

CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label:

PCAP

Plot No: 1063

Date Sampled: 07/27/15

Lead: LANCE

Comment required if item answer is NO

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

GRTS point verification: Is plot sampleable?

<input checked="" 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:

--



1000

1000

1000

1000

1000

1000

GENERAL INFORMATION			
Project Label:	PCAP		
Project Name:	02622015		
Plot Name:	FORE!		
Plot No.:	1063		
<input type="checkbox"/> Level 4 (no nested corners sampled) <input checked="" type="checkbox"/> Level 5 (nested corners sampled)			
Date (mm/dd/yyyy)	07/27/2015		
End date (if > 1 day):	/ /		
Party	Role**		
A. Lance	Plot leader		
S. Eysenbach	"		
D. Sweet	Bot. Asst.		
M. Busam	Crew		
R. Eagle	Crew		
** Roles: Co-leader, Asst., Guide, Observer, 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:	subjective evaluation of how much effort put into sampling. Hurried plots may still provide good data		
<input checked="" type="checkbox"/> Very thorough			
<input type="checkbox"/> Accurate			
<input type="checkbox"/> Hurried			
TAXONOMIC ACCURACY			
	high	moderate	low
vascul.	<input checked="" type="checkbox"/>		n/a
bryo			<input checked="" type="checkbox"/>
lichen			<input checked="" type="checkbox"/>
TAXONOMIC STANDARD			
Authority:	G&C	Pub Date:	1998

Minimum required fields in Bold and Underlined

LOCATION	
State:	OH County: Cuyahoga
Quadrangle:	Shaker Hts.
Local Place Names:	Shawnee Hills GC
Landowner:	CMP
Data Confidentiality:	
Check one:	<input 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 <input checked="" type="checkbox"/> Lat/Long <input type="checkbox"/> UTM <input type="checkbox"/> StatePlane <input type="checkbox"/> deg <input type="checkbox"/> deg min
Coordinate system:	Coord. Units
Other (specify)	<input type="checkbox"/> m <input type="checkbox"/> ft
Datum:	<input checked="" type="checkbox"/> NAD83/WGS84 <input type="checkbox"/> NAD27
GPS location in plot (x=0 to 5, y=1,0,+1):	
x =	0 y = 0 (base of plot x=0, y=0)
Latitude:	41.37847
Longitude:	81.54350
Coord. Accuracy:	6 m <input type="checkbox"/> ft
GPS File Name:	1063A
Plot size for cover data:	1.04 (hectares)
X-axis Bearing of plot:	110.1°
Depth: (1-5)	4
Intensive modules:	2, 3, 4, 9, 12, 14 (EDIT IF MODIFIED)
Camera No.:	3
Photo Nos.:	0145
Plot 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 FOM v. 1.0 and CVS Field Guide

← Golf Tee

Mowed Turf

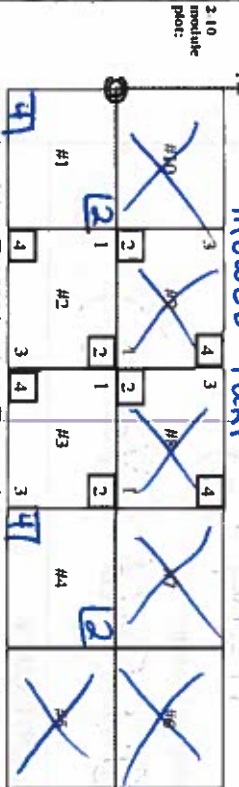


Diagram Key:
 Plot origin (0,0) point
 GPS location point
 photo taken, with direction
 location of permanent posts

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 → 1 x 4

Location → Located approx. 550 m west of Shawnee Hills GC. Located adjacent to hole #3 (par 3).

Rationale → GRTS; PCAP re-sample

Veg. Characteristics → Plot is a managed meadow dominated by Festuca, Phleum, and Agrostis grass species. Small amounts of ragweed, buckthorn and oak regeneration scattered throughout. Lots of dogbane →

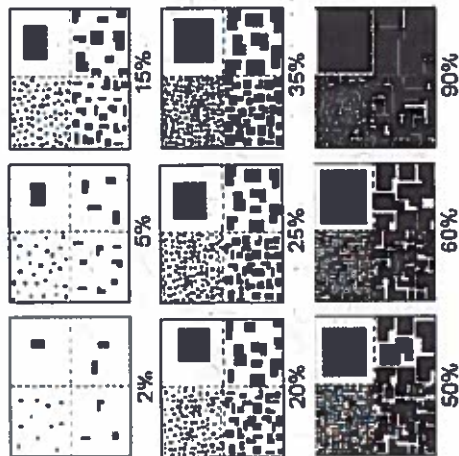
OVER

<div style="display: flex; justify-content: space-between;"> CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet Plot No.: <u>1063</u> Page 2 of 2 </div>																																							
Project Label: _____ PCAP _____		Project Name: <u>02Bz 2015</u>																																					
MODIFIED NATURESERVE CLASS* CODE (on separate form): <u>V-04 (a)</u> Fit= _____ Conf= _____ COMMUNITY NAME: <u>Old Field (Youngs)</u>		DISTURBANCES <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">type*</th> <th style="width: 20%;">severity**</th> <th style="width: 10%;">yrs ago</th> <th style="width: 10%;">% of plot</th> <th style="width: 30%;">description</th> </tr> </thead> <tbody> <tr> <td>Human</td> <td><u>VH</u></td> <td><u>0</u></td> <td><u>100%</u></td> <td><u>mowing</u></td> </tr> <tr><td>Natural</td><td></td><td></td><td></td><td></td></tr> <tr><td>Fire</td><td></td><td></td><td></td><td></td></tr> <tr><td>Cut</td><td></td><td></td><td></td><td></td></tr> <tr><td>Animal</td><td></td><td></td><td></td><td></td></tr> <tr><td>Other</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>			type*	severity**	yrs ago	% of plot	description	Human	<u>VH</u>	<u>0</u>	<u>100%</u>	<u>mowing</u>	Natural					Fire					Cut					Animal					Other				
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Fire																																							
Cut																																							
Animal																																							
Other																																							
HOMOGENEITY <input checked="" type="checkbox"/> Homogeneous <input type="checkbox"/> Compositional trend across the plot <input type="checkbox"/> Conspicuous inclusions <input type="checkbox"/> Irregular/pattern mosaic		**L=low, ML=med low, M=med, MH=med high, H=high, VH=very high Current Land Use: <u>GOLF COURSE</u> Former Land Use: <u>UNKNOWN</u>																																					
HYDROLOGIC REGIME*																																							
SALINITY* <input type="checkbox"/> Saltwater <input type="checkbox"/> Brackish <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Upland (n/a)		<input checked="" type="checkbox"/> Upland (seldom flooded) <input type="checkbox"/> Intermittently/seasonally saturated (seldom flooded) <input type="checkbox"/> Permanently/Semipermanent, saturated (dry <1/yr, seldom flooded) <input type="checkbox"/> Occasionally flooded (<1/yr) <input type="checkbox"/> Temporarily flooded <input type="checkbox"/> Intermittently flooded <input type="checkbox"/> Semipermanently flooded <input type="checkbox"/> Permanently flooded <input type="checkbox"/> Tidal/Seiche flooded daily <input type="checkbox"/> Tidal/Seiche flooded monthly <input type="checkbox"/> Tidal/Seiche flooded irregular (e.g. wind, storms) <input type="checkbox"/> Unknown																																					
(by default unless plot is a wetland) Additional notes & diagrams: (Representativeness of plot to the stand, successional status, maturity, etc.)																																							

in mod 4.
 Most likely mowed annually / bi-annually as woody re-generation has been suppressed.

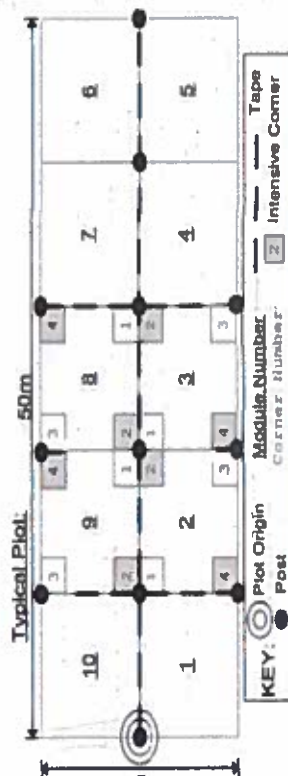
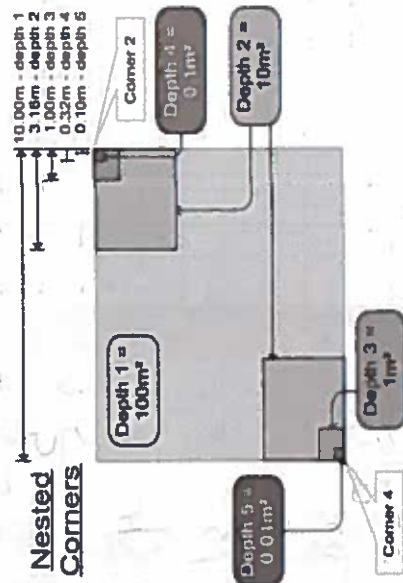
EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used for various data elements to convey "Amount" or "Quality". 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 2

Project Label:

PCAP

Project name: 0282015

Plot no.: 1063

Total modules:

4

Intensive modules: 4

Plot configuration: 2x4

Plot area (ha): .04



Cleveland Metroparks

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

Strata - Cov. entire plot

S H (F)(A) Br

Species

c

Voucher #

depth

cov

depth

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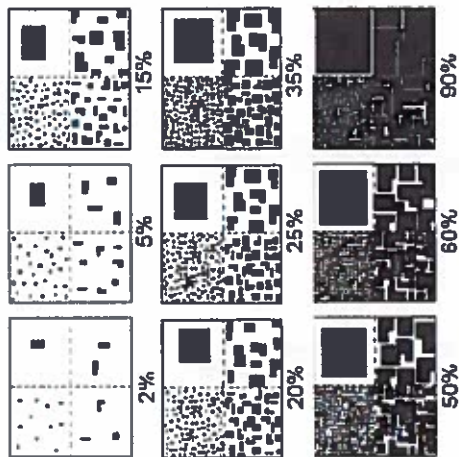
1

1

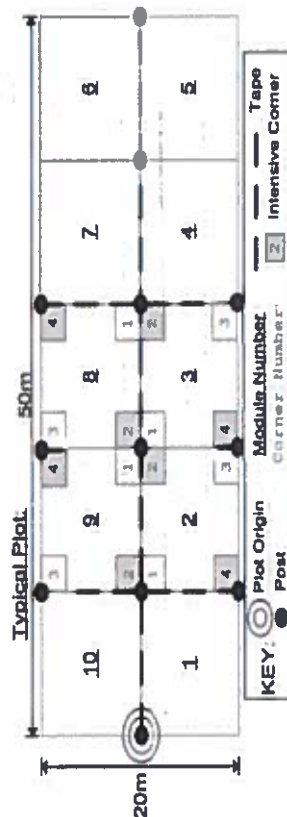
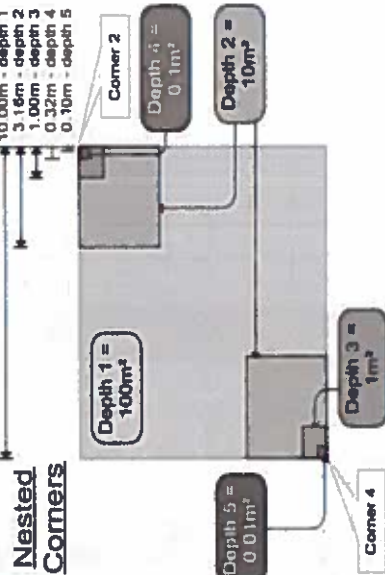
1

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	mid point
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.

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Page 1 of 1

Plot no.: 1063

Page 1 of 1

[illegible]

% COVER		Presence of tree species (X)		mod		mod		mod		mod		R	
Strata - Cov. entire plot		c		Voucher #								R	
T	Br	Species											

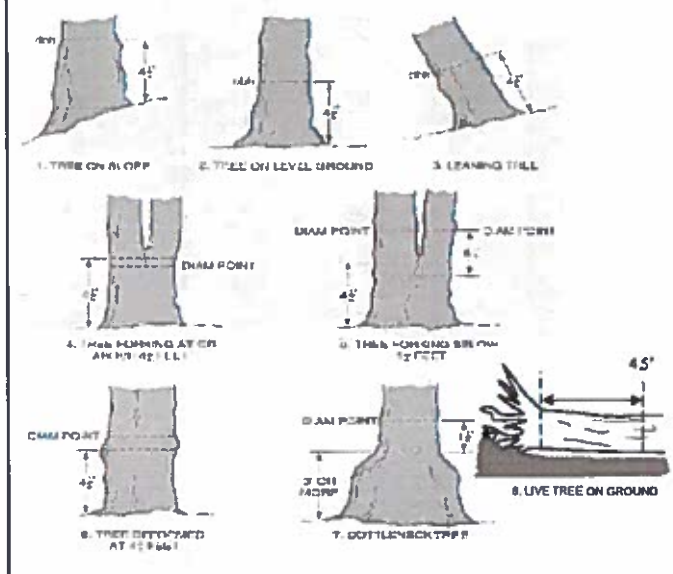
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Page: of

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Natural Resources Management FORM NR/2010-03a

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.

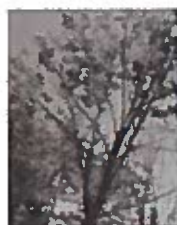
Record using the tally system from 1 to 10



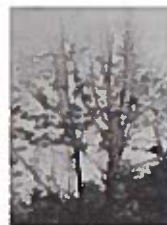
1



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):

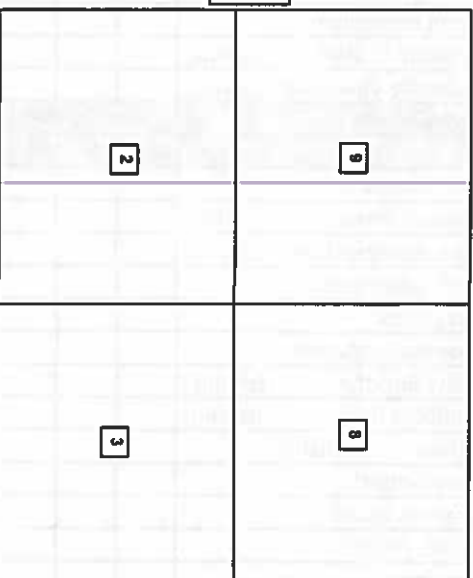
(If an ash receives a score of 5 (dead) under canopy condition it must also receive a breakup condition rank as described below)

- 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.

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

ASH ONLY

Baseline



*** 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 1.25m² x 21.5m
Woodpecker and epicormic marked present (1) or absent (0)

CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey



Tier 1: Early detection/ Rapid response		Presence				GPS	Presence X: yes
		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	# of Plants 1: 1-10 2: 11-50. 3: 51-100 4: 101-1,000 5: >1,000
		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	# of Plants 1: 1-10 2: 11-50. 3: 51-100 4: 101-1,000 5: >1,000
		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	# of Plants 1: 1-10 2: 11-50. 3: 51-100 4: 101-1,000 5: >1,000
		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						

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

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



Project Label: PCAP

Project Name: 02/22/2015

Plot No.: 1063

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-<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														
3														
4														
5														
6														
7														
8														
9														
10														

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

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

* Write None Present if no evidence:	
None present	
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 wetland) collected in 0.1m clip plot (32x32 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

RTT - excellent, F Fit and Confidence

Hydrogeomorphic class (WETLANDS ONLY)

<input type="checkbox"/> DEPRESSION	Fit=	Conf=
<input type="checkbox"/> INFLUENCEMENT <input type="checkbox"/> Beaver <input type="checkbox"/> Human	Fit=	Conf=
<input type="checkbox"/> RIVERINE <input type="checkbox"/> Headwater <input type="checkbox"/> Mainstem <input type="checkbox"/> Channel	Fit=	Conf=
<input type="checkbox"/> SLOPE (erosional water by-embog or on a physical slope)	Fit=	Conf=
<input type="checkbox"/> FRINGING <input type="checkbox"/> Reservoir <input type="checkbox"/> Natural Lake	Fit=	Conf=
<input type="checkbox"/> COASTAL (specify subclass)	Fit=	Conf=
<input type="checkbox"/> BOG (strongly, moderately, weakly ombrotrophic)	Fit=	Conf=

On-site EPA VIBI Plant Community Class (WETLANDS ONLY)

<input type="checkbox"/> FOREST <input type="checkbox"/> swamp forest <input type="checkbox"/> bog forest <input type="checkbox"/> forest seep	Fit=	Conf=
<input type="checkbox"/> EMERGENT <input type="checkbox"/> marsh <input type="checkbox"/> wet meadow <input type="checkbox"/> open bog	Fit=	Conf=
<input type="checkbox"/> SHRUB <input type="checkbox"/> shrub swamp <input type="checkbox"/> tall sh. bog <input type="checkbox"/> tall sh. fen	Fit=	Conf=

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Rankings for microhabitat features. Select one or select two and average the score. NOTE: If mod fails on a slope automatically gets ranked based on steepness (1-2) to begin - any features present Slope 1 = slight elevational grade across module (all) Slope 2 = falls on slope -20° Slope 3 = maximum steepness that can be safely sampled -45°

- 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

		C.W.D. - count for pieces with minimum 1m length					
		no. of tussocks	no. of hummocks	no. macro. depressions	C.W.D. (2-12 cm)	C.W.D. (12-40cm)	C.W.D. >40 cm
		depth 3 1x1m	depth 2 3 1x1.5m	depth 1 10x11m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m
module	corner	(count)	(count)	(count)	(count)	(count)	(count)
1		0	0	3	0	0	1
2		0	0	2	0	0	1
3		0	0	2	0	0	1
4		0	0	2	0	0	1

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

MANAB INDICES (degrees) + (for up - (or down)

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

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

Random Index (position within landscape)
Terror Slope Index (aka microtopographic slope)

CROWN COVER (DENSIMETER) Scale - 1 readings per module facing N, S, E, W. Place dot count in corresponding space. (4 dots per grid square)

Module	N	S	E	W
1	96	96	96	96
2	96	96	96	96
3	96	96	96	96
4	96	96	96	96

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.

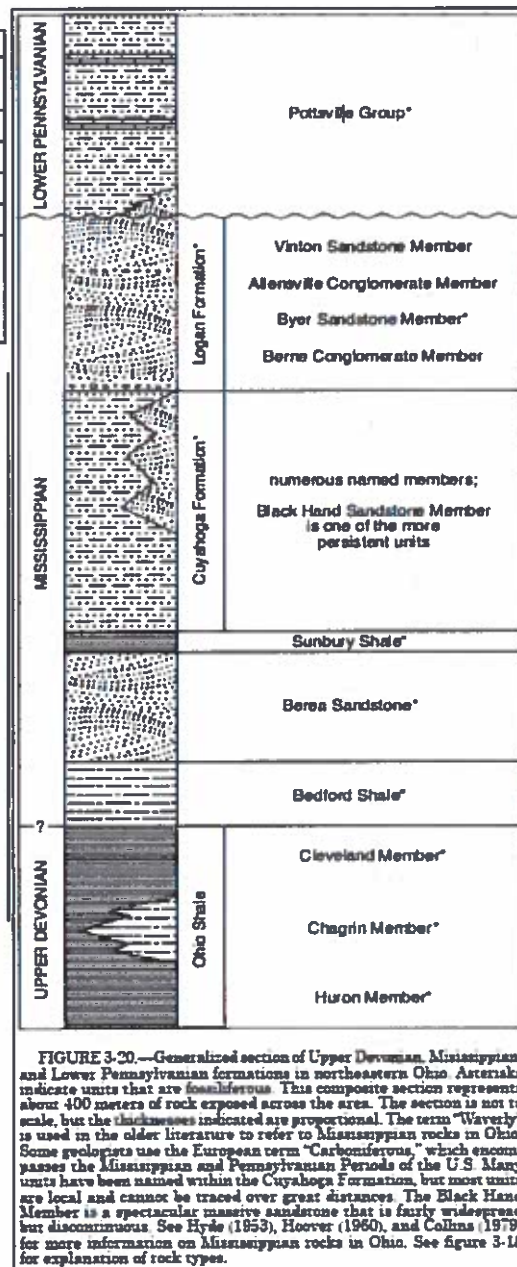
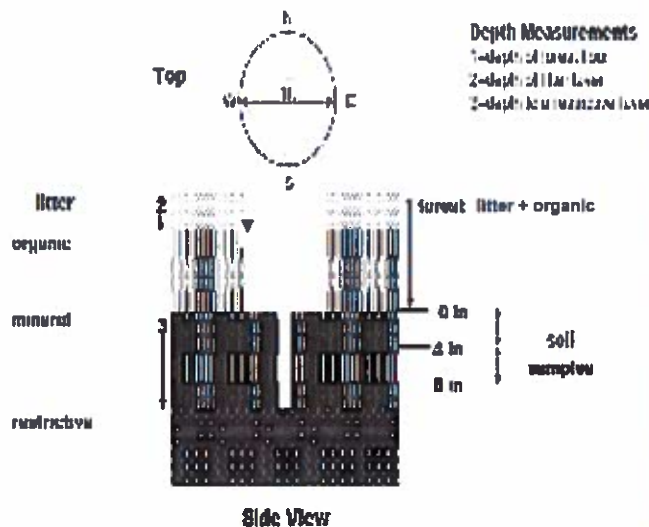


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses 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 (1853), 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	
	moist color	
	%moist	
	oxid roots	Y N
	texture*	
	redox features**	Y N
	hydr. cond.***	1 S M D
20 cm	matrix color	
	moist color	
	%moist	
	oxid roots	Y N
	texture*	
	redox features**	Y N
	hydr. cond.***	1 S M D

* refer to texture classes on reverse side
 ** e.g. hydrogen sulfide odor, gleying, etc.
 *** Circle one:
 1-indurated S-assisted M-moist D-dry
 Notes: include evidence of earthworms (worms, castings, middens)

No worms or
 castings or
 middens
 present

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

Web Soil Survey Information

Soil Series/Type:

Soil Series Source: Ohio Soil Survey

Landform type:

Depth to root layer:

Parent Material:

DEADWAGE*

- ☐ Excessively dr. ☐ Somewhat excessively
☐ Well drained ☐ Moderately well dr.
☐ Somewhat poorly dr. ☐ Very poorly dr.
☐ Impervious surface

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

	1 litter+ organic depth (cm)	2 litter depth (cm)	water depth (cm)	depth sat soil (cm)
1	0	0		
2	0	0		
3	0	0		
4	0	0		

EARTH SURFACE & GROUND COVER

Underlying Earth Surface*	Ground Cover	percent
Grass - 100%	percent	
litter	Coarse Woody Debris**	0
Mineral Soil	Fine Woody Debris***	0
Gravel-Cobble*	Litter	0
Boulder**	Duff (Ferm. + Humus)	0
Bedrock	Bryophytes- Lichen	1
* Gravel-Cobble = 1/16-10"	Water	0
** Boulder = > 10 in	Bare Soil	0
*** > 5 cm in diameter	Root/Tail	0
**** < 5 cm in diameter	Other	0

COVER BY STRATA

Strata	Height Range (m)	Total Cover (%)
Tree	5.0 - 1	8
Shrub	0.5 - 5	3
Herb	0 - 0.5	98
(Floating)*		0
(Aquatic)*		0

* rooted and floating or slightly emergent
 ** submerged, most plant mass below surface

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

None

TRAIL INFORMATION:

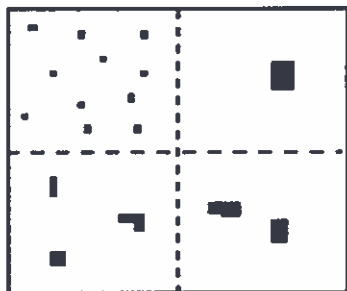
record type and cover for each	%Cover
Type	
All Purpose	
Bridle	
Hiking sanctioned	
Boatlog unsanctioned	
Gravel	
Deer	

STAND SIZE

- ☐ >600 x plot size
☐ > 100 x plot size
☒ 10-100 x plot size
☐ 3-10 x plot size
☐ 1-3 x plot size
☐ < plot size

PERCENT MOTTLES (USE CLASS CODES):

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



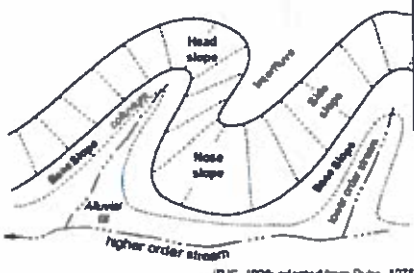
2%



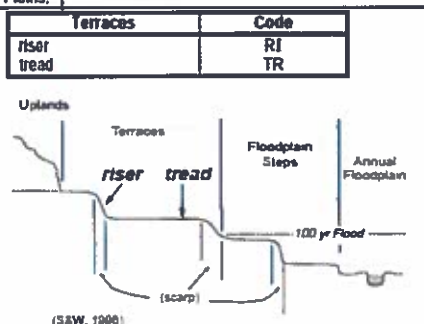
20%

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
interfluvial	IF	IF
head slope	HS	HS
nose slope	NS	NS
side slope	SS	SS
base slope	—	BS

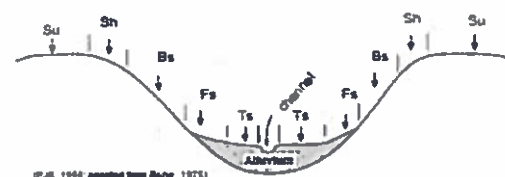


(PJS, 1990; adapted from Ruhe, 1975)



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



(PJS, 1990; adapted from Ruhe, 1975)

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/SEMI-PERMANENTLY 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.

SEMI-PERMANENTLY 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.