Appendix I
Site Investigation Field Notes

RAL RESOURCE SOLUTIONS INC
Modified ELC Community Description

Site: Armour WF 1275
Polygon: WOD-001 (TMC_20_28)
UTM:
Date: Sept 14, 20 Time: 13:20
Surveyor(s): Katherine S + Jessa D
Weather: Bright, S wind 15km/h, 12°C, 0% P

Community Classification

Vegetation Type: FODM4-2 Dry-Fresh White Ash-Hardwood 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
History	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
X Natural	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Cultural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
Site		X Roll. Upland	Bluff	Fen	X Forest
Cover	Open Water	Cliff	**Plant Form**	Bog	Plantation
Open	Shallow Water	Plankton	Forb	Coniferous	
Shrub	X Surficial Dep.	Submerged	Lichen	Mixed	
Treed	Bedrock	Floating-Lvd.	Bryophyte		
		Graminoid	X Deciduous		

nd Description

Layer	HT	Cover	Species
Super-canopy			
1 Canopy	2	4	White Ash-Rucswood
2 Sub-canopy	2	3	Sugar Maple > Basswood
3 Understorey	5	3	Calico Aster >> Common Blackberry > Goldenrod
4 Groundcover	7	2	Bracken >> Hellebarine > Herb Robert

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							
Snags	O	< 10	A	10 - 24	R	25 - 50	N	> 50
Logs	R	< 10	O	10 - 24	X	25 - 50	N	> 50
	O	< 10	O	10 - 24	O	25 - 50	[illegible]	> 50

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

Pioneer	Young	Mid-age	X Mature	[illegible]

NATURAL RESOURCE SOLUTIONS INC
Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour WF- 1275
Polygon: WOD-001
UTM:
Date: Sept 14/11 Time: 13:20
Surveyor(s): Katherine S + Jessica P.
Weather: Bright, CC, S wind 15km/h 12°C 0% P

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
Common Juniper			A		
Tall [illegible]			A		
[illegible]			R		
Calico aster			D		
Hawthorn sp.		R			
[illegible]			R		
Sugar Maple		A			
Wild red raspberry			O		
Common Dandelion			R		
Herb Robert	A	O			
Bracken			R		
Eastern hemlock			R		
White Ash	A				
Basswood			A		
Hellebarine Orchid			A		
Hop hornbeam		R			
Herb Robert			O		
Common Blackberry			A		
Tall Thistle			O		
Common Elder			A		
Trembling aspen	R				
[illegible]					
Bittersweet			O		

Species	Layer 1	2	3	4	Sample
Wood Sorrel				R	
Rough-fruited Cinquefoil				R	
Canada Anemone				O	
Orange-spotted Touch-me-not				R	
Blue Cohosh			O		
Heart-leaved Aster				O	
Red Maple		R			
Bracted Polybasia				R	
Jewelweed			R		
Blue Beech		R			
Riverbank Grape				R	
Virginia Creeper				O	
Swamp Currant				R	
Zigzag goldenrod				O	
Wild geranium				R	

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

only had property access to portion of woodland

WOD-001

KSJ, JP Sept 14/11
#1275 Thornton WF

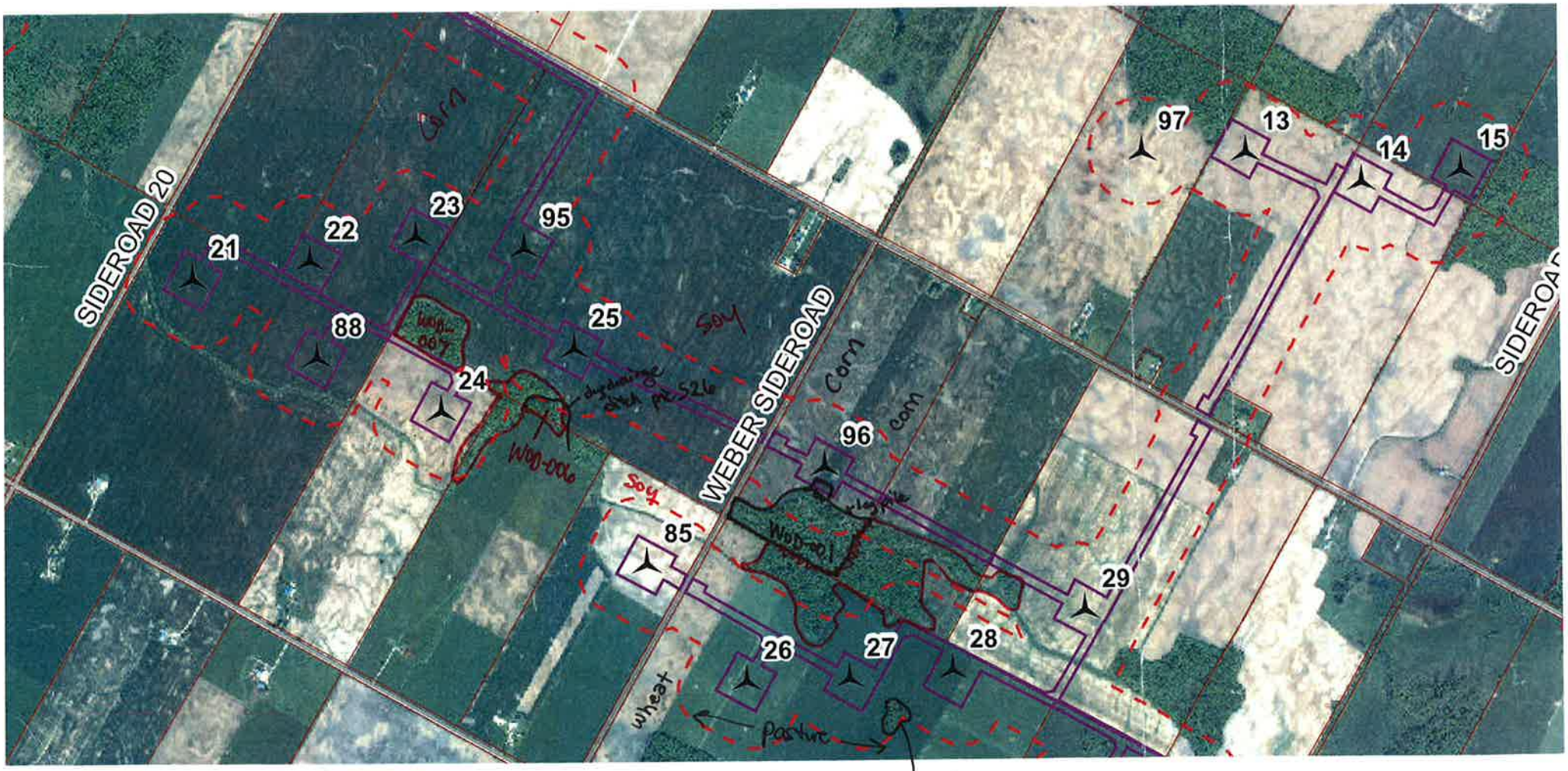


photo 531, 532, 533
Small clump of trees: Trembling aspen, ash sp. (abundant), sugar maple, Hawthorn
No understory, in pasture, heavily used by cattle
(FODMS-8)

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arnow WF
Project #: 1275
Date: Sept 14/11
Observer(s): Katherine S, Jess P

WOD-001

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments	UTM (17T)
WOD-001	1	0			0464156, 4894078
	2	0			0464139, 4894051
	3	0		Tree with <20cm dbh with peeling bark	0464107, 4894010
	4	0			0464107, 4894037
	5	0			0464092, 4894037
	6	0			0464060, 4894037
	7	0			0464167, 4894061
	8	0		Tree <20cm dbh w peeling bark	0464076, 4894026
	9	1	20	Stump (no more than 2m tall) (25 dbh)	0464037, 4894036
	10	0			0464001, 4894051
	11	0			0464273, 4893848
	12	0			0464227, 4893837
	13	0			0464190, 4893841
	14	1	20		0464148, 4893887
	15	0			0464363, 4893827
	16	0			0464483, 4893796
	17	0			0464482, 4893827
↓	18	0			0464512, 4893786
			40/18		
	total snags	2		Note: WOD-002 and WOD-003 have no Bat mat. Roost Data	
	Snags/ha	2.22		Landowner not given access onto property	

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

Wildli. Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow Wind Farm 1275
Polygon:	WOD-001
UTM:	
Date:	Sept 14/11 Time: 1:20pm (13:20)
Surveyor(s):	Katherine S + Jessica P
Weather:	80% cc, 5-wind (from W), 17°C, 0% P

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. Robin		Calling	1						
B	Hairy Woodpecker		Calling	1						
B	Blue Jay		Calling	1						
B	C. Goose	Fo		10						
B	Great Crested Flycatcher		Calling	1						
H	Leopard Frog	OB		1						
H	American Toad	NU	Calling	1						
B	Pileated Woodpecker	FE		1						
B	Gray Catbird		Calling	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

(WOD-001)

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow WF 1275
Polygon:	WOD-001
UTM:	
Date:	Sept 14/11 Time: 13:20
Surveyor(s):	Katherine S + Jess P
Weather:	80% CC, 5 wind from W, 17°C, 0% P

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 Pile	17T, 0469102, 4894093	Pile of cut logs (photo 519)
Log Pile	17T, 0463976, 4894064	Pile of stumps/logs (photo 520)
Log Pile considered cumulative		

Describe Valley (depth, geomorphological traits):

Additional Details:

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Modified ELC Community Description Page 1 of 2

Site:	WOD-026 = WOD-001
Polygon:	A
UTM:	0464271 4893946
Date:	Oct. 5/11 Time: 3:05 pm
Surveyor(s):	SAG, MEE
Weather:	temp: 23°C, % c.c.: 0%, precip: none, W: 2

Community Classification

Vegetation Type:	FODM5-8 (Dry-Fresh Sugar maple -
Inclusion:	white ash 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	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	2	White Ash = Red Maple = sugar maple > bassword
1	Canopy	2		
2	Sub-canopy	3	3	Red maple = bassword > white Ash > sugar maple
3	Understorey	4	4	Nanny berry = hawthorn > Redosier = red maple
4	Groundcover	5	4	Goldenrod > Aster >> Virginia water leaf > 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	R	< 10	A	10 - 24	A	25 - 50	A	> 50
Snags	R	< 10	A	10 - 24	A	25 - 50	A	> 50
Deadfall/Logs	R	< 10	A	10 - 24	A	25 - 50	A	> 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 2

PLANT SPECIES LIST

Site:	WOD-001
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 maple	A	A	A	A	
Silver maple	—	—	O	O	
Basswood	D	A	A	A	
White Ash	D	A	A	A	
Black Ash	—	—	O	—	
Black Cherry	R	O	O	A	
Sugar Maple	A	O	O	O	
Ironwood	—	R	O	O	
Red osier dog.	wood		A	—	
Nanny berry	—	—	A	—	
hawthorn	—	—	A	—	
Raspberry	—	—	O	—	
elderberry	—	—	O	—	

Species	Layer 1	2	3	4	Sample
Water plantain	—	—	—	O	
Aster sp.	—	—	—	A	
Burdock	—	—	—	A	
tall goldenrod	—	—	—	A	
Goldenrod sp.	—	—	—	A	
Canada anemone	—	—	—	O	
Virginia water leaf	—	—	—	O	
Ragweed	—	—	—	O	
Stinging nettle	—	—	—	A	
Jewelweed	—	—	—	O	
deadly nightshade	—	—	—	O	
Woodsorrel	—	—	—	R	
Queen anne's lace	—	—	—	O	
Herb Robert	—	—	—	O	

Wildlife and Other Notes

no wildlife observed
- large section of forest selectively cut
  - new growth predominantly asters & goldenrod

(ELC code for remainder of WOD not summarized)

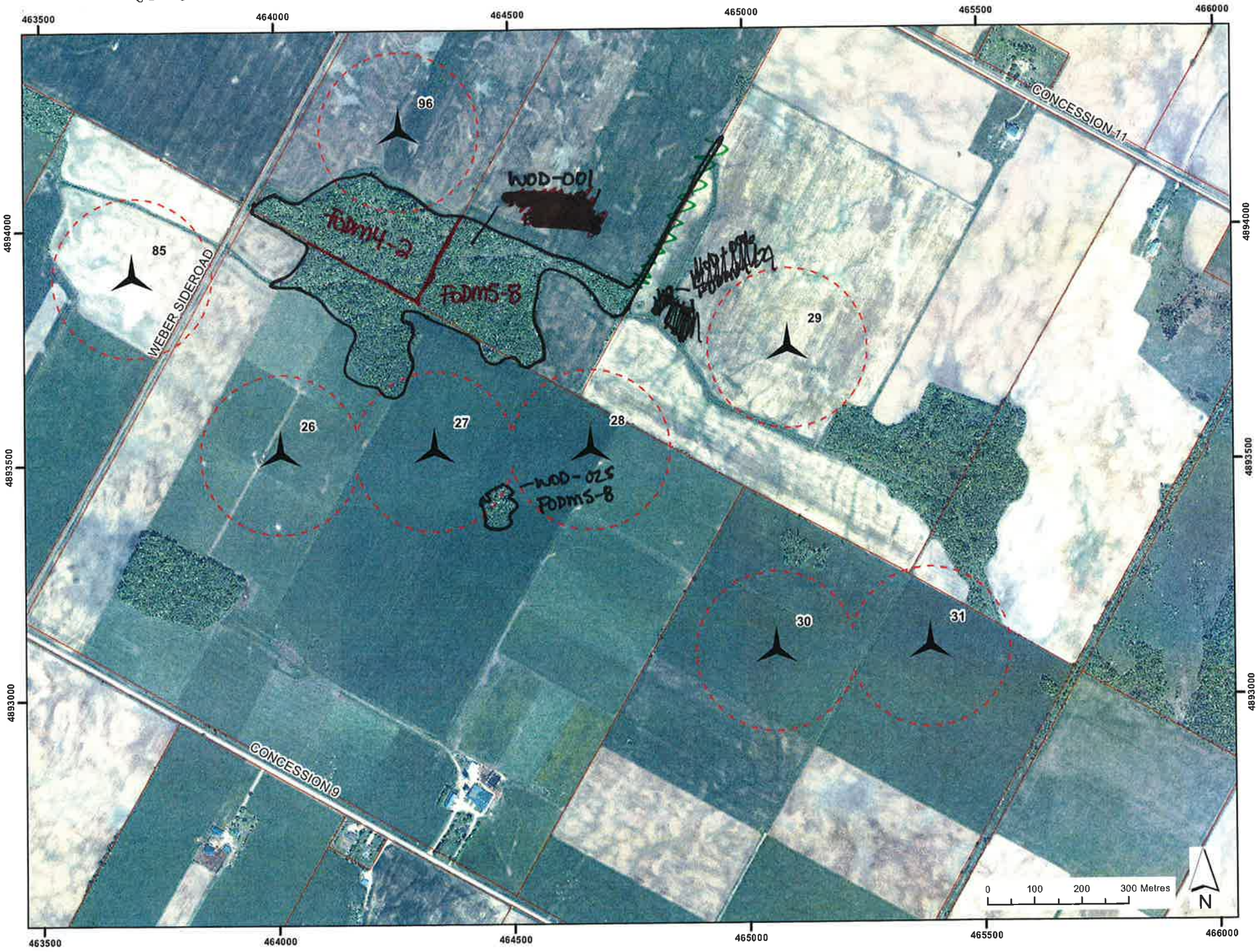
Turbines 29, 30, 31

W(WOD-001)



SAGMEE 2014-6/11

WOD-001


463500
464000
464500
465000
465500
466000
4894000
4893500
4893000
96
85
29
26
27
28
30
31
WOD-001
FODM14-2
FODM5-8
WOD-025
FODM5-8
WEBER SIDEROAD
CONCESSION 11
CONCESSION 9
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in(WOD-001)

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Oct. 13, 2011 **Time (24h):** 11:11

Field #: WET-016 **Weather:** Precipitation: None Temp (°C): 15

Map Code: S1 Wind Speed & Direction: 2/5 Cloud %: 95

Wetland Type: Swamp **Site Type:** R **Dominant Form:** Treed (h)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos: 172-187

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash, freeman's maple, white elm, red maple
c	
dc,dh,ds	
ts	
ls	common blackberry
gc	sensitive fern, jewelweed, marsh bedstraw, blue flag iris
(ne)	Reed Canary Grass, Carex sp., hop sedge, fox sedge, bebb's sedge
be	
re	Scirpus sp.,
ff	
f	
su	
m	

Soil type: Si C L | Organic ☐ Mineral ☒ Si Cl

Rare Species (Local, Regional, Provincial):

None

Wildlife Notes:

Killdeer
Spring Peepers (10)
Canada Goose (Flock) - in field to south

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-025 51

Oct. 13, 2011 (WSD-001) 1275 Armow
11:11 PWA RJW
Wetland Evaluation
15°C, overcast, 95%cc, Wind 2/S, no rain

WET-016
Site Type: ~~Palustrine~~ Riverine
Communities: 1 (see field map)
S1: h (Green Ash) – dominant form, deciduous trees.
re Reed Canary Grass
Soils: SiCL / MR 6

Open Water Type: Type I
Fish Habitat: Absent
Rare Species Observed: None
Surrounding Land Use (1.5km):

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description (WOD-001)

PLANT SPECIES LIST

Page ___ of ___

not canal

CNB-013
WSA-016

Site:	Armow 1275
Polygon:	WET 016 (complex) (T96)
UTM:	
Date:	Oct 13, 2011
Time:	11:11
Surveyor(s):	KJW PVD
Weather:	overcast 15°C, 95% CC, wind 2/5

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
Green Ash	O	O	O	O	
Freeman's Maple	O	O	O	O	
Riverbank Grape			O	O	
White Elm		O	O	O	
Red Maple	O	O	O	O	
Red Osier Dogwood		O	O		
Common Blackberry			O	O	

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Calico Aster			O		
Scirpus sp.				O	
Blue Flag Iris				O	
Bittersweet Nightshade				O	
Boneset			O		
Canada Goldenrod			O		
Carex sp.			O		
Helliborine				O	
Sensitive Fern				O	
Downy Willowherb				R	
Flat-topped Goldenrod				O	
Spotted Jewelweed				O	
Spearmint				O	
Poison Ivy				O	
Hop Sedge				O	
Marsh Bedstraw				O	
Fox Sedge				O	
Bebb's Sedge				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arnaw 1275
Polygon:	WET-016 (WOD-001)
UTM:	
Date:	Oct 13, 2011 — Time: 11:11
Surveyor(s):	PWD, KJW
Weather:	15°C, overcast, 95%cc, Wind 2/S, very light rain

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

Soils	1	2	3
Position:	6		
Aspect:	70°		
%	2-5		
Type:	S		
Class:	C		

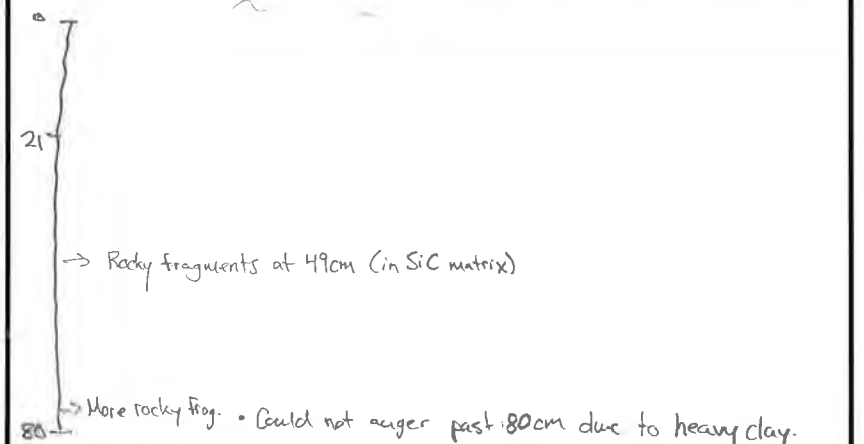
5	***Strata:*** Texture	SiCL		
	Depth	21		
5	***Strata:*** Texture	SiC		
	Depth	80		
	Strata: Texture			
	Depth			
	Strata: Texture			
	Depth			
Effective Texture		SiCL		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	19		
	Gley	45		
	Bedrock	-		
	Water table	?		
	Carbonates			
Depth of Organics		0		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WET-016 (WOD-001)

Tree Tally

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

NOTES:



Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armoy T2T5
Polygon:	WET 016 (NRD-001)
UTM:	
Date:	Oct. 13, 2011 **Time:**
Surveyor(s):	KSW, PWD
Weather:	overcast 5°C, 95% CC, wind 2T5

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	[illegible]	VO		-						
B	[illegible]	VO		"						
B	[illegible]	VO		""						
B	[illegible]	VO		-						
H	[illegible]	VO		-						
V	[illegible]	VO		-						
B	[illegible]	VO		-						
B	[illegible]	VO	nest used	NU						
B	[illegible]	VO		-						
B	[illegible]	VO		-						
B	[illegible]	VO		""						

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:	Armoy T2T5
Polygon:	WET 016 (NRD-001)
UTM:	
Date:	Oct. 13, 2011 **Time:**
Surveyor(s):	KSW, PWD
Weather:	overcast 5°C, 95% CC, wind 2T5

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)

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
possible snake hibernaculum	364185/4893688	large south facing rock pile
SNH-001	IMPG ITZ-1106	
1 SNHST considered candidate SNH.		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

(T96) in WOD001 *

Project Name: Arnaw **Project #:** 1275

Observer(s): PWD, KJW

Date: Oct 14, 2011 **Time (24h):** 07:50

Field #: WET-019 **Weather:** Precipitation: None Temp (°C): 13

Map Code: S1 Wind Speed & Direction: 2/SE Cloud %: 95

Wetland Type: Swamp **Site Type:** R **Dominant Form:** [illegible]

% Open Water: 0% **ELC Code:** SWTM2-1

Photos: 173-1116

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm
c	
dc,dh,ds	
(ts)	Red Osier Dogwood, common elderberry, willow sp., wild raisin
ls	narrow-leaved meadowsweet
gc	sensitive fern, turtlehead, flat-topped goldenrod, wild mint
(ne)	Lakebank Sedge, reed canary grass
be	
re	woolgrass
ff	
f	
su	
m	

Soil type: CL 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-025 S2

Oct 14, 2011 — 1215 Arrow

07:50 (WOD-001) — PWD, KJW

Wetland Evaluation

13°C, overcast, 95% cc, Wind 2/SE, light rain

WET-019

Site Type: ~~Palustrine~~ Riverine

#Communities: 1 (see field map)

S1: ts Red Osier Dogwood

ne Lakebank Sedge

Soils: CL/MR5

Open Water Type: Type 1

Fish Habitat: Absent

Rare Species Observed: None

Surrounding Land Use (1.5km)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___ of ___

PLANT SPECIES LIST

Site:	Arnow 1275
Polygon:	WET 019 (WOD-001)
UTM:	
Date:	Oct. 14, 2011
Time:	7:50
Surveyor(s):	KJW, PWD
Weather:	Overcast, 13°C, 95% C.C., Wind 2/SE

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		
Common Elderberry		O	O		
Willow sp.		O	O		
Common Red Raspberry			O		
Wild Raisin		O	O		
Ash sp.	O	O	O	O	
White Elm	R	O	O	O	

Species	Layer 1	2	3	4	Sample
Lakebank Sedge			A		
Woolgrass			O		
Wild Mint				O	
Yellow Fing Sedge				O	
Bur Reed			O		
Canada Goldenrod			O		
New England Aster				O	
Thistle sp.				R	
Reed Canary Grass			O		
Spotted Joe-Pye-Weed				O	
Turtlehead				O	
Flat-topped Goldenrod			O		
3-Ranked Sedge				O	
Bittersweet Nightshade				O	
Calico Aster				O	
Sensitive Fern				O	
Downy Willowherb				O	
Sweet Cicely				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WET-019 (WOD-001)
UTM:	
Date:	Oct 14, 2011 — Time: 07:56
Surveyor(s):	PWD, KJW
Weather:	13°C, overcast, wind 2/SE, no rain, 95% CC.

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 Mtl	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 __

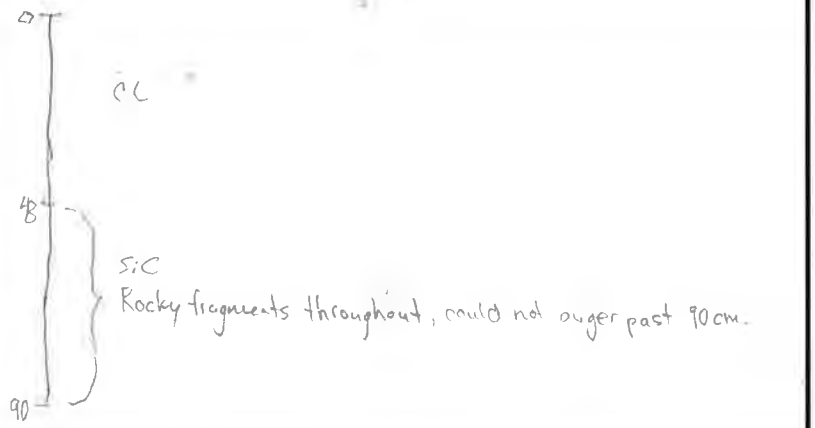
Soils	1	2	3
Position:	S		
Aspect:	0°		
%	2-5		
Type:	S		
Class	C		
Strata: Texture	CL		
Depth	43		
Strata: Texture	SiC		
Depth	90		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	CL		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	35		
Gley	58		
Bedrock	/		
Water table	45		
Carbonates	90		
Depth of Organics			
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	5		

Polygon: WET 019 (WOD-001)

Tree Tally

Species	Tally 1	Tally 2	Tally 3
		5	
Total:			
Basal Area			
Snags			

NOTES:



T96 - wetland

5 (WOD-001)



Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold 12-15
Polygon:	WET 019 (WOD-001)
UTM:	
Date:	Oct 14, 2011 **Time:** 7:50
Surveyor(s):	KSW, PWD
Weather:	overcast, 13°C, 95% 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	#
M	Leopard Frog	OB		*						
M	Spring Peeper	VO		*						
B	Downy Woodpecker	VO		*						
B	Canada Goose	VO	overhead	**						
B	American Crow	VO		****						
B	Blue Jay	VO		*						

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

WWOD-001

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold 12-15
Polygon:	WET 019 (WOD-001)
UTM:	
Date:	Oct 14, 2011 **Time:** 7:50
Surveyor(s):	KSW, PWD
Weather:	overcast, 13°C, 95% 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:	Arrow WF 1275
Polygon:	WOD-002 (799)
UTM:	
Date:	Sept 15/11
Time:	9:40 am
Surveyor(s):	KSF + JSP
Weather:	90%CC, 7°C, showers with hail, 2-5 Wind (NW)

Community Classification

Vegetation Type:	FODM5-8 Dry-Fresh Sugar Maple - White Ash Decid. Forest 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	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	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	White ash > Sugar maple = basswood = white elm
2	Sub-canopy	3	3	Sugar maple >> Red maple
3	Understorey	5	1	Calico aster
4	Groundcover	7	1	woodsorrel

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	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	R	10 - 24	A	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:	Arrow WF 1275
Polygon:	WOD-002
UTM:	
Date:	Sept 15/11
Time:	9:40 am
Surveyor(s):	KSF + JSP
Weather:	90%, CC, 7°C, showers with hail, 2-5 wind (SW)

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

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

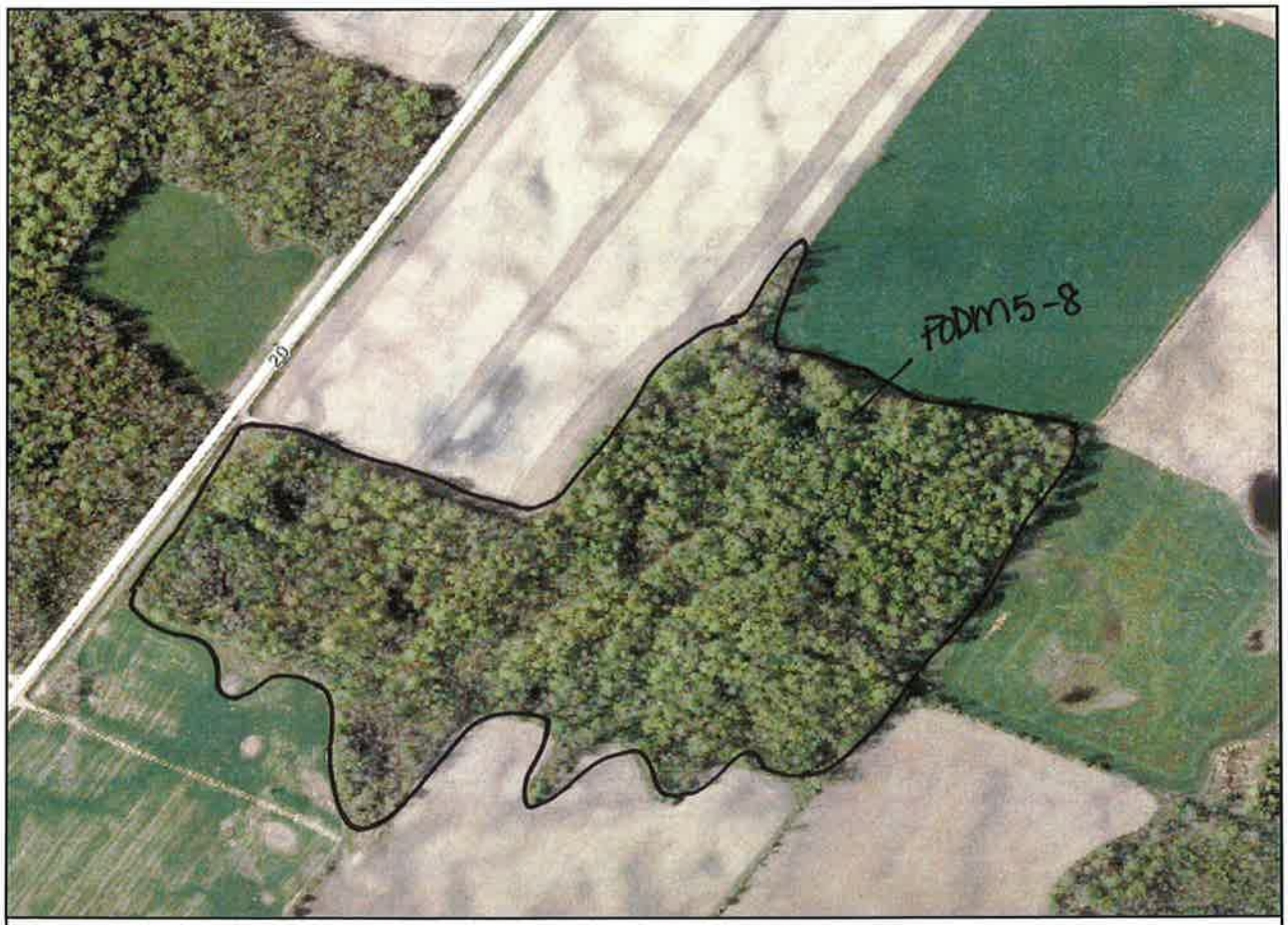
Species	Layer 1	2	3	4	Sample
Basswood	O				
Sugar maple	O	O			
White Elm	O				
Red maple	R	R			
Blue cohosh			R		
White Ash	A				
Herb Robert				R	
Hallehome aster				R	
Wood Sorrel				O	
Calico Aster			A		
Wintergreen			O		
Green ash		R			
Zigzag goldenrod			O		

Species	Layer 1	2	3	4	Sample

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

Done from property line

T99 - WOD-[illegible] 002



Map centre: 44° 13' 24.0" N, 81° 27' 29.9" 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
- Province

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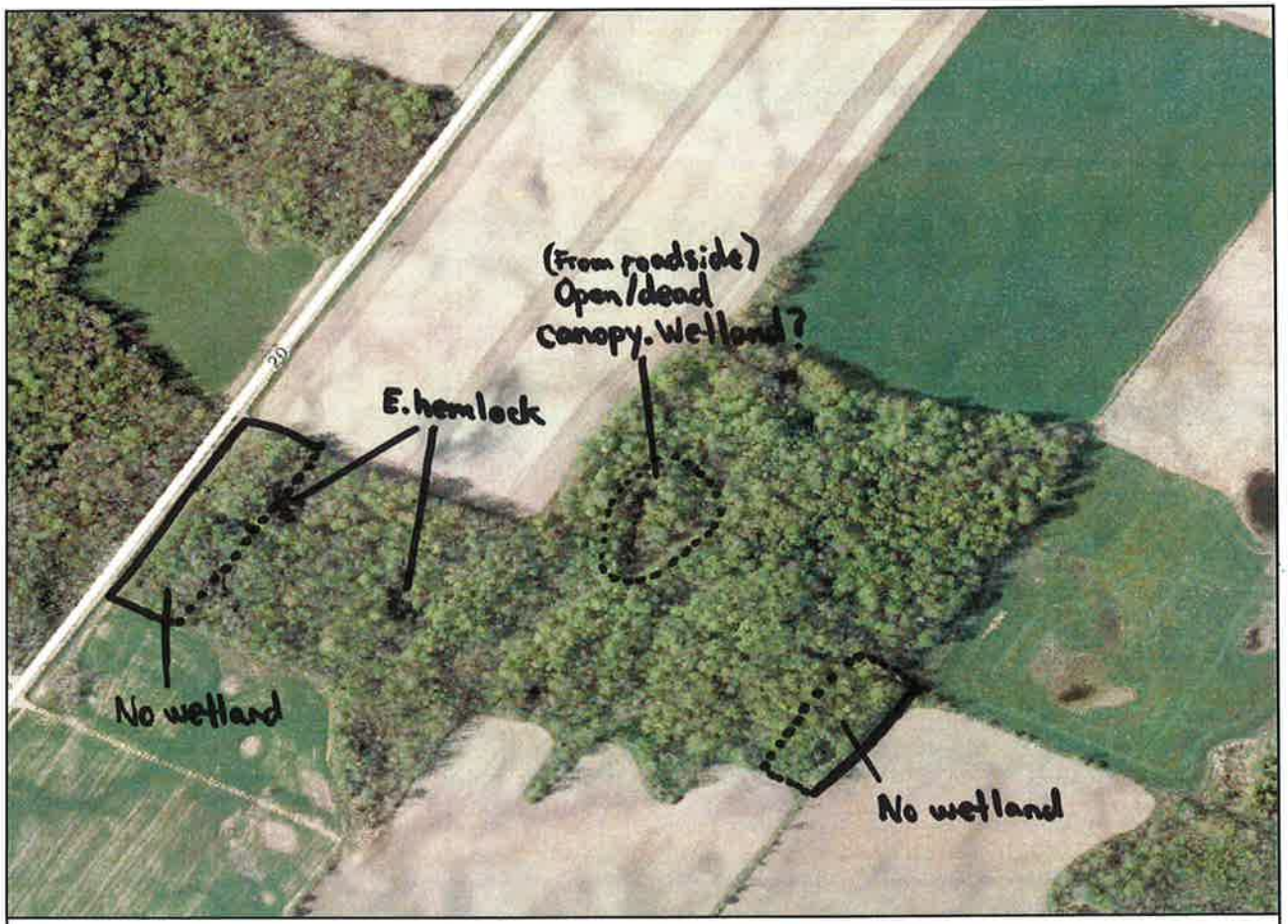
N

S

Ontario

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T99 (WDD-002)



Map centre: 44° 13' 24.0" N, 81° 27' 29.9" 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
- Province

PWD. Verified no wetlands in this woodland (within 120m of proj location). NOV 24/11

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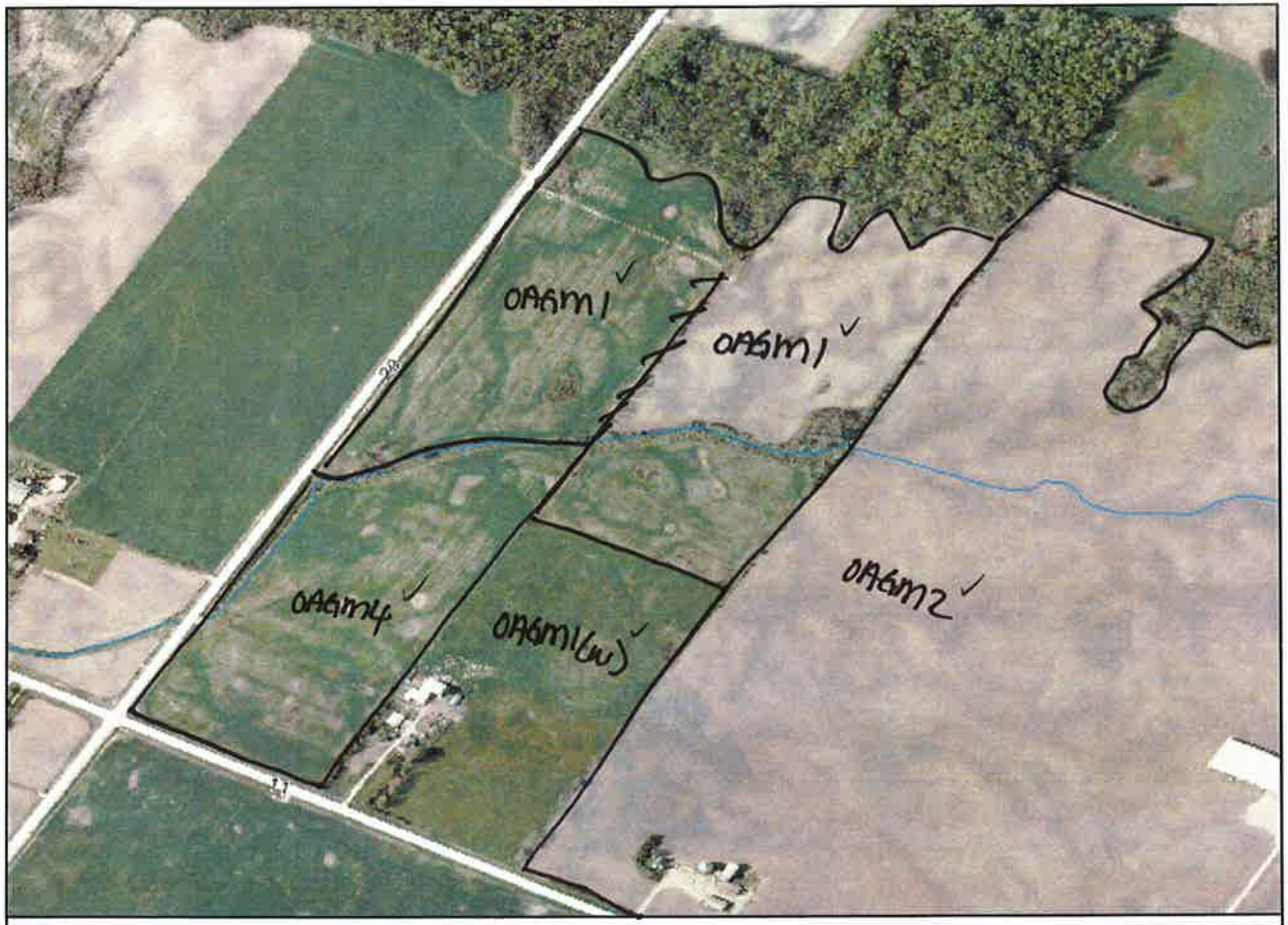
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(WOD-002)

T99 Land use



Map centre: 44° 13' 06.9" N, 81° 27' 40.6" W

Map created: December 30, 2011

0 100 200 300 400 m

Scale: 1:9,100

Legend

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

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Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow WF 1225
Polygon:	WOD-002
UTM:	
Date:	Sept 15/11 **Time:** 9:40 AM
Surveyor(s):	KRJ + JSP
Weather:	90% CC, 7°C, showers with hail, 2-5 wind (NW)

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Northern Harrier		Flying	1						
B	Northern Flicker		Flying	1						
B	T. Vulture		Flying	1						
B	Am. Crow		Calling	3						
B	Killdeer		Calling	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:	Arrow WF 1225
Polygon:	WOD 002
UTM:	
Date:	Sept 15/11 **Time:** 9:40am
Surveyor(s):	Katherine S + Jess P
Weather:	90% CC, 7°C, showers with hail, 2-5 wind (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

- 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
Vernal pool	17T 0463592, 4983245	PHOTO
AWO-002		
(→ This is located in WOD-001, not WOD-002 & is not considered candidate SWH		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Arrow 002
Polygon:	WOD-F (69,91) ★WOD — A
UTM:	
Date:	28 Oct 2011 Time: 16:00
Surveyor(s):	KNP, JRW
Weather:	8°C, 40% cc windspeed 3 from W

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
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	Sugar maple > Am. Beech > w. elm = hemlock
2	Sub-canopy	3	3	Sugar maple > Am Beech : hemlock > w. elm
3	Understorey	1/3	3	Sugar maple > Am. Beech = w. ash > w. elm - basswood
4	Groundcover	0/1	3	Black raspberry - fern sp. > 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	A	> 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

PLANT SPECIES LIST

Site:	WOD-002
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
Am Beech	O	O	O		
Hemlock	O	O	R		
White Elm	R	O	O		
White Ash	O	O	R		
hop hornbeam		O	O		
sugar maple	A	O	O	O	
basswood		R	R		
Green ash	O	O	O		
Freeman's Maple	O	O	O		
Silver Maple	O	O	O		
wetland					

Species	Layer 1	2	3	4	Sample
blue cohosh				R	
christmas fern				O	
aster sp.				O	
bittersweet nightshade				O	
b. green strawberry				O	
fern sp.				O	
black raspberry				O	
WETland					
blue flag iris				R	

Wildlife and Other Notes

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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	AXUDD-002
Polygon:	
UTM:	17T 0463011 4897140
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

WOD-002

Soils	1	2	3
Position:	3		
Aspect:	0°		
%	5		
Type:	C		
Class:	D		

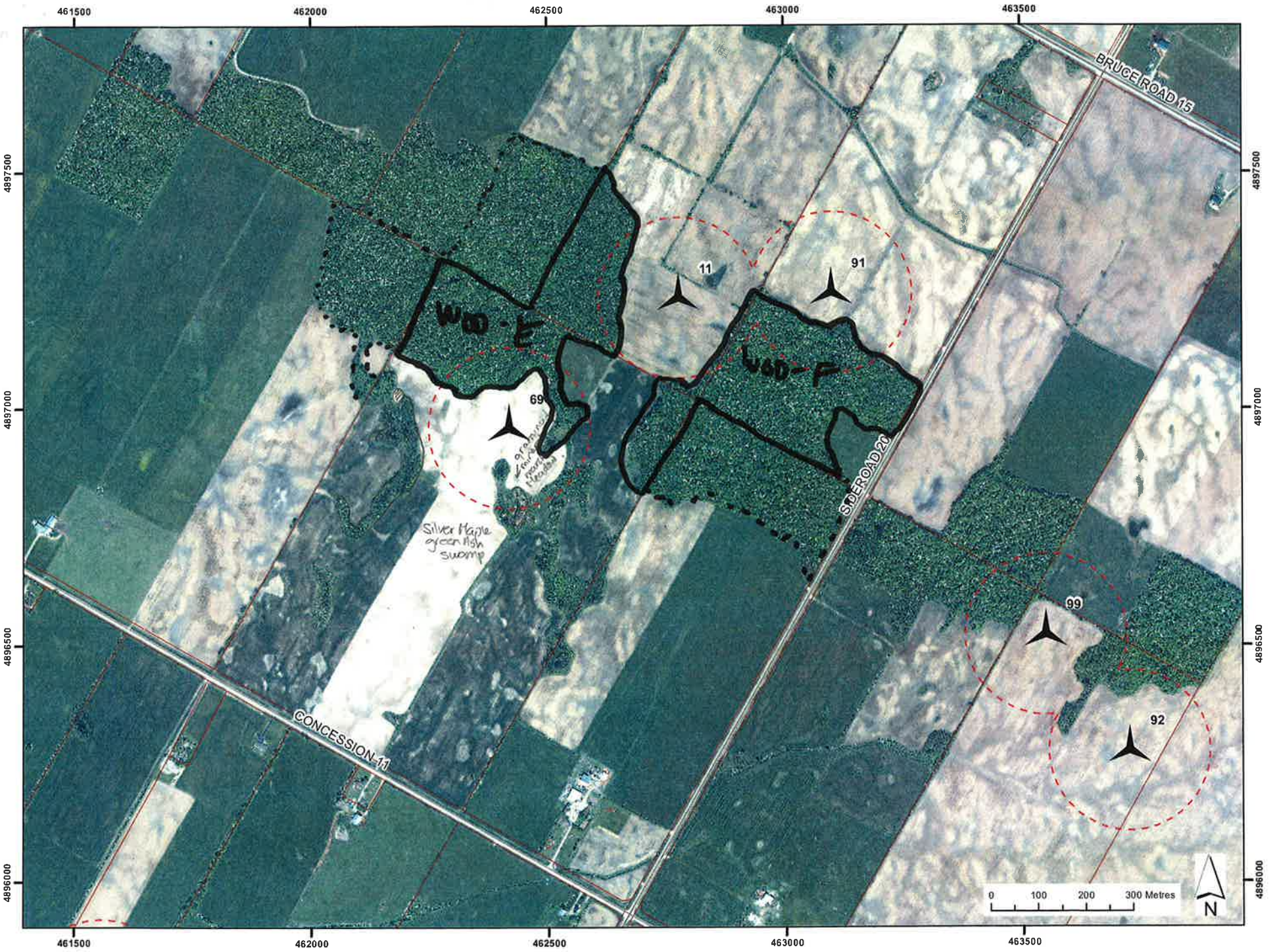
Strata: A	Texture	SC		
	Depth	16		
Strata: B	Texture	SC		
	Depth	44		
Strata: C	Texture	SiCL		
	Depth	120		
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	9		
	Gley	—		
	Bedrock	—		
	Water table	9		
	Carbonates	44		
Depth of Organics		1		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WOD-F (69, 91)

Tree Tally

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

NOTES:


461500
462000
462500
463000
463500
4897500
4897000
4896500
4896000
BRUCE ROAD 15
SIDEROAD 20
CONCESSION 11
WOD-E
WOD-F
11
91
69
99
92
Silver Maple green Ash swamp
0 100 200 300 Metres
N

P7/8

#WOD-002 ☆

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

WOD-F T69 & 91

Project Name: Arrow
Project #: 12715
Date: Oct 28 11
Observer(s): JR.W, K.J.P

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-F	1	0		17T 0462692 4896924	
"	2	0		17T 0462717 4896932	
"	3	1		17T 0462775 4896965	
"	4	0		17T 0462810 4896987	
"	5	0		17T 0462858 4897021	
"	6	0		17T 0462883 4897059	
"	7	2		17T 0462932 4897132	
"	8	3		17T 0463018 4897140	
"	9	0		17T 0463030 4897147	
"	10	2		17T 0463065 4897162	
total snags	8				
snags/ha	16				

WOD-018

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

Photo # WODF-00165

Wildlife Observation Form

Page 5 of 8

NATURAL RESOURCE SOLUTIONS INC.

Site: Arrow	
Polygon: WOD-FT69&91	~~WOD-002~~
UTM:	
Date: Oct 28 2011	Time: 15:00
Surveyor(s): JRW, KNP	
Weather: 8°C, CC=50%, wind=2, precip=0,	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	Blue Jay	OB		1						
	Amphibian	VO		1						
	BCCH	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 6 of 8

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WOD-002
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
Snag	17T 0463037 4897184	Very large >50cm DBH pic 00161 w large cavity @ top of tree.
BMA-018		

Describe Valley (depth, geomorphological traits):

Additional Details:

Large fallen logs, potential habitat, Snakes

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Armow WF (T91)
Polygon:	WET-036 (WOOD-002)
UTM:	
Date:	Nov. 2/11 Time: 09:30
Surveyor(s):	PWD, AMD
Weather:	7°C, Sunny, wind 2 from SW, CC 10%.

Community Classification

Vegetation Type:	Swamp Maple-Conifer Min. Mixed Swamp (SWMM2-2)
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		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	freeman/Red maple>>hemlock>yellow birch
2	Sub-canopy	2	4	freeman/Red maple>>hemlock>yellow birch
3	Understorey	3	3	freeman/Red maple>hemlock>yellow birch=wh. elderberry
4	Groundcover	6	3	intermediate wood fern>sensitive fern>carex intumescens

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	N	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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page ____of____

PLANT SPECIES LIST

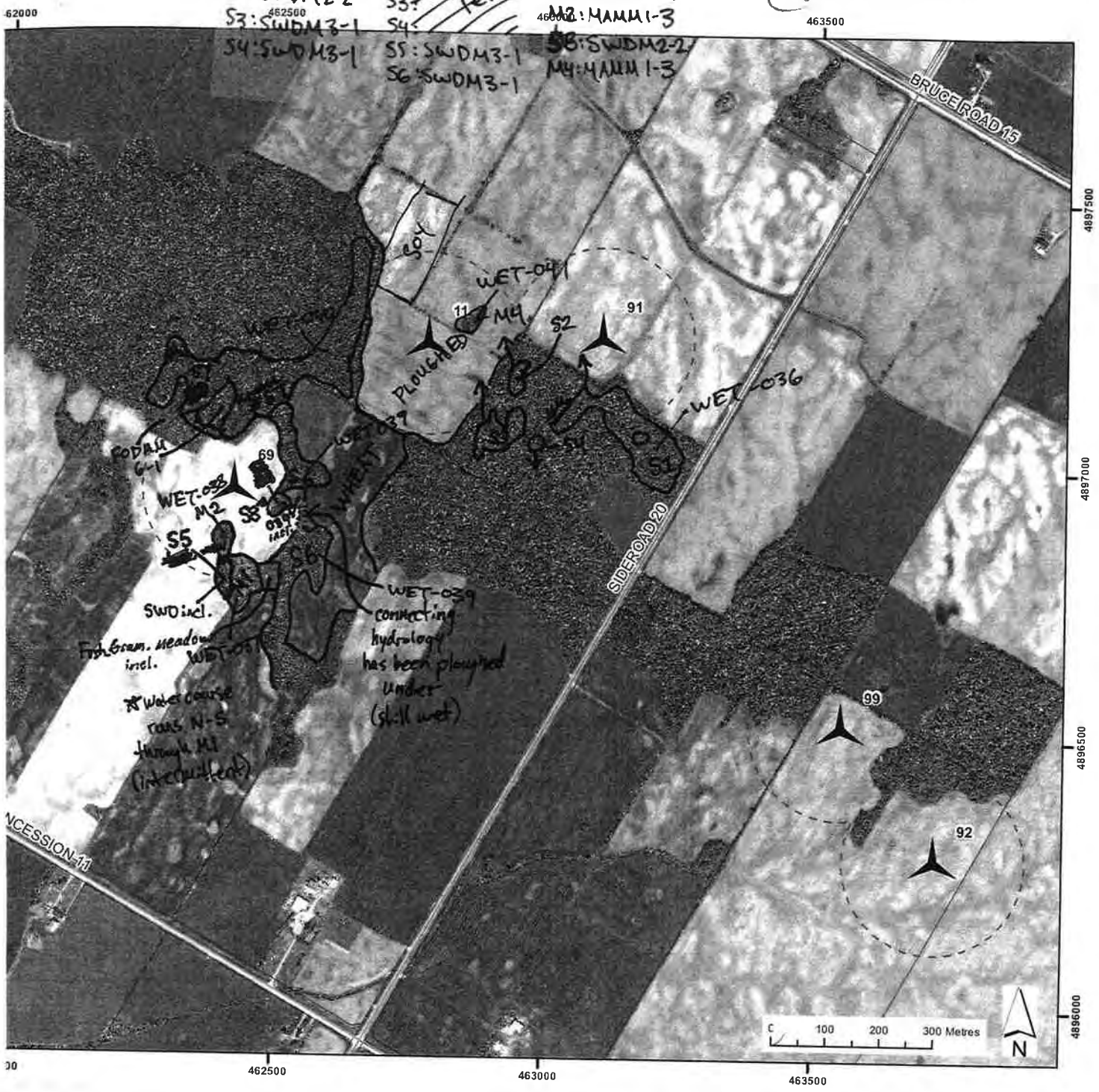
Site:	
Polygon:	WET-036 (WOOD-002)
UTM:	
Date:	Nov. 2/11 Time: 09:30
Surveyor(s):	
Weather:	

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
hemlock	O	O	O		
wh. elm.		R	R		
[illegible]					
bristly cattrier				R	
basswood		R			
spicebush			R		
ribes triste				R	
canada yew				R	
wh. elderberry			O	O	
rubus idaeus			R	R	
red osier dogwood			R		
smooth blackberry			R		
ribes cynosbati			R		
black cherry		R	R		
diervilla lonicera				R	✓PWD
yellow birch	O	O	O		
black chokeberry			R		✓PWD
wh. cedar.		R	O		
freeman maple.	A	A	A		
beech	R	R			
sugar maple		R	R		
red maple.	A	A	A		

Species	Layer 1	2	3	4	Sample
intermediate wood fern				A	
dew berry				R	
viola sp.				R	
sensitive fern				O	
carex intumescens				O	
helleborine				R	
galium aparine				R	✓PWD
meadow horsetail				R	
calico aster				R	
royal fern				R	
blue flag iris				R	
avens sp.				O	
wh. lettuce				R	
galium triflorum (sweet-scented)				R	✓PWD
foamflower				O	
carex blanda				R	
bitter nightshade				R	
false nettle.				R	


S1: SWMM2-2
S2: SWDM2-2
S3: SWDM3-1
S4: SWDM3-1
S1: see to left
S2:
S3:
S4:
S5: SWDM3-1
S6: SWDM3-1
S7: SWDM3-3
M1: MMM3-1
M2: MMM1-3
S8: SWDM2-2
M4: MMM1-3
(WOD-002)
462000
462500
463000
463500
4897500
4897000
4896500
4896000
BRUCE ROAD 15
SIDEROAD 20
CONCESSION 11
WET-041
WET-036
WET-039
WET-038
WET-037
PLOUGHED
11
M4
S2
91
S4
S1
69
M2
S8
S5
S6
99
92
SWD incl.
WET-039 connecting hydrology has been ploughed under (sl: 11 wet)
Fish Stream, meadow incl.
Watercourse runs N-S through M1 (intermittent)
0 100 200 300 Metres
N

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

002 in WOD-056

Wetland Vegetation Communities

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

Observer(s): PWS AMD

Date: Nov 2 2011 **Time (24h):** 09:30

Field #: WET-036 **Weather:** Precipitation: None Temp (°C): 7

Map Code: S1 Wind Speed & Direction: 2/SW Cloud %: 10

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (h) (deciduous)

% Open Water: 0% **ELC Code:** SWMM2-2 Swamp Maple Conifer Mix Hwood Sub-type

Photos: 100-1043

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Red Maple 25% Freeman's Maple 25%, white elm, red maple
(c)	E. Hemlock 25%
dc,dh,ds	
ts	Spicebush, red osier dogwood
ls	bristly cat brier, ribes triste, rubus idaeus
gc	foamflower, false nettle, sensitive fern, royal fern, intermediate wood fern
ne	Carex intumescens
be	
re	
ff	
f	
su	
m	

Soil type: See ELC - Si C 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

40% pooled water sporadic and shallow

WET-015
S1

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(inUDI-002)

Wetland Vegetation Communities

Project Name: Arrow WF **Project #:** 1275
Observer(s): PWD, AMD
Date: Nov 2, 2011 **Time (24h):** 10:20
Field #: WET-036 **Weather:** Precipitation: None Temp (°C): 9
Map Code: S2 Wind Speed & Direction: 2/SW Cloud %: 10
Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (h)(deciduous)
% Open Water: 0 Type | **ELC Code:** SWDM2-2 Gr Ash Mineral Dec Swamp Type
Photos: 100-1044

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash 25%, freeman's maple, white elm
c	
dc,dh,ds	
ts	Spicebush, red osier dogwood
ls	rubus idaeus
gc	false nettle, sensitive fern, royal fern, intermediate wood fern
ne	Carex intumescens
be	blue flag iris
re	
ff	
f	
su	
m	

Soil type: See ELC + SiC 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
No water cover.

S2-A
WET-015

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(INUDL-002)

Wetland Vegetation Communities

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

Observer(s): PWD AMD

Date: Nov 2 2011 **Time (24h):** 10:35

Field #: WET-036 **Weather:** Precipitation: None Temp (°C): 9

Map Code: SA Wind Speed & Direction: 2/SW Cloud %: 10

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (h)(deciduous)

% Open Water: Type 1 0% **ELC Code:** SWDM3-1 Red Maple Mix Deciid Swamp

Photos: 100-1045

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Red Maple 25%, Freeman's Maple 25%, yellow birch, white elm
c	
dc,dh,ds	
ts	spice bush, red osier dogwood
ls	rubus idaeus
gc	sensitive fern, royal fern, intermediate wood fern
ne	Carex Intumescens
be	
re	
ff	
f	
su	
m	

Soil type: See ELC + S.C 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
30% pooled water, sporadic among veg hummocks.

SA-8
WET 015

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arnaw WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 2 2011 **Time (24h):** 10:45

Field #: WET-036 **Weather:** Precipitation: None Temp (°C): 9

Map Code: S4 Wind Speed & Direction: 2/SW Cloud %: 10

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (h) (deciduous)

% Open Water: Type 1 0% **ELC Code:** SWDM3-1 Red Maple Min Decid. Swamp

Photos: 100-1046"

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Red Maple 40%, green ash, white elm
c	E. hemlock
dc,dh,ds	
ts	spicebush, red osier dogwood
ls	rubus idaeus
gc	sensitive fern, royal fern, foamflower, intermediate wood fern
ne	
be	
re	
ff	
f	
su	
m	

Soil type: See ELC + S;C 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
50% pooled water, sporadic and shallow

S2-C
WET-015

WOD-002



WOD-002

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armour WF
Polygon:	WET-036 (T91) #WOD-002 ☆
UTM:	
Date:	Nov 2, 2011 **Time:** 09:30
Surveyor(s):	PWA, AMD
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						
B	Am. crow	VO		1						
M	Squirrel sp.	VO		1						
B	W cap Flicador	VO		1						
B	gull sp.	OB								

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:	WOD-002
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
(WOD-002)		
↳ WD forges a candidate habitat		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armow WF
Polygon:	WET-042 ~~(WET-001?)~~ (WID-003).
UTM:	
Date:	Nov. 2/11
Time:	16:35
Surveyor(s):	PWD, AMD
Weather:	

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	green ash
2	Sub-canopy	3	3	green ash > wh elm
3	Understorey	4	3	rubus idaeus > red osier dogwood
4	Groundcover	5-7	4	lance leaved aster > avens sp > 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	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	X	Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ____of____

Site:	Armow WF
Polygon:	WET-042 (WID-003)
UTM:	
Date:	Nov. 2/11
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
rubus idaeus			A	O	
red osier dogwood			R	R	
wh. elm		R	R		
green ash	D	D			
ribes triste				R	
hawthorn sp				R	
silky dogwood			R	R	
amelanchier laevis			R		✓PWD

Species	Layer 1	2	3	4	Sample
herb robert				O	
avens sp				A	
calico aster				R	
carex viridula				R	
lance leaved aster				A	
reed canary grass				O	
bitter nightshade				R	
wood strawberry				R	
burdock				R	
garlic mustard				R	

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Armow WF

Project #: 1275

Date: NOV 2/11

Observer(s): PWD, AMD

Start Time _____ End Time _____

Woodland ID (WOD- 003) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1			
Plot 2	☆No snags observed in entire woodland☆		
Plot 3			
Plot 4			
Plot 5			
Plot 6			
Plot 7			
Plot 8			
Plot 9			
Plot 10			
Plot 11			
Plot 12			
Plot 13			☆ office based summary
Plot 14			- SI data completed
Plot 15			Jan 9/12 by PNT
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

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

Final Wodland Tally

= Ø

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armow WF
Polygon:	WET-042 (WD-003)
UTM:	
Date:	Nov 2 2011
Time:	16:35
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:	4		
Aspect:	330		
%	0.5.2		
Type:	S		
Class:	B		
Strata: Texture	L		
Depth	34		
Strata: Texture	SiCL		
Depth	105		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture -	SiCL		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	36		
Gley	37		
Bedrock	/		
Water table	0		
Carbonates	53		
Depth of Organics	2		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	5		

Polygon: WET-042 ~~001~~ (WD-003)

Tree Tally

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

NOTES:

Rocky fragments throughout SiCL

WOD-003



Map centre: 44° 13' 08.0" N, 81° 27' 32.8" W

Map created: December 30, 2011

0 50 100 150 200 m

Scale: 1:2,700

Legend

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

Complex W

S1

WET-016

Wetland

PWD, AMD NOV 2/11

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T99

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

in WOD-003

Wetland Vegetation Communities

Project Name: Armow WF		**Project #:** 1275	
Observer(s): PWD. AMD			
Date: Nov 2 2011	**Time (24h):** 16:35		
Field #: WET-042	**Weather:** Precipitation: None	Temp (°C): 10	
Map Code: S1	Wind Speed & Direction: 3/SW	Cloud %: 90	
Wetland Type: Swamp	**Site Type:** P	**Dominant Form:** Treed (TA) (deciduous trees)	
% Open Water: 0%	**ELC Code:** SWDM2-2 Sr.Ash Mineral Deciduous Swamp Type		
Photos: 100-1054			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash 80%, white elm,
c	
dc,dh,ds	
ts	red osier dogwood, silky dogwood
ls	rubus idaeus, ribes triste
(gc)	lance-leaved aster 40%, woodland strawberry, herb robert
ne	Carex viridula, reed canary grass,
be	
re	
ff	
f	
su	
m	

Soil type: SiCL	MR 5	Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None Observed	American Woodcock Black-capped Chickadee

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
3% pooled waters (sporadic)

S1
WET-016

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armour WF
Polygon:	WET-042 ~~(not used)~~ (WOD-003 TM)
UTM:	
Date:	Nov. 2/11 **Time:** 16:35
Surveyor(s):	AMD, PWD
Weather:	Wind 3 from SW, 90% CC, 10°C, Cloudy

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am. Woodcock	OB		1						
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:	(WOD-003 TM)
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
☆NO Snags observed in Woodland (as indicated on Abundance on FLC sheet ☆		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arnaud WF 1275
Polygon:	WOD-004 (T92199)
UTM:	
Date:	Sept 15, 2011 — Time: 11:15
Surveyor(s):	Katherine S., Jess P
Weather:	7°C, 90% CC, Wind 2-5 (NW), Showers

Community Classification

	Vegetation Type:	FODM5-6 Dry-Fresh Sugar Maple - Basswood Deciduous Forest
I	Inclusion:	MAMM2-4 Mixed Forb Mineral Meadow Marsh (WET-002)
	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 > Basswood = Am Elm
2	Sub-canopy	3	2	Sugar Maple > Am Elm
3	Understorey	5	3	Calico Aster > Red Raspberry
4	Groundcover	6	2	Poison Ivy >> Herb Robert

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	K	> 50
Snags	N	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	O	< 10	A	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:	Arnaud WF 1275
Polygon:	WOD-004
UTM:	
Date:	Sept 15/11 — Time: 11:15
Surveyor(s):	Katherine S., Jess P
Weather:	7°C 90% CC, Wind 2-5 (NW), Showers

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	A			
Am Elm	O				
Basswood	O				
Am Beech	O				
Wild Red Raspberry			R		
Calico Aster			A		

Species	Layer 1	2	3	4	Sample
Poison Ivy				D	
Woodland Strawberry				O	
Wood Sorrel				R	
Herb Robert				O	
Wetland Inclusion:					
Red-Osier Dogwood				O	
Willow sp.				O	
Woolgrass				R	
Lapsana communis				O	
Raspberry Ticks				A	

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

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

Project Name: Arrow WF
Project #: 1225
Date: Sept 15th
Observer(s): Katherine S + Jess P

(WOD-004)

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	~~Comments~~ UTM	
004 WOD-004	1	1		17T 0463682 4996444	comments: 6m, no bark
	2	1		17T 0463671 4996480	7m
	3	0		17T 0463686 4996462	
	4	0		17T 0463620 4996423	
	5	1		17T 0463 4996	
	6	1		17T 0463648 4996414	no bark 7m
	7	0		17T 0463808 4996373	
	8	0		17T 0463602 4996357	
	9	0		17T 0463502 4996316	
	10				
	total snags	4			
	snags/ha	8.89			

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:	Arrow WF 1275
Polygon:	WOD-004
UTM:	
Date:	Sept 15 2011 Time: 11:15
Surveyor(s):	Katherine S + Jess P
Weather:	7°C, 90% cc, wind 2-5 (N-W), showers

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
L	Monarch Butterfly	OB		1						
B	Hairy Woodpecker		Calling	1						
B	Blue Jay		Calling	1						
B	Black-c Chickadee		Calling	1						
B	Am Crow		Calling	1						
B	Gray Catbird		Calling	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:	Arrow WF 1275
Polygon:	WOD-004
UTM:	
Date:	Sept 15 2011 Time: 11:15
Surveyor(s):	Katherine S, Jess P
Weather:	7°C, 90% cc, wind 2-5 (NW) showers

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:

1 - 5

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

(In WOD-004) (T 92/99)

Wetland Vegetation Communities

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

Observer(s): CLH, KM

Date: Oct 5 2011 **Time (24h):** 11:36

Field #: ~~WET-002~~ **Weather:** Precipitation: None. Temp (°C): 15

Map Code: 51 WET-002 Wind Speed & Direction: 3 Cloud %: 40

Wetland Type: Swamp **Site Type:** Isolated **Dominant Form:** ts (tall shrub)

% Open Water: 0 % **ELC Code:** SWD01-2

Photos: DSC_0938 (small marsh area - 40.5 m at south end) DSC_0939.

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash (c), white elm, red maple, Salix alba
c	
dc,dh,ds	
ts	red osier dogwood, Salix alba, Viburnum cassinoides, choke cherry
ls	Rubus idaeus
gc	? dense Fragaria, bidens water pepper, bittersweet nightshade, sensitive fern
ne	reed canary, bladder sedge, lakebank sedge, Poa palustris
be	
re	woolgrass, water parsnip
ff	
f	
su	
m	moss sp.

Soil type: organic MESIC, ~5 65cm 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-016
SJ

1-1 In WOD-004 *.

Arrow WF 1275

Wetland Analysis Oct 5 2011

Sunny 15°C ~40% wind 3 AH, KJW

WET-002 (* WET-0160-52)

Isolated Swamp

1 community - see field map

Forms 75% cover (dominant species listed):

ts red osier dogwood - dom. form
↳ tall shrub

h green ash

ne reed canary grass

m moss sp

See attached forms for more detailed vegetation description.

Open Water Types (permanently flooded areas):

No open water

Soils: mesic organic (UP 5) 65cm.

over Silty Clay Loam containing <30% org.

No rare species observed.

No fish habitat

Surrounding Land Use within 1.5km: Deciduous Forest, Row Crops, Fencerows with deep cover

J.L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

in(WOD-004)) ★

Arrow WF 1275

Wetland Analysis Oct 5 2011

Sunny 15°C CC 40% Wind 3 CCH, KJW

WET-002

Isolated Swamp

1 Community → See field map.

Forms >25% cover (dominant species listed):

h	green ash
cs	red osier dogwood
ne	reed canary grass
m	moss sp.

See attached forms for more detailed vegetation description.

Open Water types (permanently flooded areas):
No open water.

Soils: Mesic Organic (VP 5) 65cm
over silty Clay Loam containing <30% organic.

No rare species observed.

No Fish Habitat.

Surrounding Land Use Within 1.5km: Deciduous Forest, Row Crops, fence rows with deep cover

J.L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

Modified ELC Community Description

Soils	1	2	3
Position:	5		
Aspect:			
%	2-5		
Type:	Simple		
Class:	C		

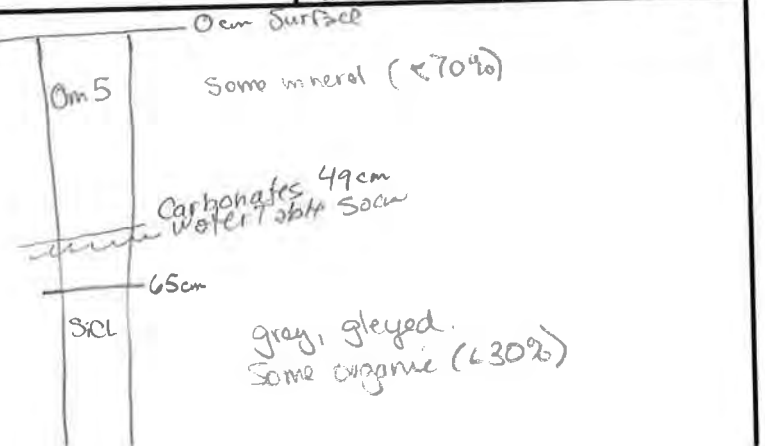
Polygon: WET-002 Arrow 1275 (WOD - OCM)

Strata: Texture	Om 5		
Depth	65		
Strata: Texture	SiCL		
Depth	111		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	Om		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles			
Gley	65		
Bedrock	/		
Water table	50cm		
Carbonates	49		
Depth of Organics	65cm		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	7		

Tree Tally

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

NOTES:



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

WOD-004

Site:	Arrow 1275
Polygon:	WET 002 South end; Soil Sample
UTM:	0463633 4896424 ± 10m (Garmin GPS)
Date:	Oct 6, 2021 **Time:** 11:26
Surveyor(s):	KJW CLH
Weather:	15°C, Wind 3, 40% CC, 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
Salix alba		O	O		#1
Robinia pseudoacacia			A		
White Elm	O				
Green Ash	A	O			
Choke Cherry			O		
Viburnum cassinoides			O		#2
Shining Willow			O		3
Red Maple	O				

Species	Layer 1	2	3	4	Sample
Bidens frondosa				O	
Mild Water Pepper				O	
Water Parsnip				O	
Bittersweet Nightshade				O	
Woolgrass				O	
Reed Canary Grass				O	
Sensitive Fern				O	
Fox Sedge				O	
Poison Ivy				O	
Calico Aster				O	
White Vervain			R		
Poa palustris			O		
Lakebank Sedge				O	
Carex stipata			R		
Yellow Avens				O	
Bladder Sedge				O	
Northern Bugleweed				O	
Spreading Wood Fern				O	
Dwarf Raspberry				O	
Marsh fern				R	
Impatiens capensis				O	

North end 004/Kim's GPS: 0463633 4896424

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. IN(WOD-004)

Site: Arrow 1275	
Polygon: WET-002	
UTM:	
Date: Oct 5 2011	Time: 11:26
Surveyor(s): CLH, KJW	
Weather: Sunny 15°C, wind 3 40%CC	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Red-tailed Hawk	VO		1						
H	Leopard Frog	OB		1						
H	Spring Peeper	VO		1						
B	Columbia Raven	VO		1						
	Fields									
B	Horned Lark	DB		100						
H	Leopard Frog	SB		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. IN(WOD-004)

Site: Arrow 1275	
Polygon: WET-002	
UTM:	
Date: Oct 5 2011	Time: 11:26
Surveyor(s): CLH KJW	
Weather: Sunny 15°C wind 3 40%CC	

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

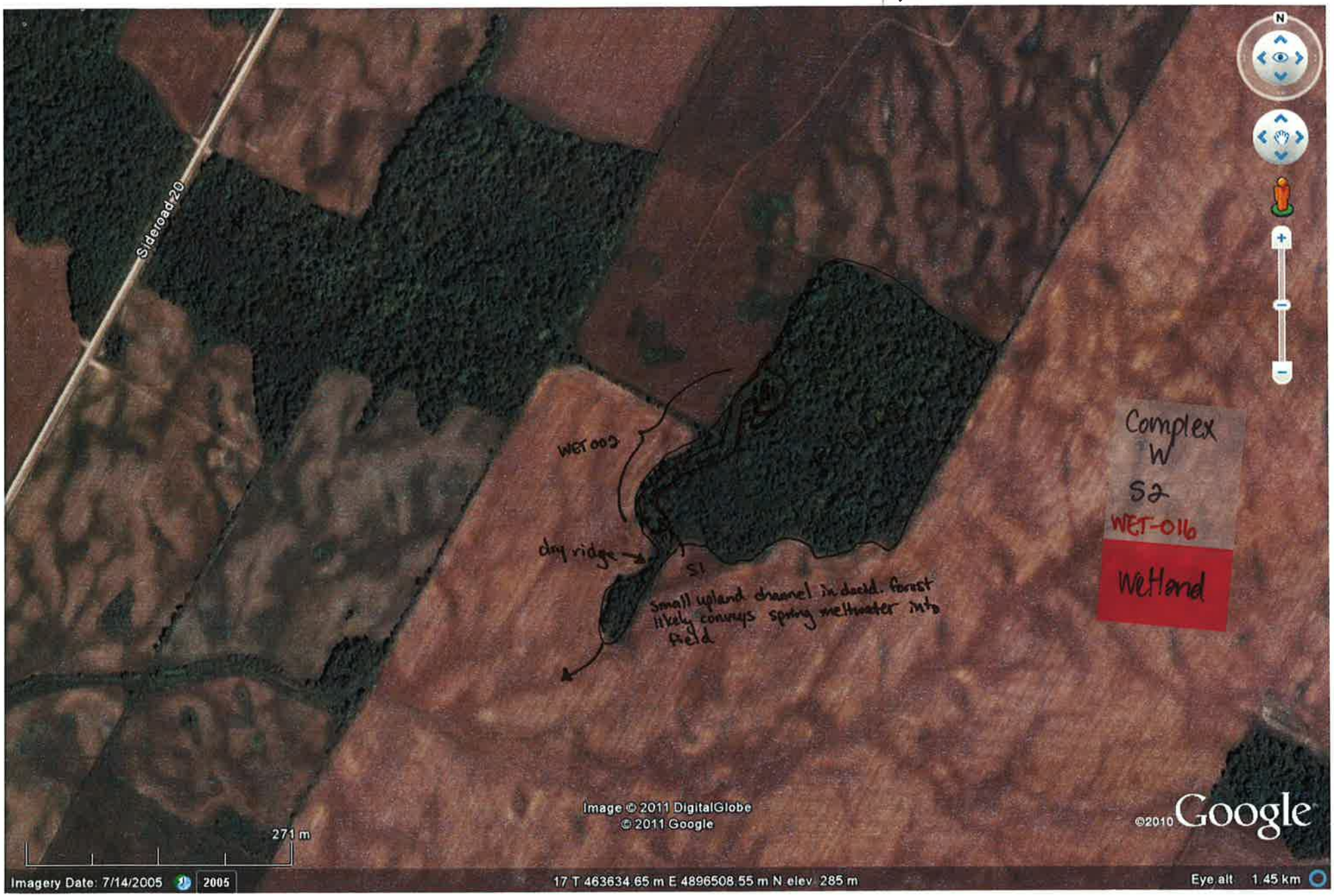
For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Vernal Pool (AWO-004)	14 0463633 4896424	Small marsh area at south end. No water present but undoubtedly contains a small pool in Spring. ~15 m diameter, circular in shape.
No longer considered candidate Swamp		

Describe Valley (depth, geomorphological traits):

Additional Details:

WET-002

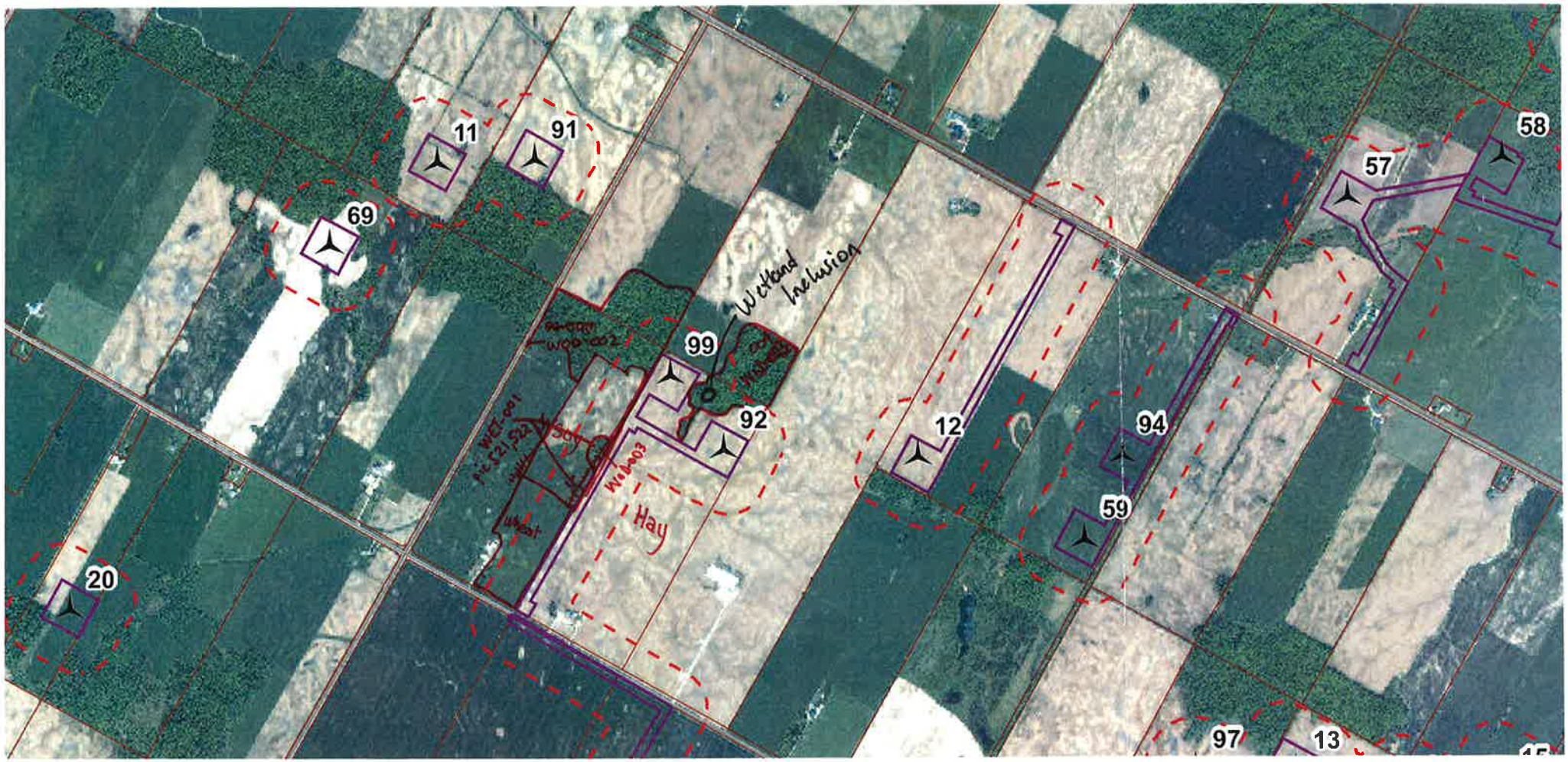


Concession 11
↓

✓

W(WOD-004)

WOD-004: FODMS-6
Wet. Incl: MAMM2-4



KSJ, JP Sept 15/11

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow WF 1275
Polygon:	WOD-005 (T36/37/79)
UTM:	
Date:	Sept 15, 2011
Time:	1233
Surveyor(s):	Katherine S, Jess P
Weather:	7°C, Wind 2-5 (NW), CC 90%, Showers w hail

Community Classification

Vegetation Type:		FODM 5-2 Dry-Fresh Sugar Maple - Beech Deciduous
	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		Tableland		Sand Dune		Swamp		Woodland
		Site		X	Roll Upland		Bluff		Fen	X	Forest
					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 >> Am Beech > Red Maple
2	Sub-canopy	3	3	Sugar Maple > Am Beech > Hop Hornbeam
3	Understorey	5	4	Raspberry > Calico Aster > Red-berried Elder
4	Groundcover	6	3	Herb Robert > 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	A	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	R	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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arrow WF 1275
Polygon:	WOD-005
UTM:	
Date:	Sept 15, 2011
Time:	1233
Surveyor(s):	Katherine S, Jess P
Weather:	7°C, Wind 2-5 (NW), CC 90%, showers with hail

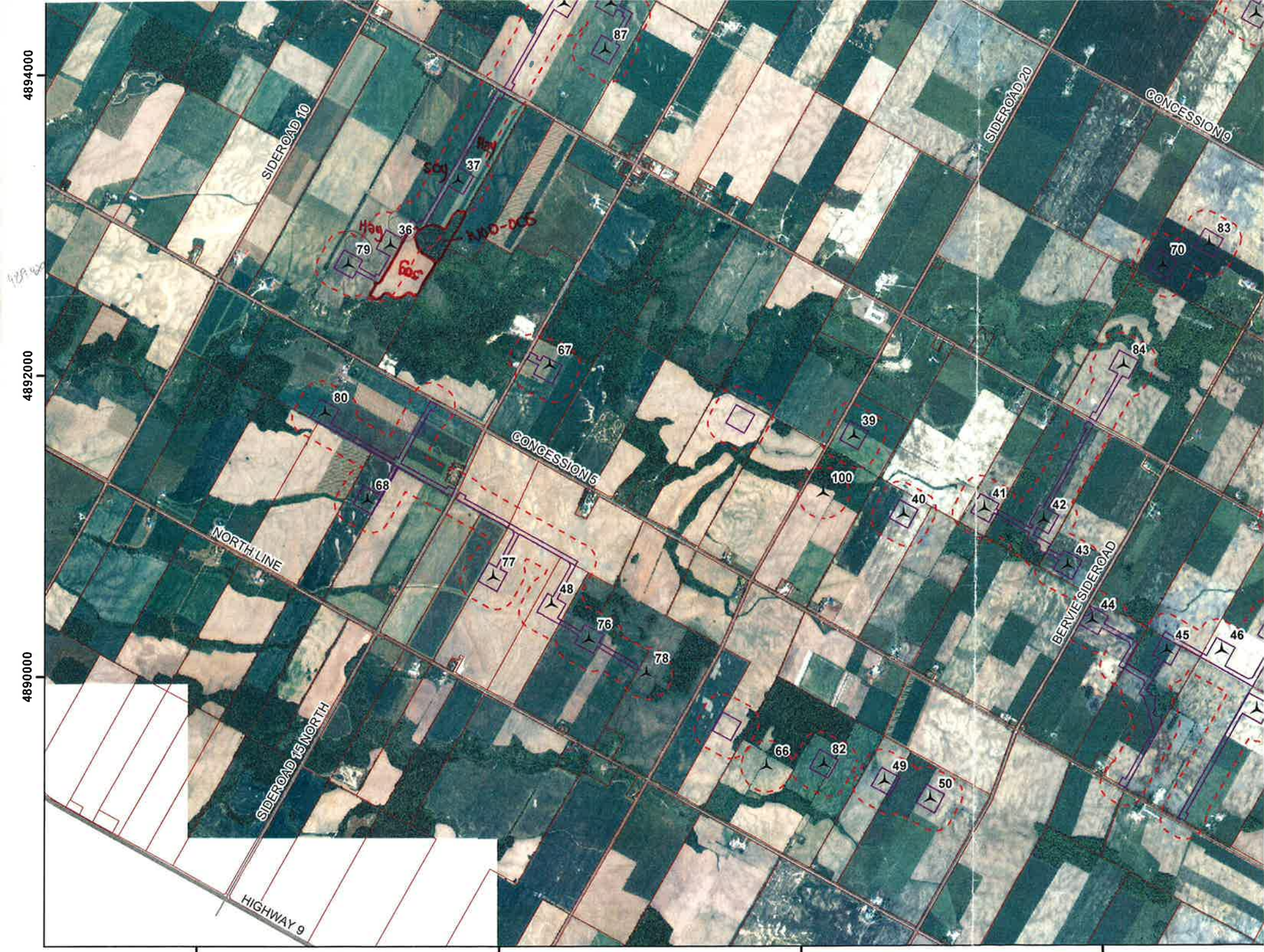
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

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

Species	Layer 1	2	3	4	Sample
Sugar Maple	D	D			
White Elm	O		O		
Red Maple	O				
Hop hornbeam		O			
Am Beech	A	O			
Yellow Birch	R		R		
Red-berried Elder			O		
Wild red raspberry			A		
Smooth Black Currant			R		
Swamp Black Currant			O		
Calico Aster			O		
Dogwood			O		
Black cohosh			R		

Species	Layer 1	2	3	4	Sample
Virginia Creeper				R	
Bittersweet Nightshade				O	
Wood Sorrel				R	
C. Dandelion				R	
Burdock				R	
Herb Robert				A	
Ostrich Fern				R	
Riverbank grape				R	
wild leek				R	

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



KSJ, JP Sept 15/11 Amm WF

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

Project Name: Armour
Project #: 1275
Date: Sept 15, 2011
Observer(s): Katharine S, Jess P

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM ~~Comments~~	Comments
WOD-005	1	0		17T 0457620 4892811	
	2	0		17T 0457629 4892858	
	3	0		17T 0457642 4892898	
	4	0		17T 0457620 4892940	
	5	0		17T 0457601 4892881	
	6	0		17T 0457561 4892839	
	7	0		17T 0457530 4892828	
	8	0		17T 0457499 4892844	
	9	0		17T 0457[illegible]494 4892900	
	10	1		17T 0457515 4892962	
WOD-005 total snags	1			large Am beech, loose bark w cavities	
WOD-005 snags/ha	2				
WOD-006	1	1		17T 0463411, 4894435	No bark, 1m high
	2	0		17T 0463374, 4894453	
	3	0		17T 0463383, 4894481	
	4	2		17T 0463357, 4894486 - one w bark and fallen over at half, one w no bark	
	5	1		17T 0463324, 4894469 - white ash	
	6	1		17T 0463293, 4894473 - loose bark	
	7	0		17T 0463285, 4894494	
	8	0		17T 0463271, 4894494	
WOD-006 total snags 5	9	0		17T 0463272, 4894480	
WOD-006 snags/ha 10	10	0		17T 0463281, 4894454	
WOD-007	1	1		17T 0463090, 4894599 - no loose bark	
	2	1		17T 0463065, 4894606	
	3	0		17T 0463033, 4894604	
	4	0		17T 0463008, 4894629	
	5	0		17T 0462988, [illegible]4894644	
	6	1		17T 0462996, 4894668 - large old beech snag w cavities	
	7	0		17T 0463016, 4894683	
	8	0		17T 0463032, 4894674	
	9	2		17T 0463042, 4894662 - 4m tall, holes, no bark	
	10	1		17T 0463081, 4894618 - loose bark	
WOD-007 total snags	12				
WOD-007 snags/ha	24				

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:	Arnaud WF 1275
Polygon:	WDD-005
UTM:	
Date:	Sept 15, 2011 **Time:** 1233
Surveyor(s):	K. Hennes, Jess P
Weather:	7°C, Wind 2-5 (NW), CC 90%, showers with hail

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue day		calling	1						
B	Red-tailed Hawk	OB		1						
B	Mourning Dove	OB		1						
B	N. Harrier	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:	Arnaud WF 1275
Polygon:	WDD-005
UTM:	
Date:	Sept 15 2011 **Time:** 1233
Surveyor(s):	Katherine S + Jess P
Weather:	7°C, Wind 2-5 (NW), CC 90%, Showers with hail

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-069 (T79) *WOD-005*
UTM:	17T 045714 4892511
Date:	Nov. 17/11 Time: 15:10
Surveyor(s):	NGM, AMD
Weather:	Snow, C.ci 100%, Wind 4SW, Temp: 0°C

Community Classification

Vegetation Type:	Deciduous Plantation (TAGM3)
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 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
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	Canopy	3	3	Aspen (Trem.) = White cedar > Red oak = Black locust
2	Sub-canopy	3	3	Red oak > T. Aspen > White Pine
3	Understorey	4	3	Canada Goldenrod > Tall Goldenrod
4	Groundcover	5	2	Dandelion > 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	A	10 - 24	R	25 - 50	N	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	N	< 10	V	10 - 24	V	25 - 50	V	> 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

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-069 *WOD-005*

Tree Tally

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

NOTES:

- all tree species planted in rows and species clumped together
- 1080, 1081 (photos)
- no snags in plantation observed

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour WF

Polygon: WOD-069 *WOD-005*

UTM: 17T 0457214 4992511

Date: Nov. 17/11 Time: 15:10

Surveyor(s): AMD, NCM

Weather: Snow, 100% CC, wind 4 from SW, 0°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
red oak	O	O			
wh. cedar	A	R			
trembling aspen	A	O			
hawthorn sp.			R		
black locust	O				

Species	Layer 1	2	3	4	Sample
tall goldenrod			O		
spotted knapweed				R	
calico aster				R	
reed canary grass			R		
com. burdock				R	
smooth brome			D		
canada goldenrod			D		
wild carrot				O	
dandelion				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armour WF (Next to WOD-005)
Polygon:	XWOD-005 (179)
UTM:	17T 0456794 4892546
Date:	Nov 17/11 Time: 14:45
Surveyor(s):	AMD, NGM
Weather:	

Community Classification

Vegetation Type:	~~Dry-Fresh Graminoid Meadow (MEGM3-)~~
Inclusion:	→ Shrub Pasture (SAPAST)
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
Natural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
X 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	1	white ash > Sugar maple
2	Sub-canopy	3	1	white ash
3	Understorey	4	2	hawthorn sp. >> common apple
4	Groundcover	5-7	4	pasture grasses > orchard grass > spotted knapweed

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	R	> 50
Snags	N	< 10	N	10 - 24	N	25 - 50	R	> 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

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-005~~ 179

Tree Tally

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

NOTES:

- meadow used as cattle pasture
- photos 1078, 1079 (these are of hedgerow to the NE)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

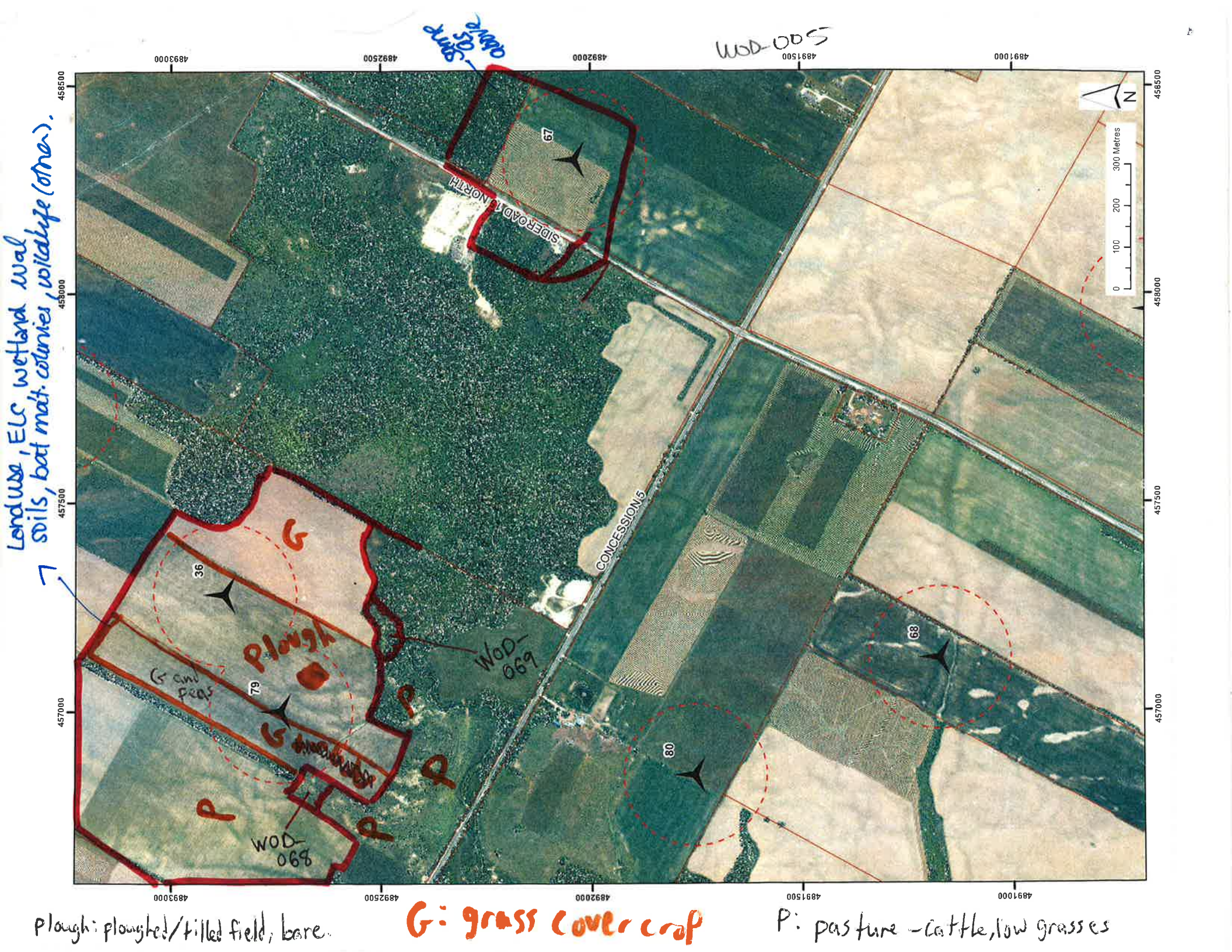
Site:	Arrow WF
Polygon:	WOD-068 (open pasture) (WOD-005)
UTM:	17T 0456794 4892546
Date:	Nov. 17/11
Time:	14:45
Surveyor(s):	AMD, NCM
Weather:	light snow, wind 4 from SW, 100% CC, 1°C

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
wh. ash	R	R	R		
hawthorn sp.			O		
Sugar maple	R				
common apple			R		

Species	Layer 1	2	3	4	Sample
spotted knapweed				D	
orchard grass				O	
pasture grasses				A	


WOD-005
Landuse, ELC, wetland, soil, bat mat. colonies, wildlife (other).
7
WOD-069
WOD-068
Plough
G cmt peas
G
P
36
79
80
68
19
SIDEROAD 5 NORTH
CONCESSION 5
N
0
100
200
300 Metres
489300
489250
489200
489150
489100
458500
458000
457500
457000
Plough: ploughed/tilled field, bare.
G: grass cover crop
P: pasture - cattle, low grasses

Wildlife Observation Form

Page 1 of 2

NATURAL RESOURCE SOLUTIONS INC.

Site:	Amer. WF
Polygon:	WOD-069 *WOD-005*
UTM:	17T 0457214 4992511
Date:	Nov. 17/11 **Time:** 15:30
Surveyor(s):	Nov. 17/11 AMD, NGM
Weather:	Wind 9 SW, Temp: 0°C, C.C: 100%, Light Snow

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Black-capped Chickadee	X		III						
B	Am. Goldfinch	X		II						
M	White-tailed Deer	TK		Tracks						

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:	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)

Plantation

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
None		

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnew WF
Polygon:	WOD-2068 (179) open pasture
UTM:	
Date:	Nov. 17/11 **Time:** 15:10
Surveyor(s):	NGM, AMD
Weather:	Wind 4 SW, Temp: 0°C, C.C: 100%, Light Snow

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	BL. Capped Chick.	X		11						
B	Am. Tree Sparrow	X		HHT						
B	Ring-billed Gull	X		HHT I						
M	White-tailed Deer	TK		NA						

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:	SPP 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

- [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)

Plantation

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
None		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armow WF
Polygon:	WOD-070 ~~WOD-005~~ (T67)
UTM:	17T 0458168 4892209
Date:	Nov. 17/11 Time: 16:00
Surveyor(s):	AMD, NGM
Weather:	Snow, -1°C, overcast, wind 3 from SW, 100% CC.

Community Classification

Vegetation Type:	Coniferous Plantation (TACrM1)
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	Canopy	2	4	White Pine > White Spruce > (likely white) Ash
2	Sub-canopy	3	1	White cedar
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	R	< 10	A	10 - 24	A	25 - 50	A	> 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

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-070 ~~WOD-005~~

Tree Tally

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

NOTES:

- completed from roadside
- dense plantation preventing understory + ground cover
- ash sp. is likely white ash.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-070 (T67) WOD-005
UTM:	17T 0458168 4892209
Date:	Nov. 17/11
Time:	16:00
Surveyor(s):	AMD, NGM
Weather:	Snow, -1°C, overcast, wind 3 from SW, 100%, CC

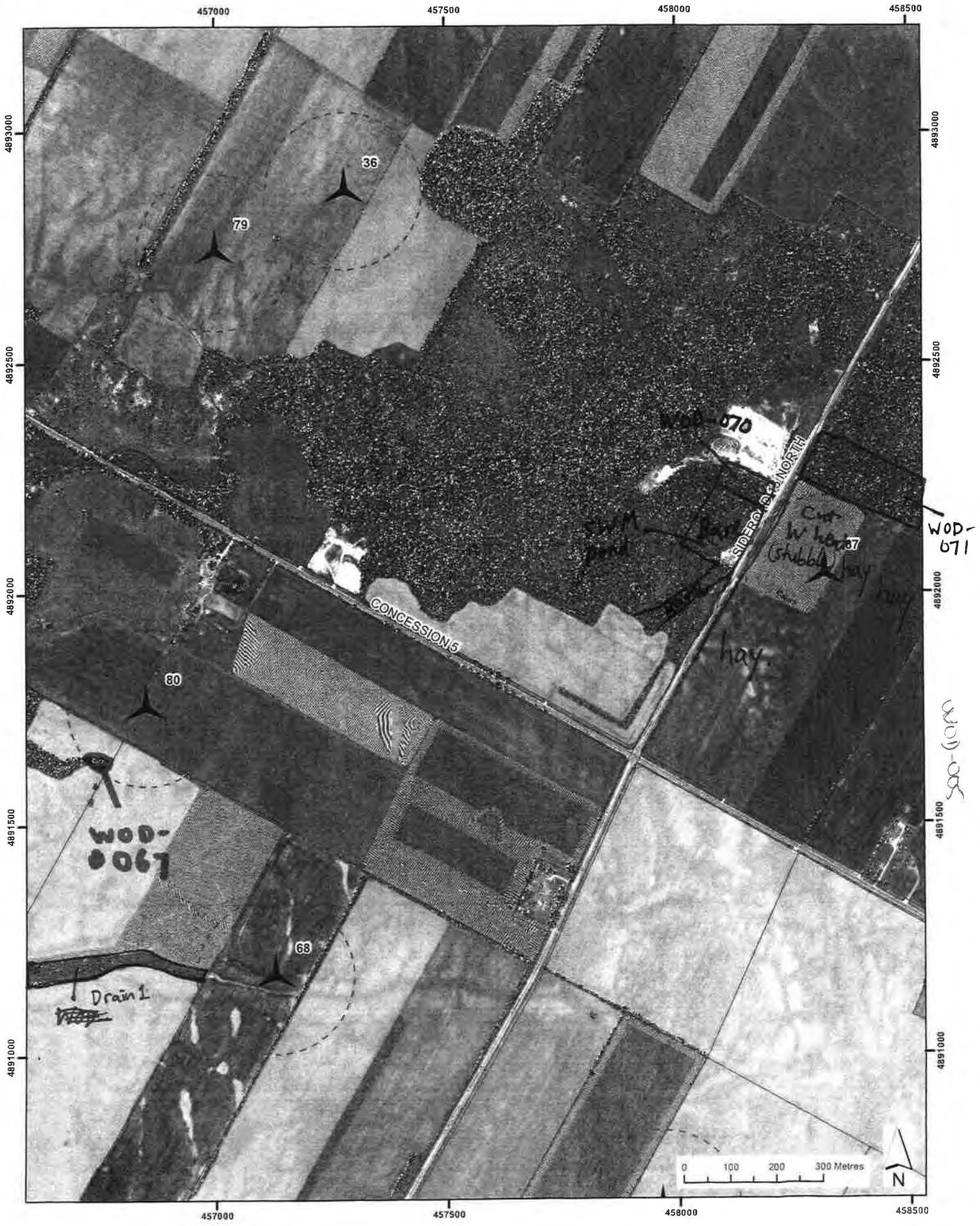
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

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

Species	Layer 1	2	3	4	Sample
wh. pine	A				
wh. spruce	O				
ash sp.	R				
wh. cedar		R			

Cannot confirm ash sp. from roadside

Species	Layer 1	2	3	4	Sample


457000
457500
458000
458500
4893000
4892500
4892000
4891500
4891000
36
79
80
68
WOD-070
WOD-071
WOD-067
WOD-068
CONCESSION 5
SIDEROAD NORTH
Drain 1
hay
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow WF
Polygon:	WOD-071 ~~WOD-005~~
UTM:	17T 0458264 4892258
Date:	Nov. 17/11 Time: 16:20
Surveyor(s):	AMD, NGM
Weather:	Snow, Overcast, 100% cc., wind 4 from SW, -1°C

Community Classification

Vegetation Type:	~~Naturalized type plant~~
~~Inclusion:~~	Dry-Fresh Wh. Pine Naturalized Coniferous Plantation (FOCM6-1)
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	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	Canopy	2	4	White Pine > White Ash > White Elm
2	Sub-canopy	3	2	Hawthorn > Apple
3	Understorey	4	2	Goldenrod sp. > white cedar
4	Groundcover	5	2	Tall / Canadian Goldenrod > 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	N	> 50
Snags	N	< 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	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: WOD-071 ~~WOD-005~~

Tree Tally

Species	Tally 1	Tally 2	Tally 3

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

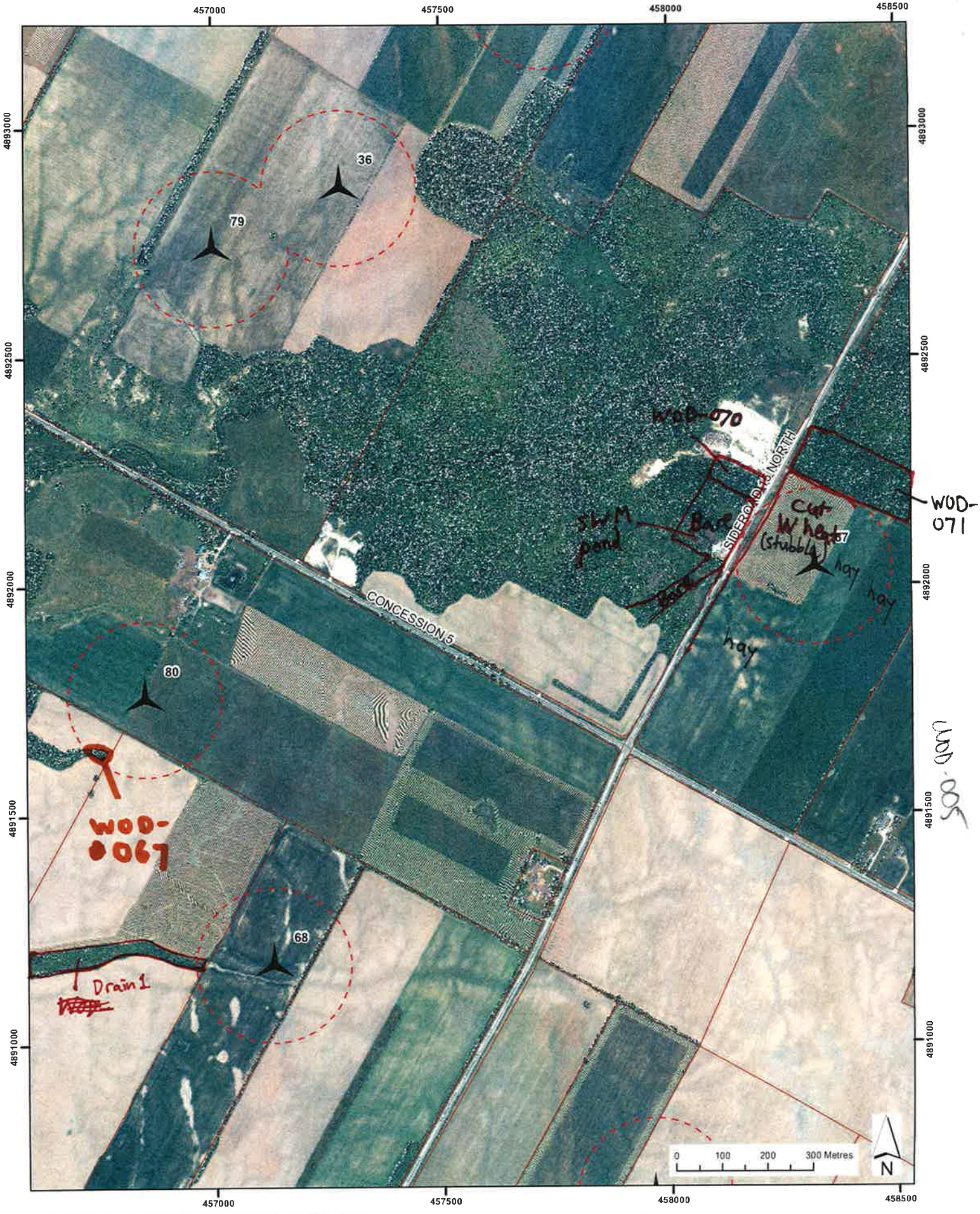
Site:	Armow WF
Polygon:	WOD-071 (T67) ~~WOD-005~~
UTM:	17T 0458264 4992258
Date:	Nov. 17/11
Time:	16:20
Surveyor(s):	AMD, NGM
Weather:	Snow, Overcast, 100% CC, wind 4 from SW, -1°C

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
wh. pine	D				
hawthorn sp.		A			
common apple		O			
wh. ash	R				
wh. elm	R				
wh. cedar		R	R		
red osier dogwood				R	
rubus idaeus				R	
riverbank grape				R	

Species	Layer 1	2	3	4	Sample
smooth brome				R	
tall goldenrod				O	
wild carrot				R	
new england aster				R	
orchard grass				R	
calico aster				O	
canada goldenrod				O	
reed canary grass				O	
common milkweed				R	


457000
457500
458000
458500
4893000
4892500
4892000
4891500
4891000
36
79
80
68
WOD-070
WOD-071
WOD-067
WOD-085
SWM pond
Barn
Cut Wheat (stubble)
hay
hay
hay
CONCESSION 5
SIDEROAD 18 NORTH
Drain 1
0
100
200
300 Metres
N

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnaw WF
Polygon:	WoD-071 *KWOD-005*
UTM:	17T 0458264 4892258
Date:	Nov. 17/11 Time: 16:20
Surveyor(s):	NKM, AMD
Weather:	Snow, wind 4 SW, C.C. 80%, temp: 0°C

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Black-capped Ch.	X		1						
B	Hermit Thrush	X		1						
B	Ruby-crowned Kinglet	X		##						
B	Am. Goldfinch	X		1						
M	White-tailed Deer	TK		NA						

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 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
___ 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
None		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Arnold
Polygon:	WOD-Xi & WOD-005 ✗
UTM:	
Date: Nov 10 2011	Time: 16:10
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	FOCM6-1 Dry-Fresh Wh Pine Naturalized Conif. 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	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 >> White Elm
2	Sub-canopy			
3	Understorey	2	1	Malus sp. = Crataegus sp.
4	Groundcover	1	2	Grass 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	N	25 - 50	N	> 50
Snags	N	< 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	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

WOD-005 (WOD-XI)



Map centre: 44° 11' 26.8" N, 81° 30' 43.5" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:5,700

Legend

you might already have this info

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

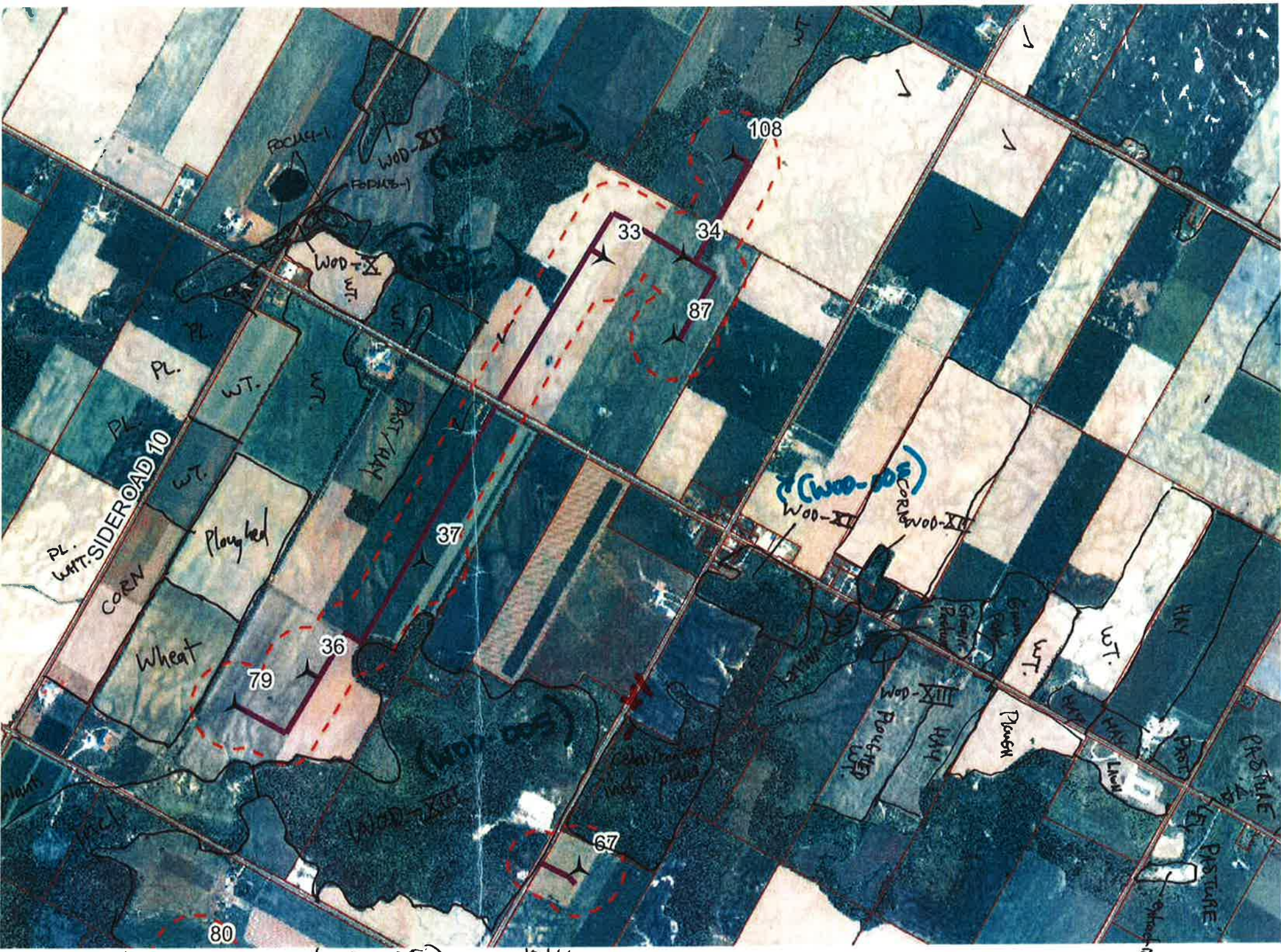
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PWD/NGM WOD-XI (WOD-005) NOV 10/11

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Arnow
Polygon:	WOD-xvi ☆ WOD-005 ☆
UTM:	
Date:	Nov 10 2011 — Time: 16:40
Surveyor(s):	PWD NGM
Weather:	

Community Classification

	Vegetation Type:	FODM3-1 Dry Fresh Poplar Dec. Forest (Part of WOD-130)
X	Inclusion:	THDM2-11 Hawthorn Dec. Shrub Thicket (slopes).
	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	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	Canopy	2	3	Trembling Aspen > Ash sp.
2	Sub-canopy	3	4	" » 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	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

WOD-005



WOD-005

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 4

Site:	Arrow WF 1275
Polygon:	WOD-1006 (T24)
UTM:	
Date:	Sept 15 2011 Time: 1530
Surveyor(s):	Katherine S + Jess P
Weather:	7°C, Wind 2-5(NW), CC 80%, Showers

Community Classification

Vegetation Type:	FODM5-8 Dry-Fresh Sugar Maple - White Ash Decid	Forest 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	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	Mixed
√ Treed	X Surficial Dep	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	White Ash = Sugar maple > Basswood > Am. Beech
2	Sub-canopy	3	3	Hawthorn >> Hophornbeam = Blackcherry
3	Understorey	5	4	Calico aster > Wild red raspberry > Jewelweed
4	Groundcover	6	2	woodland strawberry > burdock = wood sorrel = wild 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	A	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	R	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		Mid-age	X	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 2 of 4

PLANT SPECIES LIST

Site:	Arrow WF 1275
Polygon:	WOD-1006
UTM:	
Date:	Sept 15 2011 Time: 15:30
Surveyor(s):	Katherine S + Jess P
Weather:	7°C, Wind 2-5(NW) CC 80%, Showers

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			
Basswood	O				
White Ash	A				
Sugar Maple	A				
Black cherry		R			
Am Beech	O		O		
Hop Hornbeam		R			
Apple tree		R			
Smooth Blackberry			R		
Tall Goldenrod			R		
Red osier Dogwood			R		
Milkweed			R		
Jewelweed			O		
Grass-leaved Goldenrod			R		
Late goldenrod			R		
Wild red raspberry			O		
Sensitive Fern			R		
Heart-leaved Aster			R		
White Baneberry			R		

Species	Layer 1	2	3	4	Sample
Calico Aster			A		
Burdock				O	
Woodland Strawberry				A	
Wood Sorrel				O	
Herb Robert				O	
Bittersweet Nightshade				O	
Virginia ivy				R	
Hollebone sp.				R	
Sensitive Fern				R	
Ostrich Fern				R	
St John's wort			R		

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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 4

Site:	Arrow 1275 12/16/11
Polygon:	WOD-007 (T23/24) *WOD-006*
UTM:	
Date:	Sept 15, 2011 Time: 1715
Surveyor(s):	Katherine S, Jess P
Weather:	14°C, CC % 50, No precip, Wind 3 (NW)

Community Classification

Vegetation Type:	FODM5-6 Dry-Fresh Sugar Maple - Basswood Decid. Forest 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	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	Basswood = White Ash > American Beech
2	Sub-canopy	3	3	Sugar Maple >> Basswood = White Ash = Hawthorn = Am. Beech
3	Understorey	5	4	Sugar Maple = Goldenrod > Basswood > White Ash = Heart leaved Aster
4	Groundcover	6	2	Woodland strawberry > Calico aster > Herb robert = 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	A	10 - 24	O	25 - 50	R	> 50
Snags	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	A	< 10	O	10 - 24	O	25 - 50	O	> 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 2 of 4

PLANT SPECIES LIST WOD-006

Site:	Arrow Wolf 1275
Polygon:	WOD-007
UTM:	
Date:	Sept 15 2011 Time: 17 15
Surveyor(s):	Katherine S, Jess P
Weather:	14°C, cc % 50, No precip., 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
Basswood	A	O	A		
White Ash	A	O	O		
Hawthorn		O			
Sugar Maple	O	A	A		
Am Beech	O	O			
Am Elm	R	R			
Hop Hornbeam		R			
Black Cherry		R			
Yellow Birch		R			
Swamp Currant			R		
Goldenrod sp.			A		
Heart-leaved Aster			O		
Jewelweed			R		
Sensitive Fern			R		
Jack-in-the-pulpit			R		
Blue cohosh			O		
Zig zag goldenrod			R		

Species	Layer 1	2	3	4	Sample
Bur oak				R	
Calico Aster				O	
Bittersweet Nightshade				O	
Hollyberrie orchid				R	
Woodland Strawb				A	
Herb Robert				O	
Yellow avens				R	

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

WOD-006

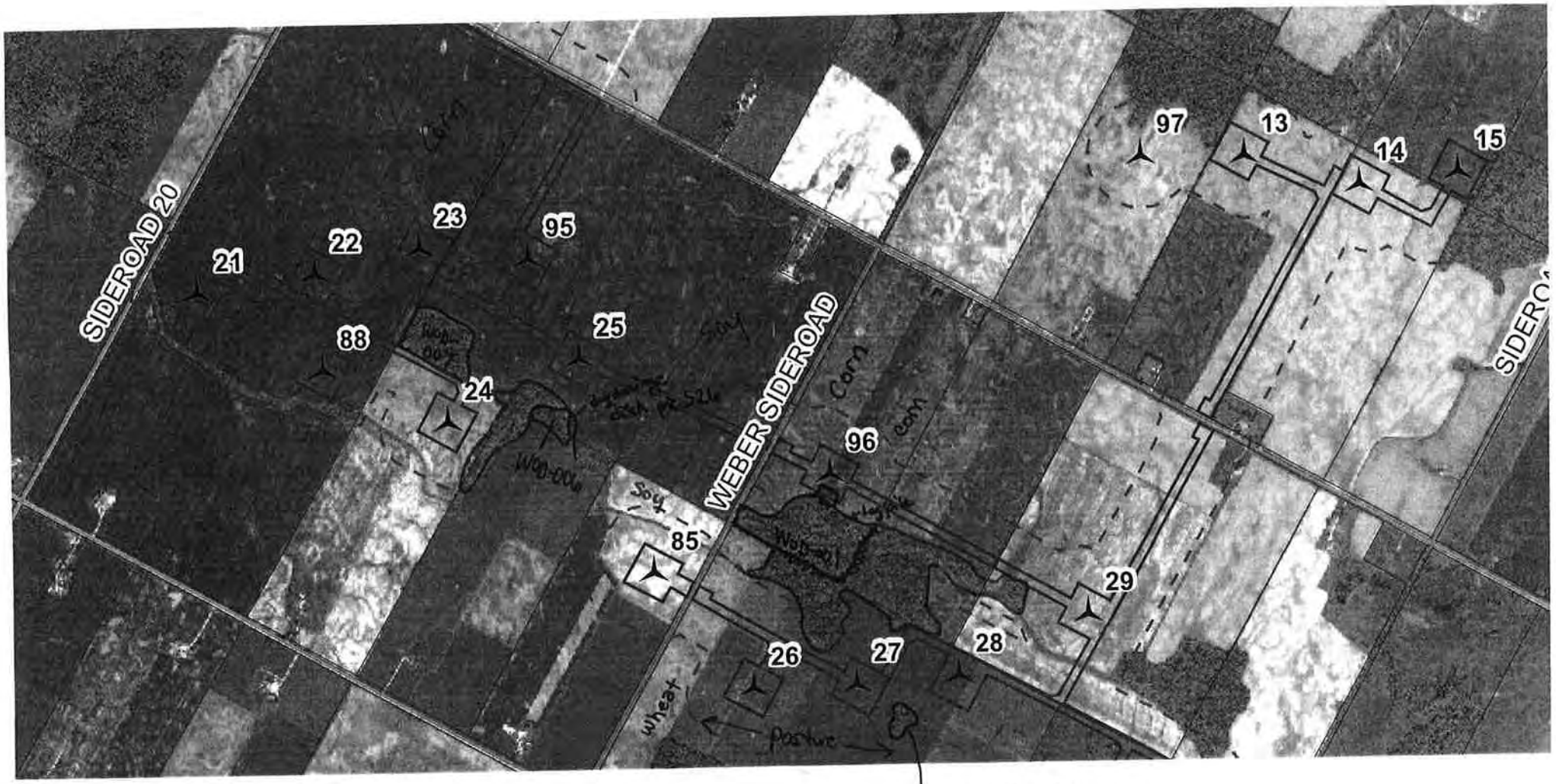


photo 531, 532, 533
Small clump of trees: Trembling aspen, ash sp. (abundant), sugar maple, Hawthorn
No understory, in pasture, heavily used by cattle

(WOD-006)


462000
462500
463000
463500
464000
464500
4895000
4894500
4894000
SIDEROAD 20
CONCESSION 11
CONCESSION 9
WEBER SIDEROAD
21
22
23
95
88
25
24
96
85
Ploughed Bare (COAGM1)
Drain
Sparse hawthorn sp.
reed canary grass
Holy (COAGM2)
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: Armour WF 275

Project #:

Date: Sept 15/11

Observer(s): KSJ, JP

Start Time _____ End Time _____

Woodland ID (WOD- 006) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17T)	Comments
Plot 1	1	0463411 4894435	No bark, 1m high
Plot 2	0	0463374 4894453	
Plot 3	0	0463383, 4894461	
Plot 4	2	0463357, 4894486	1 - w/bark + fallen over w/no bark
Plot 5	1	0463324, 4894469	White ash
Plot 6	1	0462893, 4894473	Loose bark
Plot 7	0	0463285, 4894494	
Plot 8	0	0463271, 4894494	
Plot 9	0	0463872, 4894480	
Plot 10	0	0463281, 4894454	
Plot 11	1	0463090, 4894589	no loose bark
Plot 12	1	0463065, 4894606	
Plot 13	0	0463033, 4894604	
Plot 14	0	0463008, 4894629	
Plot 15	0	0462988, 4894644	
Plot 16	1	0462996, 4894608	large beech snag w/ cavities
Plot 17	0	0463016, 4894683	
Plot 18	0	0463032, 4894674	
Plot 19	2	0463042, 4894662	4m tall, holes, no bark
Plot 20	1	0463081, 4894618	loose bark
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25		** office based summary of data, completed Jan 9/12, DJT **	
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			BMM-001
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)

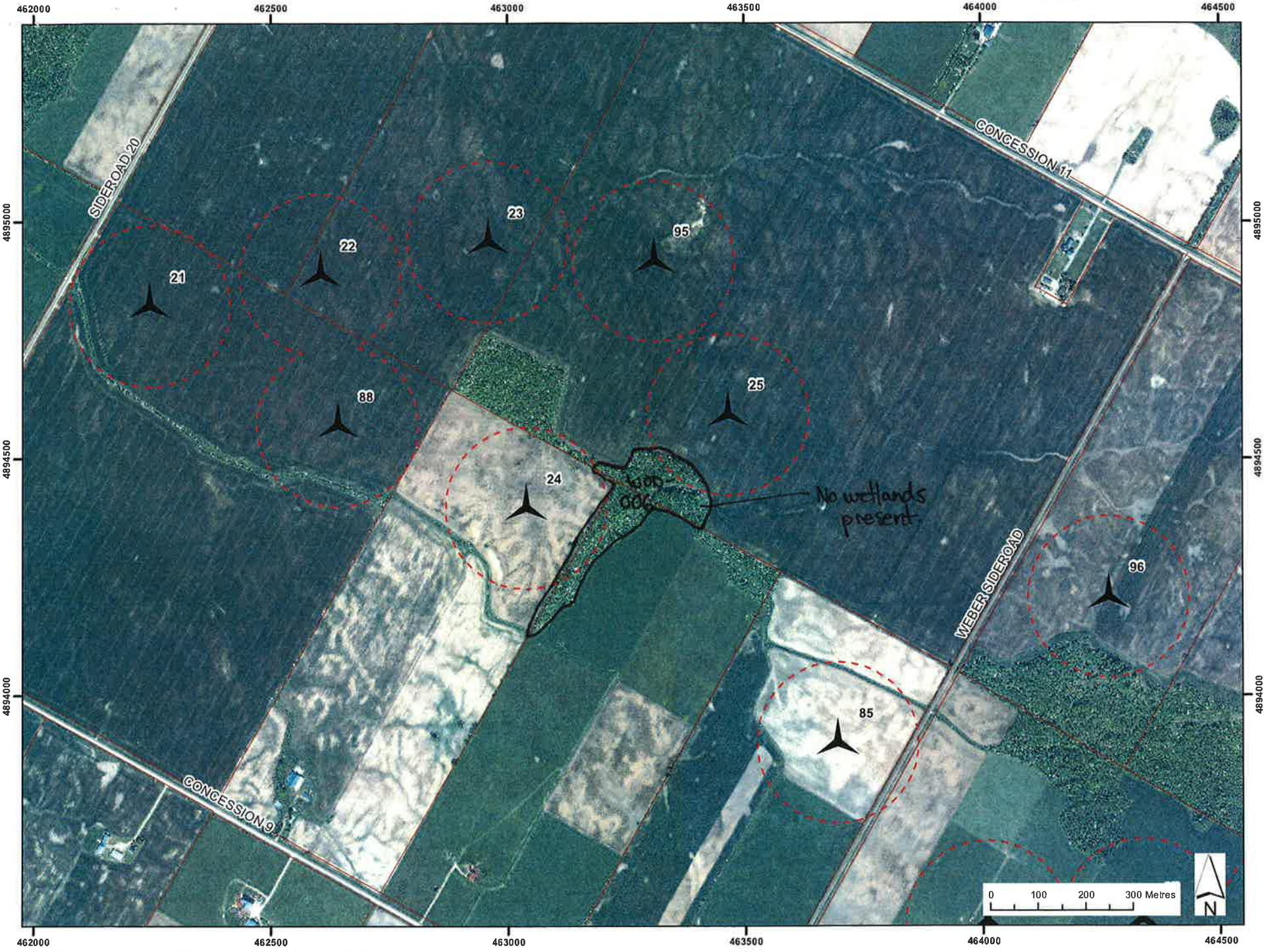
Plots = 0.05ha or 12.6m radius

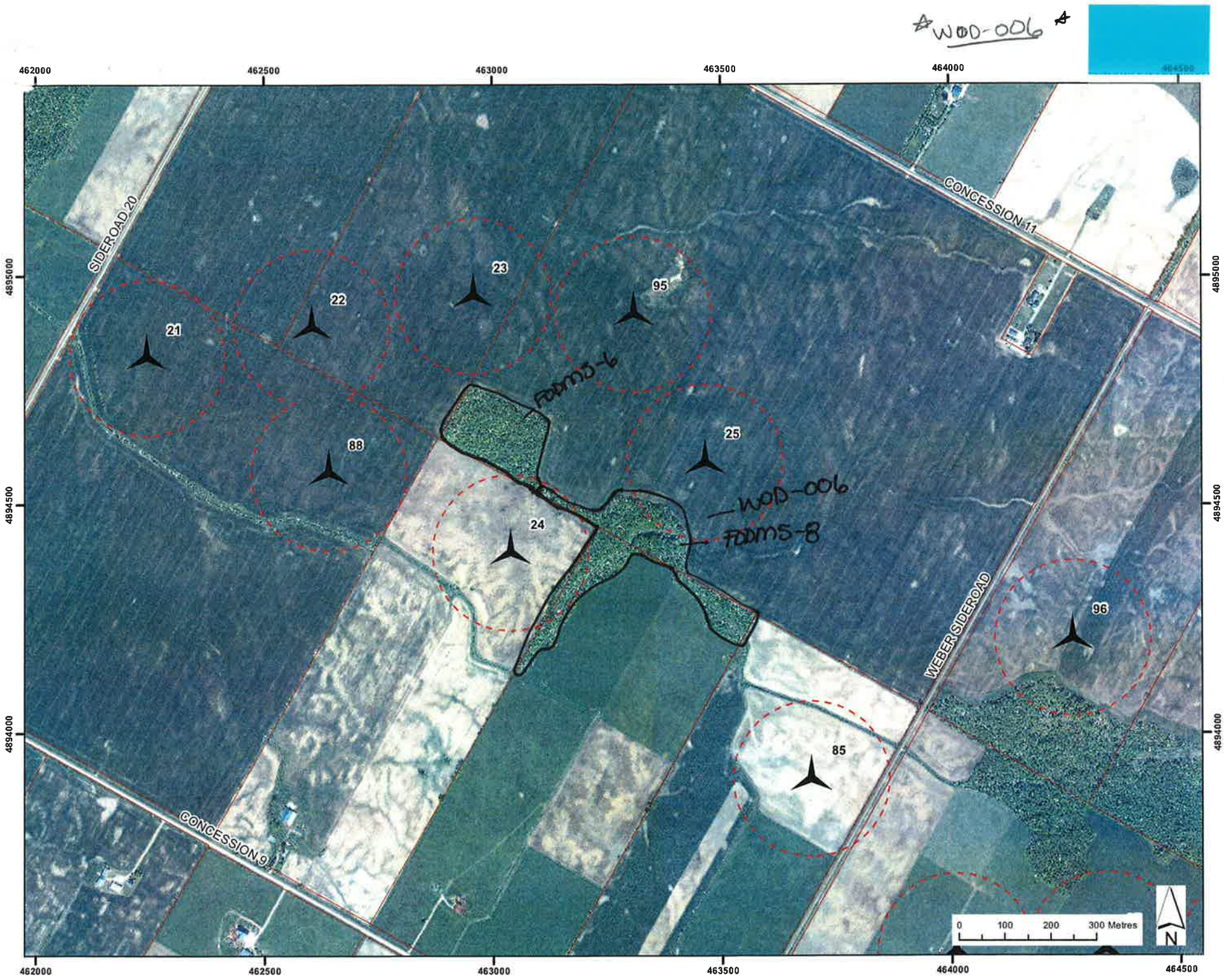
Select plots randomly

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

Final Wodland Tally 11 11/(20×0.05) = (11 snags/ha)

WOD-006


462000
462500
463000
463500
464000
464500
4895000
4894500
4894000
SIDEROAD 20
CONCESSION 11
CONCESSION 9
WEBER SIDEROAD
21
22
23
95
88
25
24
96
85
WOD-006
No wetlands present.
0
100
200
300 Metres
N


WOD-006
462000
462500
463000
463500
464000
464500
4895000
4894500
4894000
SIDEROAD 20
CONCESSION 11
CONCESSION 9
WEBER SIDEROAD
21
22
23
95
88
25
24
96
85
FOOMS-6
WOD-006
FOOMS-8
0
100
200
300 Metres
N

WOD-006 X

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

Project Name: Arrow
Project #: 1275
Date: Sept 15, 2011
Observer(s): Katherine S, Jess P

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM ~~Comments~~	Comments
WOD-005	1	0		17T 0457620 4892811	
	2	0		17T 0457629 4892858	
	3	0		17T 0457642 4892898	
	4	0		17T 0457620 4892940	
	5	0		17T 0457601 4892881	
	6	0		17T 0457561 4892839	
	7	0		17T 0457530 4892828	
	8	0		17T 0457499 4892844	
	9	0		17T 0457[illegible]494 4892900	
	10	1		17T 0457515 4892902	
		1 large	Am Beech,	loose bark w cavities	
WOD-006	1	1		17T 0463411, 4894435	No bark, 1m high
	2	0		17T 0463374, 4894453	
	3	0		17T 0463383, 4894481	
	4	2		17T 0463357, 4894486 - one w bark	and fallen over at half, one w no bark
	5	1		17T 0463324, 4894469 - white ash	
	6	1		17T 0463293, 4894473 - loose bark	
	7	0		17T 0463285, 4894494	
	8	0		17T 0463271, 4894494	
	9	0		17T 0463272, 4894480	
	10	0		17T 0463281, 4894454	
WOD-007	1	1		17T 0463090, 4894599 - no loose bark	
	2	1		17T 0463065, 4894606	
	3	0		17T 0463033, 4894604	
	4	0		17T 0463008, 4894629	
	5	0		17T 0462988, [illegible]4894644	
	6	1		17T 0462996, 4894668 - large old beech snag w cavities	
	7	0		17T 0463016, 4894683	
	8	6		17T 0463032, 4894674	
	9	2		17T 0463042, 4894662 - 4m tall, holes, no bark	
	10	1		17T ~~0463081~~, 4894618 - loose bark	
WOD-005	2				
		WOD-006-1 WOD-007 combined		11 = Henge ha	
WOD-006	10			220 x 0.05	
WOD-007	~~2~~ 12			BMA-09	

Snags per 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

Oct 13, 2011 1275 Armow
08:42 PWD, KJW

Wetland Evaluation

14°C, overcast, 95% cc, Wind 2/S, no rain

WOD-006 ★

- revisited to check for wetland, nothing observed through entire woodlot. Some patches (small) of jewelweed and sensitive fern as well as watercourse vegetation, but the FODMS-8 code is suitable for the entire woodlot.

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. (WOD-006)X

Site:	Armow WF 1275
Polygon:	WOD 007
UTM:	
Date:	Sept 15 2011 Time: 17:15
Surveyor(s):	Katherine S. Jess P
Weather:	14°C, CC% 50, NO precipitation, wind 3 (NW)

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	SI	tree rub	1						
B	Am Robin		Calling	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:	Armow WF 1275
Polygon:	WOD 007
UTM:	
Date:	Sept 15 2011 Time: 17:15
Surveyor(s):	Katherine S. Jess P
Weather:	14°C, CC% 50 NO precip 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.

Site:	Armow WF 1275
Polygon:	W00-006
UTM:	
Date:	Sept 15/11 **Time:** 15 30
Surveyor(s):	Katherine S + Jess P
Weather:	9°C, Wind 2-5 (NW), CC 80%, showers

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Great-crested Flycatcher		calling	1						
L	Caterpillar sp.	OB	pic 528, 529	2						
B	Am Crow		calling	1						
B	N. Harrier	OB	flying	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:	Armow WF 1275
Polygon:	W00-006
UTM:	
Date:	Sept 15/11 **Time:** 15 30
Surveyor(s):	Katherine S + Jess P
Weather:	7°C, Wind 2-5 (NW), CC 80%, showers

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 Pile	17T 0463357, 4894486	old fence posts and wire, pic 530

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site: Arnow	1275
Polygon: WOD-008 (T63)	
UTM:	
Date: Oct 28 2011	Time: 1215
Surveyor(s): CLH, KJW	
Weather: 5°C CC90%, Wind 2 from SE. light Rain.	

Community Classification

Vegetation Type:	FODM5-7 Dry Fresh Sugarmaple - Blackcherry 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	O	—
1	Canopy	2	4	Sugar Maple > Black Cherry > Trembling Aspen > White Birch
2	Sub-canopy	3	3	Sugar maple > American Beech > Basswood > White Elm
3	Understorey	3/4	2	Sugar maple > Allegheny Blackberry > White Ash?
4	Groundcover	4	1	Sugar Maple > Partridgeberry > Heal-All > 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	O	< 10	O	10 - 24	R	25 - 50	N	> 50
Snags	O	< 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 ___ of ___

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WOD-008	
UTM:	
Date: Oct 28 2011	Time: 1215
Surveyor(s): CLH, KJW	
Weather: 5°C CC90% wind 2 from SE light rain	

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	O	O	O	O		White Baneberry				O	
White Birch	O	O				Calico aster				O	
Black Cherry	O	O	O			Heal-All				O	
Balsam Poplar	R					Spinulose Wood Fern				O	
Basswood		O	O								
Trembling Aspen	O										
White Ash	R	O	O								
E. White Cedar		R									
American Beech		O	O								
White Elm		O	O								
Ironwood	O	O									
Allegheny Blackberry			O								
Partridgeberry				O							
Prickly Gooseberry				O							
Riverbank Grape			O								
Wild Raisin			O								
Red Raspberry				O							

Wildlife and Other Notes

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

#WOD-008

Site:	Arnow WF 1275
Polygon:	SAV-1 (T63)
UTM:	
Date:	Oct. 28, 2011
Time:	11:10
Surveyor(s):	KJW, CLH
Weather:	no precip, 5°C, 70% CC, wind 2/SE

Community Classification

	Vegetation Type:	SVDM3-5 White Birch/Poplar Deciduous Savannah
	Inclusion:	
X	Complex:	MAMM1-10 Horsetail/Graminoid Mineral Meadow Marsh

Polygon Description

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

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

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1		
1	Canopy	2		
2	Sub-canopy	3	3	Trembling Aspen > Balsam Poplar > Scotch Pine > European White Birch
3	Understorey	4/5	2	Smooth Brome > Canada Goldenrod > Allegheny Blackberry > Queen Anne's Lace
4	Groundcover	4/7	4	Orange Hawkweed > Spotted Knapweed > Grey Goldenrod > Yarrow

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	X	Pioneer		Young		Mid-age		Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___of___

PLANT SPECIES LIST

Site:	Arnow WF 1275
Polygon:	SAV-1 (T63)
UTM:	
Date:	Oct. 28, 2011
Time:	11:10
Surveyor(s):	KJW, CLH
Weather:	no precip, 5°C, 70% CC, wind 2/SE

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
European White Birch		R			
Trembling Aspen		O			
Scotch Pine		O			planted?
Common Juniper				R	
Allegheny Blackberry			O		
Balsam Poplar		O			
Eastern White Cedar		O			planted

Species	Layer 1	2	3	4	Sample
Smooth Brome			O	O	
Grey Goldenrod				O	
Daisy Fleabane				O	
Canada Goldenrod			O		
Orange Hawkweed				A	
Yarrow				O	
Rudbeckia triloba				O	
Spotted Knapweed				O	
Evening Primrose			O		
St John's Wort				O	
Queen Anne's Lace			O		
White Sweet Clover			O		

Wildlife and Other Notes

Junkyard!
old gravel pit?

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

*WOD-008

Site: Arnold	1275
Polygon: WET-031	M1
UTM:	
Date: Oct. 28, 2011	Time: 11:00
Surveyor(s): CLH, KJW	
Weather: 5°C 100% CC, wind 2, No precip.	

Community Classification

	Vegetation Type:	
	Inclusion:	
X	Complex:	MAMM 1-10 Horsetail/Graminoid Mineral meadow marsh

Polygon Description

System		Substrate		Topo Feature			Community			
	Terrestrial		Organic		Lacustrine		Talus		Lake		Barren
X	Wetland		Mineral Soil		Riverine		Crevice/Cave		Pond		Meadow
	Aquatic	X	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		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	3	0	—
3	Understorey	1/3	2	Dark Green Bulrush > Flat-topped Goldenrod > Narrow-lvd Cattail > New England Aster.
4	Groundcover	4	4	variegated Scouring-Rush > Carex granularis > Juncus Effusus > Grass-of-Parnassus.

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

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

☆ WET-027 in WOD-008

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

Observer(s): CLH, KTW

Date: Oct 28/2011 **Time (24h):** 11:00

Field #: ~~WET-031~~ **Weather:** Precipitation: none Temp (°C): 5

Map Code: M1 Wind Speed & Direction: 2 / SE Cloud %: 100

Wetland Type: Marsh **Site Type:** I **Dominant Form:** ne (narrow emergent)

% Open Water: 0 % **ELC Code:** MAMM1-10

Photos: 182 - 1291, 1292

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash
c	
dc,dh,ds	
ts	red osier dogwood
ls	
(gc)	Grass of Parnassus, nodding ladies tresses, flat topped goldenrod
(ne)	variegated scouring-rush, Carex granularis, Juncus nodosus
be	
re	typha angustifolia
ff	
f	
su	
m	

Soil type: S; C Sand over Clay Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None

See attached Site 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-026 M1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Hanson 1275

Polygon: WET 031 - M1 (T63) *WDD-008

UTM:

Date: Oct. 28, 2011 Time: 11:00

Surveyor(s): KTV, CLH

Weather: no precip, 5°C, 60% CC, wind 2 SE

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	O	
Grey Dogwood			O	O	

Modified ELC Community Description

Soils	MI 1	2	3
Position:	S		
Aspect:	—		
%	0.5		
Type:	Simple		
Class:	A		

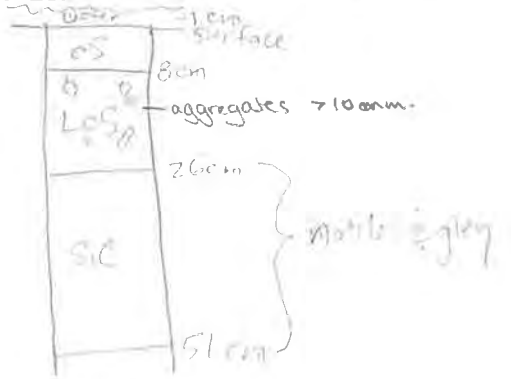
Strata: Texture		cS		
Depth		8cm		
Strata: Texture		LcS		
Depth		26cm		
Strata: Texture		SiC		
Depth		51cm		
Strata: Texture				
Depth				
Effective Texture		SiC		
Surface Stoniness		2		
Surface Rockiness		0cm		
Depth to:				
Mottles		26cm		
Gley		26cm		
Bedrock		—		
Water table		+1cm		
Carbonates		Dcm		
Depth of Organics		0cm		
Pore Size Disc #1		26cm		
Pore Size Disc #2		—		
Pore Size Disc #3		—		
Moisture Regime		6		

Polygon: WET 001 ★WDD-008

Tree Tally

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

NOTES:



could not auger further due to heavy clay

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow WF
Polygon:	WET-031 m2 *WOD-008
UTM:	
Date:	Oct 28 2011 — Time: 12:50
Surveyor(s):	CLH, KJW
Weather:	5°C CC100% Wind 2 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	X Riverine (inter.)	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	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	3	1	Salix petiolaris > white Elderberry = Cow Parsnip.
3	Understorey	3,4	4	Reed Canary > Purple Loosestrife > Red Osier > Bittersweet Nightshade
4	Groundcover	4	2	Calico Aster > 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	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

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

*WD-008

Wetland Vegetation Communities

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

Observer(s): CLH, KCTW

Date: Oct 28 2011 **Time (24h):** 12:50

Field #: WET-031 (TR3) **Weather:** Precipitation: none Temp (°C): 5

Map Code: M2 Wind Speed & Direction: 2 / SE Cloud %: 100

Wetland Type: marsh **Site Type:** P **Dominant Form:** ne (narrow emergents)

% Open Water: 0 % **ELC Code:** MAMM1-3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	trembling aspen
c	
dc,dh,ds	
ts	white elderberry, salix petiolaris
ls	common red raspberry
gc	bittersweet nightshade, Purple stemmed aster, calico aster
(ne)	reed canary grass
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-026
M2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ___of___

*WOD-008

Site:	Arnaw WF 1215
Polygon:	WET-031-M2 (T63)
UTM:	
Date:	Oct 28, 2011 **Time:** 12:56
Surveyor(s):	KJW, CLH
Weather:	precip, 5°C, 100% CC, wind 2/SE

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		
Trembling Aspen			R		
White Elderberry		O			
Salix petiolaris		O			
Common Red Raspberry				O	

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			A		
Bittersweet Nightshade			O		
Cow Parsnip		O			
Calico Aster				O	
Purple-stemmed Aster			O		

No. 392
J.L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com

1-2.

Arrow WF #WD-008 Oct. 28 2011
Wetland Assessment CLH, KSW

PC, 100% CC, Wind 0, No precipitation

WET-031 (T63)

2 communities (M1, M2)

M1: 2 forms > 25% cover
(narrow emergents) ne varigated stout bur reed, ne, dominant form
Carex granularis
gc Grass of Parnassus.

Soils: cS 8cm, LcS to 26cm, SC to 51cm.
Effective Texture SiC MR 6.

Site Type: I

M2: 1 form > 25% cover
ne reed canary grass. narrow emergents, dominant form

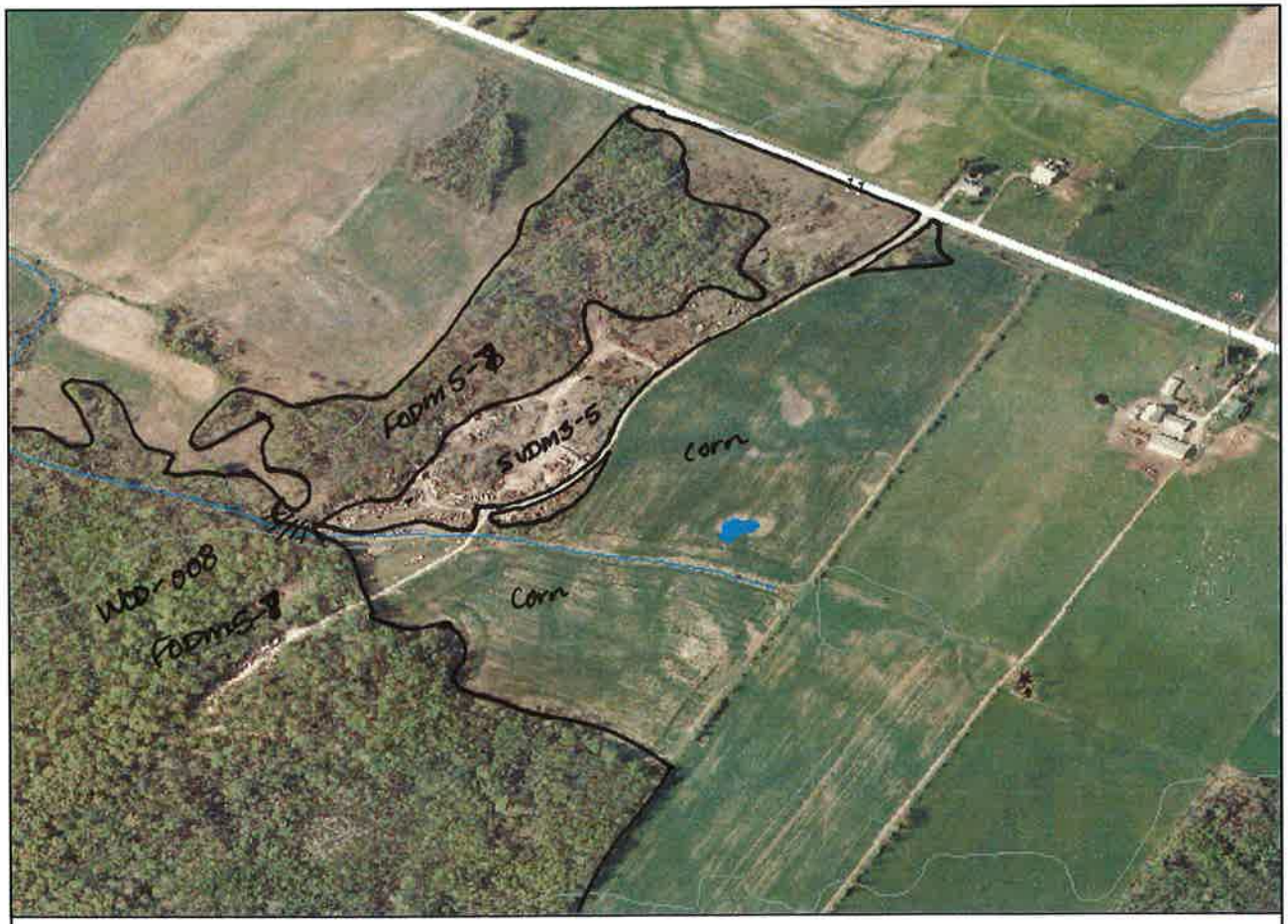
Soils: likely SiC. as in nearby M1 and rest of this portion of the project area.

Site Type: P

#WD-008


Concession 1-1
Sideroad 10
Sideroad 15 N
#ET-081
Corn
Soil
Inflow and outflow interface
© 2011 Europa Technologies
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Image © 2011 GeoEye
Image © 2011 DigitalGlobe
©2010 Goo

T63 ☆WOD-008



Map centre: 44° 13' 34.3" N, 81° 30' 09.8" W

Map created: October 31, 2011

0 100 200 300 400 m

Scale: 1:8,300

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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#WDD-008

T63 Wetlands



Map centre: 44° 13' 34.3" N, 81° 30' 09.8" W

Map created: October 31, 2011

0 100 200 300 400 m

Scale: 1:8,300

Legend

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

Complex AB
M1, M2 names as on map
WET-026
Wetlands

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WOD-008

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow LVF 1275
Polygon:	WET 031 & SAV-1 & WOD-008 (T63)
UTM:	
Date: Oct 28, 2011	Time: 10:40
Surveyor(s):	BJW, CLH
Weather:	no precip, 5°C, 60% 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	American Crow	OB	AMURDER!	~30						
M	White-tail Deer	TK		*						
H	Leopard Frog	OB		**						
B	Mourning Dove	OB		*						
B	Dark-eyed Junco	OB		***						
B	House Finch	OB	♂	*						
B	Hermit Thrush	OB		*						

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 LVF 1275
Polygon:	WET 031 & SAV-1 & WOD-008 (T63)
UTM:	
Date: Oct 28, 2011	Time: 10:40
Surveyor(s):	BJW, CLH
Weather:	no precip, 5°C, 60% 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

- [X] Deciduous Forest
- [ ] Mixed Forest
- [ ] Coniferous Forest
- [X] Marsh
- [ ] Swamp
- [ ] Bog
- [ ] Fen
- [ ] Water (Shallow & Open)
- [ ] Meadow
- [ ] Tallgrass Prairie
- [ ] Thicket
- [X] 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)
- [X] 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
Sand / Sandy Gravel	Savannah Community & MAMM1-10.	Old gravel quarry. No large areas of permanent open water present. Beaver activity and sitting 100m of MAMM1-10. However there is no perm. open water. No Evidence of use by turtles

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 5

Poplar swamp

Site:	Armow WF
Polygon:	WOD-008 MET TOWER (W of T63)
UTM:	17T 0459397 4897178
Date:	Dec. 8/11 **Time:** 10:00
Surveyor(s):	AMD, HLW
Weather:	wind 4 from SW, -1°C, cloudy w/ some sun, 80% CC

Community Classification

Vegetation Type:	Poplar Mineral Deciduous Swamp (SWDM4-5)
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	2	4	trembling aspen > white elm > green ash
2	Sub-canopy	3	4	green ash > trembling aspen > wh elm
3	Understorey	4	3	hawthorn sp. > wild raisin > riverbank grape
4	Groundcover	5-7	2	wood strawberry > Canada goldenrod > 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	N	> 50
Snags	R	< 10	R	10 - 24	R	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	X	Young		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
>25	trembling aspen	A	O			
>25	red osier dogwood			A	O	
	wild raisin			O		
	wh. elm	O	O			
	hawthorn sp.			O		
	riverbank grape			O		
	green ash	O	A			
likely crack	willow sp.	R	R	O	O	
	Common apple					

Species	Layer 1	2	3	4	Sample
Canada goldenrod				O	
tall goldenrod				R	
calico aster				R	
avens sp.				R	
Common speedwell				R	
wood strawberry				O	
dandelion				O	
reed canary grass				O	
aster sp.				O	
woolgrass				R	
soft rush				R	

Wildlife and Other Notes

- photo 1024, 1025 (AMD's blackberry) (southern portion)
- 2 small areas of poplar swamp separated by <100 m w/ crops and fallow field in between
- photo 1045 (AMD's blackberry) (northern portion)

* swamp community consists of 2 swamp areas roughly 65m apart, very similar in composition

Poplar swamp

PWD-008

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): AWD, HLW

Date: Dec. 8/11 **Time (24h):** 10:00

Field #: West of TG3 MET tower **Weather:** Precipitation: none Temp (°C): -1 °C

Map Code: S1 Wind Speed & Direction: 4 from SW Cloud %: 80

Wetland Type: Swamp **Site Type:** P **Dominant Form:** treed (h) deciduous trees

% Open Water: 0 % **ELC Code:** SWDM4-5

Photos: 1024, 1025

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	trembling aspen, green ash, white elm, common apple
c	
dc,dh,ds	
(ts)	red osier dogwood, hawthorn sp., wild raisin
ls	
gc	woodland strawberry, common speedwell, Canada goldenrod
ne	soft rush, reed canary grass
be	
re	wool grass
ff	
f	
su	
m	

Soil type: SiC 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-026

S4

see notes over →

MOD-008

Modified ELC Community Description

Page 5 of 5

(Poplar swamp)
MET tower, west of T63

Soils	1	2	3
Position:	S		
Aspect:	200		
%	0.5		
Type:	S		
Class:	A		

Strata: Texture	SiC			
Depth	4-74			
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Effective Texture	SiC			
Surface Stoniness	—			
Surface Rockiness	—			
Depth to:				
Mottles	8 (measured) from peat organics			
Gley	—			
Bedrock	—			
Water table	5 (measured from organic surface)			
Carbonates	—			
Depth of Organics	4			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	6			

Polygon:

Tree Tally

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

NOTES:

- could not auger past 74 cm due to heavy clays

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

*WOD-008

Site:	Aymont WF
Polygon:	MET tower, west of T63, drain
UTM:	17T 0459357 4897311
Date:	Dec. 8/11 **Time:** 10:51
Surveyor(s):	AMD, HLW
Weather:	-1°C, 90% CC, wind 4/SW

Community Classification

SWTM3

Vegetation Type:	Willow Mineral Decid. Thicket Swamp (~~SWMS~~)
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
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	X 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	wh. elm > green ash > trembling aspen
2	Sub-canopy	3	4	willow sp. » wild raisin
3	Understorey	4	4	willow sp. > red osier dogwood
4	Groundcover	5-7	3	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	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	X	Young		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
>25	red osier dogwood			A	O	
	trembling aspen	R	R			
	wh. elm	R	R			
	green ash	R	R			
>25	willow sp		A	A	O	
	wild raisin		O	R		

	Species	Layer 1	2	3	4	Sample
>25	reed canary grass				A	
	aster sp				O	
	dandelion				R	
	canada goldenrod				O	
	common milkweed				R	
	tall goldenrod				O	
	swamp milkweed				R	
	soft rush				R	

Wildlife and Other Notes

- riparian area of drain
- photo 1102 (Amos blackberry), 1106
  - see Met Tower, W of T63 drain wildlife form for observations
- soils + vegetation strongly influenced by watercourse running through polygon

for MET tower, west of T63, drain, riparian area

NATURAL RESOURCE SOLUTIONS INC. WOD-008
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): AMD

Date: Dec. 8/11 **Time (24h):** 10:51

Field #: **Weather:** Precipitation: None Temp (°C): -1

Map Code: S1 Wind Speed & Direction: 3 / SW Cloud %: 90

Wetland Type: Swamp **Site Type:** R **Dominant Form:** TS (tall shrub)

% Open Water: 0% **ELC Code:** SWTM3

Photos: 1102, 1106

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm, trembling aspen, green ash
c	
dc,dh,ds	
ts	willow sp., red osier dogwood, wild raisin
ls	willow sp.
gc	aster sp.
ne	reed canary grass
be	swamp milkweed
re	woolgrass
ff	
f	
su	
m	

Soil type: SiCL Organic ☐ Mineral ☒

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

WET-026
S3

See notes over →

Modified ELC Community Description

Page __ of __

MET tower, west of T63, drain area.

Soils

	1	2	3
Position:	L		
Aspect:	NE		
%	0-10.5		
Type:	S		
Class:	A		

*Measured from below overburden

Strata: Texture	SiCL			
Depth	8-83			
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Effective Texture	SiCL			
Surface Stoniness	—			
Surface Rockiness	—			
Depth to:				
Mottles	9 cm			
Gley	—			
Bedrock	—			
Water table	0			
Carbonates	—			
Depth of Organics	1-8 cm			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	6			

Polygon: ~~MOD~~ - 008

Tree Tally

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

NOTES: Soil sample taken in watercourse/drain
- Difficult to auger past 83 cm due to heavy clay
-

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 5

NOD-008

Site:	Armow WF
Polygon:	MET tower, west of T63, thicket swamp
UTM:	17T 0459708 4897479
Date:	December 8, 2011 **Time:** 11.15
Surveyor(s):	ADM, HLW
Weather:	Wind 5 from SW, -3°C, cloudy, 60% CC.

Community Classification

Vegetation Type:	Willow Mineral Decid. Thicket Swamp (SWTM3)
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
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	trembling aspen > green ash > white elm
2	Sub-canopy	3	4	willow sp. > wild raisin > green ash
3	Understorey	4	4	willow sp. > red osier dogwood
4	Groundcover	5-7	4	reed canary grass > sensitive fern > 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	A	10 - 24	O	25 - 50	R	> 50
Snags	N	< 10	R	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 2 of 5

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	O	O			
red osier dogwood			A	A	
wild raisin		O			
white elm	R	R			
green ash	O	O			
riverbank grape			O		
gray dogwood			R		
choke cherry			R		
willow sp.		A	A		
white ash		R			

Species	Layer 1	2	3	4	Sample
~~red canary grass~~					
wool grass				R	
avens sp.				O	
aster sp.				O	
canada goldenrod				O	
sensitive fern				O	
reed canary grass				A	A

Wildlife and Other Notes

- small poplar (trembling aspen) stand @ east portion of polygon
- appears hydrologically disconnected
- photo 1142 (2 photos on AMD's blackberry), 1147
- 10% standing water, willow thicket swamp

MET tower, west of T63, willow thicket swamp

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

★ WOD-008

Wetland Vegetation Communities

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

Observer(s): AMP, HLW

Date: Dec. 9/11 **Time (24h):** 11:15

Field #: **Weather:** Precipitation: None Temp (°C): -1

Map Code: S1 Wind Speed & Direction: S/SW Cloud %: 60

Wetland Type: Swamp **Site Type:** I **Dominant Form:** ts (tall shrub)

% Open Water: 0% ~~FES~~ **ELC Code:** SWTM3

Photos: 1142 (x2), 1147

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	trembling aspen, white elm, green ash
c	
dc,dh,ds	
(ts)	red osier dogwood, willow sp., wild raisin, gray dogwood
ls	willow sp.
gc	sensitive fern, aster sp., canada goldenrod
(ne)	reed canary grass
be	
re	woolgrass
ff	
f	
su	
m	

Soil type: SiCL 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-026 S3

See notes over →

Modified ELC Community Description

MET tower, west of TG3, willow thicket swamp

Soils	1	2	3
Position:	5		
Aspect:	195		
%	0		
Type:	S		
Class:	A		

Polygon: AWDD-008

Strata: Texture	SiCL		
Depth	15-32		
Strata: Texture	SiC		
Depth	32-74		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	SiCL		
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles	5	(measured from base of organics)	
Gley	—		
Bedrock	—		
Water table	surface		
Carbonates	71		
Depth of Organics	15		
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:

- heavy clays prevented augering past 74 cm

weather: ~70s, hot, cover, wind
3/4

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: Avmow NF
Project #: 1275
Date: December 8, 2011
Observer(s): AMD, HLW

Woodland ID (WOD- 008) MET Tower (W of Tb3)

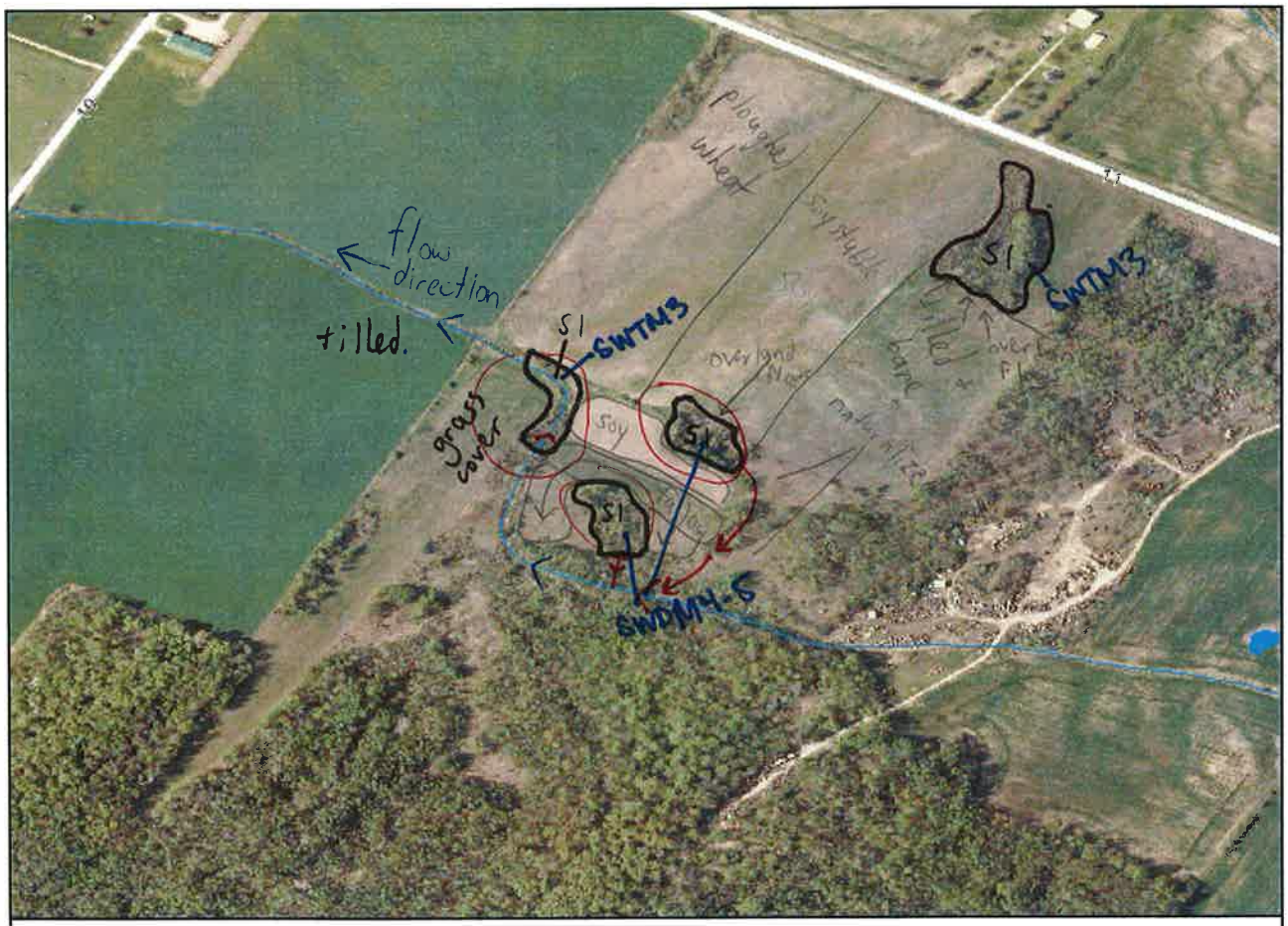
Poplar Swamp

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
Plot 1	0		0459403 4997172	
Plot 2	0		0459418 4897145	
Plot 3	0		0459441 4997123	
Plot 4	0		0459369 4897215	
Plot 5	0		0459456 4997259	
Plot 6	0		0459469 4997246	
Plot 7	0		0459502 4997222	
Plot 8	1		0459505 4897251	
Plot 9	0		0459477 4997281	
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 Woodland Tally = 1 / (9 x 0.05ha)
= 2.2

MET Tower (W of T63) WOD-008



Map centre: 44° 13' 38.3" N, 81° 30' 29.0" W

Map created: December 5, 2011

0 100 200 300 400 m

Scale: 1:8,100

Legend

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

flows

SWDMH-5: inflows absent, outflows indicated in red on map, and flow towards watercourse to the south - these outflows are intermittent.

SWTM3:
(along watercourse)
- flow direction of watercourse marked on map

SWTM3:
(near Con. 11)
- no inflows or outflows - isolated wetland

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Ontario

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WET-026

Wetlands

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

AMD-008

Site:	Aymont WF
Polygon:	MET Tower (W. of Tb3) - Poplar swamp
UTM:	17T 045 9397 4897178
Date:	December 8, 2011 **Time:** 9:53
Surveyor(s):	ADM, HLW
Weather:	-1°C, 70% cloud cover, wind 4/SW

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Bl-capped chickadee	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

- ___ 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

*MOD-008

NATURAL RESOURCE SOLUTIONS INC.

Site:	Hermon MF
Polygon:	MET Tower (Plot 76) – Willow Thicket Swamp
UTM:	17T 0459708 4897479
Date:	December 8, 2011 **Time:** 11:26
Surveyor(s):	ADM, HLW
Weather:	~1°C, 95% cloud cover, wind 4

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Black-capped Chickadee	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

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 Arrow
Polygon:	WOD-636 (T18) ★(WOD-008)★
UTM:	
Date:	Oct 14 2011 Time: 11:30
Surveyor(s):	PWD KJW
Weather:	Rainy, 12°C, 100% cc, wind 4/SE

Community Classification

	Vegetation Type:	FoDM3-1
X	Inclusion:	SwDM2-2
	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	2	4	Trem. Aspen > Basswood > Sugar Maple
2	Sub-canopy	3	2	Trem. Aspen = Sugar Maple > Red Maple > Hop Hornbeam
3	Understorey	4	2	Trem. Aspen > Am. Beech > Alt. Ind. Dogwood
4	Groundcover	7	1	Woodland Strawberry > Violet > Yellow Avens

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	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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: 1275 Armour	*WOD-008
Polygon: WOD-036	
UTM:	
Date: Oct. 14, 2011	Time: 11 30
Surveyor(s): PWD, KJW	
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	O	O	O		
Hop Hornbeam		O			
Sugar Maple	O	O			
Black Cherry	R	R			
Red Maple		R			
Alt. leaf Dogwood		O	O		
Hawthorn sp.		O			
Basswood	O	O			
Apple sp.		O			
Am. Beech	R	O	O		
Nannyberry			R		

Species	Layer 1	2	3	4	Sample
Hobblebush				O	
Woodland Strawberry				O	
Violet sp.				O	
Christmas Fern				R	
Yellow Avens				O	
Riverbank Grape			R	O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(T18) *WOD-008 in WOD-036

Wetland Vegetation Communities

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

Observer(s): PWD . KJW

Date: Oct 14. 2011 **Time (24h):** 11:50

Field #: WET-020 **Weather:** Precipitation: Heavy Temp (°C): 12

Map Code: S1 Wind Speed & Direction: 4/SE Cloud %: 100

Wetland Type: Swamp. **Site Type:** I **Dominant Form:** Treed (h) (deciduous trees)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash, white elm
c	
dc,dh,ds	
ts	
ls	
gc	bittersweet nightshade, calico aster, yellow avens.
ne	Carex sp.
be	polygonum hydropiper
re	
ff	
f	
su	
m	

Soil type: CL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None

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-026
S1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnaw 1275	ARWD-008
Polygon: WET 020	
UTM:	
Date: Oct. 14, 2011	Time: 11:50
Surveyor(s): KJW, PWD	
Weather: overcast w showers, 12°C, 100% CC, wind 4 SE	

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	O	O	
White Elm		O	O	O	
Riverbank Grape			O	O	

Species	Layer 1	2	3	4	Sample
Bittersweet Nightshade				O	
Calico Aster				O	
Wild Water Pepper				O	
Carex sp.				O	
Yellow Avens				R	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Acmow
Polygon:	WET 020 *WOD-008
UTM:	
Date:	Oct. 14, 2011 Time: 11:50
Surveyor(s):	PND, KJW
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 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

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position	6		
Aspect:	—		
%	2-5		
Type:	S		
Class	C		

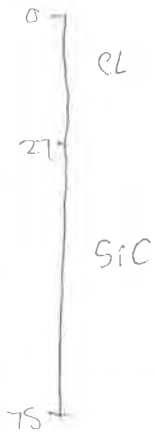
5	***Strata:*** Texture	CL		
	Depth	27		
6	***Strata:*** Texture	SiC		
	Depth	75		
	Strata: Texture			
	Depth			
	Strata: Texture			
	Depth			
	Effective Texture	CL		
	Surface Stoniness	0		
	Surface Rockiness	0		
	Depth to:			
	Mottles	13		
	Gley	35		
	Bedrock	—		
	Water table	—		
	Carbonates	75		
	Depth of Organics			
	Pore Size Disc #1			
	Pore Size Disc #2			
	Pore Size Disc #3			
	Moisture Regime	6		

Polygon: WET-020

Tree Tally

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

NOTES:



Oct 14 2011 ATWOD-008 1275 Atwood
11:50 FLUID KJW
Wetland Evaluation
12°C Overcast, 100% cc, Wind N/SE, raining

WET-020
Site Type: Palustrine
Communities: 1 (see field map)
Sl h Green Ash - dominant form, deciduous trees
Soils: CL / MR 6

Open Water Type: Type I
Fish Habitat: Absent
Rare Species Observed: None
Surrounding Land Use (1 Skm)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WOD-008
WET-021

Wetland Vegetation Communities

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

Observer(s): PWD, KJW

Date: Oct. 14/11 **Time (24h):** 12:45

Field #: WODT63 **Weather:** Precipitation: Heavy Temp (°C): 12

Map Code: S2 Wind Speed & Direction: 4/SE Cloud %: 100

Wetland Type: Swamp **Site Type:** ~~FI~~ **Dominant Form:** (h) deciduous trees

% Open Water: 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, white elm, trembling aspen, freeman's maple
c	
dc,dh,ds	
(ts)	Spicebush, common buckthorn, alternate leaved dogwood
ls	
gc	Sensitive fern, foamflower, dwarf raspberry, spinulose wood fern.
ne	Carex sp., bladder sedge, scouring rush
be	
re	
ff	
f	
su	
m	feather moss

Soil type: m SL | Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None.

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-026 S2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

*WOD-008

Site:	1275 Armour
Polygon:	WET-021 (T63)
UTM:	
Date:	Oct. 14, 2011 **Time:** 12:45
Surveyor(s):	KJW, PND
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	O	O	O	O	
Spicebush			O	O	
White Elm		O	O	O	
Moonseed			O	O	
Riverbank Grape			O	O	
Trembling Aspen	O	O	O	O	
Alt-leaved Dogwood			O	O	
Dwarf Raspberry				O	
Common Buckthorn			O	O	
Freeman's Maple		O	O	O	
Sensitive Fern				O	
Carex sp.				O	
Bladder Sedge				O	
Spinulose Wood Fern				O	
Woodland Strawberry				O	
Meadow Horsetail				O	
Foamflower				O	
Violet sp				O	
Bedstraw sp.				O	
Scouring Rush				O	
Yellow Avens				O	
Feather Moss				O	
Moss sp.				O	

Species	Layer 1	2	3	4	Sample

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armow
Polygon:	WET-021 / WOD-008
UTM:	
Date:	Oct 14 2011 — Time: 12:45
Surveyor(s):	KJW, PWD
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

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

Strata: Texture	Oh			
Depth	19			
Strata: Texture	mSL			
Depth	90			
Strata: Texture	C			
Depth	120			
Strata: Texture				
Depth				
Effective Texture	mSL			
Surface Stoniness	0			
Surface Rockiness	0			
Depth to:				
Mottles	94			
Gley	98			
Bedrock	/			
Water table	/			
Carbonates	120			
Depth of Organics	19			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	3			

Polygon: WET-021

Tree Tally

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

NOTES:



Oct 14, 2011 ~~WUD~~-008

12:45 17T 0459606 4896647

Wetland Evaluation

12°C, Pouring rain heavy, 90% c.c., wind 4/SE

WET-021

Site Type: P

Communities: 1 (see field notes)

Sp: In Green Ash - dominant form deciduous trees

ts: Spicebush

gc: Sens. Fern, Foam Flower

Soils: MSL / MR3

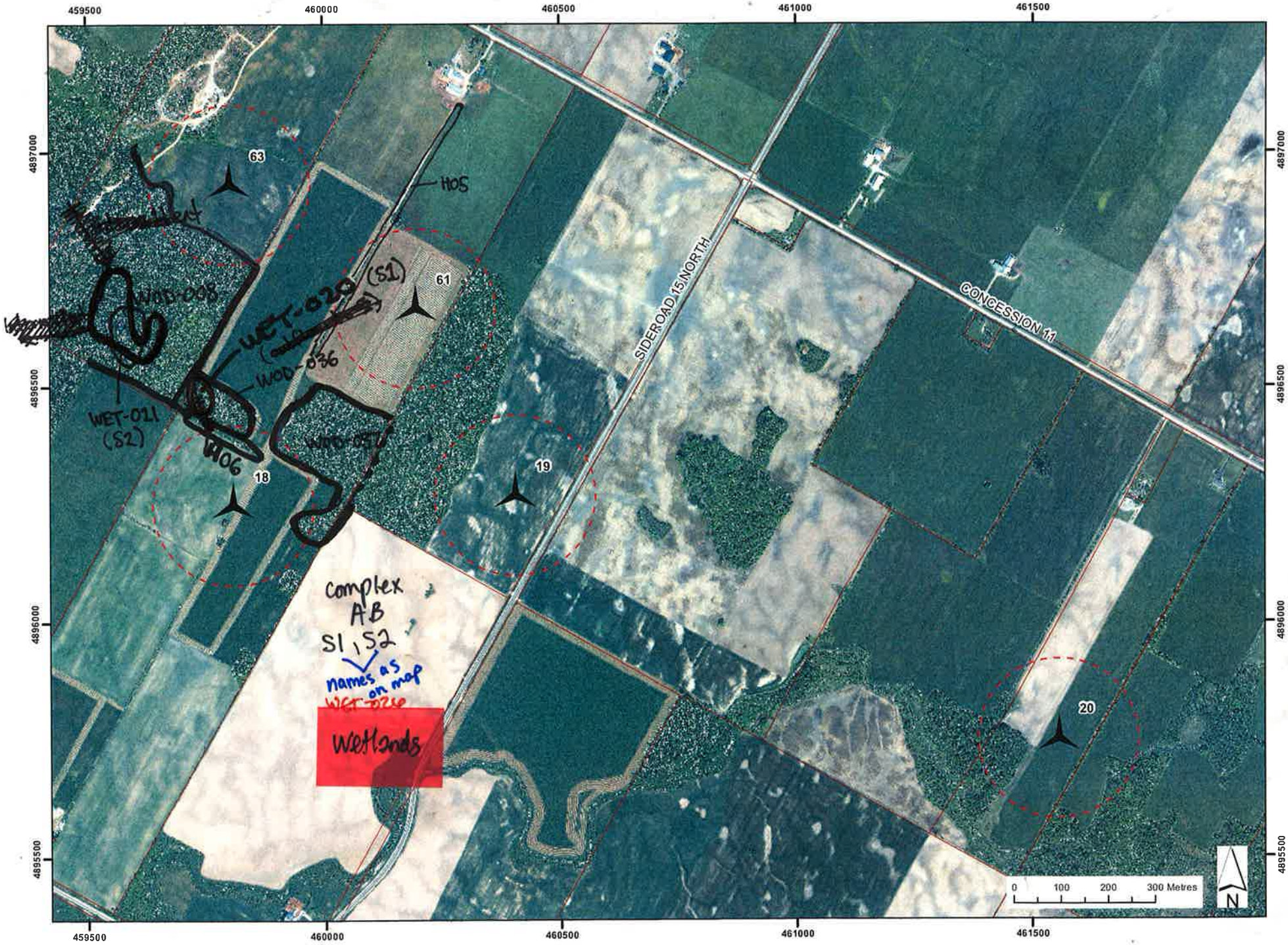
Open Water Type: Type 1

Fish Habitat: Absent

Rare Species Observed: None

Surrounding Land Use (1 Skm)

WOD-008


459500
460000
460500
461000
461500
4897000
4896500
4896000
4895500
63
61
19
18
20
H05
H06
WET-020
(S1)
WOD-008
WOD-036
WOD-037
WET-021
(S2)
SIDEROAD 15 NORTH
CONCESSION 11
Complex
AB
S1, S2
names as
on map
Wetlands
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

#WOD-008

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1775

Observer(s): Cliff

Date: Jan 24 2011 **Time (24h):** Desktop

Field #: **Weather:** Precipitation: / Temp (°C): /

Map Code: S1 Wind Speed & Direction: / Cloud %: —

Wetland Type: Swamp **Site Type:** ? **Dominant Form:** h

% Open Water: 0 **ELC Code:** SWDM

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Ash sp or 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:

BC — clay loam according to CANSIS soils map

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

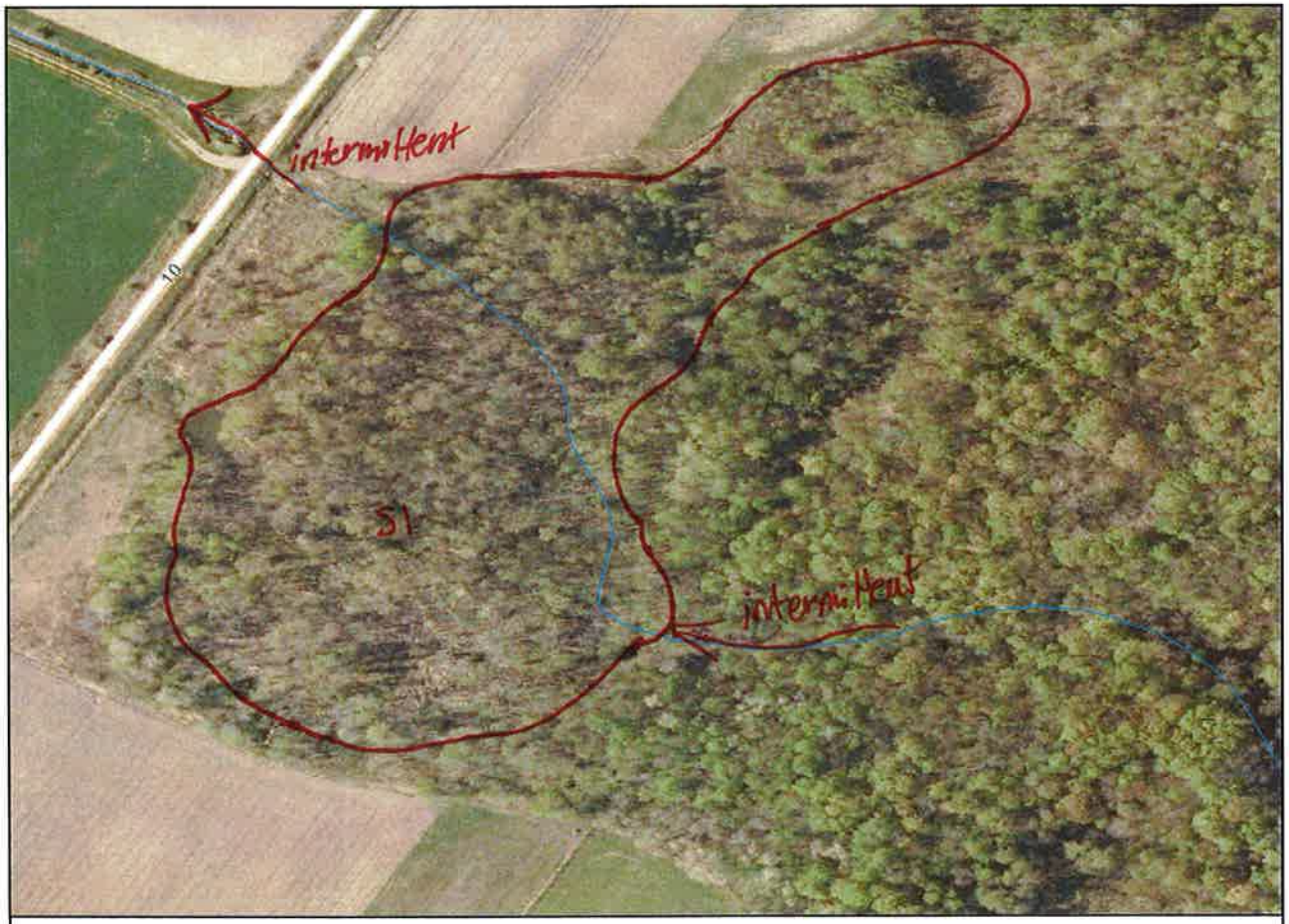
Desktop. No site access, Wetland was not visible from the road.

WET-043 S1

WOD-008

CLH Desktop

SR 10 / Conc 9



Map centre: 44° 13' 15.7" N, 81° 31' 09.4" W

Map created: January 24, 2012

0 50 100 150 200 m

Scale: 1:2,700

Legend

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

WET-043

S1

Wetland

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N S

Ontario

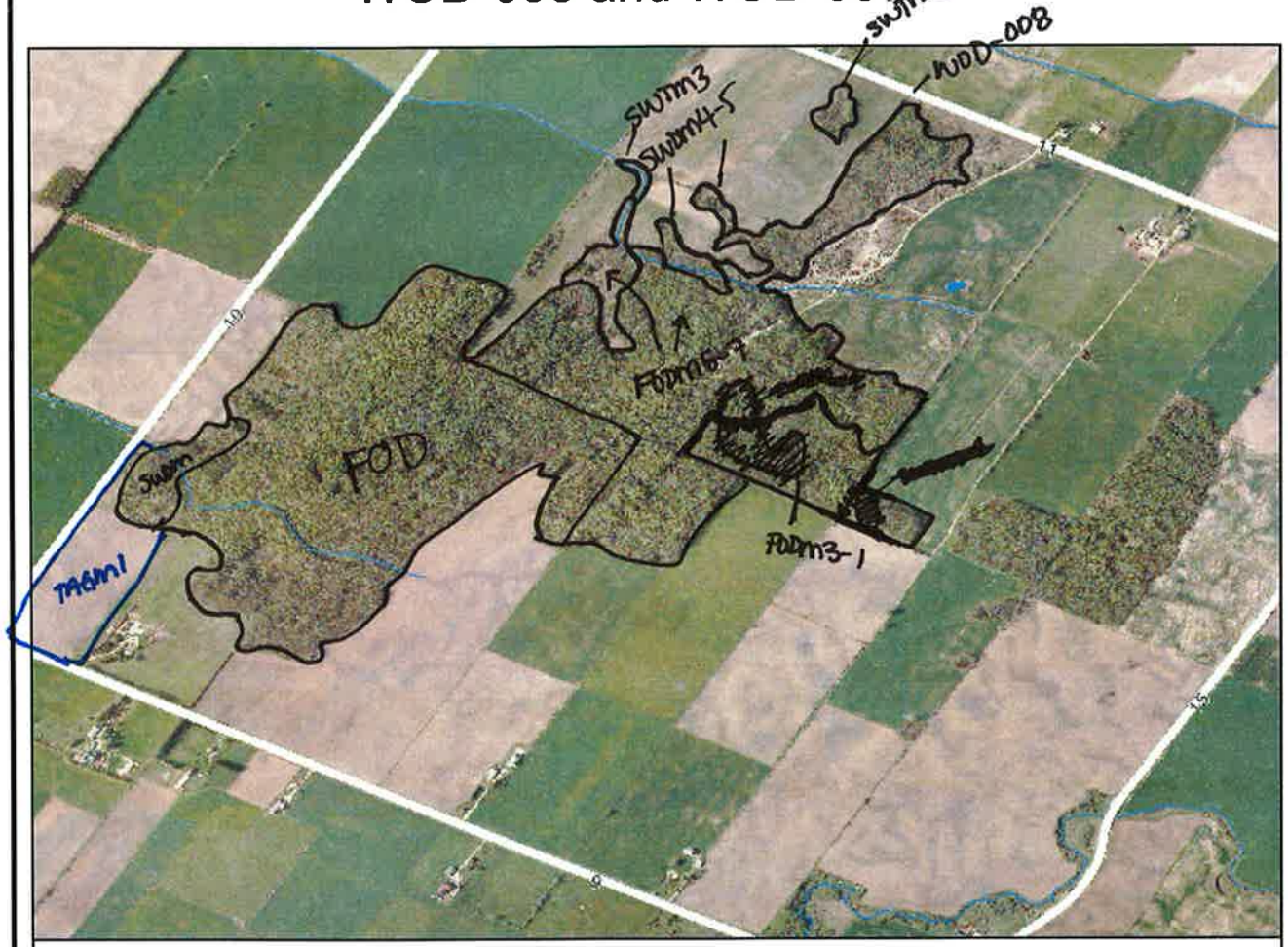
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☆WOD-008

WOD-008 and WOD-037



Map centre: 44° 13' 14.8" N, 81° 30' 31.2" W

Map created: December 30, 2011

0 300 600 900 1,200 m

Scale: 1:18,000

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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Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrow WF
Project #: 1275
Date: Sept 16, 2011
Observer(s): Katharine S, Jess P

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM Comments		
WOD-008	1	0		17T	0459590	4896894
	2	0		17T	0459607	4896893
	3	1		17T	0459633	4896896 - lom tall
	4	1		17T	0459650	4896887 - no bark
	5	1		17T	0459650	4896836 - loose bark
	6	2		17T	0459634	4896754 - almost dead T. Aspen and one W no bark
	7	0		17T	0459577	4896756
	8	1		17T	0459556	4896815 - loose bark
	9	0		17T	0459529	4896839
	10	0		17T	0459588	4896951
WOD-009	1	0		17T	0466515	4892083
	2	1		17T	0466519	4892096 - dead Trembling Aspen
	3	0		17T	0466464	4892096
	4	0		17T	0466409	4892160
	5	0		17T	0466421	4892191
	6	0		17T	0466467	4892227
	7	0		17T	0466516	4892227
	8	0		17T	0466574	4892246
	9	0		17T	0466599	4892213
	10	0		17T	0466612	4892229

WOD-009 total snags 5
WOD-009 snags/ha 17

WOD-009 total snags 1
WOD-009 snags/ha 2

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: Dec 8/Sept 16/11

Observer(s): AmD, HLW/ KSJ, JP

Start Time _____ End Time _____

Woodland ID (WOD-008) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	0		
Plot 2			
Plot 3		AmD/HLW	
Plot 4			
Plot 5			
Plot 6			
Plot 7	1		
Plot 8			
Plot 9	0		
Plot 10	0		
Plot 11	0		
Plot 12	1	KSJ, JP	
Plot 13	1		
Plot 14	1		
Plot 15	2		
Plot 16	0		
Plot 17	1		
Plot 18	0		
Plot 19	0		
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25			
Plot 26		* office based summary of Bmn info collected for entire woodland	
Plot 27			
Plot 28			
Plot 29			
Plot 30		Jan 16/12 * PNT.	
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 7

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

$= 7/(19 \times 0.05) = 7.37$

Wildlife Observation Form

Page __ of __

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Site:	1275 Arnold
Polygon:	WOD-036 AWD-005
UTM:	
Date:	Oct 14, 2011 **Time:** 11:30
Surveyor(s):	FWD, KJW
Weather:	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	European Starling	OB		~75						
B	Turkey Vulture	OB		1						
B	Am. Robin	VO		1						
B	Blue Jay	VO		2						
B	BC Chickadee	VO		1						
M	Raccoon	OB		1						
B	E. Kinglet	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)

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 1275
Polygon:	WOD-009 (TS2)
UTM:	
Date:	October 13, 2011
Time:	1200
Surveyor(s):	PWD, KJW
Weather:	18°C, cc0%, wind 2(N), No precip

Community Classification

Vegetation Type:	SWD02-3 Swamp Maple Organic Dec. Swamp 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	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 > Yellow birch > Red Maple
2	Sub-canopy	3	2	Freeman's maple > Red maple > Am. elm.
3	Understorey	6	2	Freeman's maple >> Winterberry = Red osier dogwood
4	Groundcover	7	3	Sensitive fern > Bittersweet nightshade > 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	R	10 - 24	N	25 - 50	N	> 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:	
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	A	A	O		
Red maple	O	O		O	
Am. elm	R	O			
Yellow birch	O				
Winterberry			O		
Red Osier dogwood			O		
Swamp fly honeysuckle				R	
Spicebush			O		
Wild raisin			O		

Species	Layer 1	2	3	4	Sample
C. lupulina				O	
Turtlehead				R	
Jack in the Pulpit				O	
Royal fern				R	
Bristly catbrier				O	
Calico aster				O	
Herb robert				O	
Bogus-ticks				O	
Wool grass				R	
Sensitive fern				O	
Bittersweet nightshade				O	
Dwarf raspberry				O	
Fragrant bedstraw				O	
False nettle				O	
Reed canary grass				O	
Nodding bur marigold				O	
Blue flag iris				O	
Interrupted fern				O	
Clearweed				O	
Rough avens				O	
Agrimony				O	
Marginal Shield-fern				O	

Wildlife and Other Notes

Many spring peeper and wood frog observed throughout habitat.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF 12TS
Polygon:	WOD-009 (TS2)
UTM:	
Date:	October 13, 2011 — Time: 13:00
Surveyor(s):	PWD, KJW
Weather:	18°C, Cl. 0%, wind 2 (N), No precip

Community Classification

Vegetation Type:	FOD8-1 Fresh-Moist Poplar Deciduous Forest 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	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	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	Trembling aspen
2	Sub-canopy	3	2	Trem. aspen >> Red maple > Green ash
3	Understorey	5	1	Trem aspen
4	Groundcover	6	3	Virg. creeper > Poa sp. > Riverbank grape

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	O	< 10	O	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

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	A	O	O		
Red maple		R			
Green ash		R			

Species	Layer 1	2	3	4	Sample
Heal all				O	
Poa sp.				O	
Riverbank grape				O	
Canada goldenrod				R	
Bittersweet nightshade				O	
Com. dandelion				O	
Heart-leaved aster				O	
Meadow horsetail				R	
Virg. creeper				O	

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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

IN (WOD-009)

Site:	1275 Arnow
Polygon:	WET-018
UTM:	
Date:	Oct 13, 2011
Time:	15:50
Surveyor(s):	PWD KJW
Weather:	16°C, overcast, 100% cc, wind 2/5, no rain

Community Classification

Vegetation Type:	SWD02-3
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	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		
Aspect:	160°		
%	2-5		
Type:	S		
Class:	C		

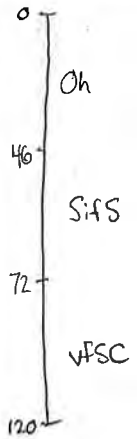
Strata:	Texture	Oh		
	Depth	46		
Strata:	Texture	SiFS		
	Depth	72		
Strata:	Texture	vFSC		
	Depth	120		
Strata:	Texture			
	Depth			
Effective Texture		Oh		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	76		
	Gley	76		
	Bedrock	/		
	Water table	?		
	Carbonates	120		
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7		

Polygon: WET-018 (S2). (WOD-009)

Tree Tally

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

NOTES:




466000
466500
467000
467500
4894000
4893500
4893000
4892500
4892000
SIDEROAD 30 NORTH
CONCESSION 11
BRUCE ROAD 1
60
32
Complex G
S1 - all of
S2 - all
WET-022
Wetlands
Basswood / Trembling Aspen
WET 018
WET 017
(S1)
0 100 200 300 Metres
N

WOD-009

N WOD-009

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): PWD KJW

Date: Oct. 13, 2011 **Time (24h):** 15:50

Field #: WET-018 **Weather:** Precipitation: None Temp (°C): 16

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

Wetland Type: Swamp **Site Type:** I **Dominant Form:** Treed (h)

% Open Water: 0 **ELC Code:** SWDM 2-3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple, Red Maple, green ash, white elm
c	
dc,dh,ds	
ts	red osier dogwood, winterberry, wild raisin, spicebush
ls	swamp fly honeysuckle
gc	dwarf raspberry, fall senettle, cinnamon fern, royal fern
ne	reed canary grass, hop sedge,
be	
re	
ff	
f	
su	
m	moss spp.

Soil type: Oh Organic [X] Mineral [ ]

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

Spring Peeper
Wood 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

WET-022 S2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnaby 12-15
Polygon:	018 (T32) in WOD-009
UTM:	
Date:	Oct 13, 2011
Time:	15:50
Surveyor(s):	KJW PWD
Weather:	overcast, 16°C, 100% CC, wind 2-15

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	A	O		
Green Ash	A	A	O		
Red osier Dogwood			O		
Winterberry			R		
Dwarf Raspberry				O	
Red Maple	O	O			
White Elm	O	O			
Swamp Fly Honeysuckle			O		Y
Swamp Rose			O		
Wild Raisin			O		
Spirea bush			O		
Bristly Greenbrier			R		

Species	Layer 1	2	3	4	Sample
False Nettle				O	
Reed Canary Grass				R	
Nodding Bur Marigold				O	
Carex spp.				O	
Blue Flag Iris				O	
Loosestrife sp.				O	✓
Calico Aster				O	
Hop Sedge				O	
Interrupted Fern				O	
Bittersweet Nightshade				O	
Sensitive Fern				O	
Royal Fern				O	
Clearweed				R	
Rough Avens				O	
Arrinonu				O	
Cinnamon Fern				O	
Marginal Shield Fern				O	
Moss, spp.				A	

Oct 13 2011 1275 Armow
15:50 PWD, KJW
Wetland Evaluation
16°C, overcast, 100%cc, wind 2/S, no rain

WET-018
Site Type: Isolated
Communities:
S2: h Freeman's Maple, Red Maple
Soils: Oh / MR7

Open Water Type: Type 1
Fish Habitat: Absent
Rare Species Observed: None
Surrounding Land Use (1.5km)

WOD-009 IN

WOD-009*

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

Project Name: Arrow WF
Project #: 1275
Date: Sept 16, 2011
Observer(s): Katherine S, Jess P

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM ~~Comments~~		
WOD-008	1	0		17T	0459590	4896894
	2	0		17T	0459607	4896893
	3	1		17T	0459633	4896896 - Lom tall
	4	1		17T	0459650	4896887 - no bark
	5	1		17T	0459650	4896836 - loose bark
	6	2		17T	0459634	4896754 - almost dead T. Aspen and one w no bark
	7	0		17T	0459577	4896756
	8	1		17T	0459556	4896815 - loose bark
	9	0		17T	0459529	4896839
	10	0		17T	0459588	4896951
WOD-009	1	0		17T	0466565	4892083
	2	1		17T	0466519	4892096 - dead Trembling Aspen
	3	0		17T	0466464	4892096
	4	0		17T	0466409	4892160
	5	0		17T	0466421	4892191
	6	0		17T	0466467	4892227
	7	0		17T	0466516	4892227
	8	0		17T	0466574	4892246
	9	0		17T	0466599	4892213
	10	0		17T	0466612	4892229
total snags	6					
snags/ha	12					
total snags	1					
snags/ha	2					

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-009 X

Site:	Arrow WF 1275
Polygon:	WOD-009
UTM:	
Date:	Sept 16 2011 **Time:** 11:30am
Surveyor(s):	Katherine S, Jess P
Weather:	18°C cc 0% Wind 2 (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	Red-tailed Hawk	OB	flying	1						
B	Merlin	OB	perched	1						
H	Garter Snake	OB	in field	1						
H	Leopard Frog	OB	in field	28						
H	Am Toad	VO	Singing	2						
B	Great-crested Flycatch		Calling	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:	Arrow WF 1275
Polygon:	WOD-009
UTM:	
Date:	Sept 16 2011 **Time:** 11:30am
Surveyor(s):	Katherine S, Jess P
Weather:	18°C cc 0% Wind 2 (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
___ Old Foundation
___ Old Bridge/Concrete Culvert

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

Invertebrates
___ Crayfish Chimney

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

Habitat Feature:	UTM	Description
Meadow Summer Hab	17T 0466684, 4891989	Pasture/grassy w many leopard frogs, near WET-001

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC. WOD-009

Site:	Armour 1275
Polygon:	WET 018
UTM:	
Date:	Oct 13, 2011 **Time:** 15:50
Surveyor(s):	KJW PWD
Weather:	overcast, 16°C, 100% CC, wind 2/5

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								
H	Spring Peeper	OB	also OB							
B	Black-capped Chickadee	T								
H	Wood Frog									

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 1275
Polygon:	WET 018
UTM:	
Date:	Oct. 13, 2011 **Time:** 15:50
Surveyor(s):	KJW, PWD
Weather:	overcast, 16°C, 100% CC, wind 2/5

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

Describe Valley (depth, geomorphological traits):

Additional Details:

WOD-029

Outside of proj. area but partly complex

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

(T32) (adj to WOD-097) (close to WOD-001)

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

Observer(s): PWD, KJW

Date: Oct 13, 2011 **Time (24h):** 15:00

Field #: WET-017 **Weather:** Precipitation: Light Temp (°C): 17

Map Code: M1 Wind Speed & Direction: 2'S Cloud %: 100

Wetland Type: Marsh **Site Type:** I **Dominant Form:** Narrow- emergent

% Open Water: 5% **ELC Code:** MAS01-1

Photos: 172-1115

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
(ne)	Bro[illegible]
be	
(re)	Broad-leaved cattail
ff	
f	
su	
m	

Soil type:		Organic ☒	Mineral ☐

Rare Species (Local, Regional, Provincial):

None

Wildlife Notes:

Red Wing Blackbird
Cowbird.

Note absorbed into S1 swamp due to size.

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-022 S1

*Not in proj. area

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour 1275	
Polygon: WET 017	IN W-05-009
UTM:	
Date: Oct 13 2011	Time: 15:00
Surveyor(s): KJW PWD	
Weather: Overcast, 16°C, 100% C.C, wind 7.8	

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	O	O		
Green Ash	O	O	O		
White Willow	O	O			
Winterberry		O			
Bebb's Willow		O	O		
Red Osier Dogwood			R		

Species	Layer 1	2	3	4	Sample
Typha angustifolia			O	O	
Scirpus sp.			O	O	
Bittersweet Nightshade				O	
Hedge Bur Marigold				O	
Blue Flag Iris			O		
Mild Water Pepper				O	

*Not in proj. area

WOD-009

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

~~WOD-097~~ *

Wetland Vegetation Communities

Project Name:	Armow	**Project #:**	1275
Observer(s):	PWD, KJW		
Date:	Oct 13, 2011	**Time (24h):**	15:35
Field #:	WET-017	**Weather:** Precipitation:	Light Temp (°C): 17
Map Code:	S1	Wind Speed & Direction:	2/S Cloud %: 100
Wetland Type:	Swamp	**Site Type:**	I **Dominant Form:** Treed (h)
% Open Water:	5%	**ELC Code:**	SWD02-3
Photos:	172-1115		

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple, green ash, white willow
c	
dc,dh,ds	
ts	bebb's willow, red osier dogwood, winterberry
ls	
gc	blue flag iris, bittersweet nightshade, nodding bur marigold
ne	
be	mild water pepper
(re)	narrow-leaved cattail, scirpus sp.
ff	
f	
su	
m	

Soil type:	Unable to take core	Organic ☐	Mineral ☐

Rare Species (Local, Regional, Provincial): None

Wildlife Notes: due to surrounding cattail marsh. See WET-017 Red wing blackbird Cowbird.

CH This is lumped together with mi (mi not big enough) so soil core taken was edge of community

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

*Not in proj. area

Oct 13, 2011 — 1275 Arrow

15:00 — PWD, KSW

Wetland Evaluation

17°C, overcast, 100% cc, wind 2/S, light rain

WET-017

Site Type: Isolated

Communities: 2 (see field map)

M1: fe Broad-leaved Cattail

Soils: Om / MR7

S1: h Freeman's Maple (barely 25%)

ipe: Broad-leaved Cattail

Soils: Unable to take core due to surrounding cattail marsh.

Open Water Type: Type 3

Fish Habitat: Absent

Rare Species Observed: None

Surrounding Land Use (1.5km)

W (WOD-009)

*Not in proj. area

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

*Not in proj. area

Site:	
Polygon:	(WOD-009)
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:	3		
Aspect:	240°		
%	5-9		
Type:	S		
Class:	D		

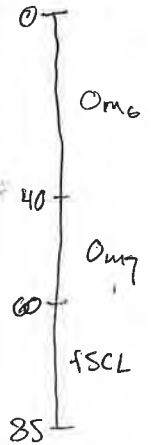
Strata:	Texture	Om6		
	Depth	40		
Strata:	Texture	Om7		
	Depth	60		
Strata:	Texture	FSCL		
	Depth	85		
Strata:	Texture			
	Depth			
Effective Texture		Om		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	—		
	Gley	60		
	Bedrock	—		
	Water table	0		
	Carbonates	85		
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7		

Polygon: WET-017 (M1) Not in project area

Tree Tally

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

NOTES:



- rocky fragments throughout horizon.
- Could not auger past 85cm due to rocky fragments.


466000
466500
467000
467500
4894000
4893500
4893000
4892500
4892000
SIDEROAD 30 NORTH
CONCESSION 11
BRUCE ROAD 1
60
32
Bobcaygeon Trenton Airport
WET 018
S1
WET 017
0
100
200
300 Metres
N

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

WWOP-009 *not in proj area

Page __ of __

Site:	Arrow 1275
Polygon:	WET 017
UTM:	
Date:	Oct. 13, 2011 Time: 15:00
Surveyor(s):	KSW, PWD
Weather:	overcast, 16°C, 100% CC, wind 2/5

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Horned Lark	VO	in field	~20						
B	Red-tailed Hawk	VO		1						
B	Red-winged Blackbird	SB		~5						
B	Brown-headed Cowbird	OB		~30						
H	Spring Peeper	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.

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Site:	Arrow 1275
Polygon:	WET 017
UTM:	
Date:	Oct 13, 2011 Time: 15:00
Surveyor(s):	KSW PWD
Weather:	overcast, 16°C, 100% CC, wind 2/5

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

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow WF 1275
Polygon:	WET-001 (T32) (close to WOD-009)
UTM:	
Date:	Sept 16/11 Time: 11:30am
Surveyor(s):	Katherine S + Jess P
Weather:	CC 5%, no precip, wind from N, 18°C

Community Classification

Vegetation Type:	~~MAMM1-2 Cattail Graminoid Mineral Meadow~~ Marsh
Inclusion:	
Complex:	MASO1-1 (on per soil sheet)

Polygon Description

System		Substrate		Topo Feature				Community			
	Terrestrial	X	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		Open Water	Plant Form			
X	Open	X	Plankton		Forb		Coniferous
	Shrub		Submerged		Lichen		Mixed
	Treed		Floating-Lvd.		Bryophyte	
			X Graminoid		Deciduous	

Stand Description

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

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	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		Young		Mid-age	X	Mature		Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arrow WF 1275
Polygon:	WET-001 (WOD-009)
UTM:	
Date:	Sept 16/11 Time: 11:30
Surveyor(s):	Katherine S + Jess P
Weather:	CC 5%, no precip, wind from N, 18°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	Species	Layer 1	2	3	4	Sample
Broadleaf cattail				D							
Grasses sp.				A							

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

- a few snags inside

1_7

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

W (WOD-009)

Wetland Vegetation Communities

Project Name: Armow | Project #: 1275
Observer(s): CLH, KJW
Date: Oct 6 2011 | Time (24h): 11845
Field #: WET-001 M1 | Weather: Precipitation: None | Temp (°C): 16
Map Code: WET-001 M1 | Wind Speed & Direction: 2 | Cloud %: 0
Wetland Type: Marsh | Site Type: Isolated | Dominant Form: re (m, re)
% Open Water: 20 | ELC Code: MASO1-1 Cattail Organic Shallow Marsh
Photos: DSC_0945 | Grab: DSC_0943, 0944

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	dead ash
ts	Salix lucida
ls	
gc	
ne	reed canary grass, carex pseudocyperus
be	mild water pepper
(re)	typha latifolia, scirpus validus
(ff)	Duckweed sp.
f	
su	
m	

Soil type: SiCl, 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-022 M1

2_7

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

W (WOD-009)

Wetland Vegetation Communities

Project Name: Armow | Project #: 1275.
Observer(s): CLH, KJM
Date: Oct 6 2011 | Time (24h): 11:45
Field #: WET 001 M2 | Weather: Precipitation: None | Temp (°C): 16
Map Code: WET-001 M2 | Wind Speed & Direction: 2 from SW | Cloud %: 0
Wetland Type: Marsh | Site Type: Isolated | Dominant Form: ne (M, ne)
% Open Water: 0 | ELC Code: MAMM1-3 Reed Canary mineral meadow marsh
Photos: DSC_0945

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	shining willow
ls	
gc	calico aster,
(ne)	reed canary grass for sedge, path rush.
be	
re	dark green bulrush, typha latifolia
ff	
f	
su	
m	

Soil type: SiCl, 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-022 M2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour WF — WWOD-009

Polygon: WET 001 M1 (T32)

UTM:

Date: Oct 6, 2011 Time: 11:17

Surveyor(s): KJW, CLH

Weather: Sunny, 16°C, 070 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
Salix lucida		R			

Species	Layer 1	2	3	4	Sample
Typha latifolia			D	O	
Reed Canary Grass				O	
Scirpus validus			O		1✓
Carex pseudocyperus				O	2✓
Mild Water Pepper				R	
Duckweed				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

W(WOD-009)

Site: Armow	
Polygon: (VET 001 MZ → Kin's GPS	
UTM: 0466631 / 4892040 (020)	
Date: Oct. 6, 2011	Time: 11:35
Surveyor(s): KJW, CLH	
Weather: Sunny, 16°C, 070 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
Dark Green Bulrush				O	
Calico Aster				R	
Path Rush				R	
Reed Canary Grass				D	
Typha latifolia				R	
Fox Sedge				O	

Modified ELC Community Description

Soils	1	2	3
Position:	S		
Aspect:	0°		
%	0.5-2		
Type:	Simple		
Class:	B		

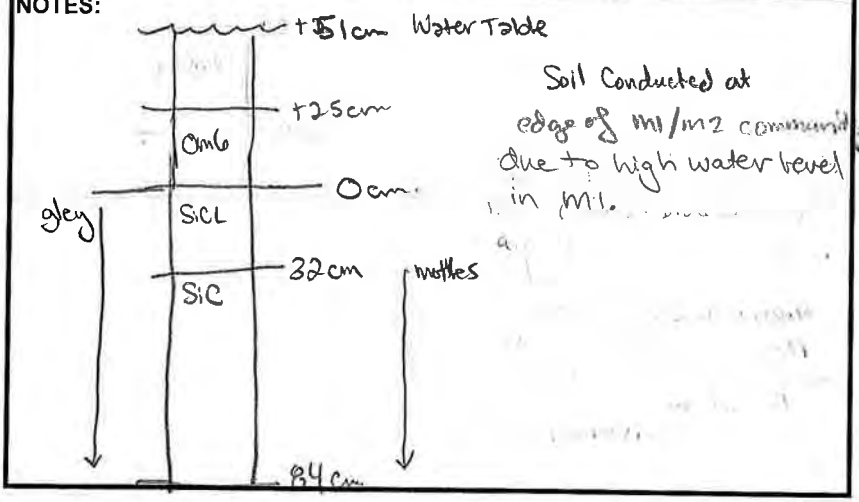
Polygon: WET-001 (W WOD-007)

Strata: Texture	Om6		
Depth	25cm		
Strata: Texture	SiCL		
Depth	32cm		
Strata: Texture	SiC		
Depth	84cm		
Strata: Texture			
Depth			
Effective Texture	SiCL		
Surface Stoniness	1		
Surface Rockiness	0		
Depth to:			
Mottles	32cm		
Gley	0cm		
Bedrock	—		
Water table			
Carbonates	0cm		
Depth of Organics	05cm		
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:



Soil Conducted at edge of MI/M2 community due to high water level in MI.

Arrow NF (WWOD-009) Oct. 6, 2011
Wetland Assessment. CH, KJW

Sunny. 16°C Wind 2 CCO%

WET-001 (WET-022 - M1, M2 *)
Isolated Marsh.
2 Communities → See Field map.

M1: 2 Forms >25% cover:
re typha latifolia
ff Duckweed sp.
See attached form for more detailed vegetation description.

M2: 1 Form >25% cover:
ne red canary grass
See attached form for more detailed vegetation description.

Open Water Type: Type 2.
Soils: M1/M2 edg: 25cm Omic over Silty Clay Loam and Silty Clay.

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

W(Woo-009)

Oct 6 2011
CLH KJW



X = small grate DSC_0945

N extent of wetland 17T 0466631 4892040 1m accuracy

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

w/(WOD-009)

Site: Arrow WF 1275
Polygon: WET 001
UTM:
Date: Oct 6 2011 Time: 11:17
Surveyor(s): KJW CLH
Weather: Sunny, 16°C, 0% cc, wind 2

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Turkey Vulture	OB		1		L	Sulphur Butterfly	OB		1
B	Brown-headed Cowbird	OB		>10		H	Turtle sp.	FY	raided nest	5
B	American Crow	VO		2		A	Leopard Frog	OB		1
M	Raccoon	SC		1						
B	Song Sparrow	OB		2						
B	Red-winged Blackbird	OB		>10						
M	Muskrat	HO		1						
B	American Goldfinch	OB		>4						
B	Northern Harrier	OB	In field	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)

(TM1-001)

Raided Turtle Nests: 17T 0466664 4891883
Quantity: 5. On side of Dirt Lane (1ft drop off from Pasture to lane). - on west side of road
Painted or Snapping
DSC-09146109447 Between the two wetlands.

Wildlife Habitat Form

NATURAL RESOURCE SOLUTIONS INC.

Site: Arrow WF 1275
Polygon: WET 001
UTM:
Date: Oct 6 2011 Time: 11:17
Surveyor(s): KJW, CLH
Weather: Sunny, 16°C, 0% cc, Wind 2

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
Standing dead trees		approx 25 small dead ash trees within marsh (avg. DBH ~20cm)

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armour WF
Polygon:	WOD-009 (T81/741) ~~WOD-010~~
UTM:	
Date:	Sept 20/11 — Time: 12:30
Surveyor(s):	AMD, PNT
Weather:	15°C, 70%CC, WIND=1, NO PRECIP

Community Classification

Vegetation Type:		FODM5-2 (Dry-Fresh Sugar maple - Beech Deciduous Forest type)
X	Inclusion:	
	Complex:	MEFM4 (Fresh-moist forb meadow)

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	X	Surficial Dep.		Floating-Lvd		Bryophyte		
			Bedrock		Graminoid	X	Deciduous		

Stand Description

	Layer	HT	Cover	Species
~~*~~	~~Super-canopy~~			
1	Canopy	1	3	Sugar maple > American beech
2	Sub-canopy	2	4	Sugar maple > white ash = basswood = American beech (+ ironwood)
3	Understorey	3/4	2	Sugar maple = choke cherry > American beech = ironwood
4	Groundcover	5-7	2	choke cherry > white ash > helleborine

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	O	> 50
Deadfall/Logs	A	< 10	A	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:	Armour WF
Polygon:	WOD-009
UTM:	
Date:	Sept. 20/11 — Time: 12:30
Surveyor(s):	AMD, PNT
Weather:	Sunny w/ cloudy periods 17°C, wind 1 from NW, C-E

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 oak or dogwood				R	
willow sp.			R		
hawthorn sp.			R		
white ash	O	O	O	A	
basswood	O	O	O		
white elm			R	R	
~~maple sp.~~					
sugar maple	O	A	A		
common apple			O		
rubus strigosus				O	
basket willow			R		
American beech	O	O	O		
choke cherry			A	A	
ironwood		O	O		
mountain ash				R	
yellow birch	R				
ribes cynosbati				R	
black cherry		R	R		
white birch		R			

Species	Layer 1	2	3	4	Sample
red carcay grass				O	
dark green bulrush				R	
willow herb sp.				O	
rosa blanda				R	
wild asparagus				R	
new england aster				O	
aster tatrifolia				O	
solidago graminifolia				O	
timothy				D	
helleborine				O	
wild leek				O	
common speedwell				R	
wood strawberry				R	
viola sp.				R	
enchanter's nightshade				R	

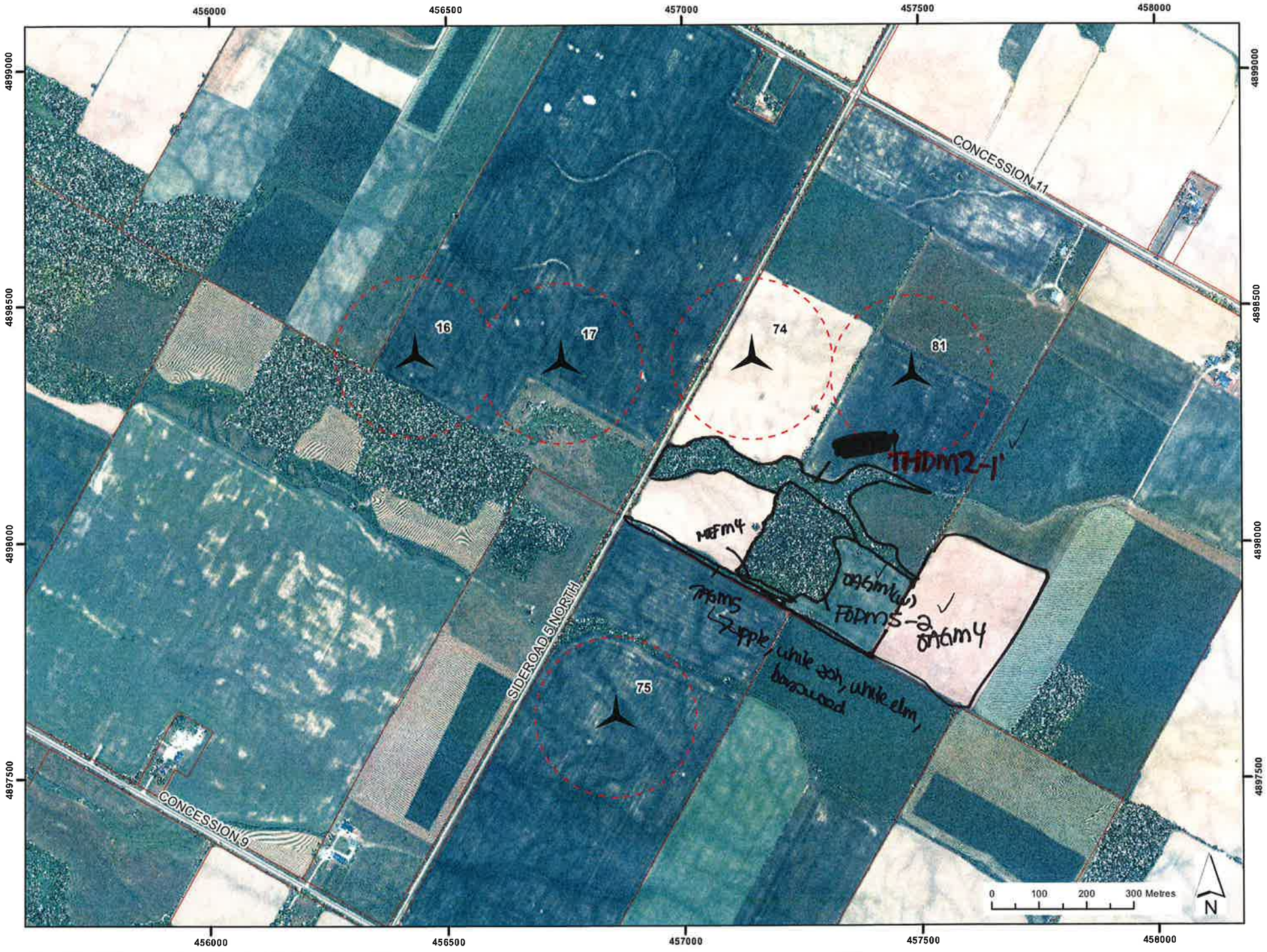
indicators. (INCL.) a) forest edge where ~~forested~~ successional would impact

forested area

Wildlife and Other Notes

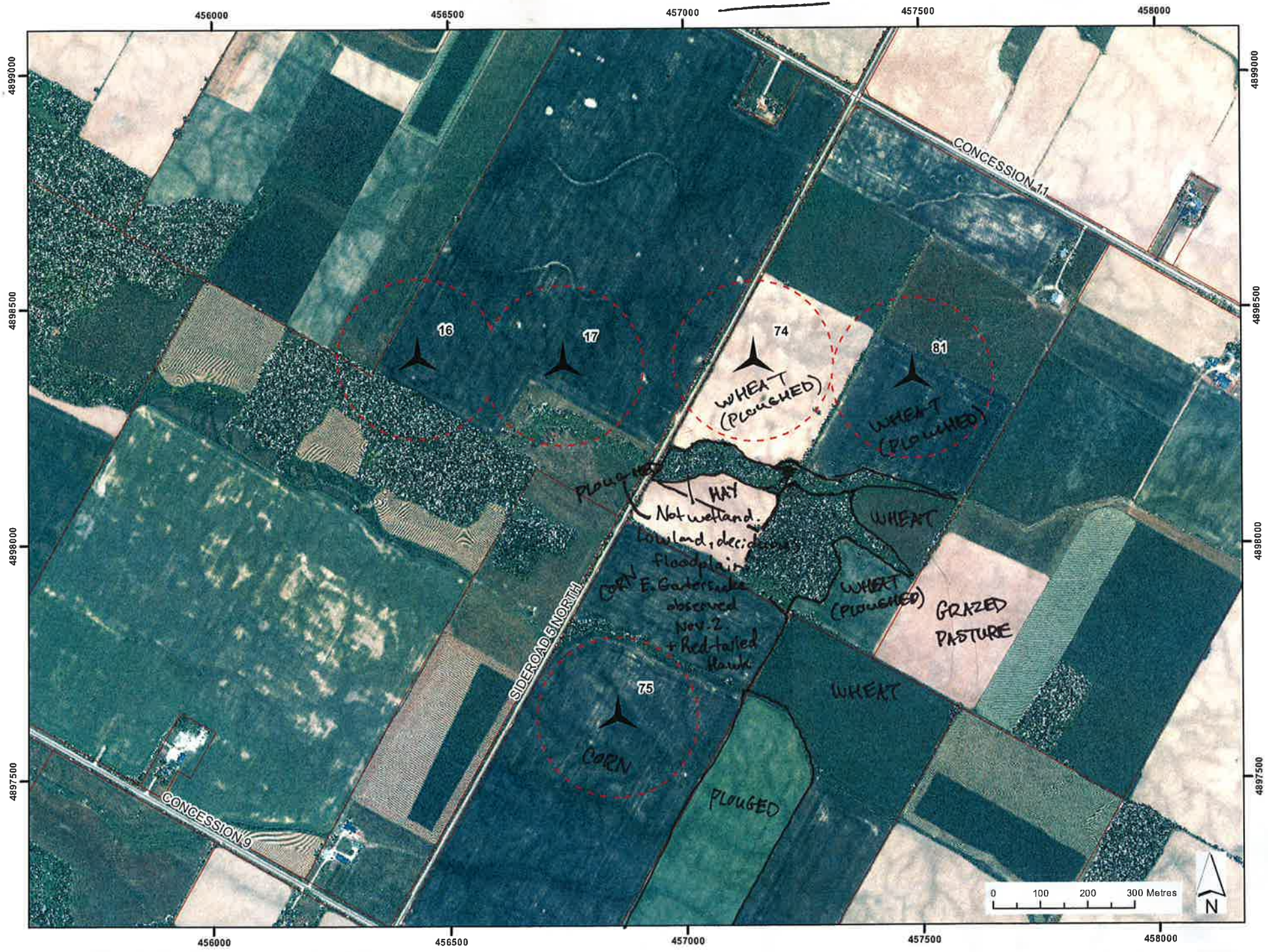
- beech snag w/ significant bee activity - likely large nest
- little groundcover in forested area.
-

WOD-010


456000
456500
457000
457500
458000
4899000
4898500
4898000
4897500
CONCESSION 11
SIDEROAD 5 NORTH
CONCESSION 9
16
17
74
81
75
THDM2-1
MBFM4
FODM5-2
ONGM4
0 100 200 300 Metres
N

WOD-010

PWD, AMD



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armow WF
Polygon:	WOD-010
UTM:	
Date:	Sept 20/11
Time:	12:30
Surveyor(s):	AMD, PNT
Weather:	15°C, 70%CC, WIND=1, NO PRECIP.

Community Classification

Vegetation Type:	THDM2-11 (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	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	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	White elm > white ash
2	Sub-canopy	3	3	Hawthorn sp > can apple > white ash
3	Understorey	4	2	Hawthorn sp > red osier > riverbank grape
4	Groundcover	6/7	2	Can. goldenrod > purple 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	R	25 - 50	N	> 50
Snags	R	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	R	< 10	A	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

Page ___ of ___

Site:	Armow WF
Polygon:	THDM2-11 (WOD-010)
UTM:	
Date:	Sept. 20, 21 2011
Time:	
Surveyor(s):	AMD, PNT
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
common apple		O			
smooth brome				A	
orchard grass				A	
white ash	R	O			
Can. goldenrod				A	
timothy				A	
purple stem aster				O	
burdock				O	
Purple stem aster				A	
willow sp				O	
panicled aster				O	
[illegible]				O	
red osier dogwood			O		
riverbank grape			O		
basswood	R		R		
ind. urtica				R	
solidago altissima				R	
knapweed sp				R	
hawthorn sp		A	O		
American beech		R			
sugar maple		R			
poa sp				R	
white elm	R		R		
hemlock				R	
Common strawberry				R	
bittersweet nightshade				O	

Species	Layer 1	2	3	4	Sample

No. 392

#1275 AmawWF 8/30/11

PNT AMD

WOD-010

- Access road proposed to go through laneway south of WOD-010. Road proposed is 30m, & this laneway is only a 3m wide. Treed fencerow (TREM5) located south of laneway w/ apple, white ash, white elm + American basswood trees. It is expected maybe some of these trees need to be removed. North of laneway, there is a meadow (MEFMK4) just south of a forest (FODMS-2). It is also expected that some white ash, basswood, white elm, willow sp. & hawthorn sp. (<10cm dbh) from forest/meadow edge may need to be removed. Also likely that forb species from meadow will need to be removed.

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

WOD-010



T16, 17, 74, 75, 81

W WOD-10

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrow WF
Project #: 1275
Date: Sept 30/11
Observer(s): PNJ AWD

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments (all 17T)
WOD-008	1	1		see point on map could not view (A)
~~WOD-010~~	2	2		(B) DN#106+107 17T 457325 4898065
	3	0		(C) DN#109 457287 4898013
total snags 12	4	3		(D) DN#108 457306 4897999
snags/ha 24	5	1		(E) DN#112 457254 4897999
	6	1		(F) DN#110 457282 4897951
	7	0		(G) DN#113 457204 4898016
	8	3		(H) DN#114 457227 4898069
	9	1		(I) DN#115 457177 4898010
	10	0		(J) DN#116 457156 4897995
WOD-009	1	0		17T 0466424 4897298 DN#124
~~WOD-011~~	2	0		17T 0466456 4897311 DN#125
	3	0		17T 0466460 4897293 DN#126
	4	0		17T 0466468 4897295 DN#127
total snags 1	5	0		17T 0466475 4897281 DN#128
snags/ha 2	6	0		17T 0466512 4897246 DN#129
	7	0		17T 0466489 4897235 DN#130
	8	0		17T 0466508 4897238 DN#131
	9	1		17T 0466530 4897221 DN#132
	10	0		17T 0466542 4897225 DN#133

17T 457338 4898024

BD

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

...ildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. WOD-010 *

Site: Arrow WF
Polygon: WOD-008
UTM:
Date: Sept 20/11 Time: 12:30
Surveyor(s): AJT, AMD
Weather: 15°C, 70%OCC, WIND=1 NO PRECIP.

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Blue JAY	SM		4						
B	Mourning Dove	OH	(unfortunate)	1						
L	Clouded Sulphur	OB		4						
B	R. capp. chickadee	SM		3						
B	Turkey Vulture	OH	↓	4						
B	Songbird	SM		1						
H	Red-sided Garter	OB		1						
M	Raccoon	SC		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

NATURAL RESOURCE SOLUTIONS INC.

Site: Arrow WF
Polygon: WOD-008
UTM:
Date: Sept 20/11 Time: 12:30.
Surveyor(s): AJT, AMD
Weather: 15°C, 70%OCC, WIND=1, 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
- ___ 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	see map 457264 4697940	bees nest (many bees)
Vernal pool AWO-007		DP#11 (Mostly gone)
		DP#14 (mostly gone, trace level bees in D.Sac
↳ No longer considered SWP		

Describe Valley (depth, geomorphological traits):

Additional Details:

WOD-007 + WET001

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow WF
Polygon:	(T84) ★WOOD-D12★
UTM:	
Date:	Sept 21/11 Time: 9:30
Surveyor(s):	PNT, AMD
Weather:	15°C, no precip, WND=1, 5%CC

Community Classification

Vegetation Type:	TAco (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	Canopy	2	4	white pine >> norway spruce = common apple = white ash
2	Sub-canopy	3	4	white pine > hawthorn sp. = common apple
3	Understorey	4	4	Solidago spp. = aster spp. = [illegible] (see species list)
4	Groundcover	5	4	bittersweet nightshade = hellebore = 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	R	25 - 50	N	> 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

PLANT SPECIES LIST

Site:	Arrow WF
Polygon:	[illegible]
UTM:	
Date:	Sept 21/11 Time: 9:30
Surveyor(s):	PNT, AMD
Weather:	15°C, no precip, WND=1, 5%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
white pine	D	D			
norway spruce	O				
hawthorn sp.		A			
white elm	R				
common apple	O	A			
[illegible]			R		
white ash	R	R			
[illegible]				R	
[illegible]				O	
[illegible]			R		
[illegible]			R	R	
[illegible]			R		

Species	Layer 1	2	3	4	Sample
new england aster				A	
orchard grass				A	
timothy				A	
smooth brome				A	
burdock				O	
alfalfa				R	
[illegible]				A	
[illegible]				A	
common speedwell				R	
hellebore				R	
[illegible]				R	
[illegible]				A	
wild strawberry				R	
canada thistle				R	
[illegible]				O	
ox eye weed				D	
[illegible]				A	
tall meadow rue				R	
bluebead lily				R	
[illegible]				R	
sensitive fern				R	
[illegible]				O	
teasel				R	

found along edge of drain (ADD 11 see other EICSMA)

see species list →

Wildlife and Other Notes

- very little ground cover in plantation area (HT = 6/7)
- [illegible] deciduous sapling in plantation

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	WOD-012 (TBL)
UTM:	
Date:	Sept 21/11 — Time: 9:30
Surveyor(s):	PNT, AMD
Weather:	15C, NO precip, wind = 1, 5% CC

Community Classification

Vegetation Type:	TTDM2-11 (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	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	X Surficial Dep.	Submerged	Lichen	Mixed
Treed	Bedrock	Floating-Lvd	Bryophyte	
		Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	2	white ash = white elm
2	Sub-canopy	3	4	hawthorn sp >> white ash
3	Understorey	4	3	hawthorn sp.
4	Groundcover	5	2	tall 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	< 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	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		A	A		
white ash	R	R			
white elm	R				
sugar maple	R				
Joe pye weed				O	
thimbleweed				A	
tall meadow rue				R	
blue vervain				R	
spotted jewelweed				R	
sensitive fern				R	
red osier				O	
teasel				R	
hemp nettle				R	
false nettle				R	
lycopus uniflorus				R	
swamp milkweed				O	
boneset				R	
aster sp.				O	
tall goldenrod				A	

Species	Layer 1	2	3	4	Sample

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

Associated w/ VAL-007, floodplain

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnprior WF
Polygon:	WOD-010 ★WOD-012★
UTM:	
Date:	Sept. 21/11 **Time:** 9:30
Surveyor(s):	PNJ, ArnD
Weather:	15°C, no precip., wind=1, 5% 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
hemp nettle				R	
false nettle				R	
Impatiens glandulifera				R	
swamp milkweed				O	
boneset				R	

WOD-010 found along drain edge (per PNJ TBM 22-11)

Species	Layer 1	2	3	4	Sample

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnold WF
Polygon:	WDD-010 *WADD-012*
UTM:	
Date:	Sept 21/11 **Time:** 9:30
Surveyor(s):	PNT, AMD
Weather:	15C, NO PRECIP, WIND = 1, 5% OCC

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am Crow	SM		1						
B	Am Goldfinch	SM		2						
B	Robin	SM		2						
F	Trout sp.	DP	Pond in NW	2						
B	Song Sparrow	SM		1						
B	[illegible]	SM		1						

THAM2.1

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:	Arnold WF
Polygon:	WDD-010
UTM:	
Date:	Sept 21/11 **Time:** 9:30
Surveyor(s):	PNT, AMD
Weather:	15C, NO PRECIP, WIND = 1, 5% OCC

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

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)

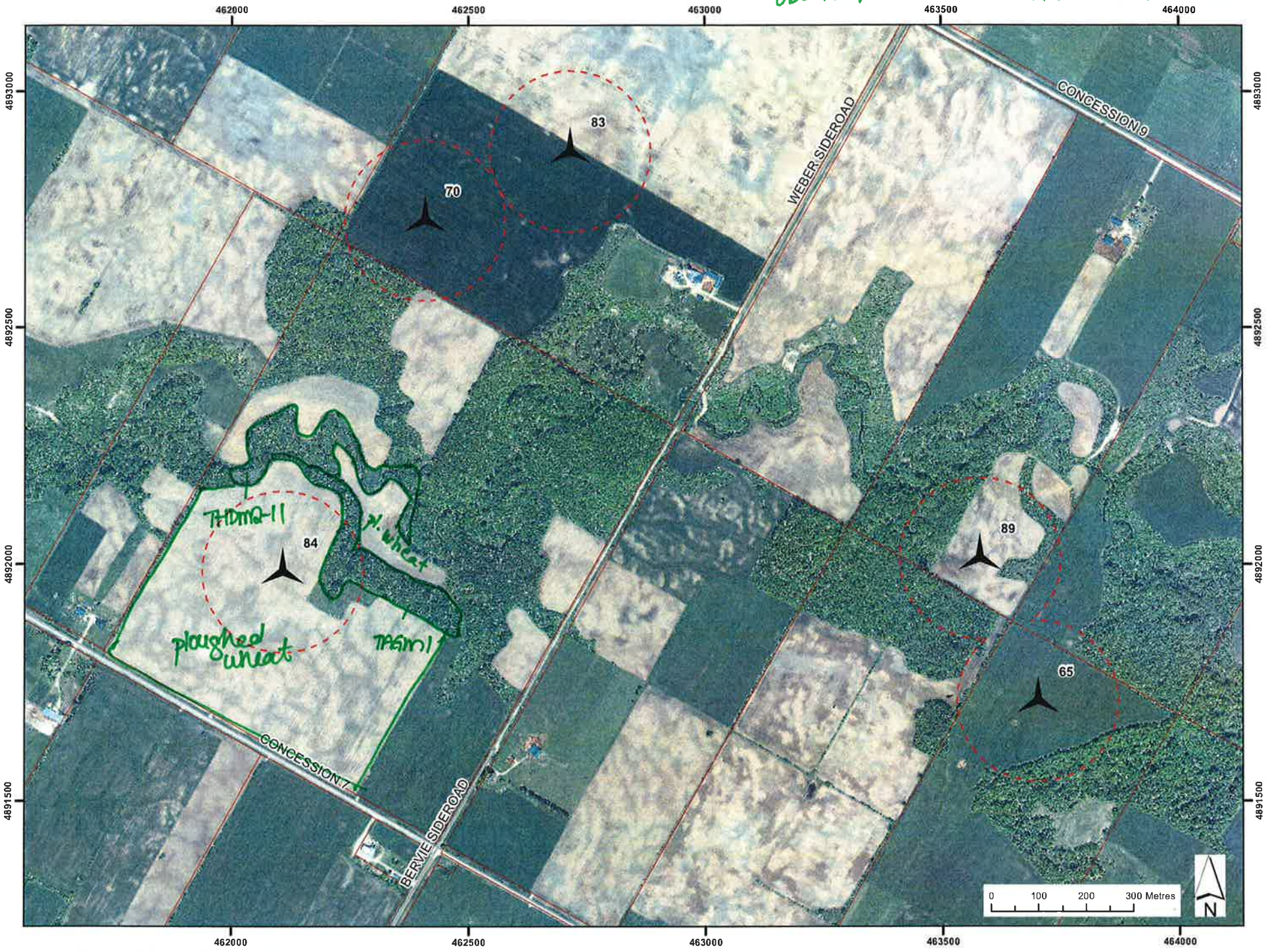
Invertebrates
___ Crayfish Chimney

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

Habitat Feature:	UTM	Description
N/A		

Describe Valley (depth, geomorphological traits):

Additional Details:


Veg. mapping
OBS: PNT, AMD
Sept 21/11
#1275 Arrows WF
462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
WEBER SIDEROAD
CONCESSION 9
CONCESSION 7
BERVIE SIDEROAD
83
70
84
89
65
THDM9-11
W. wheat
ploughed wheat
THSM11
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site: 1275 Armow	
Polygon: WOD (T70)	WOD - 012
UTM:	
Date: Nov 23, 2011	Time: 14:30
Surveyor(s): PWD	
Weather: 1°C, cloudy, wind 2/SE, 90% c.c.	

Community Classification

Vegetation Type:		FODMS-2 Dry-Fresh Sugar Maple-Beech Dec. Forest Type.
X	Inclusion:	White Pine Plantation TAGM1
	Complex:	→ SWTM2-1 Red Osier Mineral Dec. Thicket Swamp Type (WET-065)
		→ MAMM1-3 Reed Canary Graminoid Min Meadow Marsh Type. (WET-060)

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	Am. Beech > Sugar Maple > White Ash >> E. Hemlock
2	Sub-canopy	2	3	Am Beech > Hop Hornbeam > Sugar Maple > Wh. Elm
3	Understorey	3	3	Am Beech > Sugar Maple > Hop Hornbeam >> Chokecherry
4	Groundcover	5	1	Zig Zag Goldenrod > Wild Strawberry > Helleborine

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	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

Page ____of____

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	O	O	O		
White Ash	O	R			
American Elm		O	O		
Chokecherry			O		
Hop Hornbeam		A	O		
Hawthorn sp.			O		
Red Raspberry				R	
American Beech	O	A	O		
Black Cherry	R				
E. Hemlock	R		R		

Species	Layer 1	2	3	4	Sample
Zig Zag Goldenrod				O	
Dandelion				O	
Helleborine				O	
Bittersweet Nightshade				R	
Calico Aster				O	
Wild Strawberry				O	
Woodland Sedge				O	
Yellow Avens				R	
Christmas Fern				R	
Pennsylvania Sedge				R	
Herb Robert				O	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-005 in WOD-012

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov 23, 2011 **Time (24h):** 14:50

Field #: WOD T70 **Weather:** Precipitation: None Temp (°C): 1

Map Code: S1 Wind Speed & Direction: 2/SE Cloud %: 90

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

% Open Water: 0% **ELC Code:** SWTM2-1

Photos: 0628

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash, White Elm
c	
dc,dh,ds	
(ts)	Red Osier Dogwood (25%) Hawthorn sp. Red Elderberry
ls	
(gc)	Aster sp. (25%) Sensitive Fern, N. Water Horehound, Bidens cernua
(ne)	Reed Canary Grass (25%), Carex intumescens
be	
re	dark green bulrush
ff	
f	
su	
m	

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

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

American Crow
Black-capped Chickadee

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-029
S1

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-006 in WOD-010

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov 23, 2011 **Time (24h):** 14:50

Field #: WOD T70 **Weather:** Precipitation: None Temp (°C): 1

Map Code: M1 Wind Speed & Direction: 2/SE Cloud %: 90

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

% Open Water: 0% **ELC Code:** MAMM1-3

Photos: 0629

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	Red Osier Dogwood
ls	
gc	N. Water Horehound, Purple-stemmed Aster
(ne)	Reed Canary Grass (25%) ~~bladderwort~~
be	
re	woolgrass
ff	
f	
su	
m	

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

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

American Crow
Black-capped Chickadee

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-029
M1

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Modified ELC Community Description

Page ___ of ___

PLANT SPECIES LIST

Site: 1275 Armour	
Polygon: WET T70 (M1)	
UTM:	
Date: Nov 23 2011	**Time:** 14:50
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			O		

Species	Layer 1	2	3	4	Sample
N. Water Horehound				O	
Reed Canary Grass				A	
Woolgrass				O	
Purple-stemmed Aster				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ___ of ___

PLANT SPECIES LIST

Site: 1275 Armour	
Polygon: WET (T70) (S1)	
UTM:	
Date: Nov 23 2011	**Time:** 14:50
Surveyor(s): PWD	
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 Elm		R			
Hawthorn sp.			R		
Red Osier Dogwood			A		
Green Ash	R	R			
Red Elderberry			O		

Species	Layer 1	2	3	4	Sample
Calico Aster				O	
Sensitive Fern				O	
Bidens cernua				R	
Water Dock				O	
Carex lithosperma				O	
Purple-stemmed Aster				O	
N. Water Horehound				O	
Reed Canary Grass				O	
Spinulose Wood Fern				R	
Dark Green Bulrush				O	

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Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	WOD-T70
UTM:	
Date: Nov. 23, 2011	Time: 14:50
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	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	S1 1	M1 2	3
Position	4	4	
Aspect:	170	100	
%	0.5	0.5	
Type:	S	S	
Class:			

Strata:	Texture	SiC	SiC	
	Depth	120	120	
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC	SiC	
Surface Stoniness		0	0	
Surface Rockiness		0	0	
Depth to:				
	Mottles	23	17	
	Gley	35	34	
	Bedrock	—	—	
	Water table	3	0	
	Carbonates	—	—	
Depth of Organics		6	8	
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6	6	

Polygon: WOD-T70

Tree Tally

Species	Tally 1	Tally 2	Tally 3
Total			
Basal Area			
Snags			

NOTES:

Wildlife Observation Form

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Page __ of __

Site:	T&T (north of)
Polygon:	
UTM:	
Date:	**Time:** 14:30
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	Black-capped Chickadee	SM		2						
M	White-tailed Deer	TK	2 OB (1 yoy, 1 ad)	2						
B	Am. Crow	SM		1						
M	Coyote	TK								
M	Raccoon	TK								
B	Red-tailed hawk	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

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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
___ 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
Snag 110cm dbh	17T 0462318 4892459	large, dead sugar maple w holes/crevices

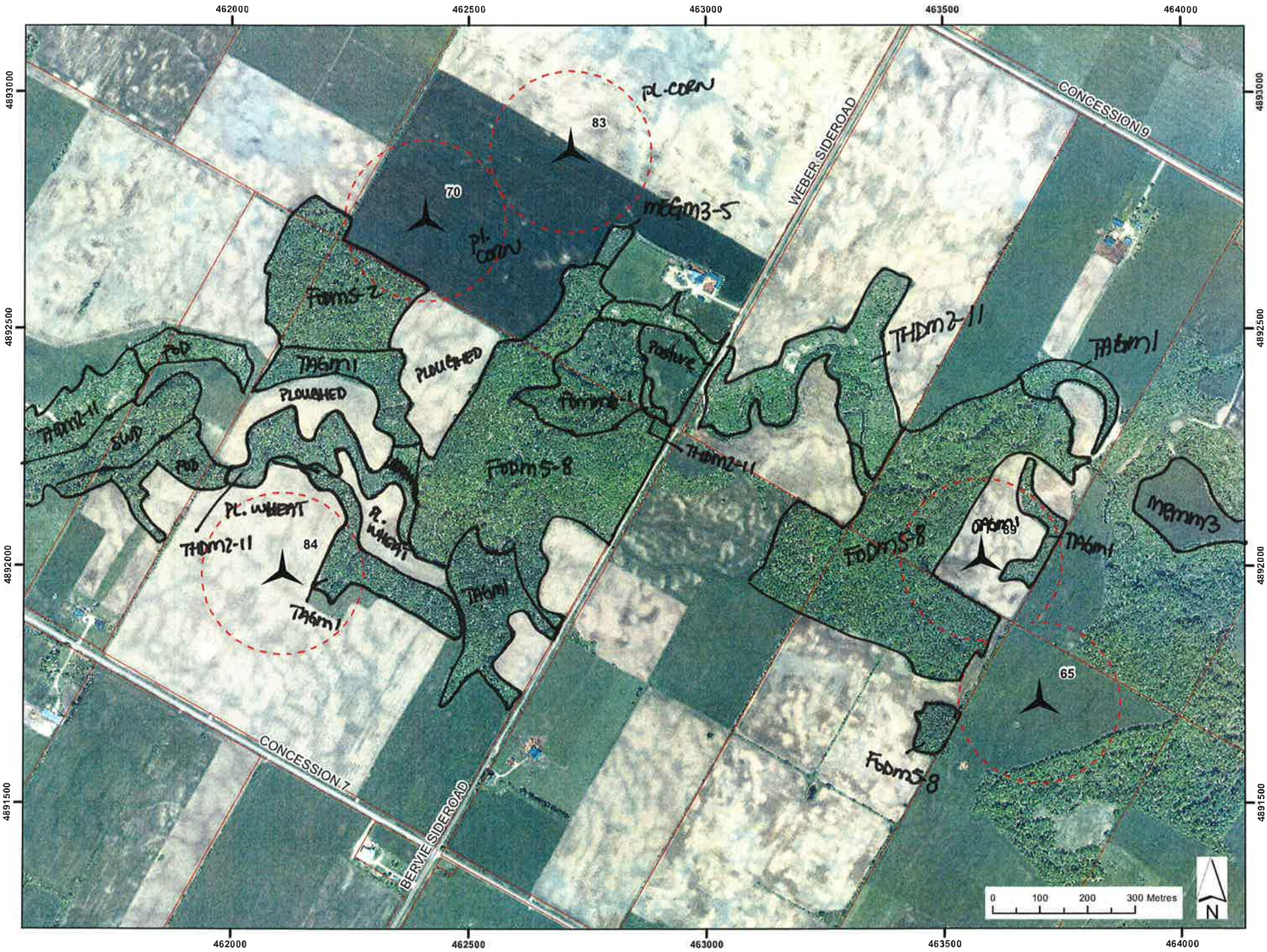
Describe Valley (depth, geomorphological traits):

Additional Details:

T70


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
WEBER SIDEROAD
CONCESSION 9
CONCESSION 7
BERVIE SIDEROAD
83
70
84
89
65
M1
S1
Large Ravine Ph 0627
WOOD
WH. PINE PLANTATION
small ravine Ph 0626
Ploughed
PLOUGHED
WHEAT
WHEAT
Complex M
M1, S1
as is
Wet - 029
Wetlands
0 100 200 300 Metres
N

300m


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
PL. CORN
83
70
mEGm3-5
WEBER SIDEROAD
CONCESSION 9
FOOm5-2
THDM2-11
THAGm1
PLOUGHED
POD
STUD
FOOm5-1
FOOm5-8
PL. WHEAT
84
THAGm1
THDM2-11
89
65
MEGmm3
CONCESSION 7
BERVIE SIDEROAD
0 100 200 300 Metres
N

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

Project Name: Armow WF
Project #: 1275
Date: Nov. 23. 2011
Observer(s): PWD

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-(T70)	1	2		17T 0462319 4892466	1 ash 25cm dbh 1 sugar maple 110cm dbh 2 stem
	2	2		0462263 4892478	2 beech in decline
	3	2		0462713 4892492	1 elm 55cm crowlced 1 beech 75cm partially uprooted
	4	Ø		0462244 4892533	
	5	Ø		0462224 4892592	
	6	Ø		0462296 4892617	
	7	Ø		0462333 4892567	
	8	Ø		0462280 4892557	
	9	Ø		0462180 4892563	
	10	Ø		0462149 4892490	
					Most snags in southern half of forest (excluding pines).
		(6/10 x 0.05) =		12 snags/ha	
				BMM-031	

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

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Modified ELC Community Description

* ie WOD 031 M

Site:	1275 Armow WF
Polygon:	WOD 012 (south of T83)
UTM:	
Date:	Nov 29, 2011 — Time: 16:25
Surveyor(s):	PWD, AMD
Weather:	1°C, rain, 100% cc, wind 4 from SW

Community Classification

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

Polygon Description

System	Substrate	Topo Feature		Community	
X Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
Wetland	X Mineral Soil	Riverine	Crevice/Cave	Pond	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	X Mixed
X Treed		Bedrock	Floating-Lvd	Bryophyte	
			Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	2	Sugar Maple > E. Hemlock > Am. Beech
2	Sub-canopy	3	3	Sugar Maple > E. Hemlock > Am. Beech > Blk Cherry
3	Understorey	4	3	Hawthorn sp. > Apple sp.
4	Groundcover	7	3	Red Raspberry > Goldenrod sp. > Comm. Burdock

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

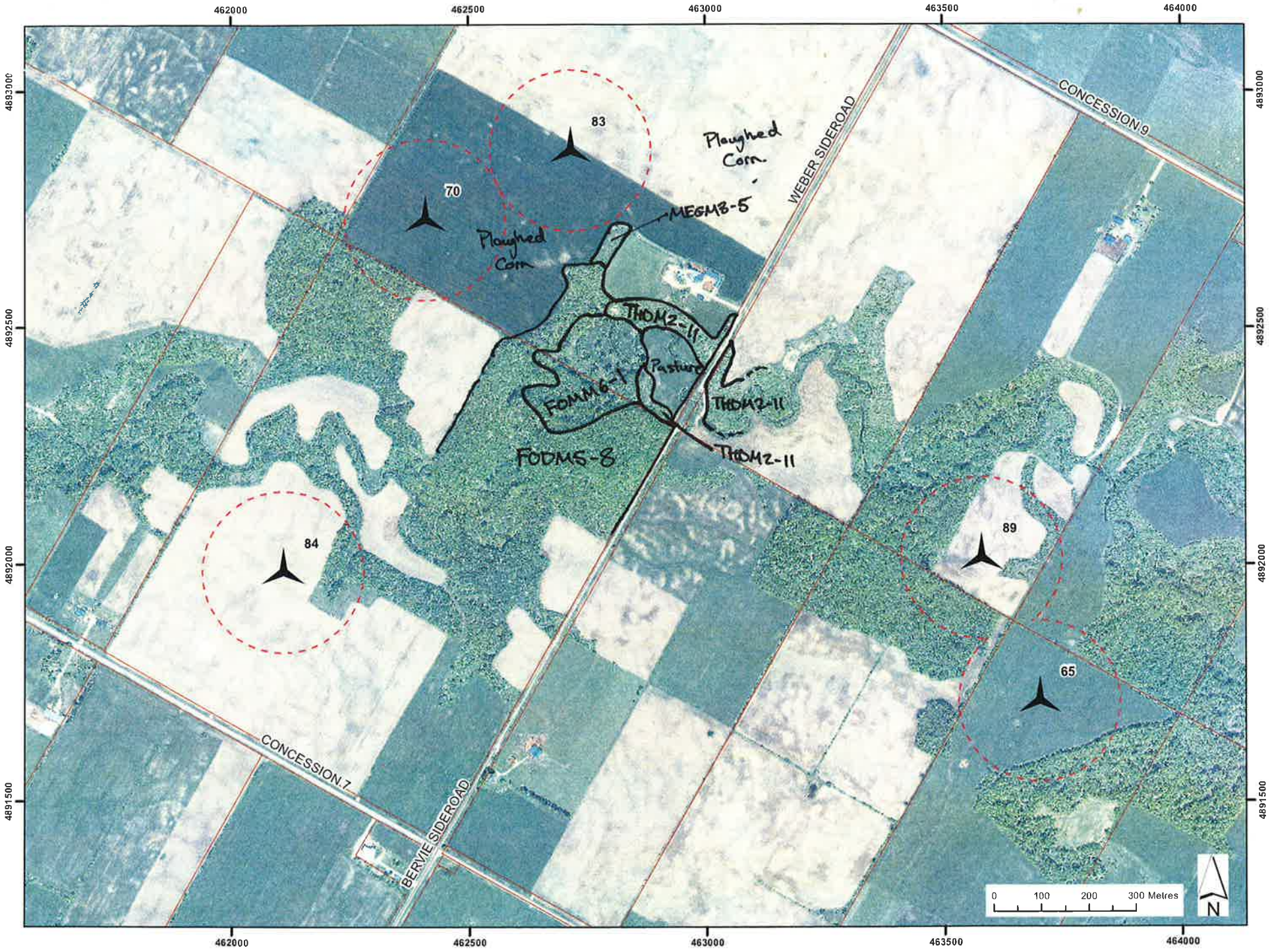
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

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

Species	Layer 1	2	3	4	Sample
Sugar Maple	A	O			
E. Hemlock	O	O			
Am. Beech	R	R			
Black Cherry		R			
Hawthorn sp.			A		
Apple sp			R		

Species	Layer 1	2	3	4	Sample
Pennsylvania Sedge				O	
Comm. Burdock				O	
Red Raspberry				O	
Goldenrod sp				O	
Orchard Grass				R	
Teasel				R	

Wildlife and Other Notes


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
CONCESSION 9
WEBER SIDEROAD
CONCESSION 7
BERVIE SIDEROAD
83
70
84
89
65
Ploughed Corn
Ploughed Corn
MEGM3-5
THOM2-11
Pasture
FOMM6-1
THOM2-11
FODM5-8
THOM2-11
0 100 200 300 Metres
N

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Modified ELC Community Description

Site:	Armow WF
Polygon:	WOD-012 (T42) ~~WOD-014~~ WOD-013
UTM:	
Date:	Sept. 21/11 Time: 12:45
Surveyor(s):	AMD, PNT
Weather:	18°C, wind=2, cc=20%, no precip.

12/14/11

Community Classification

Vegetation Type:	TAFM1 (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	X Bottomland	Alvar	River	Prairie
History	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
Natural	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
X Cultural	Carb. Bedrock	Tableland	Sand Dune	Swamp	Woodland
		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	2	4	white spruce
2	Sub-canopy	3	2	white spruce
3	Understorey	4/5	1	freemans maple = green ash
4	Groundcover	7	1	common speedwell = hellebarine

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

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-012 (WOD-013)
UTM:	
Date:	Sept. 21/11 Time: 12:45
Surveyor(s):	AMD, PNT
Weather:	18°C, wind=2, cc=20%, 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 spruce	D	D			
freemans maple			O	O	
green ash	R	R	O	O	
Virginia creeper				R	
black cherry				R	

Species	Layer 1	2	3	4	Sample
common speedwell				O	
hellebarine				O	
beaked hazel				R	
[illegible]				R	

Wildlife and Other Notes

- very little groundcover in spruce plantation
- little plant diversity

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrow Lake
Polygon:	WOD-012 AWSD-013
UTM:	
Date:	Sept 2011 **Time:** 12:45
Surveyor(s):	DNT, AMD
Weather:	18°C, wind = 2, CC = 20%, no precip.

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am Goldfinch	FLY		2						
B	Am crow	SM		1						
B	Ringbilled gull	FLY		29						

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:	Arrow Lake
Polygon:	WOD-012
UTM:	
Date:	Sept 2011 **Time:** 12:45
Surveyor(s):	DNT, AMD
Weather:	18°C, wind = 2, CC = 20%, no precip.

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

Habitats and Habitat Features are independent of wildlife observations

N/A

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
N/A		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow WF	~~WOD-013/WET-004~~ ★
Polygon: WOD-011/WET-003	(742)
UTM:	
Date: Sept. 21/11	Time: 11:00
Surveyor(s): PNT, AMD	
Weather: 18°C, wind=3, no precip, wind dir=5, CC=10%	

Community Classification

Vegetation Type:	SWDM3-3 (Swamp maple Deciduous mineral 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	1	3	green ash = freeman maple >> white elm
2	Sub-canopy	2	3	green ash = freemans maple
3	Understorey	3	2	green ash = freeman maple > choke cherry
4	Groundcover	4	4	false nettle = poa sp. > 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	L	< 10	L	10 - 24	O	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	L	< 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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow WF	
Polygon: WOD-011/WET-003	
UTM:	
Date: Sept 21/11	Time: 11:00
Surveyor(s): PNT, AMD	
Weather: 18°C, wind=3, no precip, wind dir=5, CC=10%	

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	O	
freemans maple	A	A	A	O	
red osier dogwood				R	
choke cherry			O		
basswood		R	R		
black cherry		R			
blue beech			O	O	
white elm	O	R			
white cedar				R	
white spruce		R			
trembling aspen	R				
[illegible]			R		
raspberry			R		

Species	Layer 1	2	3	4	Sample
common strawberry				O	
yellow avens				O	
Viola sp.				R	
white avens				O	
hellebore				O	
reed canary grass				A	
lettuce, nightshade				R	
herb robert				R	
poison ivy				R	
hop sp.				A	wet
spreading wood fern				R	
dark green bulrush				R	
bidens cernua				R	
carex sp.				R	
hellebore sp.				O	
common speedwell				R	
[illegible]				R	
[illegible]				O	
tall cinquefoil				O	
[illegible]				O	
false nettle				A	
blue flag iris				R	
water parsnip				R	
virginia creeper				R	
woodnettle				R	
garlic mustard				R	

Wildlife and Other Notes

- evidence of past logging
- wood frogs observed
- old deer stand observed
- lots of raccoon scat

MUDD-013A

Soils	1	2	3
Position:	6		
Aspect:	340		
%	0-0.5		
Type:	S		
Class:	A		

Strata:	Texture	CL		
	Depth	10-35		
Strata:	Texture	SiCl		
	Depth	35-120		
Strata:	Texture	—		
	Depth	—		
Strata:	Texture	—		
	Depth	—		
Effective Texture		CL		
Surface Stoniness		—		
Surface Rockiness		—		
Depth to:				
	Mottles	24		
	Gley	96		
	Bedrock	—		
	Water table	—		
	Carbonates			
Depth of Organics		10		
Pore Size Disc #1		—		
Pore Size Disc #2		—		
Pore Size Disc #3		—		
Moisture Regime		6		

Polygon: WOD-011/WET-003

Tree Tally

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

NOTES:

- encountered some gravel @ approx. 75cm.

WOD-013

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrow WF
Project #: 1275
Date: 8/23/11
Observer(s): DNT, AMD

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-013/WET-003	1	1		Selmap (A) DH# 139 17T 461424 4890450
☆WOD-013/ WET-004☆	2	1		(B) DH# 140 17T 461396 4890936
	3	0		(C) DH# 141 17T 461457 4890931
	4	0		(D) DH# 142 17T 461436 4890905
WOD-013 total snags 2	5	0		(E) DH# 143 17T 461416 4890917
WOD-013 snags/ha 4	6	0		(F) 17T 461372 4890879
	7	0		(G) DH# 144 17T 461410 4890858
	8	0		(H) DH# 145 17T 461441 4890880
	9	0		(I) DH# 146 17T 461401 4890822
	10	0		(J) DH# 147 17T 461427 4890843
WOD-014/WET-005	1	2		17T 0462703 4890412 DH#151
☆WOD-016/WET-006☆	2	0		17T 0462780 4890426 DH#152
	3	0		17T 0462773 4890456 DH# 153
	4	1		17T 0462790 4890469 DH# 154
WOD-015/WET-006	1	2		(A) DH# 156
☆WOD-017/WET-008☆	2	0		(B) DH# 157
	3	0		(C) DH# 158
	4	0		(D) DH# 159
	5	0		(E) DH# 160
WOD-016 total snags	3			
WOD-016 snags/ha	15			
WOD-017 total snags	2			
WOD-017 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:	
Polygon:	WD-011 / WET-003 #WMD-013?
UTM:	
Date:	Sept 21/11 **Time:** 11:00
Surveyor(s):	PNT, AMD
Weather:	18°C, WIND = 3, NO PRECIP, WIND DIR = S, CC = 10%

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am Crow	FM		5						
L	Clouded Sulphur	OB		1						
B	Am Goldfinch	SM		3						
H	Wood frog	OB		2						
B	Blue Jay	SM		1						
B	Comp. Chickadee	SM		2						
M	Raccoon	SC		4						

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:	Arrow Wt
Polygon:	WD-011 / WET-003
UTM:	
Date:	Sept 21/11 **Time:** 11:00
Surveyor(s):	PNT / AMD
Weather:	18°C, WIND = 3, NO PRECIP, WIND DIR = S, CC = 10%

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

Habitats and Habitat Features are independent of wildlife observations N/A.

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

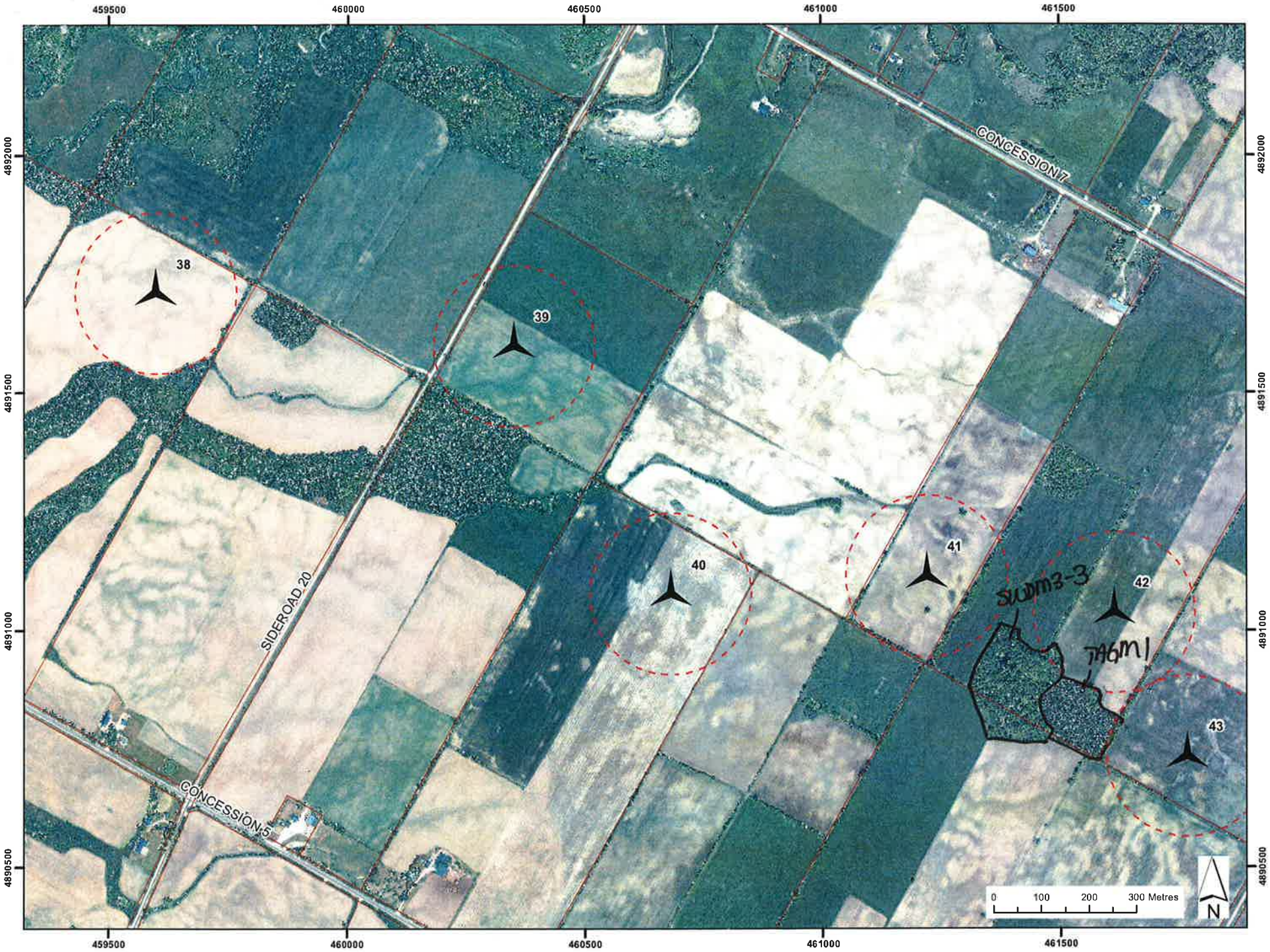
For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
N/A.		

Describe Valley (depth, geomorphological traits):

Additional Details:

WOD-013


459500
460000
460500
461000
461500
4892000
4891500
4891000
4890500
CONCESSION 7
SIDEROAD 20
CONCESSION 5
38
39
40
41
42
43
SWDM3-3
TAGM1
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow 1275

Polygon: WET-004 / SI (WMS-013 20)

UTM:

Date: Oct 6 2011 Time: 09:07

Surveyor(s): KJW, CLH

Weather: Sunny 11°C 1% 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	A	O	O	O	
Red Osier Dogwood			O		
Green Ash	O	O	O	O	
Trembling Aspen	O	R			
Choke cherry			O	O	
White Elm	O	O	O		
Apple		R			
White Spruce		R			
Yellow Birch	R				
Hawthorn sp.		O	O	O	
Basswood		R	O		
Prickly Gooseberry				O	
Silky Dogwood	O		R		
White Cedar			R		
E. Cottonwood	R				
Common Raspberry				O	
American Beech	R				
Sugar maple		R			

Species	Layer 1	2	3	4	Sample
Smooth Rose			R		
Yellow Avens				O	
Carex scoparia				O	
Poa palustris			O		
Bladder Sedge				O	
Bidens frondosa				R	
Curly Dock				O	
Reed Canary Grass			O		
Cirsium arvense				O	
Solidago gigantea			R		
N. Bugleweed				O	
Red Raspberry				O	
Bittersweet Nightshade				O	
Woodland Strawberry				O	
Geum macrophyllum				O	
Juncus sp.			R		
Sweet briar			R		
Spinulose Wood Fern				R	
Poison Ivy			R	O	
Crested Shield Fern				R	
Herb Robert				O	
Hellebore sp.				R	
Teasel sp.				R	
False Nettle				O	
Water Parsnip			O		
Mild Water Pepper				O	
Meadowsweet			O		
Blue Flag				R	
Moss sp.				O	

*WET-037 SI

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in WOD-013 (T42/41)

Wetland Vegetation Communities

Project Name: Arrow		**Project #:** 1275	
Observer(s): CLH, KJW			
Date: Oct 6 2011	**Time (24h):** 09:02		
Field #: ~~WET 004~~	**Weather:** Precipitation: None	Temp (°C): 11	
Map Code: ~~WET-004~~ S1	Wind Speed & Direction: 1	Cloud %: 1	
Wetland Type: Swamp	**Site Type:** Isolated	**Dominant Form:** h (SH)	
% Open Water: 0 %	**ELC Code:** SWD M3-3	Swamp Maple Mineral	
Photos: DSC-0941 → Vernal Pool	DSC-0942.		

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Acer saccharinum, Acer negundo, Populus tremuloides, Ulmus americana
c	
dc,dh,ds	
(ts)	Cornus stolonifera, Lonicera dioica, Salix discolor, Cornus sericea
ls	Ribes lacustre, Rubus idaeus
gc	Rubus pubescens, Cystopteris fragilis, Urtica dioica, Pilea pumila
(ne)	Phragmites australis, Typha latifolia, Juncus sp., Carex scoparia, Carex stipata
be	
re	
ff	
f	
su	
(m)	Moss sp.

Soil type:	CL	Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial): MR6.

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

See attached full veg list for secondary + present species

WET-037
S1

WOD 013

Armow WF — Oct 6, 2011

Wetland Analysis — CH, KJW

Sunny 11°C, CC 1%, Wind 2

WET-004

Isolated Swamp.

1 Community (S1) → See field map

Forms >25% cover (dominant species listed):

h	Freeman's maple, green ash
ts	red osier dogwood
ne	reed canary grass
m	moss sp.

See attached forms for more detailed vegetation description.

Open Water Types (permanently flooded areas):

No open water

Soils: Clay Loam as per PNT/AMD on Sept. 21

No rare species observed.

No fish habitat.

Surrounding Land Use Within 1km: Coniferous forest (plantation), deciduous forest, row crops, creek floodplain.

J.L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

WET 004

WOD013

Oct 6 2011
CLH, KJW



Where is This??

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARMOW 1275
Polygon:	WET 004 (WMD-0238)
UTM:	
Date: Oct 6 2011	Time: 09:02
Surveyor(s):	KSW CLM
Weather:	Sunny, 11°C, 19°C, wind 2

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	Coyote	SC	scat on dirt	***						
B	White-crowned sparrow	SB		*						
B	Canada Geese	OB	flying over	~20						
B	American Crow	OB		**						
B	Blue Jay	OB		*						
H	Spring Peeper	OB		*						

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 1275
Polygon:	WET 004
UTM:	
Date: Oct 6 2011	Time: 09:02
Surveyor(s):	KSW CLM
Weather:	Sunny, 11°C, 19°C, wind 2

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
Snag (tree)	0461368 (018) 5390929	Dead fallen cottonwood ~60cm DBH approx 20ft tall
vernal pool (WMD-008)	0461383 (019) 5390944	dry now, but clearly wet for much of season

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	Arnow WF
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 Hedgerows (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
	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	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	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	
t case				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

- forested hedgerow w 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

Modified ELC Community Description

Page __ of __

Hedgerow @ former 25 Sideroad

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

Strata: Texture	CL			
Depth	0-40			
Strata: Texture	SiCl			
Depth	40-110			
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Effective Texture	CL			
Surface Stoniness	–			
Surface Rockiness	–			
Depth to:				
Mottles	40			
Gley	–			
Bedrock	–			
Water table	–			
Carbonates	90			
Depth of Organics	0			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	5			

Polygon: WOD-015 (T112)

Tree Tally

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

NOTES:


Ontario
Ontario Geological Survey
15
T112
hedgerow
Concession 11
© 2011 Cnes/Spot Image
© 2011 Europa Technologies
Image © 2011 DigitalGlobe
© 2011 Google
Google earth

T112

WOD – 015

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

Project Name: Aymow WF
Project #: 1275
Date: December 7, 2011
Observer(s): AMD, HLW

Start Time 15:49 End Time 16:15

Woodland ID (WOD- 015 (7112)) Hedgerow(s) former sideroad 25

Weather Conditions: -1°C, overcast, 70% cloud cover, wind 2 from SW

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17T)	Comments
Plot 1	0	E:0465361 N:4996587	
Plot 2	0	E:0465338 N:4996545	
Plot 3	0	E:0465319 N:4996514	
Plot 4	0	E:0465296 N:4996470	
Plot 5	0	E:0465265 N:4996418	
Plot 6	1	E:0465219 N:4996335	Photo: 1137
Plot 7	0	E:0465185 N:4996274	
Plot 8	0	E:0465147 N:4996201	
Plot 9	0	E:0465108 N:4996132	
Plot 10	1	E:0465081 N:4996085	
Plot 11	0	E:0465040 N:4996012	
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)

= 2/11 x 0.05 = 3.6 snags/ha

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnaw WS
Polygon:	WDS-015 (T112) hedgerow & ferrer 25 sdrd
UTM:	17T 0465326 4896543
Date:	December 7/2011 **Time:** 15:50
Surveyor(s):	ADM, HLW
Weather:	-1°C, cloudy w/sunny period, 70% c.c., wind ? from SW

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	bird sp.	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
- 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
large snag, ~75cm	17T 0465219 4896335	photo 1137

Describe Valley (depth, geomorphological traits):

Additional Details:

(WOD 015)

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): PWD KJW

Date: Oct. 14. 2011 **Time (24h):** 14:45

Field #: WOD-028 **Weather:** Precipitation: Light Temp (°C): 12

Map Code: M1 Wind Speed & Direction: SE/3 Cloud %: 100

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

% Open Water: <5% **ELC Code:** MAMM1-16

Photos: —

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	
(ne)	Reed Canary Grass (35%) Sedge sp. 10% Grass sp. (25%)
be	
re	
ff	
f	
su	
m	

Soil type: 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

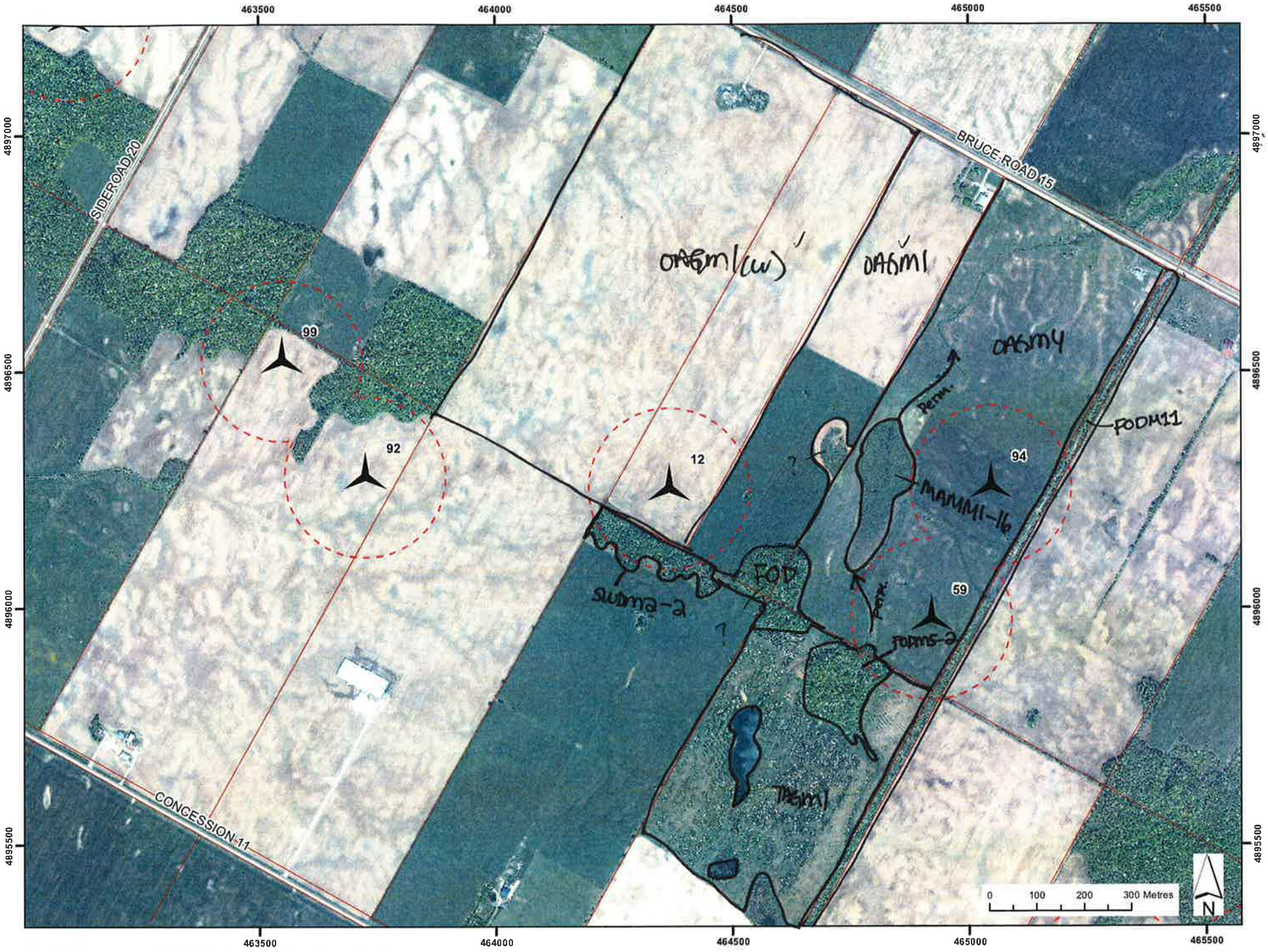
Wetland Type: **S**=swamp; **M**=marsh; **B**=bog; **F**=fen

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

Severe flooding due to recent rain

WET-018
M1


463500
464000
464500
465000
465500
4897000
4896500
4896000
4895500
SIDEROAD 20
BRUCE ROAD 15
CONCESSION 11
99
92
12
94
59
OAGM1
OAGM4
FOD
FODM11
MAMM1-16
SWDM3-2
FODM5-2
THSM1
Perm.
0
100
200
300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	1275 Armow (TS9)
Polygon:	WOD-038 (WOD-015)
UTM:	
Date: Oct 14, 2011	Time: 15:00
Surveyor(s):	PWD, KJW
Weather:	12°C, overcast, 100% cc, Wind SE/3, light rain

Community Classification

Vegetation Type:	FOD5-2 Dry-Fresh Sugar Maple-Beech
Inclusion:	Deciduous Forest type
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	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	4	Sugar Maple >> Am. Beech
2	Sub-canopy	3	2	Sugar Maple >> Am. Beech > Black Cherry
3	Understorey	4	1	Chokecherry > Am. Beech > Hawthorn sp.
4	Groundcover	6	1	Zig Zag Goldenrod > Blue Cohosh

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	R	< 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	Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armaw 1275
Polygon:	1V01-038 ★ (WUD-as) ★
UTM:	
Date:	Oct. 14, 2011 **Time:** 15:00
Surveyor(s):	KJW, PVD
Weather:	overcast w showers, 12°C, 100% CC, wind 9 ESE

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			
White Elm		R	R		
Hawthorn sp.		R	O		
American Beech	O	O	O		
Hop Hornbeam		R			
Common Elderberry			O		
Black Cherry		R	R		
Choke Cherry			O		

Species	Layer 1	2	3	4	Sample
Zigzag Goldenrod				O	
Blue Cohosh				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	NRS Arrow
Polygon:	039 (T59) #(WOD-05)
UTM:	
Date: Oct 14, 2011	**Time:** 11:20
Surveyor(s):	PWD, KJW
Weather:	12°C, overcast, 100% cc, wind SE/3, light rain

Community Classification

Vegetation Type:	~~FOTTTO-2 Treed Moist White Spruce~~
Inclusion:	~~Hardwood Mixed Forest type~~
Complex:	TH6ML

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	**Site**		X	Roll Upland	Bluff	Fen	Forest
					Cliff		Bog	X Plantation

Cover		Site		Plant Form		
	Open		Open 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	Canopy	3	1	Ash sp
2	Sub-canopy	4	3	White Spruce >> Trembling Aspen
3	Understorey	5	2	Red Osier Dogwood > Trem. Aspen
4	Groundcover	7	3	Kent. Bluegrass >> Can. Goldenrod > Birdsfoot Trefoil

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: Arrow 1275

Polygon: WOD-039 ★(WOD-015)★

UTM:

Date: Oct 14, 2011 **Time:** 14:30

Surveyor(s): K-SW, PWD

Weather: overcast & showers, 12°C, 100% CC, wind 4/SE

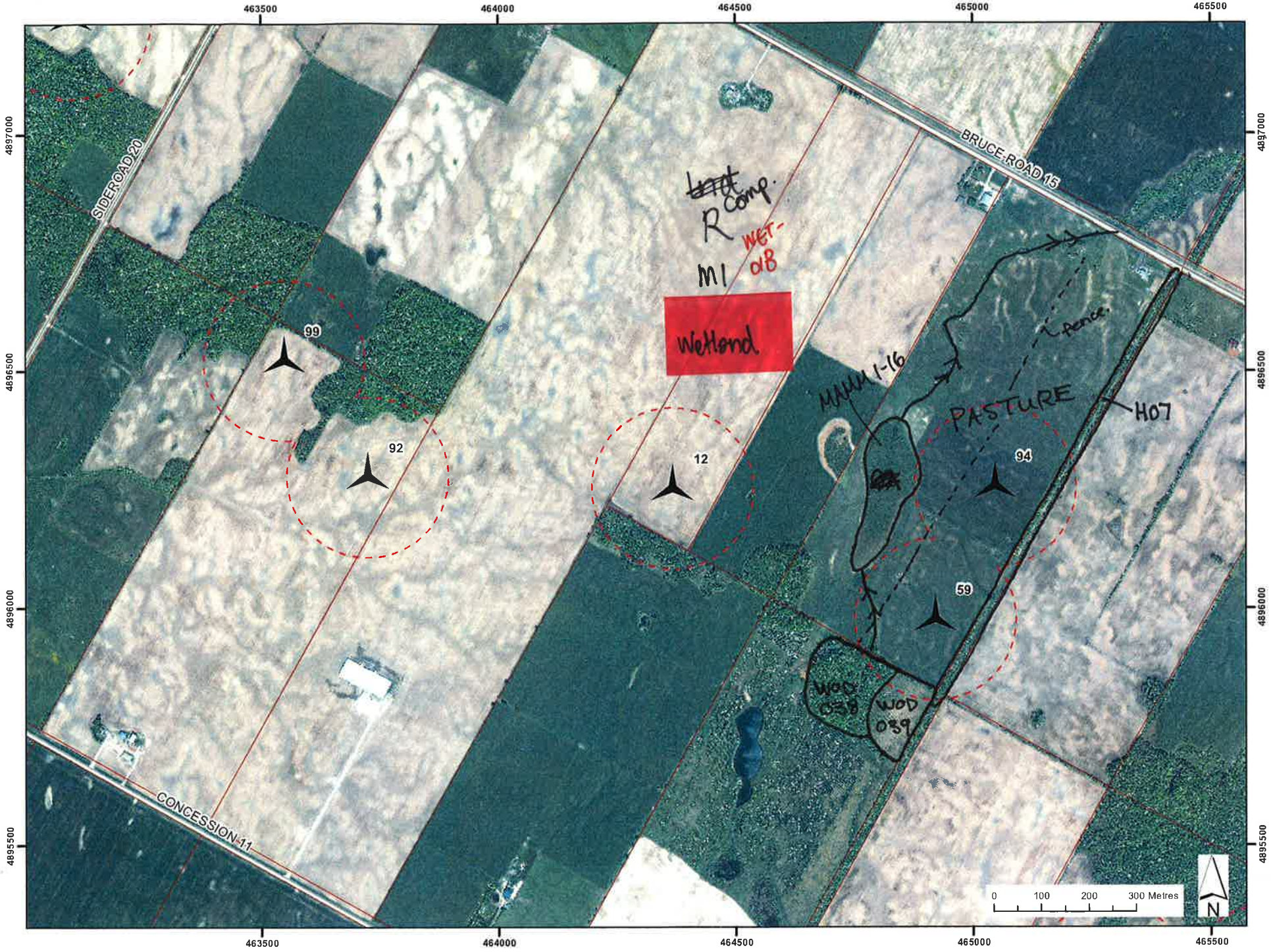
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

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

Species	Layer 1	2	3	4	Sample
White Spruce		A			
Red osier Dogwood			O		
Balsam Poplar		R			
White Elm			R		
Ash sp.	R		R		
Trembling Aspen		O	O	O	
Bur oak		R			
Apple		R			

Species	Layer 1	2	3	4	Sample
New England Aster				O	
Canada Goldenrod				O	
Tall Goldenrod				O	
Reed Canary grass				O	
Wild Carrot				O	
Kentucky Bluegrass				A	
Wild Strawberry				O	
Heath Aster				O	
Carex sp.				O	
Red Clover				O	
common St John's wort				O	
Curly Dock				R	
Common Milkweed				R	
Thistle sp.				O	
Birdsfoot Trefoil				O	
English Plantain				O	
Spotted knapweed				O	
WETLAND INDICATOR:					
Red osier Dogwood					
Hairgrass					
Typha angustifolia					
Scirpus sp.					
Carex sp.					
Rough Avens					

(WOD - 015)


463500
464000
464500
465000
465500
4897000
4896500
4896000
4895500
SIDEROAD 20
BRUCE-ROAD 15
CONCESSION 11
99
92
12
94
59
R Comp.
WET-
M1
Wetland
MAM1-16
PASTURE
H07
Fence
WOD 038
WOD 039
0
100
200
300 Metres
N

WOD-015

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

Project Name: Arrow
Project #: 1275
Date: Oct. 14, 2019
Observer(s): [illegible]

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-038	1	Ø		17T 0464799 4895810	
WOD-015	2	Ø		17T 0464768 4895828	
	3	Ø		17T 0464761 4895782	
	4	Ø		17T 0464746 4895752	
	5	Ø		17T 0464711 4895802	
	6	Ø		17T 0464686 4895835	
	7	Ø		17T 0464679 4895883	
	8	Ø		17T 0464711 4895902	
	9	1		17T 0464732 4895873	1 snag (25cm dbh) on 1.8m
	10	Ø		17T 0464746 4895843	
total snags	1				
snags/ha	2				

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 1276
Polygon:	WOD 038 (WOD-015)
UTM:	
Date:	Oct 14 2011 **Time:** 16:30
Surveyor(s):	KSW, PWD
Weather:	overcast, showers, 12°C, 100% CC, wind 4SE

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
H	Spring Peeper	SM		*						
H	Pickerel Frog	OB	dead	*						
B	Common Gull	OB	overhead	**						

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:	Arrow 1276
Polygon:	WOD 038
UTM:	
Date:	Oct 14 2011 **Time:** 16:30
Surveyor(s):	KSW, PWD
Weather:	overcast, showers, 12°C, 100% CC, wind 4SE

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. (WOB-015)

Page __ of __

Site:	Hornby 275
Polygon:	WOD-039
UTM:	
Date:	Oct 14, 2011 **Time:** 14:30
Surveyor(s):	KSW PWD
Weather:	overcast w showers, 12°C, 100% CC, Wind 4 SE

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
L	Monarch Butterfly	OB		1						
M	Eastern Cottontail	OB		1						
M	Leopard Frog	OB		1						
B	Canada Goose	OB	overhead	116						

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:	Hornby 275
Polygon:	WOD-039
UTM:	
Date:	Oct. 14, 2011 **Time:** 14:30
Surveyor(s):	KSW PWD
Weather:	overcast w showers, 12°C, 100% CC, Wind 4SE

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)

✓ Plantation (C)

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 ~~WOD-015 / WET-005~~ (T12) *Need adjacent property*
Polygon:	WOD-013 / WET-004
UTM:	
Date:	Sept 21/11 — Time: 14:25
Surveyor(s):	PNT, AMD
Weather:	18°C, wind=4, no precip, CC=100%, overcast

Community Classification

Vegetation Type:	Swamp - deciduous Ash Mineral
Inclusion:	Deciduous Swamp Thicket
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
History	Acidic Bedrock	Terrace	Rockland	Stream	Thicket
X Natural	Basic Bedrock	Valley Slope	Beach/Bar	Marsh	Savannah
Cultural	Carb. Bedrock	X Tableland	Sand Dune	X Swamp	Woodland
	Site	Roll Upland	Bluff	Fen	Forest
		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	

* once access is granted to woodlot, soil core required - wetland suspected upon site visit but no access given to woodlot at this time *

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	3	green ash > white elm > trembling aspen
2	Sub-canopy	3	3	green ash = white elm
3	Understorey	4/5	2	red osier dogwood
4	Groundcover	5	2	(to complete on next site visit)

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	R	< 10	R	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:	Armow WF — WOD-013
Polygon:	WOD-013 / WET-004
UTM:	
Date:	Sept. 21/11 — Time: 14:25
Surveyor(s):	PNT, AMD
Weather:	18°C, wind=4, no precip, CC=100%, overcast

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

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

Species (woody)	Layer 1	2	3	4	Sample
white elm	A	A			
red osier dogwood			D		
rubus idaeus				O	
ash	R	R			
Sugar maple			R	R	
hawthorn sp.		R			
green ash	A	A			
trembling aspen	O	R			

Species (herbaceous)	Layer 1	2	3	4	Sample
canada goldenrod				A	
timothy				O	
reed canary grass				A	
poison ivy				D	
aster sp.				A	
[illegible]				A	
soil too wet to [illegible]				A	
dark green bulrush				O	
soft rush				O	
woodgrass				O	
cattail				R	
hard rush				R	
violet sp.				R	
riverbank grape				O	
wild sorrel				R	
polygonum sp.				R	

*

Wildlife and Other Notes

- cattle using woodlot
- species marked with * are outside of woodlot w/ cattle - cattle appear to be foraging on understory vegetation - little understory veg
- herbaceous species list representative veg outside of woodlot to the north [illegible]

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	(WOD-015 IN)
Polygon: WET - 0	, WOD - (T12)
UTM:	
Date: Oct 25 2011	Time: 15:45
Surveyor(s): DM, KJN	
Weather: rain, 11°C, Wind 2, CC 100%	

Community Classification

Vegetation Type:	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.	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	2	Green Ash > Trembling Aspen
2	Sub-canopy	3	4	Green Ash > Trembling Aspen = White Elm > Apple
3	Understorey	4	3	red Osier = reed canary > wool grass > flat-topped goldenrod
4	Groundcover	3	4	grass sp. grazed > tall aster > meadow horsetail > 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	O	< 10	O	10 - 24	N	25 - 50	N	> 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	X	Young		Mid-age		Mature		Old Growth

Modified ELC Community Description

(WUD-015) x

Soils	1	2	3
Position:	6		
Aspect:	/		
%	0		
Type:	Simple		
Class:	23A	(A)	

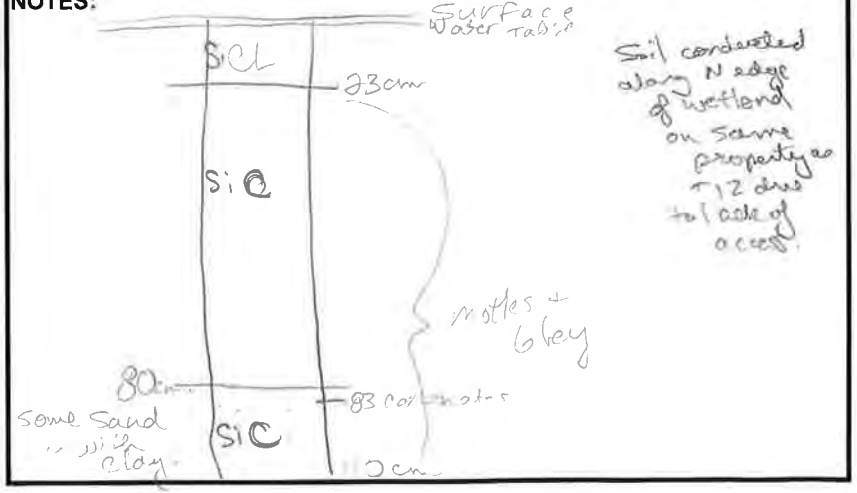
		1	2	3
Strata:	Texture	SiCL		
	Depth	23cm		
Strata:	Texture	SC		
	Depth	83		
Strata:	Texture	SiC		
	Depth	110		
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness				
Surface Rockiness		0		
Depth to:				
	Mottles	23cm		
	Gley	23cm		
	Bedrock	/		
	Water table	0.5cm		
	Carbonates	80 cm		
Depth of Organics		0cm		
Pore Size Disc #1		/		
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WET-O (T12)

Tree Tally

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

NOTES:



NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnaw WF 1275
Polygon:	(T12) in WOD(015)
UTM:	
Date:	Oct. 25, 2011 **Time:** 15:45
Surveyor(s):	KJW CLH
Weather:	Raining, 10 °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	A	O	O	
Trembling Aspen	O	O	O		
Red osier Dogwood			O		
White Elm		O	O	O	
Apple		R			

Species	Layer 1	2	3	4	Sample
Calla palustris				O	
Viola sp.				O	
Rubus pubescens			O		
Carex crinita				O	
Solidago flexicaulis				O	
Aster macrophyllus				O	
Aralia nudicaulis				O	
Viola sp.				O	
Maianthemum canadense				O	
Grass sp. (grazed)				A	

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WOD-015

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

Observer(s): CLH, KJW

Date: Oct. 25, 2011 **Time (24h):** 15:45

Field #: WET-~~005~~ (T12) **Weather:** Precipitation: rain Temp (°C): 11

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

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

% Open Water: < 1 % **ELC Code:** SWDM 2-2

Photos: 179 - 1221

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash > trembling aspen, white elm, apple
c	
dc,dh,ds	
(ts)	red osier dogwood
ls	
gc	calico aster, meadow horsetail
(ne)	reed canary grass > Poa palustris
be	
re	softstem bulrush, wool grass
ff	
f	
su	
m	

Soil type: Silty Clay Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None.

Wildlife Notes:

See attached soils form

See attached wildlife form.

heavily grazed by cattle.

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-017
S1

No. 392

L-1.

Arrow

WOD-015

Oct. 25, 2011

Wetland Assessment

ecol, kgw

rain, 11°c, wnd 2, cc 100%

WET-0

(T 12)

1 Community (S1)

S1: 3 forms >25% cover

h green ash, trembling aspen

ts red osier

ne reed canary grass, poa palustris

Soils: Silty Clay

Site Type Isolated.

Open Water Type: 0% perm water.

Fish Habitat: Absent.

Rare Species: None observed.

Surrounding Land Use 4.5 km: row crop, pasture, fencerows with deep cover, deciduous forest, young coniferous plantation → conifer forest?, creek floodplain, terrain undulating.

J. L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com
"Write All Day"
ALL-WEATHER WRITING PAPER

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

(WOD-015)

Site: Arnow	1275
Polygon: Small wetland area on property W of T12 (WET-A)	-S1
UTM:	
Date: Oct 25, 2011	Time: 15:15
Surveyor(s): CLH, KJW	
Weather: rain. 11°C, wind 2/W, CC100%	

Community Classification

Vegetation Type:	SWTM3 Willow Mineral Deciduous Thicket Swamp
Inclusion:	
Complex:	

Polygon Description

System	Substrate	Topo Feature		Community	
Terrestrial	Organic	Lacustrine	Talus	Lake	Barren
X Wetland	X Mineral Soil 7	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		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	9	0	—
2	Sub-canopy	3	3	willow sp.
3	Understorey	3/5	4	willow sp > reed canary >> typha 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	N	< 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: Small wetland area on property west of T12	
UTM:	
Date: Oct 25, 2011	Time: 15:15
Surveyor(s): CLH, KJW	
Weather: rain, 11°C, wind 2/W CC100%	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — >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
willow sp.					
reed canary					
typha sp.					

Species	Layer 1	2	3	4	Sample

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

property line assessment (from T12 property)

near T12. appears to be >120m on map but it's close to the line. West side of property to the west.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(WOD-015) IN

Wetland Vegetation Communities

Project Name: Arrow WF		**Project #:** 1275	
Observer(s): CLH, KSW			
Date: Oct. 25, 2011	**Time (24h):** 15:15		
Field #: WET-A	**Weather:** Precipitation: rain	Temp (°C): 11	
Map Code: S1	Wind Speed & Direction: 2 / W	Cloud %: 100	
Wetland Type: Swamp	**Site Type:** P	**Dominant Form:** ts	(S, ts)
% Open Water: 0	**ELC Code:** SWTM3		
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	typha sp.
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

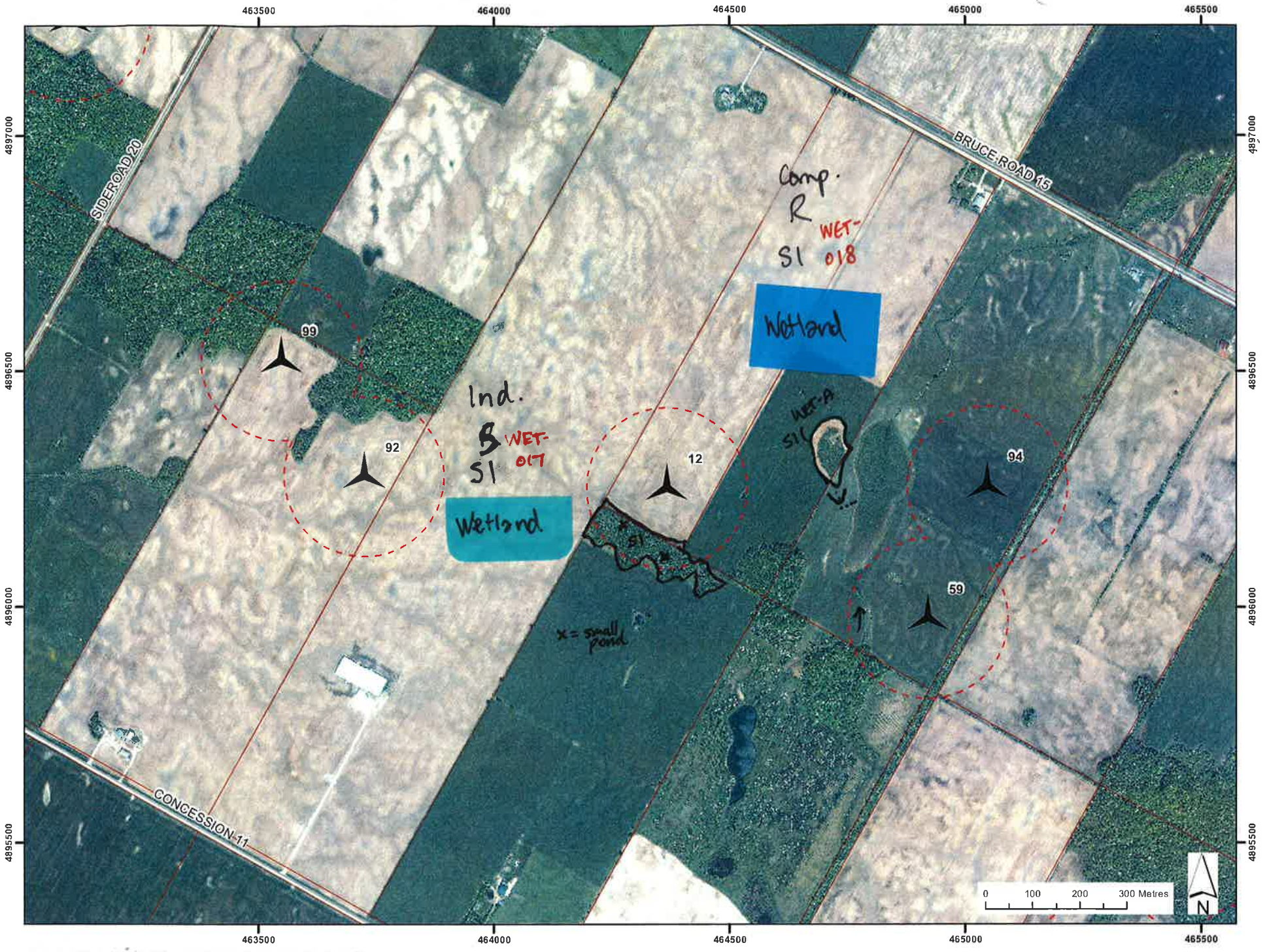
Site Type: L=lacustrine; **P**=palustrine; R=riverine; **IS**=isolated

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

No property access.
Appears to be intermittent overland flow from this to adjacent larger wetland

(WET-01B S1)

WOD-015)


463500
464000
464500
465000
465500
4897000
4896500
4896000
4895500
SIDEROAD 20
BRUCE ROAD 15
CONCESSION 11
Comp. R
SI
WET-018
Wetland
Ind. B
SI
WET-017
Wetland
WET-A
SI
x = small pond
99
92
12
94
59
0
100
200
300 Metres
N

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. WOD-015 4

Site:	Arnaud WF
Polygon:	WOD-013/WF1-004
UTM:	
Date:	Sept 21 '11 **Time:** 14:25
Surveyor(s):	PAT, AMD
Weather:	18°C, WIND: 4, MOD PRECIP, CC = 100%, OVERCAST

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Red tailed hawk	SM		1						
B	Turkey vulture	OB		4						
B	Song Sparrow	SM		1						
B	Redwing blackbird	SM		10						
B	Can. Goose	OB		12						
B	Am. crow	SM		4						
M	raccoon	SC		1						
M	Black bear	SC		1						
H	Leopard Frog	OB		2						
B	Belted 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

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arnaud WF
Polygon:	WOD-013/WF1-004
UTM:	
Date:	Sept 21 '11 **Time:** 14:25
Surveyor(s):	PAT, AMD
Weather:	18°C, WIND: 4, MOD PRECIP, CC = 100%, OVERCAST

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 Pile	14T 0464246 4896010	ph#1481149
Vernal pool (WOD-010)	14T 0467299 4896196 (2 UTMs taken not in vernal pool location as property access not granted. These UTMs are actual vernal pool locations: 4285 4896168	ph#150 - WOD wetland area

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. (WOD-015)

Site:	Arnold WF 1275
Polygon:	(T12)
UTM:	
Date:	oct 25 2011 Time: 15:45
Surveyor(s):	KJW CLH
Weather:	Raining, 10°C, 100% CC, wind 2/10

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	Wood Thrush	SH								

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 WF 1275
Polygon:	(T12)
UTM:	
Date:	oct 25, 2011 Time: 15:45
Surveyor(s):	KJW CLH
Weather:	Raining, 10°C, 100% CC, wind 2/10

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
	Photo 179-1220	
Brush Pile	14U 464395/4989612	in fence row, 1-2 yrs old
Brush Pile	14U 464357/4989652	as above
Brush Pile	14U 464[illegible]/4989659	as above

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 5

Site:	Armow WF
Polygon:	WOD-014/WET-005 (T3) ~~WOD-016/WET-005~~
UTM:	
Date:	Sept. 21/11 Time: 16:05
Surveyor(s):	PNT, AMD
Weather:	18°C, overcast, 97%CC, wind=3, no precip.

Community Classification

	Vegetation Type:	SWDM3-2 (SWAMP MAPLE DECIDUOUS SWAMP) (WET)
X	Inclusion:	SWTOD (WILLOW ORGANIC DEC MINERAL THICKET SWAMP) ~~SWET~~ (20-75%)
	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	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. cedar = wh. elm = trembling aipen
2	Sub-canopy	3	4	green ash = freemans maple > wh. cedar = wh. elm
3	Understorey	4	3	nannyberry > red osier dogwood = hawthorn sp.
4	Groundcover	5	4	aster spp. > goldenrod spp. > poisonivy (see species list for aster + GR)

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	A	< 10	O	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 2 of 5

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WOD-014 WET-005
UTM:	
Date:	Sept 21/11 Time: 16:05
Surveyor(s):	PNT, AMD
Weather:	18°C, overcast, 97%CC, wind=3, 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
red osier dogwood			O	O	
freeman maple	A	A			
green ash	A	A			
white cedar	O	O			
nannyberry			A		
trembling aspen	O				
hawthorn sp.			R		
raspberry sp.				R	
hawthorn sp.			O		
white elm	O	O			
riverbank grape				O	
black cherry			R		
sugar maple			R	R	
sandbar willow			O		
willow sp.			D		
crack willow			O		
Manitoba maple			R		
white birch	R				

Species	Layer 1	2	3	4	Sample
aster lateriflorus				A	
tall goldenrod				O	
grass-leaved goldenrod				A	
panicled aster				A	
bracken fern				R	(thinly)
horsetail sp.				R	(>1m tall)
sensitive fern				O	
marsh bedstraw				R	
river grape vine				R	
rose sp.				R	
jewelweed				O	
yellow lady slipper				R	
pyrola (pink)				R	
agrimony				O	
polygonum sp.				O	
arrow-leaved aster				A	
grape vine				O	
reed canary grass				O	
blue flag iris				R	
water parsnip				R	
aster ericoides				A	

Wildlife and Other Notes

- group of ~10 turkeys observed
- garter snake observed
- swamp supported rich + good plant diversity + little non-native/invasive presence - thick vegetation coverage

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Wetland Vegetation Communities

★WET-008★ in WOD-016

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

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 0945

Field #: ~~WET-007~~ **Weather:** Precipitation: None Temp (°C): 13

Map Code: WET-007 S1 Wind Speed & Direction: 2 ↑ SE Cloud %: 0

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h - deciduous trees

% Open Water: 0 % **ELC Code:** SWDM2-2

Photos: IMG 1068 - 1069

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash, Freeman's maple, white willow, white elm
c	
dc,dh,ds	
ts	red osier dogwood, wild raisin
ls	common red raspberry
gc	wood lant strawberry, rough avens, aster lanceolatus
(ne)	reed canary grass.
be	
re	wool grass
ff	
f	
su	
m	

Soil type: SiL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

W. Chorus Frog (1 calling)
17T 0462289 4889756

Wildlife Notes:

See attached 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

See attached veg list for more detailed composition

WET-011
SS

WOD-06 1-1

Armour WF Oct. 7 2011

Wetland ~~Assessment~~ CLH, KJW

Sunny 12°C, Wind 2 CC0%

WET-007 ~~WET-008~~ WET-011 (T2) in ~~WOD-017~~

Isolated Swamp.

1. Community → 51 See field map (S5)*

Forms >25% cover:

h green ash, Freeman's maple

ts red osier dogwood ↳h, dominant form

ne reed canary grass.

See attached forms for more detailed vegetation description.

Open Water Types (permanently flooded areas):

No Open Water.

Soils:

Rare Species: 1 W. Chorus frog heard calling

17T 0462289 4899756

No Fish Habitat.

Surrounding Land Use within 1.5km: row crops, deciduous forest, pasture, abandoned agricultural land.

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Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armov WF 17-75
Polygon:	WET 007 WOD 016
UTM:	
Date:	Oct 7, 2011
Time:	
Surveyor(s):	KJW, CLH
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			O		
Riverbank Grape		O	O	O	
Green Ash	O	O	O	O	
Freeman's Maple	O	O			
Common Red Raspberry				O	
Wild Raisin			R		
White Elm			R		
Downy Hawthorn			R		
White Willow	R				

Species	Layer 1	2	3	4	Sample
Calico Aster			O		
Heath Aster			O		
Woodland Strawberry				O	
Poison Ivy				O	
Rough Avens				O	
Bittersweet Nightshade				O	
Reed Canary Grass				O	
Woodgrass			O		
Canada Goldenrod				O	
Aster [illegible]				O	

Modified ELC Community Description

WOD-016

- willow thicket

Soils	1	2	3
Position:	L	S	
Aspect:	95	320	
%	0-0.5	0-0.5	
Type:	S	C	
Class:	A	a	

Strata:	Texture	Si L	~~SiL~~	
	Depth	11-31	0-4	
Strata:	Texture	Si	Of3	
	Depth	31-100	4-38	
Strata:	Texture	—	Of3	
	Depth		38-49	
Strata:	Texture	—	MFSiS	
	Depth		49-120	
Effective Texture			org	
Surface Stoniness		—	—	
Surface Rockiness		—	—	
Depth to:				
	Mottles	34	—	
	Gley	63	56	
	Bedrock	—	—	
	Water table	—	—	
	Carbonates	36	XY	
Depth of Organics		11	49	
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime				

Polygon: WOD-014/WET-005

Tree Tally

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

NOTES:

- could not auger past 100 cm - encountered rocks
  ↳ soil moist @ 100 cm
- Core 2 represents willow thicket inclusion. - organic soil
- willow thicket very hummocky.

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NW (WOD-016)

Wetland Vegetation Communities

Project Name: Armow **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

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Wetland Vegetation Communities

Project Name: Armow **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: 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, speckled alder
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 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 SE community.

WET-011 S1

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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:** 2:04
Surveyor(s):	KJW CLH
Weather:	Sunny, 20°C, 07-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	
Spreading Wood Fern				O	
Shinleaf				O	
Crested Wood Fern				R	
Fringed Loosestrife				O	
Common Speedwell				O	
Meadow Horsetail				R	
Moss sp.				A	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

IN WOD-016

Site: Armoy UF 12-75	
Polygon: WET 006 S2	in (WOD-016)
UTM:	
Date: Oct 6, 2011	**Time:** 2:04
Surveyor(s): KJW, CLH	
Weather: Sunny, 20°C, 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
Slender Willow		A			
Red osier Dogwood			O		
Freeman's Maple		O			
Swamp Rose			O	O	
Shining Willow		A			
Bebb's Willow			O		
White Elm	O	O			
Wild Raisin		O			

Species	Layer 1	2	3	4	Sample
False Nettle				O	
Swamp Beggar-ticks				O	
Bidens tripartita				O	
Bittersweet Nightshade				O	
Northern Bugleweed				O	
Mild Water Pepper				O	
Nodding Bur Marigold				O	
Spotted Jewelweed				O	
Blue Flag Iris				R	
Marsh Skullcap				O	
Narrow-fruited Horsetail			O		
Water Parsnip				O	
Marsh Fern				O	
Sensitive Fern				R	
Marsh Bedstraw				O	

1-6

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IN WOD-016

Wetland Vegetation Communities

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

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 0840

Field #: WET-006 **Weather:** Precipitation: None Temp (°C): 12

Map Code: WET-006 **Wind Speed & Direction:** 1 **Cloud %:** 0

Wetland Type: Marsh Swamp **Site Type:** R **Dominant Form:** H ts

% Open Water: 0 % **ELC Code:** SWTM3 Willow Mineral Deciduous Thicket Swamp

Photos: IMPG 168-1063

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	manitoba maple, ~~Manitoba~~, green ash, freeman's maple
c	
dc,dh,ds	
ts	Salix alba, ~~red osier dogwood~~, salix lucida, wild raisin
ls	Common red raspberry
gc	woodland strawberry, bidens frondosa, purple-stemmed aster
ne	reed canary grass
be	water smartweed
re	~~typha angustifolia~~, ~~typha latifolia~~, wool grass, water parsnip, dark green bulrush
ff	
f	
su	
m	

Soil type: SiL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
See attached 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

See attached veg list for more detailed species composition.

WET-011

S4

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Wetland Vegetation Communities

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

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 09:10

Field #: WET-006 **Weather:** Precipitation: None Temp (°C): 12

Map Code: WET-006 **Wind Speed & Direction:** 1 **Cloud %:** 0

Wetland Type: Swamp **Site Type:** Palustrine **Dominant Form:** h (deciduous trees)

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

Photos: IMPG 168-1062

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Freeman's Maple, Silver Maple, white willow, white elm, green ash
c	
dc,dh,ds	
ts	spicebush
ls	black raspberry, common red raspberry
gc	dwarf raspberry, water horehound, sensitive fern
ne	reed canary grass, Carex hystericina, carex lupulina, Poa palustris
be	
re	dark green bulrush
ff	
f	
su	
m	

Soil type: SiL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
See attached 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

See attached veg list for more detailed species composition.

WET-011

S3

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Modified ELC Community Description

PLANT SPECIES LIST

in WOD-016

Site:	Armow WF 1275
Polygon:	WET 006 S3
UTM:	
Date:	Oct. 7/11
Time:	9:10
Surveyor(s):	KJV CJH
Weather:	Sunny, 12°C, 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	O	O	O	
Red Osier Dogwood			R		
Green Ash			O	O	
White Elm			R	R	
White Willow	O				
Common Red Raspberry				O	
Black Raspberry				O	
Dwarf Raspberry				O	
Spirea sp.			O		
Silver Maple	O				

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Calico Aster				O	
Water Horehound				O	
Poison Ivy				O	
Poa palustris			O		
Hoof-cap				O	
Woodland Strawberry				O	
Blue Flag Iris				R	
Carex lupulina				O	
Meadow Horsetail				R	
Spinulose Wood Fern				O	
Sensitive Fern				R	
Carex hystericina				O	
Dark Green Bulrush				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow WF 1275	IN WOD-016
Polygon: WET 006 M1 (S4)	
UTM:	
Date: Oct 7/11	Time: 8:39
Surveyor(s): SJW, CLH	
Weather: Sunny, 12°C, 0% CC, WNW	

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	R	
Red osier Dogwood			O		
White Willow	R	O	O		
Green Ash		R	O		
Riverbank Grape			O	O	
Shining Willow		O	O		
Sweetbrier			R		
Wild Raisin			O		
Common Red Raspberry				R	
Freeman's Maple			R		

Species	Layer 1	2	3	4	Sample
Common Burdock			O		
Bittersweet Nightshade				O	
Calico Aster				O	
Woodland Strawberry				O	
Woolgrass			O		
Water Parsnip				O	
Mild Water Pepper				O	
Bidens frondosa				O	
Reed Canary Grass			O		
Dark Green Bulrush			O		
Typha latifolia			O		
Spotted Jewelweed				O	
Purple-stemmed Aster				O	
Flat-topped Goldenrod				O	
Swamp Milkweed				R	
Boneset			O		
Downy Hawthorn			O		
Typha angustifolia			A		
Nodding Bur Marigold				O	
Water Smartweed				O	
Scirpus sp.			O		1

Armour WF — WWOD — Oct. 6/7 2011

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-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. 17T 0462809 4899461

Approximately 6m x 3m in size.

Soil:

WOD-016

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MT: 54

3 forms >25% cover

ts Salix alba, red osier dogwood

ne reed canary grass

re typha angustifolia, typha latifolia.

See attached for more detailed vegetation description.

Soils:

No rare species observed.

No fish habitat present.

Surrounding land uses (within 1.5 km): deciduous forest, row crops, pasture, abandoned agricultural land.

IN WOD 016

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

WOD 016

462000

4900000

SIDEROAD 10

CONCESSION 2

ditch → no connecting flows

55
55

1
1

2
2

3
3

S1 WET-008 #9

WET-007 #8

WET-006

S1 overland flow → culvert

S1

S4

S2

S1

Permi.

SIDEROAD 15

BRUCE ROAD 15

462000

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

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Map Produced by Natural Resource Solutions Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without express written permission of NRSI. Data provided by MNR© Copyright: Queen's Printer Ontario.
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

☆ WOD-016 ☆

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

Project Name: Arrow WF
Project #: 1295
Date: 8/21/11
Observer(s): DNT, AMD

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-013/WET-003	1	1		Selmap (A) dh# 139
☆WOD-013/ WET-004☆	2	1		(B) dh# 140
	3	0		(C) dh# 141
	4	1		(D) dh# 142
	5	0		(E) dh# 143
	6	0		(F) dh# 144 ??? not sure
	7	0		(G) dh# 144
	8	0		(H) dh# 145
	9	0		(I) dh# 146
	10	0		(J) dh# 149
WOD-014/WET-005	1	2		IT 0462793 4899417 Dh#151
☆WOD-016/ WET-006☆	2	0		IT 0462780 4899426 dh#152
	3	0		IT 0462772 4899456 dh# 153
	4	1		IT 0462790 4899469 dh# 150
WOD-015/WET-007	1	2		(A) IT 462279 4899722 dh# 136
☆WOD-017/WET-008☆	2	0		(B) IT 462273 4899711 dh# 159
	3	0		(C) IT 462287 4899699 dh# 158
	4	0		(D) IT 462305 4899705 dh# 154
	5	0		(E) IT 462312 4899685 dh# 160
WOD-013 total snags	2			
WOD-013 Snags/ha	4			
WOD-016 total snags	3			
WOD-016 Snags/ha	15			BMA-005
WOD-017 total snags	2			
WOD-017 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.

(WOD-016)A

Site:	
Polygon:	
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	#
	AMCR									

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

(NWOD-016)

Site:	Armour WF 1275
Polygon:	WET 006
UTM:	
Date:	Oct 16 2011 **Time:** 2:07
Surveyor(s):	KJW, CLH
Weather:	Sunny, 20°C, 0% CC, wind 2

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						
B	Northern Flicker	OB		1						
B	Blue Jay	VO		2						
B	Ruby-crowned Kinglet	VO		4						
B	White-throated Sparrow	OB		1						
B	Yellow-rumped Warbler	OB		2						
B	Dark-eyed Junco	OB		1						
B	Black-capped Chickadee	VO		3						
B	White-crowned Sparrow	OB		2						
B	Killdeer	VO		1						
H	Spring Peeper	VO		3						
M	Raccoon	TK		2						
B	Hairy Woodpecker	VO		1						
B	American Crow	VO		3						
B	Raven	VO		1						
B	Seagull sp.	OB	overhead	1						
B	Hairy Woodpecker	VO		1						
B	American Robin	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:	Armour WF 1275
Polygon:	WET 006
UTM:	
Date:	Oct 16 2011 **Time:** 2:04
Surveyor(s):	KJW, CLH
Weather:	Sunny, 20°C, 0% CC, wind 2

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 / Soil Mound	0462923/4899633 (622 - Kim's)	Possible Snake Hibernaculum
SWH-004	→ Considered generic SWH	(>20m from roads/turbines)
Woodland Pond	0462809/4899461 (626 Kim's)	Amphibian Habitat (watering hole for mammals/birds)
AWO-~~001~~ 002		DSC 0150 (photo)

Describe Valley (depth, geomorphological traits):

Additional Details:

Ignore 023-025 GPS pts

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. IN WOD-016

Site:	Arnold WF 1275
Polygon:	WET 007
UTM:	
Date:	Oct. 7 2011 **Time:** 9:45
Surveyor(s):	KSW CLH
Weather:	Sunny 12°C, 0% 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	Goldfinches	OB	flock	~15						
B	Dark-eyed Junco	OB		1						
B	American Crow	VO		1						
H	Chorus Frog	VO		1						
H	Leopard Frog	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:	Arnold WF 1275
Polygon:	WET 007
UTM:	
Date:	Oct 7 2011 **Time:** 9:45
Surveyor(s):	KSW CLH
Weather:	Sunny, 12°C, 0% 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:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

WOD-016

Site:	Armow WF 12-15
Polygon:	WET 006
UTM:	
Date:	Oct 7, 2011 **Time:** 8:39
Surveyor(s):	KSW CLH
Weather:	Sunny, 12°C, 09°CC, wind 2

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Canada Goose	OB	flying over	6						
B	American Goldfinch	OB		6						
B	Red-winged Blackbird	VO		*						
B	White-throated Sparrow	VO		*						
B	Song Sparrow	VO		*						
B	Robin	VO		*						
B	Downy Woodpecker	VO		*						

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 WF 12-15
Polygon:	WET 006
UTM:	
Date:	Oct 7, 2011 **Time:** 8:39
Surveyor(s):	KSW CLH
Weather:	Sunny, 12°C, 09°CC, wind 2

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 Armour
Polygon:	WOD-XXi (WOD-016)
UTM:	
Date:	Nov 11 2011
Time:	14:10
Surveyor(s):	PWD NGM
Weather:	

Community Classification

	Vegetation Type:	SWDM4-5 Poplar Mineral Dec. Swamp Type
X	Inclusion:	(upland inclusions likely)
	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	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	
2	Sub-canopy	3	4	
3	Understorey	4	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	A	< 10	A	10 - 24	R	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			

NOTES:

Poplar sp.

Ash sp.

*Roadside

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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N S

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Ontario

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NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

★WET-008★ in WOD-016

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

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 0945

Field #: ~~WET-007~~ **Weather:** Precipitation: None Temp (°C): 12

Map Code: WET-007 S1 Wind Speed & Direction: 2 ↗SE Cloud %: 0

Wetland Type: Swamp **Site Type:** I **Dominant Form:** h - deciduous trees

% Open Water: 0 % **ELC Code:** SWDM2-2

Photos: IMG 1068 - 1067

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	~~Green Ash~~, Freeman's maple, white willow, white elm
c	
dc,dh,ds	
(ts)	red osier dogwood, wild raisin
ls	common red raspberry
gc	wood land strawberry, rough avens, aster lanceolatus
(ne)	reed canary grass
be	
re	wool grass
ff	
f	
su	
m	

Soil type: SiL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

W. Chorus Frog (1 calling)
17T 0463289 4864756

Wildlife Notes:

See attached 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

See attached veg list for more detailed composition

WET-011
S5

WOD-06 1-1

Armour WF Oct. 7 2011

Wetland Assessment CLH, KTW

sunny 12 °C, Wind 2 CCO%

WET-007 ~~WET-008~~ WET-011 (T2)

in ~~WOD-017~~

Isolated Swamp.

1 Community → S1 See field map (S5*)

Forms >25% cover.

h green ash, Freeman's maple ↳h, dominant fo

ts red osier dogwood

ne reed canary grass.

See attached forms for more detailed vegetation description.

Open Water Types (permanently flooded areas):

No Open Water.

Soils:

Rare Species: 1 W. Chorus frog heard calling

17T 0462289 4899756

No Fish Habitat.

Surrounding Land Use within 1.5 km: row crops, deciduous forest, pasture, abandoned agricultural land

J L DARLING CORP TACOMA, WA
www.RiteintheRain.com

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnou UF 12-15

Polygon: WET 007 | WOD 016

UTM:

Date: Oct 7, 2011 Time: 2:46

Surveyor(s): KJW, CLH

Weather: Sunny, 2°C 09:CC, wind 2 SE

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		
Riverbank Grape		O	O	O	
Green Ash	O	O	O	O	
Freeman's Maple	O	O			
Common Red Raspberry				O	
Wild Raisin			R		
White Elm			R		
Downy Hawthorn			R		
White Willow	R				

Species	Layer 1	2	3	4	Sample
Calico Aster			O		
Heath Aster			O		
Woodland Strawberry				O	
Poison Ivy				O	
Rough Avens				O	
Bittersweet Nightshade				O	
Reed Canary Grass				O	
Woodgrass			O		
Canada Goldenrod				O	
Aster Sp.				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Part of WOD-018 NOWA

Site:	Arrow WF
Polygon:	WOD-015 / NET-006 (T2.) ★WOD-017/NET-008★
UTM:	
Date:	Sept. 21/11 — Time: 18:43
Surveyor(s):	AMD, PNT
Weather:	16°C, wind=2, no precip, CC=10%

Community Classification

Vegetation Type:	SWDM3-3 (SWAMP MAPLE MINERAL)
Inclusion:	DECIDUOUS 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.	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	3	green ash = freemans maple > white elm
2 Sub-canopy	4	3	red osier dogwood >> green ash
3 Understorey	5	2	asters >> [illegible]
4 Groundcover	7	2	poison ivy >> hellebore

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	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	R	< 10	A	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:	WOD-015 / NET-006 (WOD-018)
UTM:	
Date:	Sept 21/11 — Time: 18:43
Surveyor(s):	AMD, PNT
Weather:	16°C, wind=2, no precip, CC=10%

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		D			
manna grass		A			
green ash	A	A			
river grape		C			
rubus idaeus		O			
white elm	O				
freemans maple	A	O			
willow sp.	R				
common apple		R			
hawthorn		R			
pine sp.		R			915 Pam

Species	Layer 1	2	3	4	Sample
aster lateriflorus			A		
Canada goldenrod			O		
riverside aster			O		
Common St. John's wort			O	R	
poison ivy				A	
yellow avens			O		
hellebore				R	
burdock			R		
queen anne's lace				R	

Wildlife and Other Notes

WOD-018

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 10:30

Field #: WET-008 **Weather:** Precipitation: None Temp (°C): 18

Map Code: WET-008 Wind Speed & Direction: 2 from SE Cloud %: 0

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

% Open Water: 0 **ELC Code:** SWDM3-2 ~~SWDM3-3~~

Photos: IMPG 168-1066

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple, Silver maple, green ash,
c	
dc,dh,ds	
ts	red osier dogwood, spicebush, silky dogwood
ls	white elderberry, swamp red currant
gc	sensitive fern, false nettle, foamflower, bidens frondosa
ne	Carex lupulina, poa palustris
be	
re	dark green bulrush, typha latifolia, wool grass
ff	
f	
su	
m	

Soil type: CL | Organic ☐ | Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
See attached 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

See attached veg list for more detailed species composition

WET-012 S2

WOD-018 1-2.

Armow WF
Wetland Assessment
Oct. 7 2011
CLH, KJW

Sunny 18°C Wind 3 CC0%

(TSS)
in WOD-18

WET-008 ✱WET-009✱

Palustrine Swamp.

1 community → S1 See attached field map.

Forms >25% cover:

h Freeman's maple, Silver maple.

See attached forms for more detailed vegetation description.

Open Water Types (permanently flooded areas):

Type 1.

Soils:

No rare species observed.

Fish Habitat: A small pond (~ 35 m x 20 m) is located in the western portion of the wetland. It contained water at the time of site investigation. It is connected to a dug ditch which extends between fields and eventually connects to the roadside ditch. →

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

This ditch likely serves to drain water from the fields into the pond. The edges of the community are characterized by cattails and rushes with some willows. = <0.5 ha of Fish Habitat.

Surrounding land Uses within 1.5 km:
row crops, pasture, abandoned agricultural land, deciduous forest.

Rite in the Rain No.352

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arrow A 1275
Polygon:	WET 003 IN WOD-018
UTM:	
Date:	oct. 7, 2011 **Time:** 10 30
Surveyor(s):	KJU CLH
Weather:	Sunny, 14°C 0% CC wind 2 SE

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	O	O	
Sycamore Maple	A	A	O	O	
Silver Maple	O				
Spice bush			O		
Red osier Dogwood			O		
Silky Dogwood			O		
Riverbank Grape		O	O		
Swamp Red Currant			O		
White Elderberry			O		

Species	Layer 1	2	3	4	Sample
Poison ivy				O	
Rough Avens				O	
Reed Canary Grass			O		
Woolgrass			O		
Water Parsnip				R	
Northern Bugleweed				O	
Bidens frondosa				O	
Sensitive fern				O	
False nettle				O	
Mild Water Pepper				O	
Bittersweet Nightshade				O	
Carex lupulina				O	
Poa palustris				O	
Calico Aster				O	
Typha latifolia			O		
Dark Green Bulrush			O		
Bladder Sedge				O	
Intermediate Wood fern				O	
Spinulose Wood fern				O	
Foam flower				O	
Barren Strawberry				O	

Modified ELC Community Description

WOD-018

Soils	1	2	3
Position:	4		
Aspect:	150°		
%	0-0.5		
Type:	S		
Class:	A		

		1	2	3
Strata:	Texture	SIC		
	Depth	9-56		
Strata:	Texture	SiCL		
	Depth	56-100		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SIC		
Surface Stoniness		—		
Surface Rockiness		—		
Depth to:				
	Mottles	42		
	Gley	62		
	Bedrock	—		
	Water table	—		
	Carbonates	50		
Depth of Organics		9		
Pore Size Disc #1		—		
Pore Size Disc #2		—		
Pore Size Disc #3		—		
Moisture Regime		5		

Polygon: WOD-015 / WET-006

Tree Tally

Species	Tally 1	Tally 2	Tally 3
N/A			
Total:			
Basal Area			
Snags			

NOTES:

*Couldn't get auger past 100cm – soil too compact.

Modified ELC Community Description

Page __ of __

IN WOD-018

Soils	1	2	3
Position:	6		
Aspect:	300		
%	0.2		
Type:	S		
Class:	L		

		1	2	3
Strata:	Texture	CL		
	Depth	20		
Strata:	Texture	SiCL		
	Depth	54		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		CL		
Surface Stoniness		/		
Surface Rockiness		/		
Depth to:		/		
	Mottles	17		
	Gley	30		
	Bedrock	/		
	Water table	/		
	Carbonates	/		
Depth of Organics		/		
Pore Size Disc #1		/		
Pore Size Disc #2		/		
Pore Size Disc #3		/		
Moisture Regime		6		

Polygon: WOD-016/WET-007

CLH, KJW Oct. 7, 2012

Tree Tally

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

NOTES:

* WET-011 55 m.

WOD-018

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

Project Name: Arrow WF
Project #: 1275
Date: 8/31/11
Observer(s): DNT, AMD

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-013/WET-003	1	1		Selmap (A) dh# 139
*WOD-013/	2	1		(B) dh# 140
WET-004*	3	0		(C) dh# 141
	4	0		(D) dh# 142
	5	0		(E) dh# 143
	6	0		(F) dh# 144 ???
	7	0		(G) dh# 144
	8	0		(H) dh# 145
	9	0		(I) dh# 146
	10	0		(J) dh# 147
WOD-014/WET-005	1	2		17T 0462793 4899412 Dh#151
WOD-016/WET-006	2	0		17T 0462780 4899426 dh#152
	3	0		17T 0462772 4899456 dh# 153
	4	1		17T 0462790 4899469 dh# 154
WOD-015/WET-007	1	2		(A) 17T 462279 4899722 dh# 156
WOD-017/WET-008	2	0		(B) 17T 462273 4899711 dh# 157
	3	0		(C) 17T 462287 4899699 dh# 158
	4	0		(D) 17T 462305 4899708 dh# 159
	5	0		(E) 17T 462312 4899685 dh# 160
WOD-013 total snags	2			
WOD-013 snags/ha	4			
WOD-016 total snags	3			
WOD-016 snags/ha	15			
WOD-017 total snags	2			
WOD-017 snags/ha	8			
				WOD-017/18 Combined = 7/(15 x 0.05) = 9 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

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Arrowwood
Polygon:	*WOD-018*
UTM:	
Date:	Sept 21/11 Time: 18:43
Surveyor(s):	PNJ, AMD
Weather:	16°C, wind=2, no precip, cc=10%

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Can. goose	SM		2						
M	Wt. deer	SC		1						
B	Ruby Cothird	SM		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:	Arrowwood
Polygon:	WOD-015/WET-006
UTM:	
Date:	Sept 21/11 Time: 18:43
Surveyor(s):	PNJ, AMD
Weather:	16°C, WIND=2, NO PRECIP, CC=10%

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

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
N/A		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	
Polygon:	WOD-016 (TSS) ☆WOD-018/WET-009☆
UTM:	
Date:	Time:
Surveyor(s):	PNT, AMD
Weather:	

Community Classification

Vegetation Type:	SWDM3-3 (SWAMP MAPLE-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	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		Freeman maple, standing aspen, ? ash
2	Sub-canopy	2		Freeman maple, green ash, white ash, basswood, elm
3	Understorey	3, 1		Freeman maple, green ash, white ash, elm
4	Groundcover	3, 4		Raspberry, ? sarsaparilla, 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	A	25 - 50	R	> 50
Snags	A	< 10	O	10 - 24	O	25 - 50	N	> 50
Deadfall/Logs	A	< 10	A	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:	Arnprior WF
Polygon:	WOD-016 ☆WOD-018☆
UTM:	
Date:	Sept. 22/11 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 maple	D	A			
white ash	O	O	A		
red osier dogwood			O		
beaked hazel			R		
elm, basswood	O	O			
red raspberry			O		
teasel			R		
calico aster			O		
yellow avens			R		
wild strawberry				O	
sensitive fern	A				
elm, white ash			O		
bedstraw				O	
bitter nightshade			O		
coltsfoot				O	
water hemlock sp.			O		
bracken				R	
rattlesnake fern		O			
poison ivy				D	
wood nettle				A	
enchanter's nightshade	R			R	
red elderberry			R		
strawberry			R		

Species	Layer 1	2	3	4	Sample
black cherry				R	
dwarf dogwood				R	
hop hornbeam				R	
hemlock	R				
mountain ash				R	
alt. leaf dogwood				R	
yellow birch	R				
hobblebush				R	

WOD-018

462000

4900000

SIDEROAD 10

CONCESSION 2

ditch

55
55

1
1

2

3
3

WET-008

WET-008

WET-006

SIDEROAD 15

BRUCE ROAD 15

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

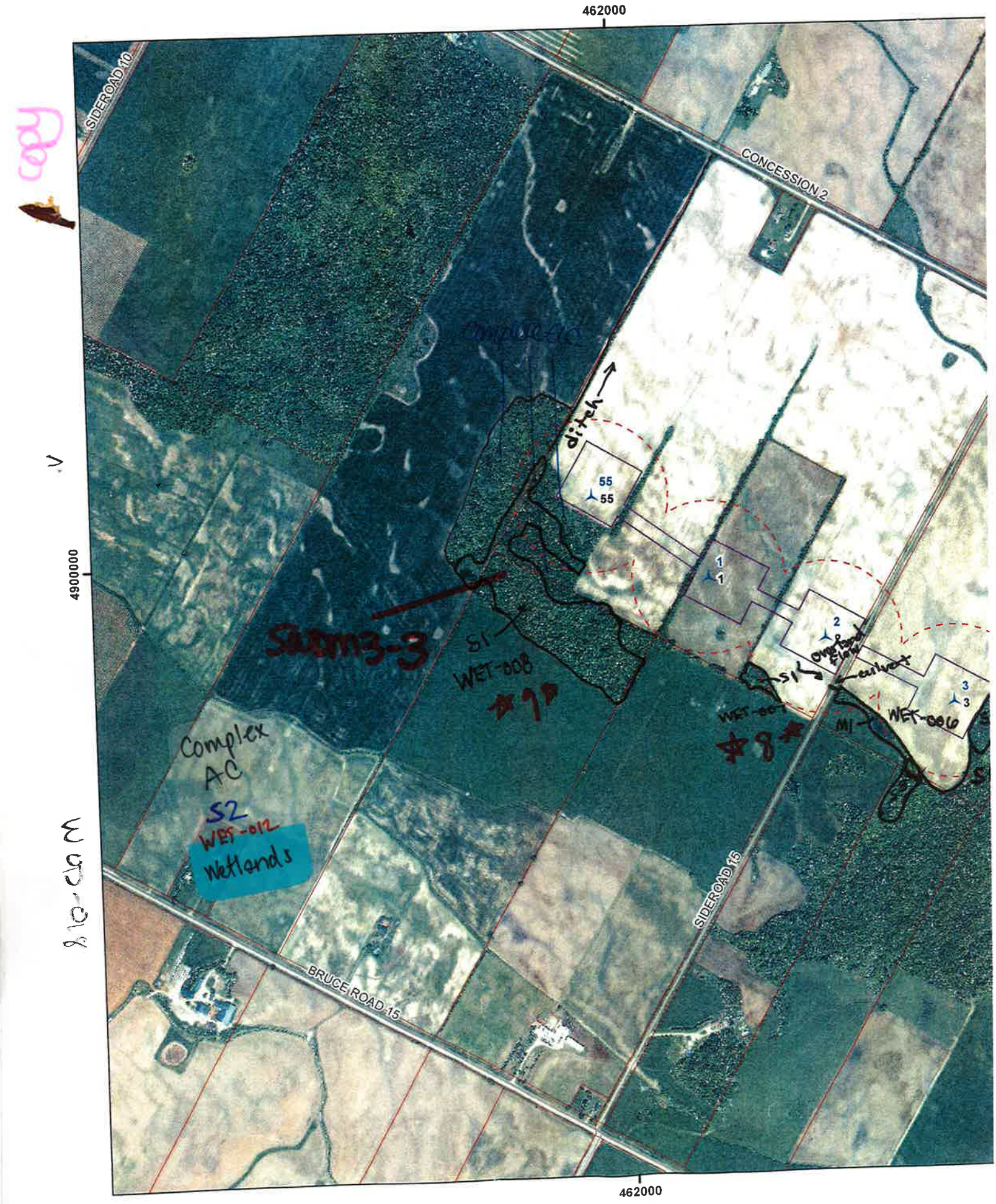
Map Produced by Natural Resource Solutions Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without express written permission of NRSI. Data provided by MNR© Copyright: Queen's Printer Ontario.
Imagery provided by: Golder Associates, 2011

Project: 1275
Date: Tuesday, October 11, 2011

NAD83 - UTM Zone 17
Size: 11x17"
1:10,000

0 200 400 600 Metres

N


462000
SIDEROAD 10
CONCESSION 2
ditch
55
55
1
1
2
3
3
4900000
Subm3-3
S1
WET-008
#7
Complex
AC
S2
WET-012
Wetlands
WET-007
#8
M1
WET-006
SIDEROAD 15
BRUCE ROAD 15
462000

WOD-018

Hook - 519-396-8099
Vanderburgh 519-368-7530

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

Project Name: Arrow WF
Project #: 1275
Date: Sept. 22/11
Observer(s): AMD, PNT

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-016/WET-009	A 1	2		17T 0461981 4899974, photo 100-0161
★WOD-017/ WET-009★	B 2	0		17T 0461899 4899980, photo 100-0163
	C 3	0		17T 0461872 4899998 photo 100-0163
	D 4	0		17T 0461846 4900004, photo 100-0164
	E 5	0		17T 0461828 4900022 photo 100-0165
	F 6	0		17T 0461816 4900017 photo 100-0166
	G 7	1		17T 0461807 4899997 photo 100-0167
	H 8	2		17T 0461817 4899974 photo 100-0168
	I 9	0		17T 0461837 4899981 photo 100-0169
	J 10	0		17T 0461821 4899972 photo 100-0170
				↳ @ property line to S of woodlot
WOD-017	A 1	0		17T 0467212 4894467, photo #171
★WOD-019★	B 2	0		17T 0467198 4894479 pht#172
	C 3	0		17T 0467212 4894436 pht#173
	D 4	0		17T 0467221 4894436 pht#174
	E 5	0		17T 0467231 4894454 pht#175
	F 6	1		17T 0467242 4894465 pht#176
	G 7	0		17T 0467261 4894452 pht#177
	H 8	0		17T 0467269 4894431 pht#178
	I 9	0		17T 0467295 4894404 pht#180
	J 10	0		17T 0467296 4894393 pht#181
WOD-018/ WET-009	1	2		17T 0462290 4890274, photo 100-184
	2	0		17T 0462277 4890286 photo 100-185
★WOD-020/ WET-011★	3	0		17T 0462265 4890279 photo 100-186
	4	0		17T 0462281 4890300, photo 100-187
	5	0		17T 0462261 4890325, photo 100-189
	6	0		17T 0462292 4890323, photo 100-190
	7	1		17T 0462310 4890316, photo 100-191
	8	0		17T 0462331 4890287 photo 100-193
	9			17T
	10			17T
WOD-018 total snags	5	combined w/ WOD-017		now total snags: 5+2=7
WOD-018 snags/ha	10			7 x 0.05 = 9 snags/ha
WOD-019 total snags	0			
WOD-019 snags/ha	0			
WOD-020 total snags	3			
WOD-020 snags/ha	7.5			

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. (WOD-016)

Site:	
Polygon:	WOD-016
UTM:	
Date:	Sept 29/11 **Time:** 9:00
Surveyor(s):	PM1, AM2
Weather:	15°C, CC=80%, WIND=2, NO PRECIP, snowed last night

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	PM-Moose	SM								
	PM-Moose	SM	4 Distinct Moose							
			Tracks							
	Blue Jay	SM								
	PM-Robin	SM								
	black-capped chickadee	SM								
	Ruffed grouse	SM								
	Red-tailed Hawk	OB								

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

- [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

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

IN W00-018

Site:	Armory WE 1275
Polygon:	WET 003
UTM:	
Date:	Oct 7 2011 **Time:** 10:30
Surveyor(s):	ESW CLH
Weather:	Sunny 14°C, 09°C, wind 2 SE

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	CA	skull	0						
B	Robin	VO		00						
B	Black-capped Chickadee	VO		0000						
B	Kinglet Sp.	VO								
B	Brown Creeper	VO		0						
H	Green Frog	VO		0						
B	Blue Jays	VO		00						
B	Hairy Woodpecker	VO		0						
B	Winter-Headed Sparrow	VO	also drum	00						
H	Spring Peeper	VO		00						
B	Red-bellied Woodpecker	VO		0						
B	Yellow-bellied Sapsucker	FE	holes in tree	0						

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:	Armory WE 1275
Polygon:	WET 003
UTM:	
Date:	Oct 7 2011 **Time:** 10:30
Surveyor(s):	ESW CLH
Weather:	Sunny 14°C, 09°C, 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
Bat Snags	0461751 4907 2490002 Kim's GPS	Many large dying snags w/ exfoliating bark

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	WOD-I ★WOD-018★ (TSS)
UTM:	
Date:	Nov 3/11 Time: 15:10
Surveyor(s):	PWD, AMD
Weather:	

Community Classification

Vegetation Type:	FODM4-2 Dry Fresh White Ash Hardwood 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	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	white ash >> trembling aspen = Am beech > black cherry
2	Sub-canopy	2	4	whiteash > trembling aspen = Am. beech = black cherry
3	Understorey	3	4	hawthorn spp. > whiteash = Am beech
4	Groundcover	5-7	3	ONCNS sp. > wild strawberry > agrimony

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	A	< 10	A	10 - 24	O	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:	Armow WF
Polygon:	WOD-I
UTM:	
Date:	Nov. 3/11 Time: 15:10
Surveyor(s):	PWD, AMD
Weather:	8°C, Overcast, 100% CC, Wind

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

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

crusgalli

Species	Layer 1	2	3	4	Sample
hawthorn sp.			O	O	
red osier dogwood			R	R	
sugar maple	R	R			
trembling aspen	O	O			
poison ivy				R	
basswood	R	R			
riverbank grape			R	R	
whiteash	D	A	O		
Am. beech	O	O	O		
black cherry	R	O	O	O	
ribes triste				R	
ironwood		R	R		
Com. apple			R		
maple leaf viburnum				R	
crataegus succulenta			O	O	
smooth blackberry			O	O	
wild raisin			R		
spicebush			R		
wh. elm		R	R		
smooth serviceberry			R		

Species	Layer 1	2	3	4	Sample
wild strawberry				A	
dandelion				R	
carex intumescens				R	
carex blanda				R	
virginia waterleaf				R	
wood strawberry				R	
herb robert				R	
lance leaved aster				O	
viola sp				R	
agrimony				A	
spinulose wood fern				D	
hellebrine				R	
bracken fern				R	
avens sp.				A	
xmas fern				R	
turtlehead				R	
sens. fern				R	

Wildlife and Other Notes


461500
462000
462500
463000
463500
4900500
4900000
4899500
4899000
CONCESSION 2
SIDEROAD 15
BRUCE ROAD 15
55
1
2
3
0 100 200 300 Metres
N

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. WOD-018

Page __ of __

Site:	
Polygon:	WOD-I
UTM:	
Date:	Nov 3/11 **Time:** 15:10
Surveyor(s):	AMD, PWD
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	VO		11						
B	bl. cap/ chickadee	VO		11						
B	Euro. Starling	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
___ 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 >20cm dbh	17T 0461780 4900139	~3 snags in same location

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arrow WF
Polygon:	SWD3-017 (T60) *SWD3-019*
UTM:	
Date:	Sept. 22/11 — Time:
Surveyor(s):	
Weather:	

Community Classification

	Vegetation Type:	FODM5-8 (DM-Fresh sugar maple-white ash deciduous forest)
X	Inclusion:	SWDM3-1 (Black ash deciduous swamp type) *MAS-017*
	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	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	Sugar maple >> white ash > basswood
2	Sub-canopy	2	4	Sugar maple >> white ash >> basswood.
3	Understorey	3	3	Sugar maple = white ash >> basswood
4	Groundcover	4-7	4	rubus idaeus and blackberry (thick sp) > wood strawberry > aster spp. (see species list)

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	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:

Tree Tally

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

NOTES:

- evidence of past logging
- sugar maple largely dominant
- starred species on plant list were found in small wetland inclusion.

#Soils not done as >100m from project area

*Wetland inclusion has been classified as SWDM3-3 based on more detailed info gathered once site access was granted.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site:	Arnaud NE
Polygon:	WOD-017 / WET-008 ✓ WOD-019/WET-010
UTM:	
Date:	Sept 20/11 — Time: 12:20
Surveyor(s):	AMD, PNT
Weather:	PC, NO PRECIP, RAIN 1 MI NW, CC = 90%, WIND = 3

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	
	red osier dogwood			R	R	
	sugar maple	D	D	A		
	basswood	O	O	O		
*	white elm	R	R	R		
	white ash	O	O	A	A	
	river grape				O	
	ironwood			R		
	choke cherry			O	O	
	black berry (cultivated)				A	adjacent area
	curious dewberry				A	
	honeysuckle			R		
	spirea alba				R	
	black cherry			O	O	
	amelanchier sp			R		
	ribes cynosbati				R	
	virginia creeper				O	
*	elderberry				R	
*	black ash			R		
*	freemans maple		O			
	yellow birch	R				
	red oak				R	

	Species	Layer 1	2	3	4	Sample
	poison ivy				R	
	carex stipata				R	
	carex sp				R	WOD-017 bag
	aster lateriflia				A	
	zig zag goldenrod				A	
	hemp nettle				R	
	woodstrawberry				A	
	canada goldenrod				A	
*	reed canary grass				O	
	yellow avens				O	
	agrimony				R	
	herb robert				R	
	hypericum perforatum				O	
	potentilla recta				R	
	heal all				R	
	lady fern				R	
	xmas fern				R	
*	sensitive fern				R	
	aster ericoides				A	
	blue cohosh				R	
*	bitter nightshade				R	
	baneberry white				R	
	enchant. nightshade				R	
*	wood nettle				R	
*	equisetum sp				R	3 teeth
	uvularia perfoliata				R	

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

* WOD-019 *

Wetland Vegetation Communities

Project Name: Ashlow WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov. 3 2011 **Time (24h):** 10:00

Field #: ~~WET-044~~ **Weather:** Precipitation: Light Temp (°C): 7

Map Code: M1 Wind Speed & Direction: 2/N Cloud %: 100

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

% Open Water: 0% **ELC Code:** MAMM1-16 Mixed Graminoid Graminoid Min Mead Marsh.

Photos: 100-1056

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm, freeman's maple.
c	
dc,dh,ds	
ts	red osier dogwood
ls	
gc	lance leaved aster, sensitive fern, hea l all
(ne)	Hop Sedge 25% Reed Canary grass 25%
be	polygonum sp.
re	woolly grass
ff	
f	
su	
m	moss sp.

Soil type: SiC MR6 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

Fish habitat: absent

3% pooled water, sporadic among sedges/grasses.

WET-020

M1-B

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

AWET-010A in WOD-019

Wetland Vegetation Communities

Project Name: Atmow WF **Project #:** 1275

Observer(s): PWD, AMD

Date: Nov 3 2011 **Time (24h):** 10:00

Field #: WET-044 **Weather:** Precipitation: Light Temp (°C): 7

Map Code: S1 Wind Speed & Direction: 2°/N Cloud %: 100

Wetland Type: Swamp **Site Type:** R I **Dominant Form:** Treed (CS, h)

% Open Water: C 0% **ELC Code:** SWDM3-3 Swamp Maple Mineral Dec. Swamp

Photos: 100-1056

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple 25% Green Ash 25%, black ash, white elm
c	
dc,dh,ds	
ts	red osier dogwood
ls	Smooth blackberry, rubus idaeus, white elderberry
(gc)	Wild Strawberry 25%, Calico ~~Aster~~ 25%, avens sp., agrimony
ne	
be	
re	woolgrass
ff	
f	
su	
m	

Soil type: SiC MR6 Organic ☐ Mineral ☒

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

Fish habitat: absent

WET-020

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Modified ELC Community Description

Page __ of __

S1 M1

Soils	1	2	3
Position:	G	4	
Aspect:	–	O	
%	O	0.5-2	
Type:	S	S	
Class:	A	B	

		1	2	3
Strata:	Texture	S.C	S.C	
	Depth	4-80	7-85	
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		S.C	S.C	
Surface Stoniness		O	O	
Surface Rockiness		O	O	
Depth to:				
	Mottles	9	8	
	Gley	26	26	
	Bedrock	–	–	
	Water table	4	O	
	Carbonates	–	–	
Depth of Organics		4	7	
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6	6	

Polygon: WET-044 (T60)
IN WOD-019

Tree Tally

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

NOTES:

- Coarse fragments encountered @ 50 cm for sample 1
- S1 sample for swamp, M1 for marsh sample.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page ____of____

PLANT SPECIES LIST

Site: Arrow WF	
Polygon: WET - 041 (T60)	/ IN WGD - 019 *
UTM:	
Date: Nov. 3/11	**Time:** 10:00
Surveyor(s): PWD, AMD	
Weather:	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer → marsh (MI)

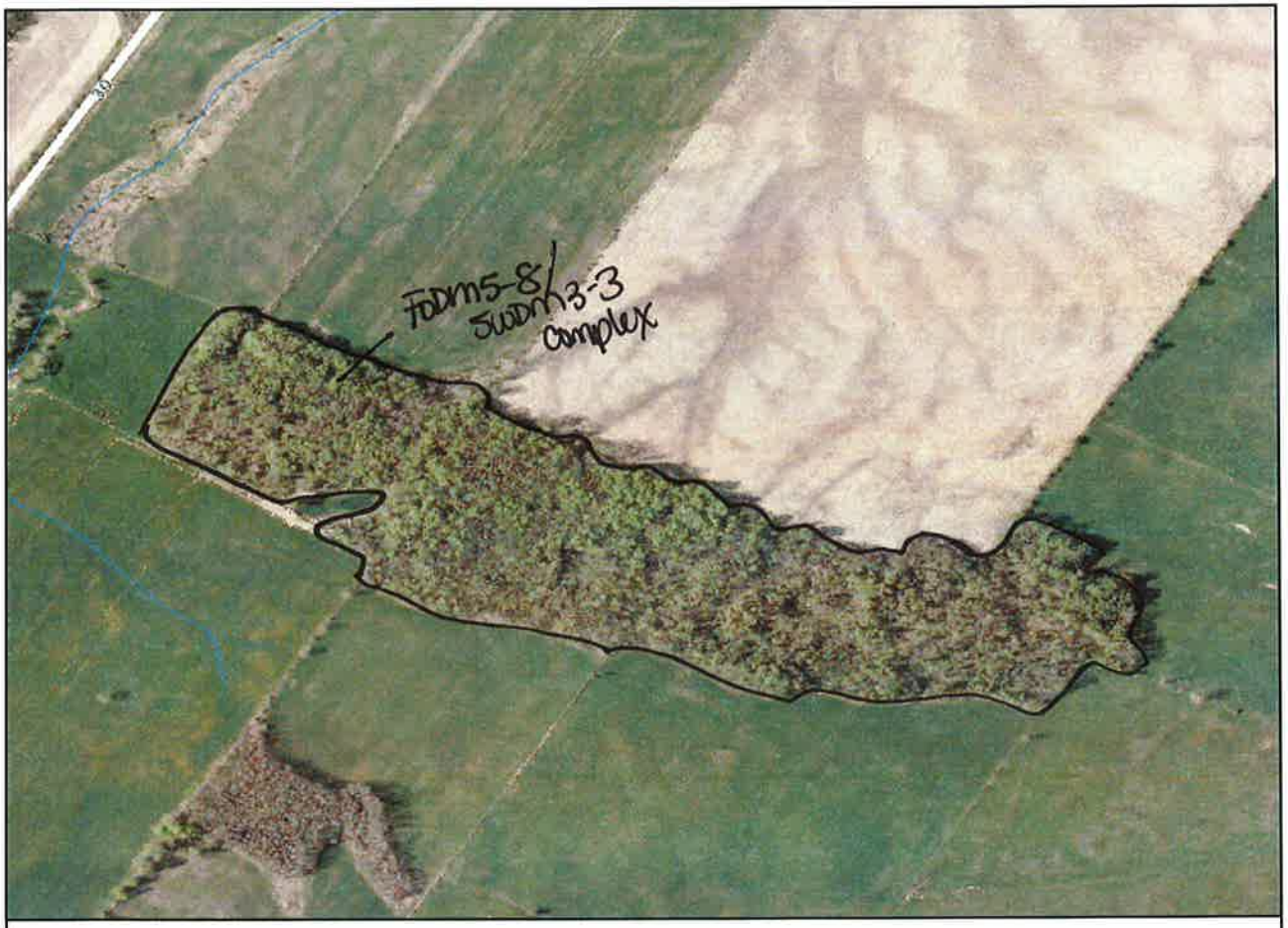
Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
~~tree~~ wh. elm	O	R			
red osier dogwood			O	O	
freemans maple	R	R			
Freemans maple	R	R			
smooth blackberry			O	O	
rubus idaeus			O	O	
wh. elm	O	O			
black ash		R			
green ash	A	O			
red osier dogwood			A	O	
wh. elderberry			O		

Species	Layer 1	2	3	4	Sample
woolgrass				O	
carex lupulina				A	
reed canary grass				A	
lance leaved aster				R	
heal all				R	
wild strawberry				R	
moss sp.				R	
agrimony				R	
polygonum sp.				R	
sensitive fern				O	
bitter nightshade				R	
buttercup sp.				R	
→ swamp (SI)					
avens sp				O	
wild strawberry				A	
woolgrass				R	
calico aster				A	
orchard grass				R	
agrimony				R	
tall goldenrod				A	

IN
WOD-019

T60 T107



Map centre: 44° 12' 13.2" N, 81° 24' 39.3" W

Map created: January 3, 2012

0 100 200 300 400 m

Scale: 1:7,400

Legend

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

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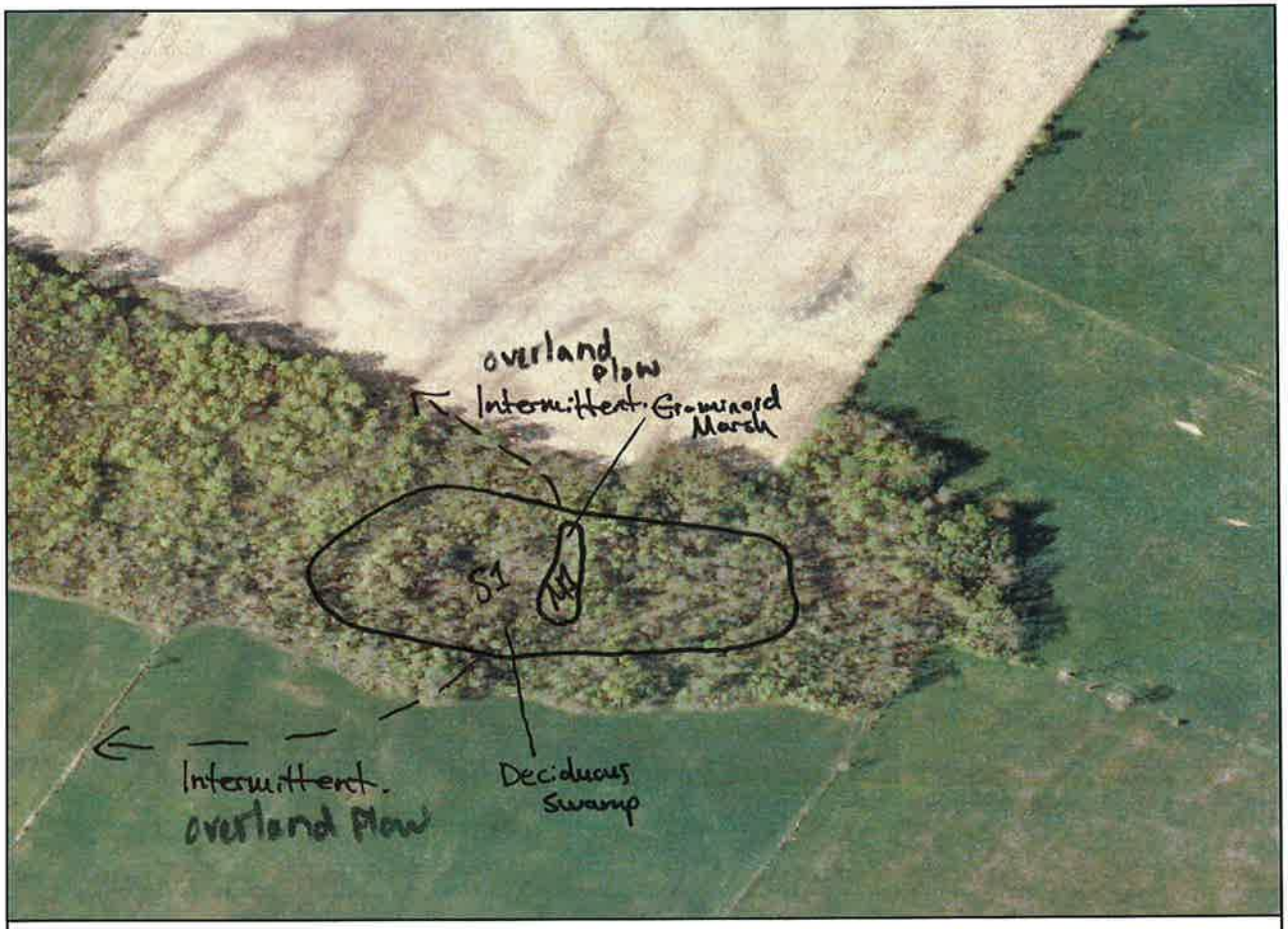
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T60 WET-014 in WSD-019



Map centre: 44° 12' 10.3" N, 81° 24' 30.7" W

Map created: December 12, 2011

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

Complex N

S2, MI-B

WET-020

Wetlands

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* WOD-019 *

[Jack - 519-396-8599
Brian Jackson 519-368-7580)

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

Project Name: Armow WF
Project #: 1275
Date: Sept. 22/11
Observer(s): AMD, PNT

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-016/WET-009	A 1	2		17T 0461751 4899974 photos 100-0161
★WOD-017	B 2	0		17T 0461879 4899990 photo 100-0162
WET-009★	C 3	0		17T 0461872 4899988 photo 100-0163
	D 4	0		17T 0461846 4900004 photo 100-0164
	E 5	0		17T 0461828 4900022 photo 100-0165
	F 6	0		17T 0461816 4900017 photo 100-0166
	G 7	1		17T 0461807 4899993 photo 100-0167
	H 8	2		17T 0461817 4899974 photo 100-0168
	I 9	0		17T 0461837 4899981 photo 100-0169
	J 10	0		17T 0461821 4899972 photo 100-0170
				↳ @ property line to S of woodlot
WOD-017	A 1	0		17T 0467212 4894467. photo #171
★WOD-019★	B 2	0		17T 0467198 4894479 DH#172
	C 3	0		17T 0467212 4894486 DH#173
	D 4	0		17T 0467221 4894486 DH#174
	E 5	0		17T 0467231 4894454 DH#175
	F 6	0		17T 0467242 4894445 DH#176
	G 7	0		17T 0467261 4894452 DH#177
	H 8	0		17T 0467269 4894431 DH#178
	I 9	0		17T 0467295 4894434 DH#180
	J 10	0		17T 0467296 4894353 DH#181
WOD-018/WET-008	1	2		17T 0462290 4890274, photo 100-184
	2	0		17T 0462277 4890266 photo 100-185
★WOD-020/	3	0		17T 0462265 4890279 photo 100-186
WET-011★	4	0		17T 0462281 4890300, photo 100-187
	5	0		17T 0462261 4890325, photo 100-189
	6	0		17T 0462292 4890323, photo 100-190.
	7	1		17T 0462310 4890316, photo 100-191
	8	0		17T 0462321 4890297 photo 100-192
	9			17T
	10			17T
WOD-018 total snags	5			
WOD-018 snags/ha	10			
WOD-019 total snags	0			
WOD-019 snags/ha	0			
WOD-020 total snags	3			
WOD-020 snags/ha	7.5			

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.

Page __ of __

INWOD-019

Site:	Acadia WF
Polygon:	WET-044 (TGO)
UTM:	
Date:	Nov 3/11 **Time:** 10:00
Surveyor(s):	PwD, AMD
Weather:	7°C, rain, 100% OC, wind 2 From N

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. * WOD-019 *

Page __ of __

Site:	Arrow NE
Polygon:	WOD-017
UTM:	
Date:	Sept. 22/11 **Time:** 12:00
Surveyor(s):	AMD, PNT
Weather:	Cloudy & sunny periods, 16°C, wind 3 from S

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
						B	Song Sparrow	SM		20
						B	killdeer	SM		15
						B	common goldfinch	SM		*
						B	chipping sparrow	SM		*
						B	turkey vulture	OH		*
						L	clouded sulphur	CP		*
						L	swallowtail sp.	OB		*
						B	crow	SM		*
						B	red-winged blackbird	DM		*

- species in field S. of woodland

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
___ 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	1273
Polygon: WOO-019 *	(T67)
UTM:	
Date: Nov 3 2011	Time: 16:15
Surveyor(s): CLH, NGM	
Weather: 6°C, Wind 4 from N, CC 100%	

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	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 > Ironwood > Basswood > American Beech
2	Sub-canopy	3	2	Sugar Maple > American Beech > Basswood > Ironwood
3	Understorey	4	1	Chokecherry >> Red Raspberry > Allegheny Blackberry > Burdock
4	Groundcover	4	1	Sugar maple > Herb Robert > Zig Zag Goldenrod > 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	O	< 10	O	10 - 24	O	25 - 50	R	> 50
Snags	O	< 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		Mid-age	X Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	
Polygon:	
UTM:	
Date: Nov 3 2011	Time: 16:15.
Surveyor(s): CLH, NGM	
Weather: 6°C, Wind 4 from N, CC 100%. No precip.	

Layers: 1=canopy (7-10) 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	A	O		O	
Basswood	O	O			
Ironwood	O	O			
White Ash	O	O			
Black Cherry	R	R			
American Beech	R	O			
Red Elderberry				R	
Bittersweet Nightshade				R	
Allegheny Blackberry			O		
Downy Hawthorn			R		
Chokecherry		O	O		

Species	Layer 1	2	3	4	Sample
Red Raspberry			O		
Burdock			O		
Calico Aster				O	
Hellebore				O	
Red Ash				O	
Zig Zag Goldenrod				O	
Herb Robert				O	
Common Strawberry				O	
Twisted Stalk				R	
Spinulose Wood Fern				O	
Dandelion				O	
Prickly Gooseberry				O	
Ostrich Fern				O	
Virginia Waterleaf				O	
Common Speedwell				O	
Wild Leek				O	
Bur Oak				O	

Wildlife and Other Notes

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

IN WOD-019 V

Site: Armow	1275
Polygon: WET-030 51 (T107)	
UTM:	
Date: Nov 3 2011	Time: 17:00
Surveyor(s): CLH, N6M	
Weather: 6°C, Wind 4, CC 100%, No precip.	

Community Classification

Vegetation Type:	
Inclusion:	SWDM3-3 Swamp Maple mineral Deciduous
X Complex:	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	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's maple > Green Ash
2	Sub-canopy	3	2	Green Ash > White Elm.
3	Understorey	4/5	1	Red osier > White Elderberry > Woolgrass.
4	Groundcover	6	1	Calico Aster > Sensitive Fern > Poa Palustris.

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	6	< 10	0	10 - 24	O	25 - 50	R	> 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	Young	Mid-age	Mature	Old Growth
				X	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armow	
Polygon: WET-030 51 (T107)	
UTM:	
Date: Nov 3 2011	Time: 17:00
Surveyor(s): CLH, N6M	
Weather: 6°C, Wind 4, CC 100%, No precip	

Layers: >10 2-10 0.5-7 <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
Freeman's Maple	O				
Green Ash	O	O			
White Elm		O			
White Elderberry			O		
Red osier			O		

Species	Layer 1	2	3	4	Sample
Sensitive Fern				O	
Woolgrass			O		
Calico Aster				O	
reed canary			R		
Poa palustris				R	

Wildlife and Other Notes

Alate 100-

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

* In WOD-019 *

Wetland Vegetation Communities

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

Observer(s): CH, NG, M

Date: Nov. 3 2011 **Time (24h):** 17:00

Field #: WET-030 (NO7) **Weather:** Precipitation: None Temp (°C): 6

Map Code: S1 Wind Speed & Direction: 4 N Cloud %: 100

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

% Open Water: 25% (pond) **ELC Code:** SWDM3-3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple, green ash, white elm
c	
dc,dh,ds	
ts	
ls	
gc	sensitive fern, calico aster
ne	reed canary grass, Poa palustris
be	
re	woolgrass
ff	
f	
su	
m	

Soil type: SiC Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed.

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

WET-020
S1

Modified ELC Community Description

Soils

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

Strata:	Texture	0m S.		
	Depth	9cm		
Strata:	Texture	/		
	Depth			
Strata:	Texture	SiC		
	Depth	99cm.		
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness				
Surface Rockiness				
Depth to:				
	Mottles	0 cm		
	Gley	0cm		
	Bedrock	/		
	Water table	+10 S		
	Carbonates	92cm		
Depth of Organics		+9cm		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

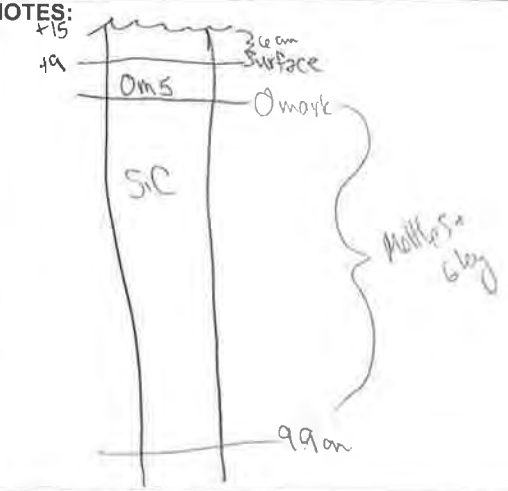
Polygon: WET-030 (TLO)

* WOD-019 *

Tree Tally

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

NOTES:



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Wetland Vegetation Communities

IN WOD-019

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

Observer(s): CLH, NGM

Date: Nov. 3 2011 **Time (24h):** 17:30

Field #: WET-09/10 (T107) **Weather:** Precipitation: None Temp (°C): 6

Map Code: M1 Wind Speed & Direction: 4 N Cloud %: 100

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

% Open Water: 0% **ELC Code:** MAMM1-3.

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	
gc	bittersweet nightshade.
(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

MH A

Arrow WF
Wetland Assessment

Nov. 3/11
CLH Nan

6°C, cc100%, Wind 4 from N, No precip.

WET-030 (WOD-019) (T107)

I Community

M1: 1 form 75% cover
ne reed canary grass
soils - mineral
Site Type: Palustrine (creek likely dries up in summer since the channel is planted through just upstream.)
Open Water Type: O.

Fish Habitat: high marsh M1.

Rare Species Observed: none.

Surrounding Land Use <1.5km: row crop, pasture, deciduous forest.

WOD-019 ✱

No. 392
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www.RiteInTheRain.com
"Rite in the Rain" ALL WEATHER WRITING PAPER

Arrow WC Nov. 3 2011

Wetland Assessment cloudy, No m

6°C, No precip., CC 100%, Wind 4 from N.

WET - 030 (WOD-019) T107

1 Community

S1: 1 Form 725% cover

h Freeman's maple

Soils: 9cm Om5 over SC. MR: 6.

Site type: Isolated.

Open water type: 25% cover. Type 2.

Fish Habitat: A pond is found adjacent to swamp habitat on the edge of the community. It is a dug pond approximately 45m x 12m at the surface.

Rare Species observed: None.

Surrounding land use within 1.5 km.

row crop, pasture, deciduous forest.

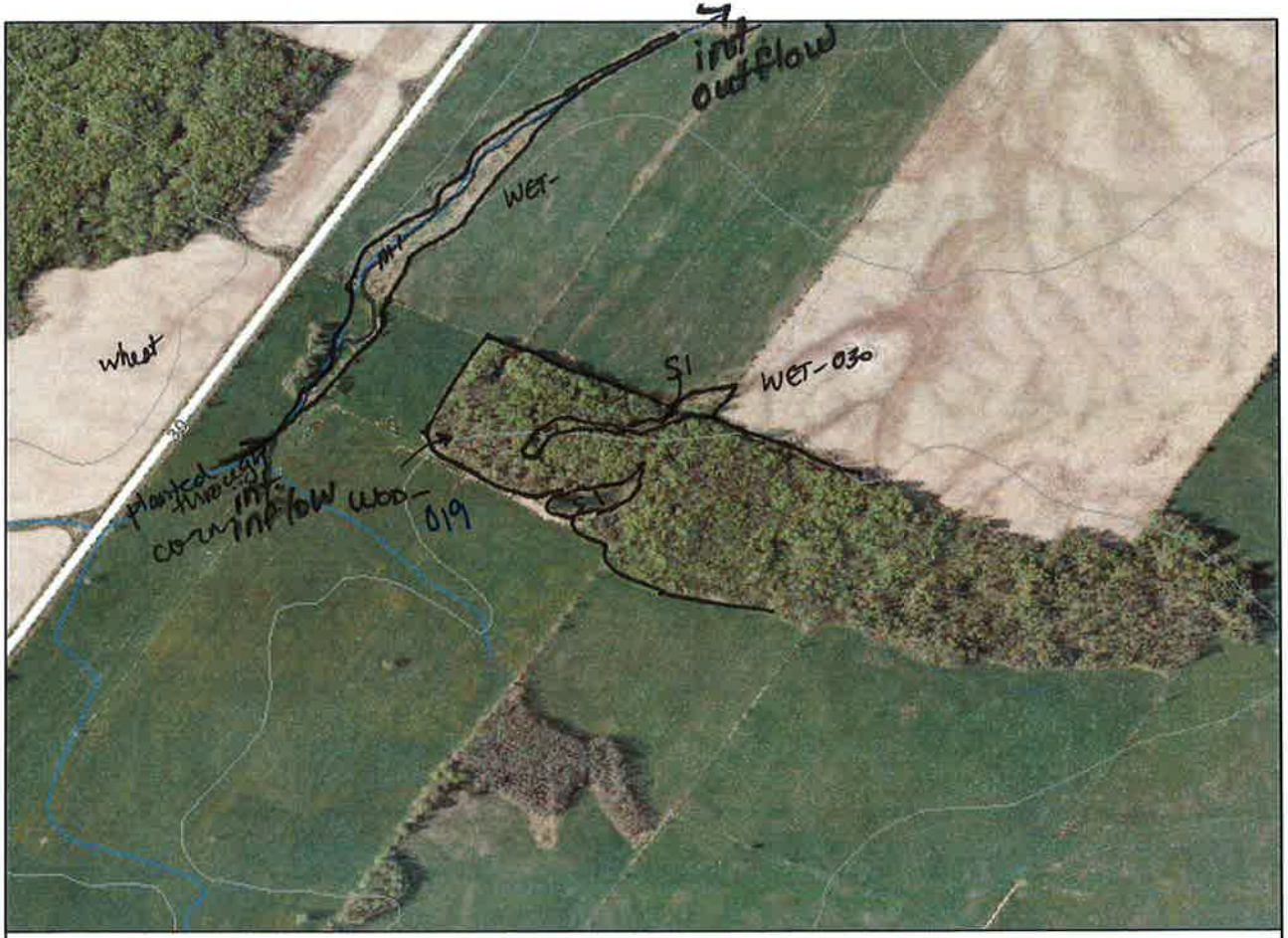
IN WOD-019

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* WOD-019 *

6

T107



Map centre: 44° 12' 12.9" N, 81° 24' 47.2" W

Map created: November 3, 2011

0 100 200 300 400 m

Scale: 1:8,800

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-019 *

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

Project Name: Arnow
Project #: 1275
Date: Nov 3 2011
Observer(s): CLH, NGM

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-028	1	2		17T 0459013 4890390 acc 10m
	2	0 —	0	17T 0459010 4890373 acc 7m
	3	0		17T 0458957 4890266 acc 6m
	4	0		17T 0458958 4890290 acc 5m
	5	0 —	0	17T 0458766 4890298 acc 5m
	6	0 —	0	17T 0468760 4890352 acc 6m
WOD-(CT107)	1	0		↑
				17T 0466859 4894685 ac. 10m
~~XWOD-019~~	2	0 -	0	17T 0467020 4894638 ac. 10m
total = 3	3	0 -		17T 0467004 4894570 ac. 7m
Snags/ha = 15	4			17T 0466872 4894644 acc. 6m
~~WOD-020~~				
BMA-022				

Add WOD-019 bat hab. data analyte & put data in bat hab. assess summary file w/ WOD-019 (bats not overlap).

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: Arnaw WF
Project #: 1275
Date: Sept 22 + Nov 3/11
Observer(s): AMD, PNT / CLH, NBM

Start Time _____ End Time _____

Woodland ID (WOD- 019) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17T)	Comments
Plot 1	Ø	467213, 4894467	
Plot 2	Ø	467198, 4894479	
Plot 3	Ø	467212, 4894486	
Plot 4	Ø	467221, 4894486	
Plot 5	Ø	467231, 4894454	
Plot 6	Ø	467242, 4894455	
Plot 7	Ø	467261, 4894452	
Plot 8	Ø	467269, 4894434	
Plot 9	Ø	467285, 4894404	
Plot 10	Ø	467296, 4894393	
Plot 11	2	466859, 4894685	acc. 10m
Plot 12	Ø	467020, 4894638	acc. 10m
Plot 13	Ø	467004, 4894570	acc 7m
Plot 14	1	466893, 4894644	acc. 6m
Plot 15			
Plot 16			
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25		*office based summary of data compiled by PNT*	
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 3

Formula: Total # Snags / (# Plots x 0.05ha)
= 3/(14 x 0.05) = 4 snags/ha

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

WOD-019

Site:	ARMOW 1275
Polygon:	WOD-019 (T107)
UTM:	
Date:	Nov 3/11 Time: 16:15
Surveyor(s):	CLH, NGM
Weather:	4 N, CC: 75%, Temp: 5

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	X		1						
M	Raccoon	X		1						
B	Red-winged BB	X		III						
B	Am. Crow	X		II						
B	Blue Jay	X		1						
B	Golden-crowned Kinglet	X		1						
B	Bl.-capped Chickadee	X		///						
B	Am. Robin	X		IIII						
B	Am. Goldfinch	X		II						
B	Downy Woodpecker	X		1						
B	C. Grackle	X		IIII						
B	Mourning Dove	X		1						
B	Ruddy-headed Cowbird	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:	Armow 1275
Polygon:	WOD-019 (T107)
UTM:	
Date:	Nov 3/11 Time: 16:15
Surveyor(s):	CLH, NGM
Weather:	Wind 4 N, CC 75%, 5°C.

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
- [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

- [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 AWO-012	17T 466935 4894544	Dug pond

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arman WF
Polygon:	WOD-019 / WET-009 (TH4/45) ★WOD-020 / WET-011 ★ 023
UTM:	
Date:	Sept. 22/11 — Time: 14:15
Surveyor(s):	AMD, PNT
Weather:	

Community Classification

Vegetation Type:	SWD02-3 / Swamp maple Organic
Inclusion:	deciduous swamp (DSO)
Complex:	

↳later determined to be organic soils

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	1	3	freemans maple > green ash >> white elm
2	Sub-canopy	2	4	freemans maple = green ash
3	Understorey	3	3	freemans maple = green ash > chokecherry = ronnyberry
4	Groundcover	1/4	4	green ash > rubus strigosus > riverbank grape

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	A	< 10	A	10 - 24	O	25 - 50	O	> 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-019 / WET-009
UTM:	
Date:	Sept. 22/11 — Time: 14:15
Surveyor(s):	AMD, PNT
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
Common apple			R		
red osier dogwood			O	O	
rubus idaeus				A	
choke cherry			A	O	
white cedar			R		
virginia creep.				A	
freemans maple	D	A	A	A	
ribes americanum				O	
white spruce			R		
white elm	S/R	R			
ronnyberry			A	O	
green ash	A	A	A	A	
willow sp	R				
white elderberry			R		
river maple				A	
common buckthorn				R	

Species	Layer 1	2	3	4	Sample
tall goldenrod				R	
aster tatarian folium				R	
garlic mustard				R	
false nettle				O	
bidens frondosa				O	
fern sp				R	
bitter nightshade				R	
viola sp.				R	
yellow avens				O	
dwarf raspberry				O	
herb robert				O	
enchanters nightsh.				O	
wood sorrel				R	
spotted jewelweed				R	
agrimony				R	
blue flag iris				R	
turtlehead				R	
tall + early meadow rue				O	
reed canary grass				R	
swamp buttercup				R	

Wildlife and Other Notes

- swamp w noticeable vernal pooling.
- good amount of downed logs - appears managed, evidence of past logging

Modified ELC Community Description

Page __ of __

WOD-020*

Soils	1	2	3
Position:	G		
Aspect:	30°		
%	0.3		
Type:	S		
Class:	L		

Strata:	Texture	SCL		
	Depth	11		
Strata:	Texture	CL		
	Depth	28		
Strata:	Texture	SCL		
	Depth	58		
Strata:	Texture			
	Depth			
Effective Texture		SiCL		
Surface Stoniness		/		
Surface Rockiness		/		
Depth to:				
	Mottles	3		
	Gley	34		
	Bedrock	/		
	Water table	/		
	Carbonates	0		
Depth of Organics		/		
Pore Size Disc #1		/		
Pore Size Disc #2		/		
Pore Size Disc #3		/		
Moisture Regime		5		

Polygon: WOD-018 / WET-009

Tree Tally

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

NOTES:

*PNHCLH collaborated to determine that 10% mineral soil + ~10% organic soil within this community based on differences in elevation / microtopography in different areas of the polygon. See additional soil samples to see organic soils.

X WOD-020 X

[fax-519-396-8891
[illegible] 519-368-7580

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow WF
Project #: 1275
Date: Sept. 22/11
Observer(s): AMD, PNT

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-016/WET-009	A 1	2		17T 0461981 4899974, photo 100-0161
★WOD-016/ WET-009★	B 2	0		17T 0461899 4899990 photo 100-0162
	C 3	0		17T 0461872 4899998 photo 100-0163
	D 4	0		17T 0461846 4900004 photo 100-0164
	E 5	0		17T 0461828 4900022 photo 100-0165
	F 6	0		17T 0461816 4900017 photo 100-0166
	G 7	1		17T 0461807 4899997 photo 100-0167
	H 8	2		17T 0461817 4899974 photo 100-0168
	I 9	0		17T 0461837 4899981 photo 100-0169
	J 10	0		17T 0461821 4899972 photo 100-0170
				↳ @ property line to S of woodlot
WOD-017	A 1	0		17T 0467212 4894467, photo #171
★WOD-019★	B 2	0		17T 0467198 4894479 ph#172
	C 3	0		17T 0467212 4894486 ph#173
	D 4	0		17T 0467221 4894486 ph#174
	E 5	0		17T 0467231 4894454 ph#175
	F 6	0		17T 0467242 4894452 ph#176
	G 7	0		17T 0467261 4894452 ph#177
	H 8	0		17T 0467269 4894434 ph#178
	I 9	0		17T 0467285 4894404 ph#179
	J 10	0		17T 0467296 4894393 ph#180
WOD-018/WET-008	1	2		17T 0462290 4890274, photo 100-184
	2	0		17T 0462277 4890266 photo 100-185
★WOD-020/ WET-011★	3	0		17T 0462265 4890279 photo 100-186
	4	0		17T 0462281 4890300, photo 100-187
	5	0		17T 0462261 4890325, photo 100-189
	6	0		17T 0462292 4890323, photo 100-190
	7	1		17T 0462310 4890316, photo 100-191
	8	0		17T 0462321 [illegible]
	9			17T
	10			17T
WOD-018 total snags	5			
WOD-018 snags/ha	10			
WOD-019 total snags	0			
WOD-019 snags/ha	0			
WOD-020 total snags	3			
WOD-020 snags/ha	7.5			[illegible]

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.

IN WOD-020

Page __ of __

Site:	
Polygon:	WOD-013 / WET-009
UTM:	
Date:	SEPT 20/11 **Time:** 4:15
Surveyor(s):	PW, AMD
Weather:	12°C, ND PRECIP, 1% CLOUD, WIND: 3

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
	Am. Toad	SM		1						
	Western Toad	OH		1						
	Am. Toad	OB		1						
	Am. crow	SM		1						
	Raven	SM		1						
	Chimney Crayfish	SM		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
___ 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	17T 0462261 4892291	ph#182183 large vernal pool (d 4)
AWO-013 (~12m from	access road ∴ considered as generalized SWH	

Describe Valley (depth, geomorphological traits):

Additional Details:

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Modified ELC Community Description

Site:	Armow
Polygon:	WOD-040 (745) ☆ inclusion in WOD-020 ☆
UTM:	17T 0462191 4890130
Date:	Oct 26 2011 Time: 0900
Surveyor(s):	CLH KJW
Weather:	light rain 100% CC Wind 3 A NW

Community Classification

Vegetation Type:		FOMT-6 Fresh-moist Black Ash-Hardwood Lowland Deciduous Forest
	Inclusion:	
	Complex:	

☆ Consider as Wetland - SH

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	Black Ash > Green Ash > White Spruce
2	Sub-canopy	3	4	Black Ash >> Green Ash > White Elm
3	Understorey	4	4	Flat-topped Goldenrod > Tall Goldenrod > Orchard Grass > Red Osier
4	Groundcover	4	4	Calico Aster > Woodland Strawberry = Dandelion > Heal-All

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	O	< 10	R	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

Site: Arrow WF 1275	IN WOD-020
Polygon: WOD-010 (T45)	
UTM:	
Date: Oct. 26, 2011	**Time:** 9:00
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
Black Ash	R	A	O		
Green Ash	R	O	O		
White Pine			R		
Red Osier Dogwood			O		
White Spruce	R	R			planted
Sweet Cherry			O		
Riverbank Grape			O		
Common Red Raspberry			O		
White Elm			O		

Species	Layer 1	2	3	4	Sample
Canada Goldenrod			O		
Flat-topped Goldenrod			O		
Tall Goldenrod			O		
Timothy				O	
Calico Aster				O	
Orchard Grass			O		
Large-leaved Asters				O	
Hazel-all				O	
Birdsfoot Trefoil				O	
Wild Madder				O	
Woodland Strawberry				O	
Common Dandelion				O	
Reed Canary Grass			R		
Agrimony				R	
Common Burdock			R		
Chicory			O		

Modified ELC Community Description

* incl. WOD-020 *

Soils	1	2	3
Position:	4		
Aspect:	110°		
%	3		
Type:	Single		
Class:	C		

Strata:	Texture	SiC		
	Depth	19cm		
Strata:	Texture	SiC		
	Depth	23cm		
Strata:	Texture	SiC		
	Depth	10cm		
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	11cm		
	Gley	15cm		
	Bedrock	/		
	Water table	/		
	Carbonates	30cm		
Depth of Organics		0.5cm		
Pore Size Disc #1		/		
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

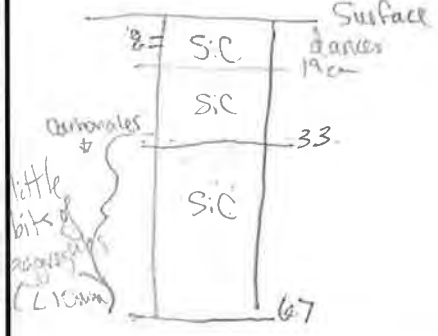
Polygon: WOD-040 (T45)

Tree Tally

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

NOTES:

ITT 0462-191 489 0130



Soil too hard to auger further

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnold WF 1275

Polygon: WET-023 S1 (T45) / in WOD-020 *

UTM:

Date: Oct. 26, 2011 Time: 9:45

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
Green Ash	O	O	O		
Black Ash	D	A	O		
Sweet Cherry			O		
Red Osier Dogwood			O		
Hawthorn sp.			O		
Shining Willow		R	O		
Narrow-leaved Meadowsweet			O		
White Elm		O	O		
Wild Raisin			R		
Common Red Raspberry			O		
Swamp Red Currant			O		
Choke Cherry			O		
Trembling Aspen	O	O			
White oak			R		
Apple		R			

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Calico Aster				G	
Large-leaved Aster				O	
Yellow Avens				O	
Canada Goldenrod			O		
Common Milkweed			O		
Bittersweet Nightshade			O		
Carex sp.				O	
Hexl-all				O	
Common Burdock			O		
Agrimony				O	
Stinging Nettle			O		
Hellebore				O	
Early Meadowrue				O	
Wood Strawberry				O	
Common Dandelion				O	
Reed Canary Grass			O		
Poa palustris			O		

1-7

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in WOD -020

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

Observer(s): CLH, KJW

Date: Oct 26 2011 **Time (24h):** 09:00

Field #: WET-023 (T48) **Weather:** Precipitation: light rain Temp (°C): 6

Map Code: S1 Wind Speed & Direction: S NW Cloud %: 100

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

% Open Water: 95 (flooded) **ELC Code:** SWD01-1

Photos: 180 - 1228

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	black ash > green ash, white elm, trembling aspen
c	
dc,dh,ds	
(ts)	red osier, shining willow, wild raisin, choke cherry
ls	narrow leaved meadowsweet, common red raspberry
(gc)	calico aster, bittersweet nightshade, early meadow rue, stinging nettle
(ne)	reed canary grass > Carex sp (sitchensis?), poa palustris,
be	
re	
ff	
f	
su	
m	

Soil type: Om Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):

Wildlife Notes:

↓ see soil form attached

↓ see wildlife form attached.

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

large amounts of heavy rain recently has flooded the creek which overspills into the low-lying swamp areas which made a lot of reed canary grass.

S1
WET-036

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow 1275	IN WOD-020
Polygon: WET-023 S2 (T45)	
UTM:	
Date: Oct. 26 2011	**Time:** 10:30
Surveyor(s): KJW, CLH	
Weather: showers 6°C light wind 3/10	

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
Common Hop	V	D	A	A	
Eastern White Cedar			O		
Red Osier Dogwood			O		
Dwarf Raspberry				O	
White Elm		O	O	O	
Green Ash	O	O	O	O	
Virginia Creeper			O		
Hawthorn sp.		O		O	
Common Cat-tail	A		O		
Yellow Birch	R				

Species	Layer 1	2	3	4	Sample
Calico Aster				O	
Lance-leaved Aster				O	
Bedstraw sp.				O	
Carex sp.				O	
Early Meadow-rue				O	
Herb Robert				O	
Fowl Manna Grass				O	
Purple-stemmed Aster				O	
Poison Ivy				O	
Garlic Mustard				O	
Enchanter's Nightshade				R	
Yellow Avens				O	
Jewelweed				O	
Downy Yellow Violet				O	
Twisted Lousewort				R	
Meadow Horsetail				O	
Blue Flag Iris				R	

2_7

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

* IN WOD-020 *

Project Name: Armow **Project #:** 1975

Observer(s): CLH, KJW

Date: Oct. 26 2011 **Time (24h):** 10:30

Field #: WET-033 **Weather:** Precipitation: none Temp (°C): 6

Map Code: S2 Wind Speed & Direction: 3 to NW Cloud %: 100

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

% Open Water: 95% **ELC Code:** SWD0243

Photos: 100 - 1227

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple, yellow birch, green ash
c	
dc,dh,ds	
ts	white elderberry, red osier dogwood, nanny berry.
ls	common red raspberry
(gc)	calico aster ~~rose raspberry~~, spotted jewelweed, blue flag iris
ne	carex sp.
be	
re	
ff	
f	
su	
m	

Soil type: Om Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial): See attached soil sheet

Wildlife Notes: See attached wildlife sheet

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.

S2
WET-036

Modified ELC Community Description

IN WOD-020

Soils	1	2	3
Position:	6	4	
Aspect:	/	100°	
%	/	1	
Type:	Simple	Simple	
Class:	A		

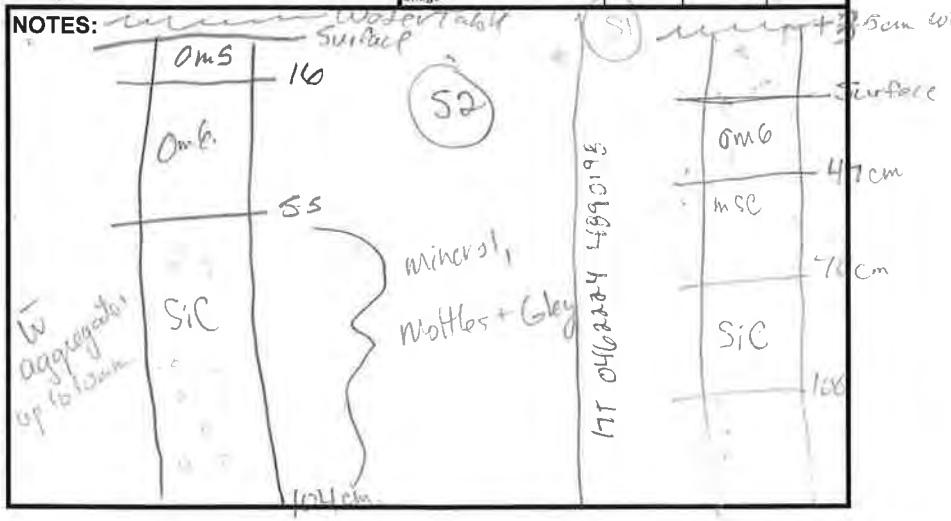
		1	2	3
Strata:	Texture	OmS	OmG	
	Depth	46cm	47	
Strata:	Texture	Omle	mSC	
	Depth	55cm	70cm	
Strata:	Texture	SiC	SiC	
	Depth	104	100	
Strata:	Texture			
	Depth			
Effective Texture		Om	Om	
Surface Stoniness		0	0	
Surface Rockiness		0	0	
Depth to:				
	Mottles	55cm	47	
	Gley	55cm	47	
	Bedrock	/	/	
	Water table	+20cm	+35cm	
	Carbonates	55cm	47cm	
Depth of Organics		55 cm	47	
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7	7	

Polygon: WET-023 (T45)

Tree Tally

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

NOTES:



Arrow * NWOD-020 * Oct. 26, 2011

Wetland Assessment CLH, KJW

6°C, 100% CC, light rain, Wind 3.

WET-023 WET-030 *

2 Communities (S1, S2)

S1: 4 forms > 25% cover:

h black ash, green ash

bs red osier

gc calico aster

ne reed canary grass, Carex sp.

Soils: Om6 47cm over m SC and SiC

Effective texture Om MR 7.

Site type: Palustrine (small portion isolated).

S2: 2 forms > 25% cover

h freeman's maple

ge calico aster > red raspberry

Soils: Om5, Om6 to 55cm over SiC.

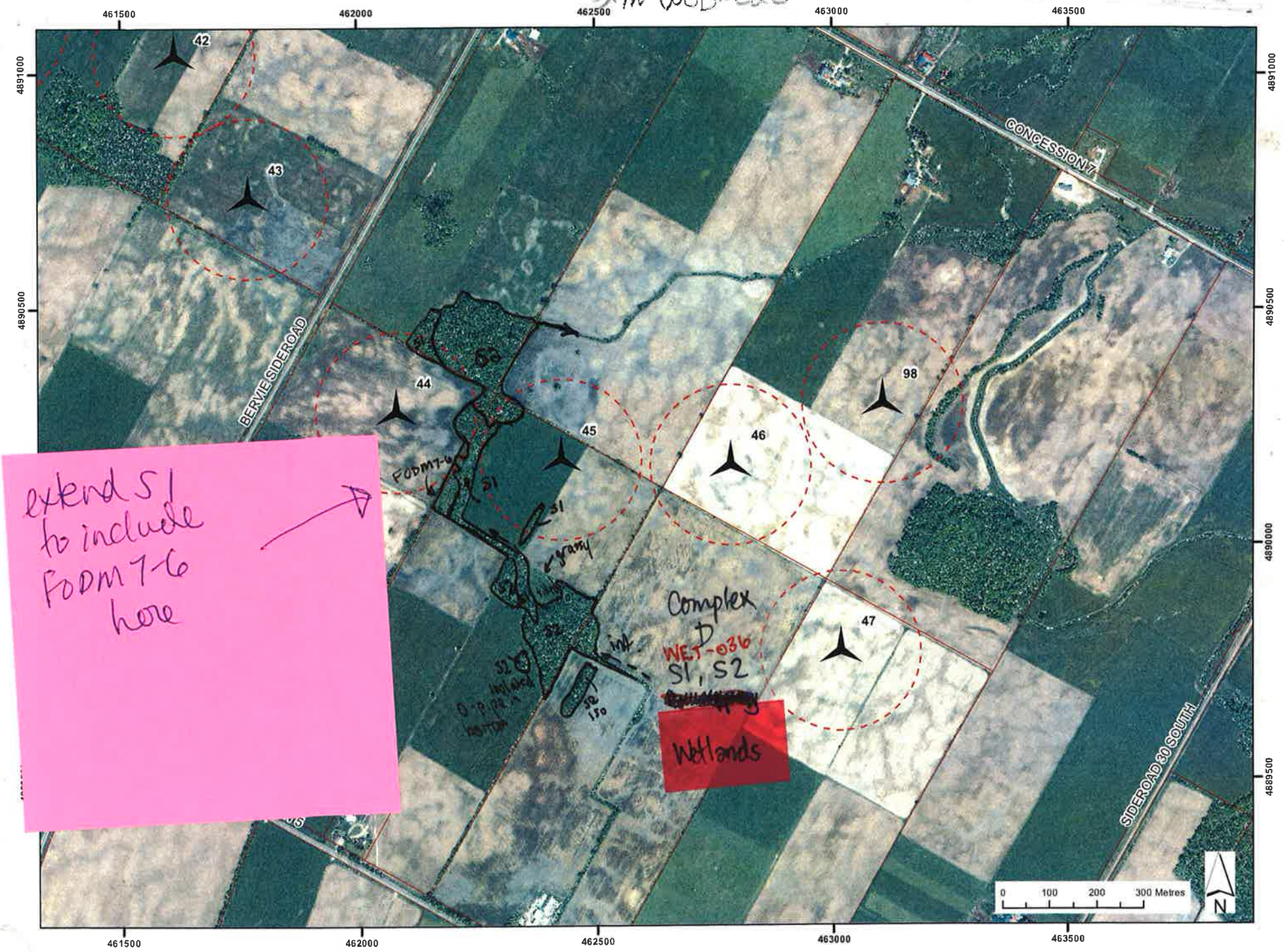
Effective texture Om MR 7.

Site Type: Palustrine (small portion isolated).

Open Water Type: no perm open water.

Fish habitat: Absent.

No. 392
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42
43
44
45
46
47
98
CONCESSION 7
BERVIE SIDEROAD
SIDEROAD 30 SOUTH
FODM7-6
S1
S2
Complex D
WET-036
S1, S2
Wetlands
extend S1 to include FODM7-6 here
0 100 200 300 Metres
N

INC.
WOD-020

T47, T98, 46, 45



Map centre: 44° 09' 43.1" N, 81° 27' 36.5" W

Map created: November 3, 2011

0 300 600 900 1,200 m

Scale: 1:20,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

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X WOD-020 X

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

Project Name: Armow Wind
Project #: 1275
Date: Oct 19/11
Observer(s): NGW, MEE

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-040	1	0		0462262 - 4890306	
	2	0		0462264 - 4890288	
	3	0		0462252 - 4890257	
	4	2		0462239 - 4890240	
	5	1		0462234 - 4890216	
	6	0		0462228 - 4890191	
	7	3		0462219 - 4890180	
	8	2 3		0462202 - 4890152	
	9	0		0462203 - 4890121	
	10	0		0462197 - 4890090	
WOD-041	1	1		0462382 - 4889781	
	2	0		0462379 - 4889743	
	3	1		0462373 - 4889806	
	4	0		0462360 - 4889826	
	5	0		0462353 - 4889864	
	6	0		0462346 - 4889884	
	7	0		0462335 - 4889891	
	8	1		0462322 4889920	
	9	0		0462315 4889942	
	10	0		0462318 - 4889954	
WOD-040 total snags	9				
WOD-040 snags/ha	18				
WOD-041 total snags	3				
WOD-041 snags/ha	6				
combined = total snags = 12 / (20 X 0.05) =				12 snags/ha	BMA-025

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:	Armov WF 1275
Polygon:	WET-023 (T45) IN WOD-020 *
UTM:	
Date:	Oct 26, 2011 **Time:** 9:00
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	American Crow	VO		***						
B	American Goldfinch	VO		**						
B	American Robin	VO		*						
B	Seagull sp.	OB	flying over	****						
B	Hairy Woodpecker	VO		*						
B	Brown Creeper	OB		*						
B	Black-capped Chickadee	OB		****						
B	Northern Harrier	OB	in field	*						
B	Kinglet sp.	OB		*						

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:	Armov WF 1275
Polygon:	WET-023 (T45)
UTM:	
Date:	Oct. 26, 2011 **Time:** 9:00
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
Rock Pile SNH-005	0462225/4810222	possible snake hibernacle
5 Sizzon from roads, trails: ASNH	photo 180-1225	Common red raspberry surrounding rocks w/5cm diameter approx 3x1.5m, 1m tall
Woodland pool	0462262/4810273	approx 20x20m
b Sizzon from roads: Generalized SNH	photo 180-1226	

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARMow WI 1875
Polygon:	T46, W00-020
UTM:	
Date:	Nov. 4/11 **Time:** 8:00 am
Surveyor(s):	NAM, CLH
Weather:	Temp: -1°C, Wind 0, C.C: 15%

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	Snow Bunting	X		1						
B	Am. Goldfinch	X		1						
B	Can. Goose	X		1						
B	Mallard	X		11						
B	Europ. Starling	X		////1						
B	Red-winged Bl.	X		////						
B	Am. Pipit	X		1						
B	Ring-billed Gull	✓		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:	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
- X 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
- X 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 + Tree Cavity	14T 402459 4896409	Tone reed maple in field. One large dead branch (shattered). Cavity at base of tree appears ~80 cm DBH

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Armow	
Polygon: WOD-021	(T108)
UTM:	
Date: Nov 4 2011	Time: 11:00
Surveyor(s): CLH NGM	
Weather: 1°C, wind 0, CC5%, No precip.	

Community Classification

Vegetation Type:	FODM5-8 Dry-Fresh Sugarmaple - 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 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	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	3	4	White Ash > Basswood >> Sugar Maple
2	Sub-canopy	3	4	Sugar Maple > White Elm > Black Ash > Sweet Cherry
3	Understorey	4/3	2	Black Cherry > Crataegus punctata > White Elm > Downy Hawthorn
4	Groundcover	0.7	2	Prickly Gooseberry > Aster lanceolatus > Helleborine > White Ash

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	O	> 50
Snags	O	< 10	O	10 - 24	A	25 - 50	R	> 50
Deadfall/Logs	O	< 10	O	10 - 24	A	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: Armow	
Polygon: WOD-021	
UTM:	
Date: Nov 4 2011	Time: 11:00
Surveyor(s): CLH, NGM	
Weather: 1°C, Wind 0, CC5%, 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	O			
Basswood	O				
Pin Cherry		O			
Common Red Raspberry				O	
Black Cherry		O	O	O	
Downy Hawthorn			O	O	
Crataegus punctata			O		
White Elm		O	O		
Sugar Maple	D	O			
Ave. Dun Beech		O			

Species	Layer 1	2	3	4	Sample
Red Raspberry				O	
Calico Aster				R	
Hellebosine				O	
Aster lanceolatus				O	
Prickly Gooseberry				O	
Black Raspberry				O	

Wildlife and Other Notes

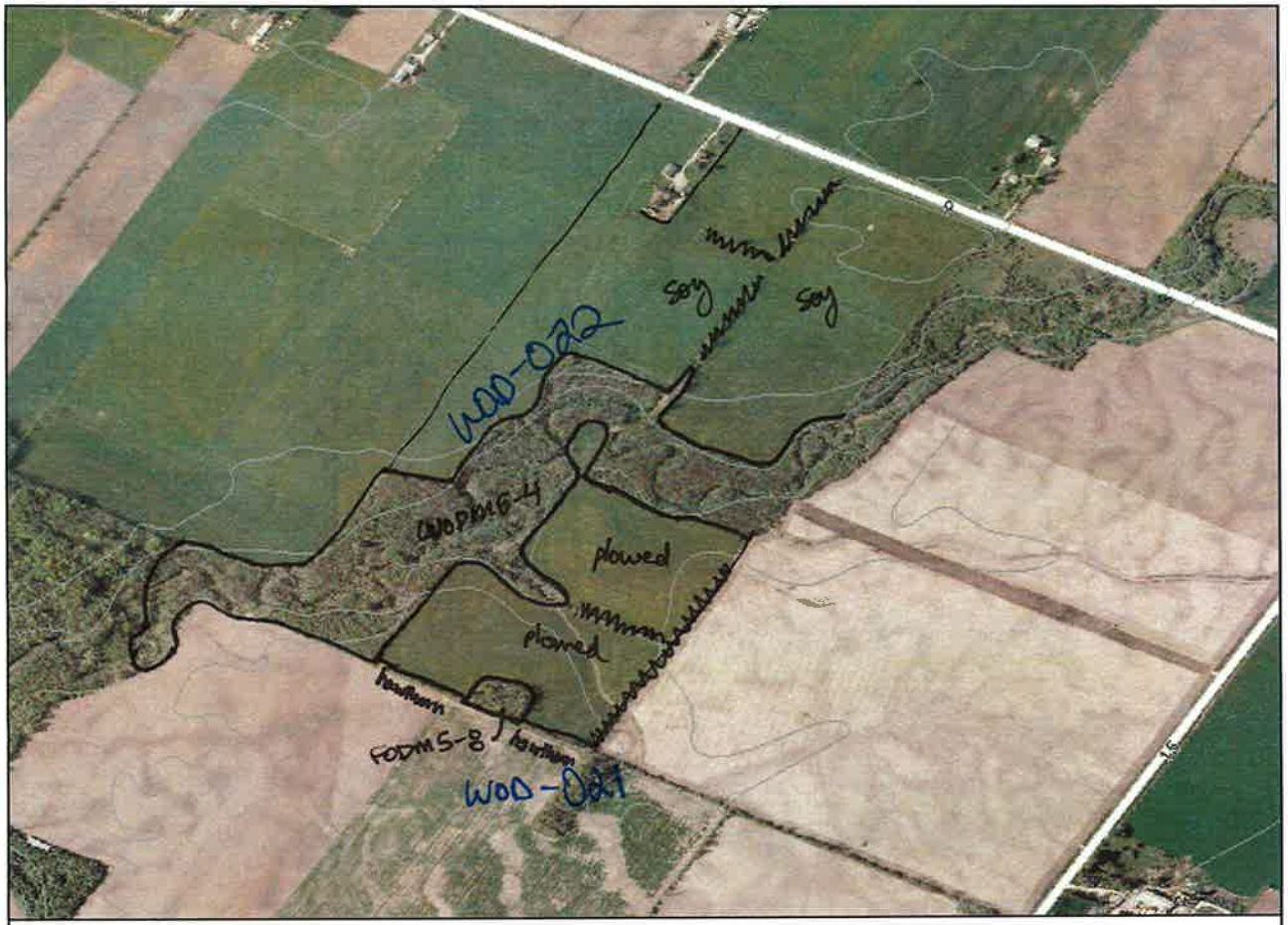
17T 0458782 4894665 acc 7m

Several large specimens of White Ash many snags and trees with cavities present, covered in woodpecker holes (sapsucker and other hairy downy). Some uprooted

WOD-021

Nov 4, 2011

T108



Map centre: 44° 12' 27.7" N, 81° 30' 49.9" W

Map created: November 3, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

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Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

IN WOD-021

Site:	ARMOW WF
Polygon:	WOD-21, 22 (T108) and associated wetlot (FODMS-8)
UTM:	
Date:	Nov. 4/11 Time: 9:30 am
Surveyor(s):	NGM, CLH
Weather:	Wind Calm, Temp: 0°. C.C: 0%

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

TY	Species	EV	Notes	#	TY	Species	EV	Notes	#
B	Great Blue Heron	X		1					
B	Black-capped ch.	X		11					
B	Am. crow	X		1					
B	Blue Jay	X		1					
B	Am. Robin	X		1111					
B	Am. Goldfinch	X		11					
B	Am. Tree Sparrow	X		1111					
B	Golden-crowned Kinglet	X		1					
B	Ruby-crowned Kinglet	X		1					
M	Raccoon tracks	X		1					
M	White-t. Deer	X		1					
B	Ruffed Grouse	X		1					
B	Red-tailed Hawk	X		1					
	Downy Woodpecker	X	FODMS-8	1					
	Sandhill Crane	X	FODMS-8	111					
	pileated WP holes	X	FODMS-8	~					

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:	As before
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
- 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
Stick nest	17T 0458760 4894679	Large stick nest in White Ash ↳ likely Red-tailed Hawk (FODMS-8)

Describe Valley (depth, geomorphological traits):

Additional Details: See WOD-022 for bat mist colony survey results but card (70 snap/1ha) BMA-024

NATURAL RESOURCE SOLUTIONS ING

Modified ELC Community Description

Page __ of __

Site: 1275 Armour	
Polygon: WOD - XiX	WOD-022
UTM:	
Date: Nov 11 2011	Time: 13:35
Surveyor(s): PWD NGM	
Weather:	

Community Classification

Vegetation Type:	FODM5-2 Dry-fresh Sugar Maple - Beech Dec. Forest.
X Inclusion:	SWD polygons on E side likely (need access)
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	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	
2	Sub-canopy	2	3	
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	A	25 - 50	O	> 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

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:

Sugar Maple
American Beech
Black Cherry
Hop Hornbeam
White Ash

- Some SWD areas on east side

Completed roadside

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

#WOD-022

Wetland Vegetation Communities

Project Name: Armow		**Project #:** 1275	
Observer(s): CLH			
Date: Jan 24 2012	**Time (24h):** Desktop		
Field #:	**Weather:** Precipitation: —	Temp (°C): —	
Map Code: S1	Wind Speed & Direction: —	Cloud %: —	
Wetland Type: Swamp	**Site Type:** P	**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	
ls	
gc	
ne	
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
	loam or sandy loam according to CANSIS.

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

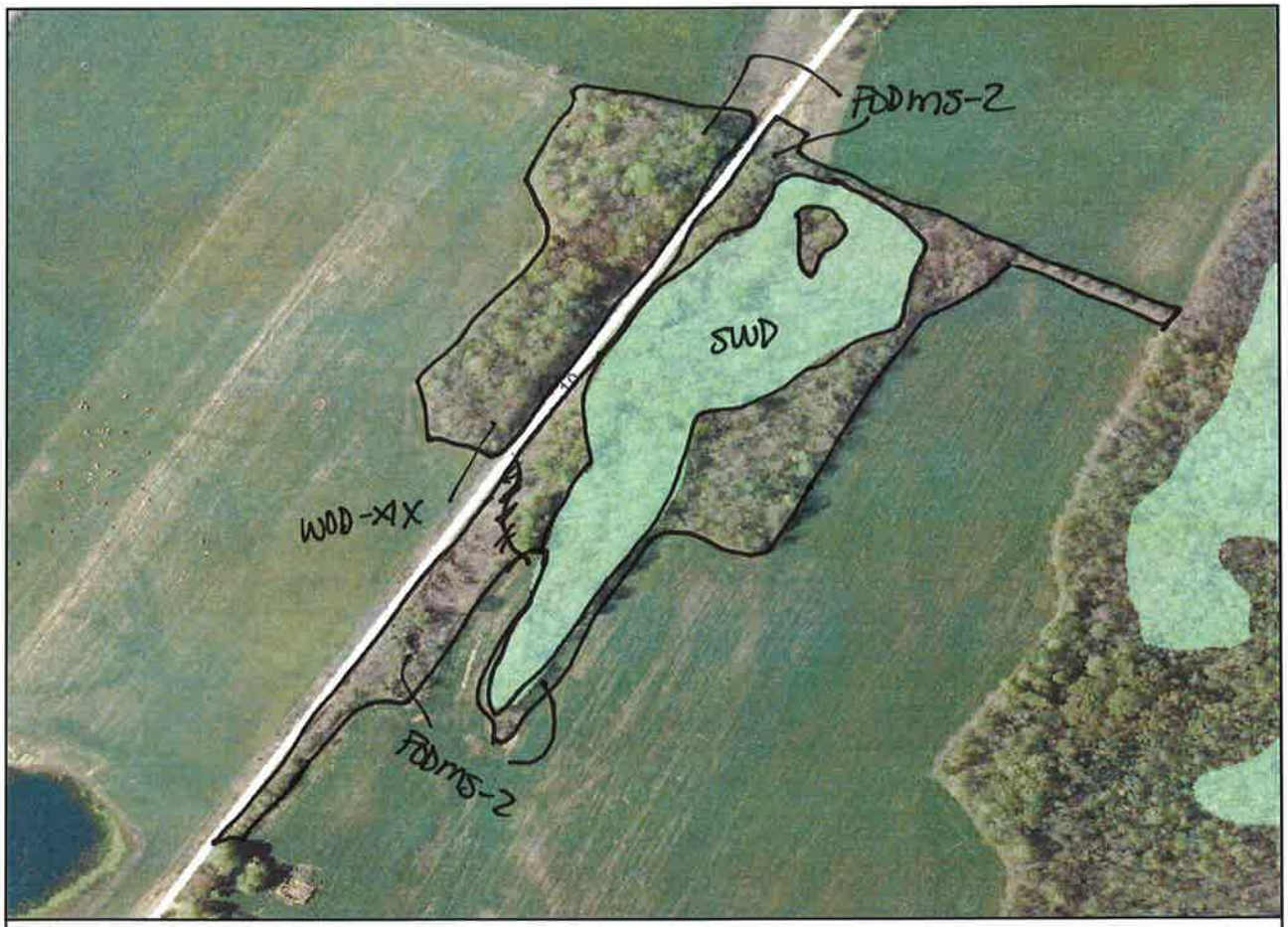
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

Desktop Assessment

WET-027
S1

Wetland was not visible from roadside

WOD-022(2)



Map centre: 44° 12' 26.8" N, 81° 31' 51.5" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:5,500

Legend

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

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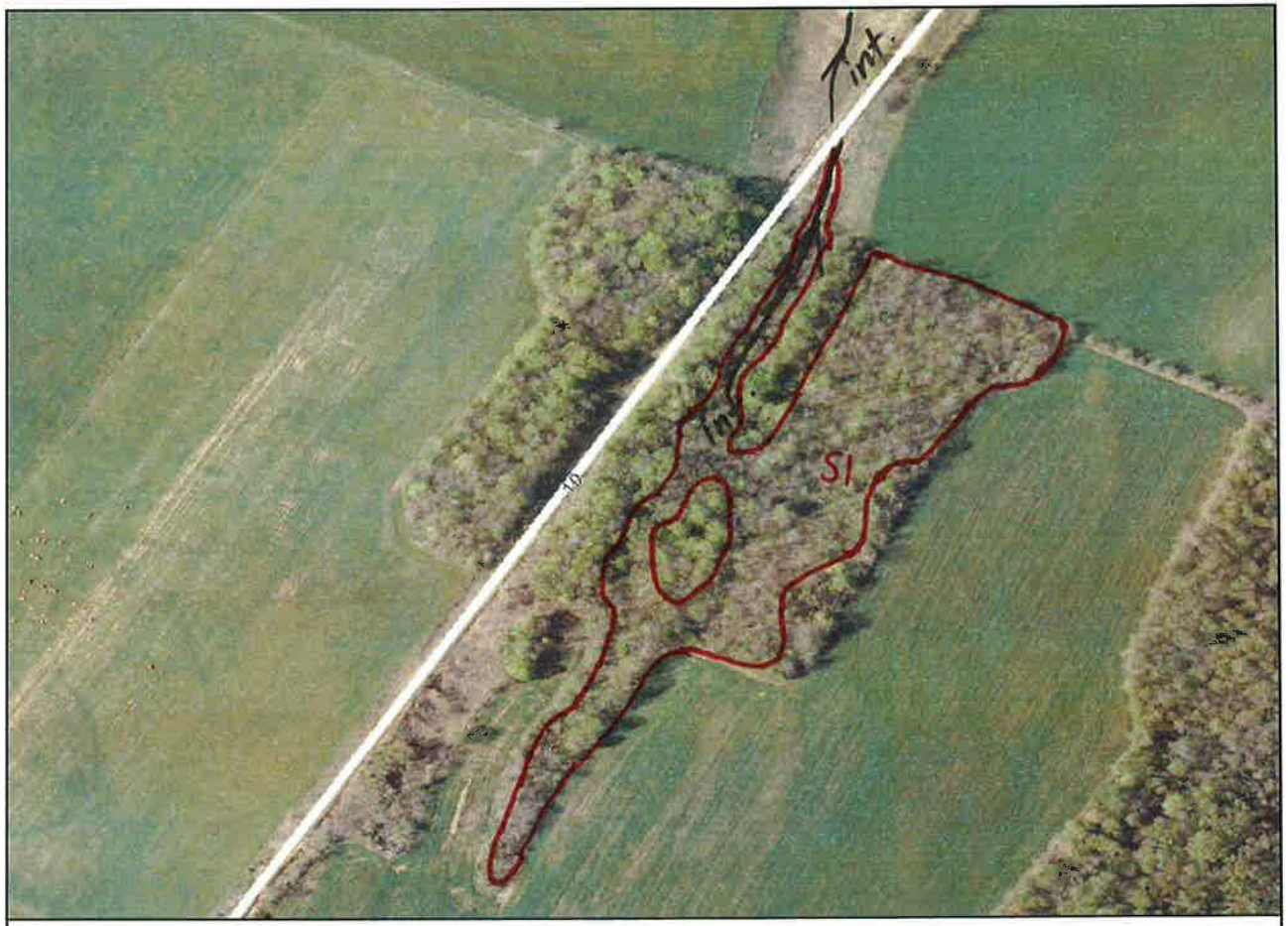
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WET-027 CLH Desktop

SR 10 / Conc 7

WOOD-022



Map centre: 44° 12' 29.2" N, 81° 31' 51.8" W

Map created: January 24, 2012

0 90 180 270 360 m

Scale: 1:4,800

Legend

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

WET-027
AA
SI

Wetland

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SI - SWDM2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	175 Arnold
Polygon:	WOD - X * WOD - 022 *
UTM:	
Date: Nov 10 2011	Time: 16:00
Surveyor(s):	PWD NGM
Weather:	

Community Classification

	Vegetation Type:	THDM2-11 Hawthorn Dec. Shrub Thicket
X	Inclusion: →	FODM3-1 Dry-Fresh Poplar Dec. Forest.
	Complex: →	FOCM4-1 Fresh Moist wh. Cedar Coniferous Forest

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	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	X	Shallow Water		Submerged		Lichen	X	Mixed
	Treed		Surficial Dep		Floating-Lvd		Bryophyte		
			Bedrock		Graminoid		Deciduous		

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy			
1	Canopy	2	1	Trembl Aspen >> Ash sp. >> White Willow
2	Sub-canopy	3	3	Crataegus sp. > Ash sp. > Malus sp.
3	Understorey	4	3	Crataegus sp.
4	Groundcover	5	4	Grass 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	R	25 - 50	N	> 50
Snags	R	< 10	R	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

WOD-022(4)



Map centre: 44° 12' 13.6" N, 81° 32' 00.3" W

Map created: December 29, 2011

0 50 100 150 200 m

Scale: 1:2,900

Legend

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

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WOD-022(3)



Map centre: 44° 12' 09.9" N, 81° 32' 13.3" W

Map created: December 29, 2011

0 50 100 150 200 m

Scale: 1:2,900

Legend

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

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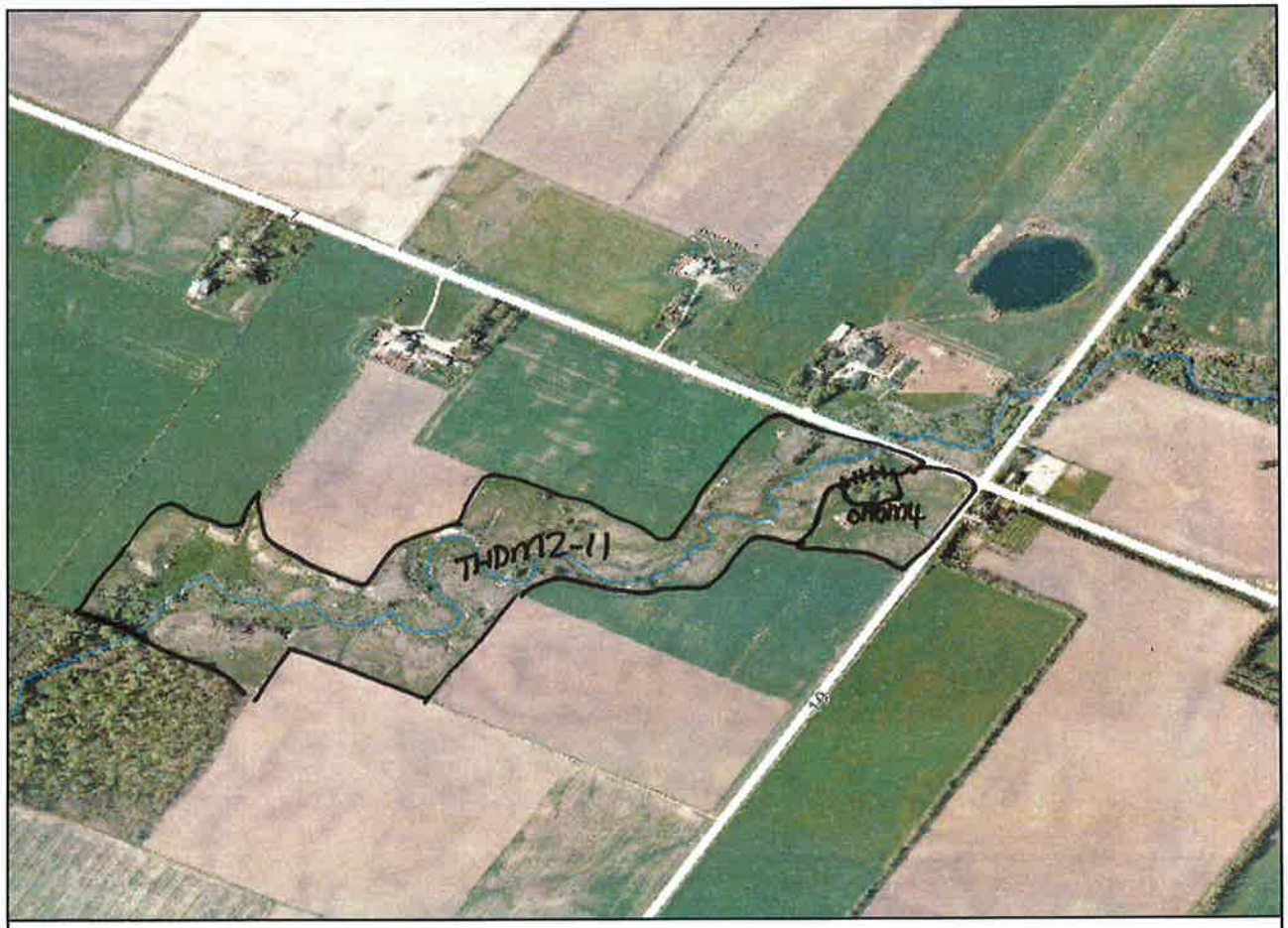
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SW corner Concession7 and Sideroad 10 WD-022



Map centre: 44° 12' 07.1" N, 81° 32' 29.4" 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

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Arnaud
Polygon:	WOD-T108 (WOD-034) ~~WOD-033~~
UTM:	
Date:	Nov 24 2011 Time: 12:25
Surveyor(s):	PWD
Weather:	Cloudy, Wind 2 ESE, 100% c.c 3°C

Community Classification

	Vegetation Type:	FODM7-2 Fresh-Moist Gr Ash-Hardwood Lowland Dec. Forest
X	Inclusion:	MAMM1-3 Reed Canary Graminoid Mineral Meadow Marsh
	Complex:	THDM2-11 Hawthorn Dec Shrub Thicket Type

WET-076

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.	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	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 >> White Elm > White Ash
2	Sub-canopy	3	4	Grea Ash >> White Elm > White Ash >> Black Cherry
3	Understorey	4	4	Hawthorn sp > Apple sp. > Green Ash > Red Osier Dogwood
4	Groundcover	5	3	Reed Canary > Red Rasp > Grass-leaf Goldenrod > 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	A	< 10	A	10 - 24	O	25 - 50	R	> 50
Snags	O	< 10	O	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	Species	Layer 1	2	3	4	Sample
White Elm	O	O				Centaurea maculosa				R	
Green Ash	O	A	O			Phalaris arundinacea				O	
Hawthorn sp.			A			Dactylis glomerata				O	
Malus sp			O			Daucus carota				O	
Rubus idaeus				O		Euthamia graminifolia				O	
Cornus stolonifera			O			Arctium sp.				R	
Prunus virginiana			O			Hypericum perforatum				O	
Prunus serotina		O				Cirsium vulgare				R	
Fraxinus americana	O	O	O			Solidago sp				O	
Vitis riparia				O		Phleum (Timothy)				R	

Wildlife and Other Notes

Canada Geese
Blue Jay

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WOD-022

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov. 24, 2011 **Time (24h):** 12:25

Field #: **Weather:** Precipitation: None Temp (°C): 3°C

Map Code: M1 Wind Speed & Direction: 2/SE Cloud %: 100

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

% Open Water: 0 Type I **ELC Code:** MAMM1-3

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	
ls	Red Raspberry 2%
gc	Grass-leaved Goldenrod 2%
(ne)	Reed Canary Grass 90%
be	
re	
ff	
f	
su	
m	

Soil type: FSCL Organic ☐ Mineral ☒

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

WET 028
M1

Modified ELC Community Description 09:14 Page 3 of 3 1275 Arrow

Nov. 4 2011 ALH, NGM.
1°C, Wind 0, CC5%, No precip. Turbine 108. ELC was redone on Nov. 24, soils stand.

Soils	1	2	3
Position:	3	6	
Aspect:	240°	—	
%	5	0	
Type:	Simple	Simple	
Class:		A	

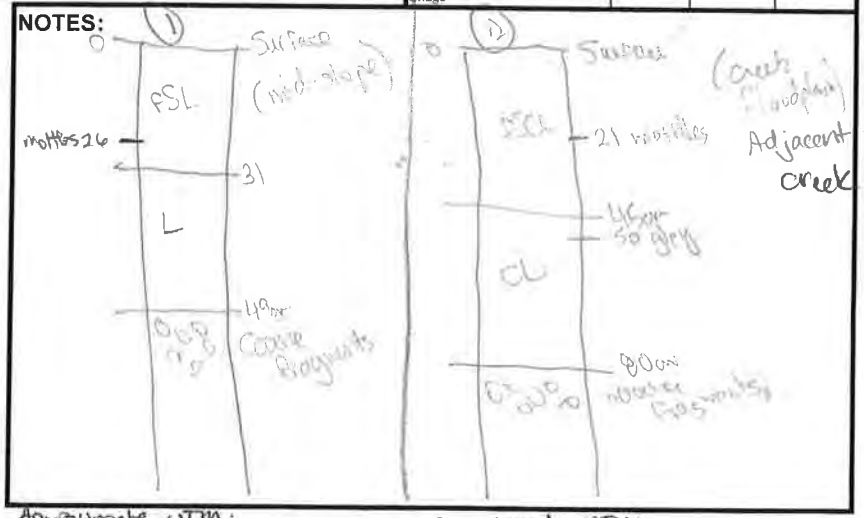
Strata: Texture	SL	FSL	
Depth	31cm	46cm	
Strata: Texture	L	CL	
Depth	49cm	80cm	
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	FSL	FSL	
Surface Stoniness	0	0	
Surface Rockiness	0	0	
Depth to:			
Mottles	26cm	21cm	
Gley	—	46cm	
Bedrock	—	—	
Water table	—	61cm	
Carbonates	49	80cm	
Depth of Organics	0.5cm	—	
Pore Size Disc #1	—	—	
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	5	6	

Polygon: W0D-022 (7108)

Tree Tally

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

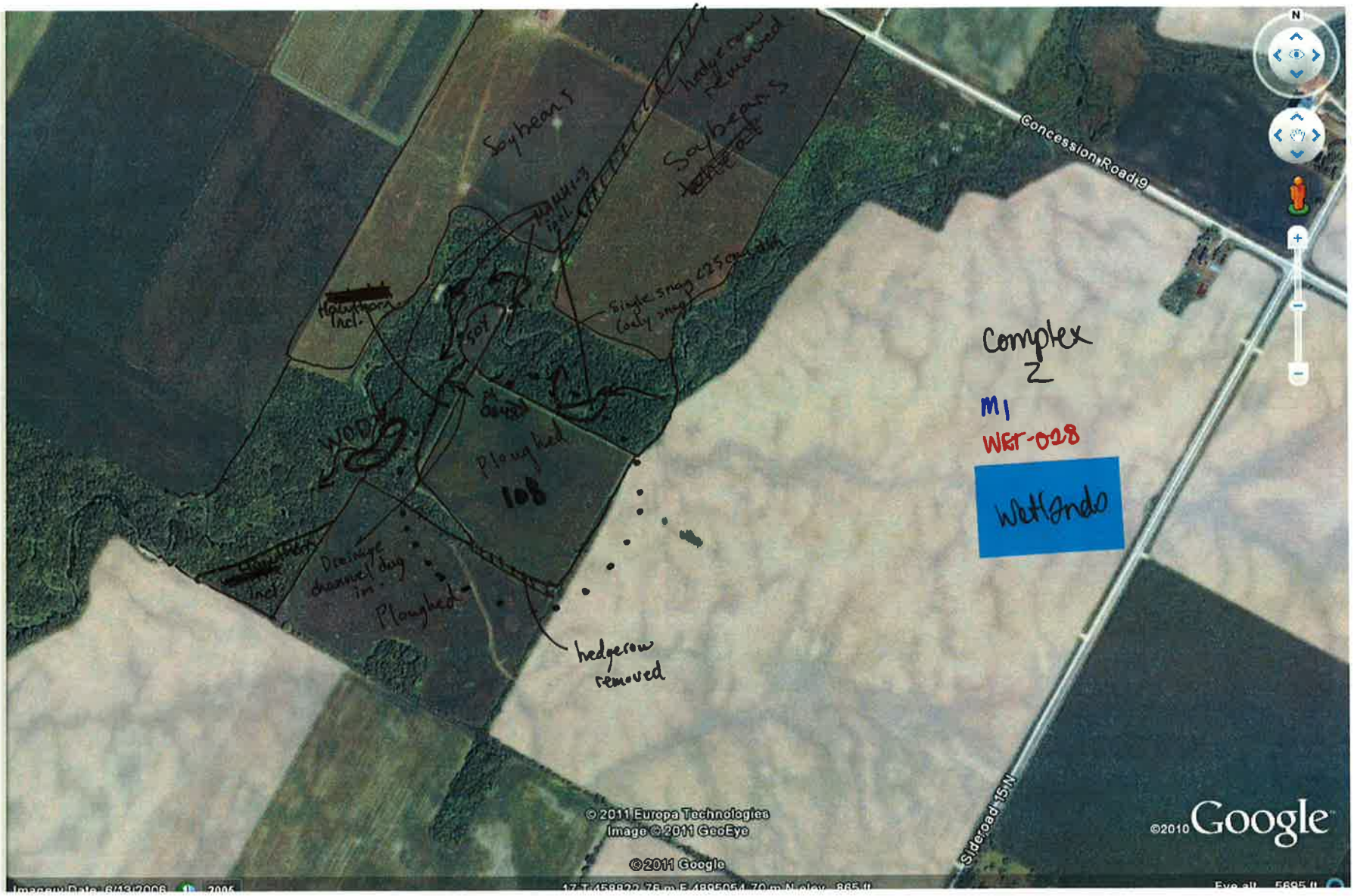
NOTES:



Approximate UTM:
17T 645024 4895069

Approximate UTM:
17T 498904 4895168

WSD-022


Soybeans
hedgerow removed
Soybeans
Concession Road 9
Complex 2
M1
WET-028
Wetland
Ploughed
108
Ploughed
hedgerow removed
Sideroad 15 N
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T108

WOD 022

Nov 4, 2011

T108



Map centre: 44° 12' 27.7" N, 81° 30' 49.9" W

Map created: November 3, 2011

0 200 400 600 800 m

Scale: 1:12,000

Legend

- Contours
- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

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Ontario

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Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARMBW WF
Polygon:	WCO-21, 22 (A108) and associated wetlat (FODMS-8)
UTM:	
Date:	Nov. 4/11 **Time:** 9:30 am
Surveyor(s):	NGM, CLH
Weather:	Wind calm, temp. 0°, C.C. 10%

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Great Blue Heron	X		1						
B	Black-capped Ch.	X		11						
B	Am. Crow	X		1						
B	Blue Jay	X		1						
B	Am. Pipit	X		HH						
B	Nam. Goldfinch	X		11						
B	Am. Tree Sparrow	X		HHT 1						
B	Golden-crowned Kinglet	X		2						
B	Bonaparte's Gull	X		1						
M	Raccoon (tracks)	X		1						
M	White-tailed Deer	X		2						
B	Ruffed Grouse	X		1						
B	Red-tailed Hawk	X		1						
	Downy Woodpecker	X	FODMS-8	1						
	Song Sparrow, Fox	X	FODMS-8	III						
	Pileated WP holes	X	FODMS-8	-						

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:	As before
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
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
Stick nest	17T 0458760 4899679	Large stick nest in White Ash, likely Red-tailed Hawk (FODMS-8)

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Agincourt
Polygon:	WDD-ix ~~WDD-022~~
UTM:	
Date:	Nov 10 2011 Time: 15:45
Surveyor(s):	PWD NGM
Weather:	

Community Classification

Vegetation Type:	THDM2-11 Hawthorn Dec. Shrub Thicket
Inclusion:	MEMM3 Dry-Fresh Mixed Meadow Ecosite.
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	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		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	Canopy	2	1	White Willow
2	Sub-canopy	3	3	Crataegus sp. >> Malus sp.
3	Understorey	4	2	Crataegus sp. > Red Osier Dogwood
4	Groundcover	5	4	Reed Canary Grass > Smooth Brome = Can. 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	O	< 10	O	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

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:	
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

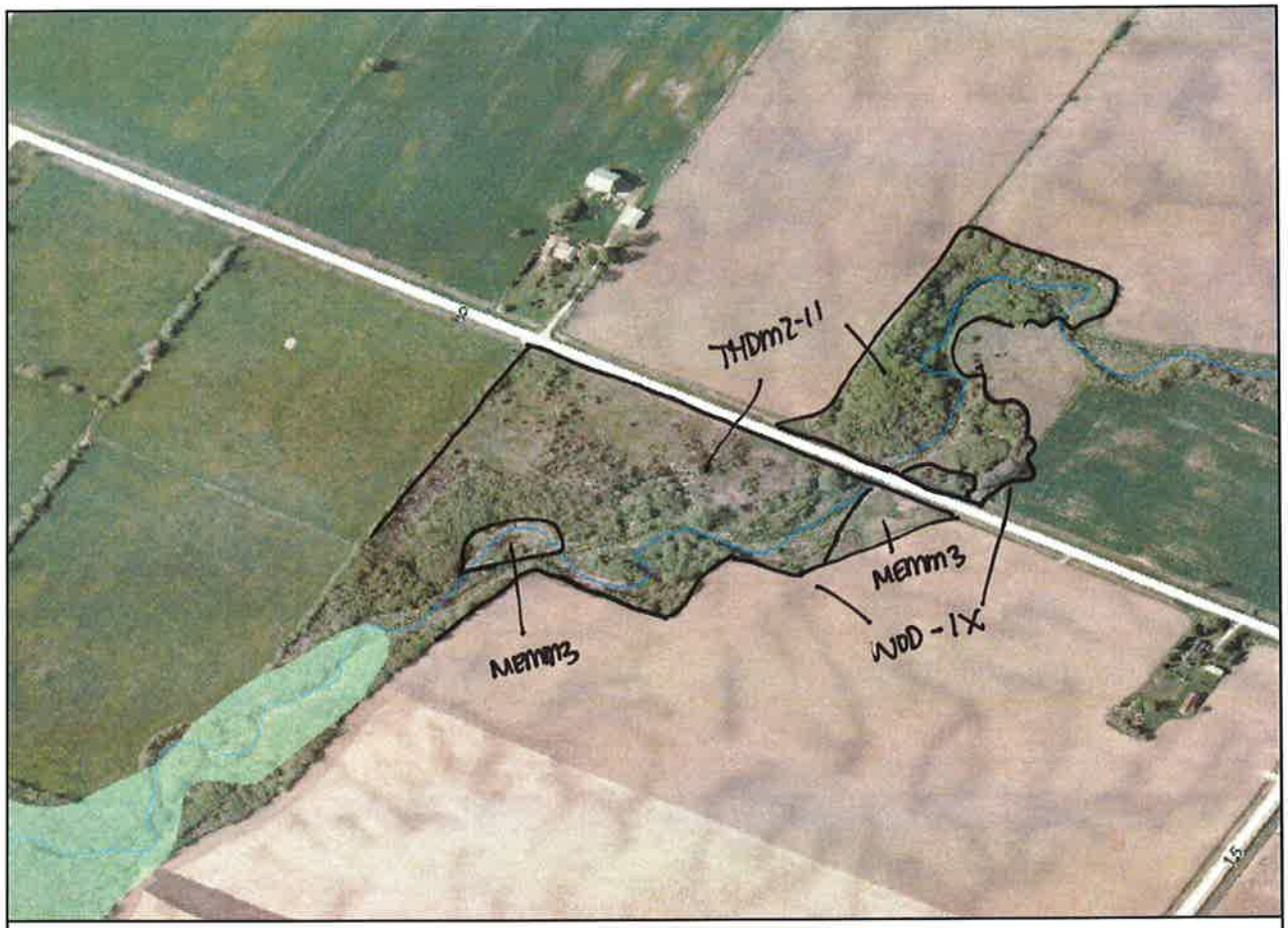
Species	Layer 1	2	3	4	Sample	Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

Completed by roadside

11/10/11 PWD /Nam

WOD-022 * completed roadside *



Map centre: 44° 12' 37.0" N, 81° 30' 27.5" W

Map created: December 29, 2011

0 100 200 300 400 m

Scale: 1:6,300

Legend

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

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NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	1275 Arrow 01/03/12
Polygon:	Number 034 (T33) PWOD-0004
UTM:	
Date: Oct 13, 2011	Time: 13:00
Surveyor(s):	PWD, KJW
Weather:	17°C, overcast, 100% cc, Wind 2/5, No rain

Community Classification

Vegetation Type:		W. Pine Plant. TAGM2
	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	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	E. White Pine >> White Ash
2	Sub-canopy	3	1	E. White Pine >> White Ash > White Elm
3	Understorey	4	1	White Ash > Red Rose > Hawthorn sp
4	Groundcover	6	2	Cn Goldenrod >> Red-osier >> Virginia creeper.

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	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	N	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 ___of___

PLANT SPECIES LIST

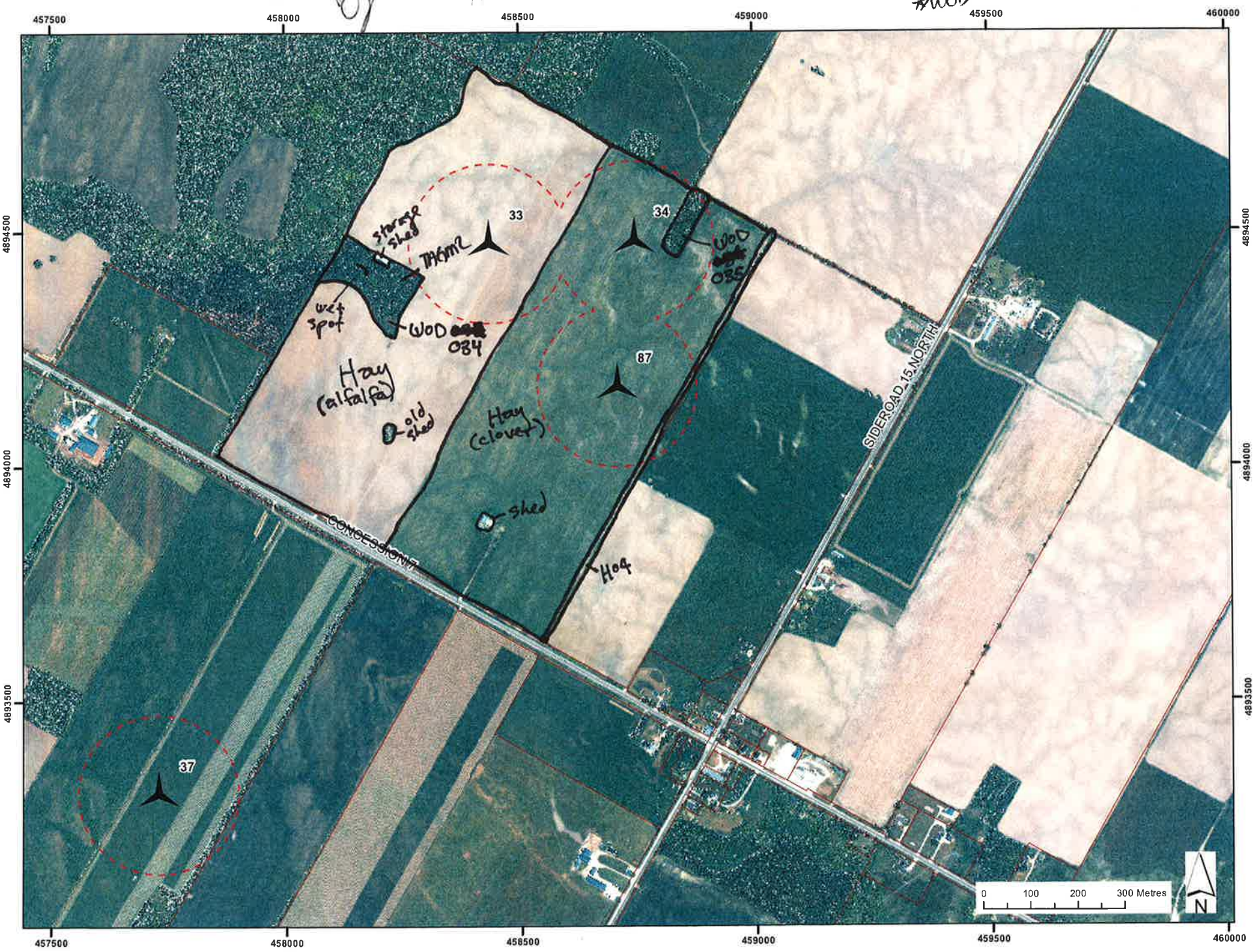
Site:	Armow 1775
Polygon:	100 034 *WOD-022*
UTM:	
Date:	Oct 13 2011
Time:	1:00
Surveyor(s):	KJO, PVD
Weather:	overcast 17°C, 100% CC, wind 2/5, no rain

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 White Pine	D	D			
Hawthorn spp.		O	O		
White Elm		O	O		
Common Red Raspberry			O	O	
Red Osier Dogwood			R		
White Ash	O	O	O	O	
Nannyberry			R		
Choke Cherry			R		

Species	Layer 1	2	3	4	Sample
Canada Goldenrod				O	
Flat-topped Goldenrod				O	
Heal-all				O	
Helliborine				O	
Common Dandelion				O	
New England Aster				O	
Heath Aster				O	
Downy Willowherb				O	
Spotted Knapweed				O	
Chicory				O	
Tufted Vetch				O	
Spotted Jewelweed				O	
orange-fruited Horse [illegible]				R	
Thyme-leaved Speedwell				O	
Wild Strawberry				O	


457500
458000
458500
459000
459500
460000
4894500
4894000
4893500
33
34
87
37
storage shed
THMR
wet spot
WOD 034
WOD 035
Hay (alfalfa)
old shed
Hay (clover)
shed
Hog
CONCESSION 7
SIDEROAD 15 NORTH
0 100 200 300 Metres
N

*WOD-022



WOD-022

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 0458823 4895028
WOD- "	6	0 —		17T 0458778 4895004
WOD- "	7	0 —		17T 0458765 4895015
WOD- "	8	••		17T 0458695 4894988
WOD- "	9	0 —	total=4	17T 0458658 4894986
WOD- "	10	0 —	snags/ha=8	17T 0458620 4894954
[redacted]	1			
WOD - FODMS-8	1	:	total=7	17T 0458782 4894665 acc 7m
WOD - FODMS-8	2	:	snags/ha=70	17T 0458760 4894688
[redacted]-024				
WOD - (T106)	1	•		17T 0468156 4896455
"	2	••		17T 0468181 4896450
"	3	0 —		17T 0468203 4896477
"	4	••		17T 0468177 4896485
"	5	0 —		17T 0468168 4896511

Mostly Haw thorn

T108 WOD-022

T108 WOD-021

T106

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:	175 Armour
Polygon:	WOD-034 ~~WOD-032~~
UTM:	
Date:	Oct 13, 2011 **Time:** 13:00
Surveyor(s):	KJW
Weather:	17 °C overcast 100% cc, Wind 2/5 No rain

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Canada Goose	OB		50						
B	N. Harrier	OB		1						
B	Black-capped Chickadee	OB		3						
B	Turkey Vulture	OB		4						

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)

SM-OB

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)
- X Plantation

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
- 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
Rock Pile	17T 0458285 4894403	172-1108 (photo) Edge of plantation
Log Pile	17T 0458283 4894405	172-1109 (photo) Edge of Plantation
Drive Shed	17T 0458227 4894430	Some shrubs present but generally
? No longer considered candidate habitat		

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	1275 Arrow
Polygon:	WOD-T108 WOD-034 & WOD-002
UTM:	
Date:	Nov 24, 2011 **Time:** 12:25
Surveyor(s):	PWD
Weather:	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Canada Goose	X	Flock	8						
B	Blue Jay	SH		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
Snag	17T 458902 4895033	Mostly bare snag, 30cm dbh, some bark

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Armow WF WET-013
Polygon:	WOD-001 *WOD-023*
UTM:	17T 0465491 4893490
Date:	Dec. 2/11 Time: 15:15
Surveyor(s):	AMD, JRW
Weather:	Wind 3 from W, 90% cc, 1°C, overcast

Community Classification

Vegetation Type:	G. Ash/Mineral Deciid. 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	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	4	green ash > freeman's maple > wh. elm
2	Sub-canopy	2	4	green ash > freeman's maple > wh. elm
3	Understorey	3	3	green ash > freeman's maple > wild ri. in
4	Groundcover	5-7	3	goldenrod + tasterspp > 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	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

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			R			avens sp				R	
wild raisin			O	O		curled dock				R	
red osier dogwood			·	D		reed canary grass				O	
freeman's maple	O	O	O			Spinulose wood fern				R	
green ash	A	A	A	O		goldenrod spp.				O	
white ash			R			aster spp.				O	
wh. elderberry			O			bitter nightshade				R	
riverbank grape			O			sensitive fern				R	
swamp red currant				R		wood strawberry				R	
rubus idaeus				O		herb robert				R	
white elm	R	R				com. burdock				R	
yellow birch	R										

Wildlife and Other Notes

- recent snow covering groundcover
- photo 1128

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): AMD

Date: Dec 2/11 **Time (24h):** 15:50

Field #: WOD-023 **Weather:** Precipitation: None Temp (°C): 1°C

Map Code: S1 Wind Speed & Direction: 3/W Cloud %: 90

Wetland Type: Swamp **Site Type:** P **Dominant Form:** deciduous trees (h)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	green ash, freeman's maple, white elm yellow birch
c	
dc,dh,ds	
ts	red osier dogwood, wild raisin, hawthorn sp
ls	
gc	sensitive fern, goldenrod sp., aster sp., curled dock, herb robert
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: LSC 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-024
S1

See notes over →

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	S		
Aspect:	80		
%	0.5		
Type:	S		
Class:	A		

~~WOD-023/WET-015~~

Polygon: WOD-001

Strata: Texture		fSC		
Depth		28-52		
Strata: Texture		SC		
Depth		52-88		
Strata: Texture				
Depth				
Strata: Texture				
Depth				
Effective Texture		fSC		
Surface Stoniness		—		
Surface Rockiness		—		
Depth to:				
Mottles		1 (measured from below organics)		
Gley		—		
Bedrock		—		
Water table		0 (surface)		
Carbonates		4 (measured from below organics)		
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

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

(T29) in WOD-023

Wetland Vegetation Communities

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

Observer(s): PWD, KJW

Date: Oct. 13, 2011 **Time (24h):** 09:45

Field #: WET 015 **Weather:** Precipitation: None Temp (°C): 14

Map Code: S1 Wind Speed & Direction: 3/S Cloud %: 100

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

% Open Water: 0% **ELC Code:** SWDM2-2

Photos: 172 - 1105

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h)	Green Ash, Freeman's Maple, Red Maple, white elm
c	
dc,dh,ds	
ts	
ls	Common red raspberry
gc	~~Hop Sedge~~ Loosestrife sp, False Nettle, bittersweet nightshade
ne	Blue Flag Iris, hop sedge, reed canary grass
be	Water Plantain
re	
ff	
f	
su	
m	

Soil type: SiCL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
None	Leopard Frog Blue Jay American Robin

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-024
S1
Cold data sheet - prior to complete land access)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Armour 1275	IN WOD -023
Polygon: WET 015	
UTM:	
Date: Oct 13, 2011	Time: 9:45
Surveyor(s): KJW PWD	
Weather: Overcast, 14°C, 95% CC, wind 2/5	

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
Freeman's Maple	O	O	O	O	
Green Ash	O	O	O	O	
Red Maple	O	O	O	O	
White Elm		O	O	O	
Common Red Raspberry			O	O	
Riverbank Grape			O	O	

Species	Layer 1	2	3	4	Sample
False Nettle				O	
Calico Aster				O	
Loosestrife sp.				O	
Hop Sedge				O	
Blue Flag Iris				O	
Bittersweet Nightshade				O	
Violet sp.				O	
Common Burdock				O	
Rough Avens				O	
Reed Canary Grass				O	
Water Plantain					

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

IN WOD-023

Site:	Annan
Polygon:	INOD-023
UTM:	
Date:	Oct 13/11
Time:	09:45
Surveyor(s):	PWD, KJW
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:	6		
Aspect:	340°		
%	2-5%		
Type:	S		
Class:	C		

Strata: Texture	/			
Depth	[illegible]			
Strata: Texture	Oh			
Depth	32			
Strata: Texture	SiCL			
Depth	74			
Strata: Texture	C			
Depth	120			
Effective Texture	SiCL			
Surface Stoniness	Ø			
Surface Rockiness	Ø			
Depth to:				
Mottles	48			
Gley	74			
Bedrock	N/A			
Water table	?			
Carbonates	120			
Depth of Organics	32			
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime	H to Cat			

5
6

Polygon: WET015

Tree Tally

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

NOTES:



- small snail/mollusc shells throughout horizon

- Strong fizz 32 through to 120 cm.

Oct 13, 2011 — 1275 Arrow
09:45 — PWD, KJW

Wetland Evaluation

15°C, overcast, 100% c.c., Wind 3/S, no rain

WET 015

Site Type: Palustrine

Communities: 1 (See field map)

S1: h Green Ash (dominant form, deciduous trees)

Soils: SiCL / MR 4/6 cm

Open Water Type: 0%

Fish Habitat: Absent

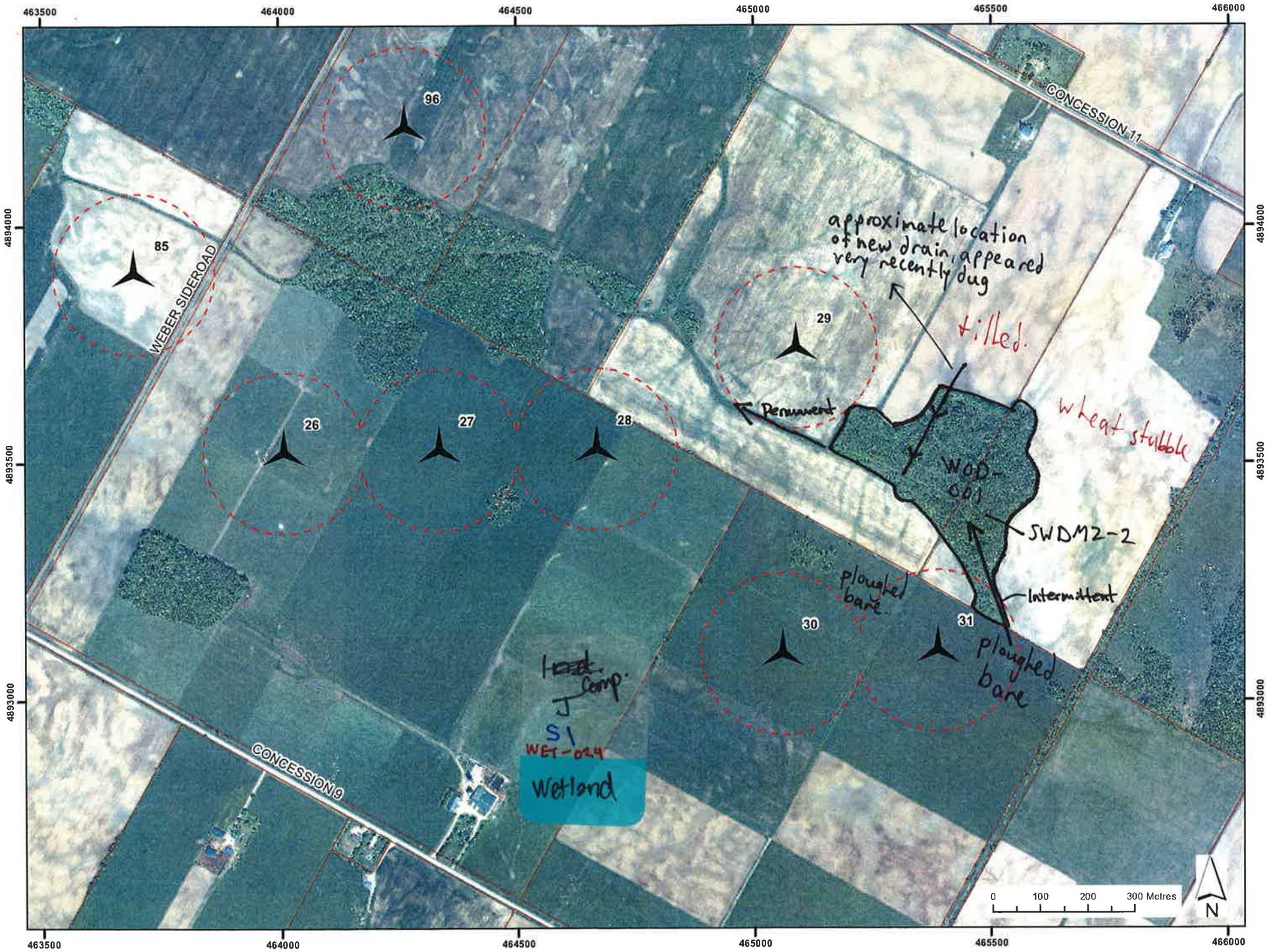
Rare Species Observed: None

Surrounding Land Use (1.5km)

~~✗~~ 11 WOD-023 ✗

~~*~~ sampled upon/at property access

WOD-023


463500
464000
464500
465000
465500
466000
4894000
4893500
4893000
CONCESSION 11
CONCESSION 9
WEBER SIDEROAD
96
85
26
27
28
29
30
31
approximate location of new drain, appeared very recently dug
tilled.
wheat stubble
Permanent
WOD-001
SWDM2-2
Intermittent
ploughed bare
ploughed bare
Comp. J
S1
WET-024
Wetland
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 WF

Project #: 1275

Date: Dec 2, 2011

Observer(s): JRW, AMD

Woodland ID (WOD-~~0001~~) ~~WOD-0036~~ WET-015

Plot Number	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	17T UTM	Comments
Plot 1	0		0465568 4893645	
Plot 2	1		0465543 4893597	
Plot 3	0		0465533 4893529	
Plot 4	1		0465523 4893499	
Plot 5	0		0465533 4893576	
Plot 6	0		0463464 4893468	*GPS signal is
Plot 7	0		0465469 4893469	weak ↓
Plot 8	0		0465485 4893408	
Plot 9			~~0465473 4893~~	
Plot ~~20~~ 9	0		0465473 4893406	
Plot ~~11~~ 10	1		0465493 4893392	
Plot 12				
Plot 13				
Plot 14	Total Snags	3		
Plot 15	Snags/ha	6		
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: _____

Woodland ID (WOD-_____)

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:	Arrow WR
Polygon:	WOD-001 *WOD-023 */WET-015?
UTM:	17T 0465491 4993490
Date:	Dec 2, 2011 **Time:** 14:30
Surveyor(s):	JRW AMD
Weather:	1°C, wind 3 @ SW, C.C = 90%

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	? VO		3						
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

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. MWOD-023

Page __ of __

Site:	
Polygon: WET 015	
UTM:	
Date: Oct 13 2011	**Time:** 9:45
Surveyor(s): KSW MWD	
Weather: overcast 14°C 12 cc [illegible] 25	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
H	Leopard Frog	SO		*						
B	Red-breasted Nuthatch	SO		*						
B	Northern Woodpecker	SM		**						
H	Spring Peeper	VO		**						
B	American Crow	VO		***						
B	European Starling	VO		>30						
B	Hairy Woodpecker	VO		*						
B	Blue Jay	VO		***						
B	American Robin	VO		**						

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: WET 015	
UTM:	
Date: Oct 13 2011	**Time:** 9:45
Surveyor(s): KSW MWD	
Weather: overcast, 14°C 12 cc wind 2/5	

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)

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	0765357/4893507 11PG 11 04	>60cm DBH trembling aspen, chez & large woodpecker holes, dead
D not in	Swamp (nearby)	

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Arnow
Polygon:	WOD-024 (T30)
UTM:	0465106 4893325
Date:	Oct. 13, 2011 Time: 09:45
Surveyor(s):	PWD, KJW
Weather:	15°C, overcast, 100% c c., Wind 3/S, no precipitation

Community Classification

Vegetation Type:	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.	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	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	3	Green Ash > Red Maple
2	Sub-canopy	3	1	Green Ash
3	Understorey	–	0	—
4	Groundcover	6	4	Reed Canary = Smooth Brome ≫ C. Burdock = Teasel

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	A	25 - 50	O	> 50
Snags	N	< 10	N	10 - 24	N	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

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
Green Ash	D	O			
Red Maple	O				
Reed Canary(Grass				A	
Smooth Brome				A	
Teasel				R	
Dandelion				R	
Com. Burdock				R	

Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

No wildlife observed.

Open understory suggests grazing or logging.

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

AWD-024

Wetland Vegetation Communities

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

Observer(s): PWD, KJW

Date: Oct. 13, 2011 **Time (24h):** 09:45

Field #: **Weather:** Precipitation: None Temp (°C): 15

Map Code: WET 016 Wind Speed & Direction: 3/S Cloud %:

Wetland Type: Swamp **Site Type:** IS **Dominant Form:** Treed. (S,N)

% Open Water: 0% **ELC Code:** SWDM2-2

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash 75%, red maple
c	
dc,dh,ds	
ts	
ls	
(gc)	Smooth brome 40%,
(ne)	Reed Canary Grass 40%
be	
re	
ff	
f	
su	
m	

Soil type: S;CL Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

None Observed

SAR observations must also include a specific UTM location.

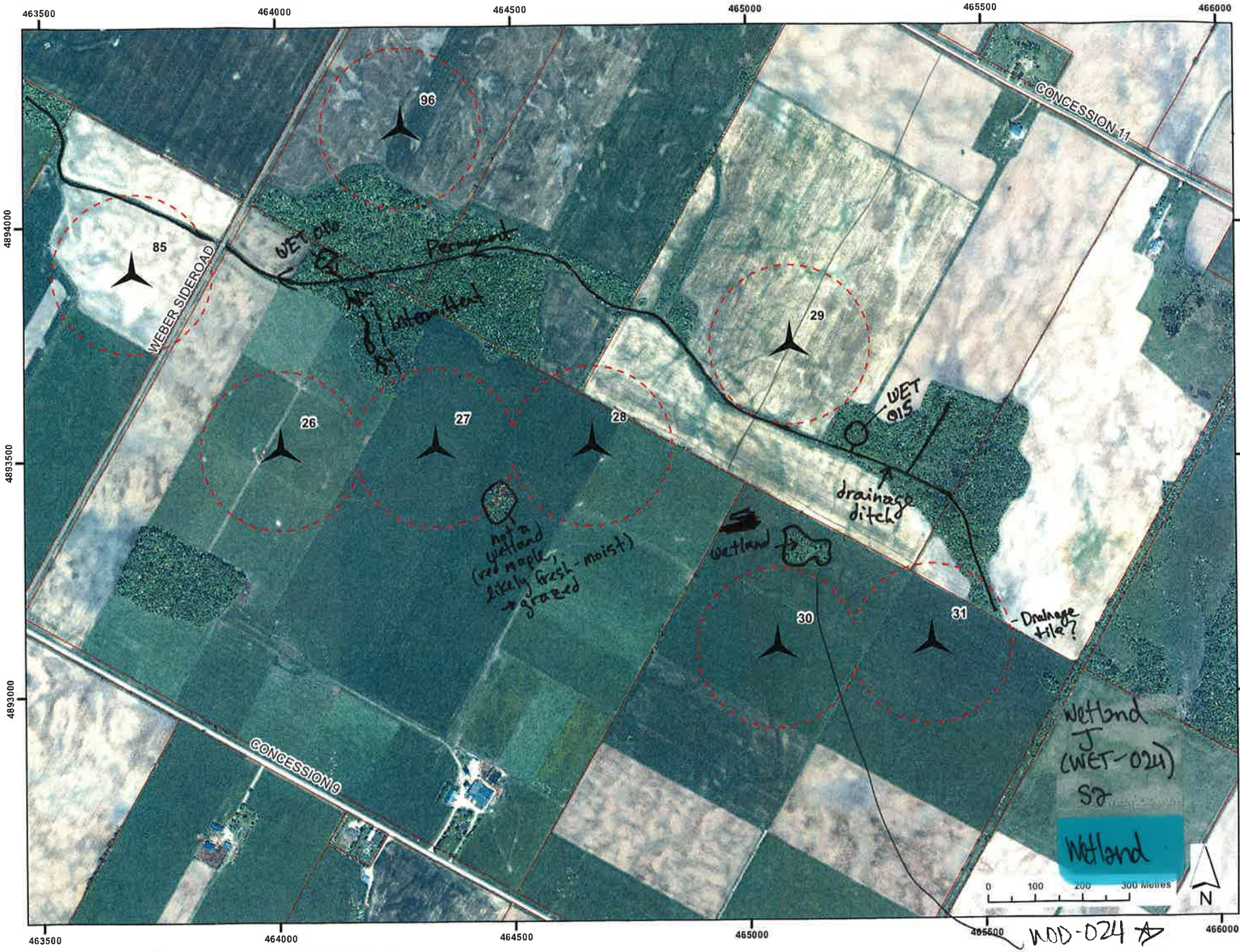
Forms: **h**=deciduous trees; **c**=coniferous trees; **dh, dc, ds**=dead trees/shrubs; **ts**=tall shrubs; **ls**=low shrubs; **gc**=ground cover; **ne**=narrow emergents; **be**=broad emergents; **f**=floating plants; **ff**=free-floating plants; **su**=submerged plants; **m**=mosses

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

WET-024
S2


463500
464000
464500
465000
465500
466000
4894000
4893500
4893000
CONCESSION 11
WEBER SIDEROAD
CONCESSION 9
96
85
29
26
27
28
30
31
WET 016
Permanent
Intermittent
drainage ditch
Not a wetland (red maple, likely fresh - moist) → grazed
wetland
- Drainage tile?
Wetland J (WET-024) S7
Wetland
0 100 200 300 Metres
N
WOD-024

WOD-024

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

Project Name: Armow WF
Project #: 1287
Date: Oct 5, 2011
Observer(s): SAG, MEF

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-024	1	1		0465085 4893335
	2	0		0465079 4893342
	3	1		0465106 4893333
	4	0		0465102 4893330
WOD-024 total snags 3	5	1		0465092 4893308
WOD-024 snags/ha 6	6	0		0465098 4893300
	7	0		0465109 4893305
	8	0		0465116 4893308
	9	0		0465124 4893300
	10	0		0465149 4893298
WOD-025	1	0		0464480 4893449
	2	0		0464471 4893445
	3	0		0464457 4893427
WOD-025 total snags 2	4	0		0464466 4893417
WOD-025 snags/ha 4	5	0		0464483 4893422
	6	2		0464496 4893427
	7	0		0464485 4893435
	8	0		0464490 4893349
	9	0		0464485 4893389
	10	0		0464460 4893385
WOD-027	1	0		0463384 4892013
	2	0		0463386 4892024
	3	0		0463394 4892038
WOD-027 total snags 1	4	0		0463385 4892055
WOD-027 snags/ha 2	5	1		0463395 4892085
	6	0		0463403 4892100
	7	0		0463405 4892065
	8	0		0463411 4892047
	9	0		0463433 4892052
	10	0		0463446 4892045
Oct 6, 2011 WOD-028	1	2		0458655 4890443
	2	0		0458659 4890448
	3	1		0458635 4890453
	4	3		0458639 4890438
WOD-028 total snags 14	5	1		0458663 4890488
WOD-028 snags/ha 28	6	5		0458620 4890510
	7	1		0458595 4890460
	8	1		0458539 4890436
	9	0		0458542 4890483
	10	0		0458570 4890534

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

Site:	WOD-025 (T27)
Polygon:	A
UTM:	0464473 4893448
Date:	Oct 5/11 Time: 1:50 pm
Surveyor(s):	SHG, MEE
Weather:	temp: 20°C, %o.c.: 0%, precip: none, W: 4

Community Classification

Vegetation Type:	FODM4-2
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	X 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	n/a	0	n/a
1	Canopy	2	4	white ash >> red maple -> aspen > elm
2	Sub-canopy	3	1	hawthorne > white ash
3	Understorey	4-5	0	n/a
4	Groundcover	6-7	3	grass sp >> dandilion > teasle > plaintain

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	O	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	A	< 10	A	10 - 24	O	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: 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	-			
white ash	D	A	-	-	
trembling aspen	A	-	-		
American Elm	O	-	-		
willow sp.	R	-	-	-	
hawthorne	-	-	A	-	
grass sp	-	-	-	A	
teasle	-	-	-	O	
plaintain	-	-	-	O	
dandilion	-	-	-	O	

Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

- old cow patties present within woodlot

m WOD-025

Turbines 29, 30, 31



(WOD-025)

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrow WF
Project #: 1257
Date: Oct 5, 2011
Observer(s): SAG, MEE

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-024	1	1		0465085 4893335
~~WOD-025~~	2	0		0465079 4893342
	3	1		0465106 4893333
	4	0		0465102 4893330
WOD-024 total snags 3	5	1		0465097 4893308
WOD-024 snags/ha 6	6	0		0465098 4893300
	7	0		0465109 4893305
	8	0		0465116 4893308
	9	0		0465124 4893300
	10	0		0465149 4893298
WOD-025	1	0		0464480 4893449
	2	0		0464475 4893445
	3	0		0464457 4893427
WOD-025 total snags 2	4	0		0464466 4893417
WOD-025 snags/ha 4	5	0		0464483 4893422
	6	2		0464496 4893427
	7	0		0464485 4893435
	8	0		0464490 4893349
	9	0		0464485 4893389
	10	0		0464460 4893385
WOD-027	1	0		0463384 4892013
	2	0		0463386 4892024
	3	0		0463394 4892038
WOD-027 total snags 1	4	0		0463385 4892055
WOD-027 snags/ha 2	5	1		0463395 4892085
	6	0		0463403 4892100
	7	0		0463405 4892065
	8	0		0463411 4892041
	9	0		0463433 4892052
	10	0		0463446 4892045
Oct 6, 2011 WOD-028	1	2		0458655 4890443
	2	0		0458659 4890448
	3	1		0458635 4890453
WOD-028 total snags 14	4	3		0458639 4890438
WOD-028 snags/ha 28	5	1		0458663 4890488
	6	5		0458620 4890510
	7	1		0458595 4890460
	8	1		0458539 4890436
	9	0		0458542 4890483
	10	0		0458570 4890534

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.

D(WOD025)

Site: WodN-025	
Polygon: A	
UTM: 0464473 4893548	
Date: Oct 5, 2011	Time: 13:10
Surveyor(s): SAG MEE	
Weather: W-S temp-20 vis-0 precip-none	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Horned lark	OB		*						
B	killdeer	VO		*						
B	Yellow Rumped	OB		*						

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
- [ ] 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:	WOD-027 (189) ~~WOD-137~~
Polygon:	A
UTM:	0463441489246
Date:	Oct. 05/11 Time: 5:15pm
Surveyor(s):	SAG, MEE
Weather:	temp: 20°C, %c.c: 0%, precip: none, W=2

Community Classification

Vegetation Type:	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 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	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	n/a	n/a	
1	Canopy	2	2	sugar maple > white ash > ironwood
2	Sub-canopy	3	2	sugar maple > white ash > ironwood
3	Understorey	4-4	3	black cherry > white ash > ironwood > elderberry
4	Groundcover	6-7	4	aster sp. > black cherry > blue cohosh > 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	N	> 50
Snags	O	< 10	R	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	A	< 10	A	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:	
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	A	A	A	A	
sugar maple	D	A	A	A	
elm American	R	R	—		
black cherry	—	O	A	A	
ironwood	O	O	—		
~~cherry, black~~	K				
elderberry	—	—	O	—	
hawthorne	—	—	A	—	
alternative leaved dogwood	—	—	A	—	

Species	Layer 1	2	3	4	Sample
aster sp.	—	—	—	A	
jewelweed	—	—	—	A	
bittersweet nightshade	—	—	—	A	A
dogbain	—	—	—	O	
herb Robert	—	—	—	O	
violet sp.	—	—	—	O	
agrimony	—	—	—	O	
ribens sp.	—	—	—	O	
fern sp.	—	—	—	O	
blue cohosh	—	—	—	A	
grass sp.	—	—	—	O	
barren raspberry	—	—	—	A	
Canada nettle	—	—	—	A	
strawberry	—	—	—	O	
goldenrod	—	—	—	A	
rose twisted stalk	—	—	—	R	
black raspberry	—	—	—	A	

Wildlife and Other Notes

- a managed forest that has been selectively cut

Turbine 89, 35

#WOD-137#



SAG, MCE OCT 4-6/11

WOD-137

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow WF
Project #: 1287
Date: Oct 5, 2011
Observer(s): SAG, MEE

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-024	1	• 1		0465085 4893335
~~WOD-025~~	2	0		0465079 4893342
	3	• 1		0465106 4893333
	4	0		0465102 4893330
WOD-024 total snags 3	5	• 1		0465097 4893308
WOD-024 snags/ha 6	6	0		0465098 4893300
	7	0		0465109 4893305
	8	0		0465116 4893308
	9	0		0465124 4893300
	10	0		0465149 4893298
WOD-025	1	0		0464480 4893449
	2	0		0464475 4893445
	3	0		0464457 4893427
WOD-025 total snags 2	4	0		0464466 4893417
WOD-025 snags/ha 4	5	0		0464483 4893422
	6	: 2		0464496 4893427
	7	0		0464485 4893437
	8	0		0464490 4893349
	9	0		0464485 4893389
WOD-137	10	0		0464460 4893385
WOD-027	1	0		0463384 4892013
	2	0		0463386 4892024
	3	0		0463394 4892038
WOD-027 total snags 1	4	0		0463395 4892055
WOD-027 snags/ha 2	5	• 1		0463395 4892085
	6	0		0463403 4892100
	7	0		0463405 4891065
	8	0		0463411 4892041
	9	0		0463433 4892052
	10	0		0463446 4892045
Oct 6, 2011 WOD-028	1	: 2		0458655 4890443
	2	0		0458659 4890418
	3	• 1		0458635 4890453
total snags 14	4	: 3		0458639 4890438
snags/ha 28	5	• 1		0458663 4890488
	6	: 5		0458620 4890510
	7	• 1		0458595 4890460
	8	• 1		0458539 4890436
	9	0		0458542 4890483
	10	0		0458570 4890534

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:	WOD-027 (WOD-137)
Polygon:	A
UTM:	0463491 4892064
Date:	Oct 25 2011 **Time:** 7:10
Surveyor(s):	SAG MEE
Weather:	temp -20 w-1 precip none l.cc-0

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
H	Spring peeper	VO OB								
H	Bullfrog	HO								
H	leopard frog	OB								

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

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

Invertebrates

- ___ Crayfish Chimney

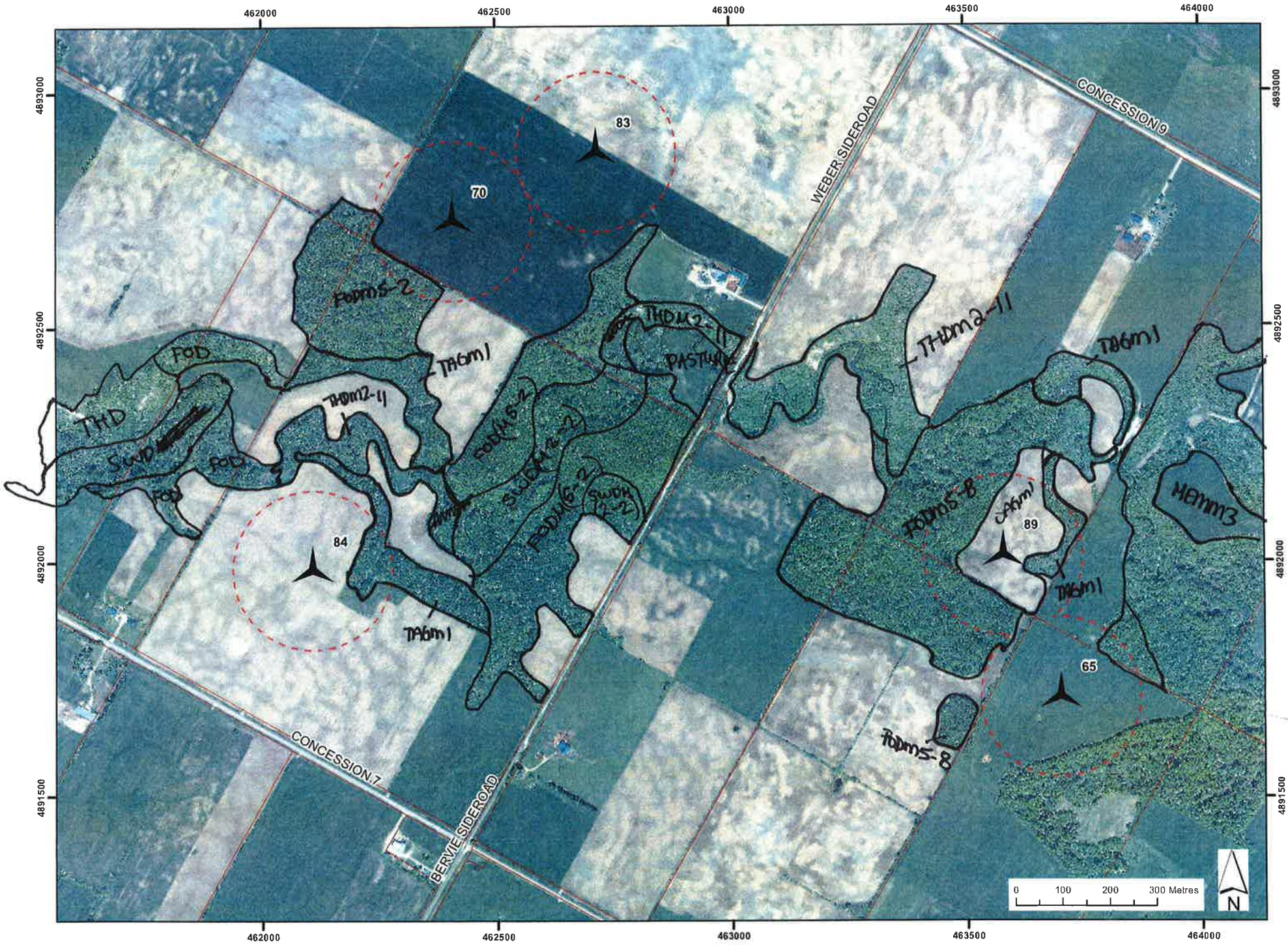
For every Habitat Type or Habitat Feature, record UTM below (for each occurrence) or mark on map

Habitat Feature:	UTM	Description
Vernal pool	0463406 4892064	Possible Vernal pools scattered throughout woodlot.
WOD-04		
No longer considered candidate		

Describe Valley (depth, geomorphological traits):

Additional Details:

WOD-137


462000
462500
463000
463500
464000
4893000
4892500
4892000
4891500
CONCESSION 9
WEBER SIDEROAD
CONCESSION 7
BERVIE SIDEROAD
83
70
84
89
65
FODm5-2
THD
FOD
SWD
TAGm1
THDm2-1
FODm5-8
HEMm3
0 100 200 300 Metres
N

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	
Polygon: WET-043	51 in WOD-028 * * WET-039*
UTM:	
Date: Nov 8 2011	Time: 11:15
Surveyor(s): CLH ; NGM	
Weather: rain, CC 100%, wind 4, 10°C-	

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	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		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		0	—
1	Canopy	B	4	Green Ash > Balsam Poplar > White Willow
2	Sub-canopy	3	3	Green Ash > Balsam Poplar > Wht Elm > Slender Willow
3	Understorey	4/5	3	Red osier > Reed Canary > Canada goldenrod > Bittersweet Nightshade
4	Groundcover	5/6	3	Cattail > Carex sp > Meadow Horsetail > Hop sedge

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	A	> 50
Snags	0	< 10	0	10 - 24	0	25 - 50	N	> 50
Deadfall/Logs	A	< 10	0	10 - 24	0	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	
Polygon: WET-043	
UTM:	
Date: Nov 3 2011	Time: 11:15
Surveyor(s): CLH, NBM	
Weather: 6°C, rain, CC 100%, wind 3 from 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
White willow	R				
Balsam Poplar	O	O			
Green Ash	D	O			
White Elm		O		O	
Slender Willow		O	R		
Wintergreen			R		
wild raisin		O	O	R	
red osier			A		

Species	Layer 1	2	3	4	Sample
reed canary			O		
bittersweet nightshade			O	O	
dandelion				O	
Carex sp.				O	
Ivy-leaved aster				O	
Canada goldenrod			A		
Common stinkweed				O	
meadow horsetail				O	
Riverbank grape					
Carex sp.				O	
turtlehead			O		
hop sedge				O	
moss sp.					

Wildlife and Other Notes

Photo 100-004

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in WOD-028

Wetland Vegetation Communities

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

Observer(s): CLH, NGM

Date: Nov. 3 2011 **Time (24h):** 11:15

Field #: ~~WET-039~~ (T104) **Weather:** Precipitation: rain Temp (°C): 6

Map Code: S1 Wind Speed & Direction: 4 / W Cloud %: 100

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

% Open Water: 15 / 0% open **ELC Code:** SWSM 2-2

Photos: 105-001

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash, white willow, balsam poplar, white elm
c	
dc,dh,ds	
ts	red osier, slender willow
ls	
gc	calico aster, meadow horsetail, turtlehead, bittersweet nightshade
ne	reed canary grass, hop sedge
be	
re	
ff	
f	
su	
m	

Soil type:	SCL, over Sand	Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):

See attached soils sheet

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-039
S1-A

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

IN (WOD-028) *

Site: Arnow	
Polygon: WET-043 52	(CT104)
UTM: 17T 0458955	4890267
Date: Nov 2 2011	Time: 12:52
Surveyor(s): CLH, NGM	
Weather: No precip - 6°C, CC100%, Wind 2	

Community Classification

	Vegetation Type:	SW
X	Inclusion:	SWDMN4-3 Poplar Mineral 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	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	5	—
1	Canopy	2	4	trembling aspen > green ash > balsam poplar
2	Sub-canopy	3	3	trembling aspen > green ash > balsam poplar > apple
3	Understorey	4/5	4	reed canary > red osier > sedge sp. > white elm
4	Groundcover	6/7	1	woodland strawberry > hop sedge

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	O	10 - 24	O	25 - 50	R	> 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

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: WET-043	(CT104)
UTM:	
Date: Nov 3 2011	Time: 1252
Surveyor(s): CLH, NGM	
Weather: No precip. 4°C, CC100%, wind 3	

Layers: 1=canopy (7-10) 2=sub-canopy (2-7) 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
trembling aspen	A	O			
green ash	O	O			
balsam poplar	O	O			
apple		O			
white elm			O		
choke cherry		A			
riverbank grape					
red osier			A		

Species	Layer 1	2	3	4	Sample
reed canary			A		
Carex sp. (stolon.)			A		
hop sedge				O	
woodland strawberry				O	

Wildlife and Other Notes

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

in (WOD-038)

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1175

Observer(s): CLH, NGM

Date: Nov 3 2011 **Time (24h):** 12:59

Field #: WET-~~039~~ (1704) **Weather:** Precipitation: none Temp (°C): 6

Map Code: SA Wind Speed & Direction: 3 km W Cloud %: 100

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

% Open Water: 0% / 0% open. **ELC Code:** SWDM4-5

Photos: 000 - 003

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	trembling aspen, grey dogwood, balsam poplar, white elm
c	
dc,dh,ds	
ts	red osier
ls	
gc	woodland strawberry
ne	red canary, Carex sp. (Calamagrostis), hop sedge
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-039
S1-B

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site: Arrow	
Polygon: WET-043 S3 / INT (WOD-032) * (TT04)	
UTM:	
Date: Nov 3 2011	Time: 13:22
Surveyor(s): CLH, NGM	
Weather: 6°C, Wind 3, 100% CC, No precip.	

Community Classification

	Vegetation Type:	
X	Inclusion:	SWTM3-6 Mixed Willow Mineral 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	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	11	Slender willow - Shining willow - Bebb's willow - Red osier
3	Understorey		11	Red osier - Solidago gigantea
4	Groundcover		3	Moss sp. - Aster lateriflorus - Woodland strawberry - 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	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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	
Polygon: WET-043 S3	(TT04)
UTM:	
Date: Nov 3 2011	Time: 13:22
Surveyor(s): CLH, NGM	
Weather: 6°C, Wind 3, 100% CC, 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
Bebb's Willow		O			
Red Osier			6		
Slender willow		O			
Shining willow		O			
Beaked Hazel		R			
Wild Raisin			O		

Species	Layer 1	2	3	4	Sample
Red Canary			A		
Woodland Strawberry				O	
Calico Aster				O	
Common Strawberry				O	
Meadow Horsetail				O	
Solidago gigantea			O		
Moss sp.				A	

Wildlife and Other Notes

Photo 151-061

Modified ELC Community Description

S1-1 *S2*

IN (WOD-028)

Soils

	S1 1	2	S2 3
Position:	S		S
Aspect:	/		/
%	0		0
Type:	Simple		Simple
Class:	A		A

Strata: Texture	OF4		OF4
Depth	+ 18cm	+	11cm
Strata: Texture VF	SCL	VF	S
Depth	52cm		66cm
Strata: Texture VF	S		C
Depth	99cm		Bl
Strata: Texture			
Depth			
Effective Texture VF	SCL	VF	S
Surface Stoniness			
Surface Rockiness			
Depth to:			
Mottles	7cm		5cm
Gley	6cm		14cm
Bedrock	/		
Water table	~~27~~ 27cm		
Carbonates	52		0cm
Depth of Organics	18cm		+11cm
Pore Size Disc #1			66cm
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6		6

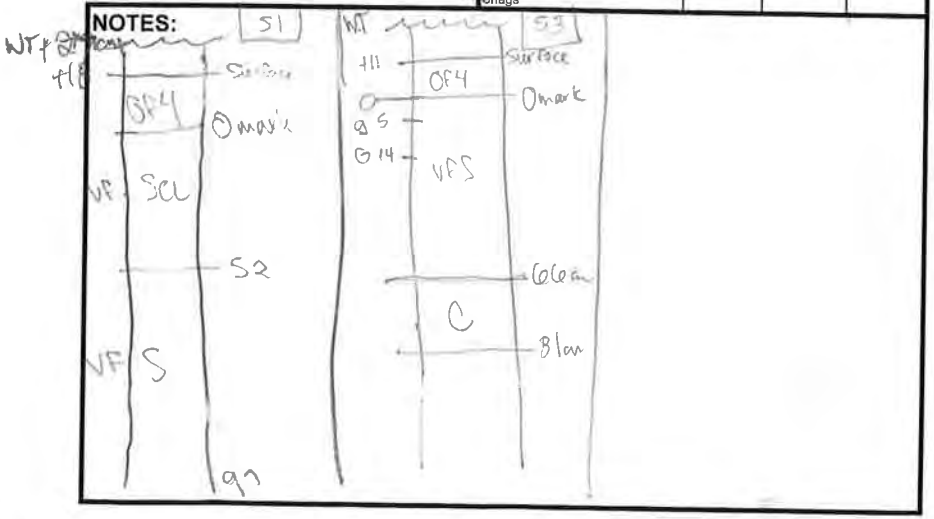
Polygon: WET-043 (1104)

WET-039*

Tree Tally

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

NOTES:



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Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

in*(WOD-028)*

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

Observer(s): CH, NLm

Date: Nov 3 2011 **Time (24h):** 13:22

Field #: ~~WET-DRD~~ (T104) **Weather:** Precipitation: None **Temp (°C):** 6

Map Code: S2 **Wind Speed & Direction:** 3 / W **Cloud %:** 100

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

% Open Water: 5% / 0% perm. **ELC Code:** SWTM2-6

Photos: 100-4

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	Sheepleaf willow, Shining Willow, bebbs willow, red osier dogwood
ls	
gc	Calla, aster, woodland strawberry, meadow horsetail, solidago gigantea.
ne	red canary grass
be	
re	
ff	
f	
su	
m	Moss sp.

Soil type: Sand. Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

Wildlife Notes:
See attached sals sheet.

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-039
S2

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

& IN(WOD-028)X

Site: Arrow	1275.
Polygon: WET-043 M1	(T104)
UTM:	
Date: Nov. 3, 2011	Time: 15:00
Surveyor(s): CLH, NGM.	
Weather: 6°C, CC100%, Wind 3, 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	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	2	Green Ash > Salix eriocephala > Salix petiolaris
3	Understorey	3.5	4	Reed Canary > Flat-top Goldenrod > Red Osier > Green Ash
4	Groundcover	0.5	4	Calico Aster > Woodland Strawberry > Meadow Horsetail > Common 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	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: Arrow	1275
Polygon: WET-043 M1	(T104)
UTM:	
Date: Nov 3 2011	Time: 15:00
Surveyor(s): CLH, NGM	
Weather: 6°C, CC100%, Wind 3, No precip	

Layers: 1=canopy (7-10) 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 osier		.	O		
Green Ash		O	O		
Salix eriocephala		R	O		
Slender willow		R	O		

Species	Layer 1	2	3	4	Sample
Reed Canary			D		
Flat top Goldenrod			O		
Swamp milkweed			R		
Common Strawberry				O	
Calico Aster				O	
Woodland Strawberry				O	
Meadow Horsetail				O	
Moss sp.					

Wildlife and Other Notes

Photo 100-009.

Trees/shrubs not greater than 3m tall

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

IN (WOD-028)

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

Observer(s): CLH, NGM

Date: Nov. 3 2011 **Time (24h):** 15:00

Field #: WET-039 (1704) **Weather:** Precipitation: None Temp (°C): 6

Map Code: M1 Wind Speed & Direction: 3 /W Cloud %: 100

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

% Open Water: 0% perm. **ELC Code:** MAMM1-3.

Photos: 100-009

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash. (Not >25%)
c	
dc,dh,ds	
ts	red osier dogwood, salix petiolaris, salix eriocephala
ls	
gc	flat topped goldenrod, swamp milkweed, calico aster, meadow horsetail
(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

WET-039
M1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

W WOD-028

Site: Arrow	
Polygon: Meadow 1. (T104)	
UTM:	
Date: Nov. 3, 2011	Time: 12:15
Surveyor(s): CLH, NGM	
Weather: 6°C, Wind 3 fr. W. CC 100%. rain.	

Community Classification

Vegetation Type:	MEMM4 Fresh-moist mixed meadow 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
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	0	—
3	Understorey	4/5	4	Canada thistle > Orchard grass > Poa pratensis > Reed canary
4	Groundcover	6/7	4	English plantain > Daisy fleabane > Colts foot > Bedford P.

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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arrow	
Polygon: Meadow 1 (T104)	
UTM:	
Date: Nov 3 2011	Time: 12:15
Surveyor(s): CLH, NGM	
Weather: 6°C, Wind 3	

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
Chicory			O		
Canada Thistle			A		
Coltsfoot				O	
Orchard Grass			A		
Reed Canarygrass			O		
Queen Anne's Lace			O		
Eng. Plantain				A	
Daisy fleabane				A	
Bedford Pisle.				O	
Poa pratensis			A		
Bird's-eye Primrose			O		
Common Evening Primrose			O		

Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

2-3 years fallow agland.

Photo 100-002

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

D W00-02

Site: Arnow	1275
Polygon: Meadow 2	(T104)
UTM:	
Date: Nov 3, 2011	Time: 14:45
Surveyor(s): CLH, NGM	
Weather:	

Community Classification

Vegetation Type:	MEFM 1-1 Goldenrod Forb 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 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	Graminoid	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	2	White Ash > Balsam Poplar
3	Understorey	4/5	4	Canada Goldenrod > flat topped Goldenrod > New England Aster > Rubberweed
4	Groundcover	4/5	4	Brass sp > English plantain > Common Strawberry > Vetch All

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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: meadow 2	(T104)
UTM:	
Date: Nov 3 2011	Time: 14:45
Surveyor(s): CLH, NGM	
Weather:	

Layers: 710 3-10 0.5-3 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
red oak			O		
Balsam poplar		R			
White Ash		O			

Species	Layer 1	2	3	4	Sample
reed canary				R	
Flat-topped Goldenrod				O	
New England Aster			O		
Canada thistle				O	
Common St. Johnswort	T			O	
Large-leaf Avens				O	
Common Strawberry				O	
Canada Goldenrod			A		
Tufted Vetch				O	
Grass Goldenrod				O	
Herb. All				O	
Rudbeckia tribloba			O		
English Plantain				O	
Cirsium Vlandra				O	
Poa pratensis				D	
Cress sp.				A	
Moss sp.				O	

Wildlife and Other Notes

Photos 100 - 107, 1008

Trees not taller than 3m

Arrow WF
Wetland Assessment

Nov. 3, 2011
CLH, NLom

WET-043 (T104) in WOD-028 * WET-039*

4 Communities.

S1: 3 Forms >25% cover:
h greenash
ts red osier
ne reed canary grass

Soils: 18cm OF4 over SCL over vfS.
Effective Texture SCL MR6.
Site Type: I.

S2: 3 Forms > 25% cover
h trembling aspen, greenash
ts red osier
ne reed canary
Soils: mineral
Site Type: I

S3: 4 Forms 7252 Cover
ts: Slender willow, Bebb's willow
gc: calico aster, woodland strawberry
ne: reed canary

No. 392
J. L. DARLING CORP. TACOMA, WA 98424-1017
www.RiteintheRain.com
"Write in the Rain"
ALL-WEATHER WRITING PAPER

m moss sp.

Soil Type: 11cm of H over vfS. over clay.

Effective Texture vf Sand. MR 6.

Site Type: I

m1: 2 forms >25% cover

ne reed canary grass

h green ash (3m or less in height)

Soils: mineral

Site Type: I.

Open Water Type: 0% perm open water

Fish Habitat: absent.

Rare species observed: none.

Surrounding Land use within 1.5km:

row crop, deciduous forest, mixed forest,

Modified ELC Community Description

W. WOO 02

Soils	1	2	3
Position:	1		
Aspect:	270		
%	1		
Type:	SimpR		
Class:	B		

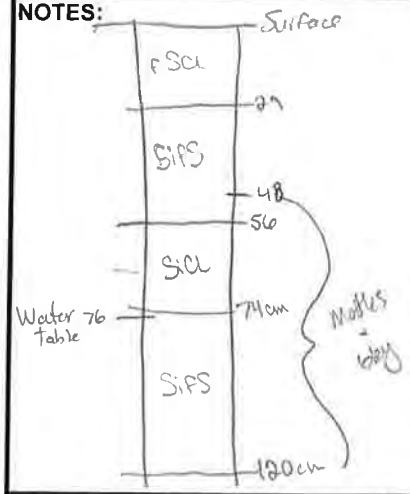
Polygon: Meadows CT104

Strata: Texture	fSCL		
Depth	29cm		
Strata: Texture	SiS		
Depth	56cm		
Strata: Texture	SiCL		
Depth	74		
Strata: Texture	fSiS		
Depth	120cm		
Effective Texture	SiFS		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	48cm		
Gley	48cm		
Bedrock			
Water table	76cm		
Carbonates	35cm		
Depth of Organics	—		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	4		

Tree Tally

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

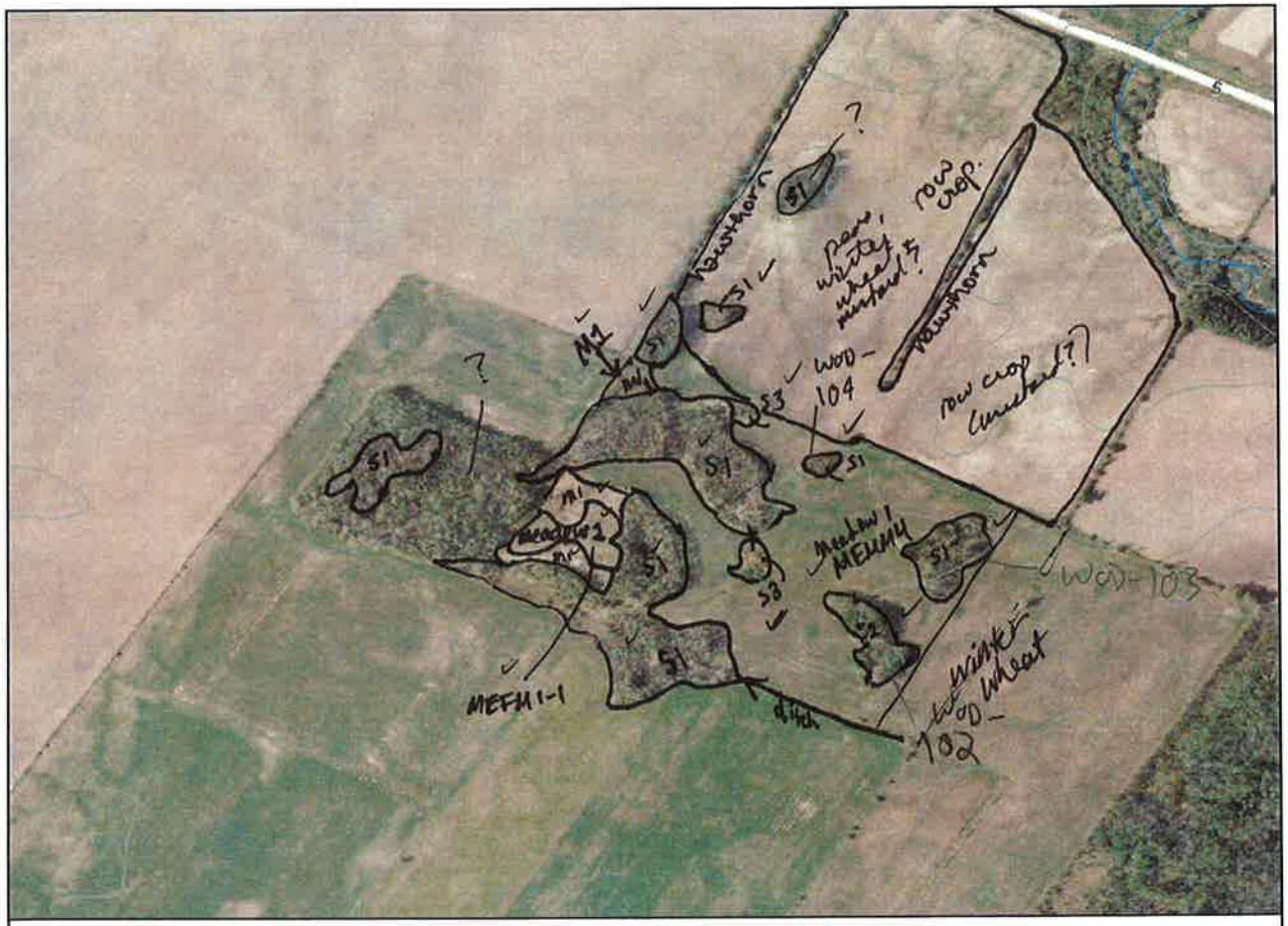
NOTES:



in WOD-28

Nov. 3, 2011

T104



Map centre: 44° 09' 58.9" N, 81° 30' 56.4" W

Map created: November 3, 2011

0 100 200 300 400 m

Scale: 1:7,900

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 4

Site: WOD-028 (T48,76,104)
Polygon: A
UTM: 0458564 4890434
Date: Oct 6, 2011 Time: 9:00
Surveyor(s): SAG HEE
Weather: temp-17 w-3 %cc-10 precip-none

Community Classification

Vegetation Type:	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 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	X Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1		White Ash > trembling Aspen > Sugar maple
1	Canopy	2		White Ash > Sugar maple > Ironwood >> yellow birch
2	Sub-canopy	3		White Ash > Ironwood > Sugar maple > elm
3	Understorey	4-5		White Ash > blue beech > hawthorn > Sugarmaple
4	Groundcover	0-1		Poison Ivy >> Aster sp > Strawberry > grass 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	A	25 - 50	R	> 50
Snags	A	< 10	O	10 - 24	R	25 - 50	N	> 50
Deadfall/Logs	A	< 10	A	10 - 24	A	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 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

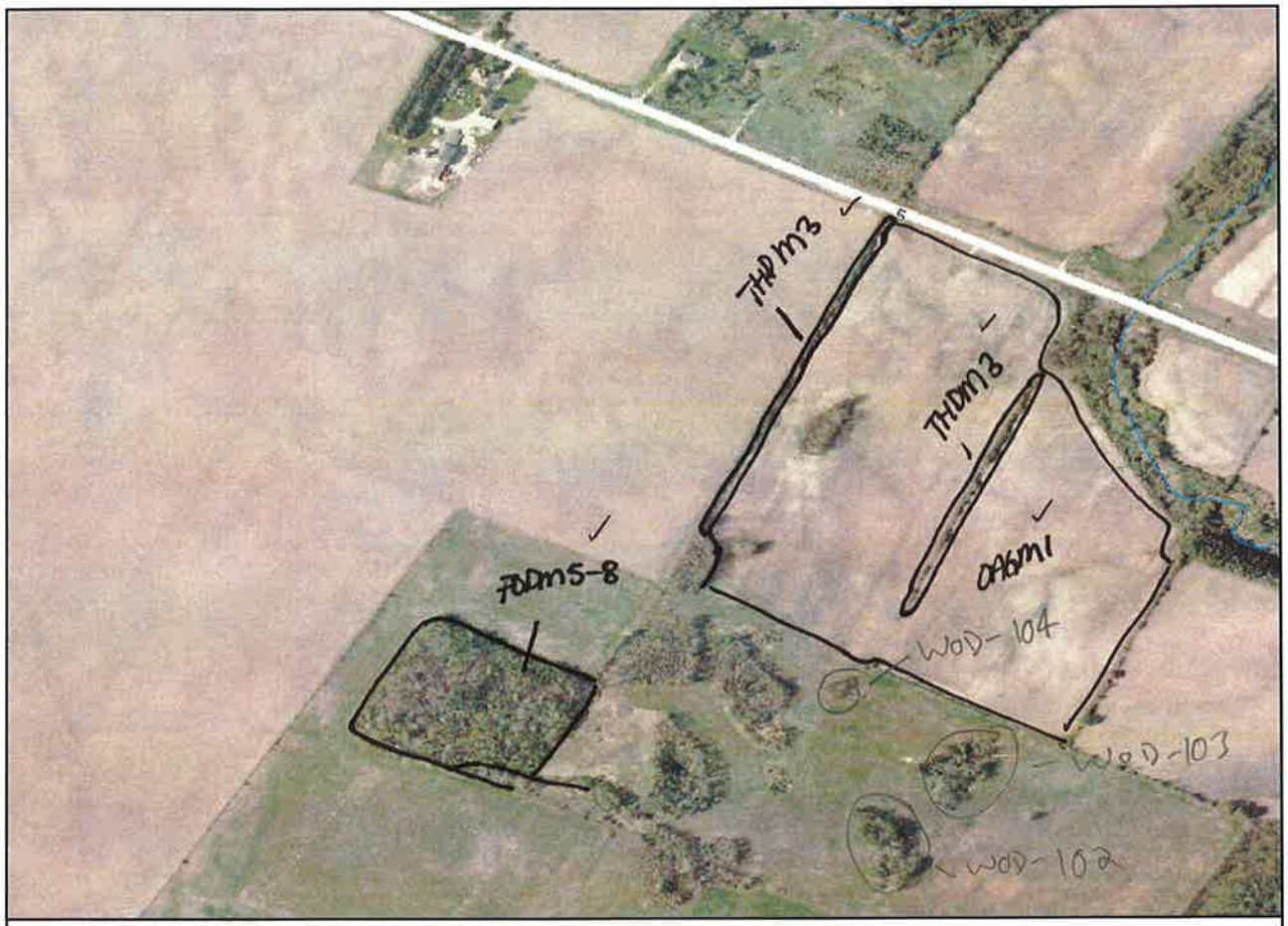
Species	Layer 1	2	3	4	Sample
Blue beech	–	A	A	–	
White Ash	D	A	A	A	
Ironwood	–	A	A	–	
trembling Aspen	O	–	–	–	
American Elm	–	O	A	O	
Sugar maple	O	A	A	A	
yellow birch	O	O	–	–	
Apple	–	–	R	–	
black cherry	–	O	O	–	
bitternut hickory		O	–	–	
Virginia creeper	–	–	A	–	
Red osier dogwood	–	–	A	–	
Riverbank Grape	–	–	O	–	
Ribes sp	–	–	O	–	
Dogwood	–	–	A	–	
black raspberry	–	–	A	A	
Spicebush	–	–	O	–	

Species	Layer 1	2	3	4	Sample
Strawberry	–	–	–	O	
herb robert	–	–	–	O	
enchanters nightshade	–	–	–	O	
Aster sp	–	–	–	A	
false solomon seal	–	–	–	R	
deadly nightshade	–	–	–	O	
Violet sp	–	–	–	O	
Agrimony	–	–	–	A	
tall meadow rue	–	–	–	O	
Poison Ivy	–	–	–	A	
fern sp	–	–	–	A	
grass sp	–	–	–	A	

Wildlife and Other Notes

WOD 24

T104



Map centre: 44° 10' 07.5" N, 81° 30' 57.5" W

Map created: January 3, 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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WOD-028

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

Project Name: Dymond
Project #: 1275
Date: NOV 3 2011
Observer(s): CW, NGM

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-028	1	••		17T 0459013 4890890 acc 10m
	2	0 —	0	17T 0459010 4890373 acc 7m
total → 9	3	••		17T 0458957 4890266 acc 6m
snags = 30	4	••		17T 0458958 4890290 acc 6m
ha	5	0 —	0	17T 0458766 4890298 acc 5m
	6	0 —	0	17T 0458760 4890352 acc 6m
WOD-019	1	••		↑
(T107)				17T 0466859 4894685 ac. 10m
	2	0 —	0	17T 0467020 4894638 ac. 10m
RMA-007	3	0 —		17T 0467004 4894570 ac. 7m
	4	•		17T 0466873 4894644 acc. 6m
total = 3				
snags = 13				
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

IN WOD-028

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arnaud WF
Project #: 1257
Date: Oct 5 2011
Observer(s): SAG, MEE

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-024	1	• 1		0465085 4893335
WOD-025	2	0		0465079 4893342
	3	• 1		0465106 4893333
	4	0		0465102 4893330
WOD-024 total snags 3	5	• 1		0465092 4893308
WOD-024 snags/ha 6	6	0		0465098 4893300
	7	0		0465109 4893305
	8	0		0465116 4893308
	9	0		0465124 4893300
	10	0		0465149 4893298
WOD-025	1	0		0464480 4893449
	2	0		0464471 4893445
	3	0		0464457 4893427
WOD-025 total snags 2	4	0		0464466 4893417
WOD-025 snags/ha 4	5	0		0464483 4893422
	6	: 2		0464496 4893427
	7	0		0464485 4893435
	8	0		0464490 4893349
	9	0		0464485 4893389
	10	0		0464460 4893385
WOD-027	1	0		0463384 4892013
	2	0		0463386 4892024
	3	0		0463394 4892038
total snags 1	4	0		0463385 4892055
snags/ha 2	5	• 1		0463395 4892085
	6	0		0463403 4892100
	7	0		0463405 4892065
	8	0		0463411 4892047
	9	0		0463433 4892052
	10	0		0463446 4892045
Oct 6, 2011 WOD-028	1	: 2		0458655 4890443
	2	0		0458659 4890448
	3	• 1		0458635 4890453
	4	:• 3		0458639 4890438
total snags 14	5	• 1		0458663 4890488
snags/ha 28	6	:: 5		0458620 4890510
	7	• 1		0458595 4890460
	8	• 1		0458539 4890436
	9	0		0458542 4890483
	10	0		0458570 4890534

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: Armow
Project #: 1275
Date: Oct 6, Nov 3, 2011

Start Time _____ End Time _____

Observer(s): SMG, MEE / CLH, NAM

Woodland ID (WOD- 028, 102, 103, 104) Weather Conditions: IN WOD-028 *

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	2		
Plot 2	0		
Plot 3	1		
Plot 4	3		SMG / MEE
Plot 5	1		
Plot 6	5		
Plot 7	1		
Plot 8	1		
Plot 9	0		
Plot 10	0		
Plot 11	3		
Plot 12	0		
Plot 13	2		CLH / NAM
Plot 14	2		
Plot 15	0		
Plot 16	0		
Plot 17			
Plot 18			
Plot 19			
Plot 20			
Plot 21			
Plot 22			
Plot 23			
Plot 24			* WOD-028, 102, 103, 104 have all been considered BMA-007 due to all of those woodlands being located within the same general natural feature complex / in fairly close proximity to each other functionality as a complex). *
Plot 25			
Plot 26			
Plot 27			
Plot 28			
Plot 29			
Plot 30			
Plot 31			
Plot 32			* Office based analysis completed Jan 16/12 by PNJ.
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-007

Final Wodland Tally 21

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

= 21 / (16 x 0.05) = 26 snags/ha

Wildlife Observation Form

Page 1 of 2

NATURAL RESOURCE SOLUTIONS INC.

Site: Armon	1275
Polygon: WOD-028	
UTM:	
Date: Nov. 3/11	**Time:** 1115
Surveyor(s): CLH, NBM	
Weather: rain, CC 100%, wind 4, 6°C → rain ended.	

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am Woodcock	OB		"						
B	Common Raven	OB		1						
B	Am. Pipit	X		~~						
B	Am Crow	X		2						
B	Blue Jay	X		1						
B	BL Capped Chickadee	X		"						
B	Downy Woodpecker	X		1						
B	Am. Goldfinch	X		1						
M	White-tailed deer tracks	X		—						
M	Grey 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
Vernal Pool (ANO-013)	17T 0458771 4890377	In swamp - Photo 100 - 005

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC. WOD-028

Site:	WOD-028
Polygon:	A
UTM:	0458564 4890434
Date:	Oct 6/11 Time: 8:55 am
Surveyor(s):	SAG, MEE
Weather:	temp: 12°C, %c.c: 0%, precip: none, w: 2

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Robin	VO		2						
B	downy woodpecker	FE		1						
B	Common American Crow	VO		3						
B	Golden Crowned Kinglet	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

- [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
vernal pool	0458655 4890443	depression in forest floor
vernal pool		dark soil, water mark on trees
vernal pool		11 11
vernal pool		
complexes throughout		
AWO-015		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 4

Site:	WOD-029 (T78)
Polygon:	A *WET-039*
UTM:	0459030 4889867
Date:	Oct. 06/11 Time: 10:30 am
Surveyor(s):	JAG, MEE
Weather:	temp: 15°C, %c.c: 0%, precip: none, W: 2

Community Classification

Vegetation Type:	SWDM3-3 (Soils confirm ELC) (to be SWD2-3)
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	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	n/a		
1	Canopy	2	3	maple sp. (Freemans) = white ash > willow sp > American elm
2	Sub-canopy	3	2	white ash > American elm > maple > hawthorne
3	Understorey	4-5	3	white ash > Red osier dogwood > American elm > spice bush
4	Groundcover	6-7	2	Canada nettle > fern sp. > poison ivy = grass 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	A	25 - 50	O	> 50
Snags	R	< 10	R	10 - 24	O	25 - 50	R	> 50
Deadfall/Logs	A	< 10	A	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

with cavities

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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	A	A	–	
willow sp.	O	–	–	–	
red maple	A	A	–	–	
red ash	R	–	–	–	
maple Freemans	D	A	–	–	
Elm, American	A	A	A		
apple sp.	–	R	–	–	
Dogwood, Red-o	V	/	A	/	
willow, hebs	/	/	R	/	
riverbank grape	/	/	R	/	
spice bush	/	/	O	/	
hawthorne	/	O	/	/	

Species	Layer 1	2	3	4	Sample
sensitive fern	–	–	–	A	
Canada nettle	–	–	–	D	
fern sp.	–	–	–	A	
fringed sedge?	–	–	–	R	
cow parsnip?	–	–	–	R	
grass sp	–	–	–	A	
bittersweet nightshade				O	
poison ivy	–	–	–	O	

Wildlife and Other Notes

Seasonal wetland - ~~could be a large vernal pool~~

Christy should come check this spot out

-red maple in more upland, freemans in seasonal wetland area

*Soils/wetland verified on oct 12/11 by PWD

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Aquatic, Terrestrial and Wetland Biologists

(T78) IN WOD-029

Wetland Vegetation Communities

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

Observer(s): PWD, KJW

Date: Oct. 12, 2011 **Time (24h):** 13:30

Field #: WET 014 (WOD029) **Weather:** Precipitation: None Temp (°C): 19°C

Map Code: S1 Wind Speed & Direction: 3/S Cloud %: 100

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

% Open Water: 0% **ELC Code:** SWD02-3

Photos: 171-1090

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple, Green Ash, White Willow, White Elm
c	—
dc,dh,ds	
ts	Red Osier Dogwood, Salix eriocephala
ls	
gc	False Nettle, Sensitive Fern, Bittersweet Nightshade, Poison Ivy, interrupted fern
ne	
be	
re	
ff	
f	
su	
m	

Soil type: Oh | Organic [X] | 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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

@ WOD 029

Site:	Armou 1275
Polygon:	WOD 029 S1
UTM:	
Date: Oct. 12, 2011	Time: 13:30
Surveyor(s):	KSW, POD
Weather:	cloudy @ showers, 9°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 Willow	O	O	O	O	
Salix eriocephala		O	O		
Trembling Aspen	O	O			
Green Ash	O	O	O	O	
Red Osier Dogwood		O	O		
White Elm	O	O	O	O	
Riverbank Grape		O	O		

Species	Layer 1	2	3	4	Sample
[illegible]				D	
Sensitive Fern				O	
False Nettle				O	
Bittersweet Nightshade				O	
Water Parsnip				R	
Poison Ivy				O	
Interrupted Fern				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	1275 Armour
Polygon:	1a WOD 09
UTM:	
Date: Oct 12, 2011	Time: 12:00
Surveyor(s):	KJW, PWD
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:	270°		
%	2-5		
Type:	S		
Class	C		

Strata:	Texture	Oh		
	Depth	49		
Strata:	Texture	SiC		
	Depth	67		
Strata:	Texture	fS		
	Depth	120		
Strata:	Texture			
	Depth			
Effective Texture		Oh		
Surface Stoniness		Ø		
Surface Rockiness		Ø		
Depth to:				
	Mottles	—		
	Gley	49		
	Bedrock	—		
	Water table	85		
	Carbonates	—		
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7		

Polygon: WET014 (S1)

Tree Tally

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

NOTES:



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Modified ELC Community Description

Page __ of __

EWOD-029

Site:	1275 Armour
Polygon:	
UTM:	
Date: Oct 12 2011	Time: 12:00
Surveyor(s):	AND, KW
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		
Aspect:	—		
%	2-5		
Type:	S		
Class	C		

Strata:	Texture	Oh		
	Depth	72		
Strata:	Texture	fS		
	Depth	120		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		Oh		
Surface Stoniness		Ø		
Surface Rockiness		Ø		
Depth to:				
	Mottles	—		
	Gley	—		
	Bedrock	—		
	Water table	78		
	Carbonates	—		
Depth of Organics				
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7		

Polygon: WET 014 (S2)

Tree Tally

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

NOTES:

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WOD-029

Wetland Vegetation Communities

Project Name: Armaw **Project #:** 1275

Observer(s): PWD, KJW

Date: Oct. 12, 2011 **Time (24h):** 14:15

Field #: WET014 **Weather:** Precipitation: Light Temp (°C): 19°C

Map Code: S2 Wind Speed & Direction: 3/S Cloud %: 100

Wetland Type: Swamp **Site Type:** R I **Dominant Form:** Treed

% Open Water: 0% **ELC Code:** SWDM4-1

Photos: 171-1089

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Crack willow, freemans maple, green ash, white willow, white elm
c	
dc,dh,ds	
ts	red osier dogwood
ls	
gc	clear weed, sensitive fern, false nettle, interrupted fern
ne	Rice Cut Grass
be	lady's thumb
re	
ff	
f	
su	
m	

Soil type: Oh 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-039

~~S3~~ S4

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ____of____

5) WOD-029 X

Site: Armow 1275	
Polygon: WOD 029 ~~SL AW~~ S2	
UTM:	
Date: Oct. 12, 2011	Time: 13:30
Surveyor(s): KJW, POD	
Weather: Cloudy & showers, 19°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
Freeman's Maple	A	A	A	A	
Green Ash	O	O	O	O	
Red Osier Dogwood		O	O		
White Willow	R	R			
Trembling Aspen	O	O	O		
Riverbank Grape		O	O		
White Elm	R	O	O	O	
Crack willow	A	A			

Species	Layer 1	2	3	4	Sample
Clearweed				A	
Sensitive Fern				O	
False Nettle				O	
Bittersweet Nightshade				O	
Water Parsnip				R	
Interrupted Fern				O	
lady's thumb				A	
rice cut grass				A	

Oct. 12, 2011 ~~W~~ WOD-029* 1275 Armow

12:00 PWD, KJW

Wetland Evaluation

WET014 * WET-039*

Site Type: ~~Palustrine~~ Isolated

Communities: 3 (See field map)

S1: h Freeman's Maple, Green Ash

Soils: Oh/MR7

~~S2~~: h Salix fragilis MWOT-4

MI be Polygonum sp.

ne Rice cut grass

Soils: Oh/MR7 Mineral soils?

S3: h Green Ash, Trembling Aspen

ts Spicebush

Soils: vfSC/MR5

Open Water Type: Type 1

Fish Habitat: Absent

Rare Species Observed: None

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

in WOD-029

Wetland Vegetation Communities

Project Name:	Arnow	**Project #:**	1275
Observer(s):	PND, KJW		
Date:	Oct. 12, 2011	**Time (24h):**	14:35
Field #:	WET014	**Weather:** Precipitation:	Light
Map Code:	S3	Temp (°C):	19°C
Wetland Type:	Swamp	Wind Speed & Direction:	S/S
% Open Water:	0%	Cloud %:	100
Photos:	171-1091	**Site Type:**	RI
		Dominant Form:	Treed (S,h)
		ELC Code:	SWDM2-2

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Trembling Aspen, Green Ash, Red Maple
c	
dc,dh,ds	
(ts)	Spicebush, Red Osier Dogwood, wild raisin
ls	Maple-leaved Viburnum
gc	Woodland Strawberry, Poison Ivy, Calico Aster, Heal-all
ne	bladder sedge, 3 way sedge
be	
re	
ff	
f	
su	
m	

Soil type: vf SC | 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-039
~~SD~~ S5

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnow 1215
Polygon:	100D 029 S3
UTM:	
Date:	Oct. 12, 2011
Time:	13:30
Surveyor(s):	KJW, PWD
Weather:	Cloudy @ Showers, 19°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
Green Ash	O	O	O	O	
Spicebush			A		
Red osier Dogwood			O		
Red Maple	O	O	O	O	
Wild Raisin		O	O		
Maple-leaved Viburnum			O		
Choke Cherry			O		
Sugar Maple	O	O	O	O	
Trembling Aspen	O	O			

Species	Layer 1	2	3	4	Sample
Canada Goldenrod			O		
Woodland Strawberry				O	
Flat-topped Goldenrod			O		
Turtlehead			O		
Poison Ivy				O	
Calico Aster				O	
Heal-all				O	
Starflower				O	
Meadow Horsetail				R	
Three-way Sedge				O	
Rough Avens				D	
Bladder Sedge				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

W (WOD-029)

Site:	1275 Mineola
Polygon:	
UTM:	
Date:	Oct 12 2011
Time:	12:00
Surveyor(s):	PWD, KSW
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:	5		
Aspect:			
%	2-5		
Type:	S		
Class:	C		

3	***Strata:*** Texture	fSL		
	Depth	36		
5	***Strata:*** Texture	vfSC		
	Depth	68		
2	***Strata:*** Texture	fS		
	Depth	120		
	Strata: Texture			
	Depth			
	Effective Texture	vfSC		
	Surface Stoniness	Ø		
	Surface Rockiness	Ø		
	Depth to:			
	Mottles	44		
	Gley	48		
	Bedrock	—		
	Water table	68		
	Carbonates	—		
	Depth of Organics			
	Pore Size Disc #1			
	Pore Size Disc #2			
	Pore Size Disc #3			
	Moisture Regime	5		

Polygon: WET014 (S3)

Tree Tally

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

NOTES:

D WDD 029

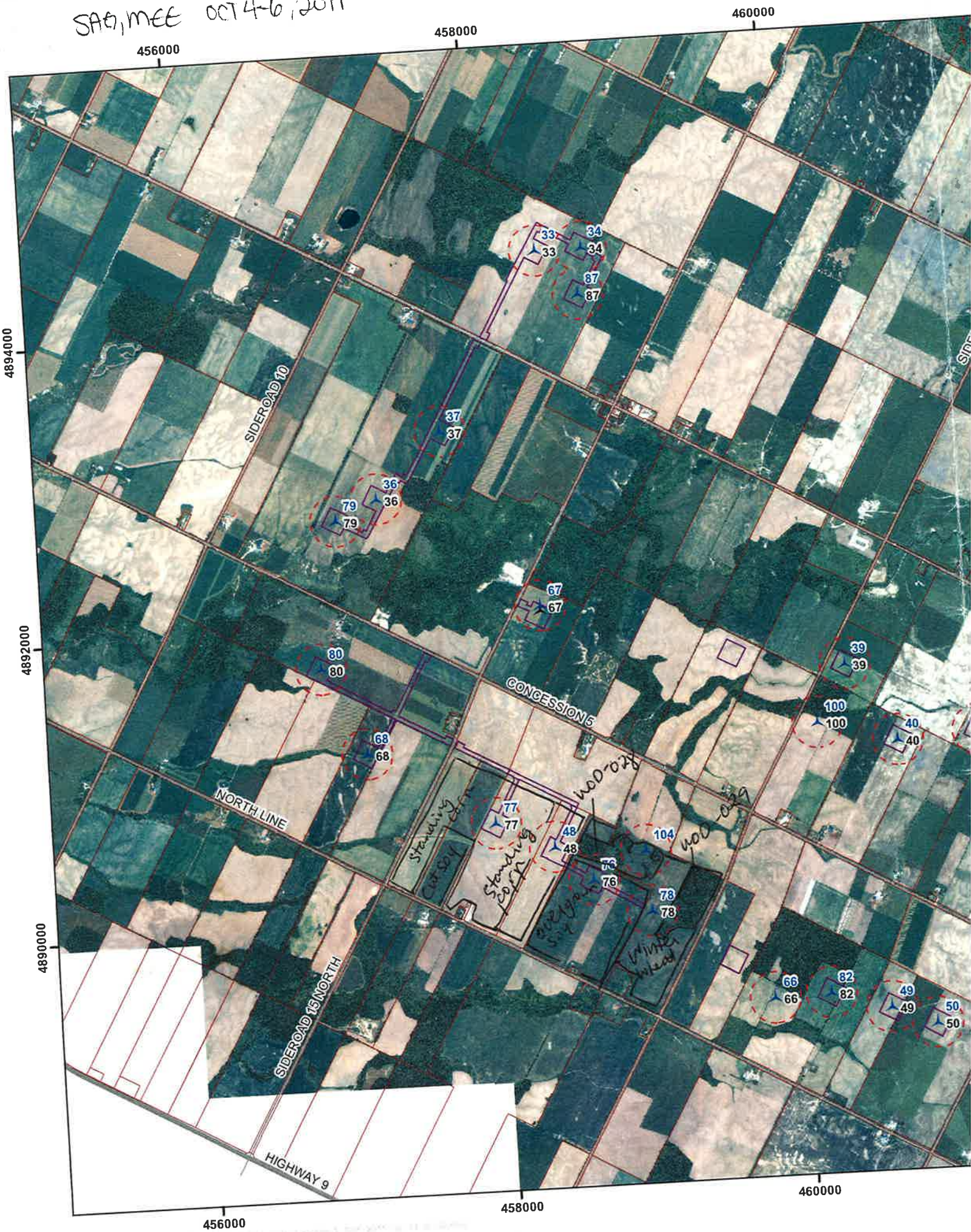

457500
458000
458500
459000
459500
4891000
4890500
4890000
4889500
SIDEROAD 15 NORTH
CONCESSION 5
SIDEROAD 20
NORTH LINE
77
48
76
78
66
S2
S1 drain
outflow leaves from S2 through S1 into S3 (intermittent) channel dug out
0
100
200
300 Metres
N



Google earth

feet 1000
meters 500

SAB, MEE OCT 4-6, 2011



W WOD-022

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arman 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		0463353 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 - snag over 50 cm Dbh with cavities
		6	0		0463331 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 4894063
Oct 06 2011	WOD-029	1	3		0459079 4889898 - lots of cavities
		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 4889898
		8	0		0459048 4889879
		9	3		0459050 4889876
		10	3		0459057 4889868
Oct 06/11	WOD-030	1	1		0466352 4890424
		2	1		0466359 4890431
		3	1		0466325 4890441
		4	1		0466325 4890441
WOD-030	total snags 16	5	0		0466286 4890455
	snags/ha 32	6	2		0466271 4890444
		7	2		0466287 4890430
		8	2		0466307 4890421
		9	2		0466336 4890381
		10	4		0466349 4890334

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 __

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IN WOD 029

Site:	Armow 1275
Polygon:	WOD 029
UTM:	
Date:	Oct 12, 2011 **Time:** 12:30
Surveyor(s):	KJW, PWD
Weather:	Cloudy, 19°C, 100% CC, wind 2/3, 1/4 showers

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	European Starling	OB		60+						
B	Turkey Vulture	OB	overhead	2						
B	American Crow	VO		2+						
M	White-tailed Deer	TK		1						
B	Black-capped Chickadee	VO		3+						
B	Eastern Meadowlark	OB		2+						
B	Eastern Bluebird	VO		1						
B	Red-winged Blackbird	VO		4+						

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:	WOD 029
UTM:	
Date:	Oct 12, 2011 **Time:** 13:30
Surveyor(s):	KJW, PWD
Weather:	Cloudy, 19°C, 100% CC, wind 2/3, 1/4 showers

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)

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.

Site:	WOD - 029
Polygon:	A
UTM:	0459032 4989867
Date:	Oct 6 2011 Time: 10:25
Surveyor(s):	SAG MEE
Weather:	temp - 20 w-3 precip - none / CC - 0

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Hermit Thrush	OB		*						
B	Chickadee	SM		*						
M	Raccoon	OB		*						
B	American Goldfinch	OB	FM	*						
M	Woodchuck	OB		*						
M	Red Squirrel	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

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)
- [X] 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

- [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 x3	0459029 4989866	3 large snags with cavities ~40cm dbh
Vernal Pool AWD-016	- possible, Vernal Impossible Vernal Common, might	pools throughout the system good areas red maple be freemans maple
Snag x2 BMA-008	0459086989902	2 large snags with large of fresh cavities

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	ArmbWWF
Polygon:	WOD-030
UTM:	17T 466300 4189051
Date:	Oct 7 2011
Time:	13:00
Surveyor(s):	CH, KTW
Weather:	Sunny, 20°C, 0-10%, Wind 2

Community Classification

Vegetation Type:	SWD02-1 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	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	Red maple > Black Ash > Freeman's Maple >> Trembling Aspen
2	Sub-canopy	3	4	Winterberry >> Freeman's maple > Black Ash > Yellow Birch
3	Understorey	4/5	4	Royal Fern > Cinnamon Fern > Sensitive Fern > Winterberry
4	Groundcover	6/9	3	Moss Sp > Dwarf Raspberry > Goldthread > Sphagnum 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	R	> 50
Snags	O	< 10	O	10 - 24	O	25 - 50	O	> 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

Modified ELC Co. mmunity Description

W WOD-OD*

Soils	1	2	3
Position:	S		
Aspect:	/		
%	0		
Type:	Sample		
Class:	A		

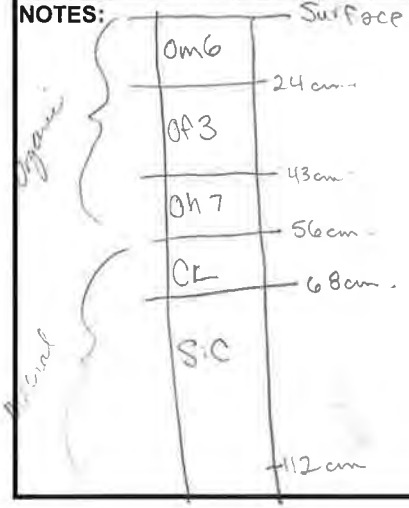
Strata:	Texture	Om6		
	Depth	24cm		
Strata:	Texture	Of3		
	Depth	43cm		
Strata:	Texture	Oh7		
	Depth	56cm		
Strata:	Texture	CL		SiC
	Depth	68cm		112cm
Effective Texture		Om		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	68 cm		
	Gley	56 cm		
	Bedrock	/		
	Water table	34 cm		
	Carbonates	68cm		
Depth of Organics		56cm		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

Polygon: WET-012 S1

Tree Tally

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

NOTES:



S1

Layer A to 24 cm
- turbid brown water, almost 1/3 → 5 or 6 (OM)

B to 43 cm
- more fibric, water more clear & still brown, no soil squeezed out lots of stuff in it
  → 4 or 5 over (OF)

C to 56 cm
- mixed u mineral, greyish water, 1/2 squeezed out
  → 6 or 7 (OM or OH)

D to 68 cm
- 30-50% sand; silty clay loam?, little to no shine

E to 112
- very long ribbon, v. high clay content
  v. strong cast

mottles 68
gley 56 cm
calb 68
water table 43

Water table = 34 cm

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Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnaud IUF 1275

Polygon: IUFT 012 S1 W WOD-030

UTM:

Date: Oct 7, 2011 Time: 1:00

Surveyor(s): KSW CLH

Weather: Sunny, 22°C, 090 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
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			
Spirea alba			O		
Yellow Birch		O			

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Calico Aster			O		
Carex aracillima				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	
Parthenocissus insertia				R	
Goldenrod				O	
Canada Mayflower				R	
Water Parsnip				R	
Hesperis lucidula				R	2
Lycopodium obscurum				R	3
Bittersweet Nightshade				O	
Carex pseudocyperis				R	
Hellebore				R	
Woolgrass			O		
Wintergreen				O	

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

W WOD 030

Site:	Arrow
Polygon:	WET-012 M1 Community
UTM:	17T 0466133 4894533
Date:	Oct 7 2011
Time:	
Surveyor(s):	CLH CJW
Weather:	Sunny, 22°C, CC0% wind 3

Community Classification

Vegetation Type:	MAMM3-1 Reed Canary Graminoid Organic Shallow Marsh
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	X	Marsh		Savannah
	Natural		Carb Bedrock		Tableland		Sand Dune		Swamp		Woodland
X	Cultural			X	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	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	0	—
3	Understorey	4	4	Reed Canary > Typha latifolia >> Marsh > Dark Green Rush, Rose
4	Groundcover	6/7	2	Sensitive Fern > Purple-Stem Aster > Royal Fern = Cattail, Pseudoacorus

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	O	< 10	O	10 - 24	O	25 - 50	O	> 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

A WOD-030 x

Site:	Arrow UF 1275
Polygon:	UFT 012
UTM:	
Date:	Oct 7 2011
Time:	
Surveyor(s):	CJV, RH
Weather:	Sunny, 22°C, 0%, CC, [illegible] 35

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		
Bebb's Willow			O		
Marsh Rose			O		
Balsam Poplar			R		
Trembling Aspen			R		
Salix eriocephala			R		
Common Red Raspberry				O	
Bristly Greenbrier				R	
Basswood				O	5

Species	Layer 1	2	3	4	Sample
Grass sp.			O		
Lythrum latifolia			A		
Bittersweet Nightshade				O	
Sensitive Fern				O	
Meadow Horsetail				O	
Common St. John's Wort				O	
Heath Aster			O		
Boneset				R	
Reed Canary Grass			D		
Lily sp.				R	
Joe Pye weed				R	
Dark Green Bulrush			O		
Carex lupulina				R	
Yellow Iris				R	
Carex pseudocyperus				O	
Purple-stemmed Aster				O	
Royal Fern				O	
Cinnamon Fern				R	
Three-way Sedge				R	4
Chelone glabra				R	
Northern Bugleweed				O	
Carex hystericina				O	
Nodding Bur Marigold				O	
Glyceria canadensis			R		
Sphagnum Moss				O	
Moss sp.				O	

IMP's #3 - 1076

Modified ELC Community Description

W WOD. 030

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

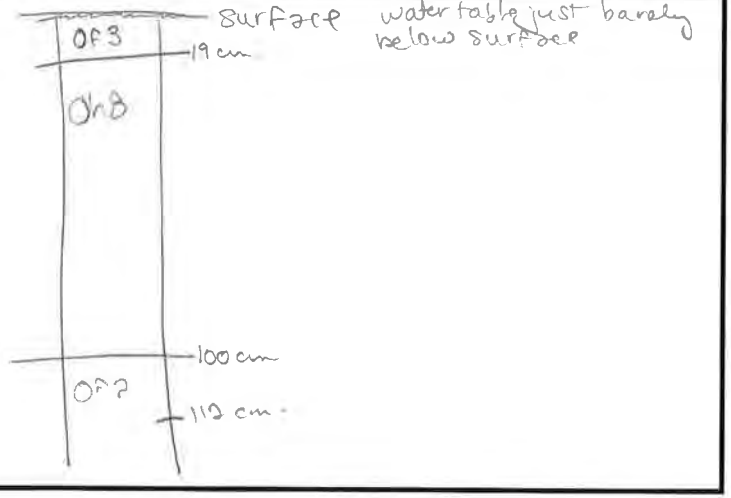
Strata: Texture		OF3		
Depth		19cm		
Strata: Texture		OhB		
Depth		100 cm		
Strata: Texture		OF2		
Depth		112 cm		
Strata: Texture				
Depth				
Effective Texture		OF		
Surface Stoniness		C		
Surface Rockiness		O		
Depth to:				
Mottles				
Gley				
Bedrock				
Water table		0.5cm		
Carbonates				
Depth of Organics		>112cm		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		7		

Polygon: WET 012-M1

Tree Tally

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

NOTES:



Mi

Layer B to 100

- very turbid, reddish brown, almost all squeezed out; roots left (+ twig)

Layer A to 19cm

- very turbid brown water, none squeezed out; twigs, roots, grass, leaves left behind
  4 or less

Layer C to 112 cm

- more clear, reddish water, none squeezed out; obvious moss left behind

Water: ½ cm

WOD-030

Arrow WF Wetland Assessment

Oct. 7 2011
CH, KJW.

Sunny, 22°C, wind 3, CC 0%.

(T35)

WET-012 ≠ WET-032 in WOD-030

2 Communities (S1, M1) → See attached map.

S1 – 5 forms >25% cover

ts ilex verticillata

h Red maple, black ash

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

ne reed canary grass

ls leatherleaf, narrow-leaved meadowsweet

re typha latifolia

m moss sp.

leatherleaf almost exclusively found in one small (<0.5 ha) area in the center of the area →

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

Refer to the Plan

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 points. Reed canary grass is still dominant here.

See attached forms for more detailed vegetation description of the community.

Soils: >120cm 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,

1-8

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

IN WOD-030 ✗

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: 3S-S. Cloud %: 0

Wetland Type: Swamp **Site Type:** isolated **Dominant Form:** ts. (S, ts)

% Open Water: 0 % **ELC Code:** SWDO2-1

Photos: IMPG 168 - 1068

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Red maple, Black ash, white birch, yellow birch, white elm
c	tamarack, e. hemlock
dc,dh,ds	
ts	Ilex verticillata, wild raisin
ls	spirea alba, velvet leaf blueberry
gc	Royal Fern, cinnamon fern, dwarf raspberry, sensitive fern
ne	reed canary grass, Carex hystericina, carex pseudocyperis
be	
re	woolgrass
ff	
f	
su	
m	moss sp., Sphagnum sp., lycopodium obscurum

Soil type: O MSIC (0m) 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-032

S1

1-8

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:** MAMO1-3

Photos: IMPG 163 - 1076

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	balsam poplar, trembling aspen
c	
dc,dh,ds	
ts	red osier dogwood, bebb's willow
ls	marsh rose, leatherleaf, common red raspberry
gc	sensitive fern, nodding bur marigold, boneset, common st. jans wort
ne	reed canary grass, threeway sedge, carex lupulina
be	
re	typha latifolia, dark green bulrush, woolgrass
ff	
f	
su	
m	moss sp., sphagnum sp.

Soil type: Of Organic ☒ Mineral ☐

Rare Species (Local, Regional, Provincial):
Locally rare:
Glyceria canadensis.

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

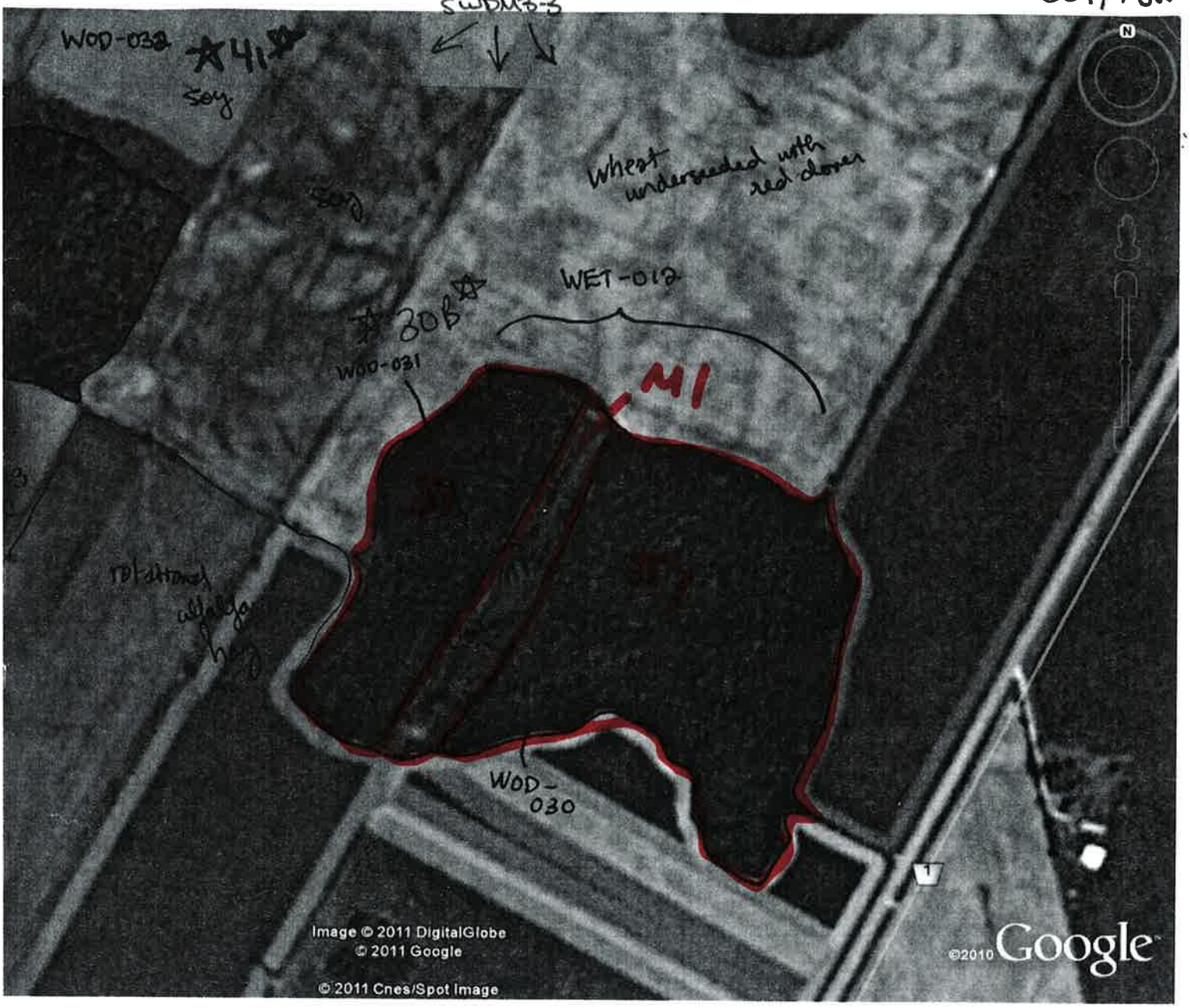
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock) **Mineral**= <60cm depth over mineral

WET-032

M1

"S1" are all SWDM3-3

Oct 7, 2011
CLH, KJW



WOD-030

Ind.
F

S1, M1
~~WET-032~~
Wetland

WOD-030

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arman WF
Project #: 1275
Date: Oct 05, 2011
Observer(s): SAG, MEL

	Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
Oct.05/11	WOD-022	1	: 2		0463753 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		0463331 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		0464148 4893952
	snags/ha 14	5	· 1		0464143 4893951
		6	• 1		0464143 4893951
		7	0		0464145 4894004
		8	0		0464164 4894046
		9	• 1		0464176 4894058
		10	0		0464129 4894063
Oct 06 2011	WOD-027	1	: 3		0459079 4889898 — lots of cavities
		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 4889898
		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 4890455
		6	: 2		0466271 4890444
	BMA-029	7	: 2		0466297 4890430
	BMA-030	8	: 2		0466307 4890421
		9	: 2		0466336 4890381
		10	:: 4		0466349 4890334

* Not 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 hydro 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 from WOD-030 was used for WOD-141.

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:	WOD-030
Polygon:	A
UTM:	0466554 4990342
Date:	Oct 6, 2011 **Time:** 12:30
Surveyor(s):	SAG, MFF
Weather:	Temp

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Yellow bellied sapsucker	SM		3						
B	AM. Crow	SM		1						
B	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.

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

unsure

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.

Site:	Armory WF 1275
Polygon:	WET 812
UTM:	
Date:	Oct 7 2011 **Time:** 1:00
Surveyor(s):	KSV CH
Weather:	Sunny, 77°C 0% CC, wind 2-5

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	American Crow	FS		*						
B	Song Sparrow	SM		*						
H	Spring Peeper	VS		***						
B	American Crow	VO		****						
B	Red-tailed Hawk	VO		*						
B	Turkey Vulture	OB	overhead	*						
B	Robin	VO		*						
B	Black-capped Chickadee	OB		****						
M	White-tailed Deer	TK		**						
B	Turkey Vulture	OB		*						

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:	Armory WF 1275
Polygon:	WET 812
UTM:	
Date:	Oct 7 2011 **Time:** 1:60
Surveyor(s):	KSV CH
Weather:	Sunny 22°C 0%CC wind 2-5

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
tree swan	6466772	tall snag, yet w/ [illegible]
	4890616	great cavity at top with [illegible]
	(050-Kim's)	[illegible]
	6466274	similar to above #1
	4890634	trembling aspen, DBH ~50
	(03)	near edge of wetland

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

WOD-031 / WET-022

Site: Arnow (TS7/58)	1275
Polygon: B 1	
UTM: 17T 0416618	4897439
Date: Oct 5 2011	Time: 15:19
Surveyor(s): CLH, KSW	
Weather: Sunny, 20°C, 02cc	Wind 3 from SE

Community Classification

Vegetation Type:	FODM6-1 Fresh-Moist Sugar Maple-Lowland Ash Deciduous Forest Type
Inclusion:	
Complex:	

Consider as wetland as no soils taken

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	Green Ash 77 Sugar Maple 7 White Elm 7 Ironwood.
2	Sub-canopy	3	3	Green Ash 77 White Elm 7 Sugar Maple 7 Basswood
3	Understorey	4/5	3	Choke Cherry 7 Prickly Gooseberry 7 Bittersweet Nightshade 7 Am. Beech.
4	Groundcover	4/1	3	Barren Strawberry 2 Calico Aster 7 Choke Cherry 7 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	A	10 - 24	O	25 - 50	R	> 50
Snags	O	< 10	O	10 - 24	R	25 - 50	R	> 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	X Young	Mid-age	Mature	Old Growth

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site: Arnow	1275
Polygon: B 1	
UTM:	
Date: Oct 5 2011	Time: 15.19
Surveyor(s): CLH, KSW	
Weather: Sunny, 20°C, 09cc, Wind 3 SE	

Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer — 1,2 / 2-10 / 0.5-2 / <0.5

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

Species	Layer 1	2	3	4	Sample
Green Ash	D	A			
Basswood	R	O			
Downy Hawthorn		O	R		
White Elm	O	O			
Calico Aster				O	
Sugar Maple	O	O		O	
Choke Cherry			O	O	
Black Cherry			O		
White Ash	O	A			
Ironwood	O				
Barren Strawberry				O	
Am Beech	O	R	O		
Christmas Fern				O	
Prickly Gooseberry			O		
Sensitive Wood Fern				O	
Bittersweet Nightshade			O	O	
Impatiens capensis				O	
Intermediate Wood Fern				O	
Marginal Shield Fern				O	
Sensitive Fern				O	
Ostrich Fern				R	

Wildlife and Other Notes

Some low areas throughout - treed areas are tamarack dominated with hot herbaceous veg in small pockets indicating some damp soil which may be wetter in Spring.

XWOD-031X

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

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

Observer(s): CLH, KRW

Date: Oct 5 2011 **Time (24h):** 15:19

Field #: B1 **Weather:** Precipitation: None Temp (°C): 20°C

Map Code: S Wind Speed & Direction: 3 /SE Cloud %: 0

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

% Open Water: 0 **ELC Code:** FODM6-1 (SWDM2-2)

Photos:

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	green ash, sugar maple, white elm, ironwood
c	
dc,dh,ds	
ts	
ls	choke cherry, Prickly gooseberry
gc	(bareu strawberry), cat. coaster, sensitive fern
ne	
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; **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

S2

WET-009

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

WWOD031

Site: Arnow	1275
Polygon: B2	
UTM: 17T 0466099 4897368	
Date: Oct 5 2011	Time: 16:22
Surveyor(s): CLH, KJW	
Weather: Sunny, 20°C, 89.2% Wind 3	

Community Classification

Vegetation Type:	FOMM5-8 Dry-Fresh Sugar Maple-White Ash Deciduous Forest 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	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	6	—
1	Canopy	2	4	Sugar maple > White Ash = American Beech > Eastern Hemlock.
2	Sub-canopy	3	1	Sugar maple > White Ash > American Beech > Basswood
3	Understorey	4/5	2	Choke Cherry > Ribes occidentalis > Prickly Gooseberry > Alternate-leaved Dogwood
4	Groundcover	6/7	1	Christmas fern > Spinulose Wood Fern > Sensitive Fern = 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	O	10 - 24	O	25 - 50	O	> 50
Snags	R	< 10	R	10 - 24	O	25 - 50	O	> 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	1275
Polygon: B2	
UTM:	
Date: Oct 5 2011	Time: 16:22
Surveyor(s): CLH, KJW	
Weather: Sunny, 20°C, 89.2% Wind 3	

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

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

Species	Layer 1	2	3	4	Sample
American Beech	O	O	O		
Sugar Maple	A	O			
Ironwood	R				
E. Hemlock	O			O	
White Elm	O				
Basswood		R		R	
White Ash	O	O			
Black Cherry	O				

Species	Layer 1	2	3	4	Sample
Christmas Fern				O	
Calico Aster				O	
White Baneberry				R	
Spinulose Wood Fern				O	
Hellebarine				R	
Blue Cohosh				R	
Sensitive Fern				O	

Alternate-leaved Dogwood			R		
Ribes occidentalis			O		
Prickly (gooseberry)			O		
Choke Cherry	O		O		

Wildlife and Other Notes

Several large beeches (live + dead) with cavities

D WOD-03/

Arrow
oct 5 2011
ALH, KJW



B1 = WET-009 S2.

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Armow

Project #: 1275

Date: oct 5, 2011

Observer(s): CLH, KJW

~~AWOD-031~~

WOD-058 Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments		Km's GPS
B1	1	"		ITT 0466183	4897438	007
B1	2	"		0466176	4897402	008
B2	3	"		0466137	4897390	009
				good cavities in B2 community (Beech)		
B2	4	0	0	0466099	4897368	010
B2	5	0	0	0466060	4897364	011
B2	6	'		0466041	4897421	012
B2	7	0	0	0466023	4897466	013 (ignore 014)
B2	8	"		0466006	4897399	015
B2	9	'		0466001	4897361	016
						018
total snags	10					
Snags/ha	22					

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. WWOD-031

Site:	Armory 1215
Polygon:	B1
UTM:	
Date:	Oct 6 2011 **Time:** 3:19
Surveyor(s):	KTW CLH
Weather:	Sunny, 20°, 0% CC, Wind 3 SE

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
In	Polygon:									
B	Blue Jay	OB		**						
B	Wild Turkey	DP	feather	*						
H	Spr Peeper	VO		*						
B	Robin	VO		*						
B	Yellow-rumped Warbler	OB		**						
B	Raven	VO		*						

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:	Armory 1215
Polygon:	B1
UTM:	
Date:	Oct 6 2011 **Time:** 3:19
Surveyor(s):	KTW CLH
Weather:	Sunny, 20°C, 0% CC, Wind 3 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:

Wildlife Observation Form

Page 2 of 4

NATURAL RESOURCE SOLUTIONS INC.

W/WOODS

Site:	Airport 1275
Polygon:	B2
UTM:	009 - 01 (Kim's GPS)
Date:	Oct 6 2011 **Time:** 16:22
Surveyor(s):	KSW CLH
Weather:	Sunny 20°C 0% CC Wind 3 SE

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
M	Raccoon	SC	scat in forest	**						
B	Wild Turkey	OB		***						
B	Blue Jay	SO		**						
M	Grey Squirrel	SO		*						

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 1 of 1

NATURAL RESOURCE SOLUTIONS INC.

Site:	Airport 1275
Polygon:	B2
UTM:	009 - 01 (Kim's GPS)
Date:	Oct 6 2011 **Time:** 16:22
Surveyor(s):	KSW CLH
Weather:	Sunny 20°C 0% CC Wind 3 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
snags		
brush P2	489131 (017)	
SNH		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

12/30/11

Site:	Armow WF ~~WOD-03~~
Polygon:	WOD-009 (TSS) ~~(WOD+011)~~
UTM:	
Date:	Sept 20/11 Time: 16:45
Surveyor(s):	PNT, AMD
Weather:	18°C, sunny, no precip, 30%cc, wind=2

Community Classification

Vegetation Type:	FODM4-2 (Dry-fresh White Ash-Hardwood Deciduous Forest 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	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	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	3	white ash
2	Sub-canopy	2	4	white ash = ironwood >> sugar maple
3	Understorey	3/4	2	white ash = ironwood >> sugar maple
4	Groundcover	7	1	clover sp > herb robert > wood sorrel

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	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	A	< 10	A	10 - 24	O	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:	Armow WF
Polygon:	WOD-009
UTM:	
Date:	Sept. 20/11 Time: 16:45
Surveyor(s):	AMD, PNT
Weather:	18°C, sunny, no precip, 30%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
hawthorn spp			R		
basswood		R			
blue beech			R		
sugar maple	R	O	O		
ironwood		A	A		
Amer. beech	R	R	R		
white ash	D	A	A		
white elm	R	R	R		

Species	Layer 1	2	3	4	Sample
queen anne's lace				R	
curled dock				R	
aster lateriflora				R	
hellebozine				R	
common speedwell				R	
clover sp.				O	
herb robert				O	
common plantain				R	
enchanter's nightshade				R	
polygonum sp.				R	
viola sp.				R	
wood sorrel				O	
heal all				R	

Wildlife and Other Notes

- cattle using forest as pasture - trampling, patties, very little understory veg., high disturbance, understory veg. mostly pasture spp.
- sapling trees, i.e. <5cm dbh completely removed by cattle - i.e. pushed over - same w snags

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

(WOD-031)

Site: Armow WF	Not wetland
Polygon: WET-002	(758) AWL-038
UTM:	
Date: Sept 30/11	Time: 15:45
Surveyor(s): PNJ, AMD	
Weather: 18°C, no precip, 60%OC, wind = 1	

Community Classification

Vegetation Type:	MAMM1-16 / Mixed (mineral) thicket
Inclusion:	Meadow (marsh 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.	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	X 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			N/A
1	Canopy			N/A
2	Sub-canopy	3	1	Hawthorn sp.
3	Understorey	4	3	Tall Goldenrod > grass, broad goldenrod.
4	Groundcover	5	4	Soft rush = lake sedge

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:	S		
Aspect:	DR		
%	0.1		
Type:	C		
Class:	9		

Strata:	Texture	SiCL		
	Depth	23-107		
Strata:	Texture	SiC		
	Depth	107-120		
Strata:	Texture	/		
	Depth	/		
Strata:	Texture	/		
	Depth	/		
Effective Texture		SiCL		
Surface Stoniness		/		
Surface Rockiness		/		
Depth to:				
	Mottles	26		
	Gley	30		
	Bedrock	—		
	Water table	115		
	Carbonates	/		
Depth of Organics		23		
Pore Size Disc #1		/		
Pore Size Disc #2		/		
Pore Size Disc #3		/		
Moisture Regime		6		

Polygon: WET-002

Tree Tally

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

NOTES:

- wetland used in cattle pasture - cow patties + grazing evident.

*CLH verified during 00/S/11 visit this community is not considered a wetland.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

(Not Wetland) 031
★WET-003/WUD-6M★

Site: Armow	1275
Polygon: A (TSB)	
UTM: 17T 6460285 4897310	
Date: Oct 5 2011	Time: 1448
Surveyor(s): CLH, KJW	
Weather: Sunny 20°C 0% Wind 3	

Community Classification

Vegetation Type:	SAGM6 Shrub Pasture.
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	X 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		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Pasture

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	1	White Ash > White Elm > Sugar maple
2	Sub-canopy	3	1	Crataegus sp.
3	Understorey	4/3	3	Crataegus sp. > Canada Goldenrod > Curly Dock > Scirpus validus
4	Groundcover	6/7	4	Orchard Grass > Scirpus validus > Red clover > Scirpus 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	N	< 10	R	10 - 24	N	25 - 50	N	> 50
Snags	O	< 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	Young	X Mid-age	Mature	Old Growth

PLANT SPECIES LIST

Site: Armow	1275
Polygon: A	
UTM:	
Date: Oct 5 2011	Time: 1448
Surveyor(s): CLH, KJW	
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
Canada thistle				O	
Crataegus sp.		R	A		
Canada Goldenrod			A		
Peppermint				O	
Curly Dock			O		
Calico Aster				O	
Iris pseudacorus				O	
Scirpus sp. (grazed)				O	
White Elm	R			R	
Scirpus validus			O	A	
Yellow Avens				O	
Canada Anemone				R	
Spotted Knapweed				R	
Phleum pratense			R		
Red Clover				A	
Yarrow				R	
White Ash	R				
Dwarf Hawthorn			O		
Wild Carrot				O	
Euthamia graminifolia			O		
Spotted Joe-Pye Weed			R		
Hal-Ai				R	
Fox Sedge			R		

Species	Layer 1	2	3	4	Sample
Sugar maple	R				
Bluegrass				R	
Orchard grass				D	
Creeping Buttercup				O	

Wildlife and Other Notes

While there would normally be a proliferation of wetland species, the grazing by cattle is extensive, there are several old field species throughout. As per owes the effect of cattle grazing on this community is exceedingly noticeable and severely impairs the growth of wetland species.

Creek runs through

DSC_0940

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow WF
Polygon:	WFT-002 — TWOD-031
UTM:	
Date:	Sept. 2011 **Time:** 15:45
Surveyor(s):	AMD, PNT
Weather:	18°C, no precip, 60% CC, wind = 1

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	
hawthorn sp.			R		

all dead

Species	Layer 1	2	3	4	Sample
soft rush				A	
fox sedge				A	
aster sp				O	
sensitive fern				O	
curled dock				O	
carex lacustris				D	
solidago graminifolia				D	
anemone canadensis				D	
eupatorium maculatum				R	
queen anne's lace				R	
viola sp				R	
yellow avens				R	
solidago altissima				A	
blue flag iris				O	
bur oak seedling				R	
wool grass				R	

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	Nashua WF (WOD-031)
Polygon:	WOD-009
UTM:	
Date:	Sept 20/11 **Time:** 16:45
Surveyor(s):	PNJ, AMD.
Weather:	8°C, sunny, no precip, 30%cc, 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	SM		3						
B	Wild turkey		feather	1						
B	Bl rapt Chew	SM		2						
B	Blue jay	SM		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:	Nashua WF
Polygon:	WOD-009
UTM:	
Date:	Sept 20/11 **Time:** 16:45
Surveyor(s):	PNJ, AMD
Weather:	8°C, sunny, no precip, 30%cc, wind=2

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

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
N/A		

Describe Valley (depth, geomorphological traits):

Additional Details:

WOD-010

Candidate Bat Maternity Roost Data Form

Use this form in Mixed or Deciduous Forest Communities

Project Name: Arrowwf
Project #: 1275
Date: Sept 30/11
Observer(s): PNJ, AWD.

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-008	1	1		see point on map emailed at 4pm (A)
~~WOD-010~~	2	2		(B) ph#106+107 17T 457325 4898065
	3	0		(C) ph#109 17T 457287 4898013
WOD-010 total snags 12	4	3		(D) ph#108 17T 457306 4897999
WOD-010 snags/ha 24	5	1		(E) ph#112 17T 457254 4897999
	6	1		(F) ph#110 17T 457282 4897951
~~WBMA-004~~	7	0		(G) ph#113 17T 457204 4898016
	8	3		(H) ph#114 17T 457227 4898069
	9	1		(I) ph#115 17T 457177 4898010
	10	0		(J) ph#116 17T 457136 4897905
WOD-009	1	0		17T 0466424 4897298 ph#124
~~WOD-011~~	2	0		17T 0466456 4897311 ph#125
[redacted]	3	0		17T 0466460 4897293 ph#126
	4	0		17T 0466468 4897298 ph#127
WOD-011 total snags 1	5	0		17T 0466475 4897281 ph#128
WOD-011 snags/ha 2	6	0		17T 0466512 4897246 ph#129
	7	0		17T 0466489 4897235 ph#130
	8	0		17T 0466528 4897228 ph#131
	9	1		17T 0466530 4897231 ph#132
	10	0		17T 0466512 4897285 ph#133

17T 457338 4898024

BD

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:	Arrow WF
Polygon:	WET-002 — W (WOD-031)
UTM:	
Date:	Sept 20/11 Time: 15:45
Surveyor(s):	DNT, AMD
Weather:	18°C, No Precip, 60% CC, WIND = 1

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Am Goldfinch	SM		2						
B	Com. Raven	SM		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:	Arrow WF
Polygon:	WET-002
UTM:	
Date:	Sept 20/11 Time: 13:45
Surveyor(s):	DNT, AMD
Weather:	18°C, No Precip, 60% CC, WIND = 1

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

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
N/A		

Describe Valley (depth, geomorphological traits):

Additional Details:

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

2 in WOD-031

Site: Arrow WF 1275	
Polygon: A	
UTM:	
Date: Oct 5 2011	Time: 1423
Surveyor(s): CLH, KJW	
Weather: Sunny, 20°C, 1090Cc wind 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		:::		In field:				
B	Robin	A		*		M	Coyote	SC	several all scat carrying pups	**
B	Flycatcher sp.	OB		*						
B	Red-eyed Cowbird Flycatcher	OB		**						

in polygon

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: Arrow 1275	
Polygon: A	
UTM:	
Date: Oct 5 2011	Time: 1423
Surveyor(s): CLH, KJW	
Weather: Sunny, 20°C Wind 3 CC 0%	

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)

pasture

Habitat Features

Birds

___ Spring Flooded Field
___ Stick Nest (Raptors, Herons)
___ Snag (Raptors, Herons)
___ Tree Cavity Nest (Ducks)
___ Seep/Spring (Turkeys/Grouse)
___ Cliffs/Banks none

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

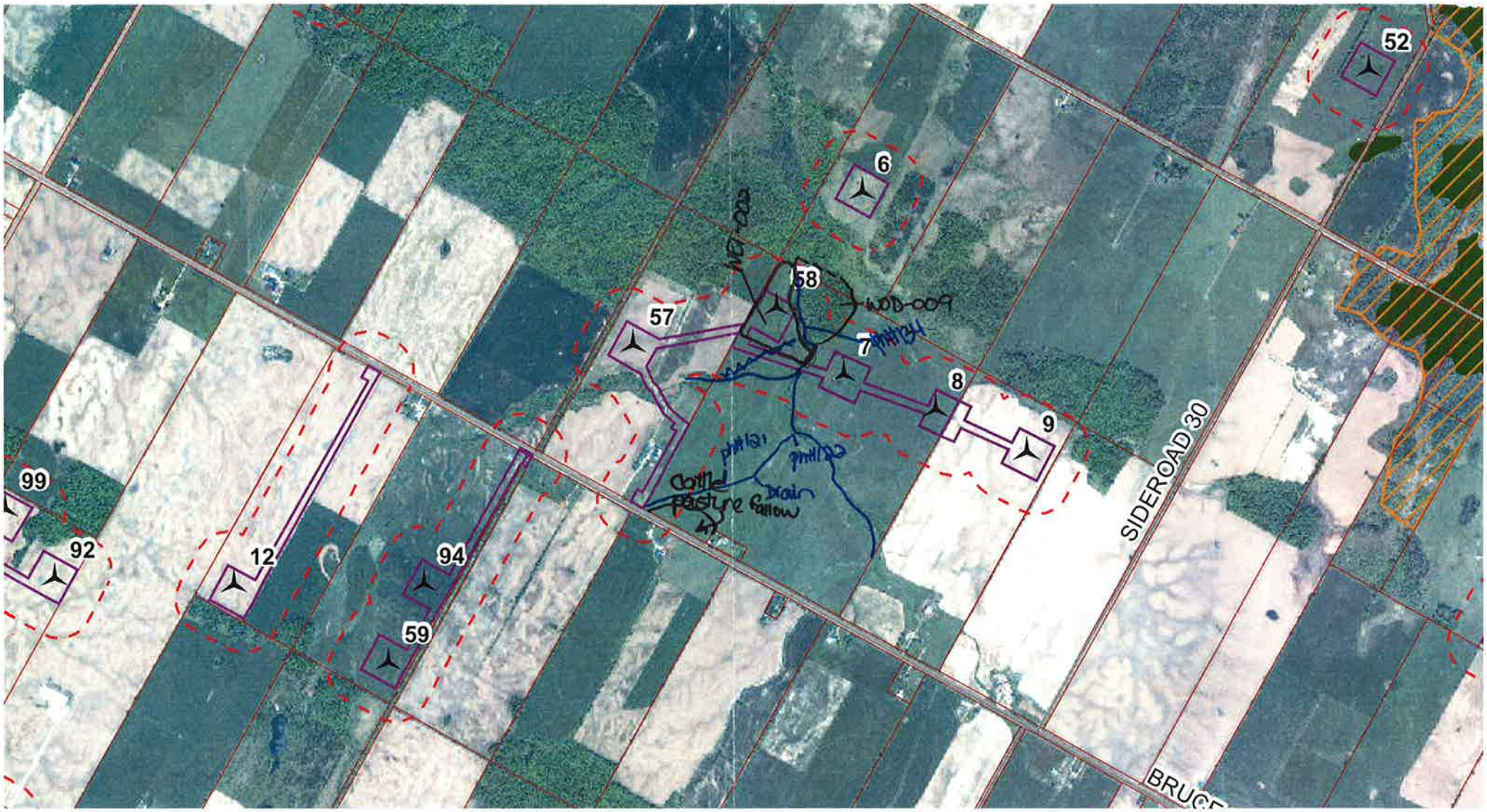
___ Crayfish Chimney

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

Habitat Feature:	UTM	Description

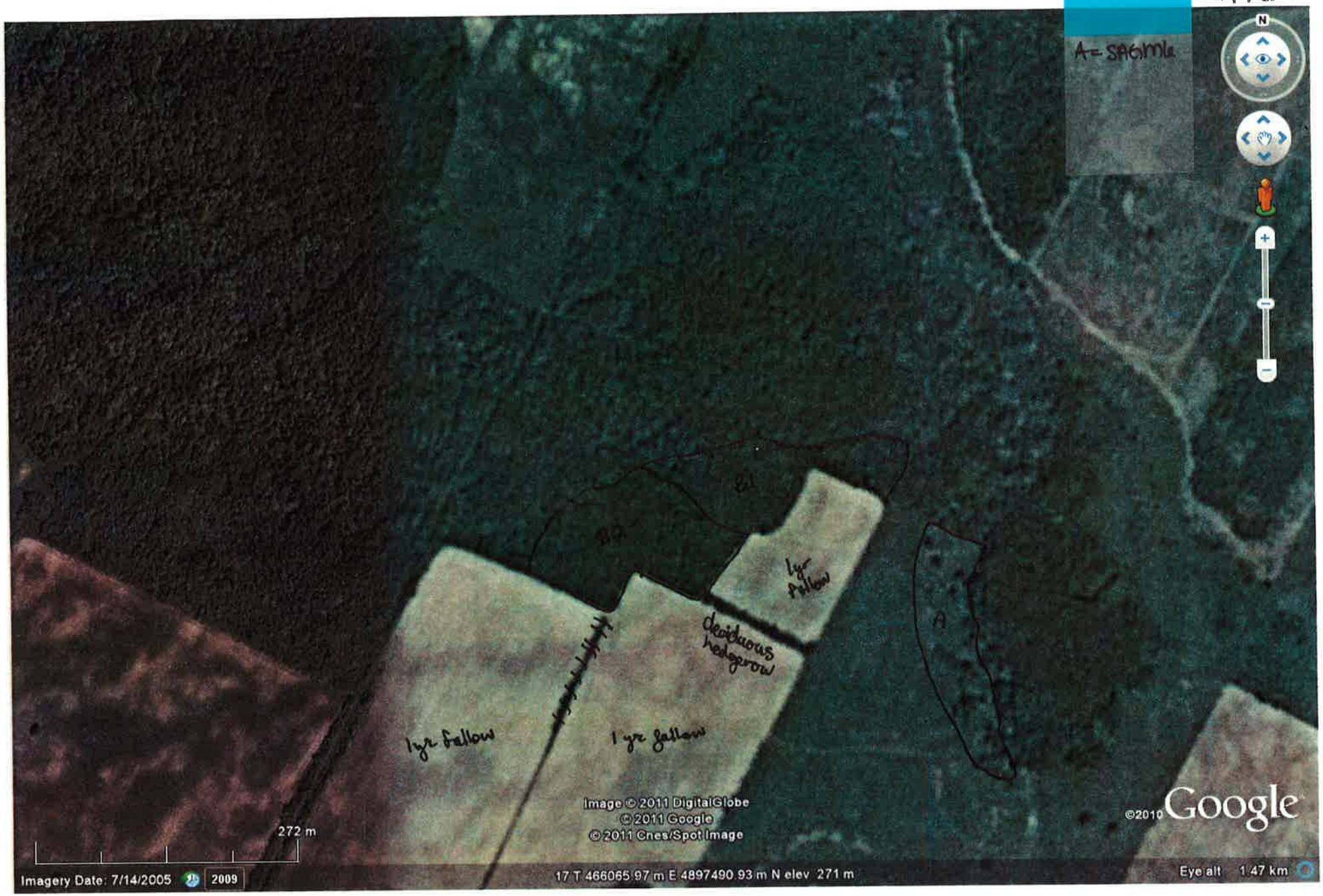
Describe Valley (depth, geomorphological traits):

Additional Details:


52
6
58
WDD-009
57
7
8
9
99
92
12
94
59
SIDEROAD 30
Cattle
Pasture
Fallow
Drain

W WOD-031

oct 5 2011
CLH, KJW



T58

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Page __ of __

Site:	Arman WF
Polygon:	WOD-075/WET-048 (T4/T56) ☆WOD-031☆
UTM:	17T 0464918 4898337
Date:	Nov. 18/11 Time: 9:15
Surveyor(s):	AMD NGM
Weather:	1°C, wind 4 from W, 60% CC.

Community Classification

Vegetation Type:	Dry-Fresh Sugar Maple - Wh. Ash Decid. Forest	(FODM5-8)
~~Inclusion:~~ (2)	green ash swamp, mineral deciduous (SWDM2-2)	-complex
X Complex: (1)	mineral meadow marsh - graminoid, reed-canary grass (MAMM1-3)	-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	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	~~Super-canopy~~			
1	Canopy	1	4	Sugar maple > wh. ash > basswood
2	Sub-canopy	2	4	Sugar maple > basswood = wh. ash > ironwood
3	Understorey	3	3	ironwood > basswood > Sugar maple
4	Groundcover	S-1	2	calico aster > helleborine = 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	O	< 10	A	10 - 24	A	25 - 50	R	> 50
Snags	R	< 10	R	10 - 24	O	25 - 50	N	> 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

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	6	5	
Aspect:	270	245	
%	0	0	
Type:	S	S	
Class:	A	A	

		1	2
Strata:	Texture	SiC	SiCL
	Depth	4-120	4-120
Strata:	Texture		
	Depth		
Strata:	Texture		
	Depth		
Strata:	Texture		
	Depth		
Effective Texture		SiC	SiCL
Surface Stoniness			
Surface Rockiness			
Depth to:			
	Mottles	5	4
	Gley	32	—
	Bedrock	-	—
	Water table	2	1
	Carbonates		
Depth of Organics		4	4
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime		6	6

☆WOD-031☆

Polygon: WOD-075/WET-048

Tree Tally

Species	Tally 1	Tally 2	Tally 3

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ____of____

Site:	Armour WF
Polygon:	WOD-075 ~~WOD-031~~
UTM:	17T 0464918 4898337
Date:	Nov. 18/11
Time:	9:15
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
wh. elm	R	R			
sugar maple	A	A	O		
beech	R	R			
wh. ash	A	O			
ironwood		O	O		
black cherry		R	R		
hawthorn sp			R		
basswood	O	O	O		
E. Hemlock	R	R			
red osier dogwood				R	
White elderberry			R		
Freeman's Maple	R	R			
Trembling Aspen	R				
green ash	A	A			
freemans maple	R	R			
lance leaf aster				A	
Sensitive fern				O	
woolgrass				O	
reed canary grass				O	

green ash complex (swamp)

Species	Layer 1	2	3	4	Sample
teasel				R	
calico aster				A	
knapweed sp.				R	
orchard grass				R	
hypericum perforatum				R	
helleborine				O	
dandelion				O	
heal-all				R	
bone set				O	
Blue vervain				R	
Nightshade (Bitt)				O	
Spicebush			R		
Avens sp.				O	
Curled Dock				R	
Buttercup sp.				R	
Spinulose wood fern				R	
Common speedwell				R	
freeman's maple	R	R			
Green Ash	R	R			
red osier dogwood			O		
canada thistle				R	
carex vulpinoidea				R	
Carex crinita.				R	
mad dog skullcap				R	
carex tufulina				R	
Sensitive fern				A	
soft rush				O	
woolgrass				O	
reed canary grass				A	
dark green bulrush				R	
lance leaf aster				A	

meadow marsh complex

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Page ____of____

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

Bat Habitat

Plot #	# snags (12m x 12m)	UTM
1	3	17T 0464898 4898309
2	0	17T 0464926 4898294
3	0	17T 0464909 4898259
4	2	17T 0464820 4898334
5	0	17T 0464921 4898410
6	0	17T 0464901 4898397
7	0	17T 0464871 4898389
8	1	17T 0464852 4898361
9	2	17T 0464823 4898361
10	0	17T 0464781 4898328

See Wildlife Habitat form

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

★WET-048★ In WOD-031

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

Observer(s): FWD

Date: Nov 24 2011 **Time (24h):** 08:50

Field #: T4 (5 of) WOD-075 **Weather:** Precipitation: None Temp (°C): 2

Map Code: M3 **Wind Speed & Direction:** 2/SE **Cloud %:** 100

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

% Open Water: 0% **ELC Code:** MAMM1-3

Photos: 0634

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	freeman's maple, green ash
c	
dc,dh,ds	
ts	
ls	
gc	Water Dock 1%, Bidens sp 1%, Tear Thumb 1%, mad dog skullcap, sensitive fern
ne	Reed Canary Grass (40%) soft rush 2%, Bebb's sedge 10%, carex crinita
be	
re	woolgrass, dark green bulrush
ff	
f	
su	
m	

Soil type: SiCL Organic ☐ Mineral ☒

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

M1-A

WET-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

* WET-048 in WOD-031

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

Observer(s): PWD

Date: Nov 24 **Time (24h):** 09:00

Field #: T4 (S of) WOD-075 **Weather:** Precipitation: None Temp (°C): 3

Map Code: M4 Wind Speed & Direction: 2/SE Cloud %:

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

% Open Water: 15 **ELC Code:** MAMM1-3

Photos: 0635

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 10%, freeman's maple
c	
dc,dh,ds	
ts	Red Osier Dogwood 2%
ls	
gc	mad dog skullcap
ne	Reed Canary Grass (70%), soft rush, Carex lupulina, carex crinita
be	
re	manna grass
ff	
f	
su	
m	

Soil type: Si CL Organic ☐ Mineral ☒

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

Wildlife Notes: Black-capped Chickadee

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-A

WET-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

* WET-048 in WOD-031

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

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 09.10

Field #: T4 (S of) WOD-075 **Weather:** Precipitation: None Temp (°C): 3

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

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

% Open Water: 0 Type I **ELC Code:** SWDM2-2

Photos: 0636

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash (80%), Trembling Aspen 10%, freeman's maple
c	
dc,dh,ds	
ts	American Elderberry 2%
ls	
gc	Aster sp. 2%, Blue Vervain 1%, sensitive fern
ne	Poa palustris 2%, Lakebank Sedge 2%, reed canary grass
be	
re	manna grass
ff	
f	
su	
m	

Soil type: SiCL Organic ☐ Mineral ☒

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

Wildlife Notes: Black-capped Chickadee

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-048 WOD-031

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 09:15

Field #: T4 (S of) WOOD75 **Weather:** Precipitation: None Temp (°C): 3

Map Code: S3 Wind Speed & Direction: 2/SE Cloud %: 100

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

% Open Water: 0 Typel **ELC Code:** SWDM2-2

Photos: 0637

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash (50%)
c	
dc,dh,ds	
ts	
ls	
gc	
ne	Poa palustris 1% Hop Sedge 1%
be	
re	
ff	
f	
su	
m	

Soil type: See ELC Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

Black-capped Chickadee

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-048 WOD-031

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 09:25

Field #: T4 (S of) WOOD75 **Weather:** Precipitation: None Temp (°C): 3

Map Code: S4 Wind Speed & Direction: 2/SE Cloud %: 100

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

% Open Water: 7 **ELC Code:** SWDM2-2

Photos: 0640

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash (30%) Red Maple 10%
c	
dc,dh,ds	
ts	Sambucus sp. 1%
ls	
gc	Sensitive Fern 2% Bidens sp. 1% Sp Joe Pye 1% Blue Vervain 1% Calico aster 1%
ne	Lakebank Sedge 10%, Soft rush 2%
be	
re	Woolgrass 1%, Dark green bulrush 1%
ff	
f	
su	
m	

Soil type: See ELC Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

Black-capped Chickadee
Red-tailed hawk

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-048 in WOD-031

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 09:35

Field #: T4 (S of) WOD075 **Weather:** Precipitation: None Temp (°C): 4

Map Code: MS Wind Speed & Direction: 3/SE Cloud %: 100

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

% Open Water: 0 Type I **ELC Code:** MAMM1-16

Photos: 0640

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	Sam. Elderberry Sambucus sp. 3%
ls	
gc	Sensitive Fern 5% Lycopus uniflorus 5% Calla lilies 5% Hairy Willowherb 1%
(ne)	Carex lacustris (25%) Carex crinita 5% Carex lupulina 5% Woolgrass 10% C. valpinoides 1%
be	
re	
ff	
f	
su	
m	

Soil type: See ELC Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None Observed

Wildlife Notes:

Black-capped Chickadee

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-B WET-010

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-048 in WOD-031

Wetland Vegetation Communities

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

Observer(s): PWD

Date: Nov 24 2011 **Time (24h):** 09:45

Field #: T4 (S of) WOD-075 **Weather:** Precipitation: None Temp (°C): 4

Map Code: S5 Wind Speed & Direction: 3/SE Cloud %: 100

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

% Open Water: 0 Type I **ELC Code:** SWDM2-2

Photos: 0639

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Green Ash (40%) Trembling Aspen 5%
c	E. Hemlock 1%
dc,dh,ds	
ts	Am. Elderberry 1% Speckled Alder 1%
ls	
gc	Calla Arches (30%) Sp. Toothpetalwort (25%) Lycopus uniflorus 2% Marsh Marigold 2% Sensitive Fern 2%
ne	Soft Rush 2% Carex vulpinoidea 1% Carex intumescens 1% Reed Canary Grass 1% Dk Br Bulrush 2%
be	
re	
ff	
f	
su	
m	

Soil type: SiC Organic ☐ Mineral ☒

Rare Species (Local, Regional, Provincial):

None observed

Wildlife Notes:

Canada Goose (Flock flyover)

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

S2 WET-010

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

IM WOD-031 / K

Wetland Vegetation Communities

Project Name: Agnew **Project #:** 1275

Observer(s): PLJD

Date: Nov 24 2011 **Time (24h):** 10:00

Field #: TH (3 of) WOD-075 **Weather:** Precipitation: None Temp (°C): 4

Map Code: M6 Wind Speed & Direction: 3 / SE Cloud %: 100

Wetland Type: Marsh **Site Type:** RT **Dominant Form:** Graminoid (MA, ne)

% Open Water: 0 Type I **ELC Code:** MAMM 1-16

Photos: 0641

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 5% Red Maple 5%
c	
dc,dh,ds	
ts	Am Elderberry 4%
ls	Spicebush 2%
gc	Sens Fern 7% Meadowsweet 3% Calico Aster 10% Bidens sp 2%
ne	Carex lupulina (25%) C. bebbiana (25%) Woolgrass 15% Soft Rush 5% C. vulpinoidea 5%
be	
re	
ff	
f	
su	
m	

Soil type: SiC 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

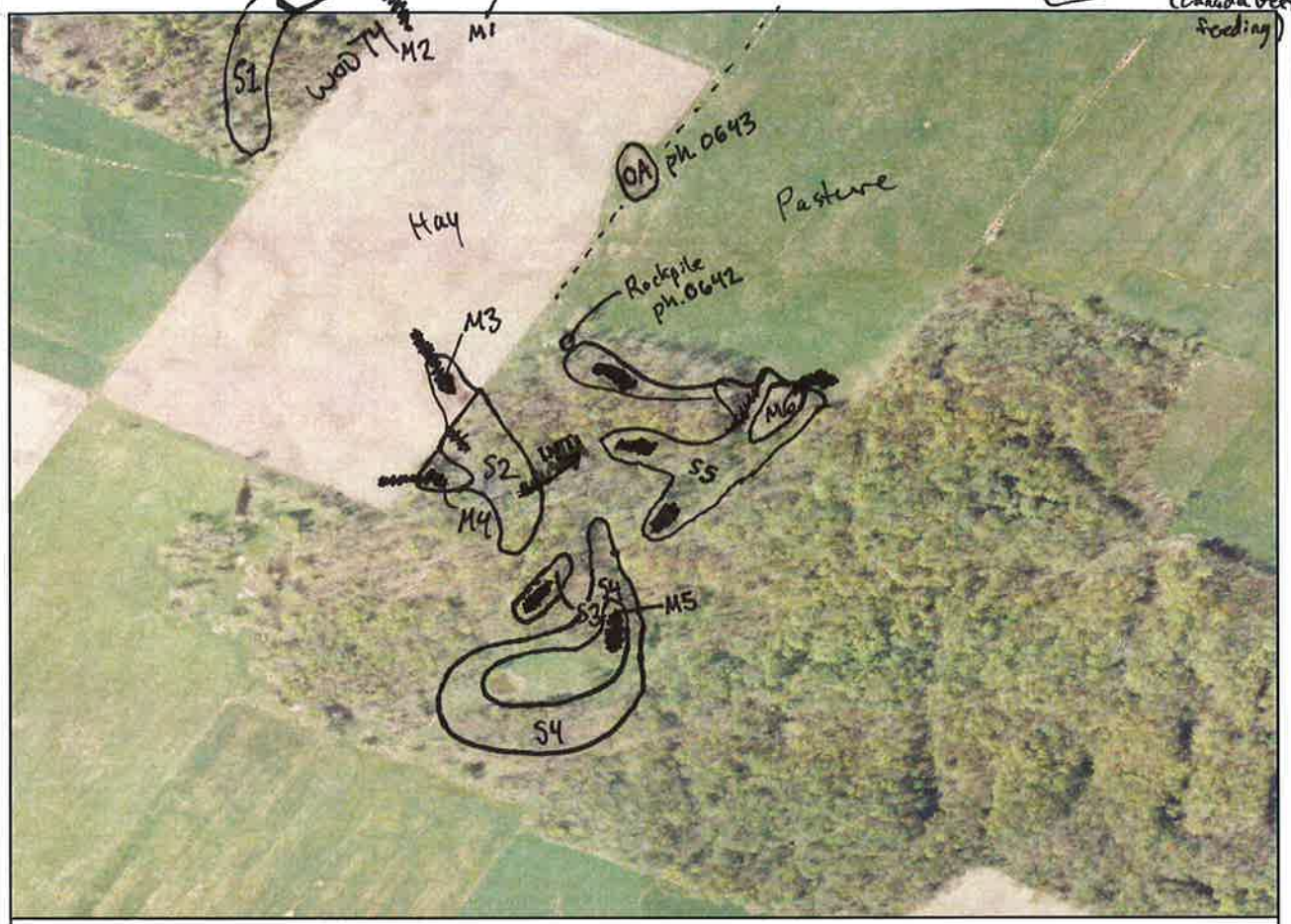
Soil type: **cl**=clay/loam; **sl**=silt/loam; **l**=limestone; **s**=sand; **hm**=humic/mesic; **f**=fibric; **g**=granite **Organic**= >60cm depth over mineral (>10cm over bedrock)**Mineral**= <60cm depth over mineral

M1-C

WET-010

WOD-031

T04



Map centre: 44° 14' 14.9" N, 81° 26' 23.1" W

Map created: November 22, 2011

0 100 200 300 400 m

Scale: 1:6,000

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

Complex AH
M1-A, M1-B, M1-C
S1, S2

Wetlands
WET-D10

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N S

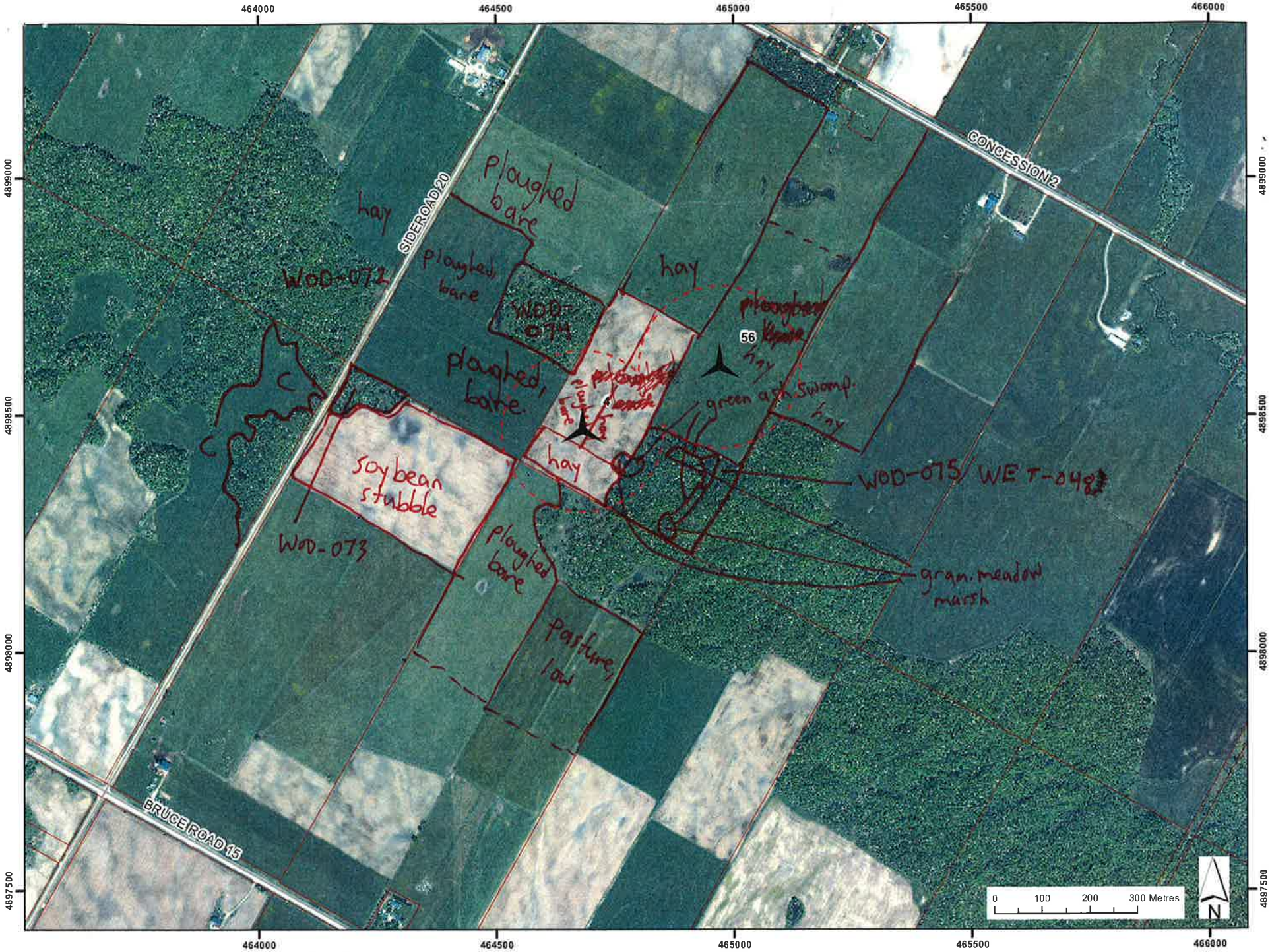
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Ontario

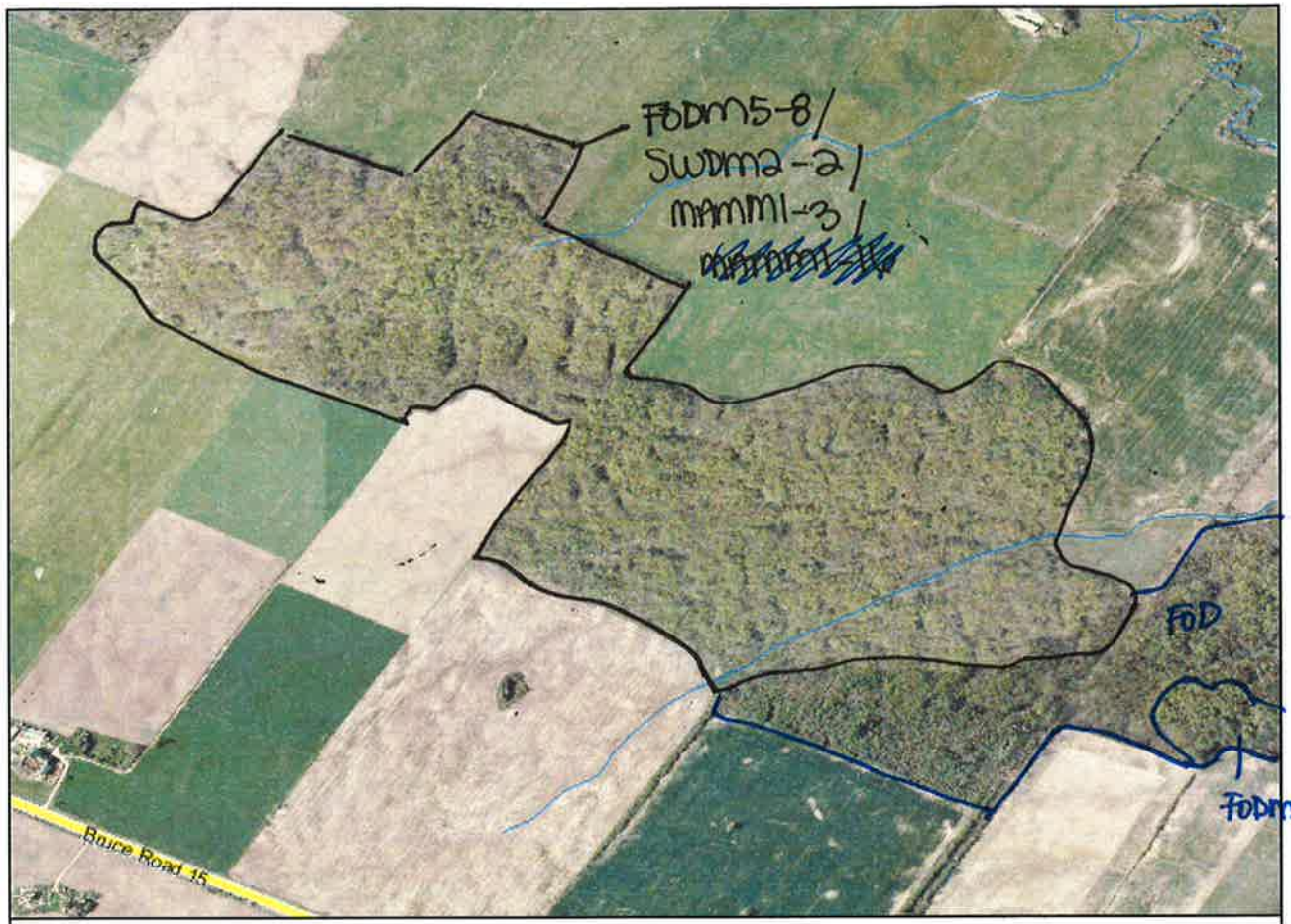
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WX (WOD-031)



C: Corn

WOD-031 W



Map centre: 44° 13' 59.5" N, 81° 26' 04.0" W

Map created: December 14, 2011

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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Ontario

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1 (WOD-031) 1

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

Project Name: Armow WF
Project #: 1275
Date: Nov 18/11
Observer(s): AMD, NGM

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-075	1	3		17T 0464898 4898309	
~~WOD-031~~	2	0		17T 0464926 4898294	
	3	0		17T 0464909 4898259	
	4	2		17T 0464820 4898334	
	5	0		17T 0464921 4898410	
	6	0		17T 0464901 4998397	
	7	0		17T 0464871 4898389	
	8	1		17T 0464852 4898361	
	9	2		17T 0464823 4898361	
	10	0		17T 0464781 4898328	
total snags	8				
snags/ha	16				

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:	Arrow WF
Polygon:	WOD-075 AMOD-031
UTM:	17T 0464918 4898337
Date:	Nov. 18 **Time:** 9:00 am
Surveyor(s):	NGM, AMD
Weather:	Temp: 1°C, wind 4 W, C.C: 60%, no precip

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Downy Woodpecker	X		1						
B	Am. Crow	X		1						
B	Black-capped Chick.	X		1						
M	White-tailed Deer	TK		NA						
M	Gray Squirrel	TK		NA						
B	Blue Jay	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:	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

- [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
- [ ] 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 (on back)	

Describe Valley (depth, geomorphological traits):

Additional Details:

Candidate Bat Maternity Roost Data Form WOD-031

Use this form in Mixed or Deciduous Forest or Swamp Communities

Project Name: AmaWF
Project #: 1275
Date: 04 5, NOV 18, sept 20

Start Time _____ End Time _____

Observer(s): CLH, KJW / mmD, NDm / mmD DNST

Woodland ID (WOD- 031) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: 17T)	Comments
Plot 1	2	466183, 4897438	B1 (CLH, KJW)
Plot 2	2	466176, 4897402	(FODM6-1)
Plot 3	2	466139, 4897390	B2 (CLH, KJW)
Plot 4	0	466099, 4897383	(FODM5-B)
Plot 5	0	466060, 4897364	Good conifers in B2 community
Plot 6	1	466041, 4897421	(beeches)
Plot 7	0	466023, 4897466	
Plot 8	2	466010, 4897399	
Plot 9	1	466001, 4897361	Coun: 22 snags/ha
Plot 10	3	464898, 4898309	
Plot 11	0	464926, 4898294	FODM5-B
Plot 12	0	464909, 4898259	SUBM3-2
Plot 13	2	464820, 4898334	MMM1-3
Plot 14	0	464921, 4898410	complex
Plot 15	0	464901, 4898397	(MMD, NDm)
Plot 16	0	464871, 4898389	Coun: 16 snags/ha
Plot 17	1	464852, 4898361	
Plot 18	2	464823, 4898361	
Plot 19	0	464781, 4898308	
Plot 20	0	466424, 4897398	FODM4-2
Plot 21	0	466456, 4897311	(PNJ, MMD)
Plot 22	0	466460, 4897293	
Plot 23	0	466468, 4897296	Coun: 2 snags/ha
Plot 24	0	466475, 4897281	
Plot 25	0	466512, 4897240	
Plot 26	0	466489, 4897235	
Plot 27	0	466528, 4897232	
Plot 28	1	466520, 4897221	
Plot 29	0	466542, 4897225	
Plot 30			
Plot 31		* Due to the number of plots sampled within this woodland, this entire woodland has been considered to contain a bat maternity	
Plot 32			
Plot 33			
Plot 34			
Plot 35	* Office based analysis PNJ Jan 6/11.		

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 010

Final Wodland Tally 19

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

= 19/(29x0.05) = 13 snags/ha

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of 2

Site:	Armour WF 1275
Polygon:	WOD-048 (P) (T6) *WOD-031*
UTM:	17T 0466455 4897772.
Date:	Oct 28 2011 Time: 9:15
Surveyor(s):	EJW, CLH
Weather:	no precip., 2°C, 60% CC, wind 2/SE

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	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	0	none
1	Canopy	2	4	White Ash > Sugar Maple > Bassword
2	Sub-canopy	3	4	White Ash > Sugar Maple > White Pine
3	Understorey	R/3	2	White Elm > Wild Raisin > Apple > Silky Dogwood
4	Groundcover	R/1	1	species 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	0	< 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 2 of 2

PLANT SPECIES LIST

Site:	Armour WF 1275
Polygon:	WOD-048 (P) (T6)
UTM:	
Date:	Oct. 28 2011 Time: 9:15
Surveyor(s):	EJW, CLH
Weather:	no precip., 2°C, 60% CC, wind 2/SE

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	O	O			
White Ash	A	O			
Bassword	O				
Apple			R		
White Pine		O			photo
White Elm			O		
Wild Raisin			O		
Silky Dogwood			R		

Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

photo 187 - 1289
property line assessment

See WOD-049 for addl details on other woodland

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow LUF 1275
Polygon:	WOD-048 (?) (T6) ☆WOD-031☆
UTM:	17T 0466507 4897511
Date:	Oct 27, 2011 Time: 16:30
Surveyor(s):	CLH KJW
Weather:	overcast, 5°C, 90% CC, wind 3/NW

Community Classification

	Vegetation Type:	WODM5-4 Fresh-moist Hawthorn / Apple Deciduous Woodland 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		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	**Site**			Roll. Upland		Bluff		Fen		Forest
					Cliff				Bog		Plantation

Cover			Plant Form				
	Open		Open Water		Plankton		Forb		Coniferous
X	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	1	Trembling Aspen > White Ash
2	Sub-canopy	3	4	Sugar Maple = Hawthorn > White Ash > Wild Raisin
3	Understorey	3	4	Hawthorn sp > Wild Raisin > Silky Dogwood > Flat-topped Goldenrod
4	Groundcover	4	3	Common Strawberry > Orchard Grass > Bird's-foot Trefoil > Yellow Avens

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	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	X	Pioneer		Young		Mid-age		Mature		Old Growth

PLANT SPECIES LIST

Site:	Arrow LUF 1275
Polygon:	WOD 048 (?) T6
UTM:	
Date:	Oct 27, 2011 Time: 16:30
Surveyor(s):	CLH, KJW
Weather:	overcast, 5°C, 90% CC, wind 3/NW

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
Hawthorn sp		A	D		
E. Hemlock		R			
Trembling Aspen	R				
Wild Raisin		O	O		
Sugar Maple		A	O		
White Ash	R	O	O		
Apple		R			
Silky Dogwood			O		

Species	Layer 1	2	3	4	Sample
Yellow Avens				O	
Yarrow				O	
Canada Goldenrod			O		
Flat-topped Goldenrod			O		
Red-stemmed Dogwood			O		
Bird's-foot Trefoil				O	
Orchard Grass			O	O	
Common Strawberry				O	
Heath-like Aster				R	

Wildlife and Other Notes

Photo
181-1263

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armow
Polygon:	SAGM16 (T6) (adj. to WD-031)
UTM:	17T 0466579 4897658
Date:	Oct 27 2011 Time: 16 00
Surveyor(s):	CLH, KJW
Weather:	Overcast, 5°C, 100% CC, wind 3/1 NW

Community Classification

Vegetation Type:	SAGM16 Shrub Pasture
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	Plantation

Pasture

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

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	1	Hawthorn sp. >? Wild Raisin
3	Understorey	4	3	Hawthorn sp. >? Wild Raisin
4	Groundcover	6 7	4	Orchard Grass > Spotted Knapweed > Common Strawberry > Field Pussytoes

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	0	< 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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armow UF 1275
Polygon:	SAGM16 (T6)
UTM:	
Date:	Oct 27, 2011 Time: 16:00
Surveyor(s):	KJW, CLH
Weather:	overcast, 5°C, 100% CC, wind 3/1 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
Hawthorn sp.		O	O		
Wild Raisin		O	O		

Species	Layer 1	2	3	4	Sample
Sp. knapweed				O	
Field Pussytoes				O	
Common Strawberry				O	
Orchard Grass	O			A	
Wild carrot				O	
Red Clover				O	
Bull thistle				O	
Yarrow				O	

Wildlife and Other Notes

Photo 181 - 8260

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

InWO 03/

Site: Armour	1275
Polygon: WET-028	(T16) (WET-027 M2* ~~WET-074~~)
UTM:	
Date: Oct 27, 2011	Time: 16:15
Surveyor(s): CLH, KTM	
Weather: 5°C, CC 90%, Wind 3, No precip.	

Community Classification

Vegetation Type:	MAMM 2-3 Purple-stemmed Aster meadow
Inclusion:	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	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	Site	Plant Form		
X Open	X Open Water	Plankton	X Forb	Coniferous
Shrub	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	0	—
3	Understorey	4	4	Purple-stemmed Aster > Reed canary Grass > Flat top Goldenrod > Canada Goldenrod
4	Groundcover	5	3	Carex sp. > Creeping Buttercup > Canada Anemone > Blue Flag.

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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnold UF 1215
Polygon:	WET-028 (T6) M1 (WET-027-M2*)
UTM:	17N (WOD-031)
Date:	Oct 27, 2011 **Time:** 16:15
Surveyor(s):	KJW CLH
Weather:	overcast, 5°C 90%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
Salix petiolaris			O		
Silky Dogwood			O		
Common Red Raspberry			O		
Wild Raisin			O		
Trembling Aspen			R		
Shining Willow			R		
Red osier Dogwood			O		

Species	Layer 1	2	3	4	Sample
Tall tower (Goldenrod			O		
Dark green Bulrush			O		
Canada (Goldenrod			O		
Canada Anemone				O	
New England aster			O		
Creeping Buttercup				O	
Fowl bluegrass			R		
Carex sp.				A	
Juncus sp.			O		
Typha latifolia			O		
Reed Canary Grass			A		
Spotted Jewelweed			O		
Blue Flag Iris				O	
Bonesett			O		
Purple-stemmed Aster			A		

1-8

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

* WET-027 M2 ~~WET-074~~ TWOD 031

Wetland Vegetation Communities

Project Name: Arrow **Project #:** 1175

Observer(s): CLH

Date: Oct 27 2011 **Time (24h):** 16:15

Field #: WET-028 (T6) **Weather:** Precipitation: none **Temp (°C):** 5

Map Code: M1 (* M2) **Wind Speed & Direction:** 35, NW **Cloud %:** 90

Wetland Type: Marsh **Site Type:** R **Dominant Form:** gc (M, gc)

% Open Water: 0 % **ELC Code:** MAmm0-3

Photos: 181-125

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	trembling aspen
c	
dc,dh,ds	
ts	Salix petiolaris, silky dogwood, wild raisin, Shining willow, red osier dogwood
ls	common red raspberry
gc	purple-stemmed aster, boneset, spotted jewelweed, swamp milkweed
ne	reed canary grass, carex sp., juncus sp.
be	
re	dark green bulrush, typha angustifolia
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

M2
WET-007

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Armour ★ WET-014 ★
Polygon:	WET-029 (WET-027 - 52 *)
UTM:	★ W WOD-031
Date:	Oct 27, 2011 Time: 11:10
Surveyor(s):	CLH, KJW
Weather:	5°C, overcast, 90% cc, wind 3 to NW

Community Classification

Vegetation Type:	SWTM3-3 Slender Willow mineral	
Inclusion:	Deciduous Thicket 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	Site	Plant Form		
Open	Open Water	Plankton	Forb	Coniferous
X Shrub	X Shallow Water	Submerged	Lichen	Mixed
Treed	Surficial Dep.	Floating-Lvd	Bryophyte	
	Bedrock	X Graminoid	X Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	1	0	—
1	Canopy	2	0	—
2	Sub-canopy	3	1	Salix petiolaris > Crack willow > Tamarack
3	Understorey	4 5	3	Salix petiolaris > Red osier > Wild Raisin > hawthorn sp.
4	Groundcover	6		Juncus sp. > Carex sp. > Water Plantain > 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		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:	Arrow 1275
Polygon:	WET-029 (T6) ☆WET-094☆
UTM:	☆ WOD-031
Date:	Oct 27, 2011 **Time:** 17:10
Surveyor(s):	KJW, CLH
Weather:	overcast, 5°C, 90% CC, W 3 km/hr

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
Saliv petiolaris			O		
Wild Raisin			O		
Red osier Dogwood			O		
Apple		R			
Hawthorn sp.			O		
Tamarack		O			
Crack Willow		O			

Species	Layer 1	2	3	4	Sample
Juncus sp.				O	
Carex sp				O	
Water Horehound				R	
Water Plantain				O	
Coltsfoot				O	
Wool-grass			O		

NATURAL RESOURCE SOLUTIONS INC. ~~WET-071~~
Aquatic, Terrestrial and Wetland Biologists

*WET-027
S2-A
(WOD 03)

Wetland Vegetation Communities

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

Observer(s): CH, KJW

Date: Oct. 27 2011 **Time (24h):** 17:10

Field #: WET-029 **Weather:** Precipitation: none Temp (°C): 5°C

Map Code: S2 (WET-027) Wind Speed & Direction: 3 / NW Cloud %: 90% CC

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

% Open Water: 25% (0% p) **ELC Code:** SWTM3-3

Photos: 181-12606, 182-1284

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	crack willow
c	tamarack
dc,dh,ds	
(ts)	Salix petiolaris, wild raisin, red osier dogwood
ls	
gc	water horehound, colts foot
(ne)	Juncus sp. > Carex sp.
be	water plantain
re	woolgrass
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

0% Perm. open water

WET-007
S2-A

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

WET-074

Site: Arnow	1275
Polygon: WET-030	(WET-027 - (WET-031)
UTM:	
Date: Oct 28 2011	Time: 0845
Surveyor(s): CLH, IGW	
Weather: no precip. 1°C, wind 2 /SE, 70%cc.	

Community Classification

Vegetation Type:	SWTM3-3 Slender 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	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	2	white elm > green ash > trembling aspen
2	Sub-canopy	3	1	Salix petiolaris >> white spruce
3	Understorey	4 5	4	Salix petiolaris > Silky dogwood > dwarf cherry > red osier
4	Groundcover	6 7	1	Calicea > Heath 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	< 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

PLANT SPECIES LIST

Site:	Arrow UF 1275 ~~WOD-031~~
Polygon:	WET-030 (WET-027 ~~WET-074~~
UTM:	
Date:	Oct. 28, 2011 **Time:** 8:45
Surveyor(s):	EJC CLH
Weather:	No precip. 1°C -10% CC (up to) 21 SE

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
Silky Dogwood			O		
[illegible]			O		
[illegible]	O				
[illegible]	O				
[illegible]		R	O		
[illegible]			O		
[illegible]			R		
[illegible]	O				
White Spruce		R			

Species	Layer 1	2	3	4	Sample
[illegible]			O		
[illegible]			O		
[illegible]				O	
Heath Holly				R	

1-3

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

~~WET-074~~ WET-027 (WOD-031)
S2-B

Wetland Vegetation Communities

Project Name: Arrowo **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 28, 2011 **Time (24h):** 08:45

Field #: WET-030 **Weather:** Precipitation: none **Temp (°C):** 1

Map Code: S3 (WET-027) **Wind Speed & Direction:** 2 / SE **Cloud %:** 70

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

% Open Water: 0 **ELC Code:** SWTM3-3

Photos: 182 - 1285, 128

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	white elm, green ash, freeman's maple, trembling aspen
c	white spruce
dc,dh,ds	
ts	Salix petiolaris, Silky Dogwood, wild raisin
ls	
gc	flat topped goldenrod, calico aster, heath aster
ne	
be	
re	dark green bulrush
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-007
S2-B

W (WOD-031)

Arrow WF

Wetland Assessment

CH, KJW -

Oct 27 2011

5°C, 90% cc, wind 3,

No precip. 14:25 - 17:30

Oct 28 2011

1°C, 70% cc, Wind 2/SE, No precip.

0845 - 0930.

~~WET-029~~ WOD 031

WET-027 (TT6) Field Names: WET-027 028 029 030

Completed by David Stephenson.

M1: 1 form > 25% cover

ne Carex sp., Wool-grass.

Soils: 6cm OF4 over Silty Clay.

Moisture Regime 6.

Open water Type: 0% perm. water

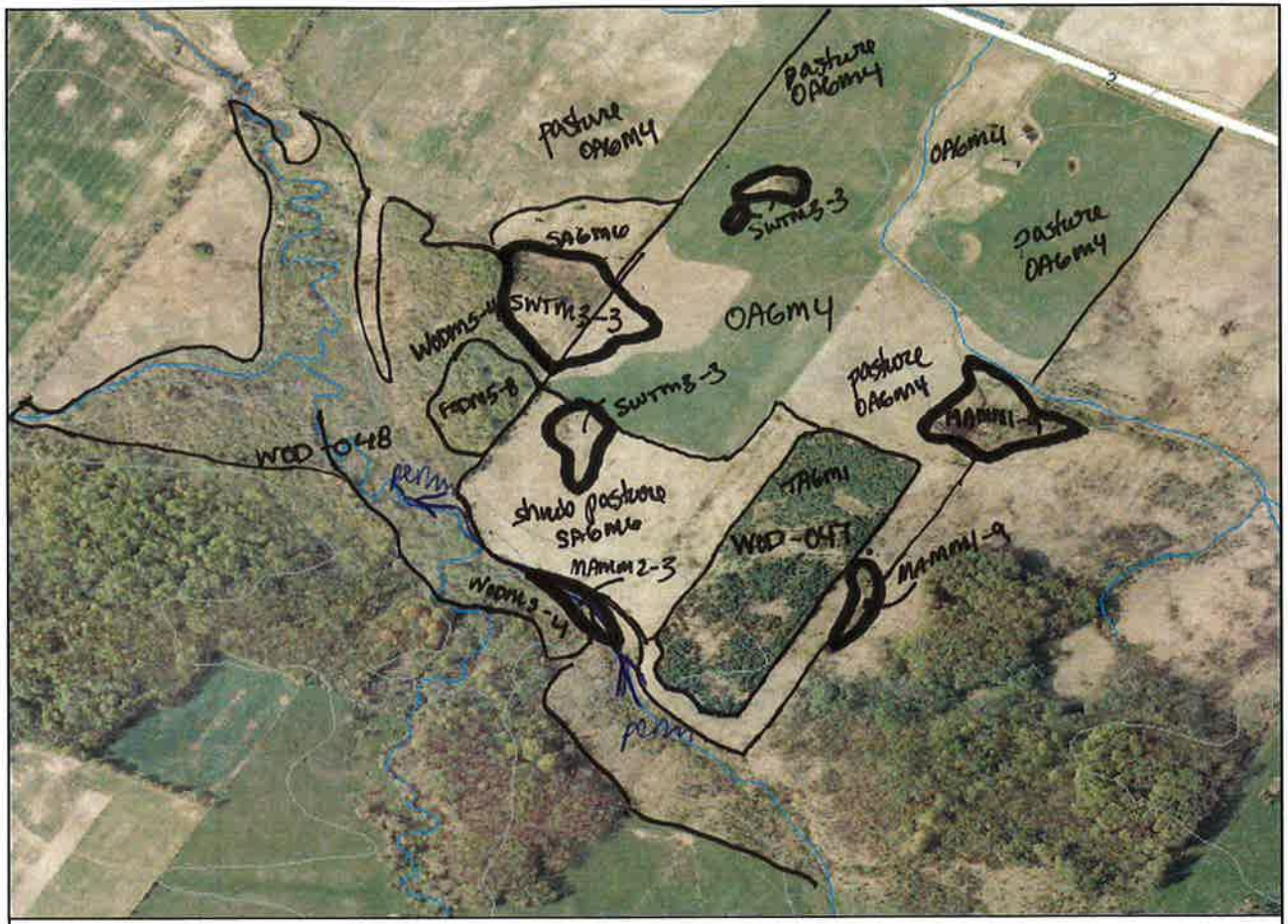
J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

S1: 2 forms > 25% cover:
ts Silky dogwood, red osier dogwood
m moss sp.
Site Type Isolated. Open Water: 0%.
Soils: Mineral (Silty Clay)

S2: 2 forms > 25% cover:
ts:
ne:
S2A
ts Salix petiolaris
ne Juncus sp > Carex sp.
S2B
ts Salix petiolaris, Silky dogwood
ne dark green bulrush.
Site Type Isolated. Adjacent to Total Open Water: ~ Water is present.
Soils Mineral (Silty Clay)

Fish Habitat: None present
Rare species: none observed.

WOD-031, WOD-47, WET-74 T6 ELC



Map centre: 44° 13' 54.2" N, 81° 25' 03.9" W

Map created: October 31, 2011

0 100 200 300 400 m

Scale: 1:9,200

Legend

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

WET-007

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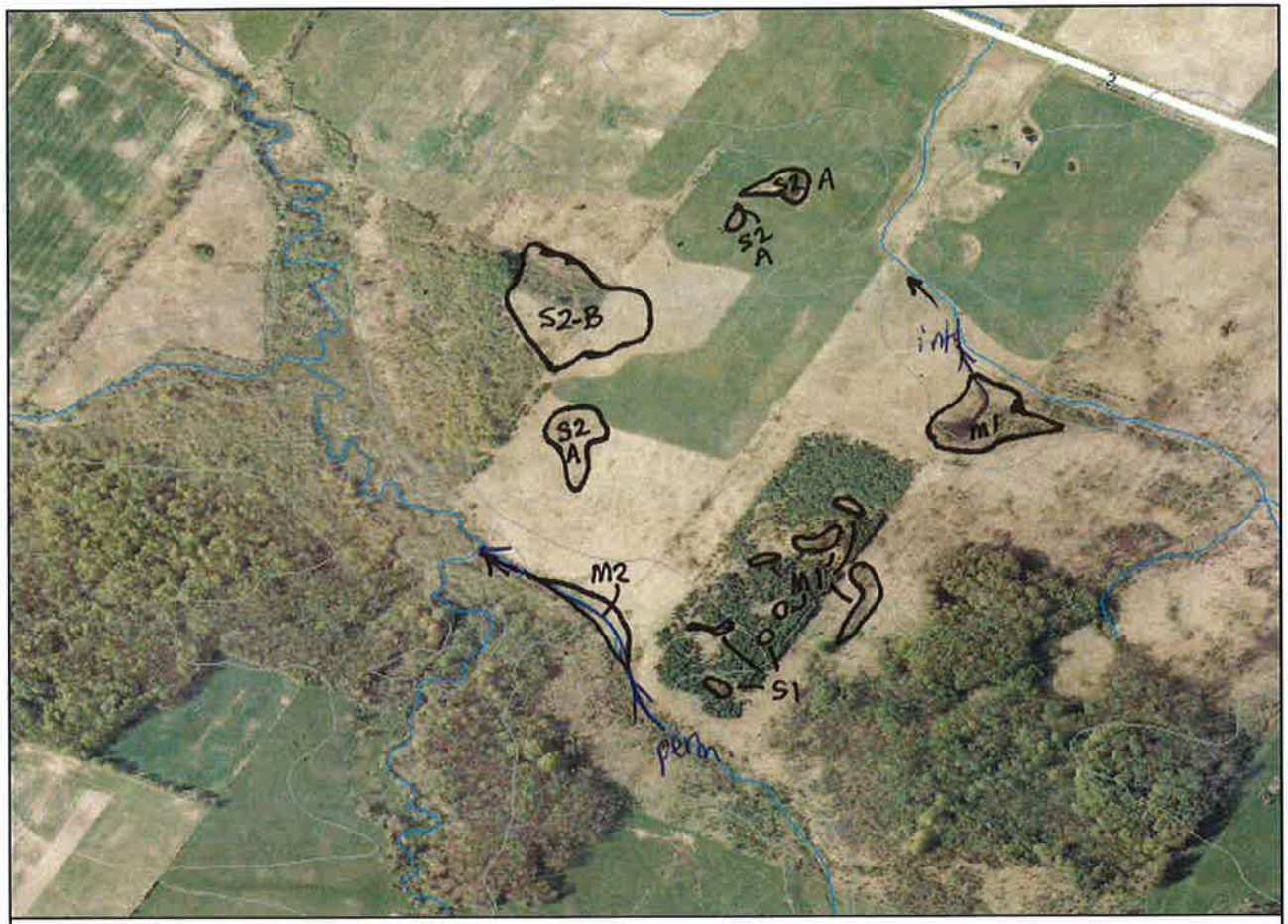
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Ontario

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(in WOD-031 / WOD-47)

T6 Wetlands - WET-027 ~~WET-014~~



Map centre: 44° 13' 54.2" N, 81° 25' 03.9" W

Map created: October 31, 2011

0 100 200 300 400 m

Scale: 1:9,200

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Legend

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

Complex AK
M1, M2
S1, S2-A
S2-B as is

Wetlands
WET-007

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WET-007

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARNOLD WF 1275
Polygon:	WET027 + WET028 + WET029 TAG WOD-031
UTM:	
Date:	Oct. 27 2011 **Time:** 14:25
Surveyor(s):	KJW, CLH
Weather:	overcast, 5°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	Song Sparrow	OB		*						
B	American Crow	VO		**						
B	American Woodcock	OB		**						
B	Blue Jay	VO		****						
B	Black-capped Chickadee	VO		**						
H	Spring Peeper	VO		****						
B	Red-tailed Hawk	OB		*						
M	Raccoon	SC	+ 1 dead body	**						
B	Goldfinch	OB	+ 1 dead body	****						
M	Coyote	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

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	ARNOLD WF 1275
Polygon:	WET 027 + WET 028 + WET 029
UTM:	
Date:	Oct 27 2011 **Time:** 14.25
Surveyor(s):	KJW, CLH
Weather:	overcast, 5°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

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	Armow UF 1275
Polygon:	WET 030 & WOD-048
UTM:	
Date:	Oct 28, 2011 **Time:** 8:40
Surveyor(s):	KJW, CLH
Weather:	no precip, 1°C, 70% CC, wind 2 ESE

WWOD-031

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Horned Lark	OB		N20						
B	Blue Jay	VO		***						

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 UF 1275
Polygon:	WET 030 & WOD-048
UTM:	
Date:	Oct. 28, 2011 **Time:** 8:40
Surveyor(s):	KJW, CLH
Weather:	no precip, 1°C, 70% CC, wind 2 ESE

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 Airview
Polygon:	WAT-TS6 (forest to N) MNRD-031
UTM:	
Date: Nov 24 2011	Time: 16:40
Surveyor(s):	PWD, EFB
Weather:	2°C 100% c. Wind 2/SE no rain

Community Classification

Vegetation Type:		FODM4-2 Dry-Fresh White Ash Mixed Deciduous Rec. Forest
X	Inclusion: →	SWT2-1 Red Osier Min Dec Thicket Swamp. (WET-061/062/063)
	Complex: →	MAMM1-3 Reed Canary Grass Min Wood. Marsh (WET-064)

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	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	White Ash > Am. Beech > Sugar Maple
2	Sub-canopy	2	4	White Ash > Am. Beech > Sugar Maple = Trem Aspen
3	Understorey	3	3	White Ash > Sugar Maple > Red Osier Dog. > Grey Dogwood
4	Groundcover	6	2	Grass/sed Reforested > Wild Strawberry > Herbal Sp. > Fern 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	O	25 - 50	D	> 50
Snags	O	< 10	R	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 ___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
Crataegus succulenta			O		
Gen. Dogwood			O		
Solidago sp.				O	
Fragaria virginiana				O	
Dactylis glomerata				C	
Plantago lanceolata				O	
Prunella vulgaris				O	
Fraxinus pennsylvanica		O	R		
Fothergilla gardenii				O	
Dipsacus fullonum				R	
Wild Rose sp.			R		
NT Aster				O	
Carex blanda				O	
White Elm	R	O	O		
Trem. Aspen	O	O			
Penn. Sedge				O	
Am. Beech	O	O	O		
Blue Cohosh				O	
Spinulose Fern				O	
Christmas Fern				R	
Sugar Maple	O	O	O		
Red Osier Dogwood			O		
Tall Goldenrod				R	

Species	Layer 1	2	3	4	Sample
Aster sp.				R	
Sp. Sensitive Fern				O	
Bracken Fern				R	
Broad-lvd Cattail				R	
Sambucus sp.			O		
Reed Canary Grass				O	
Fraxinus pubescens	O	A	O		

Wildlife and Other Notes

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WET-061 (in WOD-031)

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

Observer(s): PMD, BETS

Date: Nov 24 2011 **Time (24h):** 16:45

Field #: WOD TS8 **Weather:** Precipitation: None Temp (°C): 2

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

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

% Open Water: 0 Type 1 **ELC Code:** SWTM2-1

Photos: —

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	Red Osier Dogwood (75%)
ls	
gc	Sp. Tree Pipe Weed 5% Bracken Fern 5% Asparagus 1%
ne	
be	
re	Dark green bulrush 2%, broad-lvd cattail 2%
ff	
f	
su	
m	

Soil type: SiC 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-009
S1

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

WET-062 (in WOD-031)

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

Observer(s): PMD BETS

Date: Nov 24 2011 **Time (24h):** 16:45

Field #: WOD TS8 **Weather:** Precipitation: None. Temp (°C): 2

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

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

% Open Water: 0 Type 1 **ELC Code:** SWTM2-1

Photos: —

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	Red Osier Dogwood (50%)
ls	
gc	
ne	Carex lacustris 5%
be	
re	broad-lvd cattail 15%
ff	
f	
su	
m	

Soil type: CL 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-009
S1

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-062 (52153 30m wetland) (in WOD-031)

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275
Observer(s): PWD BEB
Date: Nov 24 2011 **Time (24h):** 16:45
Field #: WOD TS8 **Weather:** Precipitation: None Temp (°C): 2
Map Code: S3 Wind Speed & Direction: 2/SE Cloud %: 100
Wetland Type: Swamp **Site Type:** PR I **Dominant Form:** Shrub/ts (S,t)
% Open Water: 0 Type 1 **ELC Code:** SWTM2-1
Photos: —

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
(ts)	Red Osier Dogwood (50%) Sambucus sp 5%
ls	
gc	Spinulose Wood Fern 1%
ne	Broad-lvd Cattail 10% Carex crinita 10%
be	
re	
ff	
f	
su	
m	

Soil type: SiC. 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-009
S1

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-064 (adj WOD-031).

Wetland Vegetation Communities

Project Name: Armow **Project #:** 1275
Observer(s): PWD, BEB
Date: Nov 24 2011 **Time (24h):** 16:45
Field #: WOD TS8 **Weather:** Precipitation: None Temp (°C): 2
Map Code: M1 Wind Speed & Direction: 2/SE Cloud %: 100
Wetland Type: Marsh **Site Type:** PI **Dominant Form:** Graminoid/ne (M,ne)
% Open Water: 0 Type 1 **ELC Code:** MAMM1-3
Photos: 0666

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	
c	
dc,dh,ds	
ts	Hawthorn 5% Red Osier Dogwood 5%
ls	
gc	Goldenrod 3%
(ne)	Reed Canary Grass (95%)
be	
re	
ff	
f	
su	
m	

Soil type: SiC 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

M1 WET-009

Modified ELC Community Description

Page __ of __

WET-061 (INWOD-031)

Soils	1	2	3
Position:	6		
Aspect:	NW		
%	0-05		
Type:	S		
Class:	A		
Strata: Texture	SiC		
Depth	70+		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	Sil		
Surface Stoniness	0		
Surface Rockiness	0		
Depth to:			
Mottles	7		
Gley	22		
Bedrock	-		
Water table	0		
Carbonates	Neg		
Depth of Organics	7		
Pore Size Disc #1			
Pore Size Disc #2			
Pore Size Disc #3			
Moisture Regime	6		

Polygon: S1 (TSB)

9 WET-009 S1 4

Tree Tally

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

NOTES:

- could not auger past 70 cm due to thick, heavy clays.

Modified ELC Community Description

Page __ of __

WET-062 inWOD-031 *

Polygon: S2 (T58)

* WET-009.S1 *

Soils	1	2	3
Position:	6		
Aspect:	300		
%	0-0.5		
Type:	S		
Class:	A		
Strata: Texture	SiL		
Depth	13-18		
Strata: Texture	CL		
Depth	18-120		
Strata: Texture			
Depth			
Strata: Texture			
Depth			
Effective Texture	CL		
Surface Stoniness	—		
Surface Rockiness	—		
Depth to:			
Mottles	24		
Gley	38		
Bedrock	—		
Water table	13		
Carbonates	—		
Depth of Organics	13		
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:

- organic layer Oh
- photo 0669 of swamp

Modified ELC Community Description

Page __ of __

WET-062 in WOD-031

Soils	1	2	3
Position:	6		
Aspect:	180		
%	0.5-2		
Type:	S		
Class:	B		

Strata:	Texture	SiL		
	Depth	13		
Strata:	Texture	SiC		
	Depth	65		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		—		
Surface Rockiness		—		
Depth to:				
	Mottles	34		
	Gley	39		
	Bedrock	/		
	Water table	15		
	Carbonates	None		
Depth of Organics		3		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		5		

Polygon: S3 (TS8) (S2+S3 some wetland)

* WET-009 SIM

Tree Tally

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

NOTES:

- Difficulty augering past 65 cm due to heavy clays.

Modified ELC Community Description

Page __ of __

WET-064 in WOD-031.

Soils	1	2	3
Position:	4		
Aspect:	110		
%	05-2		
Type:	S		
Class:	B		

Polygon: M1 (T58)

* WET-009 M1 *

Strata:	Texture	SiC		
	Depth	65		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiC		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
	Mottles	25		
	Gley	30		
	Bedrock	-		
	Water table	5		
	Carbonates	NOR		
Depth of Organics		~~20~~ 6		
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

Page __ of __

Site:	1275 Ashcow
Polygon:	WOD T58 (Watercourse) WOD-070 *(ADD-031)*
UTM:	
Date:	Nov 24 2011 — Time: 17:00
Surveyor(s):	PWD, BFB
Weather:	2°C, 100% C, Wind 2/SE, no rain.

Community Classification

	Vegetation Type:	FODM7-2 Fresh-Moist Er Ash Hardwood Lowland Dec Forest
X	Inclusion:	MAMM1-3 Reed Canary Gram. Min Mroad. Marsh. (WET-060)
	Complex:	

or Veg Type Considered as wetland but ELC not changed *

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	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	2	3	Grn. Ash > White Elm >> White Ash
2	Sub-canopy	3	4	
3	Understorey	4	4	Hawthorn > Gr. Ash > Red Osier Dogwood > Apple
4	Groundcover	5	3	Reed Canary >> Grass-lvd Goldenrod >> Willow-herb

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	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

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	O	A	O		
Hawthorn sp.		R	O		
Apple sp.		R	O		
Red Osier Dogwood			O		
White Elm	O	O	O		
White Ash	R	R			
Teasel				O	
Grass-lvd. Goldenrod				O	
Willow-herb sp.				O	
Reed Canary Grass				O	
Tall Buttercup				R	

Species	Layer 1	2	3	4	Sample

Wildlife and Other Notes

Desktop

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Wetland Vegetation Communities

Project Name: Arrow		**Project #:** 1275
Observer(s): CLH		
Date: Apr. 9 2012	**Time (24h):**	
Field #:	**Weather:** Precipitation:	Temp (°C):
Map Code:	Wind Speed & Direction:	Cloud %:
Wetland Type: Swamp	**Site Type:** R	**Dominant Form:** 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	white elm, white ash
c	
dc,dh,ds	
ts	red osier
ls	
gc	
ne	reed canary E. graminifolia
be	
re	
ff	
f	
su	
m	

Soil type:		Organic ☐	Mineral ☒

Rare Species (Local, Regional, Provincial):	Wildlife Notes:
	CANOS soils alluvial (bottomland) variable

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

S 1

WET-028

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

WET-060 / X

Wetland Vegetation Communities

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

Observer(s): PWD BES WET-060 (adj to WOD-080)

Date: Nov 24 2011 **Time (24h):** 17:15

Field #: WOD758 watercourse **Weather:** Precipitation: None Temp (°C): 7

Map Code: M2 **Wind Speed & Direction:** Cloud %: 100

Wetland Type: Marsh **Site Type:** ~~R~~ P **Dominant Form:** Graminoid/ne (M,ne)

% Open Water: 0 Type 1 **ELC Code:** MAMM1-3

Photos: 0668

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
h	Green Ash 5%
c	
dc,dh,ds	
ts	Hawthorn 5%
ls	
gc	Grass Red Osier Dogwood 10% Willow shrub sp. 5%
(ne)	Reed Canary Grass (75%)
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-008 M1

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	1275 Arnaw
Polygon:	WOD-iii (WOD-031)
UTM:	
Date:	Nov 10 2011 — Time: 14:50
Surveyor(s):	PWD NGM
Weather:	

Community Classification → Actually FODM7-2 (w/property access)

Vegetation Type:	THDM2-11 Hawthorn Dec. Shrub Thicket
Inclusion:	Graminoid / Typha Marsh MAMM1-2 Cattail Grass-Mix Mineral Meadow Marsh
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	[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		Site	Plant Form				
[ ] Open	[ ] Open Water	[ ] 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	Canopy	2	1	Maple Sp
2	Sub-canopy	3	3	Maple Sp. = Crataegus sp.
3	Understorey	4	3	Crataegus sp.
4	Groundcover	5	4	Typha sp. = 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
	O		O		N		N	
Snags	N	< 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

T58



T58 W(WOD-031)

~~Head~~ Comp. AI
M1, S1
WET-008
Wetland

Complex AJ
S1, M1 + ~~S2~~
WET-009
Wetlands

Copy

☆ Complete soils in all wetlands identified
☆ Complete lost habitat in FODM7-2

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

(IN + WOD 03) Page __ of __

Site:	Arrow WF
Polygon:	(T58)
UTM:	17T 0465991 4897358
Date:	Nov 29/11 **Time:** 13:30
Surveyor(s):	AMO, PWD
Weather:	1°C, rain, 100% CC, wind 4 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.

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

- [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
burrow	17T 0466089489762	- small mammal burrow (flagged w/ orange tape) - photo 0570JJ

Describe Valley (depth, geomorphological traits):

Additional Details:

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Modified ELC Community Description Page __ of __

~~WOD 031~~

Site:	Armour WF
Polygon:	(T83) (N. of WOD-012)
UTM:	17T 0462806 4892713
Date:	Nov 29/11 Time: 16:00
Surveyor(s):	AMD, PWD
Weather:	1°C, rain, 100% cc, wind 4 from SW

Community Classification

Vegetation Type:	Smooth Brome Graminoid meadow (MEGM3-5)
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	X Tableland	Sand Dune	Swamp	Woodland
Cultural		Roll. Upland	Bluff	Fen	Forest
	Site	Cliff		Bog	Plantation

Cover		Open Water	Plant Form		
X Open		Shallow Water	Plankton	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	1	ash sp. > wh. elm
3	Understorey	4	3	tall goldenrod > mullein
4	Groundcover	5-7	4	smooth brome > 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	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
wh. elm		R			
ash sp.		R			

Species	Layer 1	2	3	4	Sample
Smooth brome				A	
wild carrot				O	
tease l				R	
tall goldenrod			R	R	
mullein				R	

Wildlife and Other Notes

- polygon influenced by surrounding land use - crops
- photo 0671 of pasture from Weber Sdrd.

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	WOD-032 (TG)
Polygon:	A
UTM:	0467386, 4896917
Date:	Oct. 14/11 Time: 8:50 am
Surveyor(s):	SAG, MEE
Weather:	temp: 15C, %c.c = 100, precip. spitting, W = 2

Community Classification

Vegetation Type:	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	Deciduous	

Stand Description

	Layer	HT	Cover	Species
*	Super-canopy	4	/	n/a
1	Canopy 2	X	3	Sugar maple > white ash > Am. elm > bass wood
2	Sub-canopy 3	X	3	American elm > sugar maple > white ash > Am. beech
3	Understorey 4-5		2	Black cherry > ~~hard wood~~ sugar maple > white ash > bass wood
4	Groundcover 6-7		2	aster sp > goldenrod > agrimony > common ~~hellebrine~~ helleborine

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	D	25 - 50	R	> 50
Snags	O	< 10	C	10 - 24	R	25 - 50	R	> 50
Deadfall/Logs	A	< 10	A	10 - 24	O	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: 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	A	A	D	
black cherry	/	/	D	O	
white ash	A	A	A	A	
American elm	A	A	O	/	
basswood	O	O	/	A	
Am. beech	/	O	O	O	
hemlock	R	O	/	/	
ironwood	R	O	/	/	
red maple	O	O	/	/	
virginia creeper	/	/	A	/	
false or true	/	/	/	R	
solomon seal	/	/	/	R	
poison ivy	/	/	/	R	O
hepatica	/	/	/	O	

Species	Layer 1	2	3	4	Sample
white baneberry				R	
agrimony				A	
aster sp. x3				D	
goldenrod sp. x3				D	
strawberry				O	
raspberry bloth				A	
rose twisted stalk				R	
blue cohosh				R	
avens sp.				R	
ribens sp.				A	
Christmas fern				R	
jewelweed				O	
ostrich fern				R	
sensitive fern				R	
nightshade sp.				O	
red osier dogwood				A	
alternate leaved dogwood				A	
riverbank grape				O	
grasses sp.				O	
hop sedge				R	
herb robert				O	
Common helleborine				A	

Wildlife and Other Notes

pictures: 0308 - 0332

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

#MDD-032

Wetland Vegetation Communities

Project Name: Ammonite **Project #:** 1275

Observer(s): CLH

Date: Jan 24 2012 **Time (24h):** Desktop

Field #: **Weather:** Precipitation: — Temp (°C): —

Map Code: M1 Wind Speed & Direction: — Cloud %: —

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

% Open Water: 0 % **ELC Code:** Marsh 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:

Soils:
Not headwater
inflows & outflows ∴ unlikely organic.
CANSIS soilmaps: Bc 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

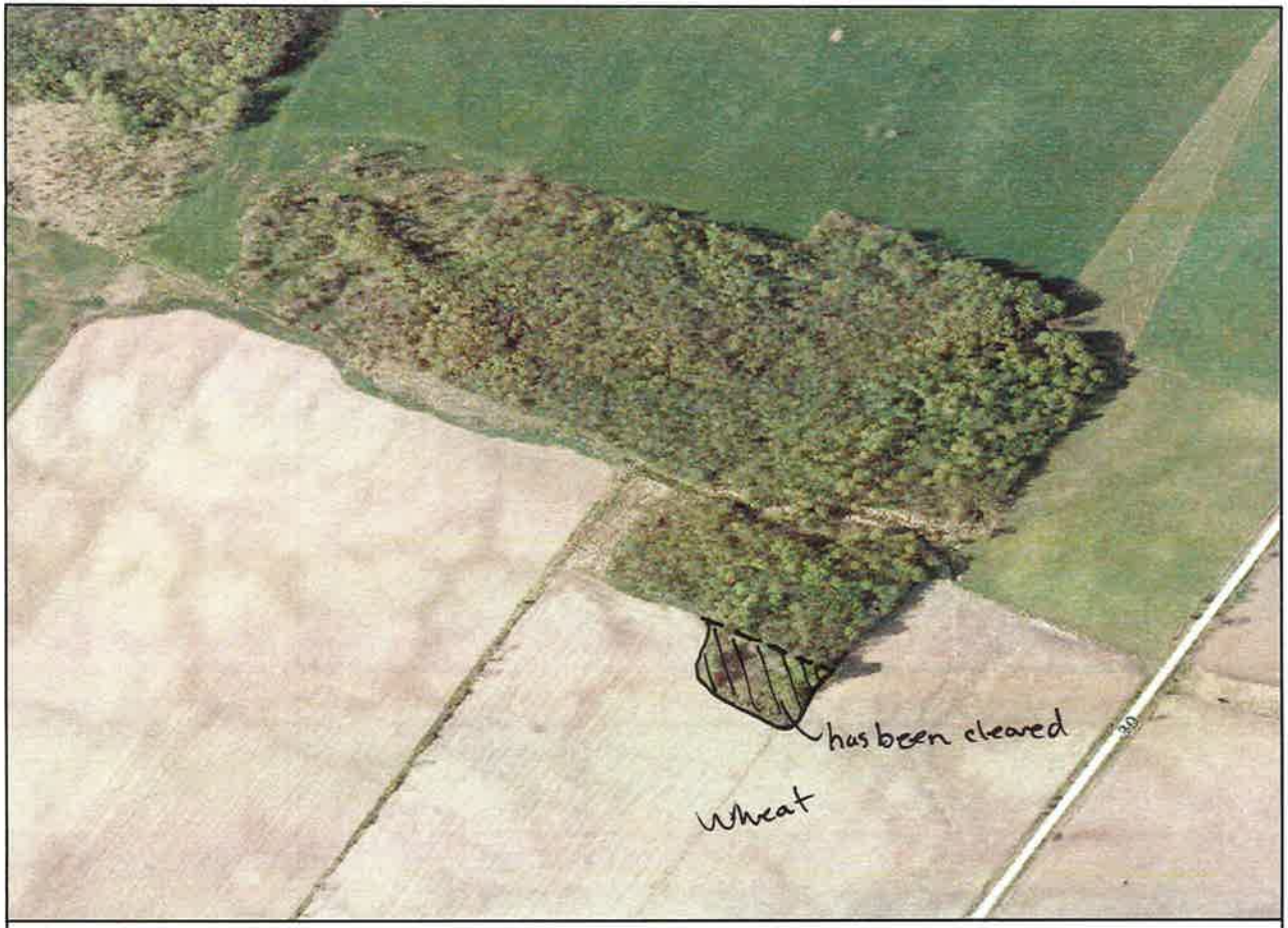
WET-006
M1



unused pasture T9 - * see field notes for description

T 09, 08, 07, 58, 57, 6

T105 (WOD-032)



Map centre: 44° 13' 26.1" N, 81° 24' 29.7" W

Map created: November 22, 2011

0 100 200 300 400 m

Scale: 1:6,900

Legend

- Freeways
- Highways
- Arterial Roads
- Collector Roads
- Local Roads
- Province

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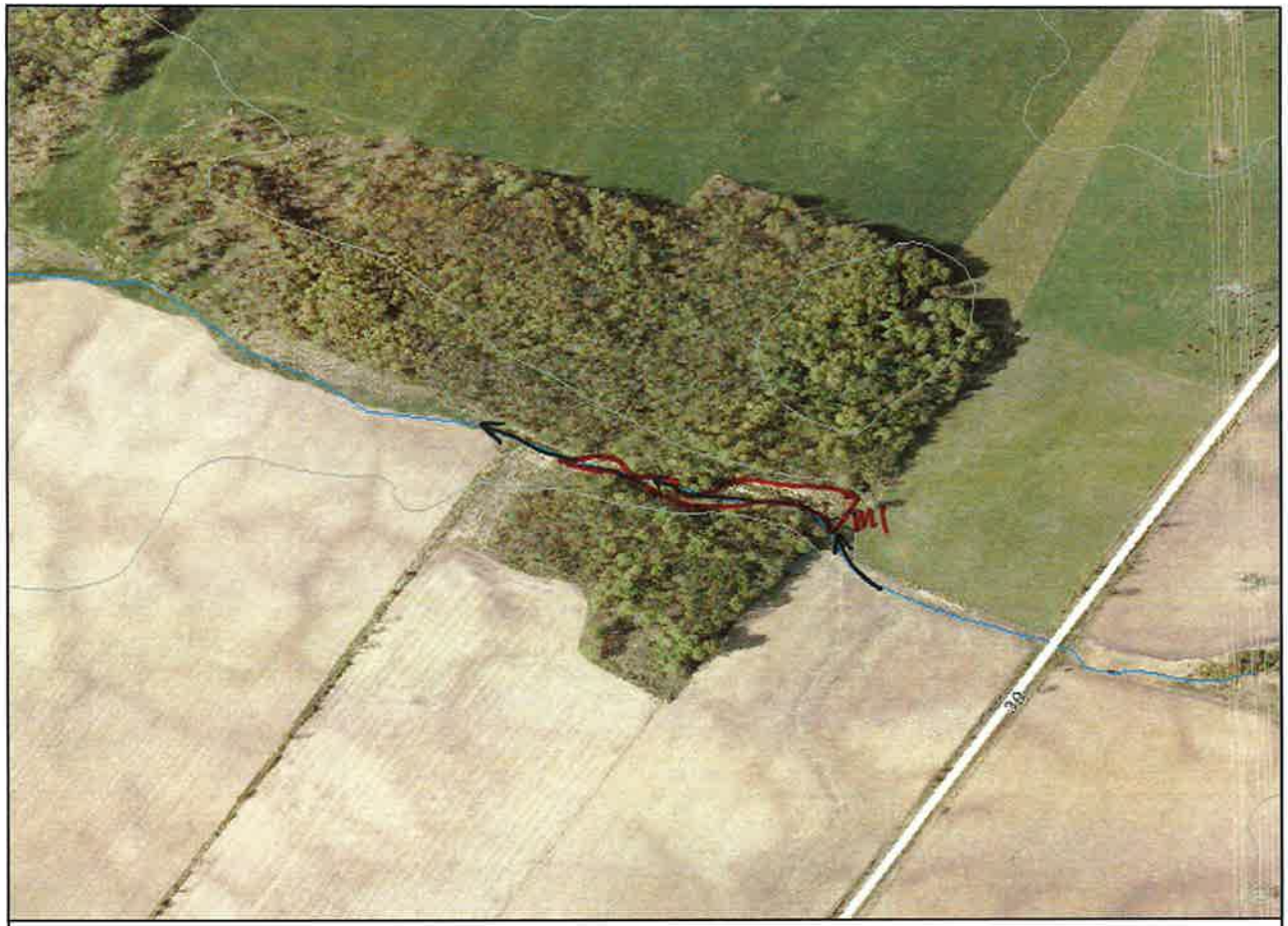
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Ontario

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CLH
Desktop
WOD-032

WET-006



Map centre: 44° 13' 25.2" N, 81° 24' 26.0" W

Map created: January 24, 2012

0 100 200 300 400 m

Scale: 1:6,800

Legend

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

WET-006 (AC)
M1

Wetland

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Ontario

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

Project Name: Armaw WF
Project #: 1275
Date: Oct 14 2011
Observer(s): SHa. MEE

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments VTM
WOD-032	1	0		046 7358 4896866
	2	1		0467375 4896868
	3	1		046 7403 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 4896943
WOD-033	1	0		0460381 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 4898017
	10	0		0460946 4897998
WOD-032 total snags	7			
WOD-032 snags/ha	14	BMA-01)		
WOD-033 total snags	4			
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:	WOI-032
Polygon:	A
UTM:	0467336 4896917
Date:	Oct 14 2011 **Time:**
Surveyor(s):	JAG MES
Weather:	ICE-10C precip-light rain temp-16 ws-2

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Canada goose		VO	8						
B	Am. crow		VO	1						
—	[illegible]									
B	Barn Swallow		VO	1						
B	European Starling		VO	8						
B	Rusty Blackbird		VO	1						
B	Spring peeper		VO	1						
B	Red-bellied [illegible]		VO	1						
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

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)
- [X] Snag (Raptors, Herons)
- [X] 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
- [X] 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

- [ ] 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 with Cavities	0467336 4896913	over 25 dbh with cavities
Fallen Log	0467336 4896914	above 25 dbh

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Ashcroft
Polygon:	100-025 (T34)
UTM:	
Date:	Oct. 13, 2011 Time: 13:30
Surveyor(s):	PWB, KJW
Weather:	17°C, overcast, 100% cc, wind 2/5, no rain

Community Classification

Vegetation Type:	FoDM 5-4
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
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	Hop Hornbeam > Basswood > Ash Beech > Sugar Maple
2	Sub-canopy	3	1	Sugar Maple > Hop Hornbeam > White Ash > Basswood
3	Understorey	4	1	Basswood > Sugar Maple > Choke cherry > White Ash
4	Groundcover	7	2	Sweet Cicely > Herb Robert > Hellebore > 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	O	< 10	O	10 - 24	O	25 - 50	O	> 50
Snags	O	< 10	N	10 - 24	N	25 - 50	N	> 50
Deadfall/Logs	O	< 10	O	10 - 24	N	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: Armour 1275	
Polygon: WOD 03S	
UTM:	
Date: Oct. 13 2011	**Time:** 1:30
Surveyor(s): KJW, RWD	
Weather: overcast 17°C, 100% CC, wind 2/5	

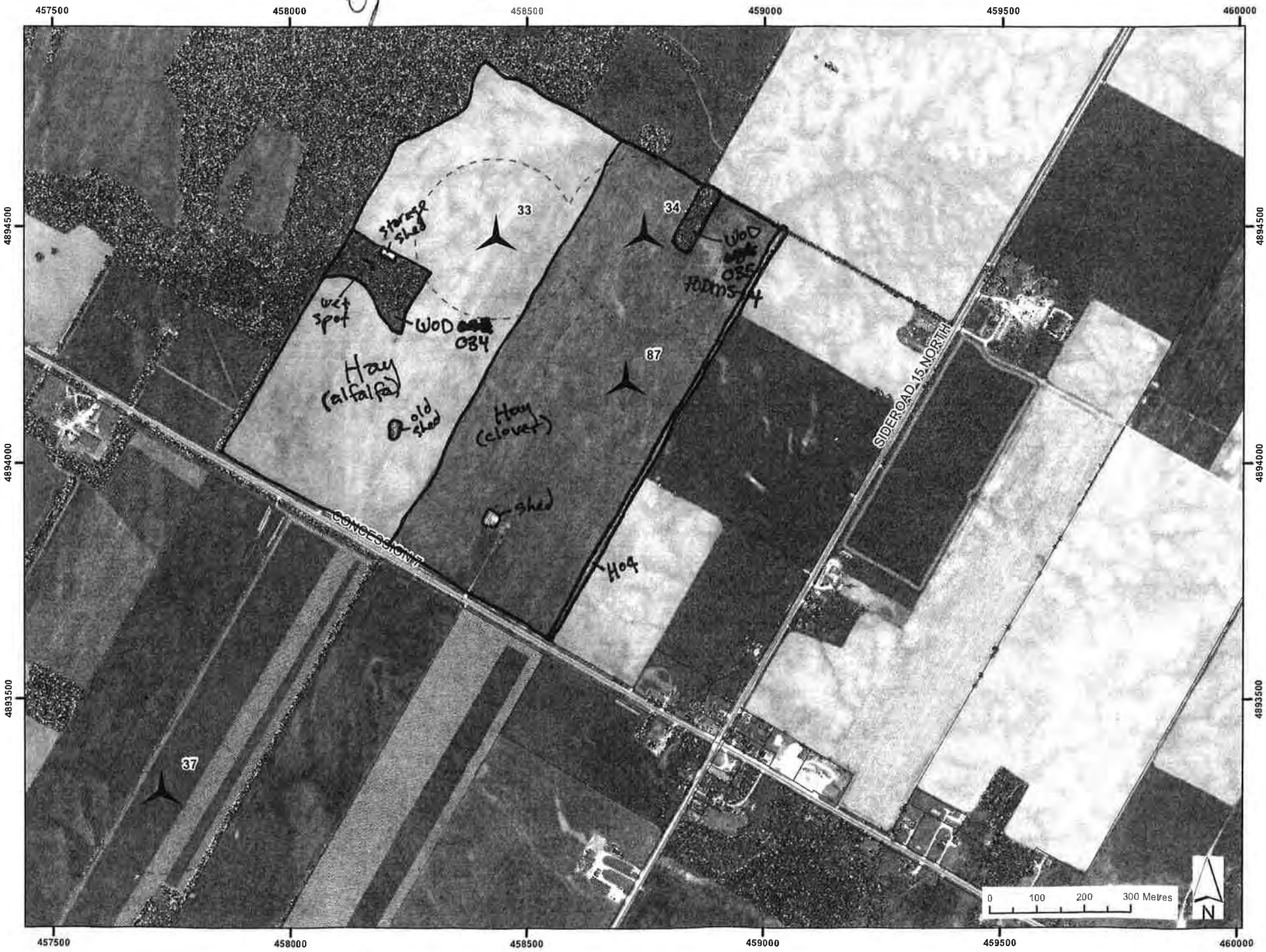
Layers: 1=canopy 2=sub-canopy 3=understorey 4=ground layer

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

Species	Layer 1	2	3	4	Sample
Hop Hornbeam	O	O	O		
Basswood	O	O	O		
Hawthorn sp.		O	O	O	
White Ash	O	O	O	O	
American Beech	O	O	O	O	
Choke Cherry			O	O	
Common Red Raspberry			O	O	
Riverbank Grape		O	O	O	
Sugar Maple	O	O	O	O	
Pasture Rose			R		

Species	Layer 1	2	3	4	Sample
Barren Strawberry				O	
Canada Goldenrod			O		
Calico Aster			O		
Yellow Avens				O	
Smooth Brome				O	
Common Burdock			O	O	
Hellibore ?				O	
Wild Strawberry				O	
Herb Robert				O	
Violet sp.				O	
Common Dandelion				O	
Hedgerow 4:					
white pine	42m				
white spruce					
white cedar					
hawthorn sp					
white elm					
red osier					
grape sp					
elderwood sp					

WOD-035


457500
458000
458500
459000
459500
460000
4894500
4894000
4893500
33
34
87
37
storage shed
wet spot
WOD 034
WOD 035
Hay (alfalfa)
old shed
Hay (clover)
shed
Hog
CONCESSION 7
SIDEROAD 15 NORTH
0
100
200
300 Metres
N

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	1275 Arrow
Polygon:	WOD-035
UTM:	
Date:	Oct. 17, 2011 **Time:** 13:30
Surveyor(s):	PWD KTW
Weather:	17°C, overcast 100% cc, Wind 7/S, no rain

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

TY	Species	EV	Notes	#		TY	Species	EV	Notes	#
B	Red-tailed Hawk	OB		1						
B	Horned Lark	OB		5						
B	American Robin	OB		1						

SNH-007 Not cond

SNH-008 Not cond

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
- [X] 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
- [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
Rock Pile & Log Pile	17T 0458816 4894457	172-1110
Snag	17T 0458874 4894577	172-1111 Beech Snag w/ woodpecker holes 45dbh
Rock Pile	17T 0458881 4894586	172-1112
Crevice tree (alive)	17T 0458870 4894641	172-1113 Basswood with deep long crevice 65dbh
Crevice Snag (dead)	17T 0458871 4894581	172-1114 Basswood 45dbh

Describe Valley (depth, geomorphological traits):

Additional Details: A total of 3 snags were identified in native woodland (visually looked at all trees). Therefore, no bat habitat assessment was completed as known snags/ha = 5 ∴ not a candidate bat maternity colony

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page __ of __

Site:	1275 Arnrow
Polygon:	WOD-037 (T18)
UTM:	
Date:	Oct. 14, 2011 Time: 10:45
Surveyor(s):	PWD, KJW
Weather:	Raining, 12°C, 100% cc, wind 4/SE

Community Classification

Vegetation Type:	~~FOD1-5~~ Dry-Fresh Sugar Maple
Inclusion:	FOMS1-10 deciduous Forest Ecosite
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	[ ] Praine
	[ ] Acidic Bedrock	[ ] Terrace	[ ] Rockland	[ ] Stream	[ ] Thickel
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	4	Sugar Maple > Trem. Aspen > Wh. Elm > Am. Beech
2	Sub-canopy	3	3	Sugar Maple > Trem. Aspen > Wh. Elm > Hop Hornbeam
3	Understorey	4	2	Sugar Maple > White Elm > Chokecherry > Alt. leaf Dogwood
4	Groundcover	7	2	Calico Aster > Zig Zag Goldenrod > Herb Robert > B S 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	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

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Armour 1275
Polygon:	(WO)-037
UTM:	
Date:	Oct 14, 2011 **Time:** 10:45
Surveyor(s):	KJW, PUD
Weather:	Raining 12°C 100% CC wind 4/SE

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

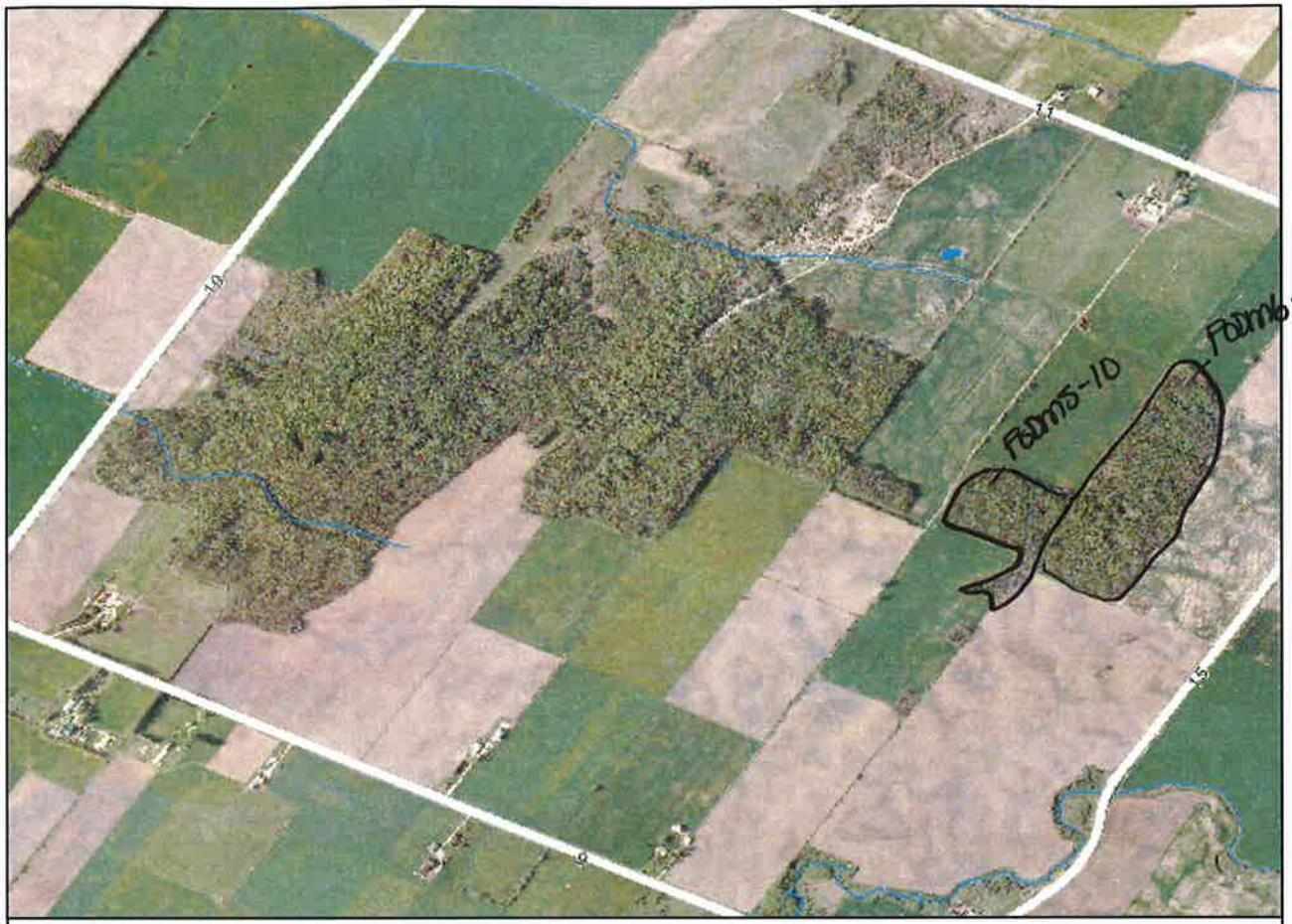
Abundance Codes: R=rare O=occasional A=abundant D=dominant

Species	Layer 1	2	3	4	Sample
Sugar Maple	O	O	O	O	
White Ash	O	O	O	O	
Basswood	O	O	O	O	
White Ash	O	O	O	O	
Choke Cherry			O	O	
Prickly Gooseberry			O	O	
Common Elder			O	O	
Hawthorn sp.		O	O	O	
Trembling Aspen	O	O	O		
Currant sp.				R	no thorns
Dwarf Raspberry				O	
Moonseed				O	*/
Red Osier Dogwood			O	O	
Thimbleberry			R	R	
White Poplar	O	O	O	O	
Hop Hornbeam	O	O	O	O	
Wild Raisin			R		
Virginia Creeper			O	O	
Black Cherry	O	O	O	O	
American Beech	O	O	O	O	
Common Red Raspberry			O	O	
Speckled Alder			R	R	
Riverbank Grape			O	O	
Red Raspberry				O	

Species	Layer 1	2	3	4	Sample
Hellebore				G	
Agrimony				G	
Bracken Fern				G	
Poison Ivy				O	
Blue-stemmed Goldenrod				O	
Orange-fruited Horned Gentian				R	
Carex sp.				O	
Grass sp.				O	
Calico Aster				O	
Enchanter's Nightshade				R	
Christmas Fern				O	
Three-leaved Goldthread				O	
Woodland Strawberry				O	
Crested Shield Fern				R	
? Square Sedge				R	
Herb Robert				O	
Meadow Horsetail				R	
Hog-all				O	
Bladder Sedge				R	
Hollow Rush				O	
Clearweed				O	
Spinulose Wood Fern				O	
Tall Goldenrod				O	


459500
460000
460500
461000
461500
4897000
4896500
4896000
4895500
63
61
19
18
20
105
SIDEROAD 15 NORTH
CONCESSION 11
WET-021
(S2)
WET-020
(S1)
WOD-036
WOD-037
WOD-038
406
0
100
200
300 Metres
N

WOD-008 and WOD-037



Map centre: 44° 13' 14.8" N, 81° 30' 31.2" W

Map created: December 30, 2011

0 300 600 900 1,200 m

Scale: 1:18,000

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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WOD-037

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

Project Name: Arrow
Project #: 1275
Date: Oct. 14, 2011
Observer(s): PWD, KTW

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WOD-037	1	Ø		17T 0459967 4896434	
	2	Ø		17T 0460020 4896380	
	3	Ø		17T 0460054 4896320	
	4	Ø		17T 0460086 4896390	
	5	Ø		17T 0460136 4896399	
	6	Ø		17T 0460122 4896368	
	7	Ø		17T 0460090 4896310	
	8	1		17T 0459995 4896209	1 knot crevice (30cm dbh)
	9	Ø		17T 0459994 4896326	
	10	Ø		17T 0459961 4896357	
total snags	1				
snags/ha	2				

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

Very few snags, some which are <25cm dbh and even those are scarce.

Wildlife Observation Form

Page __ of __

NATURAL RESOURCE SOLUTIONS INC.

Site:	
Polygon:	WOD-037
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	#
B	Killdeer	VO	flyby	*						
M	Beaver	SC		*						
H	Green Frog	VO		*						
B	Turkey Vulture	SM	soaring	**						

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:	WOD-037
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	17T 0460082 4896381	15m diameter, some willow at edge
Vernal pool	17T 0460059 4896381	25m diameter, sugar maple, white elm
AWD-020		

Describe Valley (depth, geomorphological traits):

Additional Details:

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description Page 1 of __

Site:	WOO-OX8 Armow Wind Farms - turbine 19 (WOO-03747) 21/03/12
Polygon:	A
UTM:	0460328, 4896374
Date:	Oct 21 / 11 — Time: 11:55 am
Surveyor(s):	NBW, MEA
Weather:	temp 7°C, %cc = 100, precip = raining light, ws=3

Community Classification

Vegetation Type:	FODM6-4
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	X	Terrace		Rockland		Stream		Thicket
X	Natural		Basic Bedrock		Valley Slope		Beach/Bar		Marsh		Savannah
	Cultural		Carb. Bedrock		Tableland		Sand Dune		Swamp		Woodland
		Site			Roll. Upland		Bluff		Fen	X	Forest
					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		n/a	
1	Canopy	2	4	Sugar maple > Am. elm > white ash = ironwood
2	Sub-canopy	3	4	sugar maple > Am. elm > ~~white~~ ironwood - white ash
3	Understorey	4-5	3	sugar maple > Am. elm > hawthorn > nanny berry
4	Groundcover	6-7	3	sugar maple > agrimony > aster sp. > 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%

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

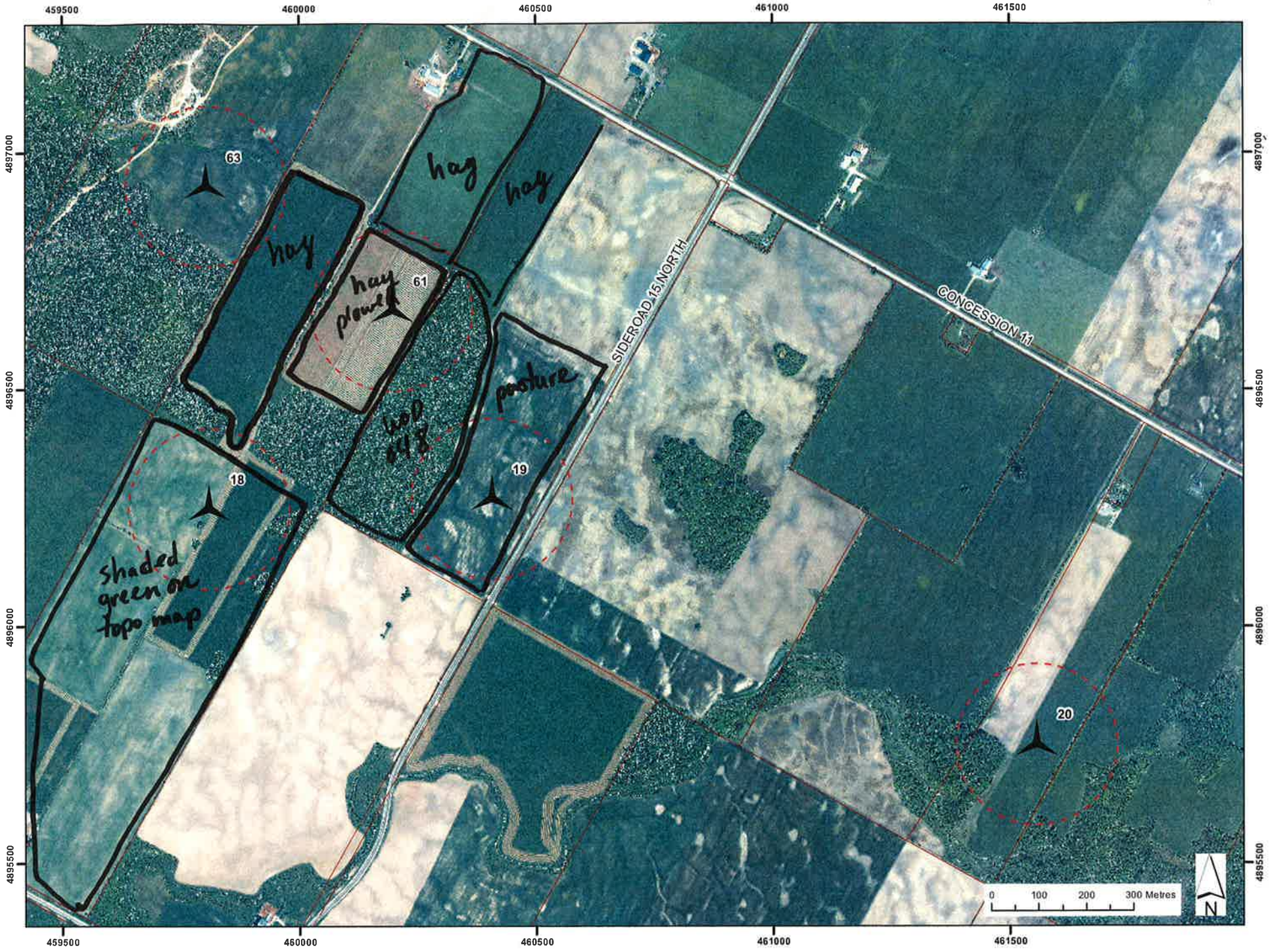
Species	Layer 1	2	3	4	Sample
sugar maple	D	D	D	D	
apple sp.	R	R			
pin cherry	R	O			
Am. elm	A	A	A	O	
white ash	A	A	A	O	
basswood	O		O		
Am. beech			R		
lg. tooth aspen	R				
ironwood	A	A	A		
hawthorn	R	O	A		
redosier dogwood			O		
nannyberry			A		
Eastern hemlock	R				
choke cherry			O		
trembling aspen	R				
yellow birch	R				
black ash	R	R	R		
Am. mountain ash			R		

Species	Layer 1	2	3	4	Sample
goldenrod sp				A	
aster sp.				A	
grass sp.				O	
Ironwood sp.				R	
beaked					
raspberry				A	
agrimony				D	
horsetail				R	
sensitive fern				O	
riverbank grape				O	
blue cohosh				D	
fern sp.				O	
black raspberry				O	
hepatica sp.				R	
common					
hellebourine				R	
Christmas fern					
rose sp.					
cranberry fruit				R	
horse gentain					
red raspberry sp.				R	
ribes sp.				O	
strawberry sp.				O	

Wildlife and Other Notes

- thick forest
- diverse forest

(WOD-037)


459500
460000
460500
461000
461500
4897000
4896500
4896000
4895500
63
hay
hay
hay
61
hay plowed
SIDEROAD 15 NORTH
CONCESSION 11
pasture
bad bush
19
18
shaded green on topo map
20
0
100
200
300 Metres
N

WOD-037

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

Project Name: Armour WF
Project #: 1273
Date: 2/17/2011
Observer(s): WAW MCL

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	Comments
WOD-043	1	1		0460209 - 4496638
1	2	3		0460287 - 4896632
	3	1		0460295 - 4896600
	4	0		0460316 - 4896577
	5	0		0460329 - 4896553
	6	2		0460304 - 4896540
	7	1		0460243 - 4896505
	8	0		0460314 - 4896484
	9	0		0460329 - 4896483
	10	3		0460353 4896512
Total Snags	11			
Snags/ha	22	BMA-015		

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: Amaw WF

Project #: 1275

Date: Oct 14 / Oct 31 / 11

Observer(s): PWD, KJW / WGW, MEE

Start Time _____ End Time _____

Woodland ID (WOD- 037) Weather Conditions:

Plot Number	# snags/cavity trees ≥ 25cm dbh	UTM (Zone: ____)	Comments
Plot 1	0		
Plot 2			
Plot 3		PWD/KJW	
Plot 4			
Plot 5			
Plot 6			
Plot 7			
Plot 8	1		
Plot 9	0		
Plot 10	0		
Plot 11	1		
Plot 12	3		
Plot 13	1		
Plot 14	0	WGW/MEE	
Plot 15	0		
Plot 16	2		
Plot 17	1		
Plot 18	0		
Plot 19	0		
Plot 20	3		
Plot 21			
Plot 22			
Plot 23			
Plot 24			
Plot 25		Summary of both FLC cruises (combined - performed in office	
Plot 26			
Plot 27			
Plot 28			Jan 12/13 by PWD
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 12

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

= 12 / (20 x 0.05) = 12 snags/ha

Wildlife Observation Form

NATURAL RESOURCE SOLUTIONS INC.

Site:	275 - WOD-004 - T19
Polygon:	A
UTM:	0460378 - 4896374
Date:	2/10/2021 Time: 11:25
Surveyor(s):	[illegible] MCA
Weather:	7°C Wind: 4 G1 - CC 100% - No Precip.

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	SR		10+						
M	Squirrel Poop	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
Snag	0460284 - 4896422	≥ 20cm DBH
Large/Deep Pool	0460237 - 4896444	small - 3x3m - likely deep - 50cm visibly flooded
Fallen Rotting Log	0460284 - 4896487	fallen tree & branches
Snag	0460301 - 4896532	>20cm DBH lots of Bark flaking off
Snag	0460355 - 4896641	>50cm DBH, on ridge top
Burrow	0460375 - 4896504	lots of cavities
		Plants=1293
		small burrow 10cm wide - continues
↳ 230m from turbine/access road: GSW11		

AWO-023

BMA-015

Describe Valley (depth, geomorphological traits):

Bird small lots of rolling logs

Additional Details:

- Deer rub on tree

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	1275 Atmosphere 041 01/03/12
Polygon:	WOD-B3 (6A) ~~WOD-053~~
UTM:	
Date:	27 Oct 2011 Time: 14:20
Surveyor(s):	KNR, JBW
Weather:	5°C, 100% cc overcast wind=gent 3 from W no precipitation

Community Classification

Vegetation Type:	Fresh-moist Sugar maple - hardwood deciduous forest (FODM6-5)
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	2	4	Sugar Maple > White elm > Am. Beech
2	Sub-canopy	3	3	Sugar Maple > White elm > Am. Beech > basswood
3	Understorey	½	2	Sugar Maple > Am. Beech > White elm > wa
4	Groundcover	½	3	red raspberry > Zanthoxylum > Sugar Maple > white ash

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	R	10 - 24	R	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

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	
White elm	O	O	O	O	
basswood	R	O	R	R	
White ash	O	O	O	O	
Am beech	O	O	O	R	
Trillium sp.				O	
red raspberry				+	
(Wild carrot)					
wild strawberry					
Avens sp.				O	
bitter sweet nightshade				O	
fern sp.				O	
white baneberry				R	
Zanthoxylum				O	
Xmas fern				O	
blue cohosh				R	
royal fern				R	
Herb robert				R	
prickly currant				R	
Aster sp.				O	

Wildlife and Other Notes

WET-031
52

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

★ WPD-041

Wetland Vegetation Communities

Project Name: Arrow		**Project #:** 1275	
Observer(s): CLH			
Date: Jan 24 2011	**Time (24h):** Desktop		
Field #:	**Weather:** Precipitation:		Temp (°C):
Map Code: 52	Wind Speed & Direction:		Cloud %:
Wetland Type: Swamp	**Site Type:** P	**Dominant Form:**	h (S,h)
% Open Water: 0	**ELC Code:** SWDM		
Photos:			

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's maple, green ash / 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

Desktop. - No site Access
WET-031 52
this area likely represents a highly complex mosaic of wetland interspersed with upland. Some areas delineated are estimate from adjacent community similar communities

Turbines 41, 46

WDD-041



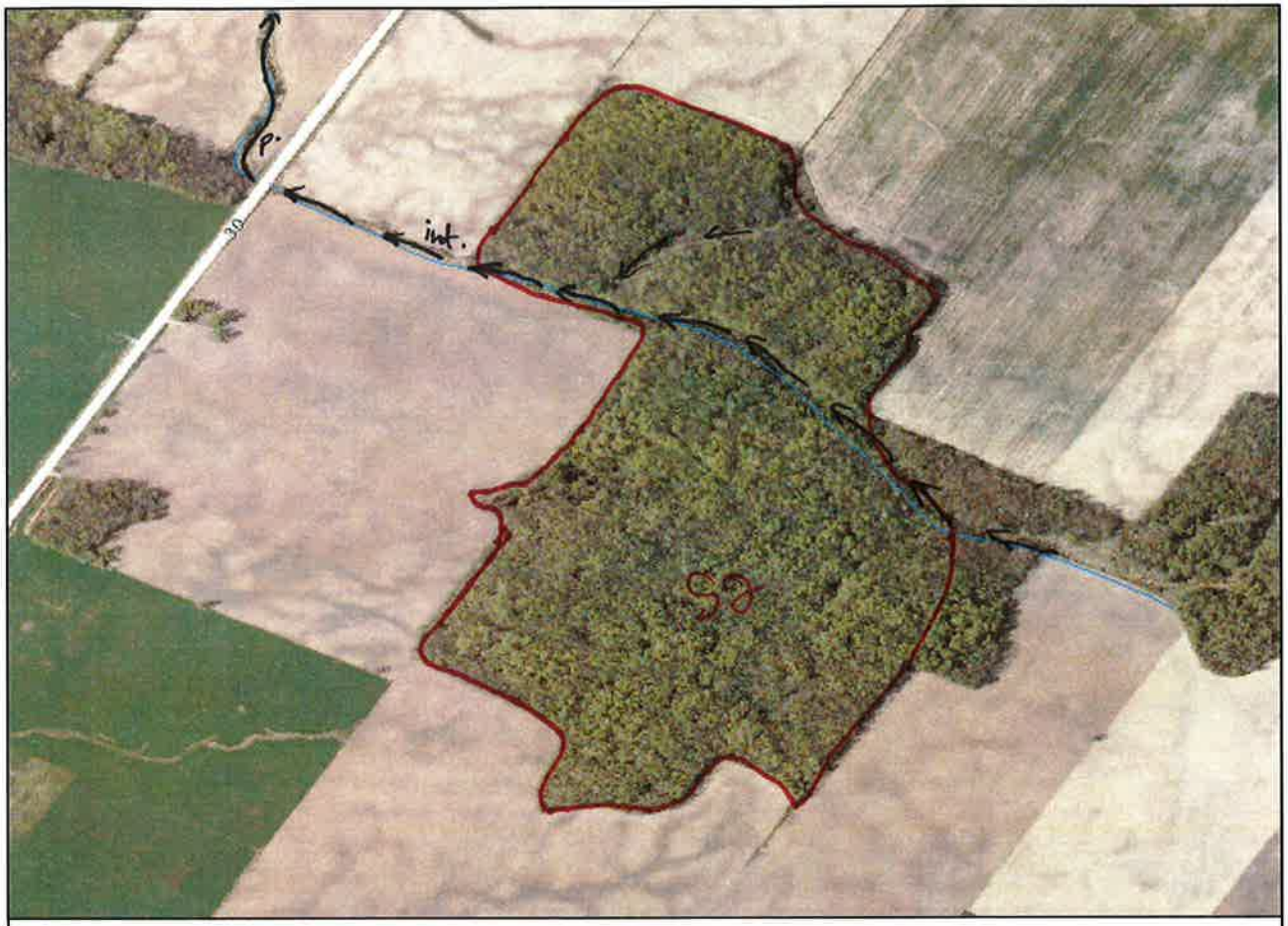
C. = clover.

W? = wheat, maybe

WOD - 041

CLH Desktop

WET-031



Map centre: 44° 10' 14.4" N, 81° 26' 13.7" W

Map created: January 24, 2012

0 100 200 300 400 m

Scale: 1:9,200

Legend

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

WET-031 E

S2

Wetland

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Ontario

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

Project Name: Armow
Project #: 1275
Date: Oct. 27, 2011
Observer(s): JRW, KNP

WOD-041

Woodland ID (WOD-XXX)	Plot #	# snags/cavity trees ≥ 25cm dbh	#snags/ha (πr^2)	UTM	Comments
WODB-T61	1	0		17T 0465371 4890639	± 12m.
WODB-T64	2	0		17T 0465344 4890695	± 8m.
WODB-T64	3	0		17T 0465325 4890699	± 5m.
WODB-T64	4			17T 0465305 4890690	± 6m
WODB-T64	5	1		17T 0465293 4890695	
total snags	1				
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

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 B - T64 RWD-041
UTM:	17 T
Date:	Oct 27, 2011 Time: 2:21
Surveyor(s):	RW, KNP
Weather:	5°C, overcast, wind 2

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		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

Describe Valley (depth, geomorphological traits):

Additional Details:

* Some potential vernal pools but off property access. Not considered candidate SWH anymore

AWD-026

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

Site:	Arrow UF 1275
Polygon:	WOD-32 ★ WOD-041 ★ (T35,90)
UTM:	
Date:	Oct 7, 2011 — Time: 4:00
Surveyor(s):	KJW, CLH
Weather:	Sunny, 22°C, 09.CC, Wind 3S

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
✓ 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	0	
1	Canopy	2	4	Freeman's Maple / Green Ash / White Elm / White Birch
2	Sub-canopy	3	3	Freeman's Maple / Green Ash / Choke Cherry / White Elm
3	Understorey	3/4	2	Reed Canary / Red Osier Dogwood / Chokecherry / Elm seedlings
4	Groundcover	4/4	3	Freeman's Maple / Calico Aster / Poison Ivy / 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	O	< 10	O	10 - 24	O	25 - 50	O	> 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		Mature		Old Growth

PLANT SPECIES LIST

Site:	Arrow UF 1275
Polygon:	C
UTM:	
Date:	Oct. 7, 2011 — Time: 4:00
Surveyor(s):	KJW, CLH
Weather:	Sunny, 22°C, 07.CC, Wind 2S

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	O	O	
Freeman's Maple	A	O	O	O	
White Ash	O				
Basswood	O	O			
Spicebush			O		
White Birch	O	O			
White Elm	O	O			
Chokecherry		O	O		
Red Osier Dogwood			O		
Wild Raisin		O	O		
Riverbank Grape		O	O	O	

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Canada Goldenrod				O	
Poison Ivy				O	
Calico Aster				O	

Wildlife and Other Notes

Assessment from property line (no access)

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

WET-6318

Site:	Arnaud WF 1275 WET-013
Polygon:	WOD-32 ★ WOD-041 ★ (T35,90)
UTM:	
Date:	Oct 7, 2011 Time: 4:00
Surveyor(s):	KJW, CLH
Weather:	Sunny, 22°C, 09:CC, Wind 3S

Community Classification

Vegetation Type:	SUDM3-3 Swamp Maple Mineral Deciduous Swamp
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	0	
1	Canopy	2	4	Freeman's Maple > Green Ash > White Elm > White Birch
2	Sub-canopy	3	3	Freeman's Maple > Green Ash > Choke Cherry > White Elm
3	Understorey	3/5	2	Reed Canary > Red osier Dogwood > Chokecherry > Ash
4	Groundcover	0/1	3	Freeman's Maple > Calico Aster, Stinging Nettle > Green Ash

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	R	10 - 24	R	25 - 50	1	> 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		Mature		Old Growth

COPY

NATURAL RESOURCE SOLUTIONS INC

Modified ELC Community Description

PLANT SPECIES LIST

Site:	Arnaud WF 1275
Polygon:	C
UTM:	
Date:	Oct. 7, 2011 Time: 4:00
Surveyor(s):	KJW, CLH
Weather:	Sunny, 22°C, 09:CC, Wind 3S

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	O	O	
Freeman's Maple	A	O	O	O	
White Ash	O				
Basswood	O	O			
Spicebush			O		
White Birch	O	O			
White Elm	O	O			
Chokecherry		O	O		
Red osier Dogwood			O		
Wild Raisin		O	O		
Riverbank Grape		O	O	O	
* Stinging Nettle	R	R			

Species	Layer 1	2	3	4	Sample
Reed Canary Grass			O		
Canada Goldenrod				O	
Poison Ivy				O	
Calico Aster				O	
* Sensitive Fern				R	
* Riverbank Grape			R	R	

Wildlife and Other Notes

Assessment from property line (no access)

* Added to WOD-041

* ELC boundary

Dec. 1/11, photo 1115 (Added w/property access).

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

*WOD-041

Wetland Vegetation Communities

Project Name: Arnaud **Project #:** 1275

Observer(s): CLH, KJW

Date: Oct 7 2011 **Time (24h):** 16:00

Field #: WET 013 **Weather:** Precipitation: None **Temp (°C):** 20

Map Code: [redacted] S1 **Wind Speed & Direction:** 3 from S **Cloud %:** 0

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

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

Photos: IMPG 168

Forms % (Circle those ≥25%)	Species (dominant species, secondary species, present species)
(h)	Freeman's Maple, Green Ash, white elm, white birch
c	
dc,dh,ds	
ts	spicebush, wild raisin, red osier dogwood, choke cherry
ls	
gc	canada goldenrod, poison ivy, calico aster
ne	reed canary grass
be	
re	
ff	
f	
su	
m	

Soil type: SiCL 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

* From edge of property → No site access.

WET-031
S1

Modified ELC Community Description

Page __ of __

Soils	1	2	3
Position:	5		
Aspect:	170°		
%	0-0.5%		
Type:	S		
Class:	A		

Polygon: WOD-041 / WET-013 * WET-031?

Strata:		1	2	3
A	Texture	SiCL		
	Depth	24-110		
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Strata:	Texture			
	Depth			
Effective Texture		SiCL		
Surface Stoniness		0		
Surface Rockiness		0		
Depth to:				
* Mottles		0		
Gley		22cm		
Bedrock		-		
Water table		14cm		
Carbonates		105		
Depth of Organics		24cm		
Pore Size Disc #1				
Pore Size Disc #2				
Pore Size Disc #3				
Moisture Regime		6		

* measured from below organics

Tree Tally

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

NOTES:

Modified ELC Community Description

Page __ of __

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

Polygon: WOD-041

Strata:		1	2	3
A	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:

Photo #1115

#WDD-041

Arrow WF
Wetland Assessment

Oct 7 2011
CLH, KJW

Sunny, 20°C, Wind 3 0CO%

WET-013

Land access not available at this time. Assessment from property line on SE side.

1 Community.
Palustrine Swamp (S1) See attached map
Forms >25% cover:
h Freeman's maple, green ash.

Soils: not available
No Open Water.
No rare species observed.
No Fish Habitat

Surrounding Land Use within 1 Km:

J. L. DARLING CORP. TACOMA, WA
www.RiteintheRain.com

connects to a watercourse downstream of Sideroad 30 S.