CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form Cleveland Metroparks

Project Label: PCAP **Plot No:** 1146 **Date Sampled:** 7-14-11 **Lead:** Eysenbach

Comment required if item answer is NO

Parking/Access outside of Park Boundaries		Y (N)	If yes, write details in Comments section below
Field journals completed		Y N	
Site sketch made on 1:3000 map?		(Y) N	
Check cover page	X-axis Bearing of plot recorded	(Y) N	
	GPS coords Recorded	(Y) N	
	North direction recorded	(Y) N	
	Photographs taken?	(Y) N	
Plot No., Date agreement on all pages?		(Y) N	
Header data completed all pages?		(Y) N	
Cover classes recorded in all Intensive modules		(Y) N	
Browse Level By Species		(Y) N	
Woody stem quality control check		(Y) N	
Invasive plant quality control check		(Y) N	
Ash trees mapped		(Y) N	
Cover by Strata? (confirm cover type)		(Y) N	
Soil samples collected with matching plot #		(Y) N	
Vouchers labeled on datasheet with initials and number		(Y) N	
Vouchers labeled on collection bag		(Y) N	
Pink flags removed		(Y) N	
Data sheet QA before leaving site?		(Y) N	
Common equipment returned to tub		Y N	
Data sheets scanned?		7/15	Enter date to left
Final data sheets scanned?		8-23-11	Enter date to left
Buffer Widths measured?		(Y) N	
Web Soil Survey		(Y) N	
Voucher Location	Refrigerator	Y N	
(# vouchers collected) SRE 448-451	Press (#)		Enter number to left
	Drier	Y N	
	Identified	(Y) N	
	Mounted	Y N	
	Thrown away	(Y) N	

GRTS point verification: Is plot sampleable?	
☑ Yes	Original GRTS point is sampleable
☐ No	Original GRTS point lands in a non-sampleable area (fill in category below)
	☐ Point falls in a water (i.e. river, lake)
	☐ Managed mowed area (i.e. golf course, picnic area, right-of-way)
	☐ Paved area (i.e. parkinglot, road)
	☐ Unsafe to sample (i.e. steep slope)
	☐ Other

Additional Comments:

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

GENERAL INFORMATION

Project Label: PCAP

Project Name: 01HI2011

Plot Name: Intra-ravinous

Plot No.: 1146

☐ Level 4 (no nested corners sampled)

■ Level 5 (nested corners sampled)

Date (mm/dd/yyyy): 7/14/2011

End date (if > 1 day): / /

Party	Role**
S. Eysenbach	Plot leader
J. Lantermen	3ot assist
M. Breth	Soils/Woody
J. Murphy	Soils/Woody

** Roles: Co-leader, Asst., Guide, Owner, Taxonomist, etc.

PLOT NOT SAMPLED: ☐ Other

☐ Perm. water ☐ Paved ☐ Slope ☐ Safety

SAMPLING QUALITY*

Effort Level:

✓ Very thorough

☐ Accurate

☐ Hurried

subjective evaluation of how much effort put into sampling. Hurried plots may still provide good data

TAXONOMIC ACCURACY

	high	modera.	low	not smpl
vascul.	✓			n/a
bryo			✓	
lichen				✓

TAXONOMIC STANDARD

Authority: G&C Pub Date: 1998

LOCATION

State: OH **County:** Medina

Quadrangle: West Richfield

Local Place Names: Wardens Homestead

Landowner: CM

X-axis Bearing of plot: 225 °

Data Confidentiality:

Check one: ✓ Public data ☐ Private Data

☐ Fuzz 100m ☐ Fuzz 250m ☐ Fuzz 500m

Reason:

If data not public why?

Source of coordinates ☐ MAP ■ GPS

GPS location in plot x=0 to 5, y=-1,0,+1):

x = 0 y = 0 (base of plot x=0, y=0)

Coordinate system: ■ Lat/Long ☐ UTM ☐ StatePlane ☐ Other (*specify*)

Coord. Units: ■ deg ☐ deg min ■ m ☐ ft ☐

Datum: ■ NAD83/WGS84 ☐ NAD27

Latitude: 41.20650

Longitude: 081.71417

Coord. Accuracy: ■ m ☐ ft +- 2

GPS File Name: 1146A

Plot size for cover data: 0.1 (hectares)

☐ Stems not sampled on this plot ☐ Stems absent

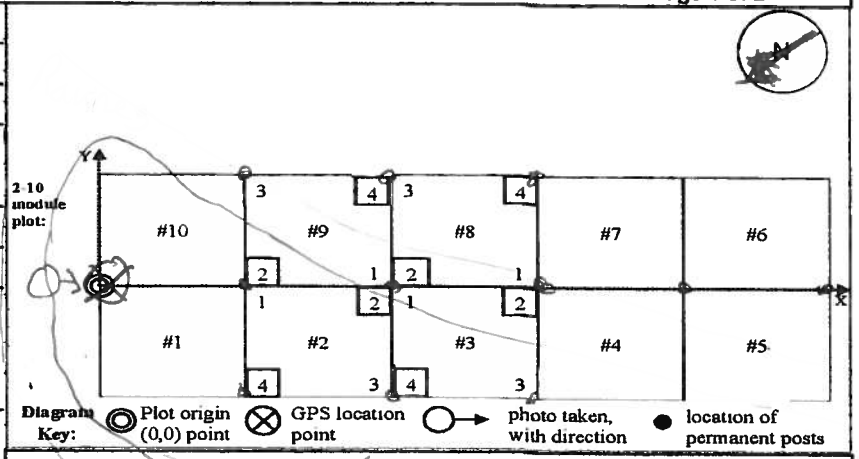
✓ Stems present **Plot size stems:** 0.1 (ha)

Depth: (1-5): 4

Intensive modules: 2, 3, 8, 9 (EDIT IF MODIFIED)

Camera No.: 2

Photo Nos.: C2-1073



Plot placement: ☐ Representative ✓ GRTS ☐ Random ☐ Stratified Random

☐ Transect component ☐ Systematic (grid) ☐ Capture specific feature ☐ Other

NOTES: Include **Layout** (any unusual shape details), **Location** (directions and landscape content), **Rationale** (why here), and **Veg Characterization** (description of community, dominants, strata, BROWSE). Additional notes in space on back.

Layout: 2x5

Location: Park at Wardens Homestead
Walk 2500m down the slope
to plot

Rationale GRTS pt

Veg Char:
Canopy: Beech, Sugar Maple, Tulip, Basswood, Red Oak, Ash, Hickory
Brid: Maple, Ostrya, spice bush
under: Sedges, geraniums, Christmas fern Mayapples

Minimum required fields in Bold and Underlined

*Definitions and values in CM PCAP FOM v. 1.0 and CVS Field Guide

OVER

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

Project Label: PCAP **Project Name:** OHI2011 **Plot No.:** 1146

CLASSIFICATION

(FIT = excellent, good, fair, poor; CONF = high, med, low) Fit and Confidence

Hydrogeomorphic class (WETLANDS ONLY):

- ☐ DEPRESSION Fit=___ Conf=___
- ☐ IMPOUNDMENT ☐ Beaver ☐ Human Fit=___ Conf=___
- ☐ RIVERINE ☐ Headwater ☐ Mainstem ☐ Channel Fit=___ Conf=___
- ☐ SLOPE (ground water hydrology or on a physical slope) Fit=___ Conf=___
- ☐ FRINGING ☐ Reservoir ☐ Natural Lake Fit=___ Conf=___
- ☐ COASTAL (specify subclass) Fit=___ Conf=___
- ☐ BOG (strongly, moderately, weekly ombrotrophic) Fit=___ Conf=___

Ohio EPA VIBI Plant Community Class (WETLANDS ONLY):

- ☐ FOREST ☐ swamp forest ☐ bog forest ☐ forest seep Fit=___ Conf=___
- ☐ EMERGENT ☐ marsh ☐ wet meadow ☐ open bog Fit=___ Conf=___
- ☐ SHRUB ☐ shrub swamp ☐ tall sh. bog ☐ tall sh. fen Fit=___ Conf=___

MODIFIED NATURESERVE CLASS*

CODE (on separate form): D Fit=fair Conf=good

COMMUNITY NAME: Mixed Forest

STAND SIZE

- ☐ >1,000 x plot size
- ☐ > 100 x plot size
- ☑ 10-100 x plot size
- ☐ 3-10 x plot size
- ☐ 1-3 x plot size
- ☐ < plot size

SALINITY*

- ☐ Saltwater
- ☐ Brackish
- ☐ Fresh
- ☑ Upland (n/a)

(by default unless plot is a wetland)

DISTURBANCES

type*	severity**	yrs ago	% of plot	description
Human				
Natural				
Fire				
Cut				
Animal	M	0	100	Deer Browse
Other				

**L=low, ML=med low, M=med, MH=med high, H=high, VH=very high

Current Land Use: Park

Former Land Use: UNK

HYDROLOGIC REGIME*

- ☑ Upland (seldom flooded)
- ☐ Intermittently/seasonally saturated (seldom flooded)
- ☐ Permanently/Semipermanent. saturated (dry <1/yr, seldom flooded)
- ☐ Occasionally flooded (<1/yr)
- ☐ Temporarily flooded
- ☐ Intermittently flooded
- ☐ Semipermanently flooded
- ☐ Permanently flooded
- ☐ Tidal/Seiche flooded daily
- ☐ Tidal/Seiche flooded monthly
- ☐ Tidal/Seiche flooded irregular (e.g. wind, storms)
- ☐ Unknown

HOMOGENEITY

- ☑ Homogeneous
- ☐ Compositional trend across the plot
- ☐ Conspicuous inclusions
- ☐ Irregular/pattern mosaic

Additional notes & diagrams: (Representativeness of plot to the stand, successional status, maturity, etc.)

Very mixed plot - a variety of canopy. The plot is on the drainage of ravine so moves from Beech, Magnolia, Maple to Tulip, Maple, up the slope. I suspect the the area was cut at some point since trees are alot younger as you move up the slope.

CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet Page 1 of 3

Project Label: PCAP Project name: 01HI2011 Plot no.: 1146

Total modules: 10 Intensive modules: 4 Plot configuration: 2X5 Plot area (ha): _____

Visual est. % open water entire site: 0 Visual est. %unveg.o.w. entire site: 0 Visual est. %invasives entire site: 2%

Cleveland Metroparks

Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

T	S	H	(F)	(A)	Br	Species	c	Voucher #
9	4					Acer saccharum		
7		2			9	Liriodendron tulipifera		
5	4	2			7	Fagus grandifolia		
6		2			10	Populus grandidentata		
5						Fraxinus sp.		
		3				Fraxinus seedlings		
		3				Geranium maculatum		
3		2				Prunus serotina		
		2				Crataegus sp.		
		3				Polystichum acrostichoides		
		3				Prenathes sp.		
		1				Arisaema triphyllum		Symphoitrichum lateriflorum
		2			10	Aster (lateriflorus ↙		
		2				Mitchella repens		
		2				Viola sp. conspersa	X	SRE451
		2				Moss sp.		
		2				Carex pensylvanica (pensylvanica)	X	SRE 449
		2			7	Euonymus obovatus		
		1				Acer seedlings		
2		1				Carya ovata		
	4	2				Lindera benzoin		
	2	1			4	Prunus virginiana		
		1				Onoclea sensibilis		
		2				Podophyllum peltatum		
		1				Vitaceae seedling		

Estimate for each intensive module:

	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner
	2	4	2	2	3	4	3	2	8	4	8	2	9	4	9	2	R	R
	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
%open water	1	0			1	0			1	0			1	0				
%unvegetated open water	1	0			1	0			1	0			1	0				
%unveg. ground (bare soil)	1	2			1	9			1	3			1	4				
%unveg. litter (bare litter)	1	4			1	7			1	8			1	6				

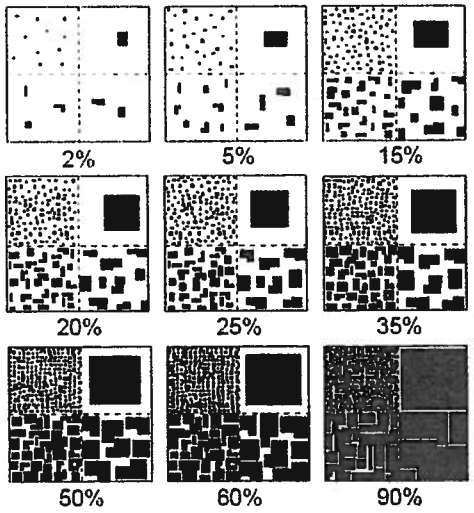
depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
4	7	4		4	9	4		4	8	4		4	6	2					
		3	6	4	8	4		2	5	3									
4	5			1	1			1	2					4	6				
4	5					2	2	4	4	4		2	6	2					
1	4							2	5			1	2						
2	2	3		4	3	3		3	2	3		3	2	3					
4	5	4		3	2							2	2	2					
3	2	2		3	2	3		1	1			2	2	2					
2	2									3	i	1	1						
2	2	2		1	2			2	2	4		2	2	2					
2	3	2		2	2	2		2	2	4		4	3	4					
2	2																		
2	2	2				2	1	1	1										
2	2	2		2	2	2		2	2	2				3	2				
2	2																		
		2	2							2	1	4	2						
2	2	4		1	2			2	1			2	1	2					
4	1									3	1								
4	2			1	1							2	1						
2	2	2						2	1										
2	1					2	1					2	3						
2	1																		
2	2	2				2	2							2	2				
2	1	2		2	1			2	1										

2aCM PCAP Species Cover Data sheet Page 1 of x_ver 1.5.xls last revised 6/9/2011 jjm

Natural Resource Management FORM NR/2010-02a

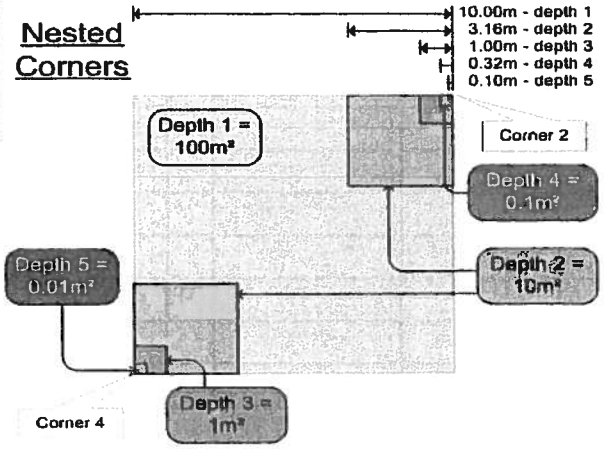
EXAMPLES OF PERCENT OF AREA COVERED

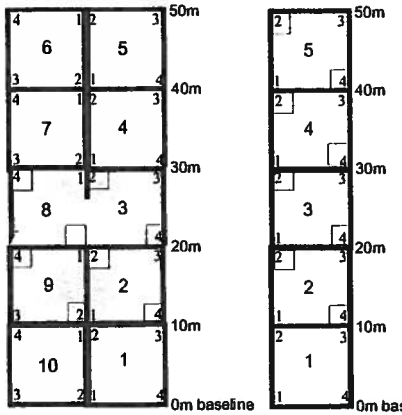
The following graphic can be used for various data elements to convey "Amount" or "Quantity". *NOTE:* Within any given box, each quadrant contains the same total area covered, just different sized objects.

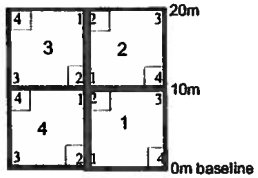


cover class	% cover	midpoint
1	solitary or few	0.0001
2	0-1%	0.005
3	1-2%	0.015
4	2-5%	0.035
5	5-10%	0.075
6	10-25%	0.175
7	25-50%	0.375
8	50-75%	0.625
9	75-95%	0.850
10	95-100%	0.975

Nested Corners







BROWSE RATING NARRATIVE DESCRIPTION

LOW OR NONE: there is no measurable browse line AND there are very few or no plants 1-m nested quadrat and intensive module. In general, low values relate to less than 10 percent, by numbers of stems browsed.

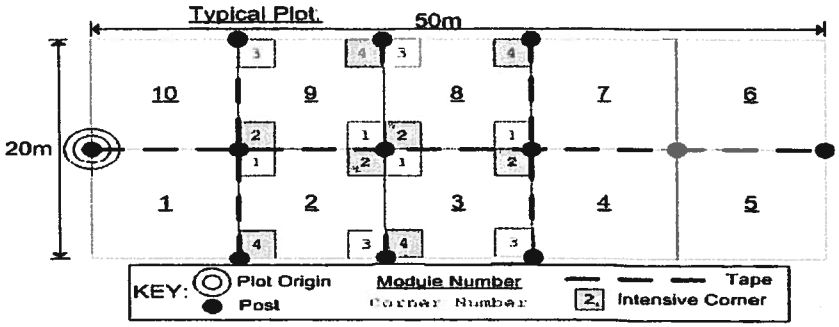
MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas. For example, trilliums may flower and fruit, but jewelweed and arrowwood viburnum exhibit browse.

MEDIUM: browse affects greater than 10 percent and less than 25 percent of stems in the 1 m2 nested quadrat and intensive module. A browse line is usually not evident or obvious for all classes and species of vegetation, but careful examination may show preferential browse and/or browse lines for some species of plants.

MEDIUM HIGH values include evidence of a browse line and 25 percent of stems browsed with very little vegetation regeneration evident. In this rating, for some species of plants, reproduction does not appear to occur or it is very severely limited.

HIGH: greater than 25 percent of the stems of plants in the 1 m2 nested quadrat and intensive module AND a browse line is evident.

VERY HIGH values include extensive browse conditions, where the browse line is very evident AND almost all seedlings and herbs are severely browsed or missing. Browse line may be 5 to 6 feet in height with no or little green growth beneath.



CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet Page 2 of 3

Project Label: PCAP Project name: OHI 2011 Plot no.: 1146

Total modules: 10 Intensive modules: 4 Plot configuration: 2x5 Plot area (ha): 0.1

Visual est. % open water entire site: _____ Visual est. %unveg.o.w. entire site: _____ Visual est. %invasives entire site: _____

Cleveland Metroparks

Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

Estimate for the each intensive module:

	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner
	2	4	2	2	3	4	3	2	8	4	8	2	9	4	9	2	R	R
	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
%open water	1				1				1				1					
%unvegetated open water	1				1				1				1					
%unveg. ground (bare soil)	1				1				1				1					
%unveg. litter (bare litter)	1				1				1				1					

T	S	H	(F)	(A)	Br	Species	c	Voucher #	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov
		2				Carpinus Caroliana			3	2	2		1	1											3	2								
		2				Carya seedling			2	2	4		2	1							2	1					3	1						
		2				Solidago Caesia			1	1																	2	1						
		2				Quercus seedling			3	2	4		2	1									4	1	1	1								
lax-wide seling		2				Carex sp. gracilliema		SRE450	1	2											1	1												
		1				Viburnum dentatum			1	1																								
		2				Amelachier sp.					2	1	1	1											2	1								
5						Quercus rubra					4	3											2	4	4	8	4							
						~~Carya glabra?~~					2	2																						
6					1D	Tilia americana					2	2											4	5	3	6	2							
		2				Parthenocissus quinquefolia					3	2	1	1									3	1	2	2								
		2				Senecio obovatus					3	2	1	2																				
		2				Toxicodendron radicans					3	2	1	1							1	1			2	2								
4		2				Carya cordiformis					2	5					-						2	1	4	4								
		1				Erectities hieracifolia					2	1	3	1																				
lax		2				Carex laxiculmis	X	SRE448	X		3	1	1	1																				
		1				Agrimonia striata			1	1																								
		2			1D	Aster cordifolius			1	2			2														2	1						
4		2				Ostrya virginana					2	4													-		2	4						
		1				Geum sp			1	1																								
		1				Ulmus sp.							3	1											2	1								
		1				~~Taraxacum officinales~~ Taraxacum officinale							1	1																				
		1				Cornus florida									2	1																		
		2				~~Sweet~~ Carex swanii							1	1																				
		1				Oxalis stricta							2	1																				

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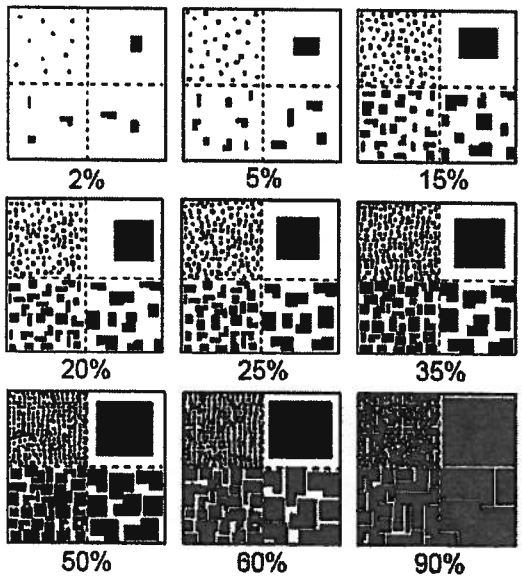

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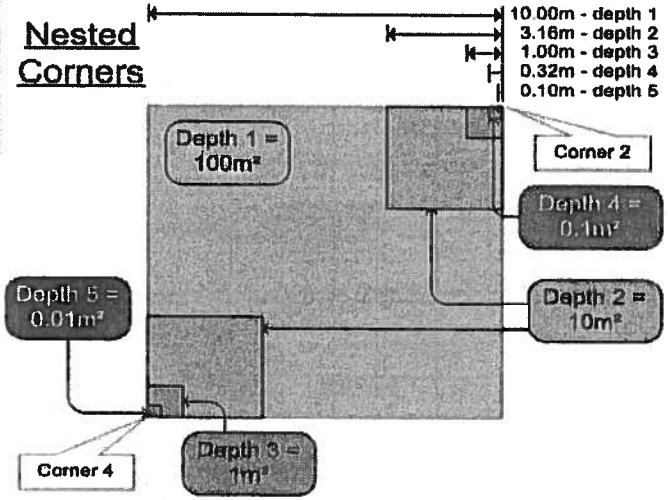

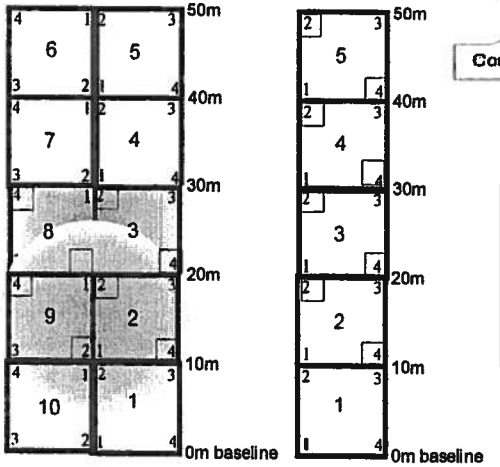

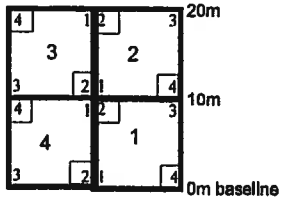

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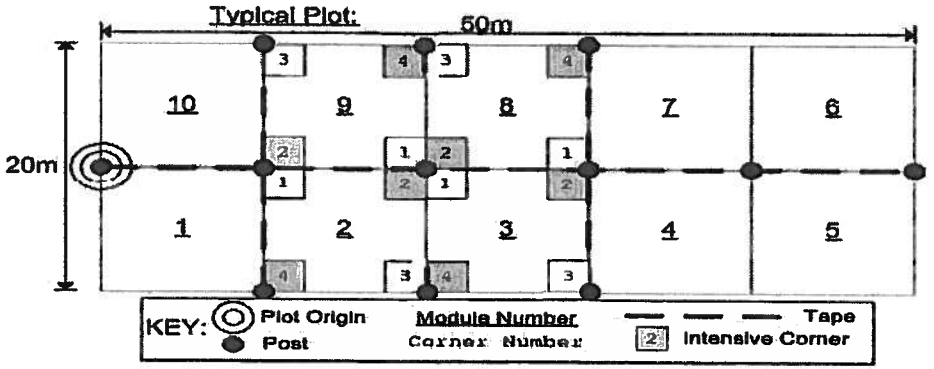

CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet Page 3 of 3

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Cleveland Metroparks

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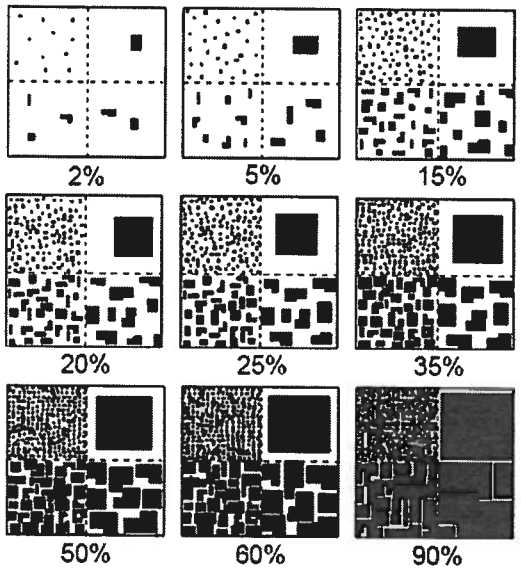
Strata - Cov. entire plot

	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner
Estimate for the each intensive module:	2	4	3	2	3	4	3	2	8	4	8	2	9	9	9	2	R	R
	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
%open water	1				1				1				1					
%unvegetated open water	1				1				1				1					
%unveg. ground (bare soil)	1				1				1				1					
%unveg. litter (bare litter)	1				1				1				1					

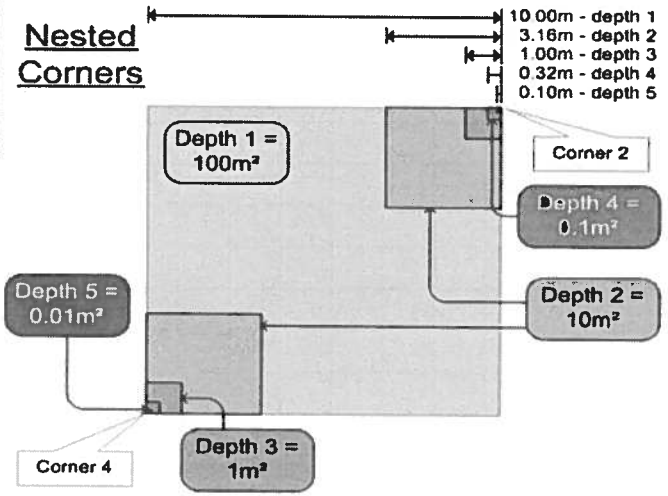
T	S	H	(F)	(A)	Br	Species	c	Voucher #	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
		1				Geum seedling							1	1														
		1				Aster sp.		C2-1074					1	1														
		1				Prunus cerasus							1	1									2	1				
		1			10	Lonicera morrowii											2	1										
		1				Carex rosea										1	1											
		1				Circaea lutetiana																	1	1				
		2				Maianthemum racemosum																	5		3	2		
		2				Caulophyllum thalictroides																	1	1				
		1				Allium tricoccum																	1	1				
		1				Vitis sp																	1	1				
5						Magnolia acuminata																						6
		1				Carex radiata		~~SDE~~																				1
		1				Osmorhiza claytoni																						1
Red bud ~~4~~ ignore		~~2~~				~~Carex sp~~			1	1																		~~1~~
		1				Poa alsodes																						2
		1				Galium sp																						1
		~~1~~				~~Carex (blue stem)~~																						~~2~~
		1				Thelypteris noveboracensis																						1

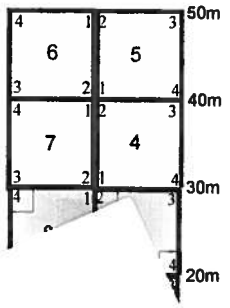
EXAMPLES OF PERCENT OF AREA COVERED

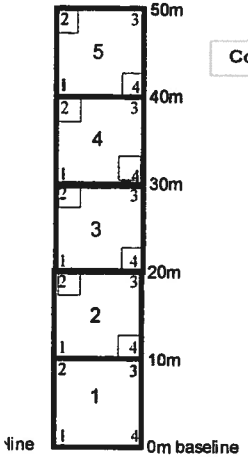
The following graphic can be used for various data elements to convey "Amount" or "Quantity". *NOTE*: Within any given box, each quadrant contains the same total area covered, just different sized objects.

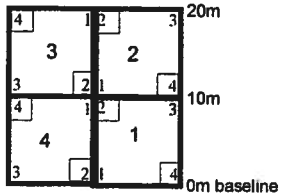


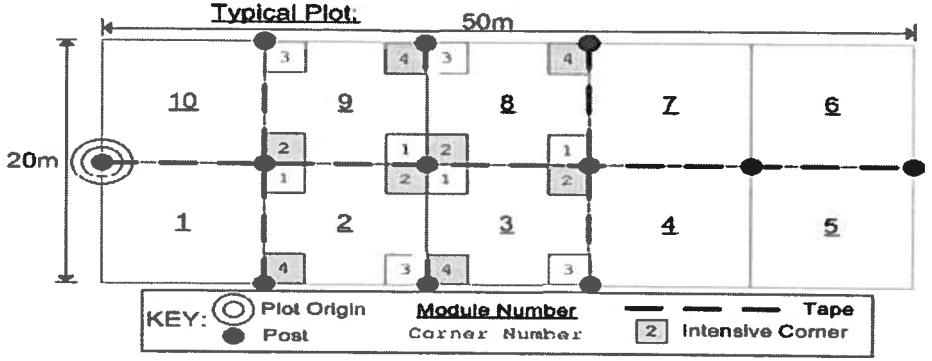
cover class	% cover	midpoint
1	solitary or few	0.0001
2	0-1%	0.005
3	1-2%	0.015
4	2-5%	0.035
5	5-10%	0.075
6	10-25%	0.175
7	25-50%	0.375
8	50-75%	0.625
9	75-95%	0.850
10	95-100%	0.975











BROWSE RATING NARRATIVE DESCRIPTION

LOW OR NONE: there is no measurable browse line AND there are very few or no plants 1-m nested quadrat and intensive module. In general, low values relate to less than 10 percent, by numbers of stems browsed.

MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas. For example, trilliums may flower and fruit, but jewelweed and arrowwood viburnum exhibit browse.

MEDIUM: browse affects greater than 10 percent and less than 25 percent of stems in the 1 m2 nested quadrat and intensive module. A browse line is usually not evident or obvious for all classes and species of vegetation, but careful examination may show preferential browse and/or browse lines for some species of plants.

MEDIUM HIGH values include evidence of a browse line and 25 percent of stems browsed with very little vegetation regeneration evident. In this rating, for some species of plants, reproduction does not appear to occur or it is very severely limited.

HIGH: greater than 25 percent of the stems of plants in the 1 m2 nested quadrat and intensive module AND a browse line is evident.

VERY HIGH values include extensive browse conditions, where the browse line is very evident AND almost all seedlings and herbs are severely browsed or missing. Browse line may be 5 to 6 feet in height with no or little green growth beneath.

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

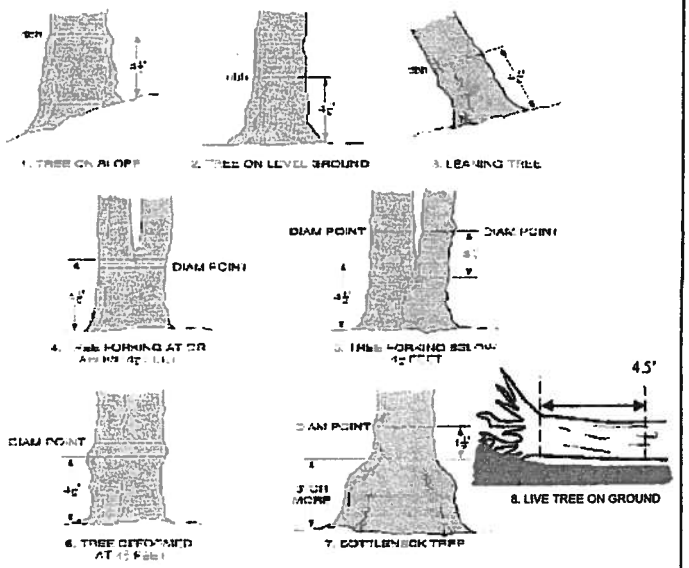
Cleveland Metroparks

Project Label: PCAP Project Name: 01 HI 2011 Plot No.: 1146 Page: 1 of 3

Explain subsample (additional room on back):

mod #	species	c	voucher#	# stems 0.5-1m browsed	% sub or super sample	# shrub clumps	size class (cm) woody stems >1m 1 0-<1	2 1-<2.5	3 2.5-<5	4 5-<10	5 10 - <15	6 15 - <20	7 20 - <25	8 25 - <30	9 30 - <35	10 35 - <40	11 >40 (record each tree)
1	Fagus grandifolia			••					•• X	••	•		•				
1	Tilia americana														X	•	
1	Standing dead						••			•							
1	Acer saccharum							••	X								
1	Ostrya virginiana										•						
1	Carya cordiformis										•	•	•				
1	Prunus serotina											•	X				
1	Populus grandidentata															•	42.4
2	Fagus grandifolia			••			•		•								
2	Populus grandidentata																42.9
2	Acer saccharum			•			••	••	••	••	••						
2	Ostrya virginiana									•							
2	Standing dead						••	•									
2	Fraxinus sp										•						
2	Carya cordiformis												•				
3	Standing dead								•	•	•						
3	Acer saccharum							•	•	L	•			•			
3	Liriodendron tulipifera			•													67.6, 52.3
4	Acer saccharum								•	L	••	••	•				
4	Liriodendron tulipifera																44.3
4	Standing dead								••	••							
4	Fraxinus sp.															•	
5	Acer saccharum								•	••	••	•					
5	Liriodendron tulipifera																57.6

DBH Measurement Rules



Woody Stem Deer Browse

Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

Record using the tally system from 1 to 10

1 2 3 4 5

ASH CANOPY CONDITION

1. **Healthy, full canopy:** A healthy ash canopy is normally thinner than many other trees such as maple.
2. **Thinning canopy:** There aren't as many leaves as there ought to be, but all top branches exposed to sunlight have leaves.
3. **Dieback:** Canopy is thinning and some top branches exposed to sunlight are dead (have no leaves). Lower branches, not exposed to sunlight, die naturally and are not considered.
4. **>50% Dieback:** The canopy has less than half of the leaves that should be there and/or half of the top branches are dead.
5. **Dead canopy:** No leaves remain in the canopy portion of the tree. It still counts as a 5 even if there are epicormic sprouts below the canopy (lowest branch) on the trunk.

A B C D E

ASH CANOPY BREAKUP CONDITION (for dead trees):
(if an ash receives a score of 5 (dead) under canopy condition it must also receive a breakup condition rank as described below)

A: All main branches contain fine twigs (newly dead).
B: Over 50% of main branches have fine twigs.
C: Less than 50% of main branches have fine twigs.
D: Stem still standing and tertiary main branches present.
E: Central stem still standing.

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

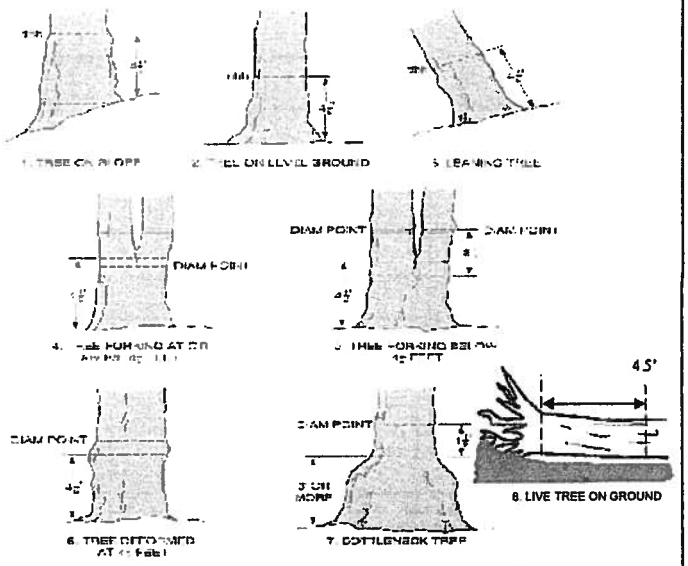
Cleveland Metroparks

Project Label: PCAP Project Name: 01 HI 2011 Plot No.: 1146 Page: 2 of 3

Explain subsample (additional room on back):

mod #	species	c	voucher#	# stems 0.5-1m browsed	% sub or super sample	# shrub clumps	size class (cm) woody stems >1m 1 0-<1	2 1-<2.5	3 2.5-<5	4 5-<10	5 10 - <15	6 15 - <20	7 20 - <25	8 25 - <30	9 30 - <35	10 35 - <40	11 >40 (record each tree)
5	Fagus grandifolia					2		•	X								
5	Lindera benzoin					4											
6	Acer saccharum							••	••	••	••	•		•			
6	Fraxinus sp.																42.0
6	Standing dead								••	••							
6	Fagus grandifolia			•													
7	Acer saccharum							•	•	••			•				
7	Liriodendron tulipifera			•									•		•		
7	Populus grandidentata			••													
7	Standing dead								•								
8	Liriodendron tulipifera											•					47.1
8	Acer saccharum								•	••	••						
8	Fraxinus sp.														•		
8	Standing dead								•	••	X	•					
8	Tilia Americana										X	•	•				
9	Carya cordiformis											•					
9	Acer saccharum							••	••								
9	Populus grandidentata														•		48.7
9	Quercus rubra													•			59.1
9	standing dead						•			•							
9	Prunus serotina							•									
9	Fagus grandifolia			•					••	•							
9	Tilia americana											•					
9	Prunus virginiana							•									

DBH Measurement Rules



Woody Stem Deer Browse

Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

Record using the tally system from 1 to 10

1 2 3 4 5

ASH CANOPY CONDITION

1. **Healthy, full canopy:** A healthy ash canopy is normally thinner than many other trees such as maple.
2. **Thinning canopy:** There aren't as many leaves as there ought to be, but all top branches exposed to sunlight have leaves.
3. **Dieback:** Canopy is thinning and some top branches exposed to sunlight are dead (have no leaves). Lower branches, not exposed to sunlight, die naturally and are not considered.
4. **>50% Dieback:** The canopy has less than half of the leaves that should be there and/or half of the top branches are dead.
5. **Dead canopy:** No leaves remain in the canopy portion of the tree. It still counts as a 5 even if there are epicormic sprouts below the canopy (lowest branch) on the trunk.

A B C D E

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(If an ash receives a score of 5 (dead) under canopy condition it must also receive a breakup condition rank as described below)

A: All main branches contain fine twigs (newly dead).
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C: Less than 50% of main branches have fine twigs.
D: Stem still standing and tertiary main branches present.
E: Central stem still standing.

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

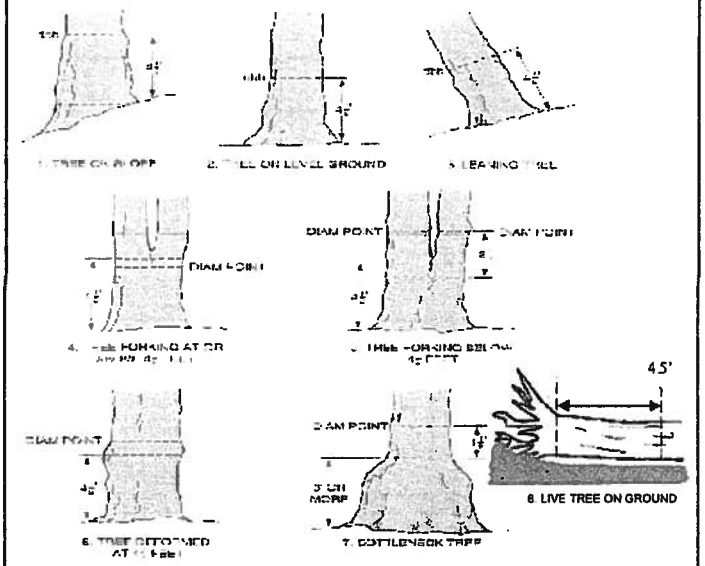
Cleveland Metroparks

Project Label: PCAP Project Name: 01 HF 2011 Plot No.: 1146 Page: 3 of 3

Explain subsample (additional room on back):

mod #	species	c	voucher#	# stems 0.5-1m browsed	% sub or super sample	# shrub clumps	size class (cm) woody stems >1m 1 0-<1	2 1-<2.5	3 2.5-<5	4 5-<10	5 10 - <15	6 15 - <20	7 20 - <25	8 25 - <30	9 30 - <35	10 35 - <40	11 >40 (record each tree)
10	Fagus grandifolia							1		2	1		1				
10	Acer saccharum						1	2	1								
10	standing dead						2	1	1			1					
10	Ostrya virginiana									2							
10	Magnolia accuminata																40.5
10	Fraxinus sp.												1				

DBH Measurement Rules



Woody Stem Deer Browse

Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

Record using the tally system from 1 to 10

1 2 3 4 5

ASH CANOPY CONDITION

1. **Healthy, full canopy:** A healthy ash canopy is normally thinner than many other trees such as maple.
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C: Less than 50% of main branches have fine twigs.
D: Stem still standing and tertiary main branches present.
E: Central stem still standing.

CLEVELAND METROPARKS Plant Community Assessment Program - Plant Cover and Earth Surface

Project Label: PCAP Project Name: 01 HI 2011 Plot No.: 1146

Cleveland Metroparks

COVER BY STRATA (% estimate using midpoints of 5 ex: 3, 8, 13, 18%)

Strata	Height Range (m)	Total Cover (%)
Tree	7 - 5	98
Shrub	05 - 5	18
Herb	2 - .5	18
(Floating)*	/	/
(Aquatic)**	/	/

* rooted and floating or slightly emersed

** submersed, most plant mass below surface

SEE BACK OF PAGE FOR "TYPICAL" STRATA DESCRIPTIONS. STRATA CAN VARY BY COVER TYPE.

EARTH SURFACE & GROUND COVER

Underlying Earth Surface* (Sum = 100%)	percent	Ground Cover (Each ≤ 100%)	percent
Histosol	0	Coarse Woody Debris***	13
Mineral Soil	99	Fine Woody Debris****	8
Gravel-Cobble*	1	Litter	93
Boulder**	0	Duff (Fern. + Humus)	0
Bedrock	0	Bryophyte-Lichen	3
		Water	0
		Bare Soil	0
		Road/Trail	0
		Other	0

* Gravel-Cobble = 1/16 to 10 in

**Boulder = > 10 in

*** >5 cm in diameter

**** <5 cm in diameter

TRAIL INFORMATION: If trail falls in plot record type and cover for each

Type	%Cover
☐ All Purpose	
☐ Bridle	
☐ Hiking sanctioned	
☐ Bootleg unsanctioned	
☐ Gravel	
☐ Deer	

No Trail

Remember: In a standard 2x5 plot each module = 10% cover

CROWN COVER (DENSIOMETER): Make 4 readings per module facing N, S, E, W. Place dot count in corresponding space. (4 dots per grid square)

Module	N	S	E	W
2	0	0	3	0
3	1	1	1	0
8	3	2	3	1
9	3	1	2	1

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Ranks for microhabitat features. Select one or select two and average the score. **NOTE:** If mod falls on a slope automatically gets ranked based on steepness (1-3)

Slope 1 = slight elevational grade across module (hill) Slope 2 = falls on slope ~20 ° Slope 3 = maximum steepness that can be safely sampled ~45 °

0 feature is absent or functionally absent (Golf Course Flat)

3 feature is present in very small amounts or if more common, of low quality

7 feature is present in moderate amounts, but not of highest quality, or in small amounts of highest quality

10 feature is present in moderate or greater amounts and of highest quality

c.w.d. - count for pieces with minimum 1m length

mod#	corner	no. of tussocks depth 3 1x1m (count)	no. of hummocks depth 2 3.16x3.16m (count)	no. macro depressions depth 1 10x10m (count)	c.w.d (2-12 cm) depth 1 10x10m (count)	c.w.d (12-40cm) depth 1 10x10m (count)	c.w.d >40 cm depth 1 10x10m (count)	microhab. interspers. depth 1 10x10m (rank)	microhab. SLOPE 10x10m (rank)
2	2,4	0	0	1	6	0	0	2	1
3	2,4	0	0	4	9	1	0	3	1
8	2,4	0	0	1	14	1	0	3	1
9	2,4	0	0	12	14	0	0	3	1

NOTE: tussock and hummocks are counted in BOTH nested quadrat corners but counts are aggregated.

macro depressions = macrotopographic depressions with module. These may extend into other modules and be counted again.

c.w.d. = course woody debris

microhab. interspers. = overall ranking of plot microtopographic interspersion complexity using scale below

McNAB INDICES (degrees) + for up - for down

(FILLED OUT USING GIS PROGRAM - DO NOT FILL OUT IN FIELD)

		LFI*	TSI**
At aspect	N		
+45 degrees	NE		
+90 degrees	E		
+135 degrees	SE		
+180 degrees	S		
+225 degrees	SW		
+270 degrees	W		
+315 degrees	NW		

LFI is angle of plot to the horizon. TSI is angles formed by local slopes. For TSI measure angle from recorders eye to eye of person standing ~10 m away.

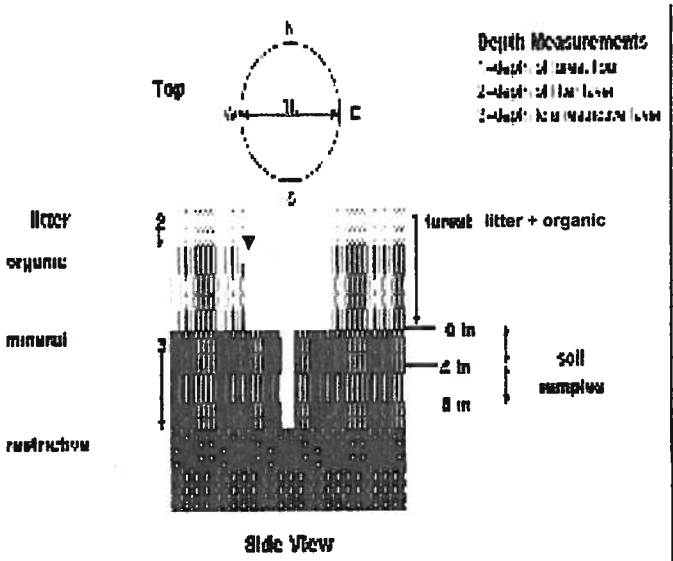
* Landform Index (position within landscape)

** Terrain Shape Index (site microtopographic shape)

COVER BY STRATA

STRATUM	GENERAL FORM
Tree (generally >5 m)	Tree (overstory), very tall shrubs*, liana, epiphyte
Shrub (generally 0.5 to 5 m)	Tree (sapling), shrub, liana, epiphyte)
Herb (Field)	Herb, dwarf-shrub**, tree (seedling***)
Floating	Floating
Aquatic (submerged)	Submerged

*Very tall shrubs are sometimes included in the tree stratum
**Can also include seedlings of shrubs, i.e. all shrubs <0.5m
***Tree seedlings are often defined as up to 1.4 m height or as <2.5 cm DBH in which case they would span the herb and shrub layers.



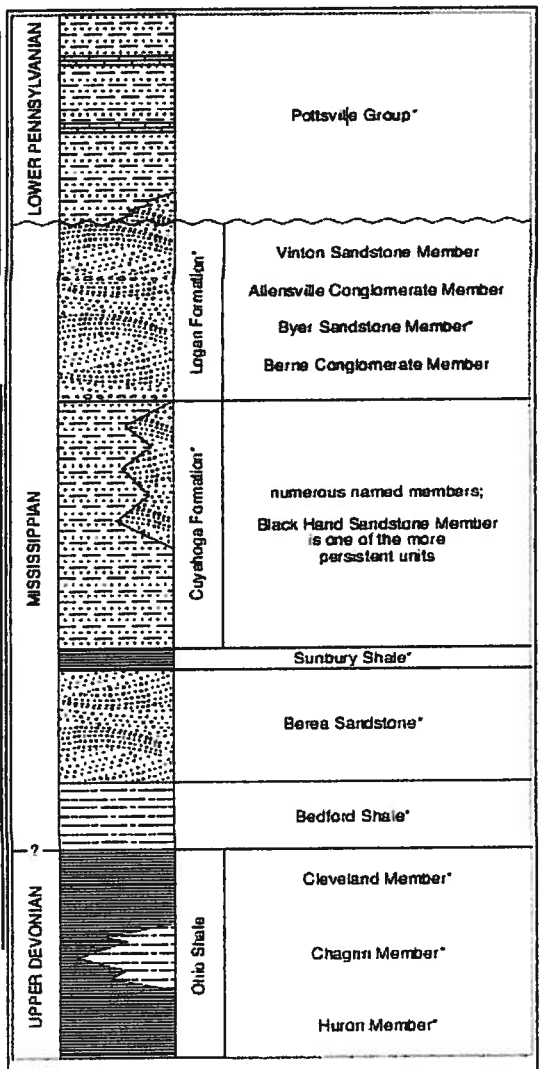


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses indicated are proportional. The term "Waverly" is used in the older literature to refer to Mississippian rocks in Ohio. Some geologists use the European term "Carboniferous," which encompasses the Mississippian and Pennsylvanian Periods of the U.S. Many units have been named within the Cuyahoga Formation, but most units are local and cannot be traced over great distances. The Black Hand Member is a spectacular massive sandstone that is fairly widespread but discontinuous. See Hyde (1958), Hoover (1960), and Collins (1979) for more information on Mississippian rocks in Ohio. See figure 3-18 for explanation of rock types.

CLEVELAND METROPARKS Plant Community Assessment Program - Soils, Crown Cover, Standing Biomass Data Sheet

Project label: PCAP **Project Name:** 01HI2011 **Plot No.:** 1146

Cleveland Metroparks

SOIL PIT DESCRIPTION: Excavate 20 cm plug wih shovel. Describe using Munsell chart, visual exam, texture, and odor.

Soil pit module # 8 **(one per entire plot)**

5 cm	matrix color	10 YR 2/1
	mottle color	—
	%mottle	—
	oxid roots	Y (N)
	texture*	1
	redox features**	Y (N)
	hydr. cond.***	I S M (D)
20 cm	matrix color	10 YR 2/1
	mottle color	—
	%mottle	—
	oxid roots	Y (N)
	texture*	1 x 2
	redox features**	Y (N)
	hydro. cond.***	I S M (D)

* refer to texture classes on reverse side

** e.g. hydrogen sulfide odor, gleying, etc.

*** Circle one:
I=indundated S=saturated M=moist D=dry

Notes: include evidence of earthworms (worms, castings, middens)

- Earthworms not observed in soil pit, but found in throughout plot
- castings / middens not observed

SOIL SAMPLES Standard procedure: collect a soil sample of the top 10 cm of soil from center of each intensive module and composite the sample

Soil Collection Module	Horizon (A, B, C)
2,3,8,9 composited	A

Soil Description/notes:

Web Soil Survey Information:

Soil Series/Type: Ellsworth silt loam

Soil Series Source: Ohio Soil Survey

Landform type: Till plains

Parent Material: Till

DRAINAGE*

- ☐ Excessively drained
- ☐ Somewhat excessively
- ☐ Well drained
- ☒ Moderately well dr.
- ☐ Somewhat poorly dr.
- ☐ Poorly dr.
- ☐ Very poorly dr.
- ☐ Impermeable surface

STANDING BIOMASS (required for emergent wetlands): collected in 0.1m clip plots (32x32 cm) from corners 1 and 3 in each intensive module. Required for VIBI-E score calculation. C?=check when collected

Module #	C?	Corner	Corner

SOIL DEPTH MEASUREMENT INSTRUCTIONS: Measure to the nearest 0.1 cm in center of intensive modules. If >30.5 cm, record as >30

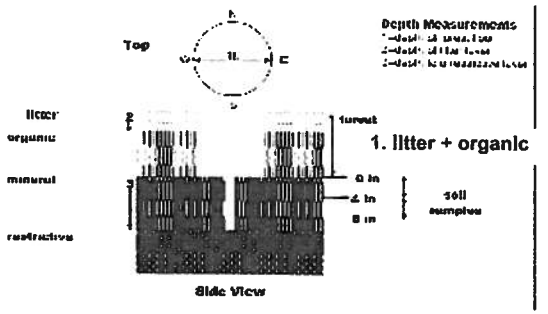
mod#	1 litter + organic depth (cm)	2 litter depth (cm)	3 restrict. depth(cm) *[WSS]	water depth (cm)	depth sat soil (cm)
2	1.2	1.2	28*	Ø	>30
3	1.8	1.8	29*	Ø	>30
8	1.4	1.4	38*	Ø	>30
9	2.0	2.0	45*	Ø	>30

Length of soil probe = 125 cm

*** Use Web Soil Survey for #3 Restrictive layer dept.**

* Did not hit restric. depth - soil too dry

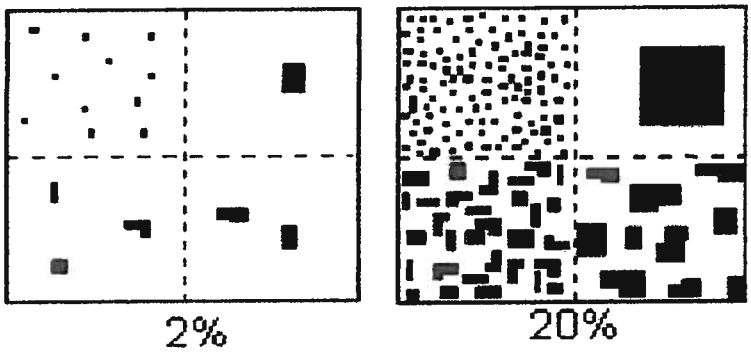
depth to restrictive layer greater than 80"



WSS AM 7/15/11

PERCENT MOTTLES (USE CLASS CODES):

Class	Code		Criteria: % of Surface Area Covered
	Conv.	NASIS	
Few	f	#	< 2
Common	c	#	2 to < 20
Many	m	#	≥ 20

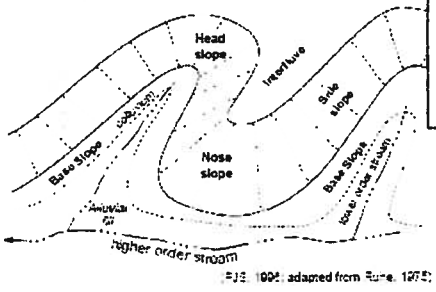


SOIL TEXTURE: Record the code for the soil texture of the 5 cm and 20 cm layers. To estimate texture, collect a soil sample from the appropriate layer and moisten it with water to the consistency of modeling clay/wet newspaper; the sample should be wet enough that all of the particles are saturated but excess water does not freely flow from the sample when squeezed. Attempt to roll the sample into a ball. If the soil will not stay in a ball and has a grainy texture, the texture is either sandy or coarse sandy. If the soil does form a ball, squeeze the sample between your fingers and attempt to form a self-supporting ribbon. Samples which form both a ball and a ribbon should be coded as clayey; samples which form a ball but not a ribbon should be coded as loamy.

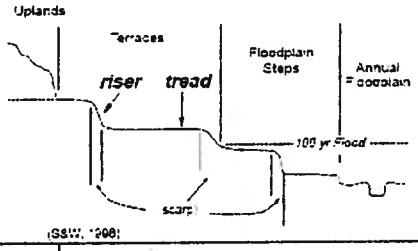
0= Organic
1= Loamy
2= Clayey
3= Sandy
4= Coarse Sand
9= Not measured - make plot note

Geomorphic Component - Three-dimensional descriptors of parts of landforms or microfeatures that are best applied to areas. Unique descriptors are available for Hills, Terraces, Mountains, and Flat Plains: e.g., (for Hills) *nose slope* or *NS*.

Hills	Code	
	PDP	NASIS
interfluve	IF	IF
head slope	HS	HS
nose slope	NS	NS
side slope	SS	SS
base slope	---	BS

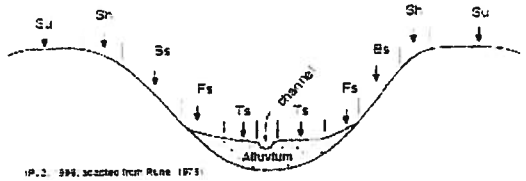


Terraces	Code
riser	RI
tread	TR



Hillslope - Profile Position (Hillslope Position in PDP) - Two-dimensional descriptors of parts of line segments (i.e., slope position) along a transect that runs up and down the slope: e.g., *backslope* or *BS*. This is best applied to transects or points, not areas.

Position	Code
summit	SU
shoulder	SH
backslope	BS
footslope	FS
toeslope	TS



HYDROLOGIC REGIME Modified from Grossman et al 1998. (Frequency and duration of flooding.)

UPLAND: Not a wetland. Very rarely flooded.

INTERMITTENTLY/SEASONALLY SATURATED: Dry at least once per year. Surface water is seldom present, but substrate is saturated to surface for extended periods during the growing season .

PERMANENTLY/SEMIPERMANENTLY SATURATED: Dry less than once per year. Surface water is seldom present, but substrate is saturated to surface for extended periods during the growing season . Equivalent to Cowardin's Saturated modifier.

OCCASIONALLY FLOODED: Surface water can be present for brief periods during growing season , but not in most years. Often characterizes flood-plain upper terraces.

TEMPORARILY FLOODED: Surface water present for brief periods during growing season , but water table usually lies well below soil surface. Often characterizes flood-plain levees and lower terraces. Equivalent to Cowardin's Temporary modifier.

INTERMITTENTLY FLOODED : Substrate is usually exposed, but surface water can be present for variable periods without detectable seasonal periodicity. Inundation is not predictable to a given season and is dependent upon highly localized rain storms . This modifier was developed for use in the arid West for water regimes of Playa lakes , intermittent streams, and dry washes but can be used in other parts of the U.S. where appropriate. This modifier can be applied to both wetland and non-wetland situations. Equivalent to Cowardin's Intermittently Flooded modifier.

SEMIPERMANENTLY FLOODED (exposed <1/year): Surface water persists throughout the growing season in most years . Land surface is normally saturated when water level drops below soil surface . Includes Cowardin's Intermittently Exposed and Semipermanently Flooded modifiers.

PERMANENTLY FLOODED: Water covers the land surface at all times of the year in all years . Equivalent to Cowardin's "permanently flooded".

UNKNOWN: The hydrologic regime cannot be determined from the available information .

CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey

Cleveland Metroparks

Tier 1: Early detection/ Rapid response		Presence				GPS
		NE	SE	SW	NW	
Microstegium vimineum	Japanese stiltgrass					
Ranunculus ficaria	Lesser Celandine					
Cynanchum louiseae (vine)	Black Swallow-wort					
Butomus umbellatus (wetland)	Flowering Rush					
Heracleum mantegazzianum	Giant Hogweed					
Tier 2: Assess as Needed		**# of Plants**				**commen**
		NE	SE	SW	NW	
Acer platanoides	Norway Maple					
Ailanthus altissima	Tree of Heaven					
Lonicera japonica (vine)	Japanese Honeysuckle					
Lythrum salicaria (wetland)	Purple Loosestrife					
Aegopodium podagraria (G-cover)	Bishop's Goutweed					
Celastrus orbiculatus (vine)	Asian Bittersweet					
Torilis sp.	Hedgeparsley					
Conium maculatum	Poison Hemlock					
Rhamnus cathartica	Common Buckthorn (shrub)					
Berberis thunbergii	Japanese Barberry (shrub)					
Alnus glutinosa	European Alder					
Dipsacus laciniatus	Cut-leaf Teasel					
Elaeagnus umbellata	Autumn Olive (shrub)					
Lonicera maackii	Amur Honeysuckle (shrub)					
Euonymus fortunei	Wintercreeper					
Tier 3: Presence is of Interest		**# of Plants**				**comments**
		NE	SE	SW	NW	
Convallaria majalis (G-cover)	Lily of the Valley					
Coronilla varia (G-cover)	Crown Vetch					
Eleutherococcus pentaphyllus	Five-leaf Aralia (shrub)					
Pachysandra terminalis (G-cover)	Japanese Pachysandra					
Philadelphus coronarius	Mock Orange (shrub)					
Pulmonaria officinalis (G-cover)	Lungwort					
Rubus phoenicolasius	Wineberry					
Iris pseudacorus (wetland)	Yellow Flag Iris					
Ornithogalum umbellatum	Star of Bethlehem					
Viburnum opulus var. opulus	European Cranberry (shrub)					
Viburnum plicatum	Doublefile Viburnum (shrub)					
Tier 4: Widespread and abundant		**Presence**				**comments**
		NE	SE	SW	NW	
Alliaria petiolata	Garlic Mustard			X	X	
Ligustrum vulgare	Common Privet (shrub)					
L. morrowii, L. tatarica	Bush Honeysuckles (shrub)	X	X	X		
Phalaris arundinacea	Reed Canarygrass					
Phragmites australis (wetland)	Phragmites					
Polygonum cuspidatum	Japanese Knotweed					
Frangula alnus	Glossy Buckthorn (shrub)					
Rosa multiflora	Multiflora Rose (shrub)	X	X	X	X	
Typha angustifolia, T. x.glauca	Cattails (wetland)					
Cirsium arvense	Canada thistle					
Dipsacus fullonum	Common Teasel					
Hesperis matronalis	Dame's Rocket					
Vinca minor (G-cover)	Periwinkle					

Presence
X: yes

of Plants
1: 1-10
2: 11-50.
3: 51-100
4: 101-1,000
5: >1,000

of Plants
1: 1-10
2: 11-50.
3: 51-100
4: 101-1,000
5: >1,000

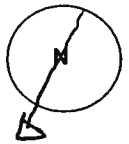
Presence
X: yes

Note: For Ground-cover plants record "stem #" but in comment field describe # of colonies and patch size (S,M, L)

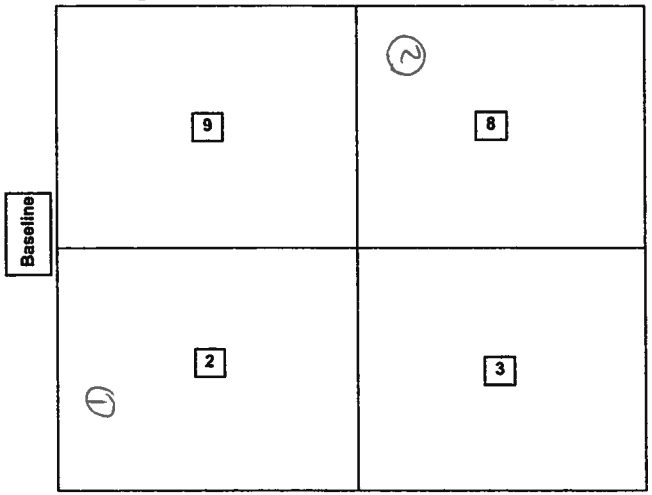
CLEVELAND METROPARKS Emerald Ash Borer - Fraxinus Sheet *INTENSIVE MODULES ONLY* *TREES ≥ 10CM ONLY*

Project Label: PCAP Project Name: OIHI2011 Plot No.: 1146 Date: 7/14/11

Module	Tree ID.	Species	Dead	c	Voucher #	DBH (cm)	Ht @ DBH	ASH Only: Ash condition	ASH Only: *Dead condition	ASH Only: # Exit holes	ASH Only: Epicormic present	ASH Only: Woodpecker holes
2	1	Fraxinus sp.				12.9		2		NO	Yes	No
8	2	Frax sp				32.3		3		1	No	No
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											
	25											



*** Change intensive module numbers when necessary



Map all ash trees ≥10cm in each module using Tree ID number

* If Ash Condition scores 5 (dead) provide breakup score (A-E)
Count EAB exit holes 1.25m≥ x ≥1.5m
Woodpecker and epicormic marked present (1) or absent (0)

FORM B-1: BUFFER SAMPLE PLOTS (Front)

Reviewed by (Initial): _____

Site ID: PCAP HI 1146 DATE: 07/14/2011

Location: ○ AA Center ○ N ○ S ○ E ● W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%); 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

Buffer Plot 1	Canopy Type: ● E	Absent: ○	Leaf Type: ● N	Flag	Buffer Plot 2	Canopy Type: ● E	Absent: ○	Leaf Type: ● N	Flag	Buffer Plot 3	Canopy Type: ● E	Absent: ○	Leaf Type: ● N	Flag
Big Trees (>0.3m DBH)	0 1 2 3 ●				Big Trees (>0.3m DBH)	0 1 2 ● 4				Big Trees (>0.3m DBH)	0 1 2 3 ●			
Small Trees (<0.3m DBH)	0 1 2 ● 4				Small Trees (<0.3m DBH)	0 1 ● 3 4				Small Trees (<0.3m DBH)	0 1 2 ● 4			
Woody Shrubs, Saplings (0.5m-5m HIGH)	0 1 ● 3 4				Woody Shrubs, Saplings (0.5m-5m HIGH)	0 1 ● 3 4				Woody Shrubs, Saplings (0.5m-5m HIGH)	0 1 2 ● 4			
Woody Shrubs, Saplings (<0.5m HIGH)	0 ● 2 3 4				Woody Shrubs, Saplings (<0.5m HIGH)	0 1 ● 3 4				Woody Shrubs, Saplings (<0.5m HIGH)	● 1 2 3 4			
Herbs, Forbs and Grasses	0 ● 2 3 4				Herbs, Forbs and Grasses	0 ● 2 3 4				Herbs, Forbs and Grasses	0 ● 2 3 4			
Bare ground	0 ● 2 3 4				Bare ground	0 ● 2 3 4				Bare ground	● 1 2 3 4			
Litter, duff	0 1 2 3 ●				Litter, duff	0 1 2 3 ●				Litter, duff	0 1 2 3 ●			
Rock	● 1 2 3 4				Rock	● 1 2 3 4				Rock	● 1 2 3 4			
Water	● 1 2 3 4				Water	● 1 2 3 4				Water	● 1 2 3 4			
Submerged Vegetation	● 1 2 3 4				Submerged Vegetation	● 1 2 3 4				Submerged Vegetation	● 1 2 3 4			

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ●

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	●	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	●	●	●	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER, OR OVERUSE)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial): _____

Site ID: PCOP HI 1146 **DATE:** 07 / 14 / 2011

● Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	●	●	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	○	○	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other: _____	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other: _____	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other: _____	○	○	○	
										Other: _____	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one): Flag

○ AA CENTER ○ N3 ○ S3 ○ E3 ● W3 ○ Nearest practicable location (flag and comment below)

Latitude North 41 . 20633 Longitude West 81 . 71572

Use Decimal Degrees; NAD83

Flag	Comments

7966623548

FORM B-1: BUFFER SAMPLE PLOTS (Front)

Reviewed by (initial): _____

Site ID: PCAP MI 1146 **DATE:** 07 / 14 / 2011

Location: ○ AA Center ● N ○ S ○ E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%); 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

Buffer Plot 1	Canopy Type: D E	Leaf Type: B N	Absent:	Flag

	0	1	2	3	4	Flag
Big Trees (>0.3m DBH)	○	○	○	○	●	
Small Trees (<0.3m DBH)	○	○	○	○	●	
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	○	●	○	○	
Woody Shrubs, Saplings (<0.5m HIGH)	●	○	○	○	○	
Herbs, Forbs and Grasses	○	○	●	○	○	
Bare ground	●	○	○	○	○	
Litter, duff	○	○	○	○	●	
Rock	●	○	○	○	○	
Water	●	○	○	○	○	
Submerged Vegetation	●	○	○	○	○	

Buffer Plot 2	Canopy Type: D E	Leaf Type: B N	Absent:	Flag

	0	1	2	3	4	Flag
Big Trees (>0.3m DBH)	○	○	●	○	○	
Small Trees (<0.3m DBH)	○	○	○	○	●	
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	○	●	○	○	
Woody Shrubs, Saplings (<0.5m HIGH)	○	●	○	○	○	
Herbs, Forbs and Grasses	○	●	○	○	○	
Bare ground	●	○	○	○	○	
Litter, duff	○	○	○	○	●	
Rock	●	○	○	○	○	
Water	●	○	○	○	○	
Submerged Vegetation	●	○	○	○	○	

Buffer Plot 3	Canopy Type: D E	Leaf Type: B N	Absent:	Flag

	0	1	2	3	4	Flag
Big Trees (>0.3m DBH)	○	○	○	○	●	
Small Trees (<0.3m DBH)	○	○	○	○	●	
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	○	○	●	○	
Woody Shrubs, Saplings (<0.5m HIGH)	○	●	○	○	○	
Herbs, Forbs and Grasses	○	●	○	○	○	
Bare ground	●	○	○	○	○	
Litter, duff	○	○	○	○	●	
Rock	●	○	○	○	○	
Water	●	○	○	○	○	
Submerged Vegetation	●	○	○	○	○	

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ●

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	●	●	●	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER OR OVERUSE)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = misc. flags assigned by each field crew. Explain all flags in comment section on the back of this form

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial): _____

Site ID: PCOP MI 1146 **DATE:** 07 / 14 / 2011

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	●	○	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	○	○	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other:	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other:	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other:	○	○	○	
										Other:	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ● N3 ○ S3 ○ E3 ○ W3 ○ Nearest practicable location (flag and comment below)

Flag: ☐

Latitude North 41.20763 Longitude West 81.71439

Use Decimal Degrees; NAD83

Flag	Comments

7966623548

FORM B-1: BUFFER SAMPLE PLOTS (Front)

Reviewed by (initial): _____

Site ID: POAP HI 1146 **DATE:** 07/14/2011

Location: ● AA Center ○ N ○ S ○ E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%), 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

Buffer Plot 1	Canopy Type: ● E	Absent: ○	Leaf Type: ● N	Flag

	0	1	2	3	4	Flag
Big Trees (>0.3m DBH)	○	○	○	●	○	
Small Trees (<0.3m DBH)	○	○	○	○	●	
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	●	○	○	○	
Woody Shrubs, Saplings (<0.5m HIGH)	○	●	○	○	○	
Herbs, Forbs and Grasses	○	○	●	○	○	
Bare ground	○	●	○	○	○	
Litter, duff	○	○	○	○	●	
Rock	●	○	○	○	○	
Water	●	○	○	○	○	
Submerged Vegetation	●	○	○	○	○	

Buffer Plot 2	Canopy Type: ○ D ○ E	Absent: ○	Leaf Type: ○ B ○ N	Flag

	0	1	2	3	4	Flag
Big Trees (>0.3m DBH)	○	○	○	○	○	
Small Trees (<0.3m DBH)	○	○	○	○	○	
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	○	○	○	○	
Woody Shrubs, Saplings (<0.5m HIGH)	○	○	○	○	○	
Herbs, Forbs and Grasses	○	○	○	○	○	
Bare ground	○	○	○	○	○	
Litter, duff	○	○	○	○	○	
Rock	○	○	○	○	○	
Water	○	○	○	○	○	
Submerged Vegetation	○	○	○	○	○	

Buffer Plot 3	Canopy Type: ○ D ○ E	Absent: ○	Leaf Type: ○ B ○ N	Flag

	0	1	2	3	4	Flag
Big Trees (>0.3m DBH)	○	○	○	○	○	
Small Trees (<0.3m DBH)	○	○	○	○	○	
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	○	○	○	○	
Woody Shrubs, Saplings (<0.5m HIGH)	○	○	○	○	○	
Herbs, Forbs and Grasses	○	○	○	○	○	
Bare ground	○	○	○	○	○	
Litter, duff	○	○	○	○	○	
Rock	○	○	○	○	○	
Water	○	○	○	○	○	
Submerged Vegetation	○	○	○	○	○	

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ●

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	●	○	○	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER OR OVERUSE)	●	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial): _____

Site ID: PCAP MF 1146 **DATE:** 07 / 13 / 2011

● **Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble**

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	O	O	O		Purple Loosestrife	O	O	O		Johnson Grass	O	O	O	
Water hyacinth	O	O	O		Knotweed	O	O	O		Kudzu	O	O	O	
Yellow Floating Heart	O	O	O		Japanese Knotweed	O	O	O		Multiflora Rose	O	O	O	
Giant Salvinia	O	O	O		Perennial Pepperweed	O	O	O		Common Buckthorn	O	O	O	
Garlic Mustard	O	O	O		Giant Reed	O	O	O		Himalayan Blackberry	O	O	O	
Poison Hemlock	O	O	O		Cheatgrass	O	O	O		Tamarisk	O	O	O	
Mile-A-Minute Weed	O	O	O		Reed Canary Grass	O	O	O		Other: _____	O	O	O	
Birdsfoot Trefoil	O	O	O		Common Reed	O	O	O		Other: _____	O	O	O	
Canada Thistle	O	O	O		Leafy Spurge	O	O	O		Other: _____	O	O	O	
										Other: _____	O	O	O	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one): Flag

● AA CENTER O N3 O S3 O E3 O W3 O Nearest practicable location (flag and comment below)

Latitude North 41 . 20.657 Longitude West 81 . 71.421

Use Decimal Degrees; NAD83

Flag	Comments

7966623548

FORM B-1: BUFFER SAMPLE PLOTS (Front)

Reviewed by (initial): _____

Site ID: PCAP HI 1146 **DATE:** 07/14/2011

Location: ○ AA Center ○ N ○ S ● E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%); 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

Buffer Plot 1	Canopy Type: D ○ E ○ Absent: ○ Leaf Type: B ○ N ○ Flag	Buffer Plot 2	Canopy Type: D ○ E ○ Absent: ○ Leaf Type: B ○ N ○ Flag	Buffer Plot 3	Canopy Type: D ○ E ○ Absent: ○ Leaf Type: B ○ N ○ Flag
Big Trees (>0.3m DBH)	0 ○ 1 ○ 2 ● 3 ○ 4 ○	Big Trees (>0.3m DBH)	0 ○ 1 ○ 2 ○ 3 ○ 4 ○	Big Trees (>0.3m DBH)	0 ● 1 ○ 2 ○ 3 ○ 4 ○
Small Trees (<0.3m DBH)	0 ○ 1 ○ 2 ○ 3 ○ 4 ●	Small Trees (<0.3m DBH)	0 ○ 1 ○ 2 ○ 3 ○ 4 ●	Small Trees (<0.3m DBH)	0 ○ 1 ○ 2 ○ 3 ○ 4 ●
Woody Shrubs, Saplings (0.5m-5m HIGH)	0 ○ 1 ● 2 ○ 3 ○ 4 ○	Woody Shrubs, Saplings (0.5m-5m HIGH)	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Woody Shrubs, Saplings (0.5m-5m HIGH)	0 ○ 1 ● 2 ○ 3 ○ 4 ○
Woody Shrubs, Saplings (<0.5m HIGH)	0 ○ 1 ● 2 ○ 3 ○ 4 ○	Woody Shrubs, Saplings (<0.5m HIGH)	0 ○ 1 ● 2 ○ 3 ○ 4 ○	Woody Shrubs, Saplings (<0.5m HIGH)	0 ○ 1 ● 2 ○ 3 ○ 4 ○
Herbs, Forbs and Grasses	0 ○ 1 ● 2 ○ 3 ○ 4 ○	Herbs, Forbs and Grasses	0 ○ 1 ● 2 ○ 3 ○ 4 ○	Herbs, Forbs and Grasses	0 ○ 1 ● 2 ○ 3 ○ 4 ○
Bare ground	0 ○ 1 ○ 2 ● 3 ○ 4 ○	Bare ground	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Bare ground	0 ● 1 ○ 2 ○ 3 ○ 4 ○
Litter, duff	0 ○ 1 ○ 2 ● 3 ○ 4 ○	Litter, duff	0 ○ 1 ○ 2 ○ 3 ○ 4 ●	Litter, duff	0 ○ 1 ○ 2 ○ 3 ○ 4 ●
Rock	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Rock	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Rock	0 ○ 1 ● 2 ○ 3 ○ 4 ○
Water	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Water	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Water	0 ● 1 ○ 2 ○ 3 ○ 4 ○
Submerged Vegetation	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Submerged Vegetation	0 ● 1 ○ 2 ○ 3 ○ 4 ○	Submerged Vegetation	0 ● 1 ○ 2 ○ 3 ○ 4 ○

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ○

Residential and Urban Stressors					Hydrology Stressors					Agricultural & Rural Stressors				
Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○		Ditches, Channelization	○	○	○		Pasture/Hay	○	○	○	
Road - two lane	○	○	○		Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○		Range	○	○	○	
Road - four lane	○	○	○		Water Level Control Structure	○	○	○		Row Crops	○	○	○	
Parking Lot/Pavement	○	○	○		Excavation, Dredging	○	○	○		Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Golf Course	○	○	○		Fill/Spoil Banks	○	○	○		Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Lawn/Park	○	○	○		Freshly Deposited Sediment (UNVEGETATED)	○	○	○		Nursery	○	○	○	
Suburban Residential	○	○	○		Soil Loss/Root Exposure	●	○	○		Dairy	○	○	○	
Urban/Multifamily	○	○	○		Wall/Riprap	○	○	○		Orchard	○	○	○	
Landfill	○	○	○		Inlets, Outlets	○	○	○		Confined Animal Feeding	○	○	○	
Dumping	○	○	○		Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○		Rural Residential	○	○	○	
Trash	○	○	○		Impervious surface input (SHEETFLOW)	○	○	○		Gravel Pit	○	○	○	
Other: _____	○	○	○		Other: _____	○	○	○		Irrigation	○	○	○	
Other: _____	○	○	○		Other: _____	○	○	○		Other: _____	○	○	○	

Industrial Development Stressors					Habitat/Vegetation Stressors									
Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○		Forest Clear Cut	○	○	○		Herbicide Use	○	○	○	
Gas Wells	○	○	○		Forest Selective Cut	○	○	○		Mowing/Shrub Cutting	○	○	○	
Mine (surface)	○	○	○		Tree Plantation	○	○	○		Trails	○	○	○	
Mine (underground)	○	○	○		Tree Canopy Herbivory (INSECT)	○	○	○		Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Military	○	○	○		Shrub Layer Browsed (WILD OR DOMESTIC)	●	●	●		Offroad vehicle damage	○	○	○	
Other: _____	○	○	○		Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○		Soil erosion (FROM WIND, WATER OR OVERUSE)	●	○	○	
Other: _____	○	○	○		Recently Burned Forest Canopy	○	○	○		Other: _____	○	○	○	
Other: _____	○	○	○		Recently Burned Grassland (BLACKENED)	○	○	○		Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial): _____

Site ID: _____ **DATE:** ___/___/_____

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	●	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	○	○	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other: Berberis thunbergii	●	○	●	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other: Lonicera maackii	○	○	●	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other:	○	○	○	
										Other:	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ○ N3 ○ S3 ● E3 ○ W3 ○ Nearest practicable location (flag and comment below)

Flag: ☐

Latitude North 41.20663 Longitude West 81.71261

Use Decimal Degrees; NAD83

Flag	Comments

7966623548

FORM B-1: BUFFER SAMPLE PLOTS (Front)

Reviewed by (initial): _____

Site ID: PCAD HI 1146 **DATE:** 07/14/2011

Location: ○ AA Center ○ N ● S ○ E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%); 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

	Buffer Plot 1	Buffer Plot 2	Buffer Plot 3
Canopy Type	● E	● E	○ D ○ E
Leaf Type	● N	● N	○ B ○ N
Absent	○	○	○
Flag			
Big Trees (>0.3m DBH)	4	4	4
Small Trees (<0.3m DBH)	4	3	4
Woody Shrubs, Saplings (0.5m-5m HIGH)	1	3	1
Woody Shrubs, Saplings (<0.5m HIGH)	2	3	2
Herbs, Forbs and Grasses	2	4	3
Bare ground	1	1	3
Litter, duff	4	4	3
Rock	1	1	2
Water	1	1	1
Submerged Vegetation	1	1	1

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ●

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	●	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	○	●	○	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER OR OVERUSE)	○	○	●	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial): _____

Site ID: _____ **DATE:** ____ / ____ / _____

● Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	○	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	○	○	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other: _____	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other: _____	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other: _____	○	○	○	
										Other: _____	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ○ N3 ● S3 ○ E3 ○ W3 ○ Nearest practicable location (flag and comment below)

Flag: ☐

Latitude North 41 - 20.529 Longitude West -81 - 7.1394

Use Decimal Degrees; NAD83

Flag	Comments

7966623548

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

GENERAL INFORMATION

Project Label: PCAP

Project Name:

Plot Name:

Plot No.: 1146

- ☐ Level 4 (no nested corners sampled)
- ■ Level 5 (nested corners sampled)

Date (mm/dd/yyyy): / /

End date (if > 1 day): / /

Party	Role**
	Plot leader

** Roles: Co-leader, Asst., Guide, Owner, Taxonomist, etc

PLOT NOT SAMPLED: ☐ Other

☐ Perm. water ☐ Paved ☐ Slope ☐ Safety

SAMPLING QUALITY*

Effort Level:

- ☐ Very thorough
- ☐ Accurate
- ☐ Hurried

subjective evaluation of how much effort put into sampling. Hurried plots may still provide good data

TAXONOMIC ACCURACY

	high	modera.	low	not smpl
vascul.				n/a
bryo				
lichen				

TAXONOMIC STANDARD

Authority: G&C Pub Date: 1998

LOCATION

State: OH County:

Quadrangle:

Local Place Names:

Landowner:

X-axis Bearing of plot: [225] °

Data Confidentiality:

Check one: ☐ Public data ☐ Private Data

☐ Fuzz 100m ☐ Fuzz 250m ☐ Fuzz 500m

Reason:

If data not public why?

Source of coordinates ☐ MAP ■ GPS

GPS location in plot x=0 to 5, y=-1,0,+1):

x = 0 y = 0 (base of plot x=0, y=0)

Coordinate system: **Coord. Units**

■ Lat/Long ☐ UTM ☐ StatePlane ■ deg ☐ deg min

☐ Other (*specify*) ■ m ☐ ft ☐ ___

Datum: ■ NAD83/WGS84 ☐ NAD27

Latitude: 41.20654

Longitude: 81.71407

Coord. Accuracy: ■ m ☐ ft +- 4

GPS File Name: 1146A

Plot size for cover data: _____ (hectares)

☐ Stems not sampled on this plot ☐ Stems absent

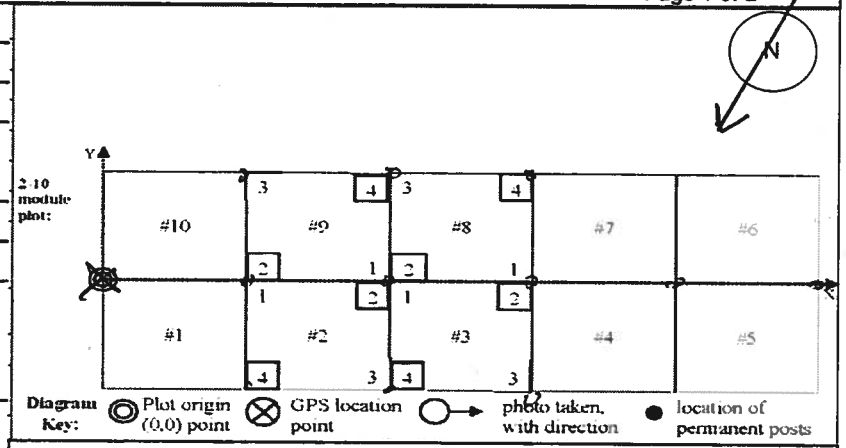
☐ Stems present **Plot size stems:** _____ (ha)

Depth: (1-5):

Intensive modules: 2, 3, 8, 9 (EDIT IF MODIFIED)

Camera No.: _____

Photo Nos.:



Plot placement: ☐ Representative ☐ GRTS ☐ Random ☐ Stratified Random

☐ Transect component ☐ Systematic (grid) ☐ Capture specific feature ☐ Other

NOTES: Include **Layout** (any unusual shape details), **Location** (directions and landscape content), **Rationale** (why here), and **Veg Characterization** (description of community, dominants, strata, BROWSE). Additional notes in space on back.

Layout - 2x5

Rationale - Point lands next to a peninsula of sorts formed By a ravine. West is the only way to run and avoid the steep sides of the Ravine

Minimum required fields in Bold and Underlined

*Definitions and values in CM PCAP FOM v. 1.0 and CVS Field Guide

OVER

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

Cleveland Metroparks

Project Label: PCAP **Project Name:** _____ **Plot No.:** _____

CLASSIFICATION

(FIT = excellent, good, fair, poor; CONF = high, med, low) Fit and Confidence

Hydrogeomorphic class (WETLANDS ONLY):

- ◻ DEPRESSION Fit=___ Conf=___
- ◻ IMPOUNDMENT ◻ Beaver ◻ Human Fit=___ Conf=___
- ◻ RIVERINE ◻ Headwater ◻ Mainstem ◻ Channel Fit=___ Conf=___
- ◻ SLOPE (ground water hydrology or on a physical slope) Fit=___ Conf=___
- ◻ FRINGING ◻ Reservoir ◻ Natural Lake Fit=___ Conf=___
- ◻ COASTAL (specify subclass) Fit=___ Conf=___
- ◻ BOG (strongly, moderately, weekly ombrotrophic) Fit=___ Conf=___

Ohio EPA VIBI Plant Community Class (WETLANDS ONLY):

- ◻ FOREST ◻ swamp forest ◻ bog forest ◻ forest seep Fit=___ Conf=___
- ◻ EMERGENT ◻ marsh ◻ wet meadow ◻ open bog Fit=___ Conf=___
- ◻ SHRUB ◻ shrub swamp ◻ tall sh. bog ◻ tall sh. fen Fit=___ Conf=___

MODIFIED NATURESERVE CLASS*

CODE (on separate form): Fit=___ Conf=___

COMMUNITY NAME:

LANDFORM TYPE*:

STAND SIZE

- ◻ >1,000 x plot size
- ◻ > 100 x plot size
- ◻ 10-100 x plot size
- ◻ 3-10 x plot size
- ◻ 1-3 x plot size
- ◻ < plot size

DRAINAGE*

- ◻ Excessively drained
- ◻ Somewhat excessively
- ◻ Well drained
- ◻ Moderately well dr.
- ◻ Somewhat poorly dr.
- ◻ Very poorly dr.
- ◻ Impermeable surface

SALINITY*

- ◻ Saltwater
- ◻ Brackish
- ◻ Fresh
- ◻ Upland (n/a)

DISTURBANCES

type*	severity**	yrs ago	% of plot	description
Human				
Natural				
Fire				
Cut				
Animal				
Other				

**L=low, ML=med low, M=med, MH=med high, H=high, VH=very high

Current Land Use:

Former Land Use:

HYDROLOGIC REGIME*

- ◻ Upland (seldom flooded)
- ◻ Intermittently/seasonally saturated (seldom flooded)
- ◻ Permanently/Semipermanent saturated (dry <1/yr, seldom flooded)
- ◻ Occasionally flooded (<1/yr)
- ◻ Temporarily flooded
- ◻ Intermittently flooded
- ◻ Semipermanently flooded
- ◻ Permanently flooded
- ◻ Tidal/Seiche flooded daily
- ◻ Tidal/Seiche flooded monthly
- ◻ Tidal/Seiche flooded irregular (e.g. wind, storms)
- ◻ Unknown

HOMOGENEITY

- ◻ Homogeneous
- ◻ Compositional trend across the plot
- ◻ Conspicuous inclusions
- ◻ Irregular/pattern mosaic

Additional notes & diagrams: (Representativeness of plot to the stand, successional status, maturity, etc.)

Park At Wardon Holmstead Cres
Hike in 500+ m