

CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label: _____

PCAP _____

Plot No: 1050Date Sampled: 07/08/15Lead: CKM

Comment required if item answer is NO

Parking/Access outside of Park Boundaries:	Y	<u>N</u>	If yes, write details in Comments section below
Field journals completed	<u>Y</u>	N	
Site sketch made on 1:3000 map?	<u>Y</u>	N	
Check cover page	<u>Y</u>	N	
X-axis Bearing of plot recorded	<u>Y</u>	N	
GPS coords. Recorded	<u>Y</u>	N	
North direction recorded	<u>Y</u>	N	
Photographs taken?	<u>Y</u>	N	
Relocated Pins Mapped	<u>Y</u>	N	
Plot No., Date agreement on all pages?	<u>Y</u>	N	
Header data completed all pages?	<u>Y</u>	N	
Cover classes recorded in all Intensive modules	<u>Y</u>	N	
Browse Level By Species	<u>Y</u>	N	
Woody stem quality control check	<u>Y</u>	N	Check every line and cross check with the Tree Cover Sheet
Invasive plant quality control check	Y	N	<u>NA</u>
Ash trees mapped	<u>Y</u>	N	
Completed Forest Pest/Pathogen Datasheet	<u>Y</u>	N	
Cover by Strata? (confirm cover type)	<u>Y</u>	N	
Soil samples collected with matching plot #.	Y	N	<u>NA</u>
Cross check 2010 information	<u>Y</u>	N	Highlight any changes from 2010 information
Vouchers labeled on datasheet with initials and number	<u>Y</u>	N	
Vouchers labeled on collection bag	<u>Y</u>	N	
Pink flags removed	<u>Y</u>	N	
Data sheet QA before leaving site?	<u>Y</u>	N	
Common equipment returned to tub.	Y	N	
Data sheets scanned?			Enter date to left
Final data sheets scanned?			Enter date to left
Buffer Widths measured?	Y	N	
Web Soil Survey	Y	N	
Voucher Location	Refrigerator	Y	N
(# vouchers collected)	Press (#)		Enter number to left
<u>CKM-143-</u>	Drier	Y	N
<u>147</u>	Identified	Y	N
	Mounted	Y	N
	Thrown away	Y	N

GRTS point verification: Is plot sampleable?

<input type="checkbox"/> Yes	Original GRTS point is sampleable
<input type="checkbox"/> No	Original GRTS point lands in a non-sampleable area (fill in category below)
	<input type="checkbox"/> Point falls in a water (i.e. river, lake)
	<input type="checkbox"/> Managed mowed area (i.e. golf course, picnic area, right-of-way)
	<input type="checkbox"/> Paved area (i.e. parkinglot, road)
	<input type="checkbox"/> Unsafe to sample (i.e. steep slope)
	<input type="checkbox"/> Other

Additional Comments:

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Page 2

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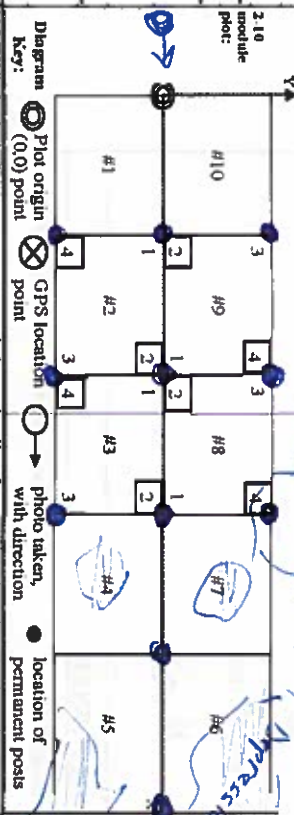
CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

GENERAL INFORMATION																					
Project Label:	PCAP																				
Project Name:	02 BW 2015																				
Pilot Name:	Mayapple Woods																				
Pilot No.:	1050																				
<input type="checkbox"/> Level 4 (no nested corners sampled) <input checked="" type="checkbox"/> Level 5 (nested corners sampled)																					
Date (mm/dd/yyyy):	07/08/2015																				
End date (if > 1 day):	6 / 1																				
Party	Role**																				
C. Minney	Pilot leader																				
M. Busdam	Woody Tech																				
M. Beitzky	Woody Tech																				
** Roles: Co-leader, Asst. Guide, Owner, Taxonomist, etc.																					
PLOT NOT SAMPLED: <input type="checkbox"/> Other <input type="checkbox"/> Perm. water <input type="checkbox"/> Paved <input type="checkbox"/> Slope <input type="checkbox"/> Safety																					
SAMPLING QUALITY* Effort Level: <input checked="" type="checkbox"/> Very thorough <input type="checkbox"/> Accurate <input type="checkbox"/> Hurried subjective evaluation of how much effort put into sampling. Hurried plots may still provide good data																					
TAXONOMIC ACCURACY <table border="1"> <tr> <td></td> <td>high</td> <td>moderate</td> <td>low</td> <td>not sampled</td> </tr> <tr> <td>vascul.</td> <td>X</td> <td></td> <td></td> <td>n/a</td> </tr> <tr> <td>hryo</td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>lichen</td> <td></td> <td></td> <td></td> <td>X</td> </tr> </table>			high	moderate	low	not sampled	vascul.	X			n/a	hryo			X		lichen				X
	high	moderate	low	not sampled																	
vascul.	X			n/a																	
hryo			X																		
lichen				X																	
TAXONOMIC STANDARD Authority: G&C Pub Date: 1998																					

Minimum required fields in Bold and Underlined

LOCATION	
State:	OH
County:	Cuyahoga
Quadrangle:	North Olmsted
Local Place Names:	Burns Lake Wildlife Area
Landowner:	CMAP
Data Confidentiality:	<input checked="" type="checkbox"/> Public data <input type="checkbox"/> Private Data <input type="checkbox"/> Fuzz 100m <input type="checkbox"/> Fuzz 250m <input type="checkbox"/> Fuzz 500m
Check one:	<input checked="" type="checkbox"/> Public data <input type="checkbox"/> Private Data <input type="checkbox"/> Fuzz 100m <input type="checkbox"/> Fuzz 250m <input type="checkbox"/> Fuzz 500m
Reason:	
If data not public why?	
Source of coordinates	<input type="checkbox"/> MAP <input checked="" type="checkbox"/> GPS Coordinate system: <input checked="" type="checkbox"/> UTM <input type="checkbox"/> StatePlane <input type="checkbox"/> Lat/Long <input type="checkbox"/> Other (specify)
Datum:	<input checked="" type="checkbox"/> NAD83/WGS84 <input type="checkbox"/> NAD27 GPS location in plot (x=0 to 5, y=-1.0 to +1): x = 0 y = 0 (base of plot x=0, y=0)
Latitude:	41.41986
Longitude:	81.94497
Coord. Accuracy:	<input checked="" type="checkbox"/> m <input type="checkbox"/> ft <input type="checkbox"/> + -2 GPS File Name: 1050A Plot size for cover data: .1 (hectares) X-axis Bearing of plot: [354]°
Depth: (1-5):	4
Intensive modules:	2, 3, 8, 9 (EXT IF MODIFIED)
Camera No.:	4
Photo No.:	4511
Pilot placement:	<input checked="" type="checkbox"/> GRTS <input type="checkbox"/> Representative <input type="checkbox"/> Random <input type="checkbox"/> Stratified Random <input type="checkbox"/> Transect component <input type="checkbox"/> Systematic (grid) <input type="checkbox"/> Capture specific feature <input type="checkbox"/> Other

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



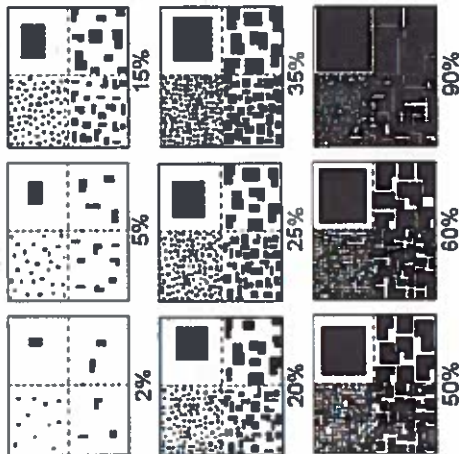
NOTES: Include Layout (any unusual shape details), Location (directions and landscape content), Rationale (why here), and Veg Characterization (description of community, dominants, strata, BROWSE). Additional notes in space on back.

Layout: 2x5
 Location: Park at Burns Lake Wildlife Area, Parking lot, ~400m from lot. Follow Northern-most Eastbound trail, cross stream walk NE to plot.
 Rationale: GRTS
 Veg characterization: Canopy dominated by Sugar Maple with Tulip interspersed in the front. The back dominated by Fagus with Red Oak interspersed in back. With Vitis. The shrub layer dominated by throughout. Sugar in front and Fagus in back. The herb layer of medium density with Mayapple and Fraxinus seedlings dominating.

OVER

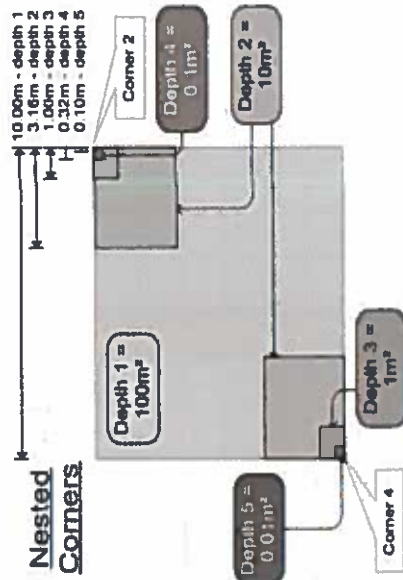
EXAMPLES OF PERCENT OF AREA COVERED

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.

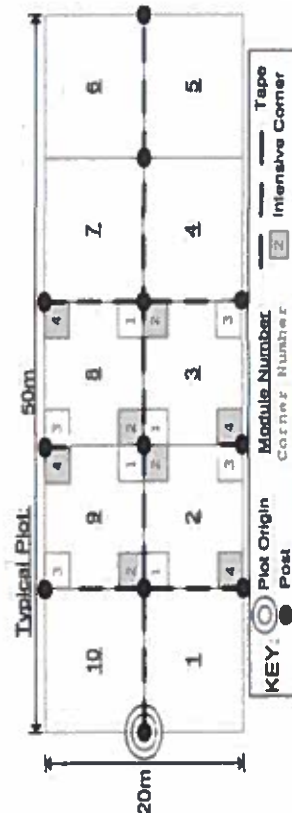
MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas.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

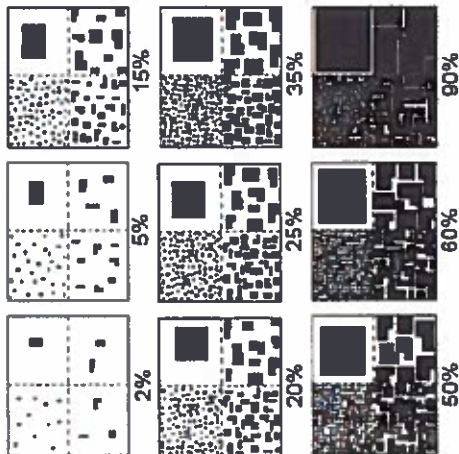
HIGH: greater than 25 percent of the stems of plants in the 1 m2 nested quadrat and intensive module AND a browse line is evident.

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.



EXAMPLES OF PERCENT OF AREA COVERED

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



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.

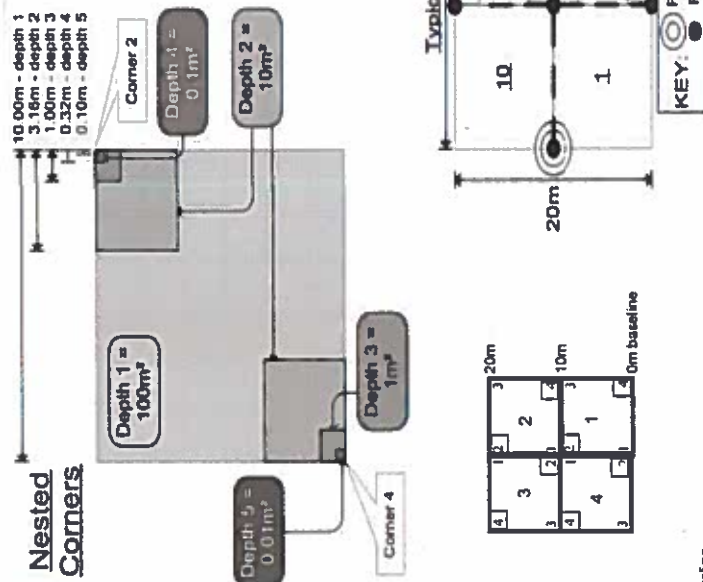
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Page 1 of 1

spider web hairy



fallen into
Mod 6

Page of

Project name:

Plot no.:

Response	Percentage
Appropriate	60%
Not appropriate	40%

PCAP

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Page: 1 of 3

3 Cleveland Metropolitan

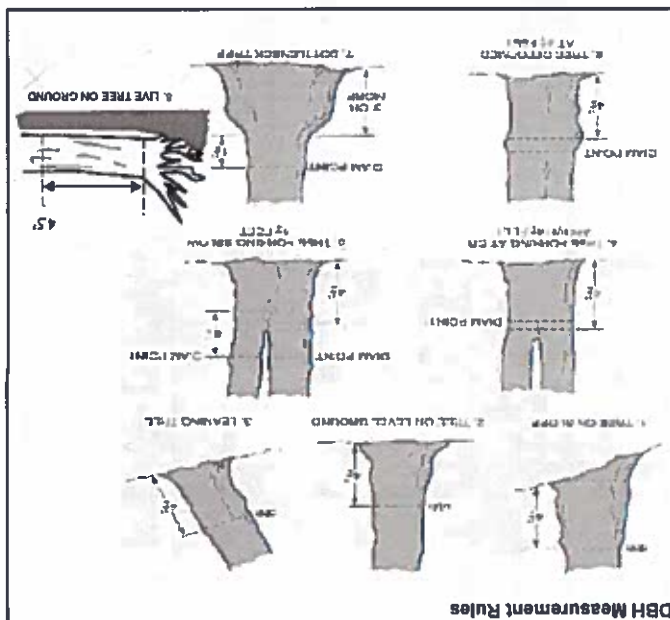
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ASH CANOPY BREAKUP CONDITION (for dead trees):
 (If an ash receives a score of 5 (dead) under canopy condition it must also receive a breakup condition rank as described below)

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.

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.



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

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

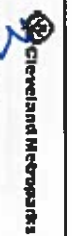
Project Label: PCAP

Project Name: COZAN 205

Plot No.: 1050

Page: 2

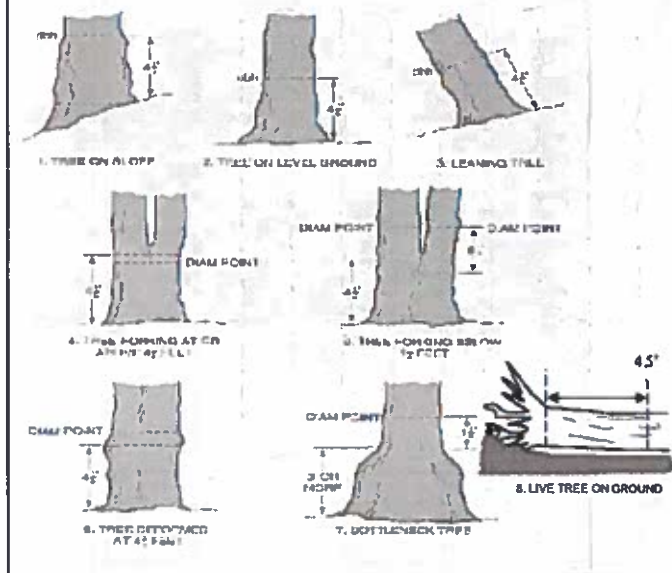
of



Explain subsample (additional room on back):

plot #	species	c	voucher#	# stems 0-1.4m browsed	% sub or super sample	# shrub clumps	size class (cm) woody stems > 1.4m										> 40 (record each tree)
							1	2	3	4	5	6	7	8	9	10	
5	FRAX americana			0				0	0								34.2
5	QUERCUS rubra																
5	SMILAX rotundifolia			0			0										
5	CORYL ORATA																
5	ACER rubrum																
6	QUERCUS rubra																54.4
6	ACER rubrum																
6	FRAX americana			0													
6	NATR. RESINOSA			0													
6	FRAX americana			0													
6	SMILAX rotundifolia			0													
7	STANDING DEAD			0													
7	FRAX americana			0													
7	NATR. RESINOSA																
7	ACER saccharum																
7	BETULA alleghaniensis																61.4
7	QUERCUS rubra																
8	BETULA alleghaniensis			0													
8	NATR. RESINOSA			0													
8	ACER saccharum																
8	LIRIODENDRON tulipifera																
8	STANDING DEAD			0													
8	FRAX americana			0													
8	FRAX americana			0													

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



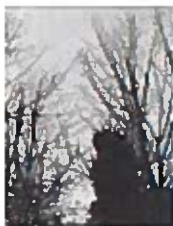
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ASH CANOPY CONDITION

- 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)

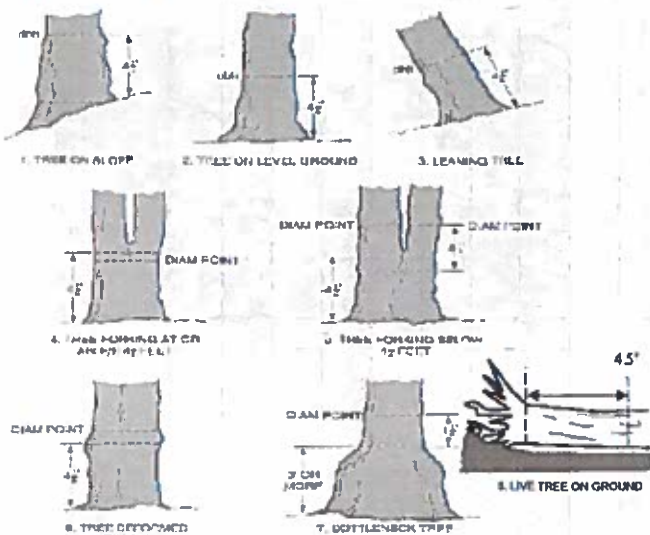
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Cleveland Metroparks:

Page: 0

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DBH Measurement Rules



Woody Stem Deer Browse

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Record using the tally system from 1 to 10



1



2



3



4



5

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A

B

C

D

E

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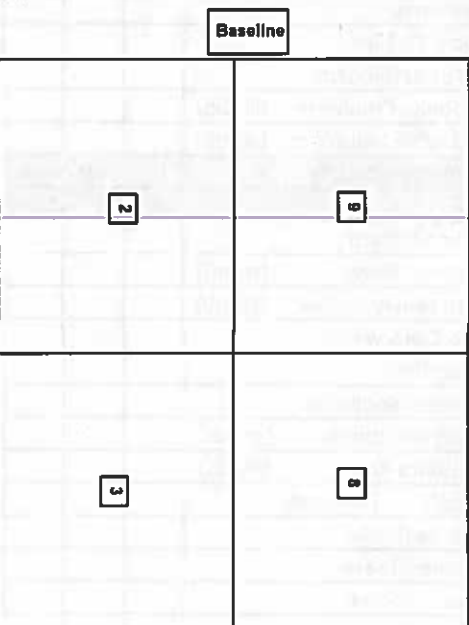
Tree ID	Species	Dead	c	Voucher #	DBH (cm)	Ht (m)	Ash condition	Dead condition	# Exit holes	Episodic present	Woodpecker holes
1	NO FRAXINUS TREES										
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

* If Ash Condition scores 5 (dead) provide Breakup score (A-E)
Count EAB exit holes 1.25m² x 21.5m
Woodpecker and episodic marked present (1) or absent (0)

ASH ONLY



*** Change intensive module numbers when necessary



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

CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey


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				comments
		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					
Ligustrum vulgare	Common Privet (shrub)					
L. morrowii, L. tatarica	Bush Honeysuckles (shrub)					
Phalaris arundinacea	Reed Canarygrass					
Phragmites australis (wetland)	Phragmites					
Polygonum cuspidatum	Japanese Knotweed					
Frangula alnus	Glossy Buckthorn (shrub)					
Rosa multiflora	Multiflora Rose (shrub)					
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

of Plants

1: 1-10

2: 11-50

3: 51-100

4: 101-1,000

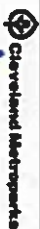
5: >1,000

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

Lowie Revisited July 2015 - Not ALB

CLEVELAND METROPARKS Plant Community Assessment Program Forest Pest and Pathogens Data Sheet

Project Label: PCAP Project Name: OSBN 2015 Plot No.: 1050 Page: 1 of 1



mod #	species	voucher#	# shrub clumps	size class (cm) woody stems > 1m										
				1 0-1	2 1-2.5	3 2.5-4.5	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	none													
2	none													
3	none													
4	Betula alleghaniensis													
5	none													
6	none													
7	Betula alleghaniensis													
8	Betula alleghaniensis													
9	none													
10	none													

* IF EVIDENCE OF PEST OR PATHOGEN RECORD TOTAL SPECIES POPULATION IN THE PLOT EVEN THE NOT INFECTED

Strata	# of stems infected	Severity (H, M, or L)
Tree (size class 3 or above)	3	M
Shrub (size class 2 or below including shrub clumps)	1	-

* Write None Present if no evidence:

Beech (Fungus)	Asian Longhorned Beetle
Hemlock (HWA)	Other Pest or Pathogen
Walnut (Thousand Canker)	

Severity

High = more than 50% of leaf/needle cover exhibiting symptoms

Medium = Less than 50% of leaf/needle cover exhibiting symptoms

Low = Only a few leaves or branches are exhibiting symptoms

STANDING BIOMASS (required for emergent wetlands) collected in 0.1m clip plot (3x32 cm) from corners 1 and 3 in each intensive module. Required for VIBI-E score calculation. C7=check when collected

Module #	C7	Corner	Corner

CLASSIFICATION

FTT = elevation, Fill and Confidence

Hydrogeomorphic class (WETLANDS ONLY)

<input type="checkbox"/> DEPRESSION	Fit=	Conf=
<input type="checkbox"/> INFUNDAMENT	Fit=	Conf=
<input type="checkbox"/> RIVERINE	Fit=	Conf=
<input type="checkbox"/> SLOPE (ground water hydrology or on a physical slope)	Fit=	Conf=
<input type="checkbox"/> FRINGING	Fit=	Conf=
<input type="checkbox"/> COASTAL (specific subclases)	Fit=	Conf=
<input type="checkbox"/> BOG (strongly, moderately, weakly anthropogenic)	Fit=	Conf=

On the EPA VIBI Plant Community Class (WETLANDS ONLY)

<input type="checkbox"/> FOREST	Fit=	Conf=
<input type="checkbox"/> EMERGENT	Fit=	Conf=
<input type="checkbox"/> SHRUB	Fit=	Conf=

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Repeat for microhabitat features. Select one or select two and average the score. NOTE: If not able on a slope systematically gate marked based on steepness (1-2) to begin + any features present

- 0 feature is absent or functionally absent from the wetland
- 3 feature is present in the wetland 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

Slope 1 = slight elevational grade across module (ft)

Slope 2 = table on slope -20°

Slope 3 = maximum steepness that can be safely sampled -45°

C.W.D. = count for pieces with minimum 1m length

no. of insects	no. of hummocks	no. macro. depressions	C.W.D. (2-12 cm)	C.W.D. (12-10cm)	C.W.D. >40 cm	microhab. interspers.	microhab. SLOPE
depth 3 1x1m	depth 2 3.16x3.16m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m
count	count	count	count	count	count	count	count
000	020	333	12	000	000	000	1

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

MENAB INDICES (degrees) + for up - for down

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

AI aspect	N	NE	E	SE	S	SW	W	NW
+45 degrees								
+90 degrees								
+135 degrees								
+180 degrees								
+225 degrees								
+270 degrees								
+315 degrees								

* Landform Index (position within landscape)
* Terrain Shape Index (use microtopographic shape)

CROWN COVER (DENSITOMETER) Made + 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	0	0
3	0	0	0	0
8	0	0	0	0
9	0	0	0	0

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.

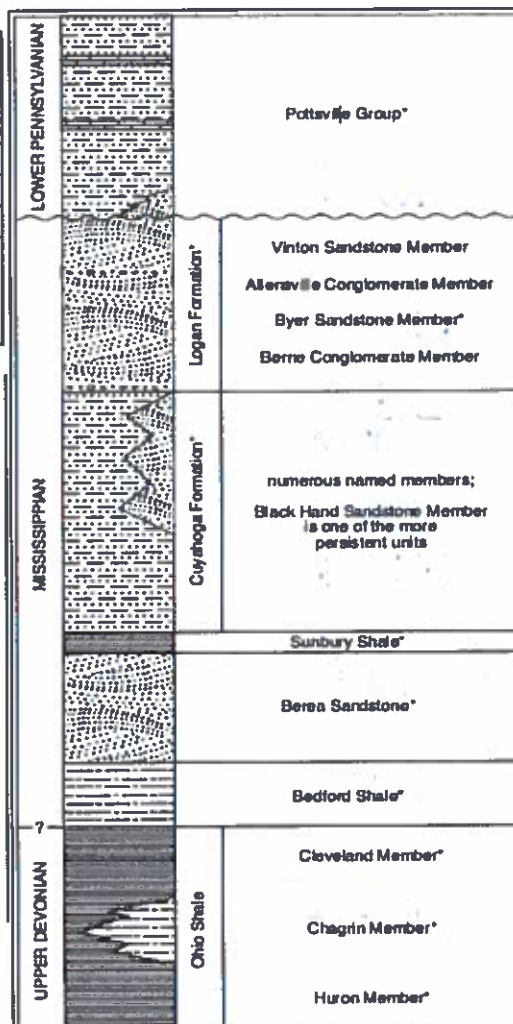
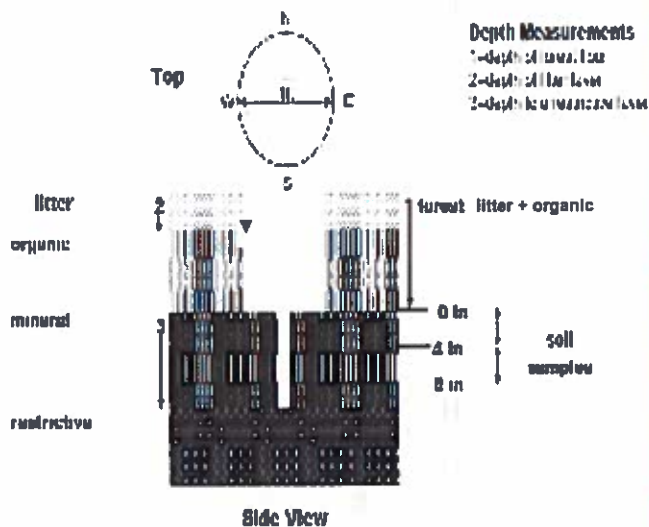


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses 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 (1953), Hoover (1960), and Collins (1979) for more information on Mississippian rocks in Ohio. See figure 3-18 for explanation of rock types.

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

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 pit module # _____ (one per entire plot)

5 cm	matrix color	
	monte color	
	%monte	
	oxid roots	Y N
	texture*	
	redox features**	Y N
	hydr. cond.***	I S M D
20 cm	matrix color	
	monte color	
	%monte	
	oxid roots	Y N
	texture*	
	redox features**	Y N
	hydr. cond.***	I S M D

Soil Collection Method	Horizon (A, B, C)
2.3, 8.9 cm plugged	A
Web Soil Survey Information:	
Soil Series/Type:	
Soil Series Source:	Ohio Soil Survey
Landform type:	
Depth to root layer:	
Parent Material:	
PERMEABILITY*	
<input type="checkbox"/> Excessively dr. <input type="checkbox"/> Somewhat excessively <input type="checkbox"/> Well drained <input type="checkbox"/> Moderately well dr. <input type="checkbox"/> Somewhat poorly dr. <input type="checkbox"/> Very poorly dr. <input type="checkbox"/> Impermeable surface	

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

1 liter+ organic depth (cm)	2 liter depth (cm)	water depth (cm)	depth sat soil (cm)
mod			
2	25	25	-
3	20	20	-
8	25	25	-
9	30	30	-

EARTH SURFACE & GROUND COVER			
Underlying Earth Surface*	Ground Cover		
Sum = 100%	percent	percent	
litter	Coarse Woody Debris**	8	
Mineral Soil	Fine Woody Debris****	6	
Gravel-Cobble*	Litter	76	
Boulder**	Duff (Ferm + Humus)	0	
Bedrock	Bryophyte-Lichen	1	
* Gravel-Cobble = 1/16-10"	Water	1	
** Boulder = > 10 in	Bar Soil	12	
*** > 5 cm in diameter	Root/Trail	12	
**** < 5 cm in diameter	Other		

TRAIL INFORMATION:	
record type and cover for each	
Type	%Cover
<input type="checkbox"/> All Purpose	
<input type="checkbox"/> Bridle	
<input type="checkbox"/> Hiking sanctioned	
<input type="checkbox"/> Bootleg unsanctioned	
<input type="checkbox"/> Gravel	
<input checked="" type="checkbox"/> Duff	2

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

Strata	Height Range (m)	Total Cover (%)
Tree	5-80	93
Shrub	0.5	45
Herb	0-3	23
(Floating)*		
(Aquatic)*		

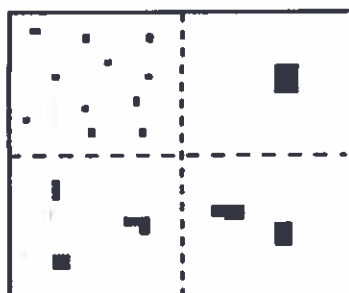
* rooted and floating or slightly emerged
 ** submerged, most plant mass below surface
 SEE BACK OF PAGE FOR TYPICAL STRATA DESCRIPTIONS. STRATA CAN VARY BY COVER TYPE.

STAND SIZE	
<input type="checkbox"/> > 600 x plot size	
<input checked="" type="checkbox"/> 100 x plot size	
<input type="checkbox"/> 10-100 x plot size	
<input type="checkbox"/> 3-10 x plot size	
<input type="checkbox"/> 1-3 x plot size	
<input type="checkbox"/> < plot size	

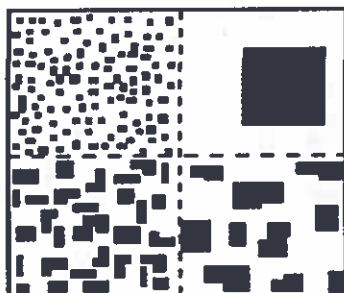
mod-2-no worms/casting
 3-castings/no worms
 8-castings/no worms
 9-castings/no worms

PERCENT MOTTLES (USE CLASS CODES):

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



2%



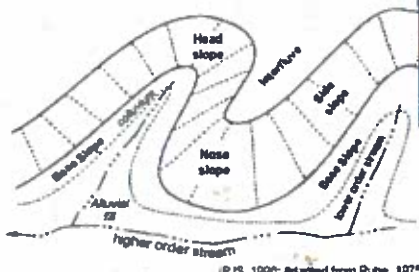
20%

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.

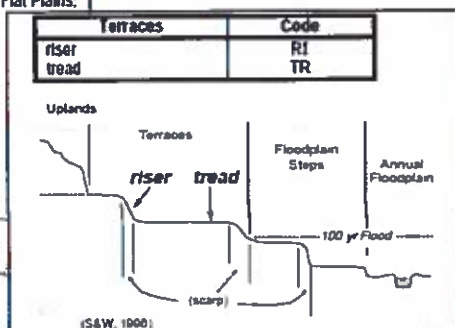
- 0= Organic
- 1= Loamy
- 2= Clayey
- 3= Sandy
- 4= Coarse Sand
- 9= Not measured - make plot note

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	NASIS
PDP		
interfluvial	IF	IF
head slope	HS	HS
nose slope	NS	NS
side slope	SS	SS
base slope	BS	BS

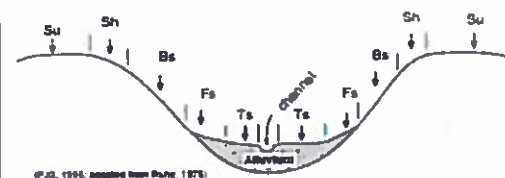


(P.J.S. 1990; adapted from Ruhe, 1975)



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/SEMPERMANENTLY 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.

SEMPERMANENTLY 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.