorey	4/5	4	typha angustifolia > willow sp. (2) > reed canary > red osier
4	Groundcover	6		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0: none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	N	< 10	N	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	R	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site: Arnow 1275

Polygon: Con 9/CR1 WET-1 Poly B

UTM:

Date: Jan 8 2011 Time: 1255

Surveyor(s): CLH

Weather: -2°, No precip 95% CC wind 7/SE

Layers: >10 2-10 0.5-2 <0.5.
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
willow sp. (1)	D				
willow sp. (2)		O	O		
typha angustifolia			D		
reed canary			O		
meadowsweet			O		
red osier			O		

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment *

North side of Conc. 9. DSC_0097

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1275 (WOD-097)

Observer(s): CLH

Date: Jan 8 2014 **Time (24h):** 13:55

Field #: WET-(1) (one CE) **Weather:** Precipitation: None Temp (°C): -2

Map Code: Poly B (52) Wind Speed & Direction: 2 / SE Cloud %: 95

Wetland Type: Swamp. **Site Type:** ≠ **Dominant Form:** RE (M, RL)

% Open Water: 0 % **ELC Code:** SWT02

Photos: DSC-0087

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	willow sp. (2), red osier dogwood
ls	meadowsweet sp
gc	
(ne)	reed canary
be	
(re)	typha angustifolia
ff	
f	
su	
m	

Soil type: | Organic ☒ | ? Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

Soil estimated organic based on situation as isolated ? in a depression and known organic soils at nearby wetlands which are similar and also isolated in depressions.

SAR observations must also include a specific UTM location.

Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

Site Type: **L**=lacustrine; **P**=palustrine; **R**=riverine; **IS**=isolated

Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

Roadside Assessment *

WET-023

Intermittent inflow - swale from field entering @ NE corner.

S2

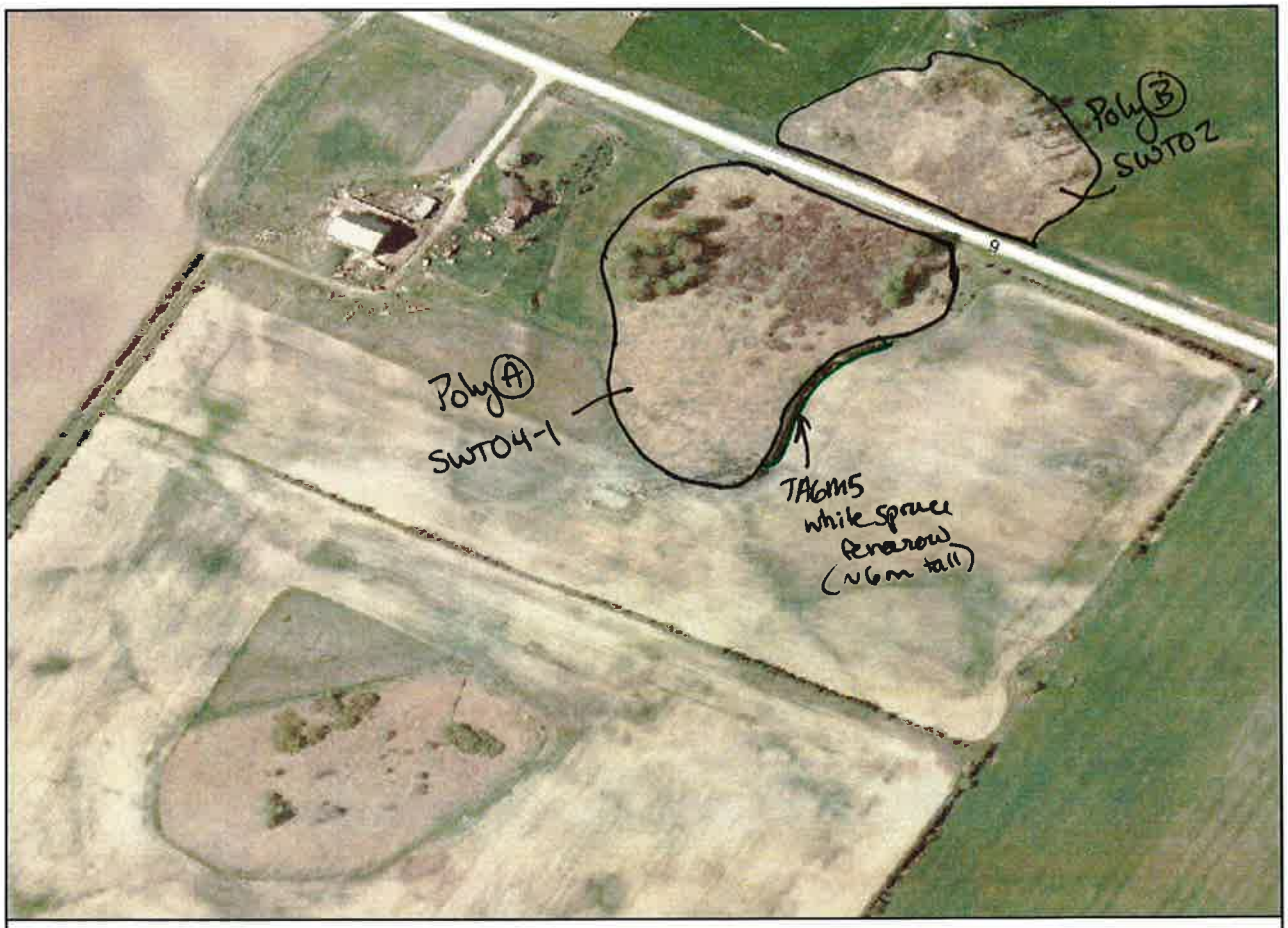
No outflow

Jan. 8 2012
CH

(WOD-097)

Concession 9 / CR 1

WET-①



Map centre: 44° 10' 24.2" N, 81° 25' 07.2" W

Map created: January 10, 2012

0 70 140 210 280 m

Scale: 1:4,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Complex X
S1, S2
WET-023
Wetlands

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Valleylands
(Key to L10 images)

Armow Wind Farm

Field Work - Key Map

Legend

- Project Area (120m Buffer)
- Proposed Turbine (L08 Rev0)
- MET Tower
- Junction Box
- Cabling
- Crane Walk
- Access Road
- Highway
- Primary Road
- Secondary Road
- Map Extent
- Interconnect Area
- Staging Area
- Disturbance Area
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland
- Wooded Area

Map-001
Map-002
Map-003
Map-004
Lorne Beach Swamp
Glammis Bog
Greenock Swamp
Kingarf Complex

454000 456000 458000 460000 462000 464000 466000 468000 470000 472000
4902000 4900000 4898000 4896000 4894000 4892000 4890000 4888000 4886000

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

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Imagery provided by: Golder Associates, 2011

Project: 1275
Date: Tuesday, November 22, 2011

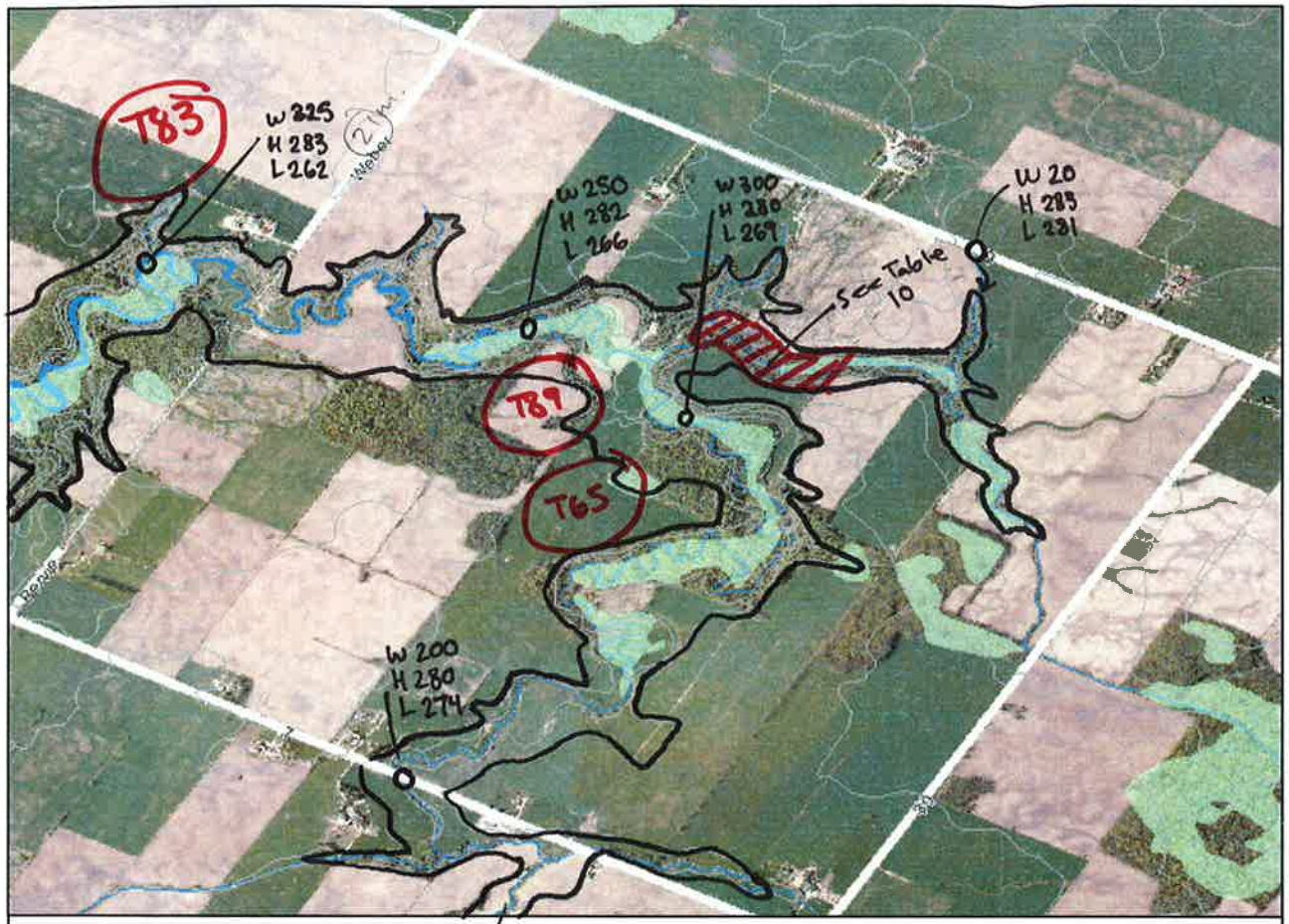
NAD83 - UTM Zone 17
Size: 11x17"
1:67,000

0 1 2 3 4 Kilometers

N

Valley 1

VAL003



Map centre: 44° 10' 45.0" N, 81° 27' 08.3" W

Map created: December 15, 2011

0 400 800 1,200 1,600 m

Scale: 1:22,000

? Valley II Map.

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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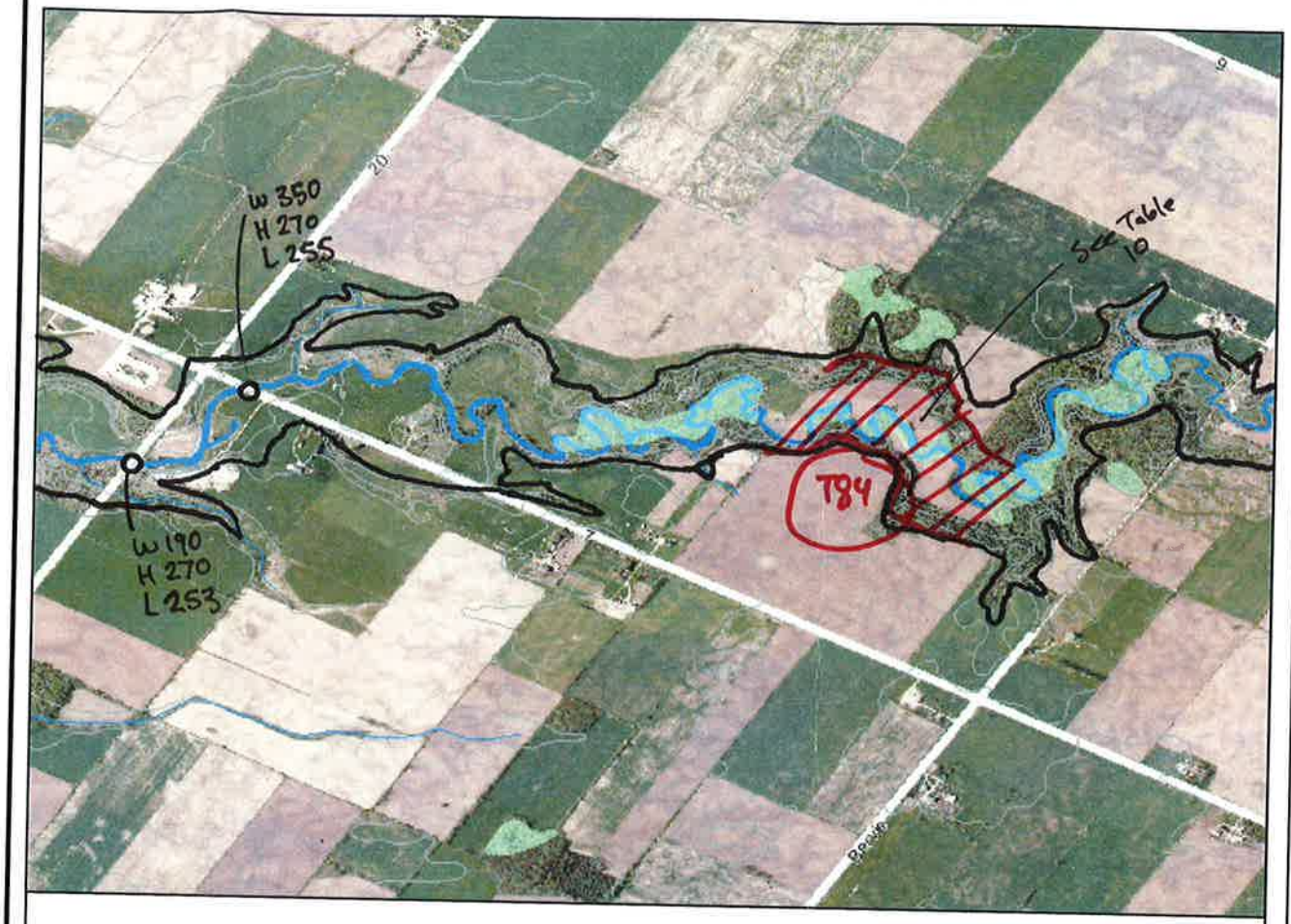
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Valley 2

VAL002



Map centre: 44° 10' 53.1" N, 81° 28' 45.4" W

Map created: December 15, 2011

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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S

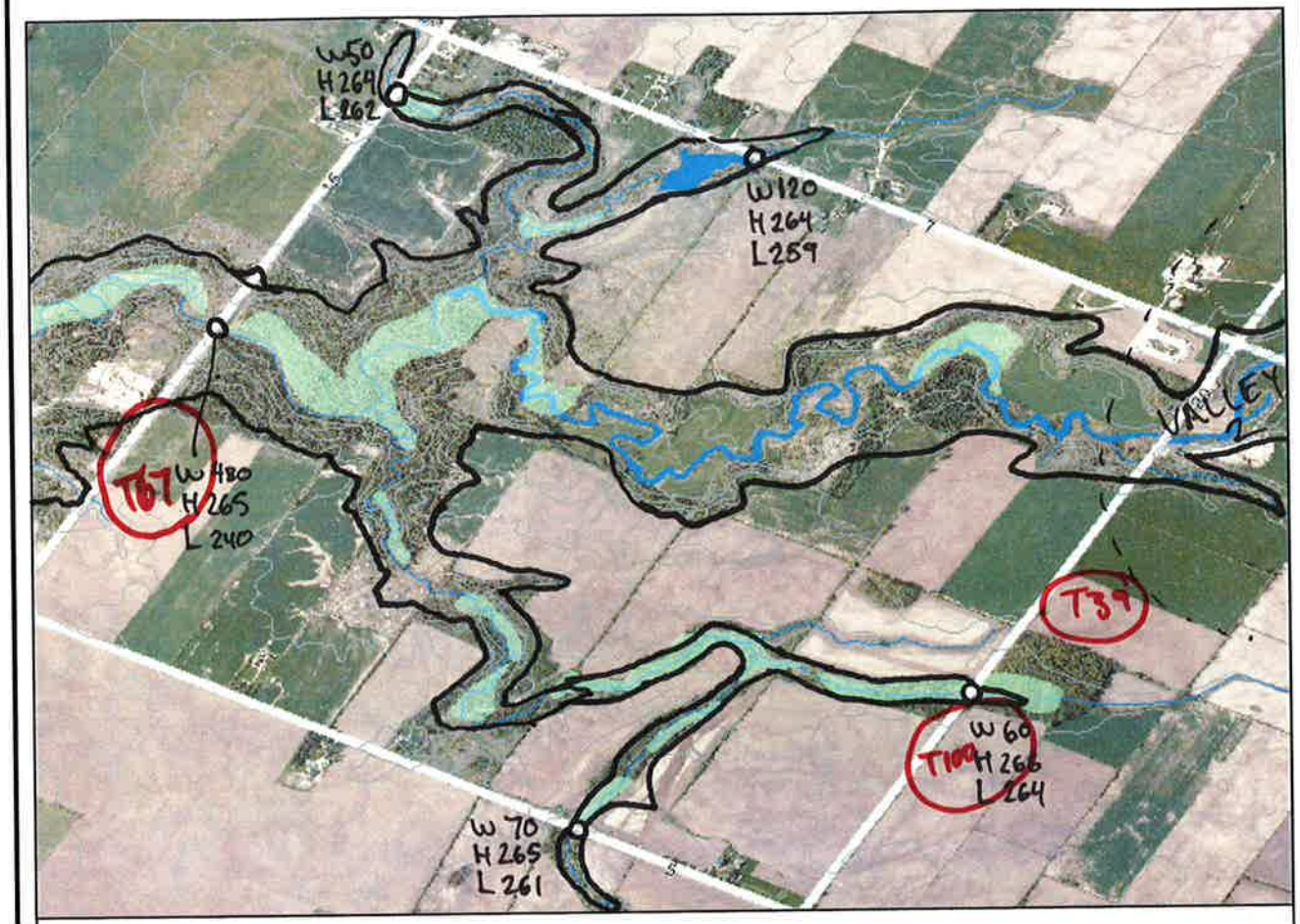
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Valley 3



Map centre: 44° 10' 50.2" N, 81° 30' 29.6" W

Map created: December 15, 2011

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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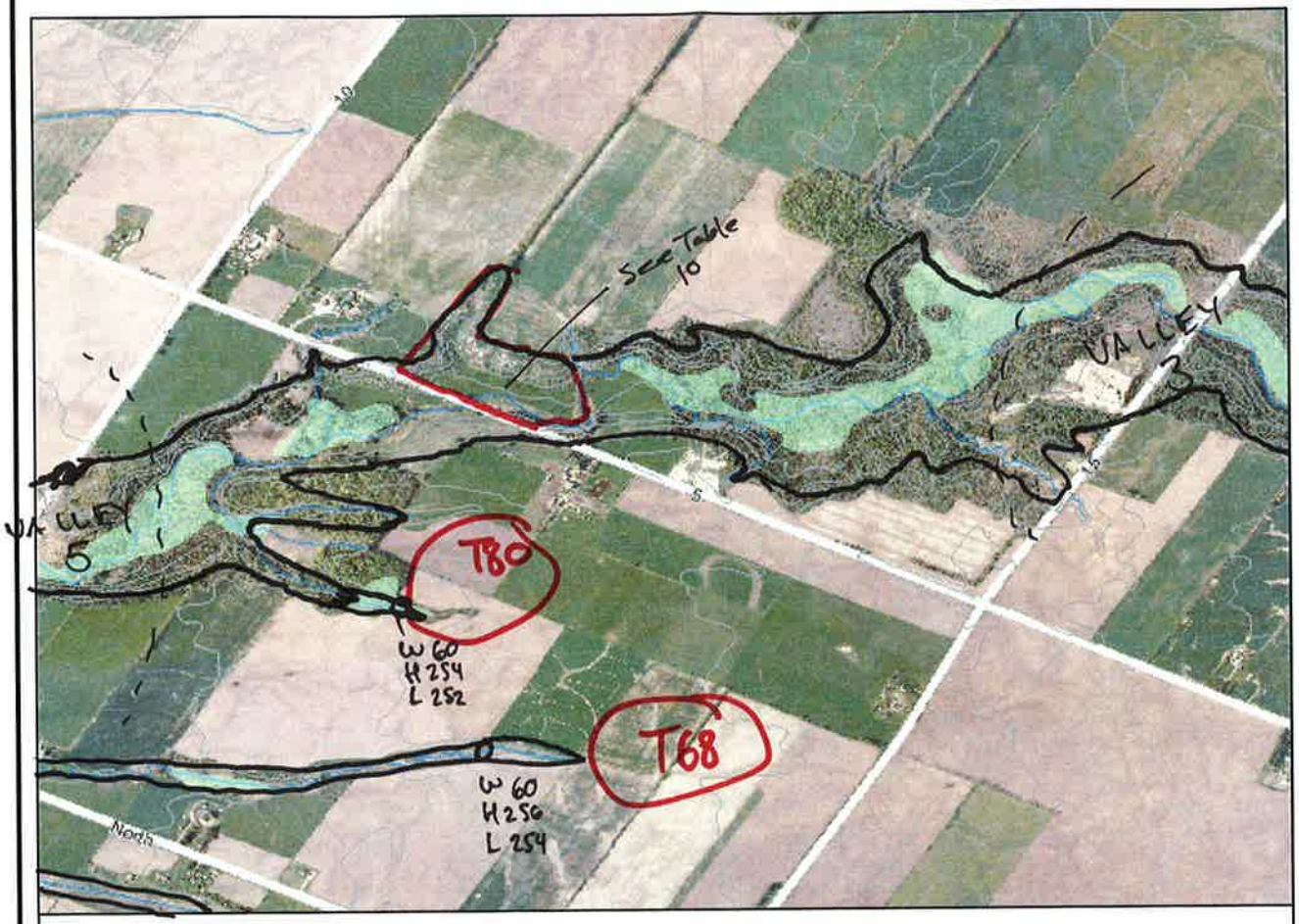
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Valley 4

VALOCI



Map centre: 44° 10' 51.0" N, 81° 32' 08.1" W

Map created: December 15, 2011

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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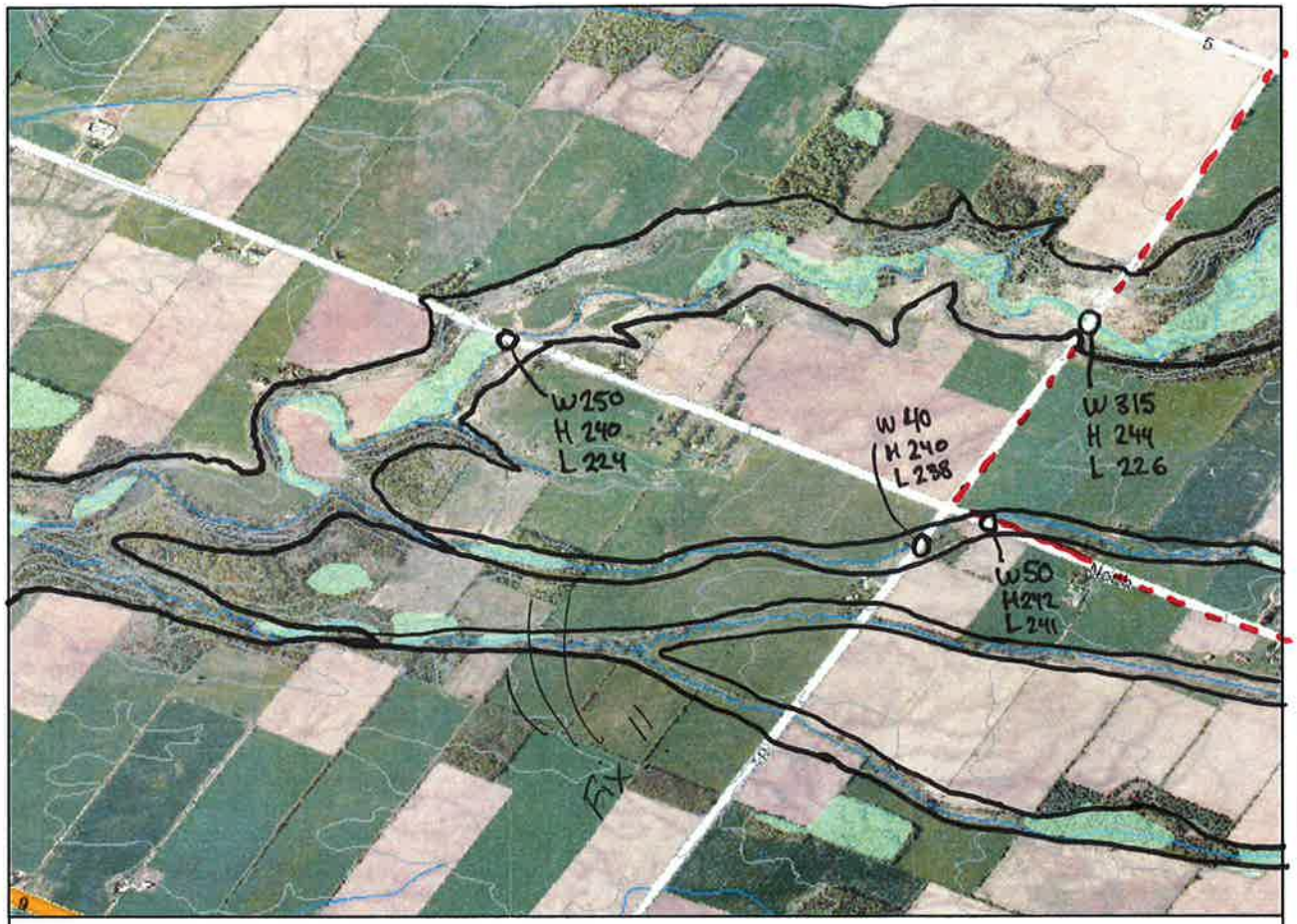
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Valley 5



Map centre: 44° 10' 29.2" N, 81° 33' 58.2" W

Map created: December 15, 2011

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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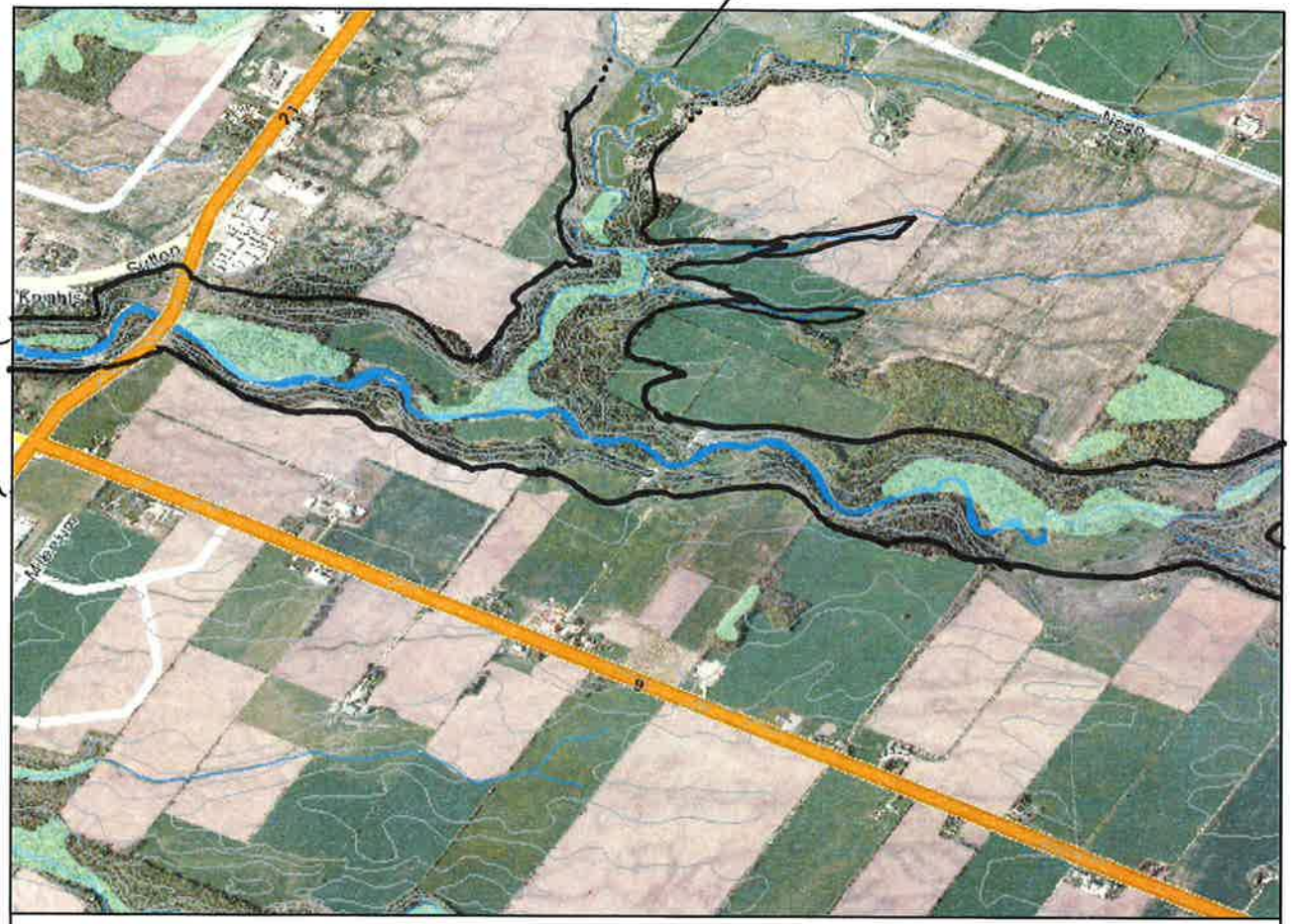
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Valley 6 ? connect Valley 7 map.



? Flows west into L. Huron (2km upx.)

Map centre: 44° 10' 28.2" N, 81° 35' 52.0" W

Map created: December 15, 2011

0 400 800 1,200 1,600 m

Scale: 1:22,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
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- Province

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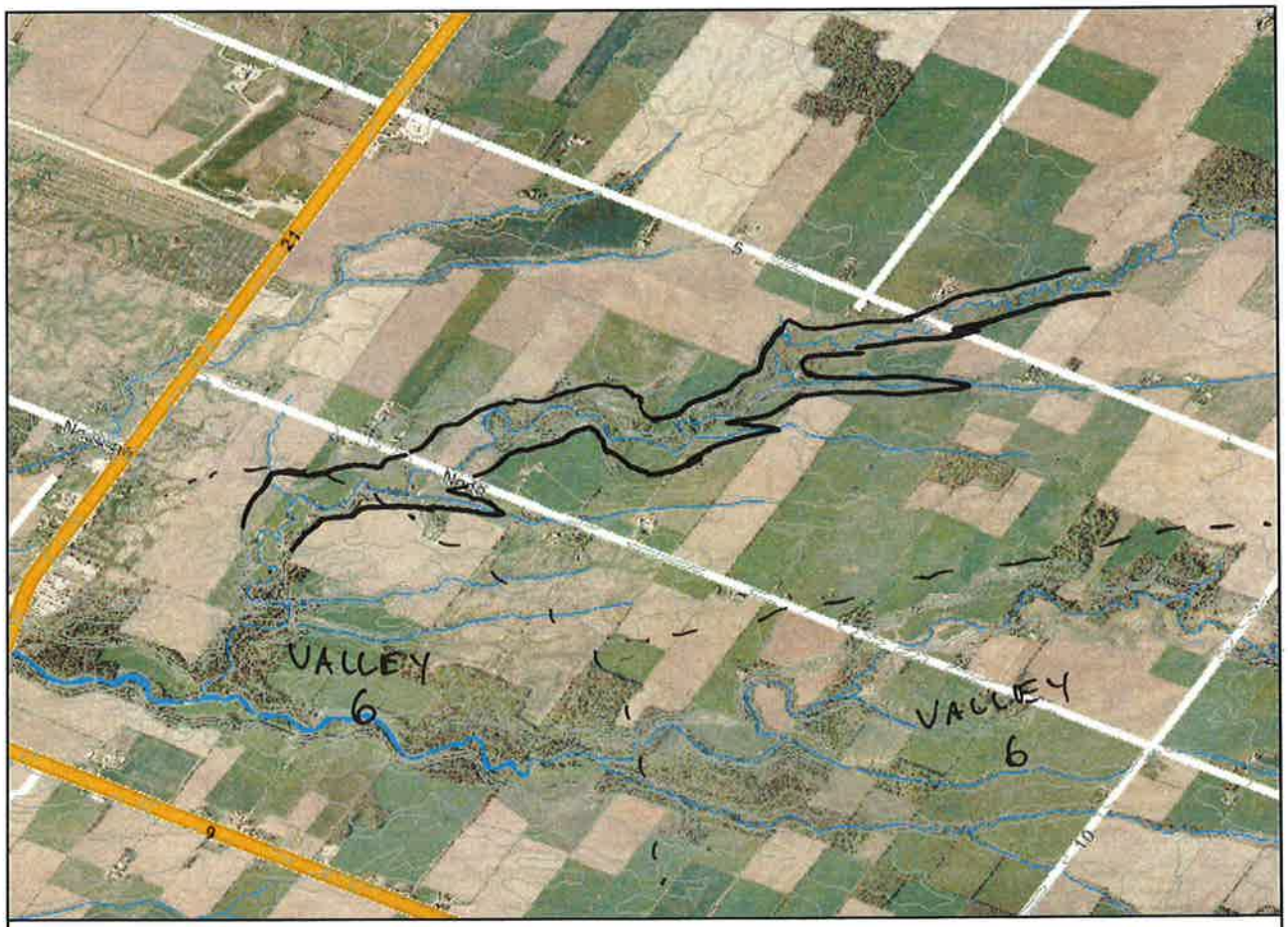
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Valley 7



Map centre: 44° 11' 12.3" N, 81° 34' 53.1" W

Map created: December 19, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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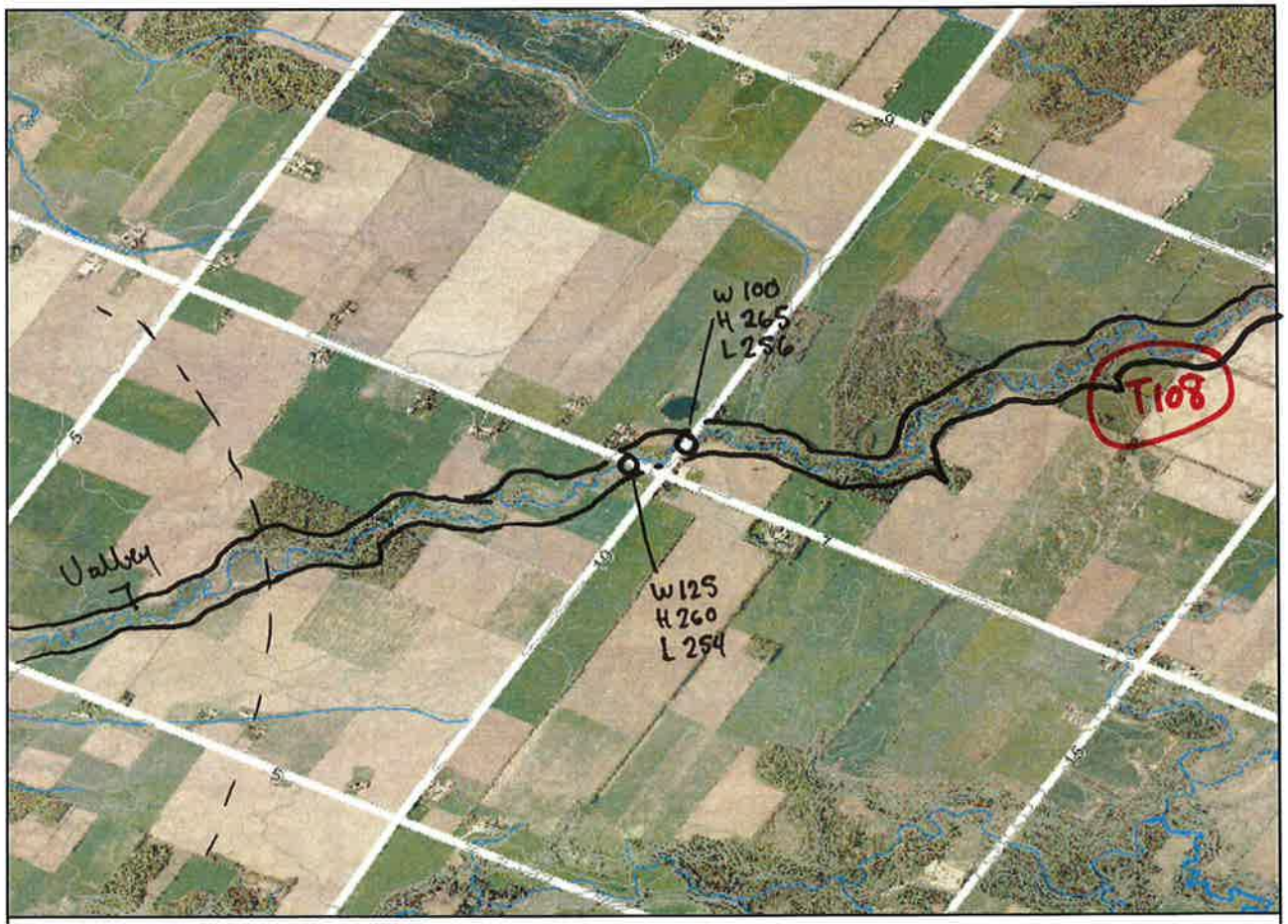
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Valley 8



Map centre: 44° 12' 08.0" N, 81° 32' 14.5" W

Map created: December 19, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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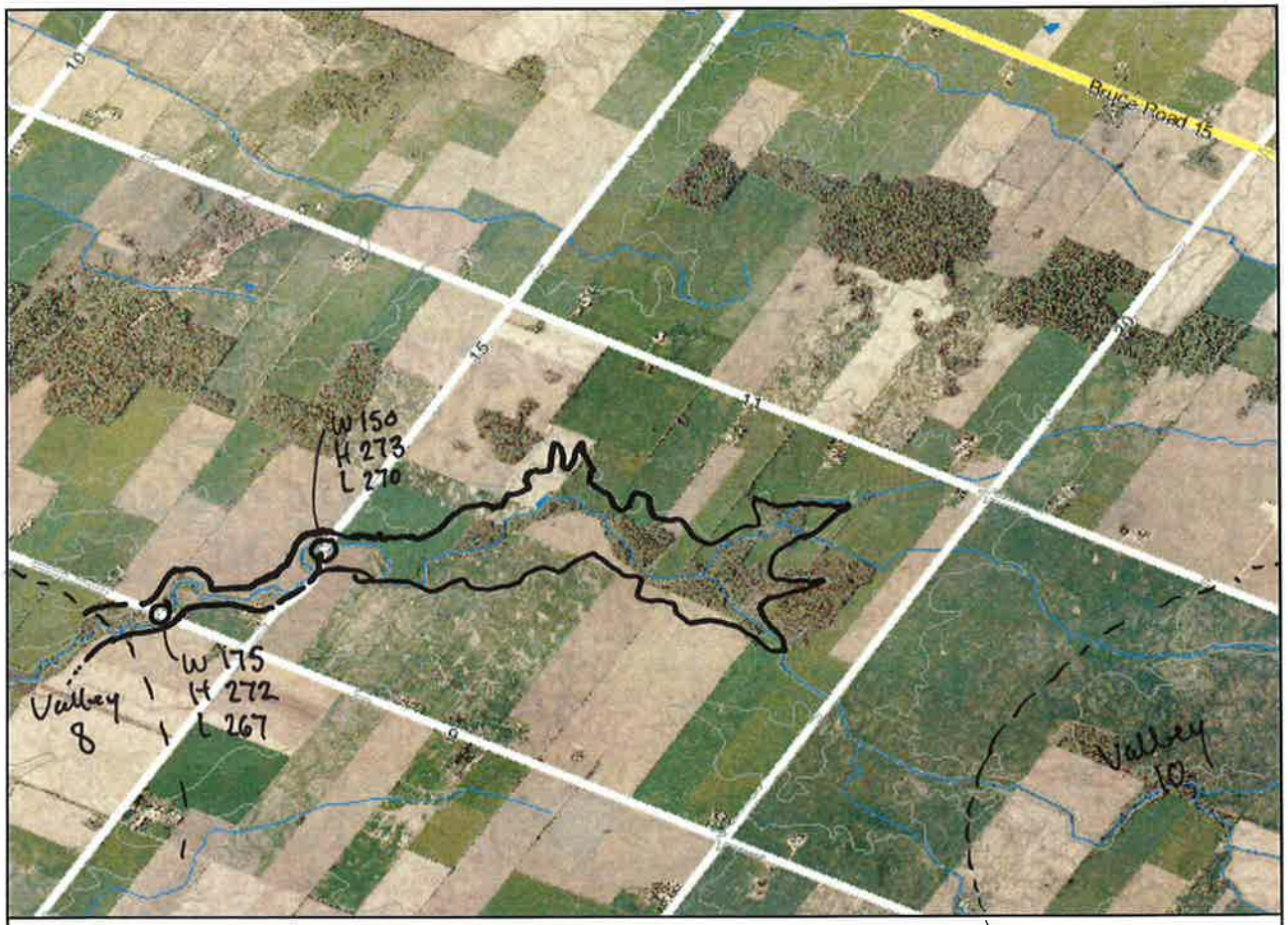
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Valley 9



Map centre: 44° 13' 02.1" N, 81° 29' 00.3" W

Map created: December 19, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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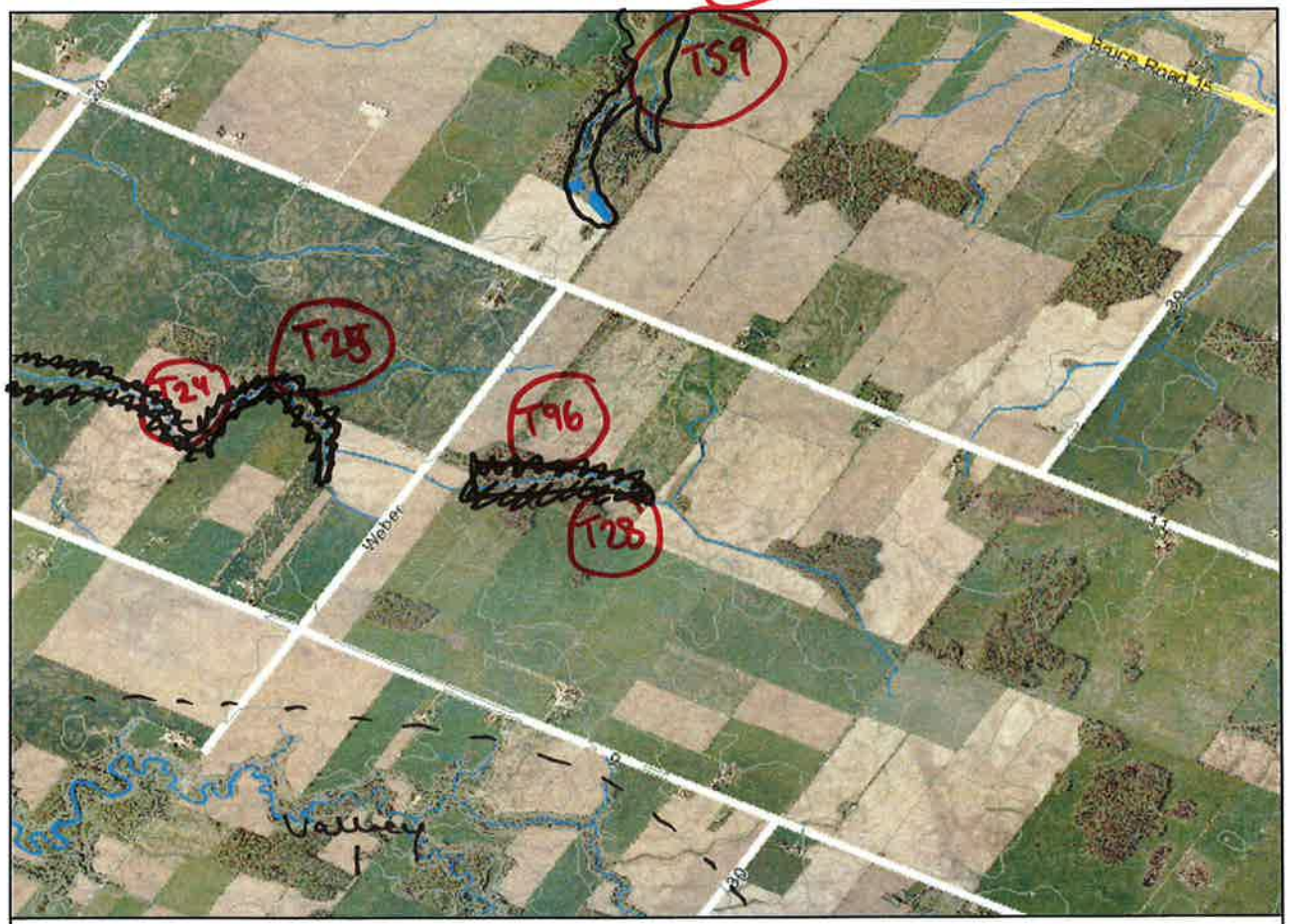
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Valley 10



Map centre: 44° 11' 54.5" N, 81° 26' 29.0" W

Map created: December 19, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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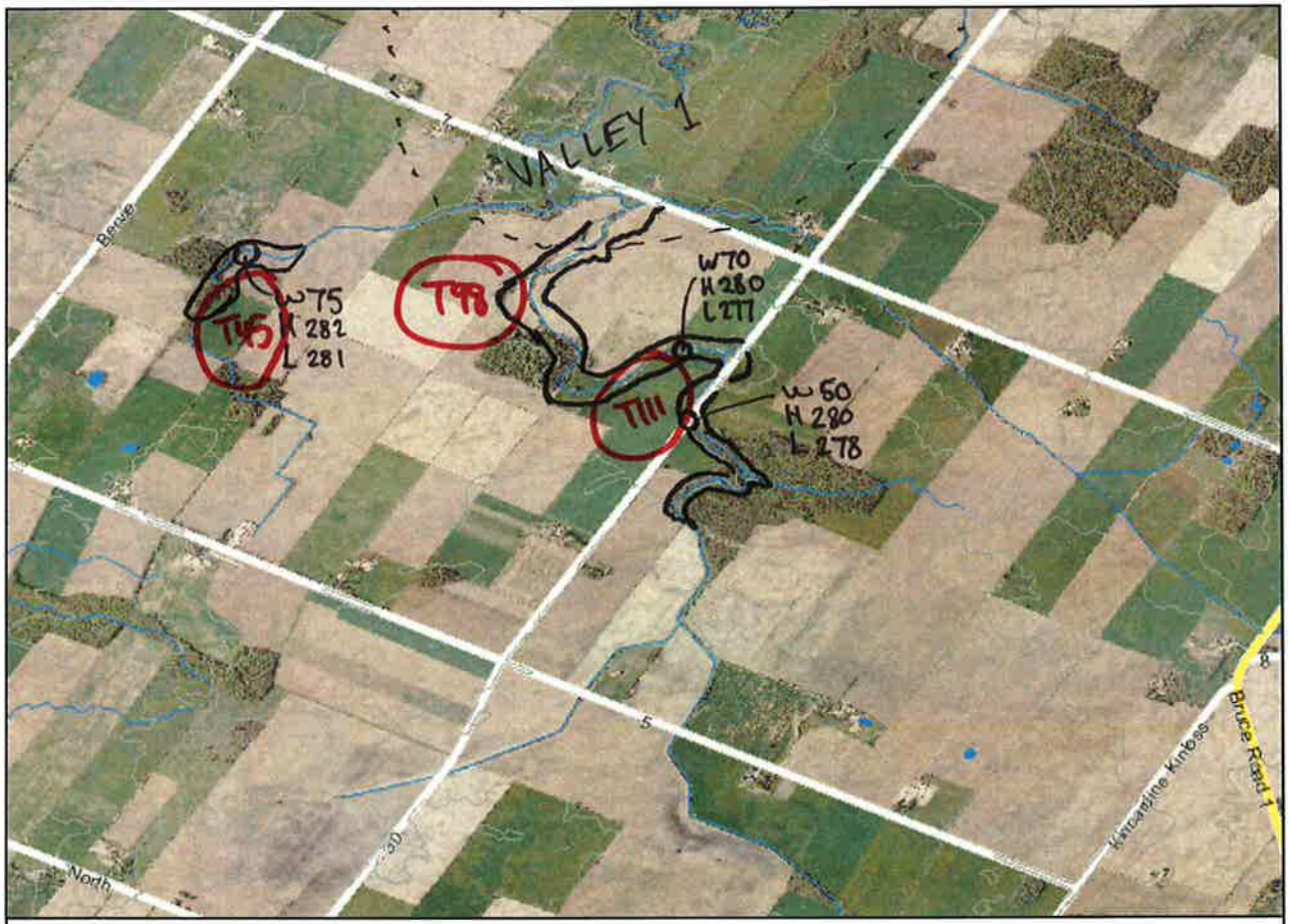
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Ontario

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Valley 11



Map centre: 44° 09' 28.5" N, 81° 27' 15.6" W

Map created: December 19, 2011

0 600 1,200 1,800 2,400 m

Scale: 1:32,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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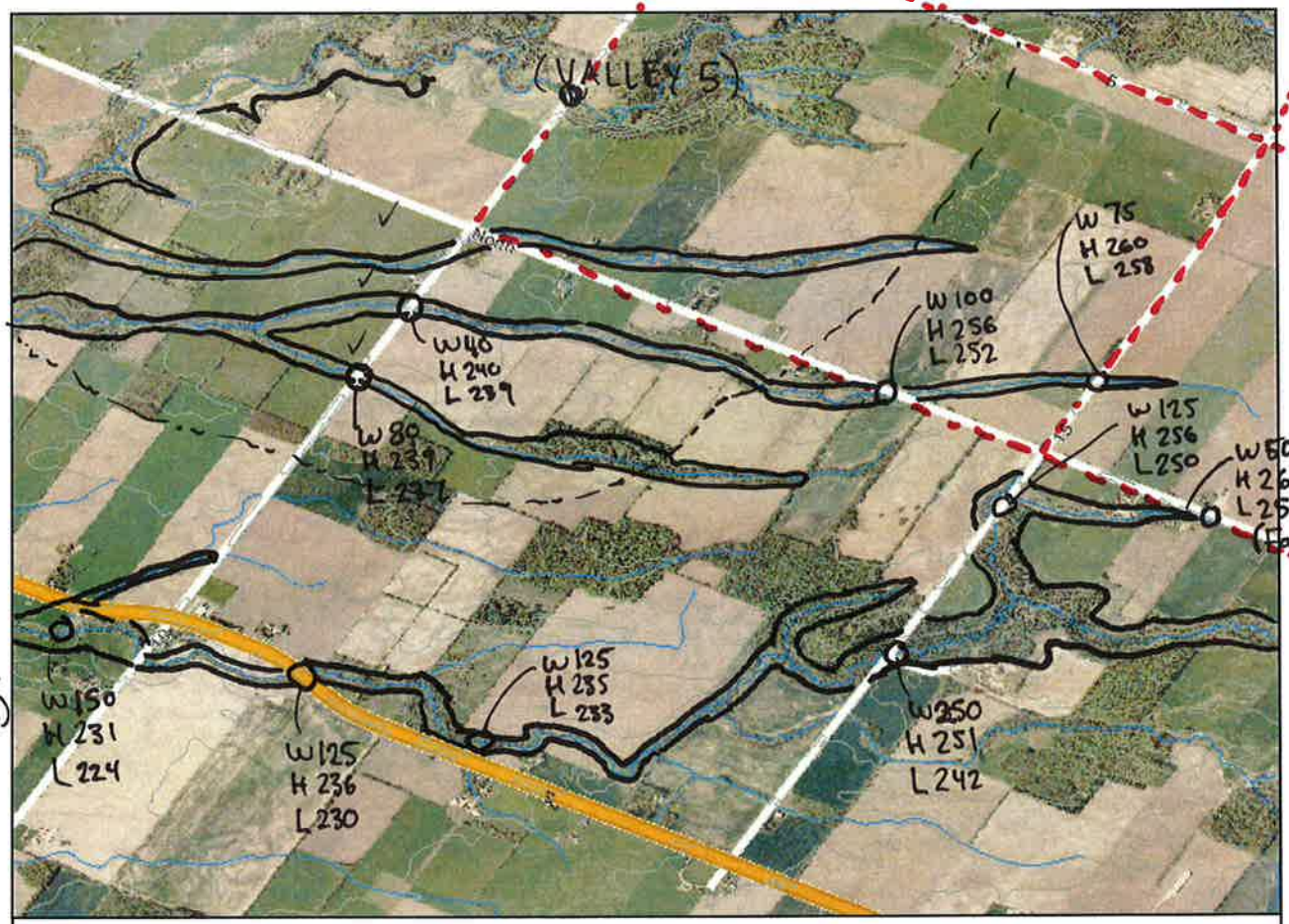
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Valley 12



Flows west into L. Huron (5.5km approx.)

Map centre: 44° 09' 51.2" N, 81° 33' 03.7" W

Map created: December 19, 2011

0 500 1,000 1,500 2,000 m

Scale: 1:31,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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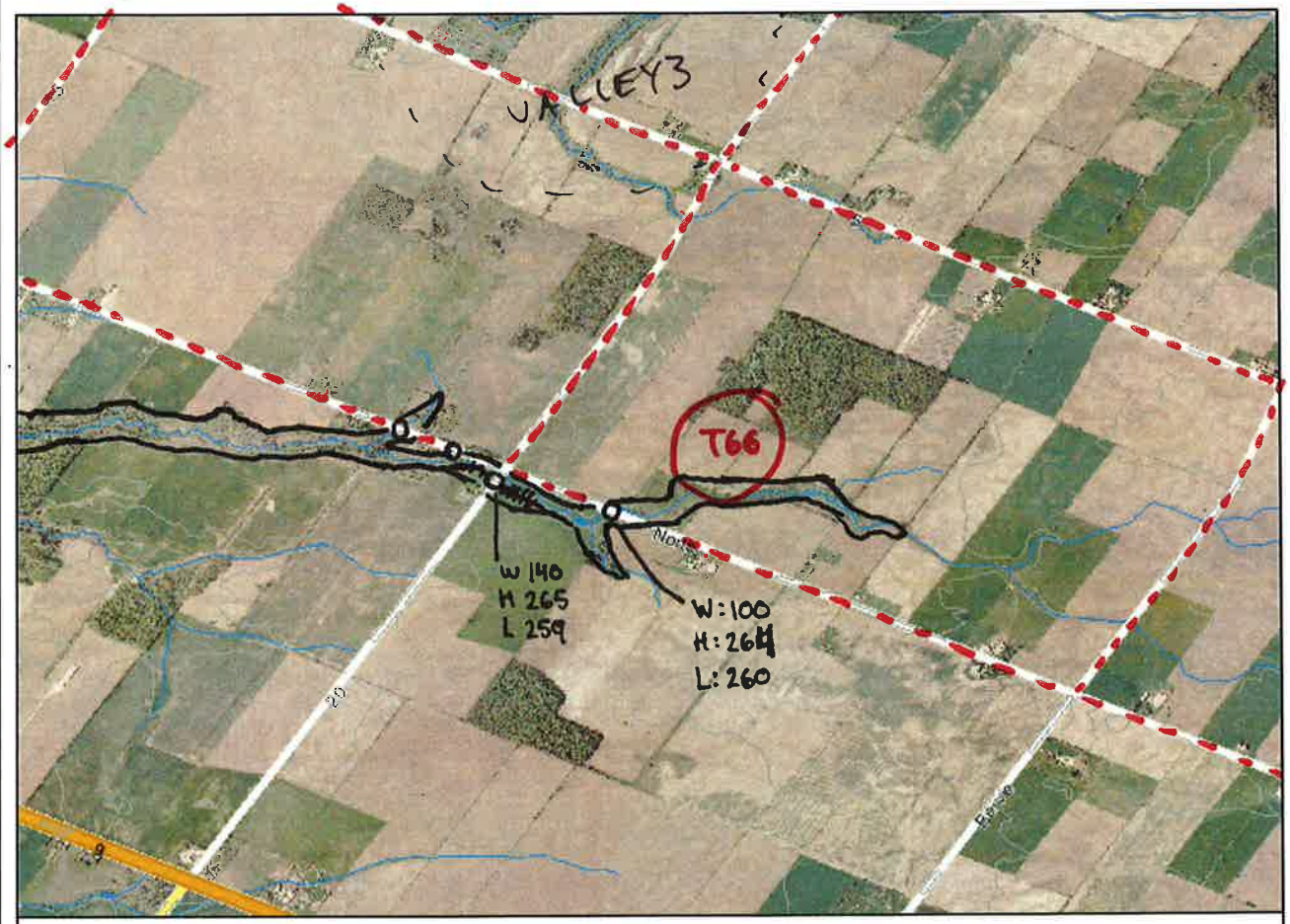
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Valley 13



Valley 12

Map centre: 44° 09' 21.8" N, 81° 30' 26.4" W

Map created: December 19, 2011

0 500 1,000 1,500 2,000 m

Scale: 1:31,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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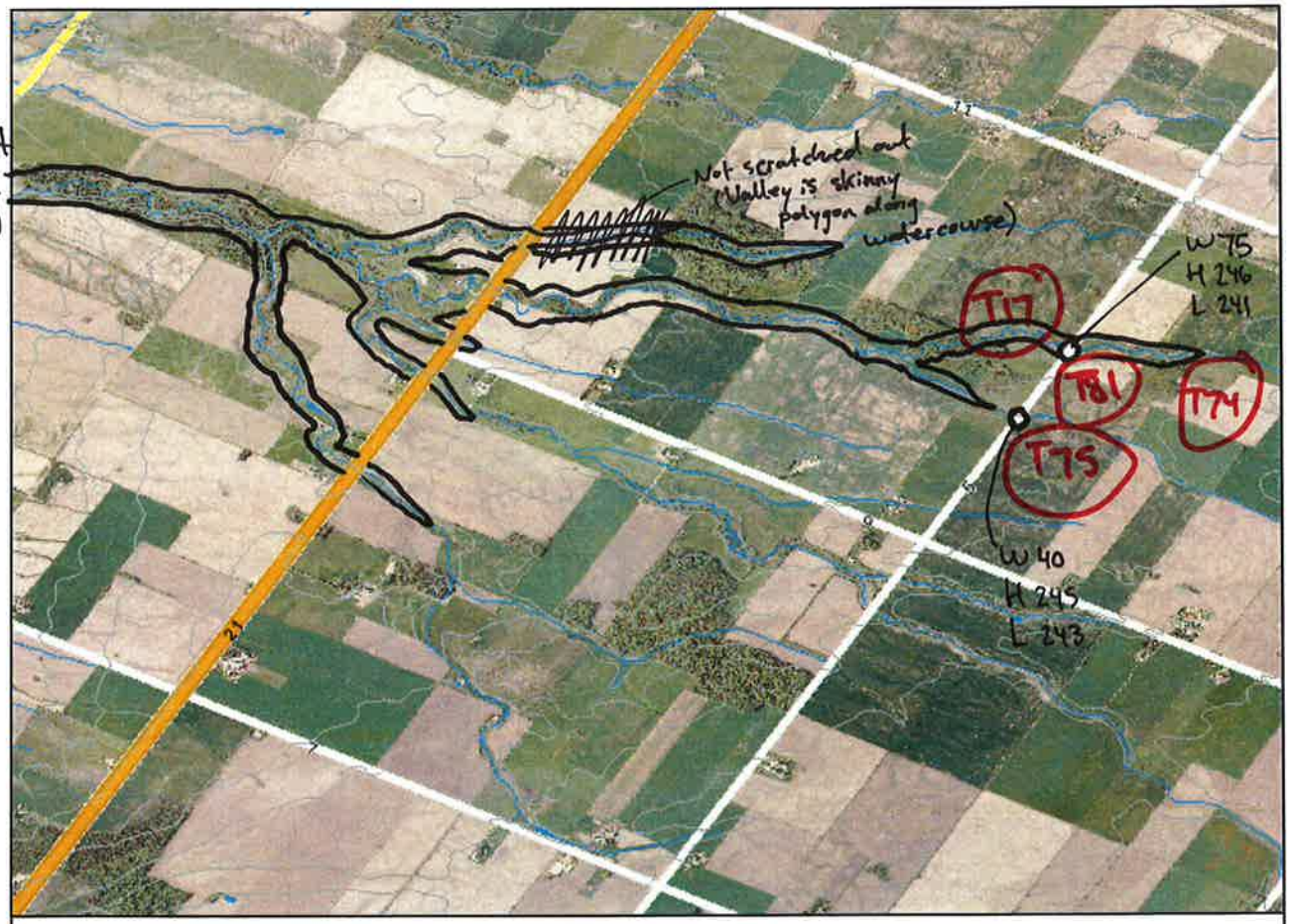
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Valley 14

Flows west into L. Huron (1.5km appx.)



Map centre: 44° 13' 48.8" N, 81° 33' 32.8" W

Map created: December 20, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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N S

Ontario

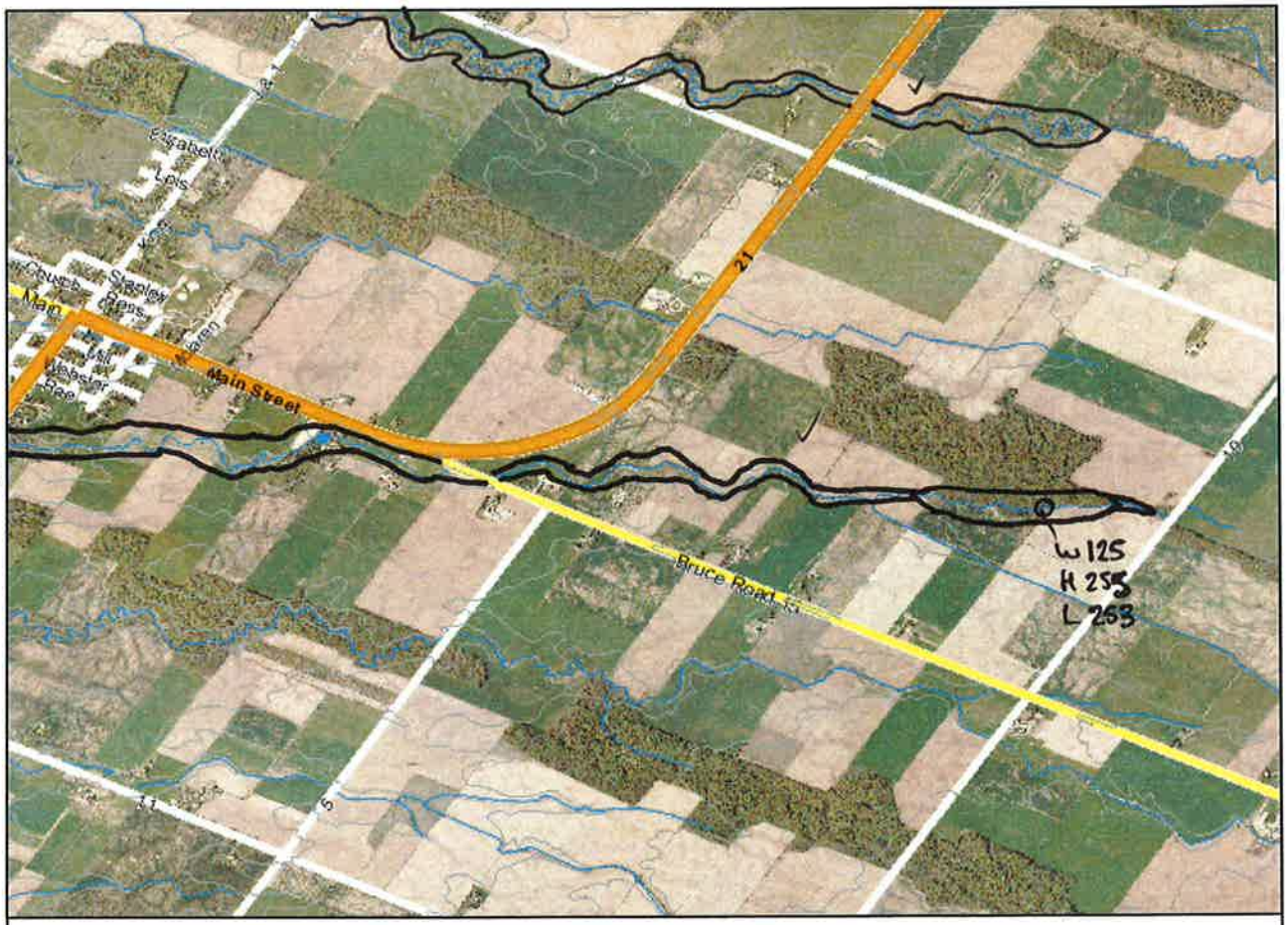
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Flows NW into L. Huron (5.5km appx.)

Valley 15



Flows west into L. Huron (4.5km appx.)

Map centre: 44° 15' 38.6" N, 81° 31' 01.8" W

Map created: December 20, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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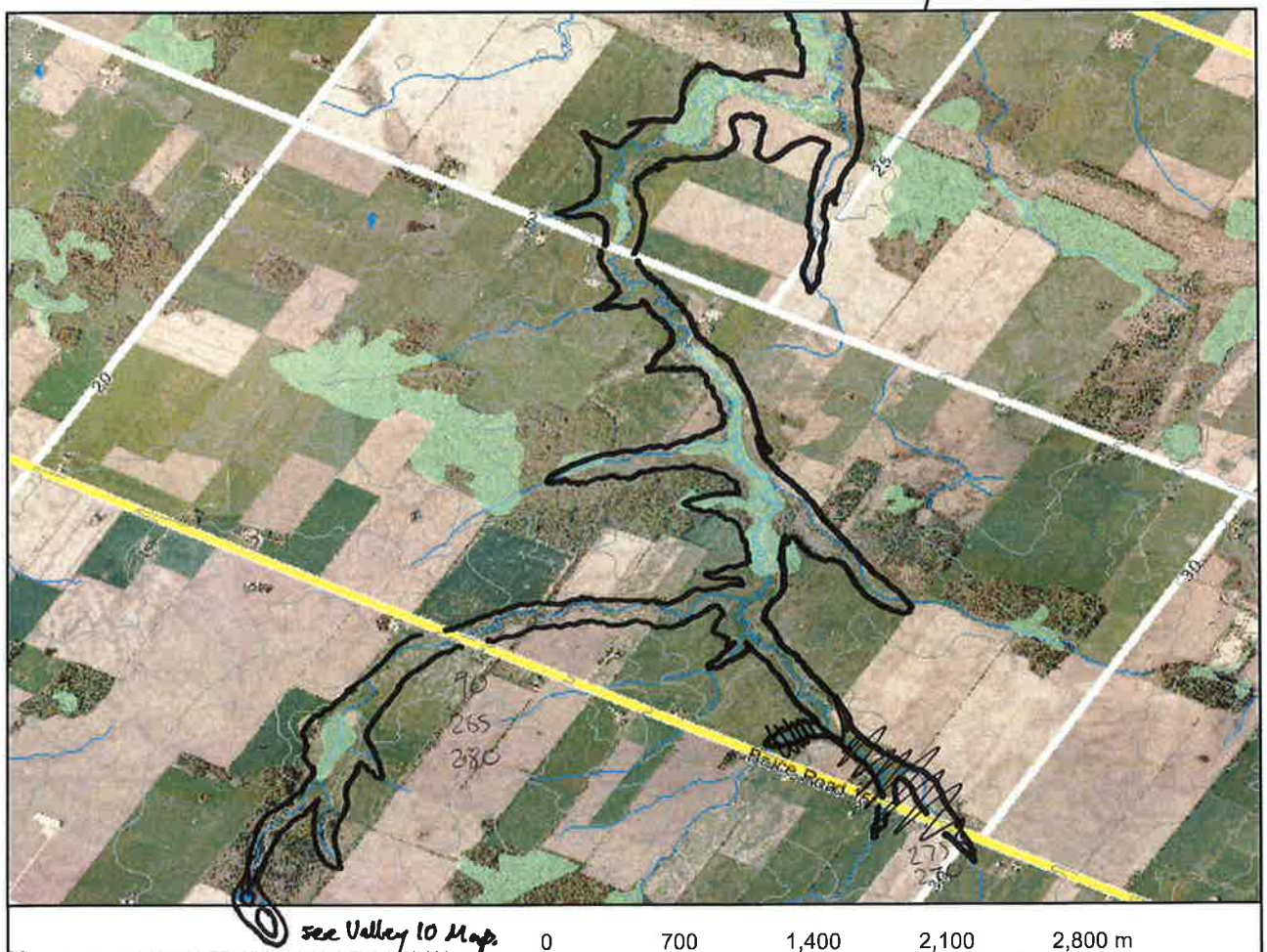
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Valley 17

Flows NE into Saugeen River at Paisley, ON.



see Valley 10 Map.

Map centre: 44° 13' 55.6" N, 81° 25' 34.9" W

Map created: December 20, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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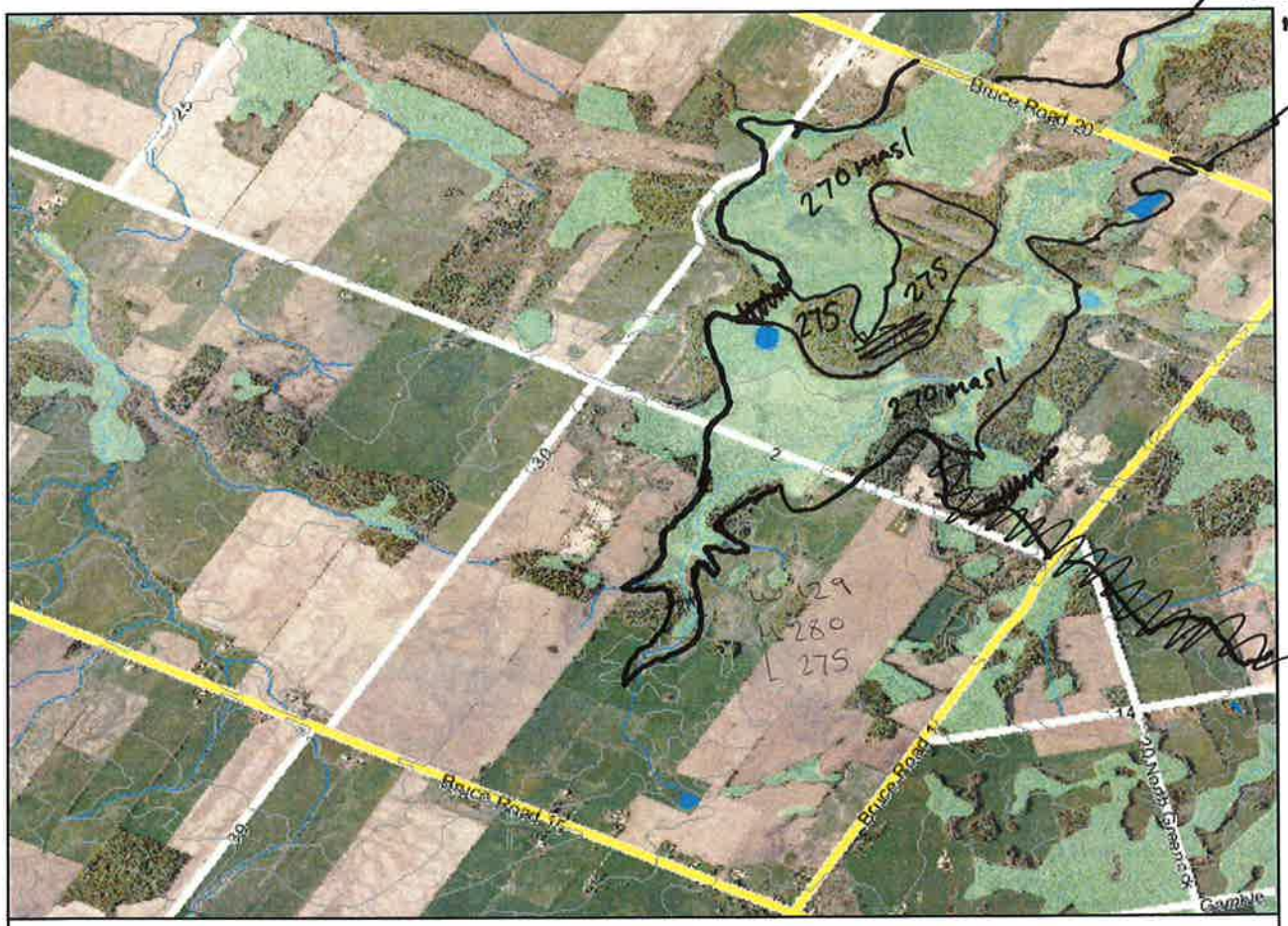
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Valley 18



Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Wetlands
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

Map centre: 44° 13' 35.0" N, 81° 23' 43.1" W

Map created: December 20, 2011

0 700 1,400 2,100 2,800 m

Scale: 1:37,000

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Ontario

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T79 (VALT0017) 1275 Armour

Nov 23, 2011 PWD

13:15

Significant Valleyland Evaluation Site Visit

Partly cloudy, 3°C, Wind 2/SE, 75% c.c.

Photos 0618 - 0622

- heavily grazed pasture, hawthorn and crabapple dominate slopes, orchard grass and spotted knapweed abundant in groundcover. Few large trees (sugar maple and ash).

Surfacewater Functions: active and historic erosion evident by exposed soils and valley walls. Watercourse permanent.

Groundwater Functions: none observed (grassed waterway is tile-fed / surface runoff

Landform Prominence: Well defined morphology present (floodplain, meander belt and valley slopes).

Distinctive Geomorphic Landform: Present (oxbows, bottomlands, terraces, exposed soil strata

Degree of Naturalness: Very poor, limited natural vegetation

Community/Species Diversity: Low

Unique Communities/Species: None

Habitat Value: watercourse likely provides habitat for aquatic species, slopes/upland may provide meadow/thicket habitat for bird species.

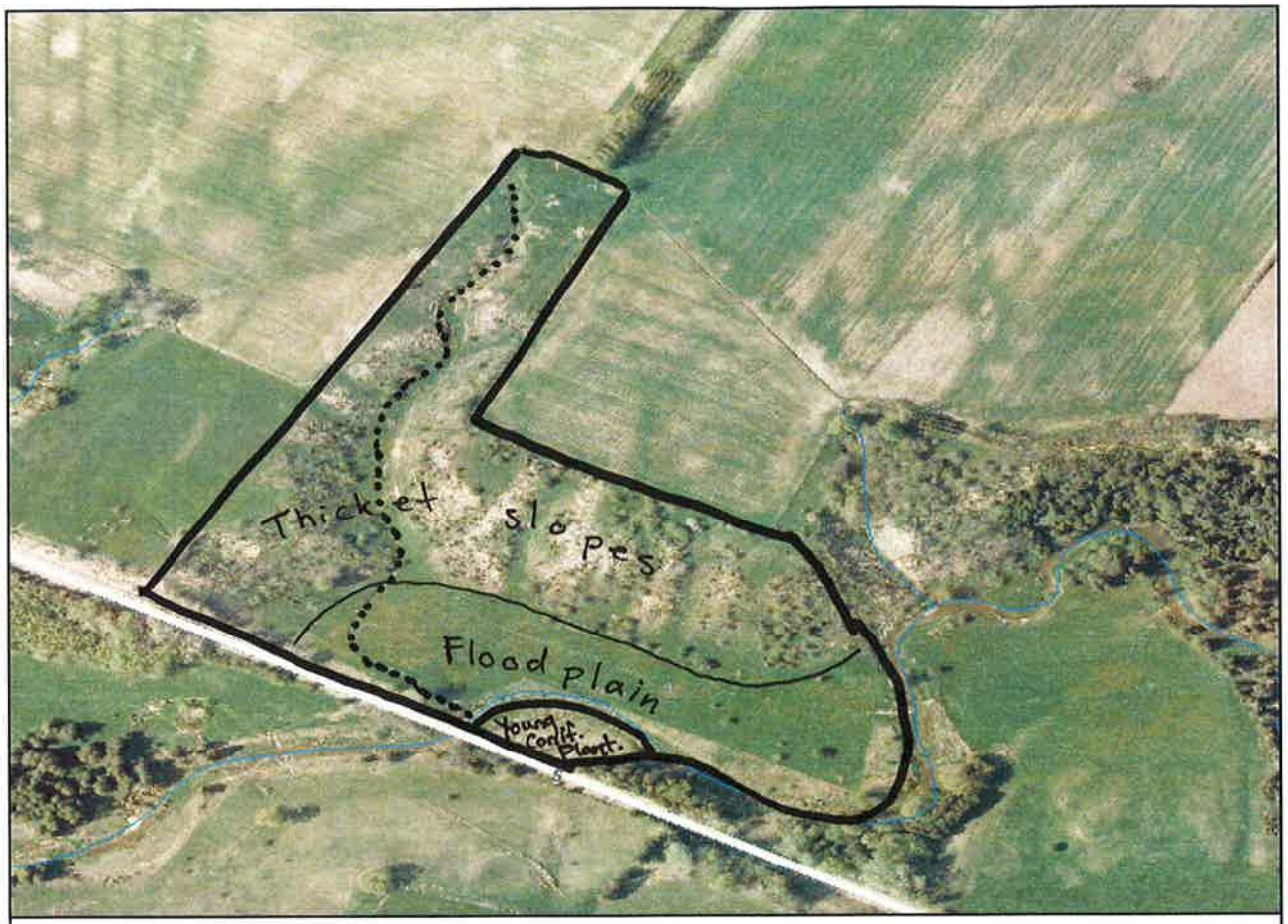
Linkage Function: High. Upstream and downstream valley is natural (vegetation), this open pasture section provides an important link between N and S sections.

Restoration Potential: High. Restoration would greatly improve habitat linkage and buffer riparian areas. Young conifer plantings suggest restoration efforts by landowner.

Note: Open, sandy banks within natural corridor do have potential to provide American badger habitat. No dens (of any type) or other signs were observed.

J. L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com
No. 392

T79 - VAL-001



Map centre: 44° 11' 03.6" N, 81° 32' 22.5" W

Map created: November 22, 2011

0 100 200 300 400 m

Scale: 1:5,400

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province
- Grassed waterway

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T84

1275 Armow

Nov 23, 2011 PWD

15:00 (VAL-002)

Significant Valleyland Evaluation Site Visit

Partly cloudy, 1°C, Wind 2/SE, 90% c.c.

- Photos: none taken
- valley has areas of agricultural fields, pine plantation, and native/non-native slope and floodplain vegetation. Watercourse meanders (including oxbows) water depth 20-150+cm.

Surfacewater Functions: Permanent watercourse meanders, deep in some areas. Active erosion clearly evident.

Groundwater Functions: None observed.

Landform Prominence: Well defined floodplain, meander belts and valley slopes present.

Distinctive Geomorphic Landforms: Oxbows, bottomlands and bank erosion are present.

Degree of Naturalness: Slope vegetation somewhat natural (<25%) but many ag. weeds present, as well as large portion of white pine cover. Some natural riparian vegetation (limited to as little as 1m on north bank in some areas).

Community/Species Diversity: Average (typical of areas adjacent to agricultural disturbance).

Unique Communities/Species: watercourse likely to contain aquatic species, evidence of white-tailed deer, coyote and raccoon on floodplain (tracks).

Habitat Value: watercourse may provide habitat for aquatic species. Deciduous forest north of valley contains 10+ snags <25cm dbh, some over 100cm dbh.

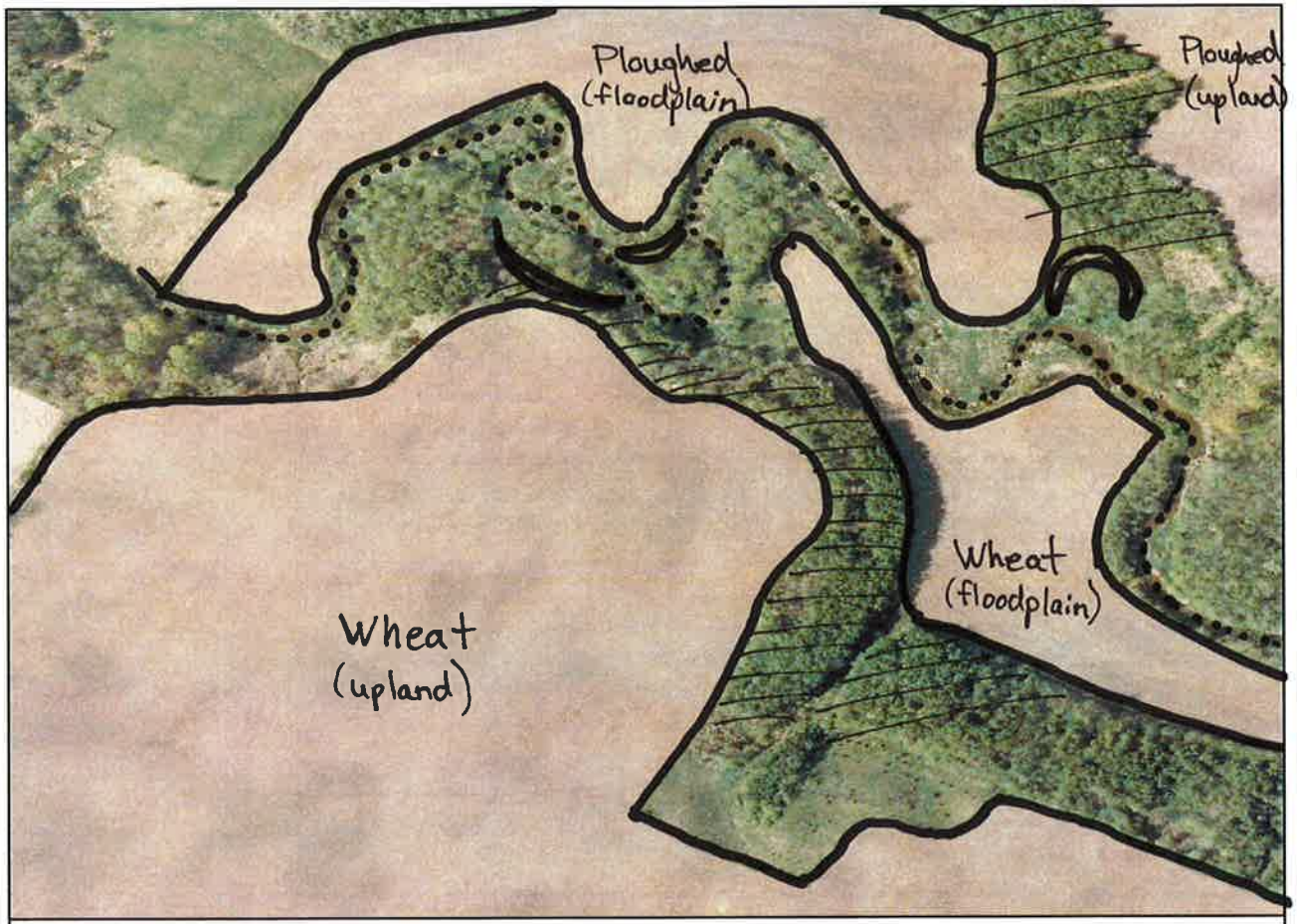
Linkage Function: This portion of valley is part of a larger, natural valley system which is likely to act as a wildlife corridor.

Restoration Potential: Some potential, pine plantations may help to prevent erosion and provide cover for wildlife. Opportunities for floodplain and riparian restoration on north bank.

J. L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteInTheRain.com
No. 392

T84

VAL-002



Map centre: 44° 10' 53.0" N, 81° 28' 23.9" W

Map created: November 22, 2011

0 70 140 210 280 m

Scale: 1:4,100

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province
- White Pine Plantation
- Watercourse
- Oxbow

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Ontario

VAL-003 (N of T65) 1275 Armow

12:35, Dec. 8/2011

AMD, HLW

1°C, Sunny w/ cloudy periods, wind 4 from SW

Photos 1141 - 1150

Slope and floodplain dominated by thicket, mainly hawthorn with white elm, green ash and common apple along the valley slopes. Reed canary grass and red-osier along watercourse.

Surfacewater functions: permant watercourse. Evosion evident in undercut banks and exposed soil along banks.

Groundwater functions: No evidence that watercourse is groundwater fed.

Landform prominence: Well defined floodplain, meander of watercourse, well defined slopes.

Distinctive Geomorphic Landforms: Eroding banks along watercourse.

Community/Species Diversity: Relatively low

Unique communities/species: None found.

Habitat Value: Potential wildlife movement corridor. Likely provides habitat for aquatic species and bird species in thicket.

Degree of Naturalness: Very disturbed from anthropogic use. Limited native vegetation, presence of some invasive species (reed canary grass prevalent).

Linkage Function: Wide vegetated buffer upstream and downstream of site, along watercourse. Serves as a connection to other woodlots in vicinity.

Restoration Potential: Construction of bridge across watercourse for recreation (ATV tracks noted crossing). Removal of invasive species.

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	4		
Aspect:	290		
%	2		
Type:	S		
Class:	B		

Strata:	Texture	SiCL		
	Depth	0-120		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiCL		
Surface Stoniness		-		
Surface Rockiness		-		
Depth to:				
	Mottles	49		
	Gley	-		
	Bedrock	-		
	Water table	61		
	Carbonates	-		
Depth of Organics		0		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		4		

Polygon: VAL-003

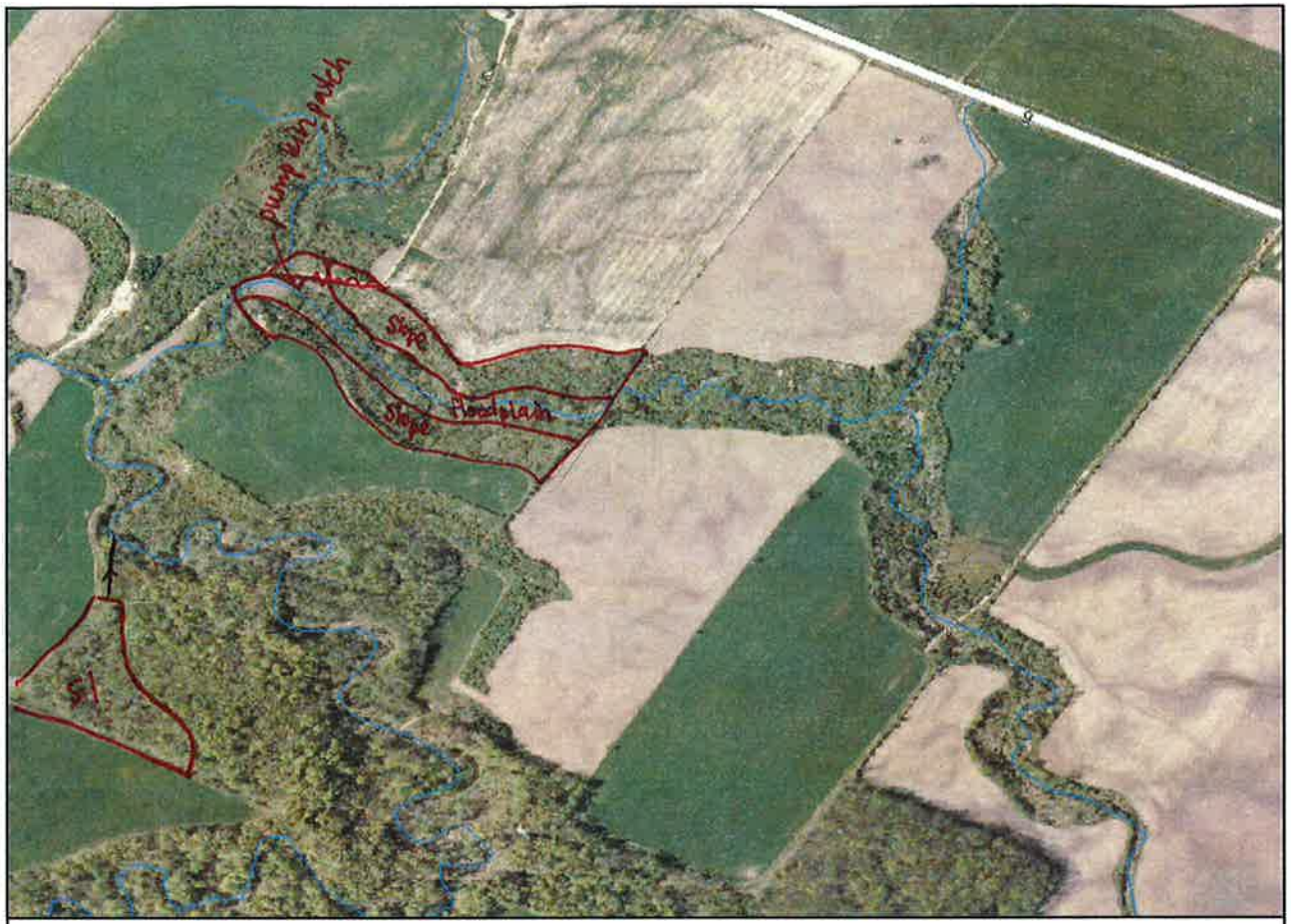
Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

- soil sample taken in valley roughly 20m from watercourse
- soil strata very consistent throughout
- valley photos 1141-1150, Dec 7-9/11 photo folder

N of T65



Map centre: 44° 10' 52.1" N, 81° 26' 47.7" W

Map created: December 5, 2011

0 100 200 300 400 m

Scale: 1:8,400

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

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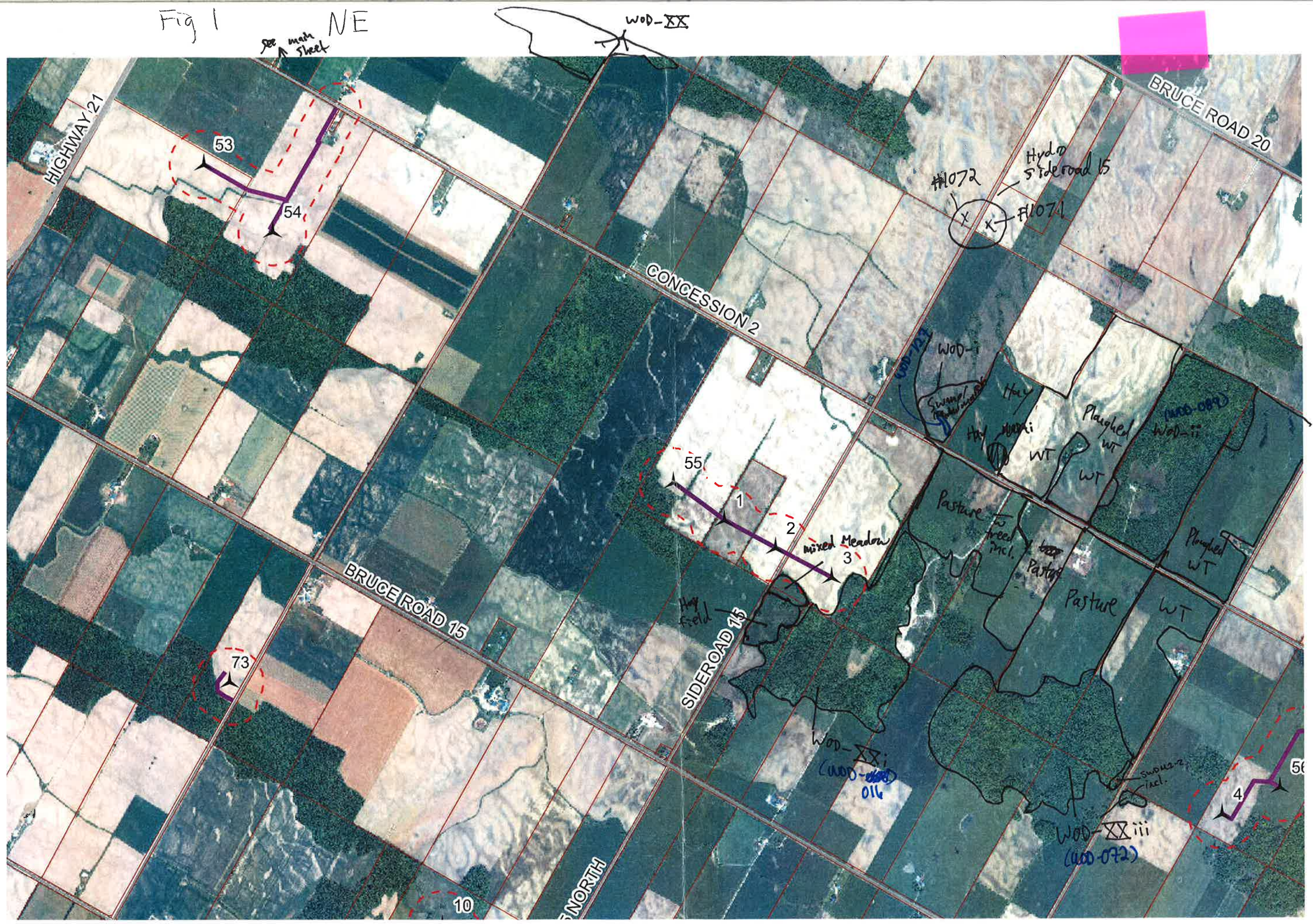
Fig 1 SW


CONCESSION 11
SIDEROAD 5 NORTH
SIDEROAD 10
SIDEROAD 15 NORTH
CONCESSION 7
CONCESSION 9
16
17
81
74
75
10
63
61
18
19
20
108
Ploughed
Alfalfa
Pasture
Corn
Hay
WT
Soy
Mixed Regen
Ploughed WT
Pasture WT
Corn WT
Hay WT
Alfalfa WT
Pasture WT
Ploughed WT
Soy WT
Mixed Regen WT
Corn WT
Pasture WT
Alfalfa WT
Ploughed WT
Corn WT
Pasture WT
Hay

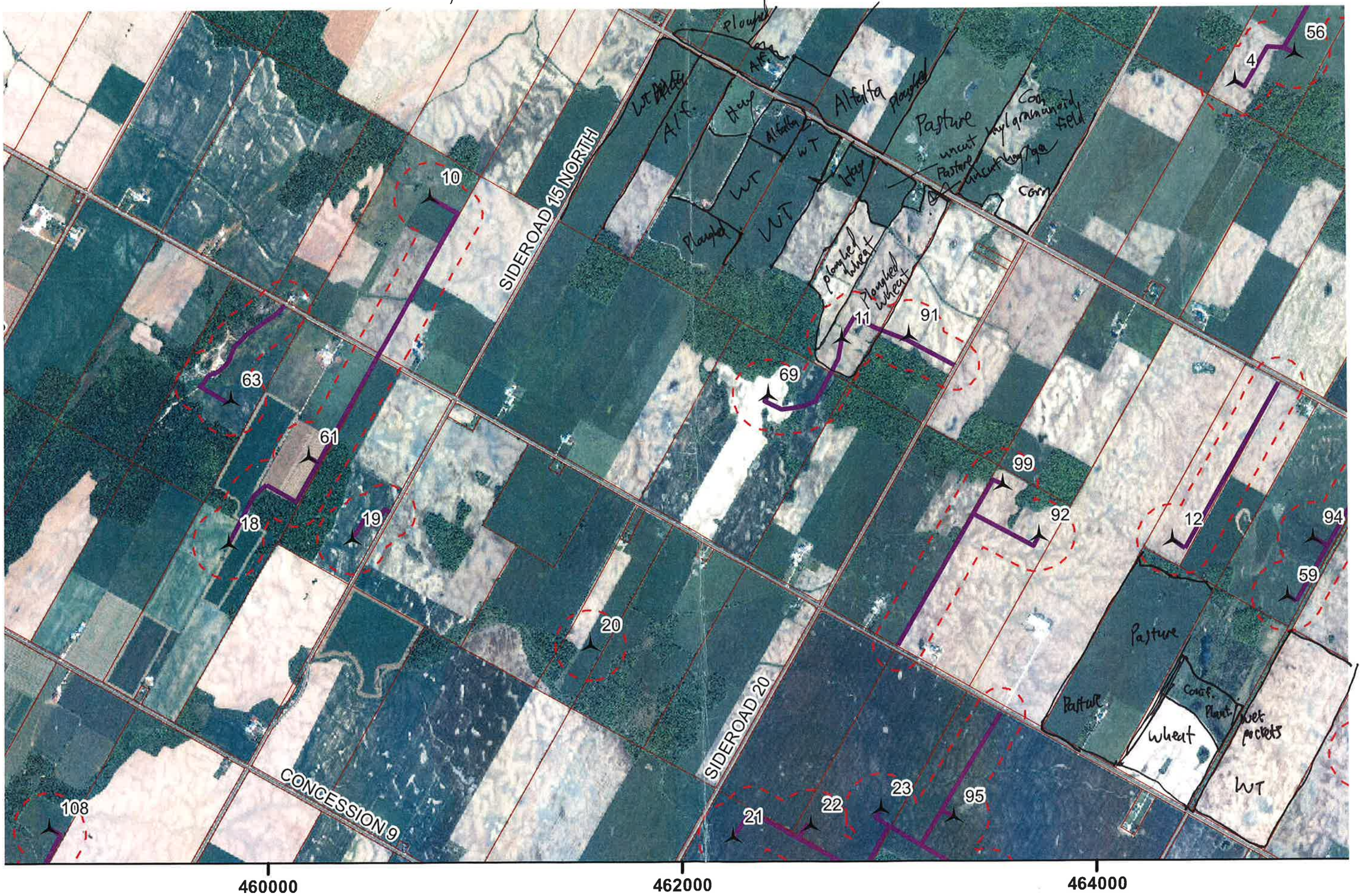
NW Fig 1

KING STREET
MAIN STREET
HIGHWAY 21
CONCESSIO
BRUCE ROAD 15
CONCESSION 11
WoD-XVii
WoD-XVIII
WoD-IV
53
54
55
73
16
17
74
10
Plowfield
Com
WT
Pasture
Alfalfa
Plowed Com
Plowed WT

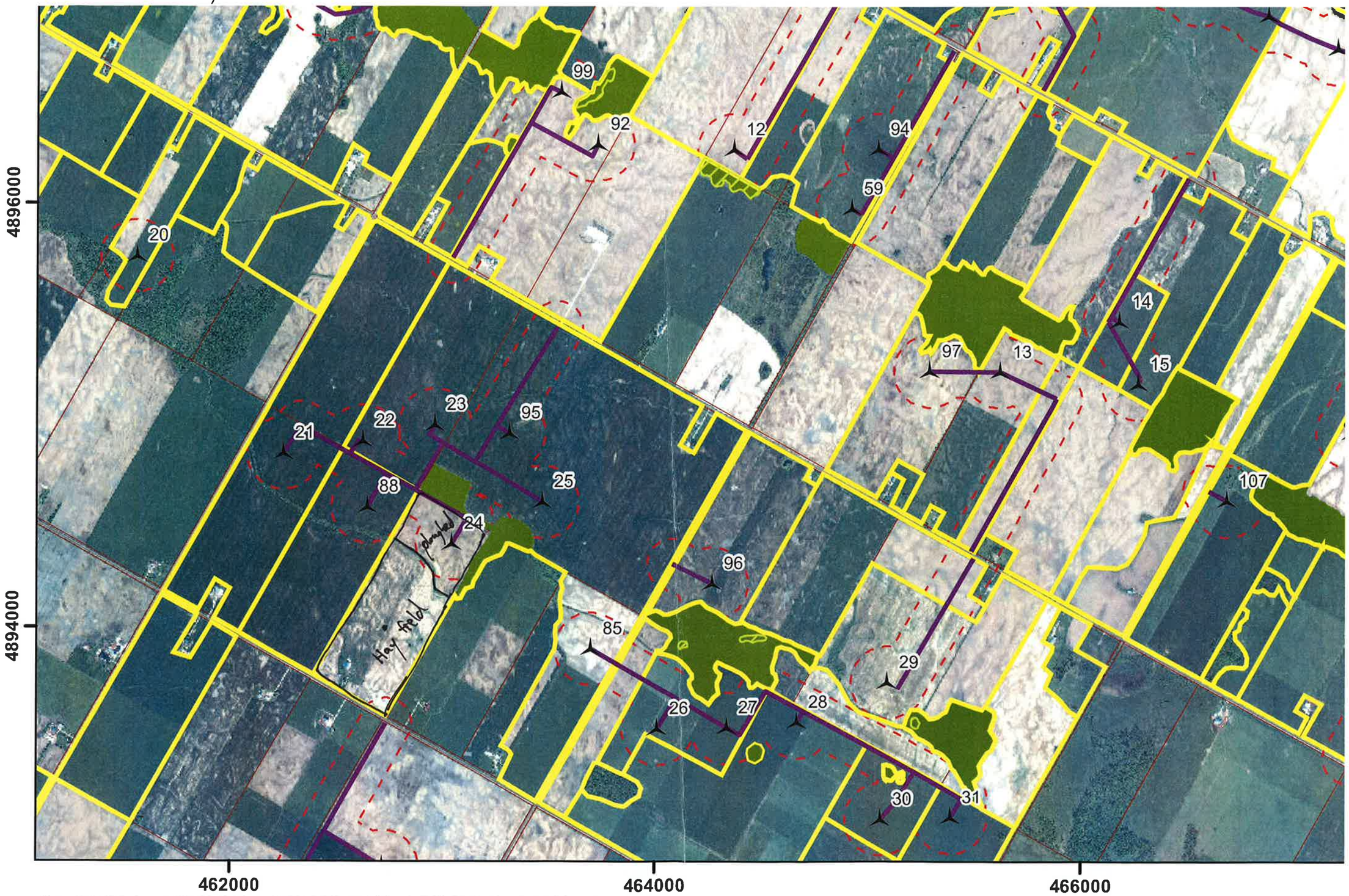
Fig 1 NE


See main sheet
WOD-XX
HIGHWAY 21
BRUCE ROAD 20
CONCESSION 2
BRUCE ROAD 15
SIDEROAD 15
53
54
55
1
2
3
73
10
#1072
#1071
Hydro
Sideroad 15
WOD-i
Swamp
Hay
Plowed
WT
Pasture
Mixed Meadow
Hay Field
WOD-XX i
(WOD-016)
WOD-XX iii
(WOD-072)
4
56

S5 Fig 1

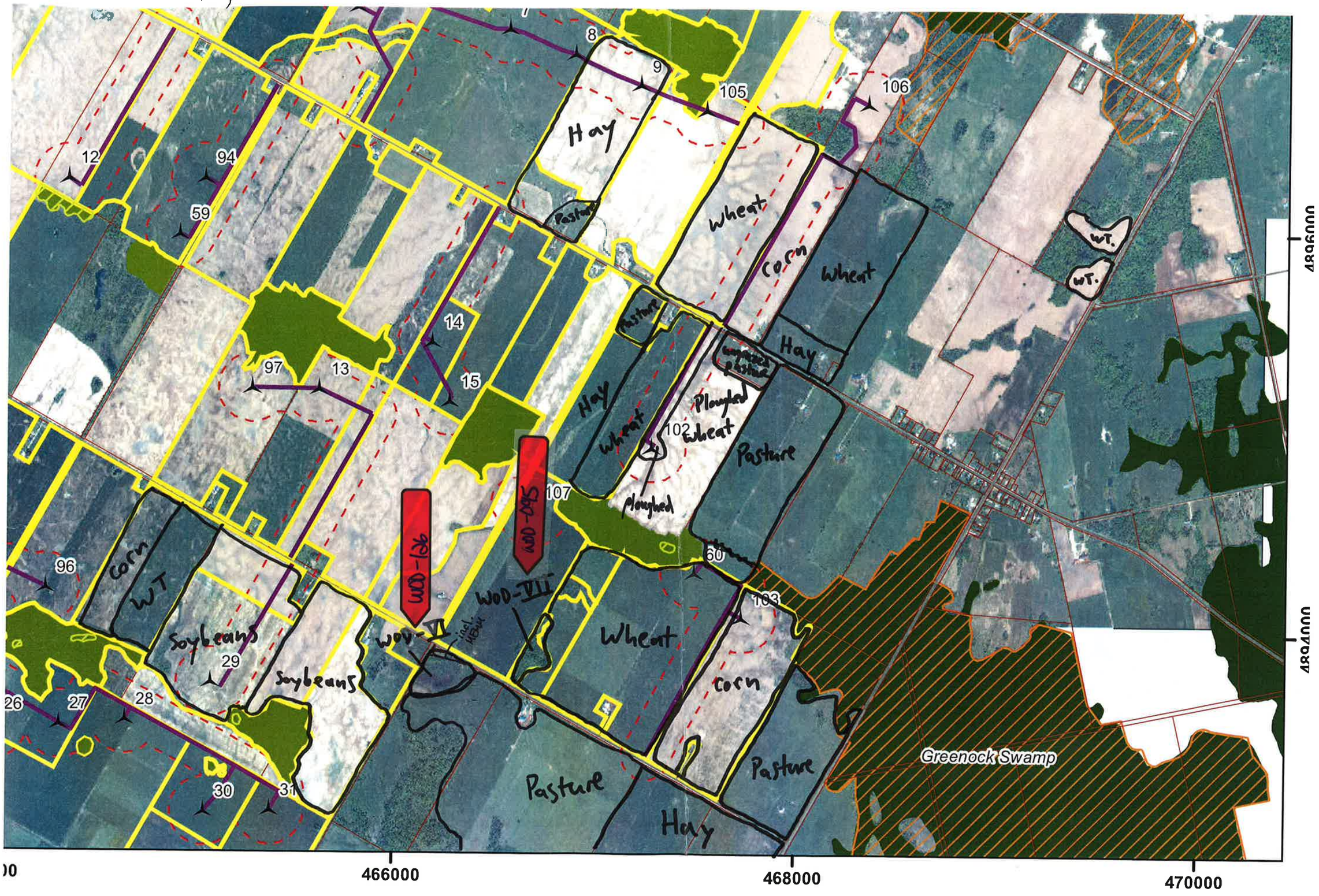

SIDEROAD 15 NORTH
SIDEROAD 20
CONCESSION 9
10
63
61
18
19
20
108
11
91
69
99
92
56
4
12
94
59
21
22
23
95
Ploughed
Alf.
Hay
Alfalfa
WT
Pasture
uncut Pasture
Corn
Ploughed wheat
Pasture
Wheat
Wet pockets
460000
462000
464000

SW Fig 2

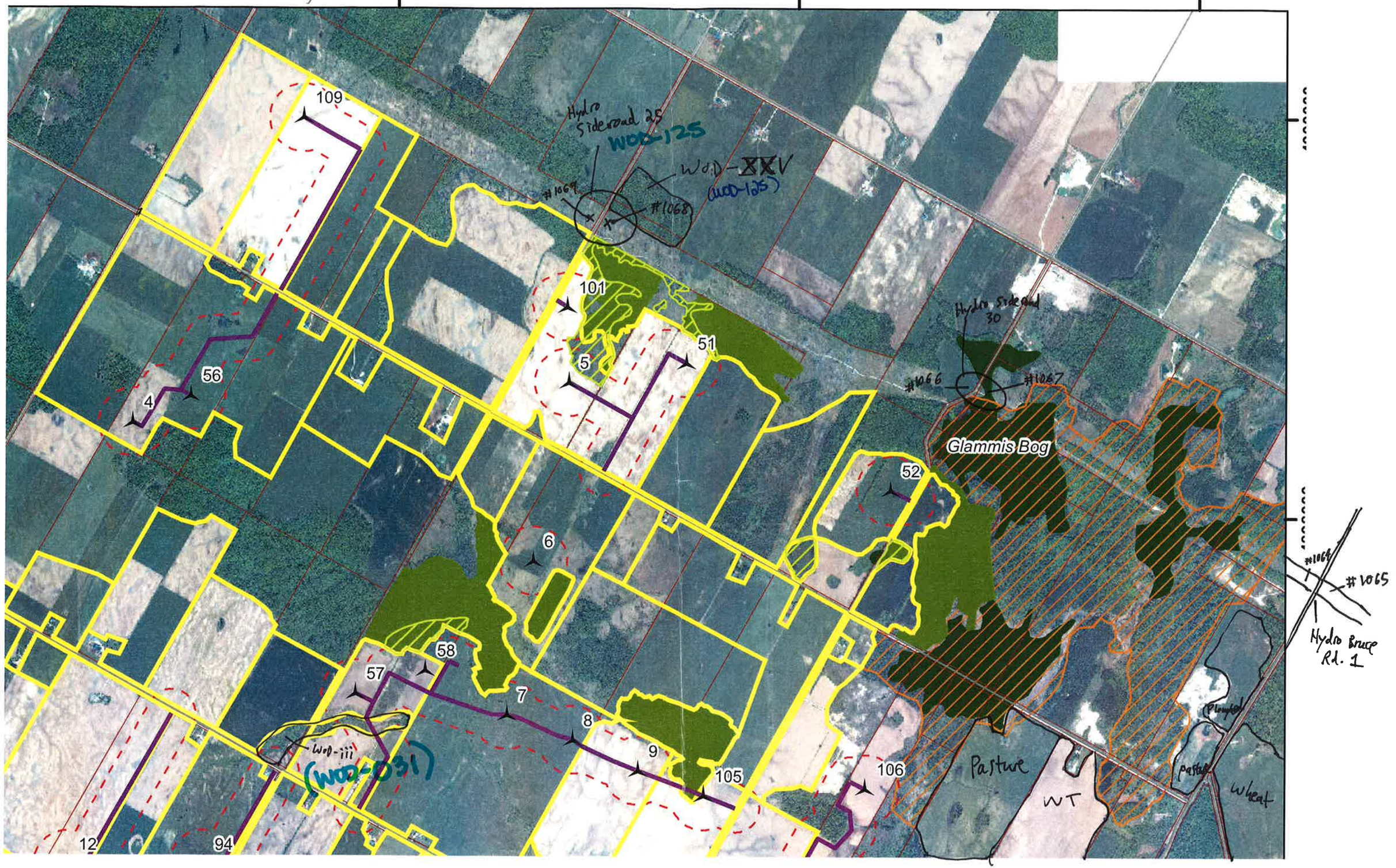


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Fig 2 SE


8
9
105
106
12
94
59
Hay
Pasture
Wheat
Corn
Wheat
WT.
WT.
14
15
97
13
Hay
Wheat
Pasture
Plowed
Wheat
Pasture
102
Plowed
107
WOD-IX
WOD-VII
WOD-VI
incl. WOD-VIII
60
103
96
Corn
WT
Soybeans
29
Soybeans
Wheat
Corn
26
27
28
30
31
Pasture
Hay
Pasture
Greenock Swamp
4989000
4987000
00
466000
468000
470000

NAE Fig 2


109
Hydro Sideroad 25
WOD-125
WOD-XXV
(WOD-125)
#1069
#1068
101
51
5
56
4
Hydro Sideroad 30
#1066
#1067
Glammis Bog
52
6
#1064
#1065
Hydro Bruce Rd. 1
58
57
7
8
9
105
106
WOD-111
(WOD-031)
Pasture
WT
Pasture
Wheat
12
94

NW

Fig 2

462000

464000

466000

4900000

4898000

#1070

#1071

Hydro sideroad 23

55

1

2

3

WOD-109 IV (WOD-085)

WOD-IV (WOD-087)

4

56

101

5

6

11

91

69

99

58

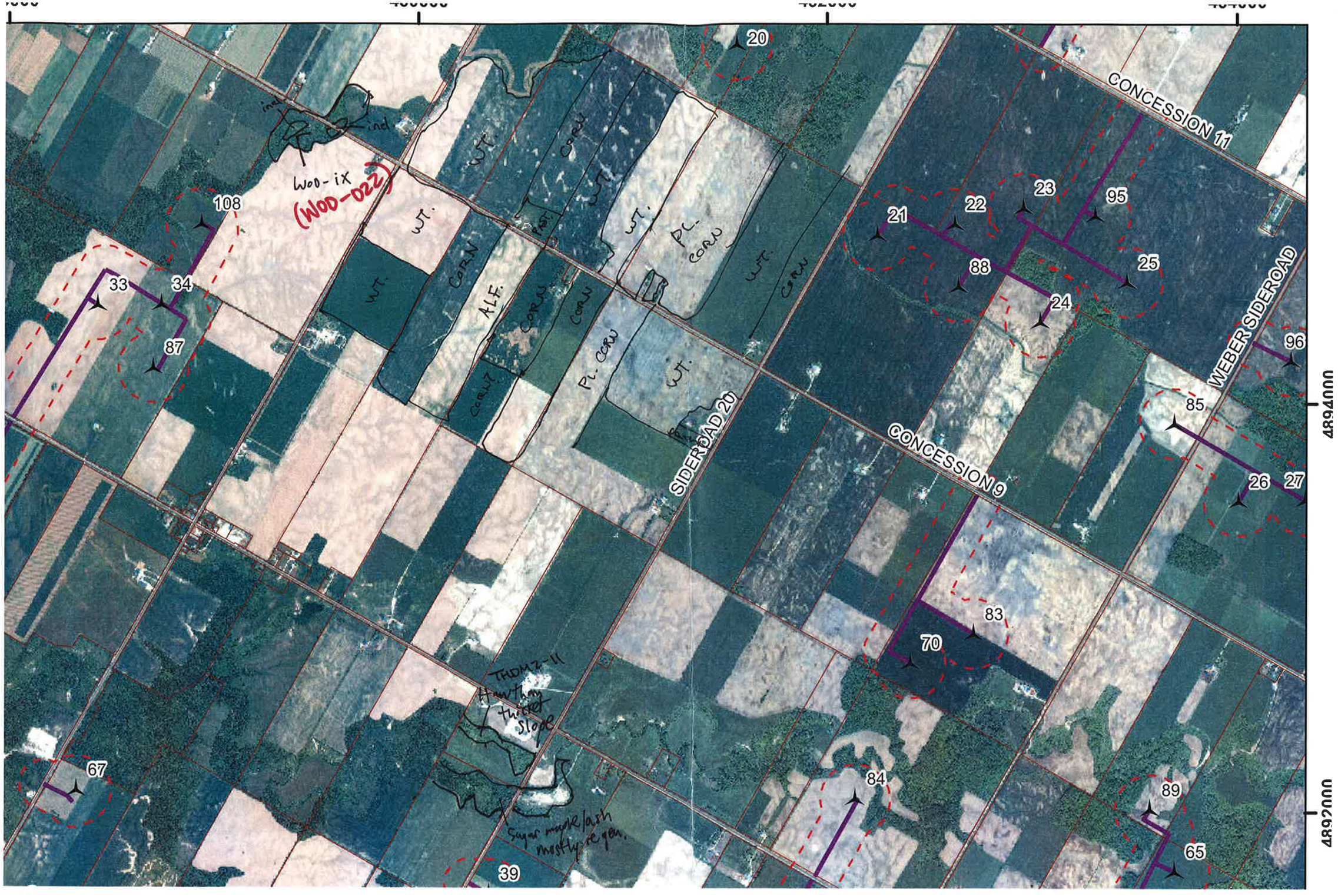
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7

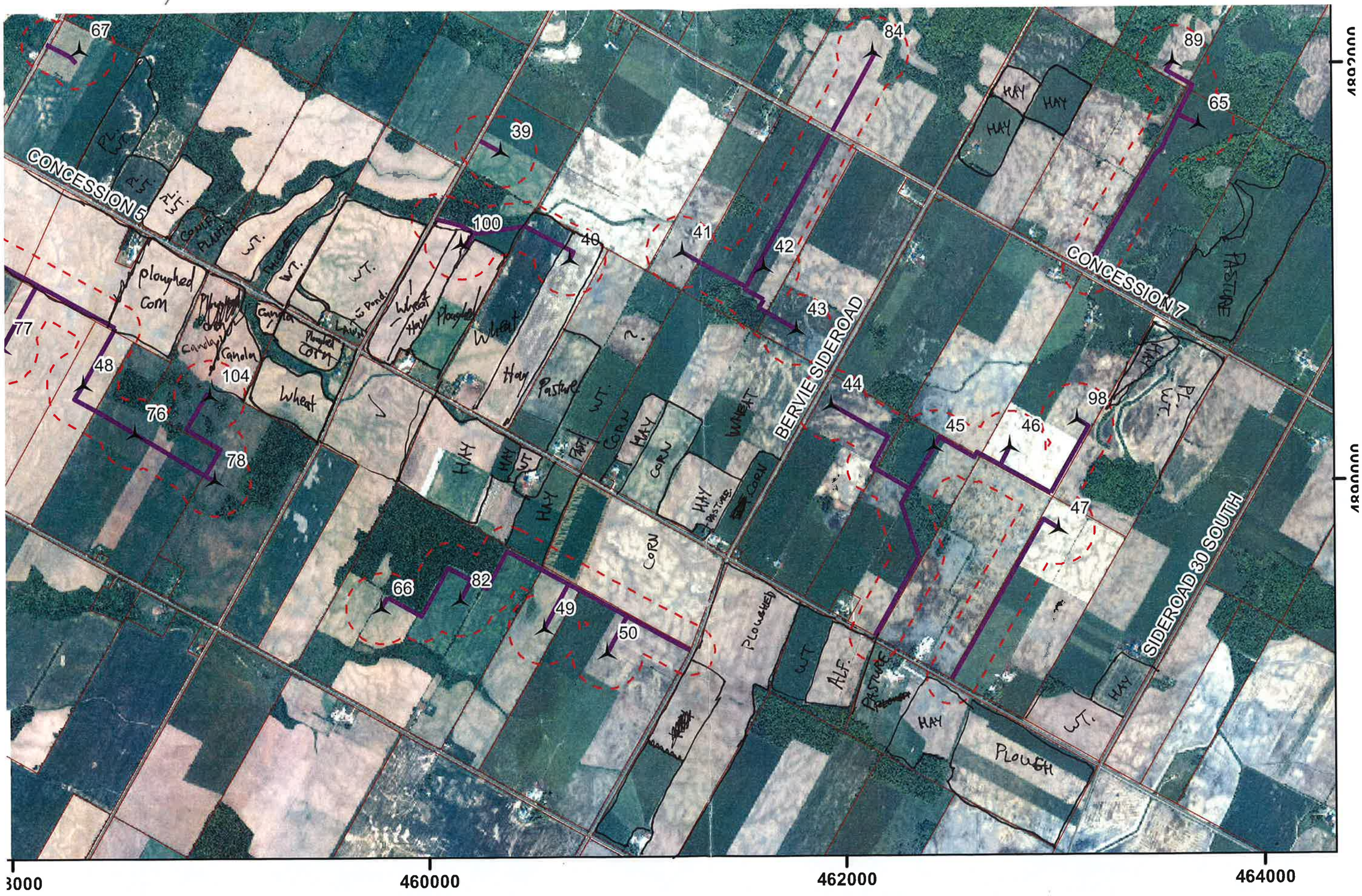
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WOD-iii

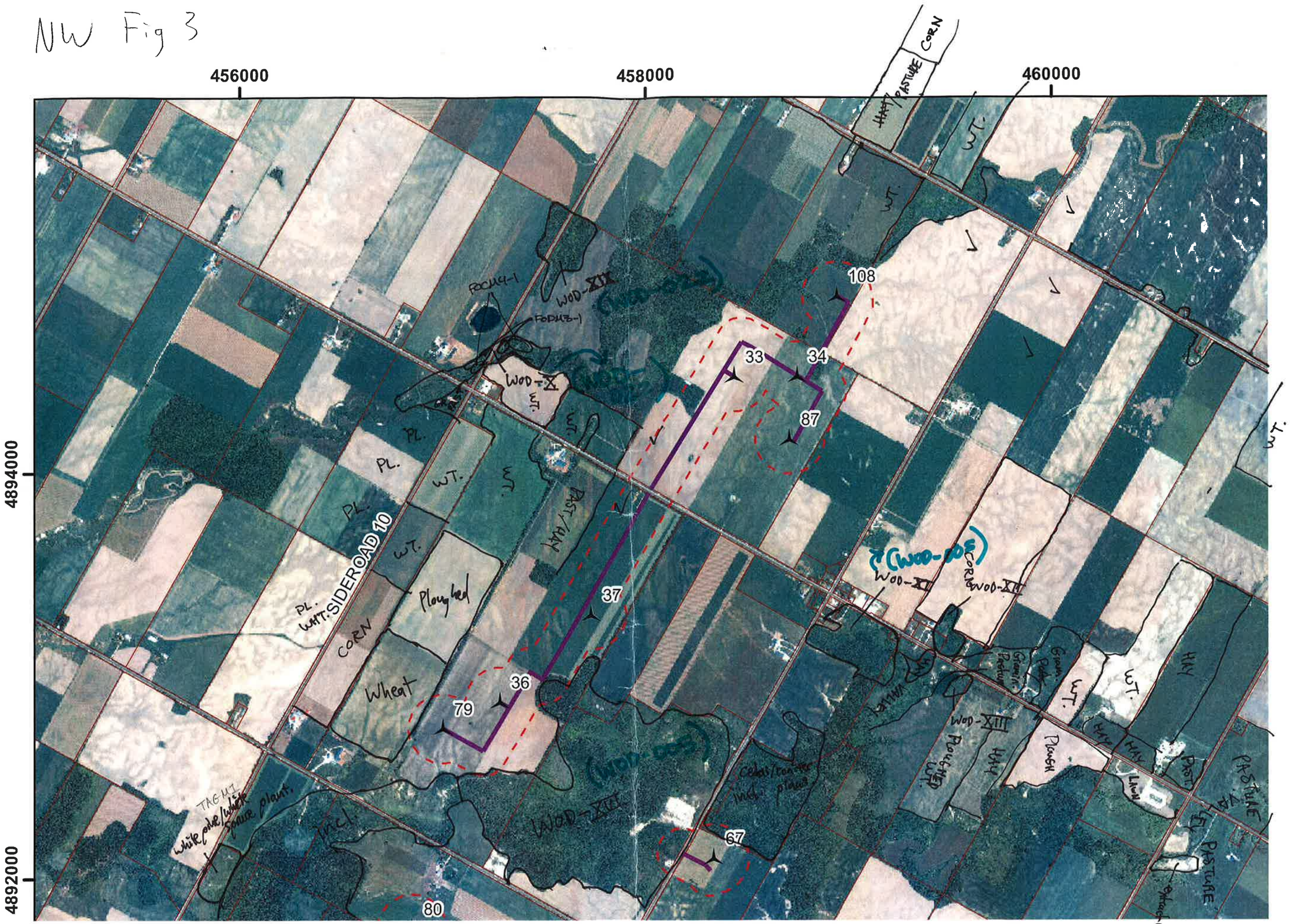
NE Fig 3


CONCESSION 11
WEBER SIDEROAD
SIDEROAD 20
CONCESSION 9
4894000
4892000
20
21
22
23
95
88
25
24
96
85
26
27
108
33
34
87
83
70
84
89
65
67
39
WOD-IX
(WOD-022)
THDM2-11
Hawthorn thicket Slope
Sugar maple/ash mostly regen.

SE Fig 3


CONCESSION 5
CONCESSION 7
BERVIE SIDEROAD
SIDEROAD 30 SOUTH
67
39
100
40
41
42
43
84
89
65
77
48
104
76
78
66
82
49
50
44
45
46
98
47
ploughed
corn
Canola
Wheat
Hay
Pasture
CORN
HAY
WHEAT
ALF.
PLOUGH
PASTURE
460000
462000
464000

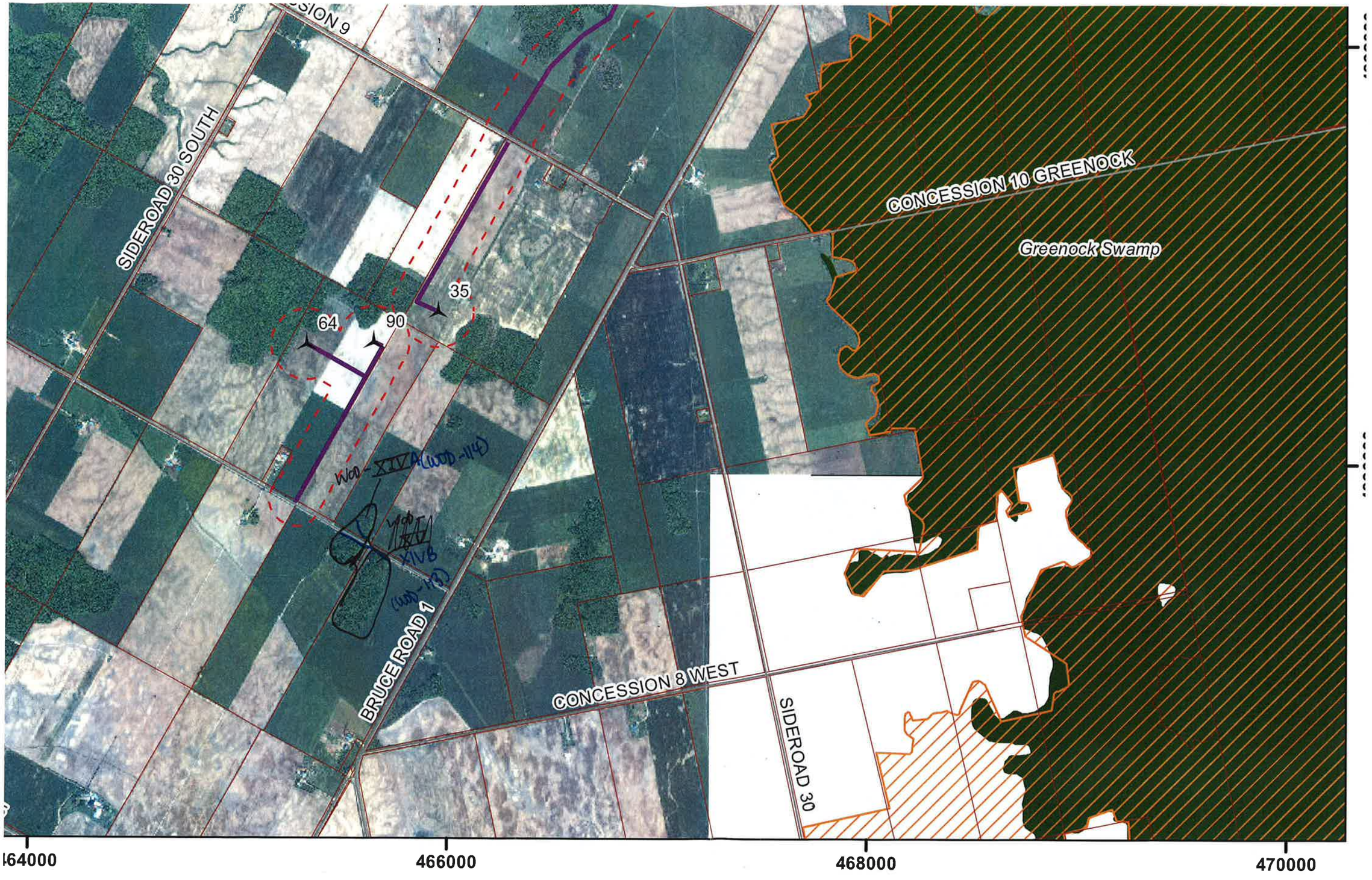
NW Fig 3


456000
458000
460000
4894000
4892000
HAY/PASTURE
CORN
WT.
ROCKY-I
WOD-XII
FoDuB-I
WOD-XI
PL.
WHT.SIDEROAD 10
CORN
Ploughed
Wheat
PASTURE/HAY
108
33
34
87
37
36
79
80
67
(WOD-IOE)
WOD-XII
CORN
WOD-XIII
WHEAT
Grass Pasture
Grain Pasture
HAY
PLOUGHED
PASTURE
Cedar/conifer mix. plant
TAG MT
white pine/white spruce plant.
Incl.

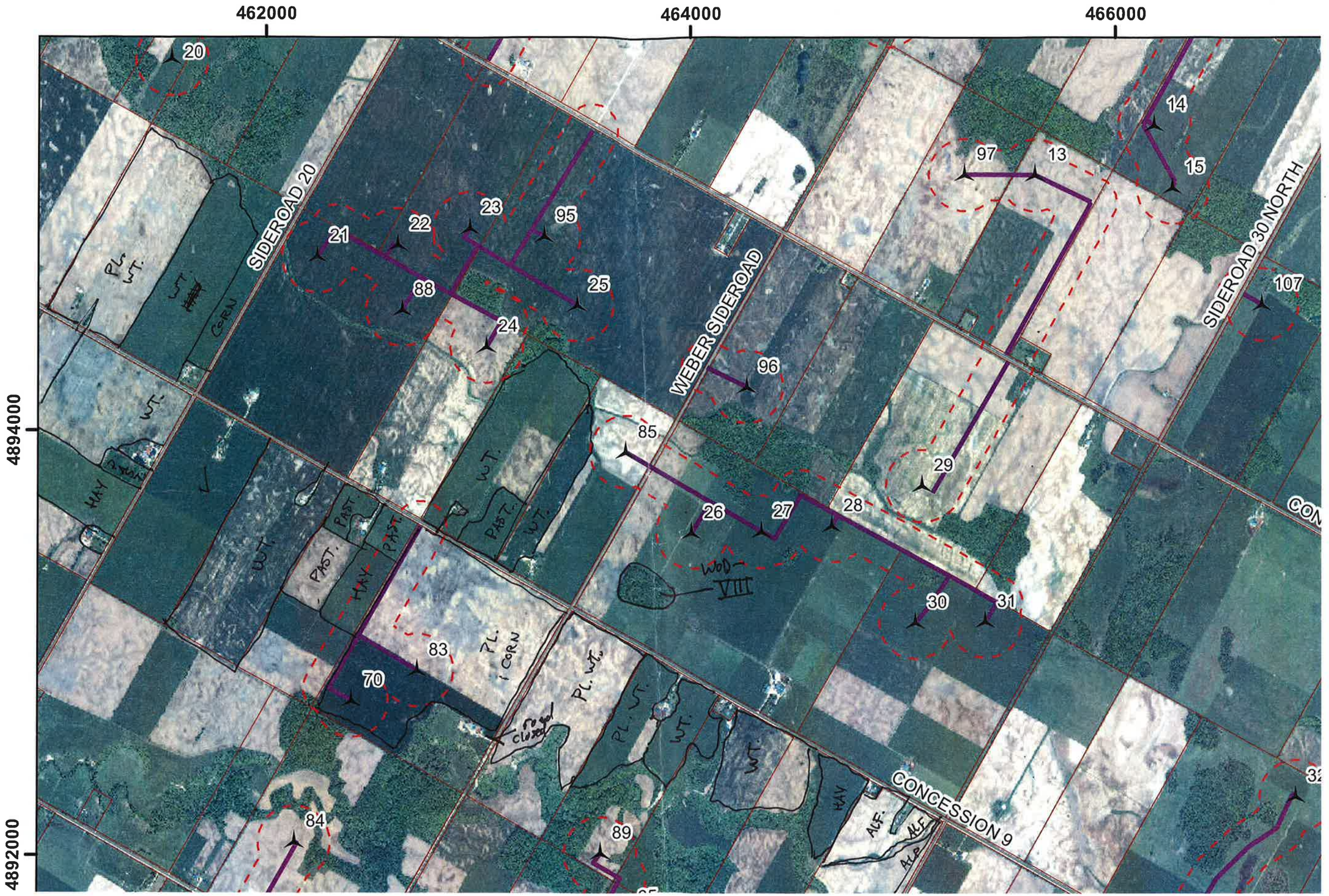
SW Fig 3


4892000
4890000
456000
458000
460000
CONCESSION 5
NORTH LINE
SIDEROAD 15 NORTH
HIGHWAY 9
80
68
77
48
104
76
78
39
100
40
WOD-XXii
(WOD-005)
66
82
49
50
WHEAT
CORN
PLOUGH
PASTURE
Hawthorn
Cattail Marsh
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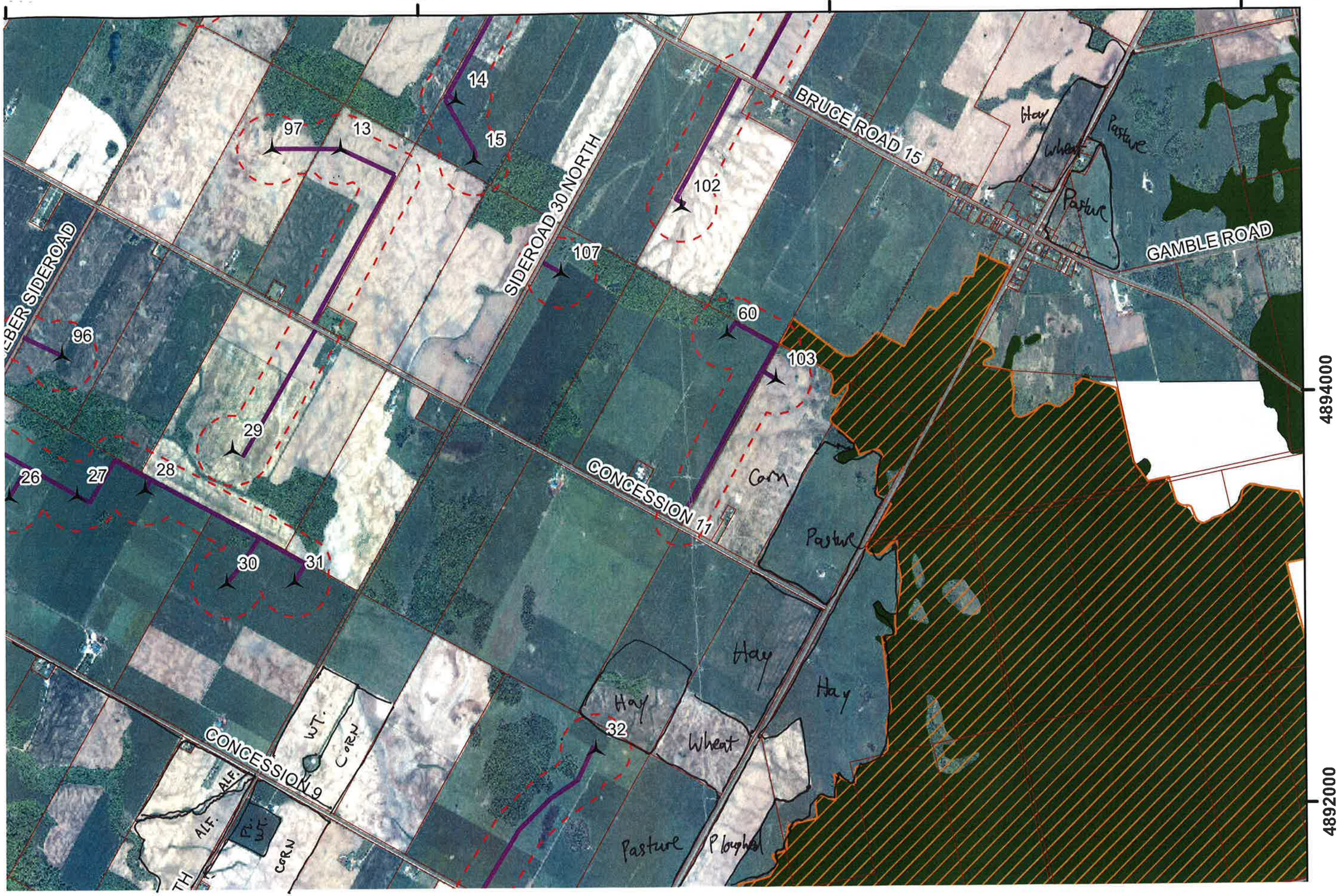
SE Fig 4


SIDEROAD 30 SOUTH
CONCESSION 10 GREENOCK
Greenock Swamp
35
64
90
BRUCE ROAD 1
CONCESSION 8 WEST
SIDEROAD 30
464000
466000
468000
470000

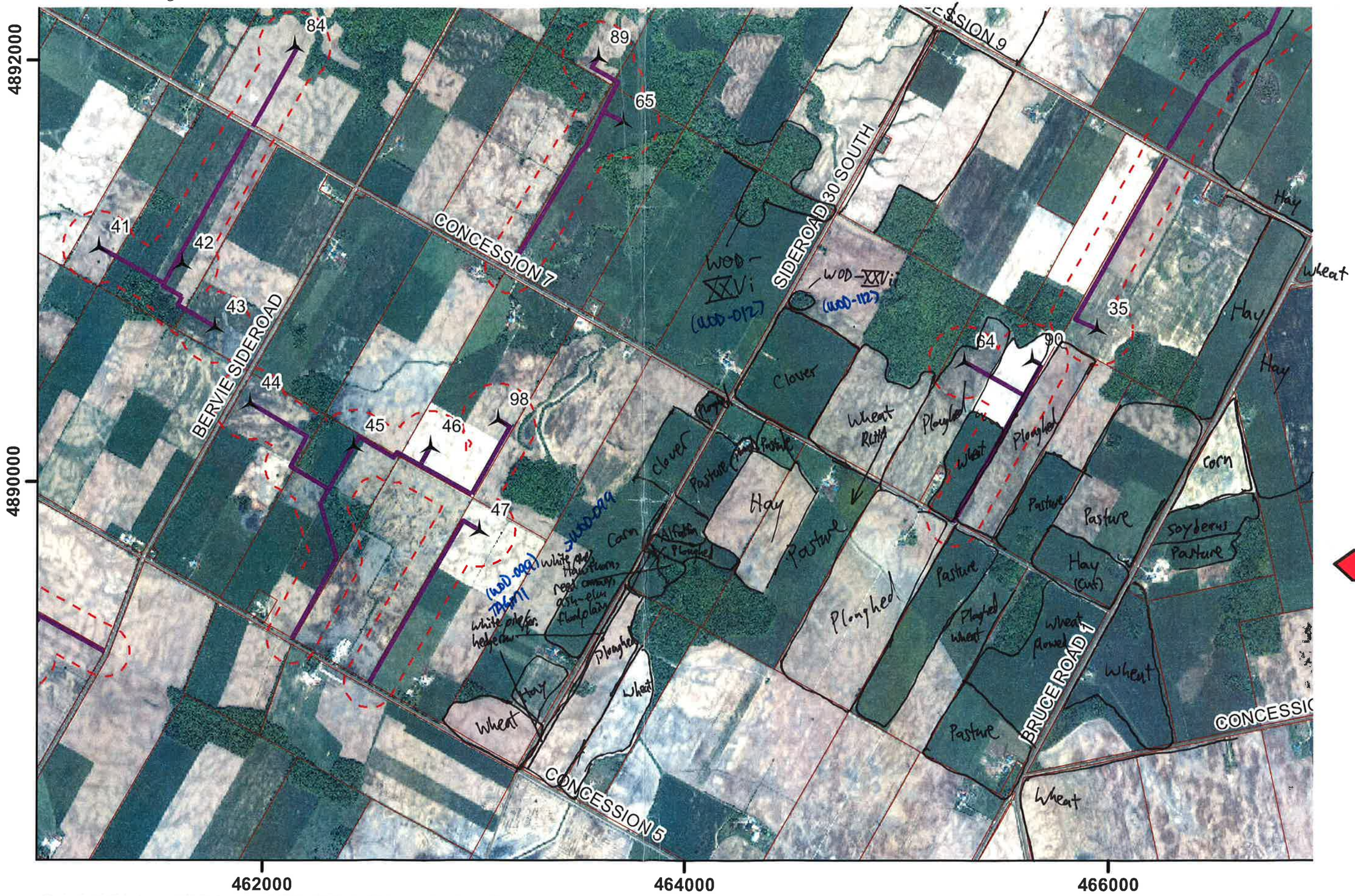
NW Fig 4


462000
464000
466000
4894000
4892000
SIDEROAD 20
WEBER SIDEROAD
SIDEROAD 30 NORTH
CONCESSION 9
20
21
22
23
95
88
24
25
97
13
14
15
107
96
85
29
26
27
28
30
31
83
70
84
89
PL. WT.
WT.
PAST.
HAY
CORN
WOOD
VIII
ALF.

NE Fig 4


BRUCE ROAD 15
SIDEROAD 30 NORTH
GAMBLE ROAD
CONCESSION 11
CONCESSION 9
14
15
97
13
102
107
60
103
96
29
26
27
28
30
31
32
Hay
Pasture
Corn
Wheat
Pasture
Hay
Hay
Hay
Wheat
Pasture
Ploughed
WT.
CORN
ALF.
PL. WT.
CORN
4894000
4892000

SW Fig 4

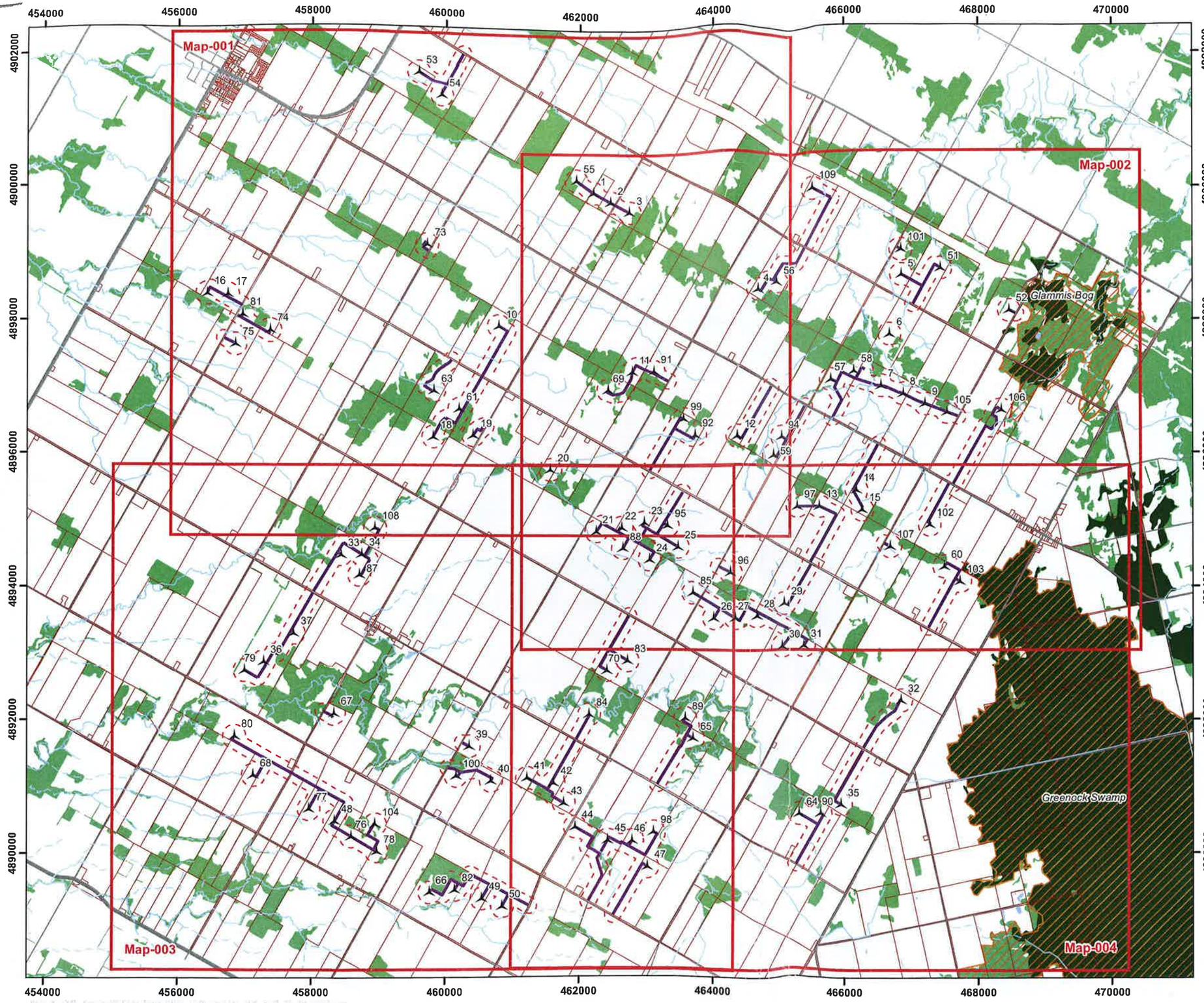


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CLH + NGM NOV 3-4, 2011

Armow Wind Farm

Field Work - Key Map



Legend

- Project Area (Oct 19, 2011)
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Map Extent
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland
- Wooded Area

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Project: 1275
Date: Wednesday, October 26, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:56,000

0 500 1,000 1,500 2,000 Metres

N

CLHTNGM WDNS-4,2011

Armow Wind Farm

Field Map - 1

Legend

- Project Area (Oct 19, 2011)
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

N

0 500 1,000 1,500 2,000 Metres

CLH, NBM Nov 3-4/11

Armow Wind Farm

Field Map - 2

Legend

- Project Area (Oct 19, 2011)
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

W = wheat
ww = winter wheat
p = plowed/tilled
C = corn
S = soy
pa = pasture
hgp = heavily grazed pasture
lgp = lightly grazed pasture
h = established hay
rh = rotational hay
a = alfalfa
rc = red clover

462000 464000 466000 468000 470000

4900000 4898000 4896000 4894000

SIDEROAD 15 · SIDEROAD 15 NORTH · SIDEROAD 20 · SIDEROAD 25 · SIDEROAD 30 · SIDEROAD 30 NORTH · WEBER SIDEROAD

CONCESSION 2 · CONCESSION 9 · CONCESSION 11 · CONCESSION 14

BRUCE ROAD 20 · BRUCE ROAD 15 · BRUCE ROAD 1 · GAMBLE ROAD

Glammis Bog · Greenock Swamp

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 2,000 Metres

Armow Wind Farm

Field Map - 3

Legend

- Project Area (Oct 19, 2011)
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 2,000 Metres

N

Armow Wind Farm

Field Map - 4

Legend

- Project Area (Oct 19, 2011)
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

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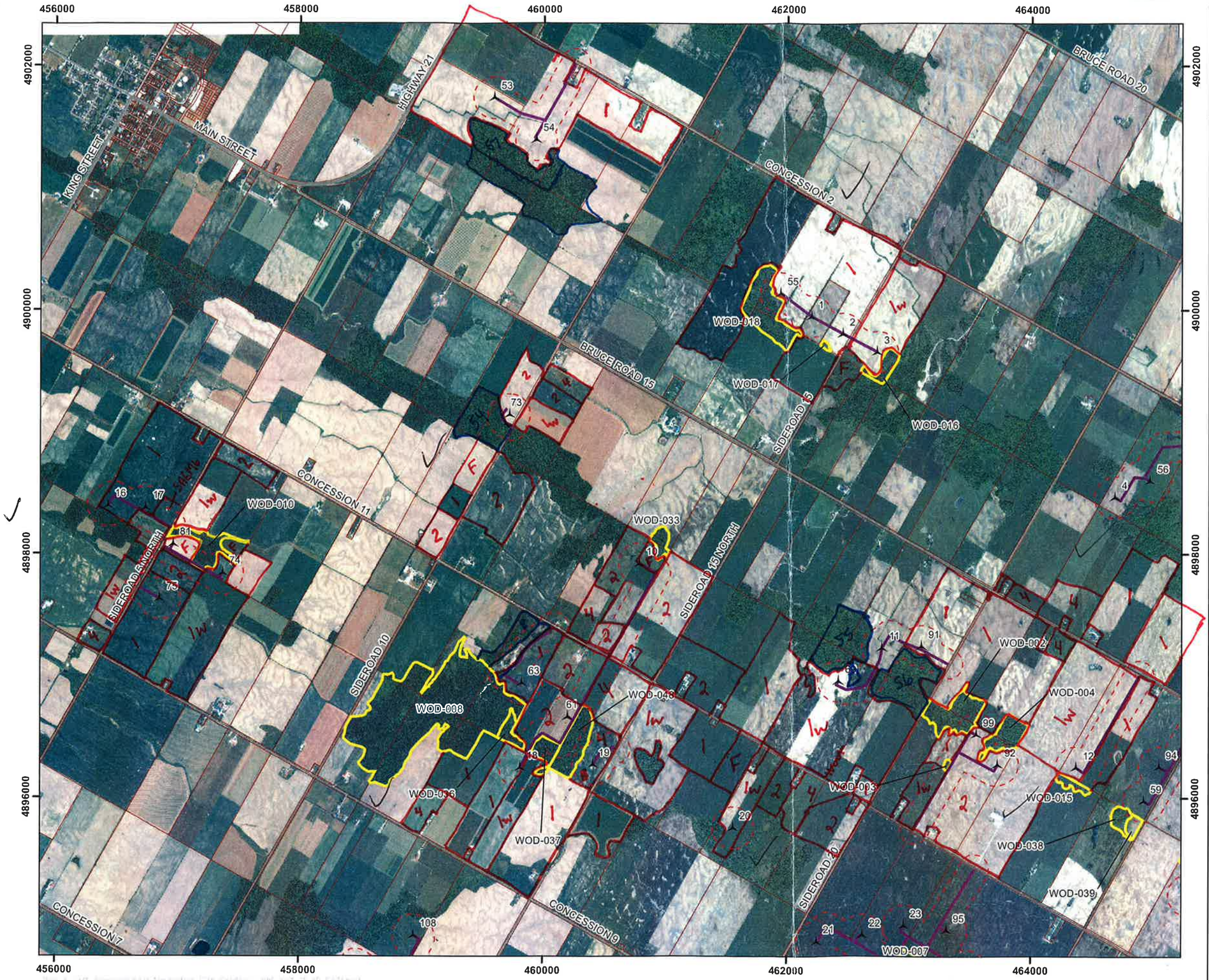
Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 2,000 Metres

N

Land Use Mapping KSJ



Armow Wind Farm

Field Map - 1

Legend

- Project Area (Oct 19, 2011)
- Ecological Land Classification
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

OAGM1(w) = lw
OAGM1 = 1
OAGM2 = 2
OAGM4 = 4
MEGM3 = F
CVR_4 = □ (little boxes around residences)

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

N

0 500 1,000 1,500 2,000 Metres

Armow Wind Farm

Field Map - 2

Legend

- Project Area (Oct 19, 2011)
- Ecological Land Classification
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

462000 464000 466000 468000 470000

4900000 4898000 4896000 4894000

WOD-018 WOD-017 WOD-016 WOD-004 WOD-002 WOD-003 WOD-015 WOD-038 WOD-039 WOD-050 WOD-044 WOD-045 WOD-046 WOD-047 WOD-031 WOD-017 WOD-032 WOD-051 WOD-019 WOD-007 WOD-006 WOD-001 WOD-023 WOD-025 WOD-024

SIDEROAD 15 SIDEROAD 15 NORTH SIDEROAD 25 SIDEROAD 30 SIDEROAD 30 NORTH SIDEROAD 20 WEBER SIDEROAD

CONCESSION 2 CONCESSION 9 CONCESSION 11 CONCESSION 14

BRUCE ROAD 20 BRUCE ROAD 15 BRUCE ROAD 1 GAMBLE ROAD

Glammis Bog Greenock Swamp

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

N

0 500 1,000 1,500 2,000 Metres

Armow Wind Farm

Field Map - 3

Legend

- Project Area (Oct 19, 2011)
- Ecological Land Classification
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

A = CVC_4

D = CVI_1

456000 458000 460000 462000 464000

4894000 4892000 4890000

CONCESSION 11 · CONCESSION 9 · CONCESSION 7 · CONCESSION 5 · NORTH LINE

SIDEROAD 10 · SIDEROAD 20 · BERVIE SIDEROAD · SIDEROAD 30 SOUTH · SIDEROAD 15 NORTH · HIGHWAY 9

WOD-001 · WOD-005 · WOD-006 · WOD-007 · WOD-012 · WOD-013 · WOD-014 · WOD-020 · WOD-027 · WOD-028 · WOD-029 · WOD-034 · WOD-035 · WOD-040

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 2,000 Metres

N

Armow Wind Farm

Field Map - 4

Legend

- Project Area (Oct 19, 2011)
- Ecological Land Classification
- Proposed Turbine (L06)
- Access Roads
- Highway
- Primary Road
- Secondary Road
- Parcel Fabric
- ANSI, Life Science
- Provincially Significant Wetland

462000 464000 466000 468000 470000

4894000 4892000 4890000

WOD-007 WOD-038 WOD-039 WOD-050 WOD-051 WOD-019 WOD-006 WOD-001 WOD-025 WOD-023 WOD-024 WOD-009 WOD-027 WOD-040 WOD-012 WOD-013 WOD-014 WOD-020 WOD-041 WOD-030

SIDEROAD 20 WEBER SIDEROAD SIDEROAD 30 NORTH BRUCE ROAD 15 GAMBLE ROAD CONCESSION 11 CONCESSION 9 CONCESSION 7 CONCESSION 5 SIDEROAD 30 SOUTH BERVIE SIDEROAD BRUCE ROAD 1 CONCESSION 8 WEST SIDEROAD 30 CONCESSION 10 GREENOCK

Greenock Swamp

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Project: 1275
Date: Tuesday, November 01, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 2,000 Metres

N

Jan 23 - 26, 2012
KSW, KNP

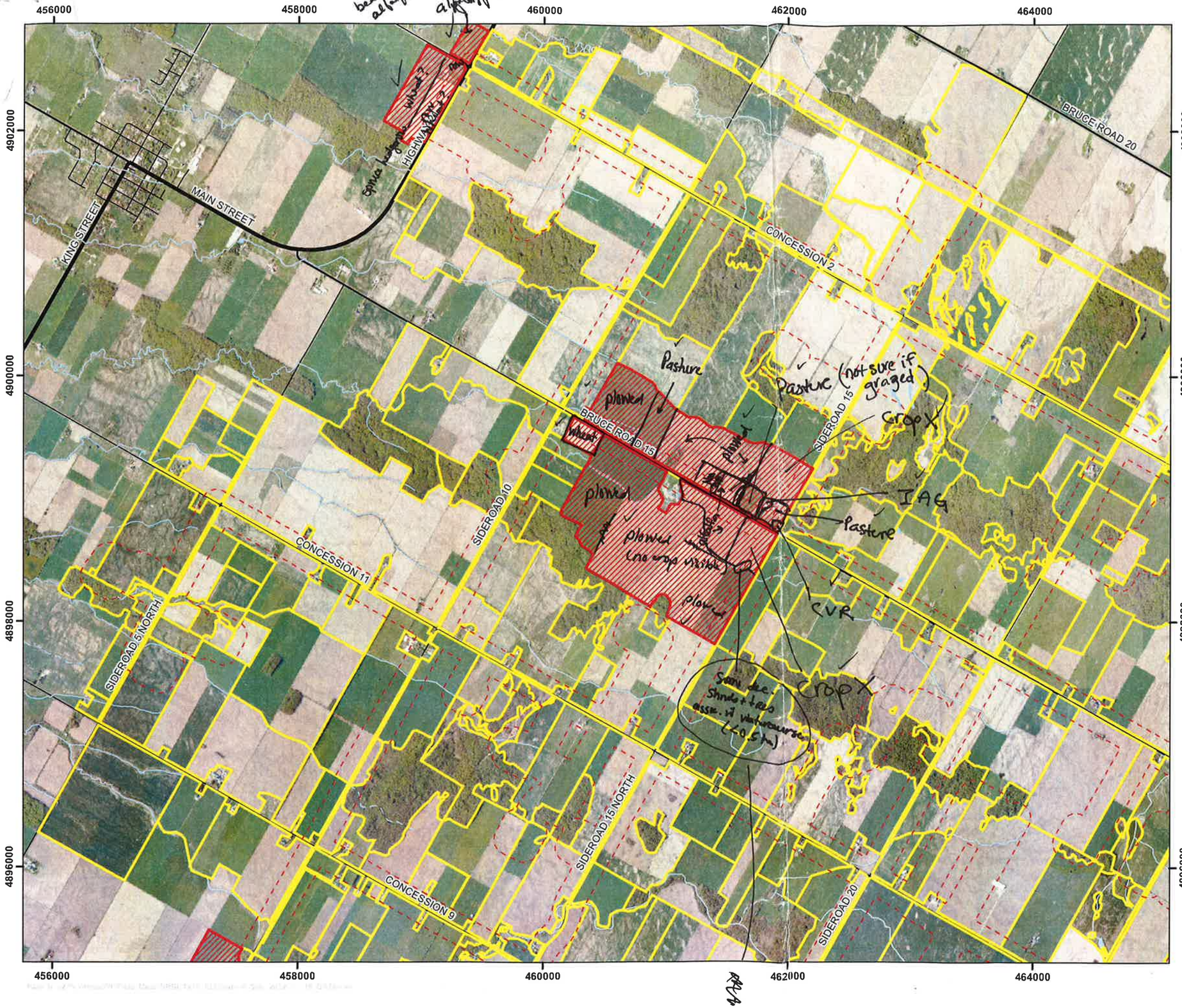
Armow Wind Farm

ELC - 1

Legend

- Project Area (120m)
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Highway
- Primary Road
- Secondary Road
- Waterbody

Wheat = ONAM1(W)
alfalfa = ONAM2
plowed = ONAM1
pasture = ONAM4
crop X = ONAM1



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Project: 1275 Date: Wednesday, January 18, 2012	NAD83 - UTM Zone 17 Size: 11x17" 1:30,000

0 500 1,000 1,500 Metres

N



Armow Wind Farm

ELC - 2

Legend

- Project Area (120m)
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Highway
- Primary Road
- Secondary Road
- Waterbody

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Project: 1275
Date: Wednesday, January 18, 2012

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 Metres

N

Armow Wind Farm

ELC - 3

Legend

- Project Area (120m)
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Highway
- Primary Road
- Secondary Road
- Waterbody

hay = ORSM2
Corn = ORBM1

graminoid gc. w bare soil. Pasture? DAGM1

dumped equip + soil + bulrush pond

(MEADOW ME) can't be seen from road

hay?

Extend FOCM2-2 polygon

plantation

Corn

456000 458000 460000 462000 464000

4894000 4892000 4890000 4888000

SIDEROAD 10
SIDEROAD 20
CONCESSION 11
CONCESSION 9
WEBER SIDEROAD
CONCESSION 5
NORTH LINE
SIDEROAD 15 NORTH
HIGHWAY 9
BERVIE SIDEROAD
CONCESSION 7
SIDEROAD 30 SOUTH

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Project: 1275
Date: Wednesday, January 18, 2012

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 Metres

N

462000 464000 466000 468000

4892000 4890000 4888000 4886000

SIDEROAD 20
CONCESSION 9
SIDEROAD 30 SOUTH
CONCESSION 7
BERVIE SIDEROAD
CONCESSION 10 GREENOCK
SIDEROAD 30
CONCESSION 8 WEST
CONCESSION 5
KINCARDINE KINLOSS
BRUCE ROAD 1
CONCESSION 6
NORTH LINE
NORTHLINE AVENUE
YOUNGS ROAD
HIGHWAY 9

rotational hay
Same
Pic 100-010
-011
-012
Suspect hay or (maybe alfalfa) other perenial row crop
Corn

Armow Wind Farm

ELC - 4

Legend

- Project Area (120m)
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Highway
- Primary Road
- Secondary Road
- Waterbody

corn = 0e6m1
rotational hay = 0ne3m1(h)

Natural Resource Solutions Inc.
Aquatic, Terrestrial and Wetland Biologists

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Imagery provided by: Golder Associates, 2011

Project: 1275
Date: Wednesday, January 18, 2012

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

0 500 1,000 1,500 Metres

N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnaw	1275
Polygon: Con 5/SR305 HR1	
UTM:	
Date: Jan 8 2012	Time: 16:15
Surveyor(s): CLH	
Weather: -1°C, 70% CC, Wind 2/SE No precip.	

Community Classification

Vegetation Type:	TAGMS Fencerow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Hedgerow

Cover		Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	X Mixed
X Treed	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	4	balsam poplar > ash sp.
2	Sub-canopy	3	4	white cedar > balsam poplar > ash sp.
3	Understorey	3 4	2	white cedar > white spruce
4	Groundcover	4		not assessed

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnaw	1275
Polygon: Con 5/SR305 HR1	
UTM:	
Date: Jan 8 2012	Time: 16:15
Surveyor(s): CLH	
Weather: -1°, 70% CC, Wind 2/SE No precip	

Layers: 1=canopy (>10) 2=sub-canopy (2-10) 3=understorey (0.5-2) 4=ground layer (<0.5)

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
balsam poplar	O	O			
ash sp.	O	O			
planted { white cedar		O	O		
planted { white spruce			R		

Species	Layer 1	2	3	4	Sample
		•			

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment #.

*Not associated w/ woodlands

Jan 8 2012
CLH

Concession 5 / Sideroad 30 S



Map centre: 44° 08' 49.0" N, 81° 26' 55.9" W

Map created: January 9, 2012

0 100 200 300 400 m

Scale: 1:6,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

HRI = TAGMS

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	1275
Polygon: Con 7/SR10 HR1	
UTM:	
Date: Jan 8 2012	Time: 17:05
Surveyor(s): CLH	
Weather: -1°C, CC 60%, Wind 2/SE No precip.	

Community Classification

Vegetation Type:	TAGMB Fencerow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	X Plantation

Cover		Site	Plant Form			
Open	Shrub	Open Water	Shallow Water	Plankton	Forb	X Coniferous
Shrub		X Surficial Dep.	Submerged	Lichen	Mixed	
X Treed		Bedrock	Floating-Lvd.	Bryophyte		
			Graminoid	Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	White spruce >> white cedar
3	Understorey	4	0	—
4	Groundcover	5		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	O	< 10	A	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	Young	X Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: T10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
White spruce		D									
White cedar		O									

Other Notes (Landowner Contact, General Notes, etc.)

★ Not associated w/ woodlands

Site:	Armow 1275
Polygon:	Con 7/SR10 HR2
UTM:	
Date:	Jan 8 2012 Time: 17:07
Surveyor(s):	CLH
Weather:	-19, 60%CC, wind 2/SE No precip

Community Classification

Vegetation Type:	TAGM5 Fenceow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	6	—
1	Canopy	2	0	—
2	Sub-canopy	3	4	Manthorn sp., TT ash sp.
3	Understorey	NS	0	—
4	Groundcover	NS		not visible

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

Size Class Analysis	A	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: >10 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
hawthorn sp.		O			
ash sp.		O			

Species	Layer 1	2	3	4	Sample

Other Notes (Landowner Contact, General Notes, etc.)

lacks structural variation of naturalized fenceow.
*Not associated w/ woodlands

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arnow	1275
Polygon: HR 3	
UTM:	
Date: Jan 8 2012	Time: 17:10
Surveyor(s): CLH	
Weather: -1°C, CC 60%, Wind 2/SE No precip.	

Community Classification

Vegetation Type:	TAGMS Cenesrow
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
[X] Terrestrial	[ ] Organic	[ ] Lacustrine	[ ] Talus	[ ] Lake	[ ] Barren
[ ] Wetland	[X] Mineral Soil	[ ] Riverine	[ ] Crevice/Cave	[ ] Pond	[ ] Meadow
[ ] Aquatic	[ ] Parent Min.	[ ] Bottomland	[ ] Alvar	[ ] River	[ ] Prairie
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thicket
History	[ ] Basic Bedrock	[ ] Valley Slope	[ ] Beach/Bar	[ ] Marsh	[ ] Savannah
[ ] Natural	[ ] Carb. Bedrock	[ ] Tableland	[ ] Sand Dune	[ ] Swamp	[ ] Woodland
[X] Cultural		[X] Roll. Upland	[ ] Bluff	[ ] Fen	[ ] Forest
	Site	[ ] Cliff		[ ] Bog	[X] Plantation

Cover		Plant Form		
[ ] Open	[ ] Open Water	[ ] Plankton	[ ] Forb	[ ] Coniferous
[ ] Shrub	[X] Shallow Water	[ ] Submerged	[ ] Lichen	[X] Mixed
[X] Treed	[X] Surficial Dep	[ ] Floating-Lvd.	[ ] Bryophyte	
	[ ] Bedrock	[ ] Graminoid	[ ] Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	3	red maple
2	Sub-canopy	3	4	white cedar = white spruce
3	Understorey	4/5	0	—
4	Groundcover	6/7		not visible

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	A	< 10	R	10 - 24	O	25 - 50	M	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer		Young	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 710 2-10 0.5-2 <0.5
1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

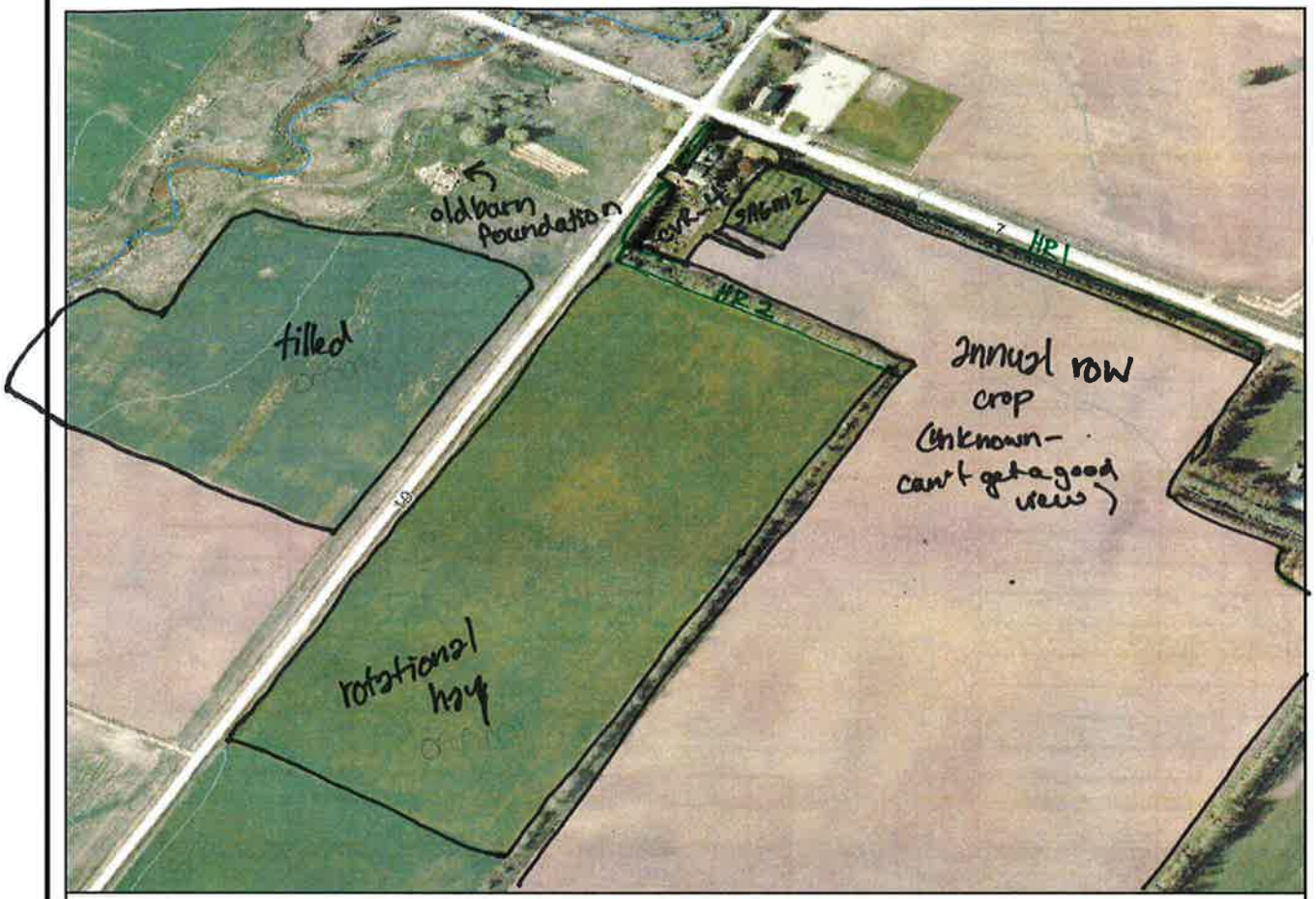
Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
white cedar		O									
white spruce		O									
red maple	O										

Other Notes (Landowner Contact, General Notes, etc.)

Roadside Assessment.
*Not associated w/ wetlands

Jan 8 2012
CM

Concession 7 and Sideroad 10



Map centre: 44° 11' 56.3" N, 81° 32' 11:6" W

Map created: January 9, 2012

0 100 200 300 400 m

Scale: 1:6,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Rivers and Streams 20K
- Lakes and Ponds 20K
- Province

HR1+HR2 = TNGMS
rotational hay = ONGMJ
filled = ONGMJ
annual row crop = ONGMJ

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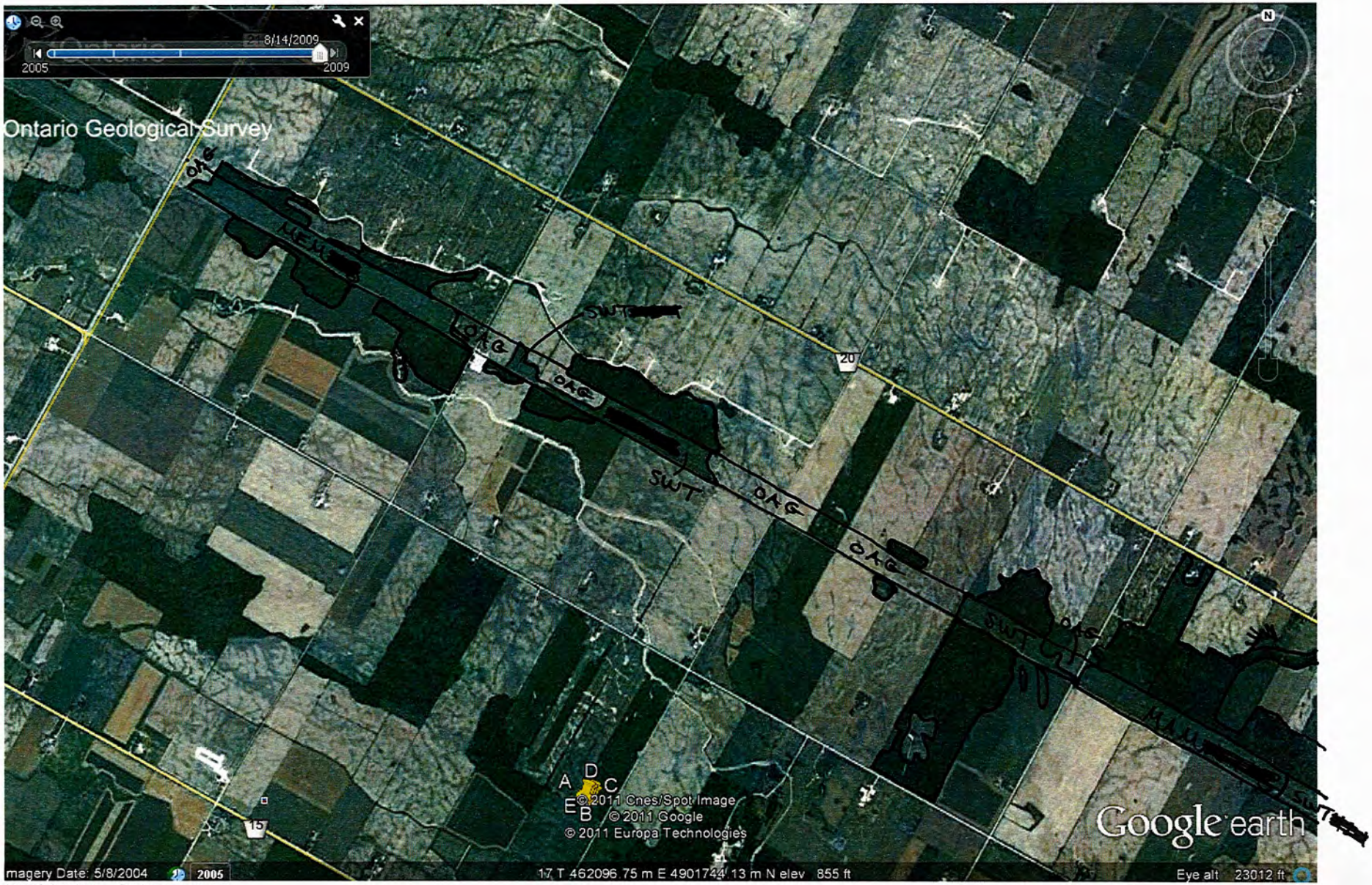
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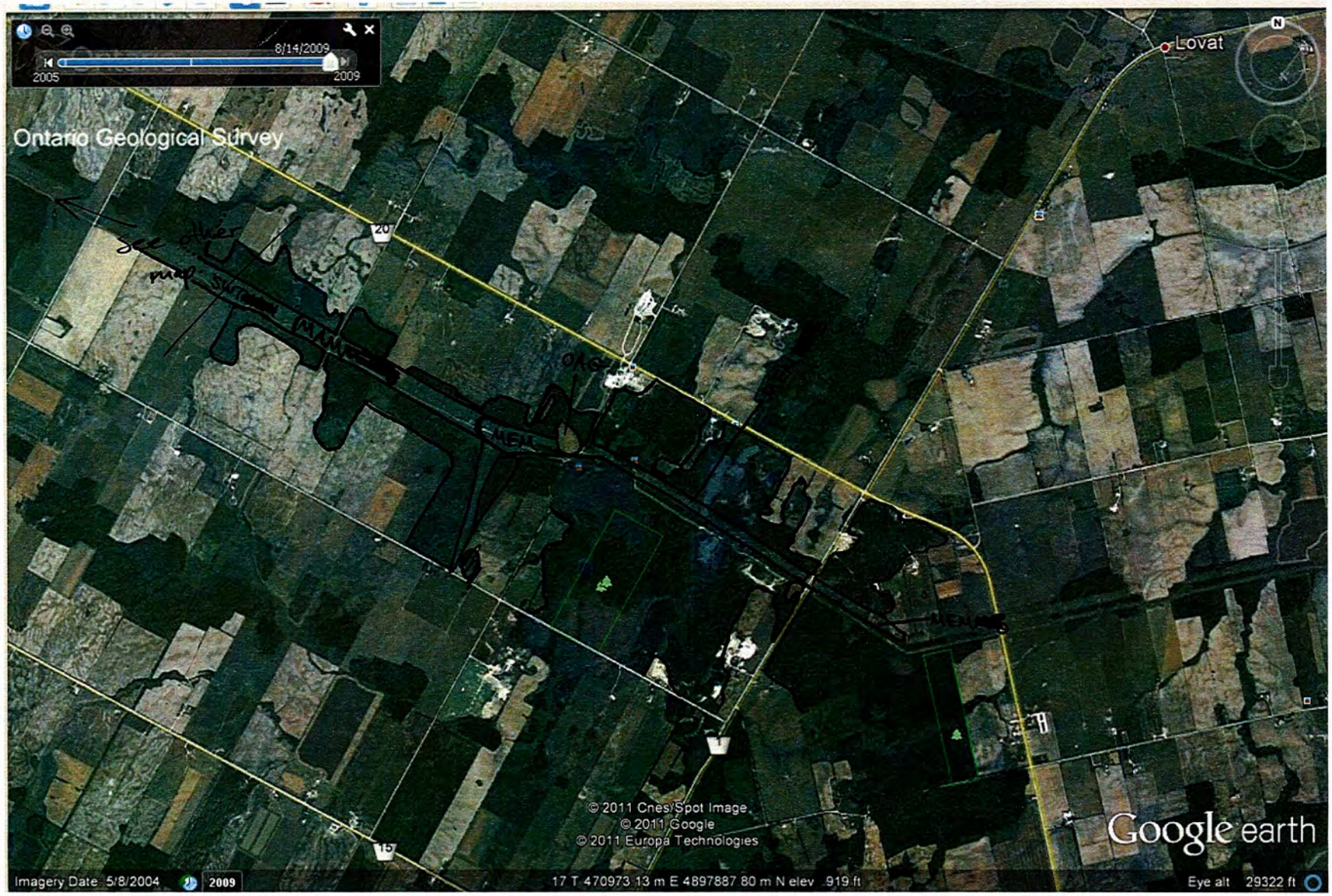
Photo of old barn foundation: DSC_0099

1275 Armow Hydro Corridor Vegetation ELC



HWY 21 to Sideroad 20

Sideroad 20 to Hwy 1



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armow
Polygon:	Hydro - Sideroad 25 Photo: 100-1068 (E) 100-1069 (W)
UTM:	✱ W00 - 125 ✱
Date:	Nov 11 2011 Time: 12:25
Surveyor(s):	PWD NGM
Weather:	

Community Classification

	Vegetation Type:	MAMM1-3 Reed Canary Graminoid Min Mead Marsh
X	Inclusion:	SWTM2-1 Red Osier Min Dec. Thicket Swamp.
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	X Marsh	Savannah
X Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
Open	Open Water	Plankton	X Forb	Coniferous
X Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd.	Bryophyte	
		X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	-	-	-
2	Sub-canopy	3	1	
3	Understorey	6	4	
4	Groundcover	7	2	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	0	< 10	N	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age	Pioneer	X Young	Mid-age	Mature	Old Growth

Modified ELC Community Description

Soils	1	2	3
Position:			
Aspect:			
%			
Type:			
Class:			

Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture				
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles			
	Gley			
	Bedrock			
	Water table			
	Carbonates			
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon:

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total:			
Basal Area			
Snags			

NOTES:

Reed Canary Grass
Winterberry
Wild Raisin
Salix sp.
Crataegus sp.
Red Osier Dogwood
Maple sp.

• bird ne

✱ Note additional hydro corridors (from roadside). These are all MEMM3 (Mixed Meadow)

Hydro - Sideroad 20 Photo: 100-1070 (W) 100-1071 (E) → Meadow as per Sideroad 30 (MEMM3)
Hydro - Sideroad 15 Photo: 100-1072 (E) 100-1073 (W) → Meadow as per Sideroad 30 (MEMM3)
Hydro - Sideroad 10 Photo: 100-1074 (W) 100-1075 (E) → Soybean field to west.
↳ Mixed meadow as per SRBO/BR1 (MEMM3)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Arnow
Polygon:	Hydro - Sideroad 30 Photo: 100-1066 (W) 100-1067 (E)
UTM:	
Date:	Nov 11 2011 Time: 12:10
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:		MEMM3 Dry-Fresh Mixed Meadow
	Inclusion:	SWTM2-3 Grey Dogwood Mineral Thicket Swamp
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	X Forb	Coniferous
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd.	Bryophyte	
		X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	-	-	-
2	Sub-canopy	3		
3	Understorey	6		
4	Groundcover	7		

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	0	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___ of ___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

	Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Meadow	Can. Goldenrod											
	Orchard Grass											
	Red Clover											
	Wild Carlot											
Swamp	Grey Dogwood											
	E. White Cedar											
	Red Osier Dogwood											
	B.L. Cattail											
	Poplar sp.											
	White Elm.											

Wildlife and Other Notes

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	1275 Arnow
Polygon:	Hydro Bruce Rd 1 Photo 100-1064(W) 100-1065(E)
UTM:	
Date:	Nov. 11, 2011 Time: 12:00
Surveyor(s):	PWD NGM
Weather:	1°C. light snow, 95% cc wind 2

Community Classification

Vegetation Type:		MEMM3 Dry-Fresh Mixed Meadow
X	Inclusion:	FODM5-8 Dry-Fresh Sugar Maple - Wh Ash Dec. Forest
	Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	Mineral Soil	Riverine	Crevice/Cave	Pond	X Meadow
Aquatic	Parent Min.	Bottomland	Alvar	River	Prairie
	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
History	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X Cultural		X Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Plant Form		
X Open	Open Water	Plankton	X Forb	Coniferous
Shrub	Shallow Water	Submerged	Lichen	Mixed
Treed	X Surficial Dep.	Floating-Lvd.	Bryophyte	
	Bedrock	X Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	-	-	-
2	Sub-canopy	3	1	
3	Understorey	6	4	
4	Groundcover	7	3	

HT Codes: 1: >25m 2: 25 - 10m 3: 10 - 2m 4: 2 - 1m 5: 1 - 0.5m 6: 0.5 - 0.2m 7: <0.2m

Cover Codes: 0:none 1: 0 - 10% 2: 10 - 25 3: 25 - 60% 4: >60%

Size Class Analysis	0	< 10	0	10 - 24	N	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	N	10 - 24	N	25 - 50	N	> 50

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

Community Age		Pioneer	X	Young		Mid-age		Mature		Old Growth

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Modified ELC Community Description Page ___ of ___

PLANT SPECIES LIST

Site:	
Polygon:	
UTM:	
Date:	Time:
Surveyor(s):	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

Abundance Codes: R=rare O=occasional A=abundant D=dominant

	Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample
Treed Incl.	Sugar Maple											
	White Ash											
	White Birch											
	White Elm											
	Nannyberry											
Meadow	Wild Carrot											
	Grey Goldenrod											
	Can. Goldenrod											
	E. White Cedar											

Wildlife and Other Notes

Egg Mass Surveys

Project #: 1275A

Project Name: Armow WF Observers NGM, AMD

DD/MM/YY 14/03/12 Time (24hr): 16:00 - 16:30 (30 min)

Weather

Air Temp. 14 °C Wind Speed 2 Wind Direction S

Cloud Cover 0 % Cloud Height NA High ☐ Med ☐ Low ☐

Precipitation — Visibility High ☒ Med ☐ Low ☐

***Please mark location of egg masses observed on separate field map, indicating observation #

Pond #	Obs. # (mark on map)	Photo #	Water Temp	pH	Water Depth (cm)	Species	Size of Egg Mass (cm)	# of Egg Masses	Habitat Description/Comments (i.e. what are eggs attached to)
AWO-001	3	0844/0845	17°C	7.4	15-30	NA	—	—	Many possible egg attachment sites (available amongst emergent vegetation (cattails) — No egg masses observed.

Egg Mass Surveys

Project #: 1275A

Project Name: Amaw WF (2012) Observers NGM, AMD

DD/MM/YY 14/03/12 Time (24hr): 13:30 - 14:15 (45 min)

Weather

Air Temp. 14 °C Wind Speed B3 Wind Direction S

Cloud Cover 5 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation — Visibility High ☒ Med ☐ Low ☐

***Please mark location of egg masses observed on separate field map, indicating observation #

Pond #	Obs. # (mark on map)	Photo #	Water Temp	pH	Water Depth (cm)	Species	Size of Egg Mass (cm)	# of Egg Masses	Habitat Description/Comments (i.e. what are eggs attached to)
AWO-002	1	0838/0839	12.3	7.6	25 (max)	—	—	—	many egg attach. sites, water may not be deep enough to last.
AWO-002	2	0840/0841	7.1	7.4	~50	NOLF (2 adult)	—	—	" "
AWO-002	2	"	7.7	7.4	~50	GTFR (calling)	—	—	"
									* note these represent "possible" egg attachment sites. No eggs observed at either pond.
									ELC Polygons:
									AWO-002 #1: FODM5-2
									AWO-002 #2: SWDM3-3, FODM5-2

Egg Mass Surveys

Project #: 1275A

Project Name: Arnow WF

Observers NGM, AMD

DD/MM/YY 14/03/12

Time (24hr): 15:25 – 15:55 (30 min)

Weather

Air Temp. 16 °C

Wind Speed 2

Wind Direction SW

Cloud Cover 0 %

Cloud Height NA High ☐ Med ☐ Low ☐

Precipitation —

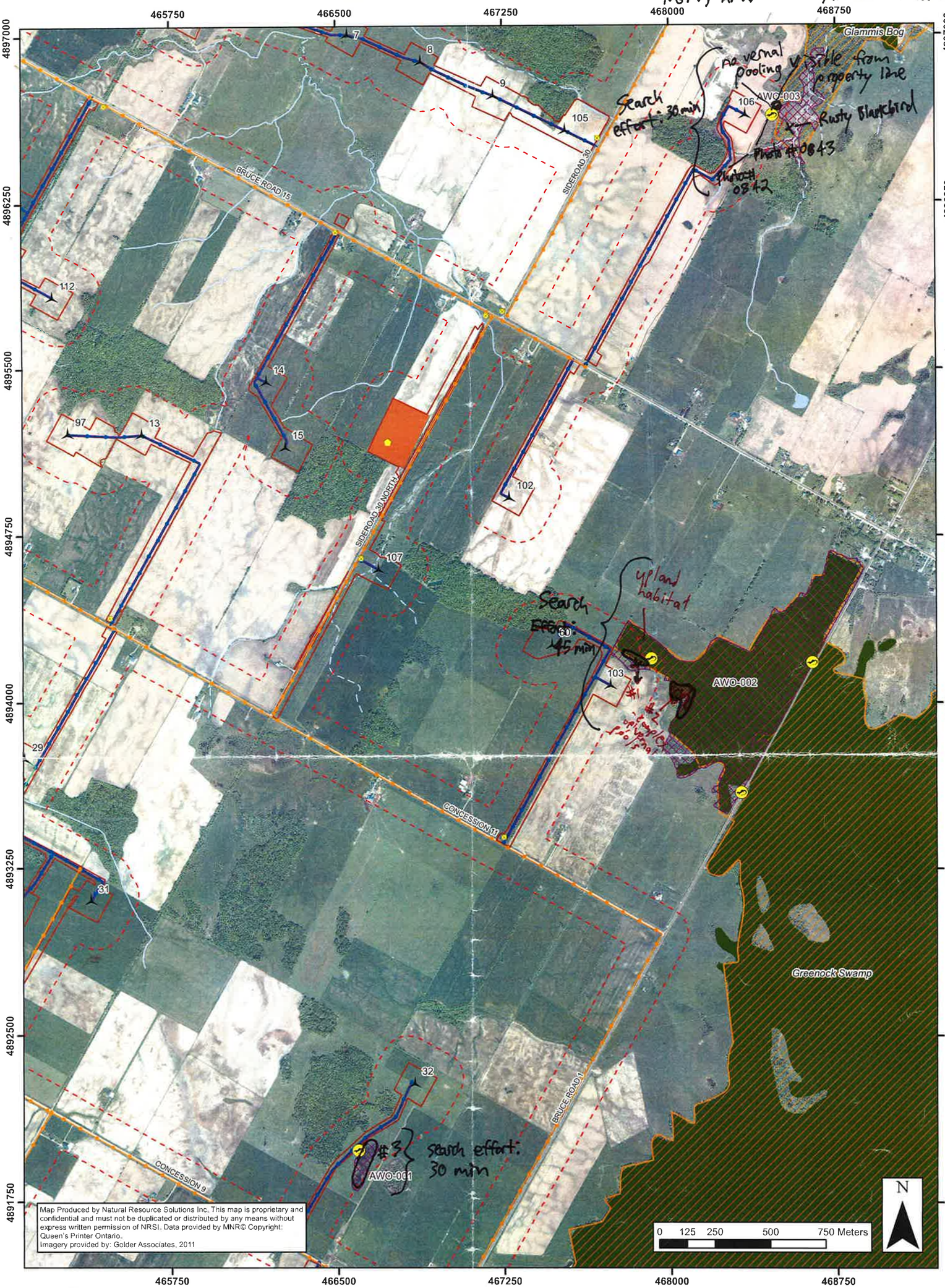
Visibility High ☒ Med ☐ Low ☐

***Please mark location of egg masses observed on separate field map, indicating observation #

Pond #	Obs. # (mark on map)	Photo #	Water Temp	pH	Water Depth (cm)	Species	Size of Egg Mass (cm)	# of Egg Masses	Habitat Description/Comments (i.e. what are eggs attached to)
AWO-003	NA	0842/0843	NA	NA	NA	—	—	—	No habitat visible from prop. line, appears much too dry.
	* Rusty Blackbird observed calling in marsh (Photo 0843)								
									Photo 0842: Stream inflow
									Photo 0843: location of marsh (Rusty Blackbird locale)

Visit #1 Mar. 14/12
NGM, AMO

#1275A
Armow WP (2012)



Armow Wind Farm

Amphibian Woodland Breeding Habitats - Monitoring Stations

Date: March-12-12. Project: NRSI-1275
NAD83 - UTM Zone 17. Scale: 1:16,000 (at 11x17").

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Legend

- Project Area (120m)
- Proposed Turbine (L08 Rev2)
- MET Tower
- Junction Box
- Crane Walk
- Overhead Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Substation
- Staging Area
- Interconnect Area
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody
- ANSI, Life Science
- Provincially Significant Wetland
- Amphibian Breeding Habitat - Woodland (AWO)
- Amphibian Monitoring Station

AVIAN POINT COUNT FORM

STATION WST-001 **PROJECT** 1275A

Length 30 mins Survey ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project Arnaw WF DD/MM/YY 13/03/12

Start Time (24hr): 14:15 End Time: 14:45 Observers NGM, AMD

Weather

Air Temp. 13 °C Wind Speed 5 Wind Direction SW (from)

Cloud Cover 20 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation none Visibility High ☒ Med ☐ Low ☐

Station

Habitat meadow - no sheet water
- surrounded by forest, w hedgerow thickets

Elevation _____ ft / m Crop _____

Pressure _____ mb UTM 17T 0462434 4899630

Turbines

Operational yes no Number in View _____ RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.
Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

Photo 100-0829

Station#: WST-001 **Date:** Mar. 13/12 **Project #:** 1275 A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
herring gull	14:15	50	foraging	–	0	–	180	50 m	
mallard	14:20	3	perched	–	0	–	240	100 m	in sheet water pool – to the west of observation area (not in WST-001)
Common grackle	14:21	2	flying	1	1	270	90	100 m	
horned lark	14:30	2	flying	1	1	90	45	50 m	
Am. crow	14:33	5	flying	1	3	90	0	250 m	
Song sparrow	14:40	1	perched	–	0	-	270	25 m	

Temp. 13
Cloud Cover 20 %
Precipitation none

Wind Speed 5
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-002 **PROJECT** 1275 A

Length: 30 mins Survey: ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project: Armaw WF DD/MM/YY: 13/03/12

Start Time (24hr): 14:55 End Time: 15:25 Observers: NGM, AMD

Weather

Air Temp. 14 °C Wind Speed 4 Wind Direction SW (from)

Cloud Cover 20 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation none Visibility High ☒ Med ☐ Low ☐

Station

Habitat meadow - no sheet water
- most of area of interest has been tilled, as indicated on map

Photo # 100 – 0830
100 – 0831

Elevation _____ ft / m Crop _____

Pressure _____ mb UTM 17T 0456916 4898139

Turbines

Operational yes no Number in View _____ RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.

Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

Station#: WST-002 **Date:** Mar. 13/12 **Project #:** 1275A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs. (m)	Comments
Red-winged Blackbird	14:59	1	flying	1	1	180	180	150	
Common Grackle	15:02	2	"	—	0	—	270	25	
Song Sparrow	15:13	1	perched	—	0	—	270	50	
Herring Gull	15:14	1	flying	1	2	45	345	100	
Red-tailed Hawk	15:15	1	"	1	4	45	300	200	
Am. Crow	15:21	1	"	1	4	90	270	100	

Temp. 14°C
Cloud Cover 20 %
Precipitation —

Wind Speed 4
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-004 **PROJECT** 1275A

Length 30 mins Survey ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project Armaw WF DD/MM/YY 14/03/12

Start Time (24hr): 16:40 End Time: 17:10 Observers NGM, AMD

Weather

Air Temp. 19 °C Wind Speed 2 Wind Direction S (from)

Cloud Cover 5 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation none Visibility High ☒ Med ☐ Low ☐

Station

Habitat thicket, woodlot, small meadow area south of thicket, no visible sheet water

Elevation ft / m Crop

Pressure mb UTM 17T 0461310 4897647

Turbines

Operational yes no Number in View RPM

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.

Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo 100-0846

Station#: WST-004 **Date:** Mar. 14/12 **Project #:** 1275 A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
Am. Crow	16:45	2	flying	1	3	0	270	50m	
red winged blackbird	16:49	2	perched	–	0	–	0	100m	
horned lark	16:55	1	flying	1	2	45	315	50m	
Am. Crow	16:55	2	flying	1	0	90	315	50m	
red tailed hawk	17:00	1	flying	1	1	90	180	200m	
herring gull	17:01	3	flying	1	3	270	0	300m	
common grackle	17:01	1	flying	1	1	270	180	25m	
horned lark	17:09	2	perched	–	0	–	45	100m	

Temp. 19
Cloud Cover 5 %
Precipitation none

Wind Speed 2
Wind Direction S

AVIAN POINT COUNT FORM

STATION WST-005 **PROJECT** 1275 A

Length: 30 mins | Survey: ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project: Armow WF | DD/MM/YY: 14/03/12

Start Time (24hr): 9:10 | End Time: 9:40 | Observers: NGM, AMD

Weather

Air Temp. 5 °C | Wind Speed 2 | Wind Direction SW (from)

Cloud Cover 5 % | Cloud Height: High ☒ Med ☐ Low ☐

Precipitation: none | Visibility: High ☒ Med ☐ Low ☐

Station

Habitat: meadow - no sheet water

Elevation ____ ft / m | Crop ____

Pressure ____ mb | UTM: 17T 0458952 4890485

Turbines

Operational: yes no | Number in View ____ | RPM ____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.

Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo - AMD's blackberry - sent to work email
photo ref "WST-005"

Station#: WST-005 **Date:** Mar. 14/12 **Project #:** 1275A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
Am. Robin	9:21	2	perched	–	1	–	315	75 m.	
red winged blackbird	9:25	3	flying	1	2	90	90	20 m	
Song Sparrow	9:25	1	perched	–	1	–	0	50 m	
black-capped chickadee	9:29	3	flying	2	0	45	0	20 m	
brown-headed cowbird	9:35	1	perched	–	1	–	45	50 m.	
herring gull	9:38	1	flying	1	3	180	0	200 m	
red-tailed hawk	9:44	3	flying	1	1	270	0	75 m	
Am. crow	9:44	4	flying	1	1	270	0	100 m	
Horned lark	9:47	2	flying	1	0	180	180	150 m	
Common grackle	9:49	3	flying	1	0	90	180	200m	

Temp. 5
Cloud Cover 5 %
Precipitation none

Wind Speed 2
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-007 **PROJECT** 1275 A

Length 30 mins Survey ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project Armow WF DD/MM/YY 13/03/12

Start Time (24hr): 16:10 End Time: 16:40 Observers NGM, AMD

Weather

Air Temp. 13 °C Wind Speed 3 Wind Direction SW (from)

Cloud Cover 0 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation none Visibility High ☒ Med ☐ Low ☐

Station

Habitat pasture - very little sheet water
- western portion of area of interest has been tilled - indicated on map

Elevation ft / m Crop

Pressure mb UTM 17T 0461156 4889012

Turbines

Operational yes no Number in View RPM

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.
Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo 100-0834

Station#: WST-007 **Date:** Mar. 13/12 **Project #:** 1275 A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
Am. crow	16:11	1	flying	1	0	0	0	75 m	
red tailed hawk	16:25	3	hunting	2	1	0	180	300 m	
Euro. starling	16:30	25	flying	1	1	180	270	150 m	
common grackle	16:36	2	perched	—	0	—	250	100m	

Temp. 13
Cloud Cover 0 %
Precipitation none

Wind Speed 3
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-008 **PROJECT** 1275A

Length 30 mins Survey ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project Armow WF DD/MM/YY 13/03/12

Start Time (24hr): 16:45 End Time: 17:15 Observers NGM, AMD

Weather

Air Temp. 13 °C Wind Speed 3 Wind Direction SW (from)

Cloud Cover 0 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation none Visibility High ☒ Med ☐ Low ☐

Station

Habitat ploughed field - very little sheet water

Elevation _____ ft / m Crop _____

Pressure _____ mb UTM 17T 0462118 4890842

Turbines

Operational yes no Number in View _____ RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.

Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo 100-0835

Station#: WST-008 **Date:** Mar. 13/12 **Project #:** 1275 A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
Common raven	16:50	1	perched	–	1	–	315	200 m	
Northern harrier	16:50	1	flying	1	3	0	180	100 m	
Am. crow	16:55	3	flying	1	1	180	180	50 m	
herring gull	17:00	2	flying	1	2	90	45	50 m	

Temp. 13
Cloud Cover 0 %
Precipitation none

Wind Speed 3
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-009 **PROJECT** 1275 A

Length: 30 mins Survey: ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project: Arrow WF DD/MM/YY: 13/03/12

Start Time (24hr): 15:35 End Time: 16:05 Observers: NGM, AMD

Weather

Air Temp. 13 °C Wind Speed 4 Wind Direction SW (from)

Cloud Cover 10 % Cloud Height High ☒ Med ☐ Low ☐

Precipitation none Visibility High ☒ Med ☐ Low ☐

Station

Habitat: tilled field – no sheet water
– entire area of interest has been tilled

Elevation _____ ft / m Crop _____

Pressure _____ mb UTM 17T 0460216 4891602

Turbines

Operational yes no Number in View _____ RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.
Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo 100-0833

Station#: WST-009 **Date:** Mar. 13/12 **Project #:** 1275 A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
Northern shrike	15:45	1	foraging	1	0	270	180	50 m	
Common grackle	15:47	2	flying	1	1	0	0	200 m	
Am crow	15:55	5	flying	1	3	90	45	100 m	
Am. robin	16:00	1	perched	-	0	-	45	100 m	

Temp. 13
Cloud Cover 10 %
Precipitation none

Wind Speed 4
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-010 **PROJECT** 1275 A

Length 30 mins Survey ☐ Migration ☐ Winter ☐ Daytime/ Raptor ☒ Other: waterfowl

Project Armaw WF DD/MM/YY 14/03/12

Start Time (24hr): 10:50 End Time: 11:20 Observers NGM, AMD

Weather

Air Temp. 10 °C Wind Speed 2 Wind Direction SW (from)

Cloud Cover 5 % Cloud Height High ☐ Med ☐ Low ☐

Precipitation none Visibility High ☐ Med ☐ Low ☐

Station

Habitat field w winter cover crop - no sheet water

Elevation _____ ft / m Crop _____

Pressure _____ mb UTM 17T 0461519 4891272

Turbines

Operational yes no Number in View _____ RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.
Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo 100-0837

Station#: WST-010 **Date:** Mar. 14/12 **Project #:** 1275 A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs. (m)	Comments
Herring Gull	11:01	10	flying	1	6	270	150	150	
Canada Goose	11:12	6	"	1	5	95	270	200	
Horned Lark	11:17	3	perched	—	0	—	45	150	
Black-capped chickadee	11:23	2	"	—	0	—	340	100	
Am. Crow	11:30	4	flying	1	3	45	270	300	
Brown-headed Cowbird	11:33	1	perched	—	0	—	340	75	

Temp. 10
Cloud Cover 5 %
Precipitation none

Wind Speed 2
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-011 **PROJECT** 1275A

Length: 30 mins | Survey: ☐ Migration ☐ Winter ☐ Daytime/Raptor ☒ Other: waterfowl

Project: Armar WF | DD/MM/YY: 13/03/12

Start Time (24hr): 14:55 | End Time: 15:25 | Observers: NGM, AMD

Weather

Air Temp. 14 °C | Wind Speed 4 | Wind Direction SW (from)

Cloud Cover 20 % | Cloud Height: High ☒ Med ☐ Low ☐

Precipitation none | Visibility: High ☒ Med ☐ Low ☐

Station

Habitat meadow w hawthorns, next to watercourse -no sheet water | Photo # 100-0832

Elevation _____ ft / m | Crop _____

Pressure _____ mb | UTM 17T 0456916 4898139

Turbines

Operational yes no | Number in View _____ | RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.

Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

Station#: WST-011 **Date:** Mar. 13/12 **Project #:** 1275A

Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs. (m)	Comments
Downy Woodpecker	14:57	1	perched	—	0	—	270	25	
Common Grackle	15:09	2	flying	1	3	180	45	100	
Am. Crow	15:12	3	flying	1	4	45	45	250	
Blue Jay	15:16	1	flying	1	2	45	100	300	
Horned Lark	15:18	1	flying	1	1	190	45	25	
Herring Gull	15:19	4	flying	1	6	70	100	100	

Temp. 14
Cloud Cover 20 %
Precipitation none

Wind Speed 4
Wind Direction SW

AVIAN POINT COUNT FORM

STATION WST-016 **PROJECT** 1275 A

Length: 30 mins Survey: ☐ Migration ☐ Winter ☐ Daytime/Raptor ☒ Other: waterfowl

Project: Armow WF DD/MM/YY: 14/03/12

Start Time (24hr): 10:05 End Time: 10:35 Observers: NGM, AMD

Weather

Air Temp. 8 °C Wind Speed 2 Wind Direction SW (from)

Cloud Cover 0 % Cloud Height: High ☐ Med ☐ Low ☐ - no clouds

Precipitation: none Visibility: High ☒ Med ☐ Low ☐

Station

Habitat: meadow along watercourse, no sheet water

Elevation _____ ft / m Crop _____

Pressure _____ mb UTM: 17 T 0463971 4889968

Turbines

Operational: yes no Number in View _____ RPM _____

Behaviour should be recorded as: foraging, mobbing, migration, flying, perching, perched on ground, or swimming. Can also use to record breeding evidence

Height Category: 0=0-9m; 1=10-19m; 2=20-29m; 3 = 30-39m etc.

Wind speed (Beaufort): 0=calm; 1=smoke drifts; 2=wind felt on face; 3=leaves move; 4=sm.branches move; 5=sm.trees move; 6=lrg branches move; 7=lrg trees move; 8=twigs break off, hard to walk; 9=light structural damage; 10=trees uprooted

photo 100-0836

Station#: WST-016 **Date:** Mar. 14/12 **Project #:** 1275 A

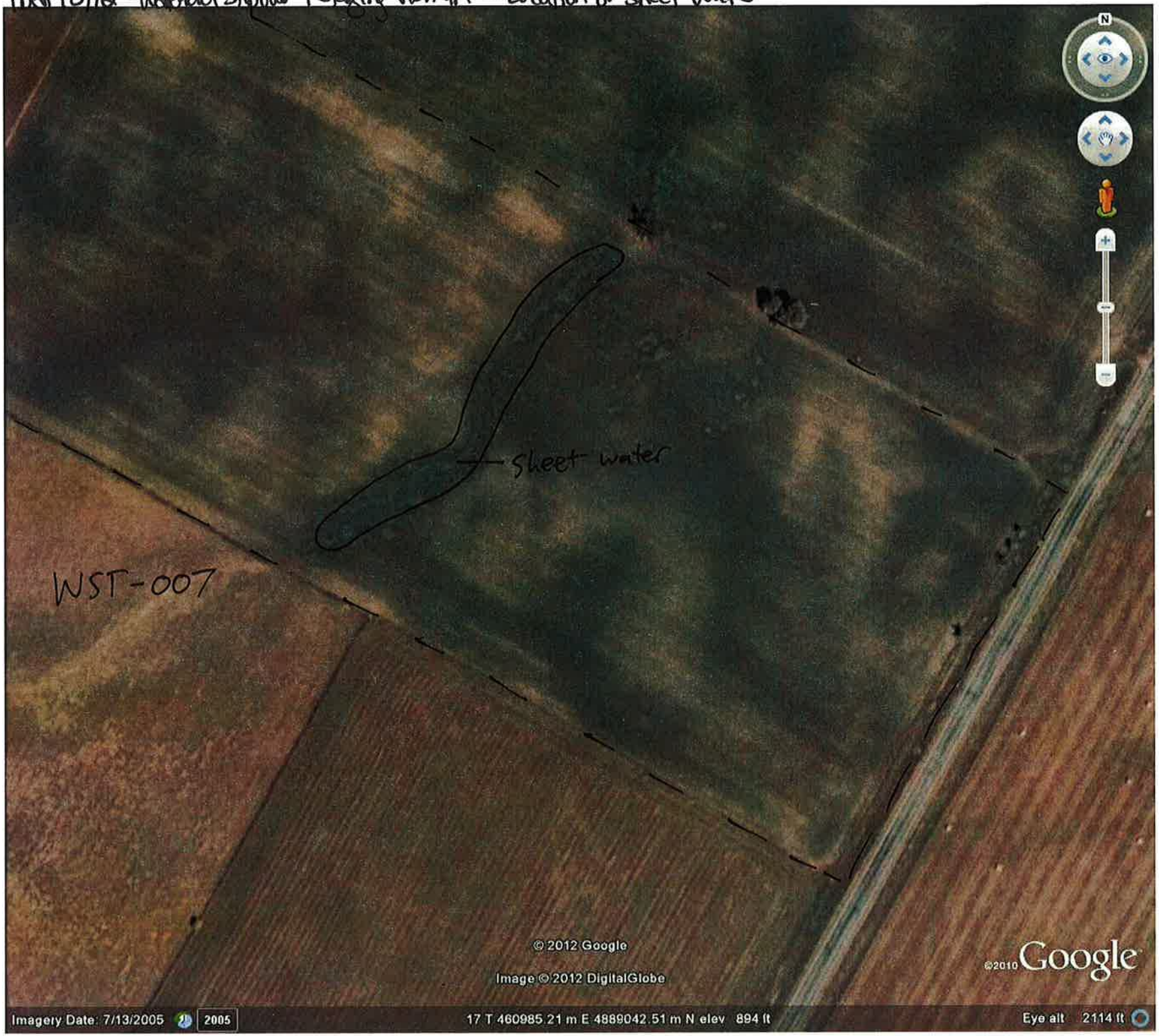
Species	Time	# of Birds	Behaviour	Passes	Height Category	Flight Direction	Direction from Obs.	Distance from Obs.	Comments
red tailed hawk	10:10	2	flying	1	1	270	0	100 m	
Am. kestrel	10:11	1	perched	-	0	-	0	15 m	
red-winged blackbird	10:15	2	flying	1	0	270	0	25 m.	
Common Grackle	10:17	1	flying	1	2	100	75	75 m	
Herring Gull	10:26	2	flying	1	4	45	270	500m	
Canada Goose	10:33	17	flying	1	7	45	270	200 m	flying over
* mink observed in creek									

Temp. 8
Cloud Cover 0 %
Precipitation none

Wind Speed 2
Wind Direction SW

Mar 13/12 - Waterloo Stormwater Steering Visit #1 - Location of sheet water

Armow
1275A



Mar. 13/12 - NGM + AMD (#1275A) ✓

WST-009, 007, 008

Armow Wind Farm

Waterfowl Stopover and Staging Area (Terrestrial) - Monitoring Locations Map 1

Mar. 14/12 - NGM + AMD

WST-005, 016, 010

459000 460000 461000 462000 463000 464000

4892000 4891000 4890000 4889000

WST-009 WST-010 WST-008 WST-005 WST-016 WST-007

39 40 41 42 43 44 45 47 49 50 65 66 70 76 78 82 83 84 89 98 100 104 110 111 113 114 115 116

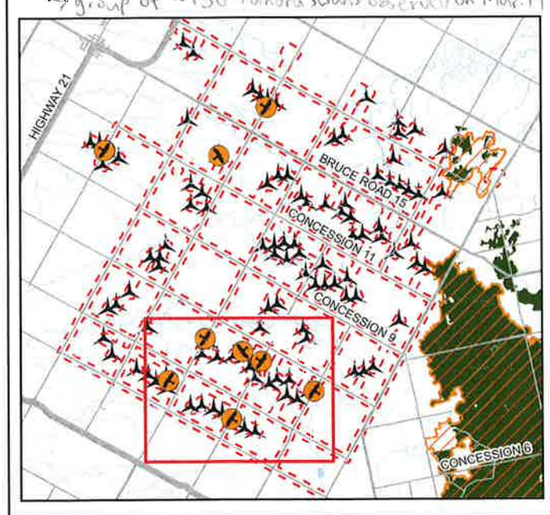
SIDEROAD 20 WEBER SIDEROAD CONCESSION 8 CONCESSION 7 BERVIE SIDEROAD CONCESSION 5 SIDEROAD 20 SOUTH NORTH LINE

- better vantage point from N side of area
- raptor stick nest
- hatched area has been tilled
- small amount of sheet wash

Legend

- Project Area (120m)
- Proposed Turbine (L08 Rev2)
- MET Tower
- Junction Box
- Crane Walk
- Overhead Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Substation
- Staging Area
- Interconnect Area
- Highway
- Primary Road
- Secondary Road
- ANSI, Life Science
- Provincially Significant Wetland
- Waterbody
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterfowl Stopover and Staging Area
- Waterfowl Monitoring Station

- in corn agr. field (not significant)
- Weber sideroad + Con 9 (southwest corner)
  - group of ~150 tundra swans observed on Mar. 14



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Aquatic, Terrestrial and Wetland Biologists

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Imagery provided by: Golder Associates, 2011

Project: 1275
Date: March-09-12

NAD83 - UTM Zone 17
Size: 11x17"
1:19,000

0 250 500 750 1,000 Meters

N

Mar. 13/12 - WST-001, 002, 011 (#1275)

AMD, NGM

Armow Wind Farm

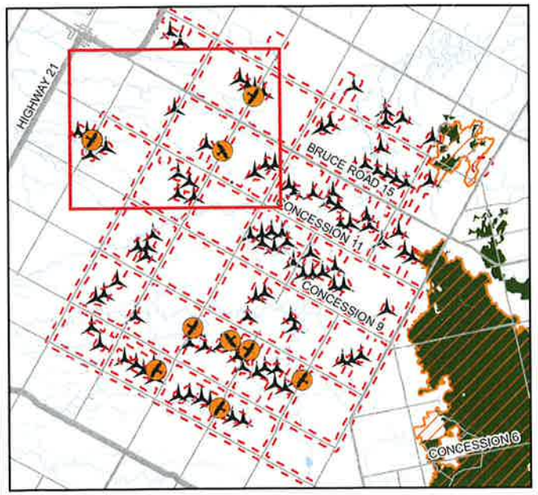
Waterfowl Stopover and Staging Area (Terrestrial) - Monitoring Locations Map 2

Mar. 14/12 - WST-004 (roadside)

AMD, NGM

Legend

- Project Area (120m)
- Proposed Turbine (L08 Rev2)
- MET Tower
- Junction Box
- Crane Walk
- Overhead Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Substation
- Staging Area
- Interconnect Area
- Highway
- Primary Road
- Secondary Road
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- Provincially Significant Wetland
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- Watercourse (Intermittent)
- Waterfowl Stopover and Staging Area
- Waterfowl Monitoring Station



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Imagery provided by: Golder Associates, 2011

Project: 1275
Date: March-12-12

NAD83 - UTM Zone 17
Size: 11x17"
1:22,000

0 250 500 750 1,000 Meters

N

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: LWOD - 010

Project Name: ARMOW Project #: 1275A

Start Time 8:50 End Time 12:10 Date: MAY 30, 2012 Observer(s): PNT JJK

Polygon or Area ID (BMA-004) Weather Conditions: SUNNY, 14°C, wind=2, no precipitation.

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	2	0457170	4497956	
Plot 2	1	0457191	4497996	LARGE CAVITY TREES AROUND PLOT CENTRE
Plot 3	2	0457235	4497949	
Plot 4	1	0457221	4499042	
Plot 5	3	0457270	4499045	
Plot 6	1	0457277	4497960	
Plot 7	Ø	045 7269	4497925	
Plot 8	Ø	045 7230	4497934	
Plot 9	2	045 7202	4497970	
Plot 10	1	045 7245	4497961	
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
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Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = >10/ha? (Yes) / No BMA- 004

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM		Photo Number(s)
~~NOT PLOT~~ 1	BEECH			0457157	4497947	
~~NOT PLOT~~ 2	SUGAR MAPLE			0457174	4497991	Not selected
~~NOT PLOT~~ 3	BEECH			0457191	4497996	(see selected
~~NOT PLOT~~ 4	SUGAR MAPLE			0457194	4497997	in back)
5	WHITE ASH			0457231	4497994	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

ALMOST DEAD

GOOD CLUSTER 0457224 4494003

BMA-004

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

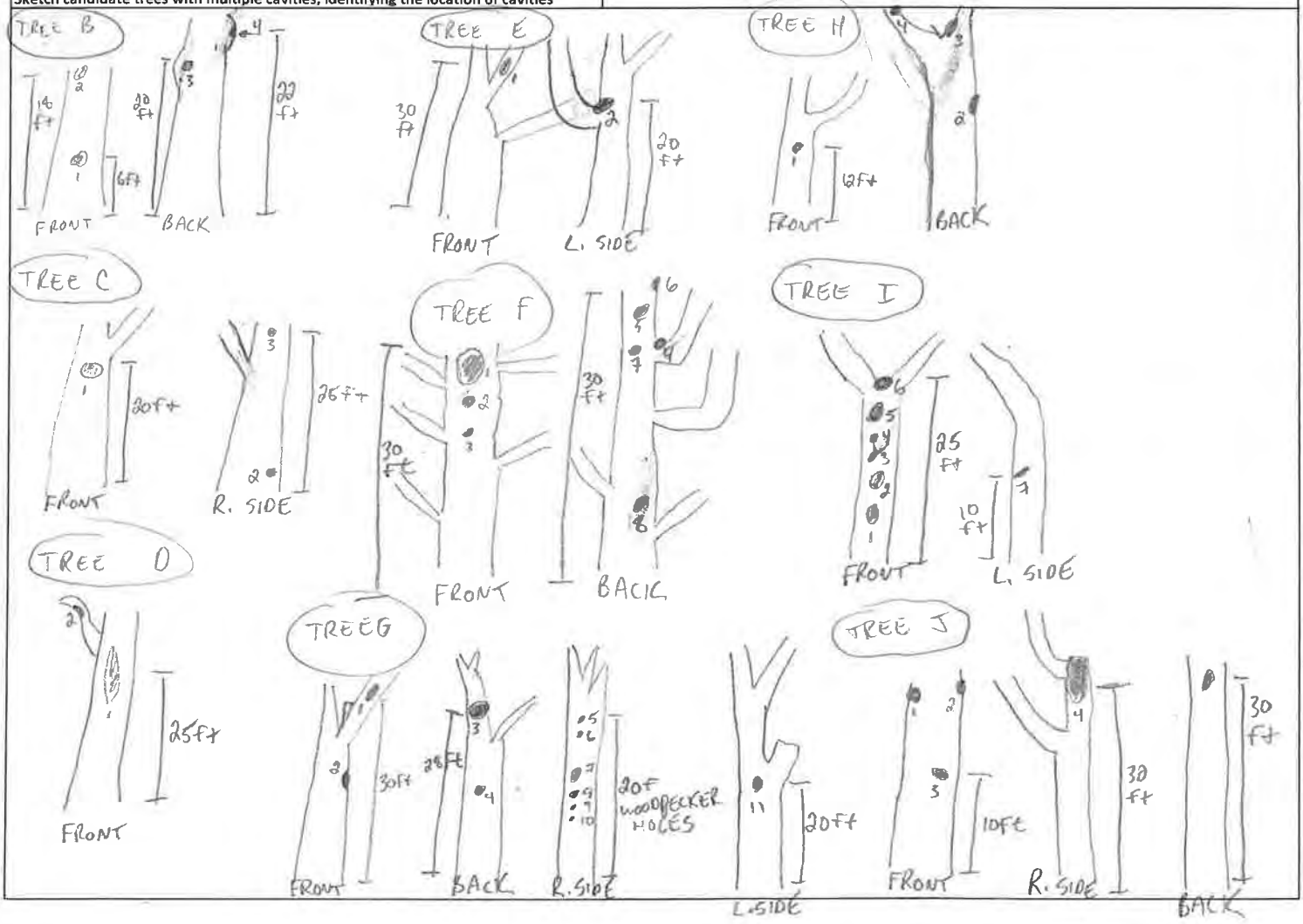
Selected for monitoring

Tree #		Species	# of Cavities	DBH (cm)	UTM		Photo Number(s)
16	A	SUGAR MAPLE	1	70.3	045 7225	4989030	100-0153, 0154
17	B	SUGAR MAPLE	4	97.4	045 7236	489 9054	100 - 0155, 0156, 0158 - 0161
18	C	SUGAR MAPLE	3	66.3	045 7269	489 9013	100 - 0162 - 0165
19	D	SUGAR MAPLE	2	77.0	045 7262	4898022	100 - 0166 - 0169
20	E	SUGAR MAPLE	2	65.8	045 7266	489 7999	100 - 0169, 0171, 0172
21	F	SUGAR MAPLE	11	70.9	045 7195	489 9014	100 - 0173, 0175, 0176, 0178, 0179, 0180
22	G	SUGAR MAPLE	11	58.9	045 7203	489 9007	100 - 0181 - 186
23	H	SUGAR MAPLE	4	55.9	045 7206	489 8004	100 - 0187 - 0190
24	I	SUGAR MAPLE	7	59.9	045 7205	489 9001	100 - 0191 - 0194, 0196, 0197
25	J	SUGAR MAPLE	5	54.7	045 7239	489 9076	100 - 0199 - 0203
26							
27							
28							
29							
30							

Supplementary Information, Incidentals

SONG SPARROW (VO)
MOURNING DOVE (VO)
AMERICAN CROW (VO)
EASTERN PHOEBE (VO)
RACCOON - IN MOST CAVITY TREES
EASTERN WOOD PEEWEE (VO)
HOUSE WREN (VO)
WOOD THRUSH (VO)
COYOTE (SCAT)
WOODPECKER SPP (HEARD)
BLACK-CAPPED CHICKADEE (VO)

Sketch candidate trees with multiple cavities, identifying the location of cavities





Armow Wind Farm

BMA-004

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:1,500

0 5 10 20 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\MXD\NRSI_1275A_BMAcreate_3K_2012_05_28_EI.Fmxd

AG: 3329200 33

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number : WOO-059

Project Name: Armour Project #: 1275A

Start Time 11:53 End Time 14:42 Date: May 30, 2012 Observer(s): TRB, TAL

Polygon or Area ID (BMA-1024 Weather Conditions: temp: 16°C cc: 100% precip: none wind: 2-3.

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	1	0468598, 4898330	PIC# 0597, 0598, 0599
Plot 2	1	0468618, 4898407	PIC# 0603, 0604, 0605
Plot 3	0	0468653, 4898451	PIC# 0607, 0608, 0609
Plot 4	0	0468604, 4898480	PIC# 0610, 0611, 0612
Plot 5	1	0468547, 4898506	PIC# 0613, 0614, 0615 - clearcut area.
Plot 6	0	0468487, 4898540	PIC# 0617, 0618, 0619 - clearcut area in N portion of property
Plot 7	3	0468426, 4898567	PIC# 0621, 0622, 0623
Plot 8	2	0468373, 4898550	PIC# 0630, 0631, 0632.
Plot 9	3	0468349, 4898507	PIC# 0635, 0636, 0637
Plot 10	2	0468311, 4898417	PIC# 0641, 0642, 0643.
Plot 11	0	0468364, 4898419	PIC # 0644, 0645, 0646.
Plot 12	0	0468406, 4898355	PIC # 0647, 0648, 0649.
Plot 13	2	0468457, 4898415	PIC # 0650, 0651, 0652. - poor candidate trees (x2) (did not record below)
Plot 14	1	0468475, 4898374	PIC # 0653, 0654, 0655
Plot 15	1	0468529, 4898366	PIC # 0658, 0659, 06660
Plot 16	1	0468564, 4898394	PIC # 0662, 0663, 0664.
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 18/16 x 0.05) = 22.5 cavity trees/ha. >10/ha? (Yes) / No If >10/ha: BMA- 024

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #		Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1	A	maple sp.	1 large	35.5	0468598, 4898331	0600
2	B	maple sp.	1 large	28.5	0468617, 4898344	0601
3	C	maple sp.	1 large	42	0468627, 4898361	0602
4	D	maple sp.	1 small	67.5	0468618, 4898409	0605 * yellow flagging tape
5	E	maple sp.	1 large	40	0468541, 4898527	06016 * yellow flagging tape for the rest of trees
6	F	maple sp.	1 large	41.5	0468464, 4898567	0620
7	G	maple sp.	3 small	39	0468432, 4898563	0624
8	H	maple sp. (?)	2 small	36	0468434, 4898562	0625.
9	I	maple sp.	1 crack	41.5	0468407, 4898563	0626
10	J	Unknown sp. (dead)	1 small	42.5	0468398, 4898581	0627
11	K	maple sp.	1 small	41	0468382, 4898563	0628, 0629
* 12	L	maple sp.	1 small	46	0468375, 4898543	0633.
13	M	Unknown sp	1 dead top	37	0468358, 4898517	0634
* 14	N	Paper Birch	1 crevice	44	0468340, 4898512	0638.
* 15	O	maple sp.	1 small hole.	48.5	0468335, 4898499	0639.

* = poor candidate tree (not priority, if possible to choose)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16 P	maple sp.	1 large	28.	0468314, 4898419.	0640
17 Q	Unknown sp.	1 large - total tree	78.5	0468463, 4898356.	0656
18 R	Maple sp.	1 cavity	42.	0468496, 4898391	0657
19				* flagged stick beside tree - no more tape *	
20					
21 S	Maple sp.	1 large cavity (good candidate)	46 cm	0468540, 4898358	0661
22				* flagged large stick beside tree ***	
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

- lots of tree cutting has occured along northern portion of property.
- many raspberry bushes throughout (mainly along northern portion of property)

Sketch candidate trees with multiple cavities, identifying the location of cavities

LOCATION OF TREES TO MONITOR

MAY 30 2012 TRB, TAL



Armow Wind Farm

BMA-024

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Ecologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:4,393

0 20 40 80 m

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Path: X:\1275 Armow\WF\NRSI_1275A_BMA#\cccc_2K_2012_05_28_ELF.mxd

Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

A1: 332900042

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-061

Project Name: Arrow WF Project #: 1275A

Start Time 15:09 End Time 16:44 Date: May 31/2012 Observer(s): TRB, TAL

Polygon or Area ID: BMA-020 Weather Conditions: temp: 16°C cc: 60% wind: 1-2 precip: none

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T	Comments
Plot 1	2	0468014, 4894102	Picture #: 0822, 0823, 0824
Plot 2	1	0468079, 4894079	Picture #: 0827, 0828, 0829
Plot 3	Ø	0468094, 4894070	Picture #: 0831, 0832, 0833
Plot 4	Ø	0468102, 4894038	Picture #: 0835, 0836, 0837
Plot 5	Ø	0468094, 4894027	Picture #: 0838, 0839, 0840.
Plot 6	1	0468070, 4893999	Picture #: 0842, 0843, 0844.
Plot 7	Ø	0468040, 4894005	Picture #: 0845, 0846, 0847
Plot 8	1	0468022, 4894038	Picture #: 0848, 0849, 0850 - poor candidate tree @ plot center
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
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Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 5/(8 x 0.05) = 12.5 cavity trees/ha >10/ha? (Yes) / No If >10/ha: BMA- 020

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1 A	Maple sp.	1 very large, 2 small	84	0468023, 4894096	0825 - good candidate
2 B	Maple sp.	1 long crack	28.5	0468031, 4894087	0826 - good candidate
3 C	Maple sp.	2 small	14	0468077, 4894078	0834
* 4 D	Unknown sp.	1 large cavity/crevice	37	0468071, 4894000	0841
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

* Poorer candidate compared to others

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

- large trees at northern portion of woodland (on other property without access?) ~ approx. 10m north of property line.
  - with good cavities
-

Sketch candidate trees with multiple cavities, identifying the location of cavities

LOCATION OF TREES TO MONITOR

MAY 31 2012 TRB, TAL



Armow Wind Farm

BMA-020

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:6,376

0 30 60 120 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_ArmowWF\NRSI_1275A_BMAmicrosite_3K_2012_05_28_ELF.mxd

AG: 332910038 - 35 plots

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-006

Project Name: Arrow WF Project #: 1875A

Start Time 14:15 End Time 17:52 Date: May 29/12 Observer(s): PNT, JJK

Polygon or Area ID (BMA-001) Weather Conditions: 19°C, overcast, wind=5, no precipitation

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	2	0462953 4894669	
Plot 2	0	0462977 4894638	
Plot 3	0	0462998 4894633	
Plot 4	1	0463019 4894604	
Plot 5	0	0463064 4894642	
Plot 6	1	0463059 4894592	
Plot 7	1	0463080 4894569	
Plot 8	1	0463096 4894446	
Plot 9	2	0463318 4894490	
Plot 10	1	0463357 4894483	
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
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Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = **>10/ha? Yes / No** BMA-001

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM (±5m acc)	Photo Number(s)
1	Am. basswood			0462954 4894649	
2	Am. beech			0462956 4894630	
3	Am. beech	1 cavity in trunk	31.3	0463035 4894614	100-0146-0148
4	Sugar maple	1 cavity @ top of tree	25.4	0463048 4894589	100-0141-0145
5	Am. basswood	1-2 holes	48.3	0463088 4894569	100-0117, 0118, 0119
6	Sugar maple	1-2 holes	50.7	0463300 4894448	100-0120, 0121, 0122
7	Sugar maple	4 holes	61.6	0463308 4894495	100-0123, 0124, 0125, 0126, 0127
8	Sugar maple	1 cavity, 1 hole	29.6	0463320 4894498	100-0128, 0129
9	Sugar maple	2 holes, branch scar	49.9	0463353 4894485	100-0130-0132
10	Sugar maple	5 holes	69.8	0463352 4894471	100-0133-0138
11	Am. basswood	6 holes	43.3	0463318 4894430	100-0139-0142
12	Sugar maple	4 holes	55.8	0462936 4894466	100-0149-0152
13					
14					
15					

IA68 BCDEFGJ

6 → one hole inside branch scar, other cavity on trunk.
C → not in plot, large cavity in trunk, 3 in branch scars
F → large cavity in trunk, see drawing

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

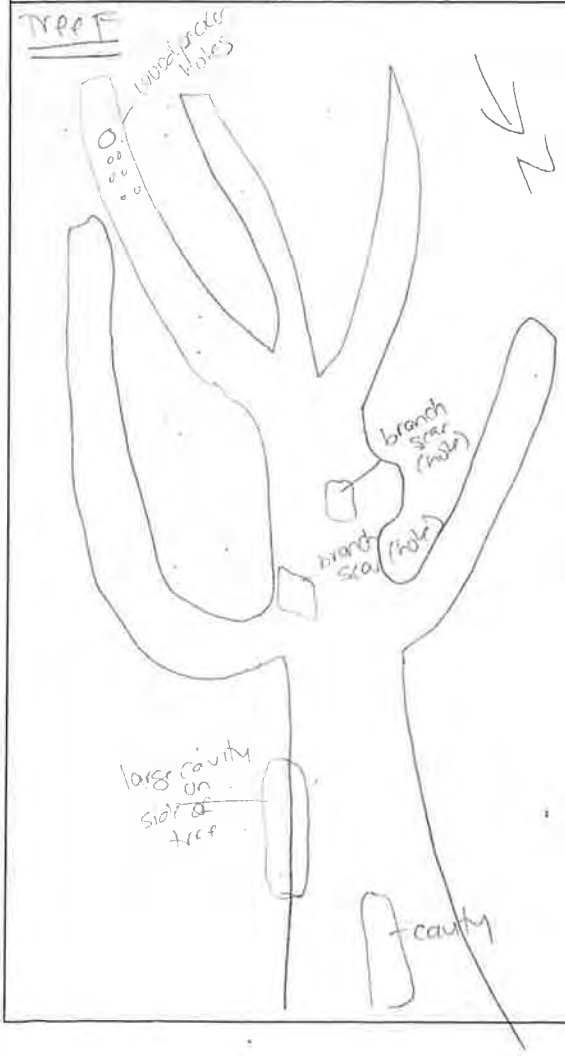
Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

- song sparrow
- blue jay
- east wood pewee
- Am crow
- mourning cloak
- Yellow warbler

Sketch candidate trees with multiple cavities, identifying the location of cavities

Tree F



Tree G – on south side, a large woodpecker holes, on north side, 4 other holes originating from woodpecker



Tree J – N side of tree large cavity on the trunk. W side has 2 branch scars w/ holes. Bark crack near top of tree, lots, good spot for bats

Locations of Trees to monitor

May 29/12 PNT, JSK



Armow Wind Farm

BMA-001

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:4,000

0 20 40 80 m

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Path: X:\1275_Armow\WP\NRSI_1275A_BMAmicrosite_8K_2012_05_28_ELT.mxd

Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332910056

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-132

Project Name: Armaw WF Project #: 275A

Start Time 16:31 End Time 18:10 Date: May 29/2012 Observer(s): TRB, TAL

Polygon or Area ID (BMA-028) Weather Conditions: temp: 23C, wind - 2, cloud: 20%, precip - none

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	Ø	0460103, 4891317	Pic 0500, 0501, 0502, along watercourse
Plot 2	Ø	0460137, 4891301	Pic 0503, 0504, 0505, plot along watercourse
Plot 3	1	0460197, 4891275	Pic 0506, 0507, 0508, plot along watercourse
Plot 4	Ø	0460261, 4891284	Pic #0510, 0511, 0512, plot near watercourse
Plot 5	1	0460307, 4891304	Pic #0513, 0514, 0515 " " - watercourse throughout
Plot 6	Ø	0460315, 4891338.	Pic #. 0517, 0518, 0519 - plot along ATV trail
Plot 7	1	0460321, 4891384	Pic # 0520, 0521, 0522 -
Plot 8	2	0460267, 4891436	Pic # 0525, 0526, 0527
Plot 9	Ø	0460234, 4891388	Pic # 0531, 0532, 0533
Plot 10	Ø	0460172, 4891338	Pic # 0536, 0537, 0538
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
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Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 5/(10x0.05) = 10 cavity trees/ha >10/ha? (Yes) No If >10/ha: BMA- 028

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #		Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1	A	Unknown	1 large crevice	81	0460205, 4891260	0509
2	B	[redacted] Basswood (?)	2 great cavities	61	0460310, 4891289	0516
3	C	Maple sp.	2	46.5	0460318, 4891402	0523, 0524
4	D	Maple sp.	1 large	67	0460271, 4891433	0528
5	~~B~~	~~Maple~~	~~2~~		~~0460299, 4891430~~	
6	E	Maple sp.	2 small	62	0460278, 4891427	0529
7	F	Maple sp.	1 small	40	0460262, 4891425	0530
8 *	G	Unknown (dead)	1 small	37	046020, 4891351	0534 - cavity near tree top.
9 *	H	Maple sp.	1 small	25	0460202, 4891353	0535
10	I	Unknown sp.	1 large	121	0460119, 4891284	0539
11	J	Maple sp	2 small	90	0460099, 4891286	0540, 0541
12						
13						
14						
15						

* poor candidate trees compared to others on site (Trees I & J)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)
Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
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27					
28					
29					
30					

Supplementary Information, Incidentals

→ as we are walking through woodland, we don't see many trees w/ cavities outside plots (only a few) – not great bat habitat

→ watercourse runs throughout woodland – doesn't approximate air photo – much more winding

Sketch candidate trees with multiple cavities, identifying the location of cavities

LOCATION OF TREES TO MONITOR

MAY 29 2012 TRB, TAL



Armow Wind Farm

BMA-028

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:3,000

0 15 30 60 m

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Path: X:\1275_Armow\MXD\NRSI_1275A_BMAmicrosite_8K_2012_03_28_ELF.mxd

Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332970031

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD – 064

Project Name: Armaw Project #: 1275A

Start Time 9:04 End Time 11:11 Date: May 30/2012 Observer(s): TRB, TAL

Polygon or Area ID (BMA-021) Weather Conditions: temp: 16°C Cc: 100% precip: none wind: 2-3

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	1	0468126, 4896429	Photos 101 - 0542 → 0545
Plot 2	2	0468135, 4896475	Photos - 101 - 0549 → 0552
Plot 3	1	0468155, 4896472	Photos - 101 - 0556 → 0559
Plot 4	0	0468166, 4896488	Photos - 101 - 0562 → 0565
Plot 5	0	0468192, 4896493	Photos - 101 - 0567 → 0570
Plot 6	0	0468231, 4896464	Photos - 101 - 0571 → 0574
Plot 7	0	0468223, 4896434	Photos - 101 - 0575 → 0578
Plot 8	2	0468206, 4896436	Photos - 101 - 0579 → 0582
Plot 9	0	0468178, 4896422	Photos - 101 - 0586 → 0589
Plot 10	0	0468187, 4896405	Photos - 100 - 0590 → 0593
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
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Plot 22			
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Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 6/(10×0.05) = 12 cavity trees/ha >10/ha? (Yes) / No If >10/ha: BMA- 021

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1 (A)	Maple sp.	1	43.5	0468119 4896449	101 - 0548
2 (B)	Unknown	1	42	0468138 4896424	101 - 0546, 0547
3 (C)	Maple sp	1	31	0468119 4896491	101 - 0553, 0554
4 (D)	Maple sp	1	31	0468137 4896461	101 - 0555
5 (E)	Unknown	2	34.5	0468157 4896468	101 - 0560, 0561
6 (F)	Maple sp	1	84	0468183 4896490	101 - 0566
7 (G)	Maple sp	2	33	0468188 4896434	101 - 0583 0584
8 (H)	Maple sp	1	33.5	0468181 4896441	101 - 0585
9 (I)	Maple sp.	1	47.5	0468191 4896399	101 - 0594
10 (J)	Unknown	3	36	0468212 4896404	101 - 0595, 0596
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

Sketch candidate trees with multiple cavities, identifying the location of cavities

LOCATION OF TREES TO MONITOR

MAY 30 2012
TRB TAL



Armow Wind Farm

BMA-021

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:2,500

0 12.5 25 50 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332900052

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-021

Project Name: Amaco WF Project #: 12758A

Start Time 1415 End Time 15:40 Date: May 29/2012 Observer(s): TRB, TAL

Polygon or Area ID: BMA-032 Weather Conditions: temp: 23°C, cloud cover: 100%, wind: 2, precip: none.

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	4	0458800, 4894678	Tree I.S Door candidates Photos: 101-0449 → 0452
Plot 2	1	0458782, 4894694	Photos – 0457 → 0460
Plot 3	2	0458757, 4894699	Photos – 0465 → 0468
Plot 4	4	0458746, 4894684	Photos – 0478 → 0481
Plot 5	1	0458761, 4894669	Photos – 0487 → 0490
Plot 6	0	0458779, 4894657	Photos – 0492 – 0495
Plot 7			
Plot 8			
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 12 / (6 x 0.05) = 40 cavity trees/ha >10/ha? Yes / No If >10/ha: BMA- 032

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1 (A)	Elm?	3 (2)	76 cm	0458783, 4894695	101-0461, 0462, 0463, 0464
2 (B)	Unknown	3	35.5	0458763, 4894699	101-0469, 0470
3 (C)	maple sp.	1	79	0458755, 4894696	101-0471, 0472, 0473
4 (D)	[redacted] Basswood	2	37	0458746, 4894690	101-0474, 0475, 0476, 0477
5 (E)	[redacted] Basswood	7	40.5	" "	" "
6 (F)	"	1	32.5	0458740, 4894687	101-0478 2, 0478 3
7 (G)	Unknown	5	43	0458738, 4894677	0478 4 – 0478 6
8 (H)	[redacted] Basswood	1	29.5	0458756, 4894648	0491
9 (I)	Basswood	4	38.5	0458800, 4894676	0496 – 0497
10 (J)	Basswood	2	26	0458800, 4894679	0498
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

Sketch candidate trees with multiple cavities, identifying the location of cavities

LOCATION OF TREES TO MONITOR

MAY 29 2012
TRB, TAL



Armow Wind Farm

BMA-032

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:750

0 3.75 7.5 15 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_ArmowWF\NRSI_1275A_BMAmxd\e_3K_2012_05_28_ELF.mxd

AG: 332960017
332960027

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only: WOO - 052
Woodland Number:

Project Name: ARMOW Project #: 1275 A

Start Time 15:35 End Time 19:12 Date: MAY 30 2012 Observer(s): PNT JJK

Polygon or Area ID (BMA-017) Weather Conditions: 14°C, OVERCAST, NO PRECIP, BWS = 2

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	Ø	045 9674 4989597	
Plot 2	Ø	045 9678 4989654	
Plot 3	Ø	0459700 4989693 (8M)	
Plot 4	Ø	045 9762 4989696	
Plot 5	Ø	045 9781 4989783	
Plot 6	• 1	045 9459 4989871	He
Plot 7	• 1	046 0042 4989930 (7m)	
Plot 8	Ø	046 0141 4989934 (6m)	
Plot 9	• 1	046 0230 4989659	POOR TREE TO MONITOR
Plot 10	Ø	046 0327 4989644	
Plot 11	Ø	046 0194 4989605	
Plot 12	Ø	046 0073 4989650	
Plot 13	Ø	045 9999 4989690	
Plot 14	Ø	045 9984 4989713	
Plot 15	• 1	045 9962 4989935	
Plot 16	Ø	046 0059 4989857	
Plot 17	Ø	0460123 4989880	
Plot 18	Ø	0460177 4989769	
Plot 19	Ø	0460216 4989933	
Plot 20	Ø	0460257 4989712	
Plot 21	Ø	0460294 4989717	
Plot 22	• 1	0460329 4989901	
Plot 23	Ø	0460295 4989595	
Plot 24	Ø	046 0279 4989572	
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = **>10/ha? Yes / (No)** If >10/ha: BMA- 017

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2	SUGAR MAPLE			0460251 4989595	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
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28					
29					
30					

Supplementary Information, Incidentals

OVENBIRD (VO)
SONG SPARROW (VO)
WOOD THRUSH (VO)
YELLOW BELLY SAPSUCKER (TREEHOLES IN Rd + He)
ROBIN (VO)
RACCOON (SCAT)
COYOTE (SCAT)
AMERICAN CROW (VO)
RED-TAILED HAWK (VO)
- DOWNY WOODPECKER

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE BMA MAY 30 2012 PNT JJK



Armow Wind Farm

BMA-017

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:4,500

0 20 40 80 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
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- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\MXD\NRSI_1275A_BMAmosaic_3K_2012_05_28_ELF.mxd

AG: 332970014
332970013

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOO-032

Project Name: ARMOW Project #: 1275A

Start Time 13:23 End Time 14:10 Date: MAY 30, 2012 Observer(s): PNT JTK

Polygon or Area ID (BMA-011) Weather Conditions: SUNNY, NO PRECIP, 21°C, BWS = 2

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	1	0467544	4896734	
Plot 2	1	0467536	4896733	
Plot 3	Ø	0467495	4896729	
Plot 4	Ø	0467467	4896748	
Plot 5	1	0467450	4896771	
Plot 6	1	0467438	4896754	
Plot 7	Ø	0467435	4896786	
Plot 8	Ø	0467439	4896723	
Plot 9	Ø	0467511	4896704	
Plot 10				
Plot 11				
Plot 12				
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Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = **>10/ha? Yes / (No)** BMA- 011

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM		Photo Number(s)
1	SUGAR MAPLE			0467510	4896722	
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
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22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

TURKEY VULTURE
SONG SPARROW (VO)
EASTERN WOOD PEEWEE (VO)
BLUE JAY (VO)
AMERICAN CROW (VO)
ROBIN (VO)

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER RMA CANDIDATE

May 30/12
PNT, JJK



Armow Wind Farm

BMA-011

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:3,500

0 15 30 60 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332900063

BMA - 007

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only: WOO - 028, 102, 103, 104

Woodland Number :

Project Name: ARMOW Project #: 1275A

Start Time 11:10 End Time 12:45 Date: MAY 31, 2012 Observer(s): PVT JJK

Polygon or Area ID (BMA-007) Weather Conditions: 12°C, PARTLY CLOUDY, NO PRECIP, BWS = 2

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1 A	Ø	0454775	4990535	
Plot 2 A	Ø	0459807	4990517	
Plot 3 B	Ø	0459786	4990349	
Plot 4 C	3	0459655	4990420	
Plot 5 C	Ø	0459619	4990470	
Plot 6 C	Ø	0459580	4990462	
Plot 7 C	Ø	0459586	4990425	
Plot 8 C	Ø	0459625	4990420	
Plot 9 D	Ø	0459700	4990344	
Plot 10 E	Ø	0459761	4990290	
Plot 11				
Plot 12 G	Ø	0459957	4990364	SEPARATE POLYGON
Plot 13 G	Ø	0459944	4990309	
Plot 14 H	Ø	0459005	4990346	
Plot 15 H	Ø	0459021	4990387	
Plot 16				
Plot 17				
Plot 18				
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Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = >10/ha? Yes / (No) If >10/ha: BMA- 007

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM		Photo Number(s)
PLOT C 1	WHITE ASH			0454653	4990425	
PLOT C 2	WHITE ASH			0459642	4990433	
PLOT C 3	WHITE ASH			0459642	4990432	
4						
5						
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11						
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13						
14						
15						

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

SONG SPARROW (V0)
AMERICAN GOLD FINCH (V0)
TREE SWALLOW (V0)
EASTERN WOOD PEEWEE (V0)
AMERICAN CROW (V0)

Sketch candidate trees with multiple cavities, identifying the location of cavities

No longer candidate BMA May 31 2012 PNT JK



Armow Wind Farm

BMA-007

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:3,000

0 15 30 60 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\WF\mxd\1275A_BMAmoose_3K_2012_05_28_ELF.mxd

AG: 332970008, 332970010

BMA - 004

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only: WOO - 029
Woodland Number :

Project Name: Almow Project #: 1275A

Start Time 9:25 End Time 10:34 Date: MAY 31 2012 Observer(s): PNT JJK

Polygon or Area ID (BMA-004) Weather Conditions: 12°C, PARTLY CLOUDY, NO PRECIP BWS = 2

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	Ø	0459422	4990202	
Plot 2	Ø	0459382	4990210	
Plot 3	Ø	0459352	4990199	
Plot 4	Ø	0459319	4990215	
Plot 5	1	0459285	4990207	
Plot 6	Ø	045 9219	4990156	
Plot 7	Ø	045 9193	4990123	
Plot 8	Ø	0459032	4990992	
Plot 9	Ø	045 9153	4990983	
Plot 10	Ø	045 9211	4990030	
Plot 11				
Plot 12				
Plot 13				
Plot 14				
Plot 15				
Plot 16				
Plot 17				
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Plot 20				
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Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = **>10/ha? Yes (No)** If >10/ha: BMA- 004

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

AMERICAN CROW (VO)
SONG SPARROW (VO)
ROBIN (VO)
HAIRY WOODPECKER
FORTS/RECREATION AREAS
BLUE JAY (VO)
RACCOON (DEAD)
TURKEY VULTURE
RACCOON (LIVE)
CHESTNUT SIDED WARBLER (VO)
EASTERN WOOD PEEWEE (VO)

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE BMA

MAY 31. 2012 PNT JK



Armow Wind Farm

BMA-008

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:3,000

0 15 30 60 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\WP\NRSI_1275A_BMA-crosslo_3K_2012_05_28_ELF.mxd

AA: 332970008, 332970010

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-037

Project Name: ARMOW Project #: 1275A

Start Time 2:15 End Time 3:42 Date: MAY 31, 2012 Observer(s): PNT JJK

Polygon or Area ID (BMA-015) Weather Conditions: SUNNY, NO PRECIP, BWS = 2, 14°C

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	Ø	045 9991	4996230	
Plot 2	Ø	046 0075	4996304	
Plot 3	Ø	046 0124	4996264	
Plot 4	Ø	046 0146	4996275	
Plot 5	Ø	046 0330	4996521	
Plot 6	Ø	046 0295	4996602	
Plot 7	Ø	046 0361	4996701	
Plot 8	Ø	046 0354	4996599	
Plot 9	Ø	046 0129	4996394	
Plot 10	Ø	046 0103	4996363	
Plot 11	Ø	046 0036	4996374	
Plot 12	Ø	045 9998	4996367	
Plot 13	Ø	045 9964	4996429	
Plot 14				
Plot 15				
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
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Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = **>10/ha? Yes / (No)** BMA- 015

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
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28					
29					
30					

Supplementary Information, Incidentals

RUFFED GROUSE
SONG SPARROW (Vo)
AMERICAN CROW (Vo)
EASTERN MEADOWLARK (Vo)
OVENBIRD (Vo)

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE BMA

MAY 31 2012 PM DK



Armow Wind Farm

BMA-015

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:3,500

0 15 30 60 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\AF NRSI_1275A_BMAmicrostc_3K_2012_05_28_ELF.mxd

AG: 332920042
332920043

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number : WOD-044

Project Name: ARMOW Project #: 12751

Start Time 4:33 End Time 6:23 Date: MAY 31 2012 Observer(s): PMT JK

Polygon or Area ID (BMA-013) Weather Conditions: SUNNY, 15°C, NO PRECIP BWS = 2-3

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	Ø	046 6969	4899360	
Plot 2	1	046 6996	4899331	
Plot 3	Ø	046 7016	4899265	
Plot 4	Ø	0467099	4899276	
Plot 5	Ø	046 7137	4899254	
Plot 6	Ø	046 7166	4899209	
Plot 7	Ø	0467179	4899160	
Plot 8	Ø	0467164	4899127	
Plot 9	Ø	046 7133	4899112	
Plot 10	Ø	0467161	4899046	
Plot 11	Ø	0467191	4899075	
Plot 12	Ø	046 7202	4899052	
Plot 13	1	046 7165	4899977	
Plot 14	Ø	046 7097	4899966	
Plot 15	Ø	046 7038	4899996	
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
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Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = **>10/ha? Yes / (No)** BMA- 013

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM		Photo Number(s)
1	SUGAR MAPLE	1	85.3	0467004	4899327	
2	SUGAR MAPLE	2		0467011	4899310	
3						
4						
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13						
14						
15						

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

BLUE JAY (V.)
ROBIN (V.)
OVENBIRD (V.)
TURKEY (x3)
AMERICAN CROW

Sketch candidate trees with multiple cavities, identifying the location of cavities

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-044

Project Name: ARMOW Project #: 1275A

Start Time 17:31 End Time 18:20 Date: May 31/12 Observer(s): TRB, TAL

Polygon or Area ID (BMA-013 Weather Conditions:

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	0	0467591, 4899048	Photo: 101-0851 → 0854
Plot 2	1	0467582, 4899027	101-0855 → 0858
Plot 3	0	0467560, 4898999	101-0859 → 0862
Plot 4	0	0467543, 4898980	101-0863 → 0866
Plot 5	0	0467497, 4898977	101-0867 → 0870
Plot 6	0	0467505, 4898995	101-0871 → 0874
Plot 7	0	0467531, 4899023	101-0845 → 0878
Plot 8	0	0467531, 4899057	101-0879 → 0882
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
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Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = **>10/ha? Yes / (No)** BMA- 044

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

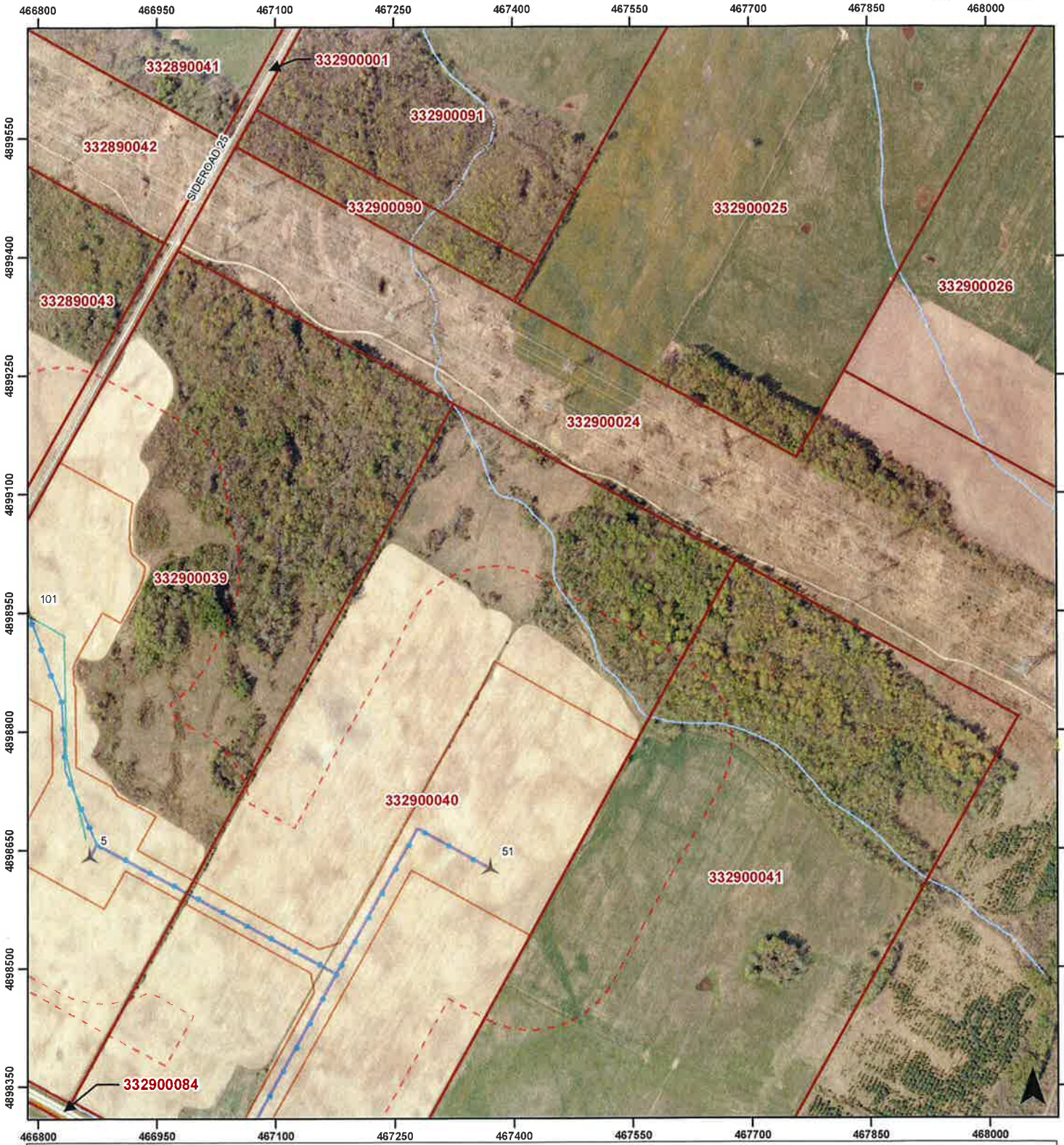
Supplementary Information, Incidentals

- Not many trees are greater than 25 cm dbh

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE BMA

MAY 21 2012 PNT JK



Armow Wind Farm

BMA-013

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No 1275A
UTM Zone 17, NAD 83
1:6,613

0 30 60 120 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\WP\NRSI_1275A_BMAmicrosite_3K_2012_05_28_ELF.mxd

AG: 332900039
332900040

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-020

Project Name: Armaw WF Project #: 1275 A

Start Time 16:40 End Time 18:13 Date: May 30/2012 Observer(s): TRB, TAL

Polygon or Area ID: BMA-025 Weather Conditions: temp: 16°C clard cover: 100% precip: none wind: 2-3.

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	0	0462146, 4890432	Photos: 101 - 0667 → 0670
Plot 2	0	0462184, 4890451	Photos: 101 - 0671 → 0674
Plot 3	1	0462265, 4890466	Photos: 101 - 0675 → 0678
Plot 4	0	0462311, 4890408	Photos: 101 - 0679 → 0682
Plot 5	0	0462308, 4890306	Photos: 101 - 0683 → 0686
Plot 6	1	0462317, 4890261	Photos: 101 - 0687 → 0690
Plot 7	0	0462334, 4889927	Photos: 101 - 0691 → 0694
Plot 8	1	0462331, 4889892	Photos: 101 - 0695 → 0698
Plot 9	0	0462408, 4889790	Photos: 101 - 0699 → 0702
Plot 10	0	0462385, 4889834	Photos: 101 - 0703 → 0706
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
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Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 3 / (10 × 0.05) = 6 cavity trees/ha

>10/ha? Yes (No)

If >10/ha: BMA- 025

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

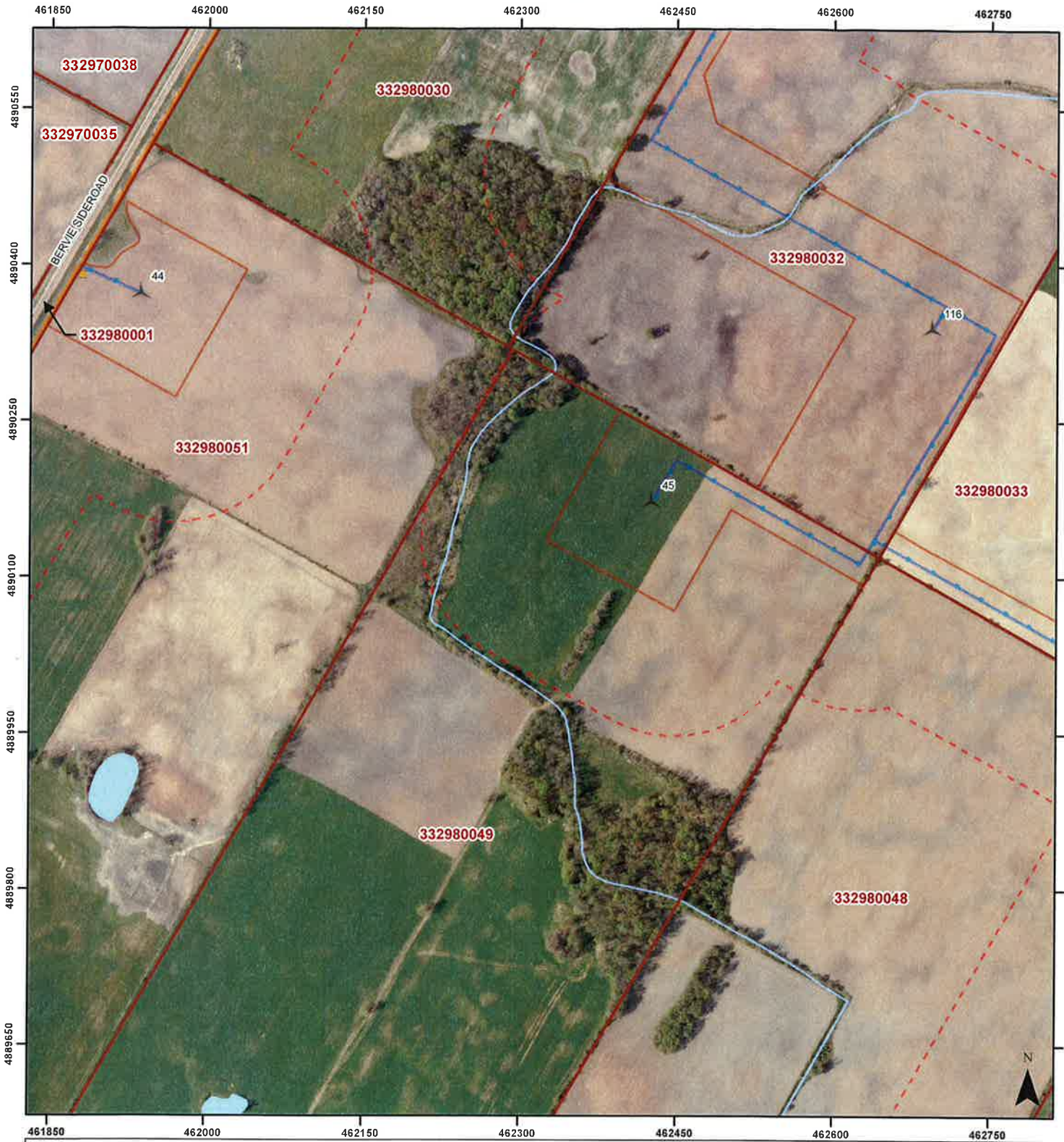
Supplementary Information, Incidentals

* Watercourse is dry - Currently no water throughout woodland.

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE
BMA

MAY 30 2012
TRB TAL



Armow Wind Farm

BMA-025

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:5,000

0 25 50 100 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\MF\NRSI_1275A_BMAmercsite_3K_2012_05_28_ELF.mxd

AG: 332980030
332980051 (call prior)

332980049

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: WOD-141

Page 1 of 2

Project Name: Arrow Lit Project #: 1275A

Start Time 9:46 End Time 11:19 Date: MAY 31/2012 Observer(s): IRB, TAL

Polygon or Area ID (BMA-030 Weather Conditions: temp: 15°C cc: 80% wind: 1-2 precip: none

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	Ø	0466165, 4890693	Few trees ≥ 25cm dbh in plot PIC-0707, 0708, 0709, 0710
Plot 2	Ø	0466157 4890662	Few trees ≥ 25cm dbh in plot PIC-0711 - 0714
Plot 3	Ø	0466124 4890636.	PICS - 0715 to 0718
Plot 4	1	0466111, 4890599.	PICS - 0719 to 0722
Plot 5	Ø	0466094, 4890576.	PICS - 0726 to 0729 - only 2 trees ≥ 25cm in plot
Plot 6	Ø	0466064, 4890570	PICS - 0730 to 0733
Plot 7	1	0466054, 4890590	PICS - 0734 to 0737
Plot 8	Ø	0466060, 4890605.	PICS - 0738 to 0741.
Plot 9	Ø	0466094, 4890649	PICS - 0742 to 0745.
Plot 10	Ø	0466139, 4890669	PICS - 0746 to 0749.
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 4/(10 x 0.05) = 8 cavity trees/ha >10/ha? Yes (No) If >10/ha: BMA- BMA-030

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1 A	Unknown	3 medium size.	37	0466115, 4690593	0723, 0724, 0725
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

- wet pockets throughout woodland.
- some trees/snags w/ cavities but holes are generally small & superficial (ie// woodpecker holes).

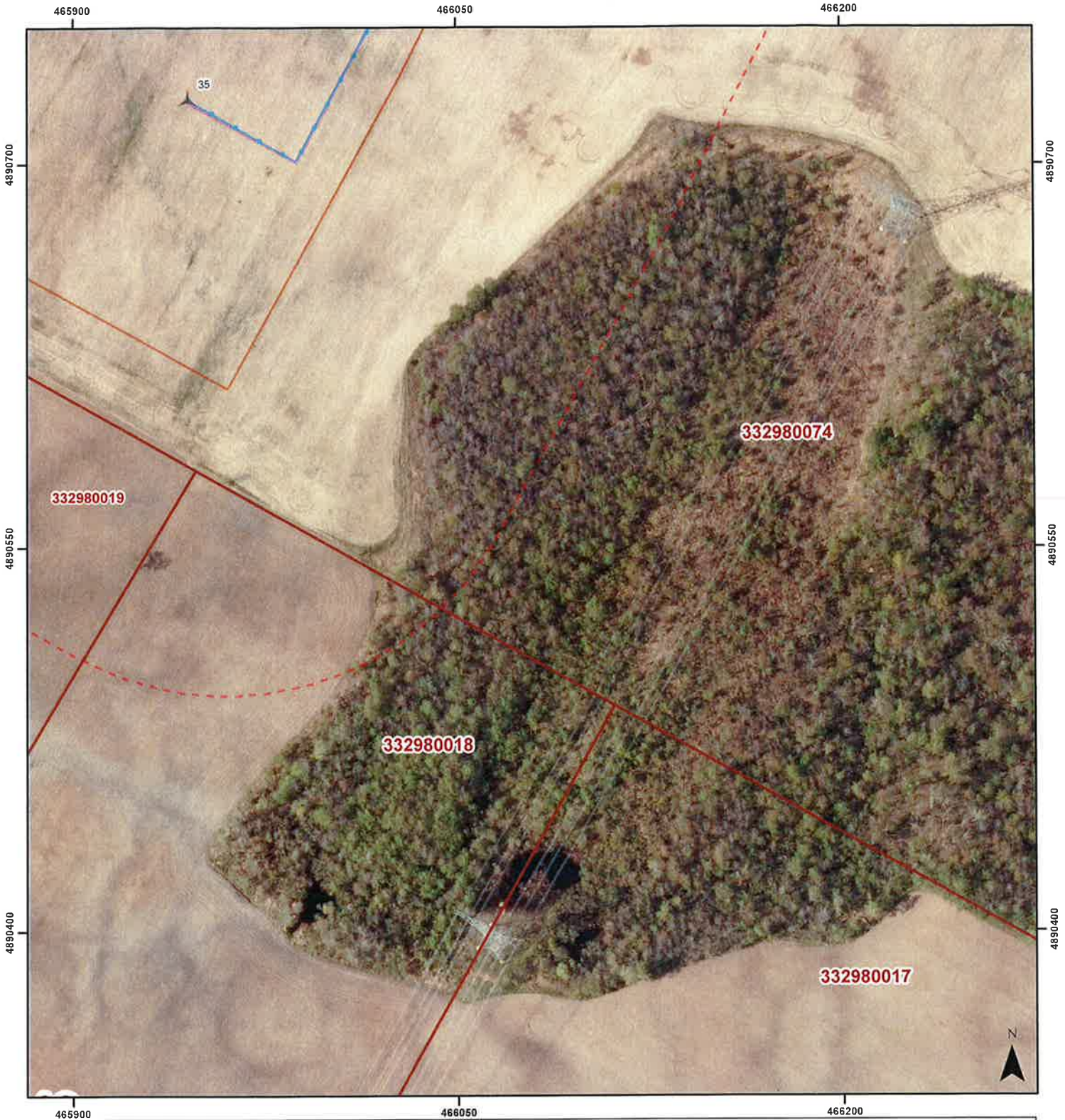
* landowner approached us as we were walking out of woodlot.

* birds- ovenbird, thrush sp., common yellowthroat.

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE BMA

MAY 31 2012 TRÉ, TAL



Armow Wind Farm

BMA-030

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No 1275A
UTM Zone 17, NAD 83
1:2,000

0 10 20 40 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Path: X:\1275_Armow\VP\MXD_1275A_BMAmercado_3K_2012_05_28_ELF.mxd

AG: 332980074

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number : WOD-002

Project Name: ARMOWUF Project #: 1275A

Start Time 12:07 End Time: 14:15 Date: MAY 31/2012 Observer(s): TRB, TAL

Polygon or Area ID: BMA-018 Weather Conditions: temp: 15°C CC: 75% wind: 2-3. precip = none

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)	Comments
Plot 1	0	0463243, 4897043	Photos: 0750 → 0753
Plot 2	0	0463225, 4897068	0754 → 0757
Plot 3	0	0463184, 4897086	0758 → 0761
Plot 4	0	0463142, 4897121	0762 → 0765
Plot 5	0	0463050, 4897147	0766 → 0769
Plot 6	1	0463014, 4897155	0770 → 0773
Plot 7	0	0462966, 4897194	0774 → 0777
Plot 8	0	0462942, 4897185	0778 → 0781
Plot 9	0	0462910, 4897142	0782 → 0785
Plot 10	0	0462844, 4897059	0786 → 0789
Plot 11	2	0462760, 4897019	0790 → 0793
Plot 12	0	0462753, 4896977	0794 → 0797
Plot 13	0	0462706, 4896910	0798 → 0801
Plot 14	0	0462918, 4897021	0802 → 0805
Plot 15	2	0462997, 4896998	0806 → 0809
Plot 16	0	0463039, 4896979	0810 → 0813
Plot 17	0	0463152, 4897040	0814 → 0817
Plot 18	0	0463191, 4897015	0818 → 0821
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 5 / (18 x 0.05) = 5.5 cavity trees/ha

>10/ha? Yes / No If >10/ha: BMA- 019

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

- few trees ≥ 25 cm dbh throughout woodlot
- lots of teel poison ivy throughout
- old farm equipment throughout
- wet pockets scattered throughout woodland

Sketch candidate trees with multiple cavities, identifying the location of cavities

NO LONGER CANDIDATE BMA

MAY 31 2012 TRB, TAL



Armow Wind Farm

BMA-018

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:4,000

0 20 40 80 m

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Path: X:\1275_Armow\GIS\NRSI_1275A_BMAmicrosite_8K_2012_05_28_ELE.mxd

Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AB: 332920019 (call prior)
332920031

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only: WOD-031
Woodland Number: BMA-010

Page 1 of 2

Project Name: Arrow Project #: 1275A

Start Time 9:00 End Time 12:45 Date: Jun 7/12 Observer(s): ZMP, BEB

Polygon or Area ID (382890061 (A) +47, 48, 59, 60 (B)) Weather Conditions: wind 2, 95% cc, 14°C, no precip

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	0	0464871	4898434	A
Plot 2	0	0464841	4898417	A
Plot 3	1	0464836	4898385	A
Plot 4	0	0464800	4898354	A
Plot 5	0	0464784	4898323	A
Plot 6	1	0464822	4898275	A
Plot 7	0	0464874	4898287	A
Plot 8	0	0464923	4898291	A
Plot 9	1	0464943	4898325	A
Plot 10	0	0464890	4898368	A
Plot 11	0	0466081	4897612	B
Plot 12	0	0466080	4897570	B
Plot 13	0	0466072	4897537	B
Plot 14	1	0466057	4897507	B
Plot 15	0	0466053	4897453	B
Plot 16	0	0466043	4897413	B
Plot 17	0	0466051	4897220	B
Plot 18	0	0466093	4897367	B
Plot 19	1	0466090	4897407	B
Plot 20	2	0466105	4897532	B
Plot 21	0	0466117	4897569	B
Plot 22	1	0466135	4897619	B
Plot 23	0	0466125	4897655	B
Plot 24	0	0466109	4897682	B
Plot 25	0	0466146	4897703	B
Plot 26	0	0466161	4897664	B
Plot 27	0	0466173	4897614	B
Plot 28	1	0466155	4897585	B
Plot 29	0	0466155	4897559	B
Plot 30	0	0466159	4897519	B
Plot 31	2	0466134	4897481	B
Plot 32	1	0466122	4897439	B
Plot 33	1	0466168	4897462	B
Plot 34	0	0466233	4897526	B
Plot 35	0	0466241	4897561	B

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 13 / (35 X 0.05) = 7.4 **>10/ha? Yes / (No)** If >10/ha: BMA-010

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

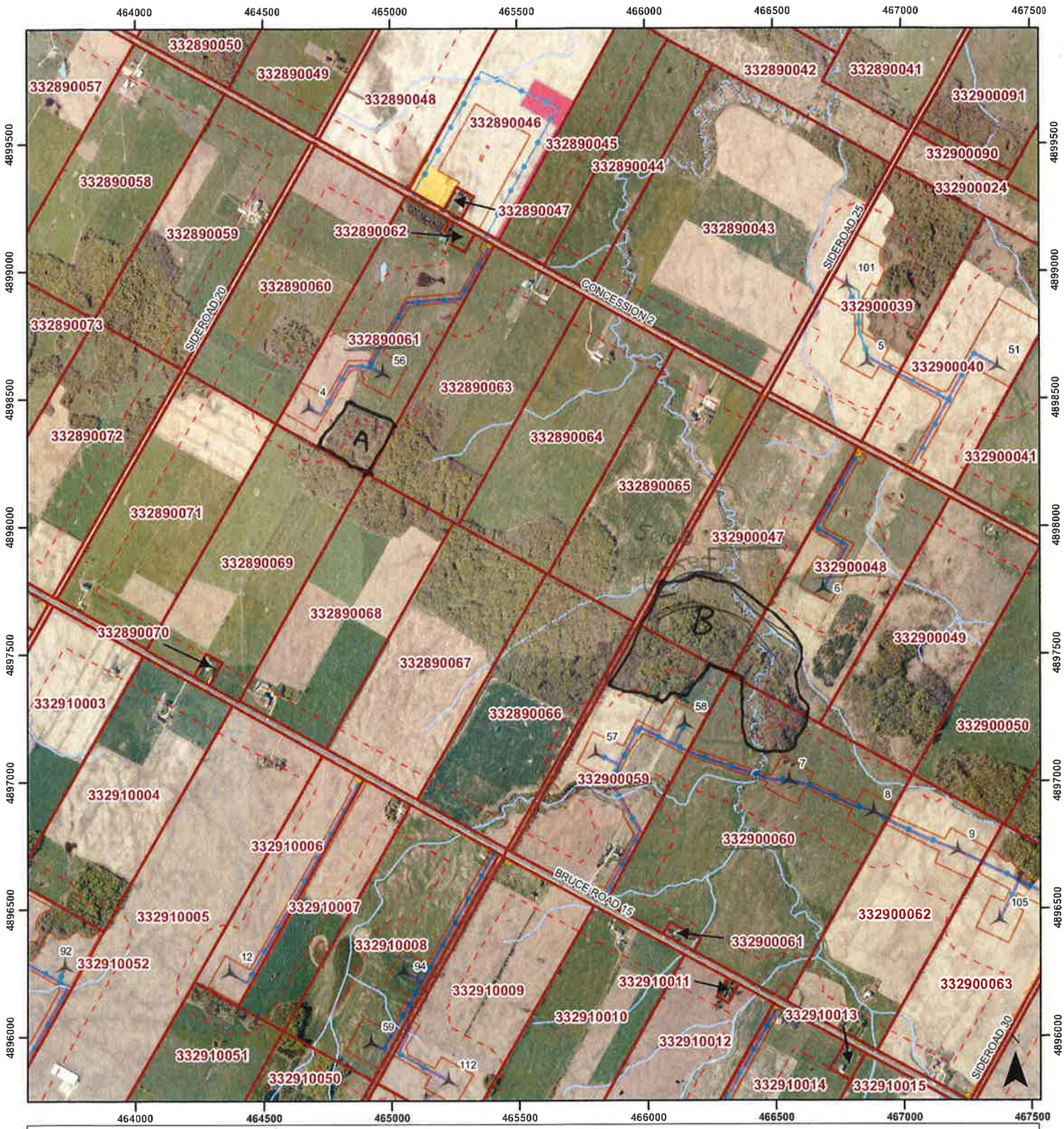
Supplementary Information, Incidentals

A: Am. Robin
Red-winged blackbird
Bobolinks (332890061 + 332890063)
Song Sparrow
Red tailed Hawk
Red-bellied Woodpecker
Blue Jay
Eastern Wood Pewee, Leopard Frog

B: Am Crow
Beaver Dam x2
Leopard Frog
Eastern Wood Pewee
Am. Robin
Northern Flicker
White-tailed deer tracks

Sketch candidate trees with multiple cavities, identifying the location of cavities

7 - June - 12 BEP



Armow Wind Farm

BMA-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

June 4, 2012
Project No: 1275A
UTM Zone 17, NAD 83
1:20,000

0 100 200 400 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Ag: 332890061 332900059 332900060
332900047 332900048

7-June-12 BEB



Armow Wind Farm

BMA-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:11,349

0 55 110 220 m

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Path: X:\1275_ArmowWF\NRSI_1275A_BMAmicrosite_3K_2012_05_28_CLR.mxd

Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Add: 332890061 332900059 332900060
332900047 332900048

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number : ~~BMA-016~~ WOD-050

Project Name: Armow Project #: 1275A

Start Time 13:15 End Time 15:00 Date: Jun 7/12 Observer(s): BEB, EMP

Polygon or Area ID (33291 0 0 0, 12, 47, 46 Weather Conditions: 17°C, 30% cc, wind 2, no precipitation

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	0	0465721	4895534	
Plot 2	0	0465760	4895490	
Plot 3	1	0465798	4895462	
Plot 4	0	0465864	4895390	
Plot 5	0	0465822	4895359	
Plot 6	0	0465760	4895390	
Plot 7	0	0465672	4895424	
Plot 8	0	0465553	4895403	
Plot 9	0	0465530	4895398	
Plot 10	0	0465512	4895405	
Plot 11	0	0465456	4895379	
Plot 12	0	0465333	4895442	
Plot 13	0	0465348	4895533	
Plot 14	0	0465401	4895641	
Plot 15	0	0465497	4895643	
Plot 16	0	0465584	4895634	
Plot 17	0	0465583	4895536	
Plot 18	0	0465462	4895530	
Plot 19	0	0465636	4895479	
Plot 20	1	0465675	4895463	
Plot 21	0	0465670	4895565	
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 2 / (21 x 0.05) = 1.9 **>10/ha? Yes / (No)** If >10/ha: BMA-016

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

Song Sparrow
Bobolink (332910010)
Am. Robin
Am. Crow
Eastern Wood Pewee
Red-winged Blackbird
Blak-capped Chickadee
Northern Cardinal
Killdeer

Sketch candidate trees with multiple cavities, identifying the location of cavities

07 - June - 12



Armow Wind Farm

BMA-016

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:5,000

0 25 50 100 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332910009 332910012 332910010
332910047 332910046

7- June-12 BEB



Armow Wind Farm

BMA-016

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

June 4, 2012
Project No: 1275A
UTM Zone 17, NAD 83
1:12,500

0 62.5 125 250 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332910009 332910013 332910010
332910047 332910046

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number: ~~BMA-031~~ WOD-012

Page 1 of 2

Project Name: Armow Project #: 1275A

Start Time 16:00 End Time 16:46 Date: Jun 7/12 Observer(s): BEB, EMP

Polygon or Area ID (3329780058 Weather Conditions: 19°C, 5% CC, Wind 2, no precipitation

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone 17T)	Comments
Plot 1	1	0462305 4892536	
Plot 2	0	0462274 4892567	
Plot 3	0	0462250 4892594	
Plot 4	0	0462278 4892622	
Plot 5	0	0462315 4892619	
Plot 6	0	0462301 4892591	
Plot 7	0	0462324 4892564	
Plot 8	1	0462341 4892602	
Plot 9	0	0462372 4892593	
Plot 10	1	0462356 4892561	
Plot 11			
Plot 12			
Plot 13			
Plot 14			
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			
Plot 33			
Plot 34			
Plot 35			

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only

Formula: Total # Cavity Trees / (# Plots x 0.05ha)

Final Woodland Tally = 3 / (10 x 0.05) = 1.5 **>10/ha? Yes / (No)** If >10/ha: BMA-031

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

Song Sparrow
Red-winged blackbird
Blue Jay
Am. Crow

Sketch candidate trees with multiple cavities, identifying the location of cavities

07- June-12



Armow Wind Farm

BMA-031

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No. 1275A
UTM Zone 17, NAD 83
1:2,000

0 10 20 40 m

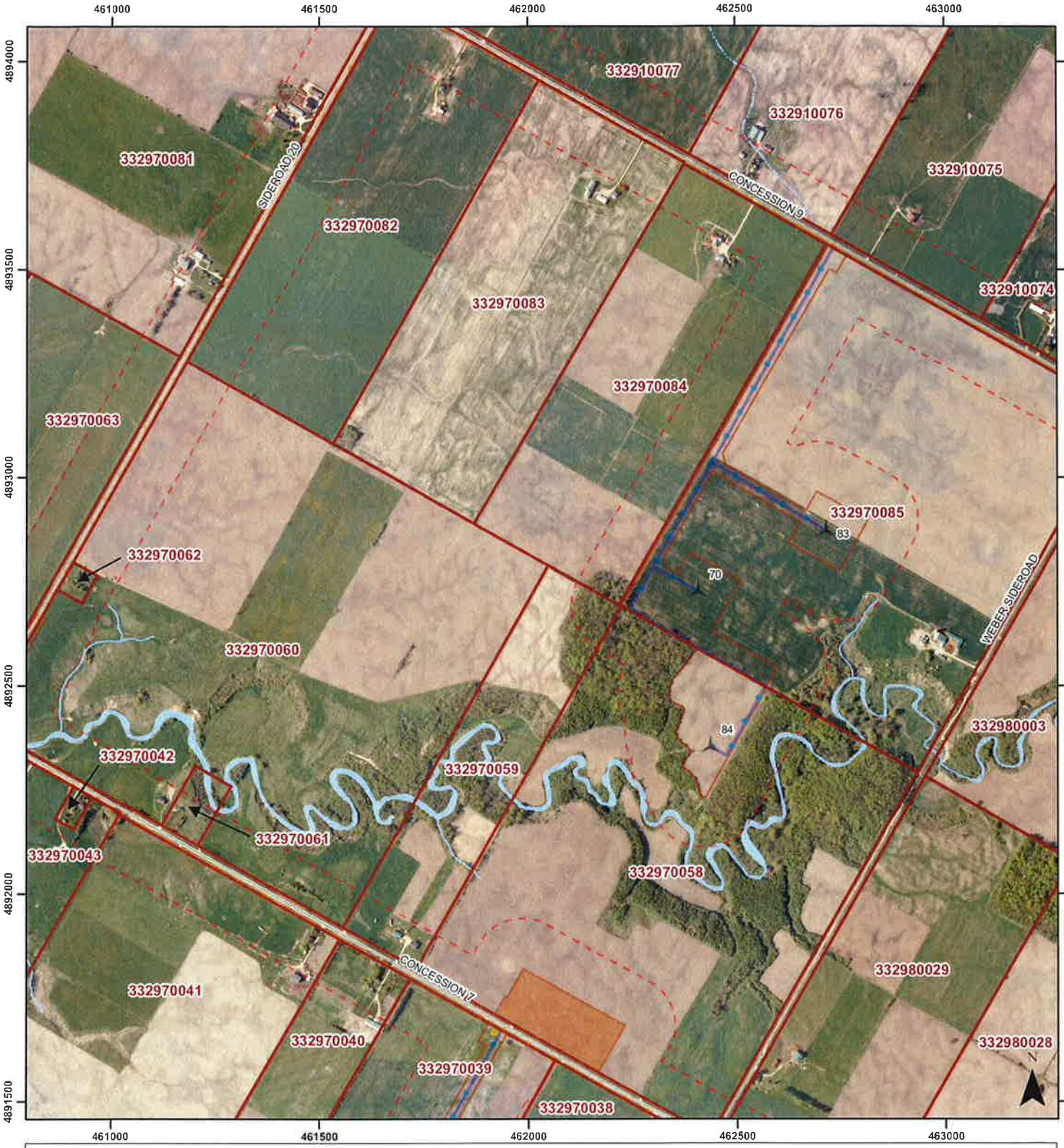
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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

a: 332970058 - 10 plots
332970085

7-June-12 BLB



Armow Wind Farm

BMA-031

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

June 4, 2012
Project No. 1275A
UTM Zone 17, NAD 83
1:12,500

0 62.5 125 250 m

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Legend

- Project Area (120m)
- Proposed Turbine (L10 Rev5)
- MET Tower
- Junction Box
- Crane Walk
- Above Ground Cabling
- Underground Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Parcel Fabric
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332970058, 332970085

Candidate Bat Maternity Roost Data Form

Use this form in FOD, FOM, SWD, SWM

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Office Use Only:
Woodland Number : WOD 041

Project Name: ARMOW Project #: 12765A

Start Time 1623 End Time 1525 Date: 08-Jun-12 Observer(s): BEB JJH

Polygon or Area ID (BMA023) Weather Conditions: 22°C 20% cc W 4 NW Prey Ø

Plot Number	# live or dead cavity trees ≥ 25cm dbh	Plot Center UTM (Zone: 17T)		Comments
Plot 1	Ø	0465321	4890673	
Plot 2	Ø	0465338	4890703	
Plot 3	0	0465348	4890732	
Plot 4	0	0465354	4890763	
Plot 5	Ø	0465376	4890793	
Plot 6	0	0465581	4890934	
Plot 7	Ø	0465372	4890876	
Plot 8	0	0465522	4890796	
Plot 9	Ø	0465548	4890814	
Plot 10	Ø	0465591	4890808	
Plot 11	Ø	0465633	4890791	
Plot 12	Ø	0465676	4890777	
Plot 13	1 Ø	0465646	4890728	
Plot 14	Ø	0465360	4890673	
Plot 15	Ø	0465365	4890643	
Plot 16				
Plot 17				
Plot 18				
Plot 19				
Plot 20				
Plot 21				
Plot 22				
Plot 23				
Plot 24				
Plot 25				
Plot 26				
Plot 27				
Plot 28				
Plot 29				
Plot 30				
Plot 31				
Plot 32				
Plot 33				
Plot 34				
Plot 35				

Number of Plots: Sites ≤10ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots) Plots = 0.05ha or 12.6m radius Select plots randomly

This Section Office Use Only Formula: Total # Cavity Trees / (# Plots x 0.05ha)

If >10/ha:

Final Woodland Tally = **>10/ha? Yes / No** BMA-

Preparation for EOS Bat Monitoring: Identification of High Quality Potential Roost Trees

Identify the best potential roost trees in the applicable woodland/polygon: <10ha in size = up to 10 >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

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Preparation for EOS Bat Monitoring - Continued (Woodlands >10ha)

Identify the best potential roost trees in the applicable woodland/polygon: >10ha in size = 1 additional for each ha up to 30

Tree #	Species	# of Cavities	DBH (cm)	UTM	Photo Number(s)
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Supplementary Information, Incidentals

Sketch candidate trees with multiple cavities, identifying the location of cavities



Armow Wind Farm

BMA-023

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

May 28, 2010
Project No: 1275A
UTM Zone 17, NAD 83
1:6,000

0 25 50 100 m

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Path: X:\1275_Armow\GIS\NRSI_1275A_IMAmicrosite_3K_2012_05_28_ELF.mxd

Legend

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- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

AG: 332980020 - 35 plots



Armow Wind Farm

BMA-023

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

June 4, 2012
Project No: 1275A
UTM Zone 17, NAD 83
1:12,500

0 62.5 125 250 m

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- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody

Ag: 332918C020