

## CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label:

PCAP

Plot No:

1034

Date Sampled:

7/22/15

Lead:

CKM

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	<input checked="" type="radio"/>	<input type="radio"/>	
Site sketch made on 1:3000 map?	<input checked="" type="radio"/>	<input type="radio"/>	
Check cover page	<input checked="" type="radio"/>	<input type="radio"/>	
X-axis Bearing of plot recorded	<input checked="" type="radio"/>	<input type="radio"/>	
GPS coords. Recorded	<input checked="" type="radio"/>	<input type="radio"/>	
North direction recorded	<input checked="" type="radio"/>	<input type="radio"/>	
Photographs taken?	<input checked="" type="radio"/>	<input type="radio"/>	
Relocated Pins Mapped	<input checked="" type="radio"/>	<input type="radio"/>	
Plot No., Date agreement on all pages?	<input checked="" type="radio"/>	<input type="radio"/>	
Header data completed all pages?	<input checked="" type="radio"/>	<input type="radio"/>	
Cover classes recorded in all Intensive modules	<input checked="" type="radio"/>	<input type="radio"/>	
Browse Level By Species	<input checked="" type="radio"/>	<input type="radio"/>	
Woody stem quality control check	<input checked="" type="radio"/>	<input type="radio"/>	Check every line and cross check with the Tree Cover Sheet
Invasive plant quality control check	<input checked="" type="radio"/>	<input type="radio"/>	NA
Ash trees mapped	<input checked="" type="radio"/>	<input type="radio"/>	
Completed Forest Pest/Pathogen Datasheet	<input checked="" type="radio"/>	<input type="radio"/>	
Cover by Strata? (confirm cover type)	<input checked="" type="radio"/>	<input type="radio"/>	
Soil samples collected with matching plot #.	<input checked="" type="radio"/>	<input type="radio"/>	
Cross check 2010 information	<input checked="" type="radio"/>	<input type="radio"/>	Highlight any changes from 2010 information
Vouchers labeled on datasheet with initials and number	<input checked="" type="radio"/>	<input type="radio"/>	
Vouchers labeled on collection bag	<input checked="" type="radio"/>	<input type="radio"/>	
Pink flags removed	<input checked="" type="radio"/>	<input type="radio"/>	
Data sheet QA before leaving site?	<input checked="" type="radio"/>	<input type="radio"/>	
Common equipment returned to tuh.	<input checked="" type="radio"/>	<input type="radio"/>	
Data sheets scanned?			Enter date to left
Final data sheets scanned?			Enter date to left
Buffer Widths measured?	<input type="radio"/>	<input type="radio"/>	
Web Soil Survey	<input type="radio"/>	<input type="radio"/>	
Voucher Location	Refrigerator	<input type="radio"/>	
(# vouchers collected)	Press (#)		Enter number to left
CKM 220-232	Drier	<input type="radio"/>	
	Identified	<input type="radio"/>	
	Mounted	<input type="radio"/>	
	Thrown away	<input type="radio"/>	

## 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:

2016 Collect Soil, all pins but back left found 7/2015



GENERAL INFORMATION		LOCATION	
Project Label: PCAP		State: OH	County: Medina
Project Name: 02 HI 2015		Quadrangle: West Richfield	
Plot Name: Long and Skinny		Local Place Names: Rocky River and Taki Research Center	
Plot No.: 1034		Landowner: CMP	
<input type="checkbox"/> Level 4 (no nested corners sampled)		Data Confidentiality:	
<input checked="" type="checkbox"/> Level 5 (nested corners sampled)		Check one: <input checked="" type="checkbox"/> Public data <input type="checkbox"/> Private Data	
Date (mm/dd/yyyy): 7 / 22 / 2015		<input type="checkbox"/> Fuzz 100m <input type="checkbox"/> Fuzz 250m <input type="checkbox"/> Fuzz 500m	
End date (if > 1 day):		Reason:	
Party:	Role**	If data not public why?	
S. Eysenbach	Plot leader	Source of coordinates <input type="checkbox"/> MAP <input checked="" type="checkbox"/> GPS	
C. Minney	Bot. Lead	Coordinate system:	
D. Sweet	Bot. Asst.	<input checked="" type="checkbox"/> Lat/Long <input type="checkbox"/> UTM <input type="checkbox"/> StatePlane <input type="checkbox"/> deg <input type="checkbox"/> deg min	
T. Lehtonen	Woody Tech	<input type="checkbox"/> Other (specify)	
R. Eagle-Malone	Woody Tech	Datum: <input checked="" type="checkbox"/> NAD83/WGS84 <input type="checkbox"/> NAD27	
PLOT NOT SAMPLED: <input type="checkbox"/> Other		GPS location in plot x=0 to 5, y=-1.0 to +1.0:	
<input type="checkbox"/> Perm. water <input type="checkbox"/> Paved <input type="checkbox"/> Slope <input type="checkbox"/> Safety		x = 0 y = 0 (base of plot x=0, y=0)	
SAMPLING QUALITY*		Latitude: 41.21066	
Effort Level:	subjective evaluation of how much effort put into sampling. Hurried plots may still provide good data	Longitude: 81.69342	
<input checked="" type="checkbox"/> Very thorough		Coord. Accuracy: <input checked="" type="checkbox"/> m <input type="checkbox"/> ft	
<input type="checkbox"/> Accurate		GPS File Name: 1034A	
<input type="checkbox"/> Hurried		Plot size for cover data: (hectares)	
TAXONOMIC ACCURACY		X-axis Bearing of plot: [116]°	
	high modera. low not simpl	Depth: (1-5): 4	
vascul.	<input checked="" type="checkbox"/>	Intensive modules: 2-3-8-9-10 (EDIT IF MODIFIED)	
bryo	<input checked="" type="checkbox"/>	Camera No.: 4	
lichen	<input checked="" type="checkbox"/>	Photo No.: C4635.	
TAXONOMIC STANDARD		Plot placement: <input checked="" type="checkbox"/> GRTS <input type="checkbox"/> Representative	
Authority: G&C	Pub Date: 1998	<input type="checkbox"/> Random <input type="checkbox"/> Stratified Random <input type="checkbox"/> Transect component	
Minimum required fields in Bold and Underlined		<input type="checkbox"/> Systematic (grid) <input type="checkbox"/> Capture specific feature <input type="checkbox"/> 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:** 1x2 (2 mods of 5x20m)

**Location:** Park inside Taki Research Center.

Walk north to creek and cross where convenient, ~~Plot~~ ~~Stand~~ Follow the creek to plot. Origin is with 2m of creek

**Rationale:** GRTS

**Veg Characterization:** The canopy is dominated by Walnut, Sycamore and Cottonwood.

The shrub layer is sparse dominated by *Lonicera marmorata*. The herb layer is very dense with lots of wingstem and *Ampelocarpaea*. Many others in herb layer of 0-2m.

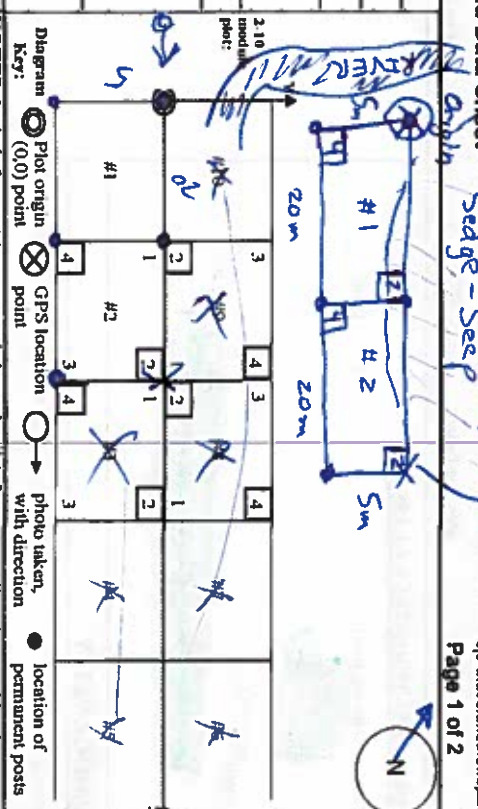


Diagram: Plot origin (0,0) point. GPS location. photo taken, location of with direction. permanent posts.

OVER

Natural Resources Management FORM NR/2010-01b





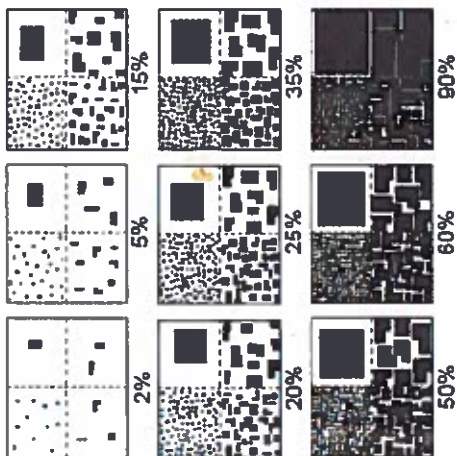
**Cleveland Metroparks**  
 Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Sirala - Cov. entire plot

S	H	(F)	(A)	Br	Species	C	Voucher #	Estimate for each intensive module:				%unvegetated open water				%unveg. ground (bare soil)				%unveg. litter (bare litter)			
								mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner
6				6	<i>Toxicodendron radicans</i>			1	4	1	2	1	0	1	0	1	1	1	1	1	1	1	1
2					<i>Galium triflorum</i> <i>ckm</i>	X	CKM220	4	2	3													
4	2			5	<i>Ostrya virginiana</i>			4	2	3				1	4	2	3						
2					<i>Moss sp.</i>			4	2					1	2	3							
2					<i>Panicum clandestinum</i> <i>ckm</i>	X	CKM221	4	2					1	2	3							
5					<i>Carex #A sp.</i>	X	CKM222	4	4	2				2	5	2							
6					<i>Amphicarpa bracteata</i>			4	6	4													
1					<i>Aster umbellatus</i>		SEE 12-1-15 14636-638	4	1														
2					<i>Leersia virginica</i>			3	2	2					2	2							
6					<i>Cryptantha canadensis</i>			2	2	4				4	3	2							
2					<i>Geum canadense</i>			3	2	2				4	3	2							
2	2			5	<i>Parthenocissus quinquefolia</i>			3	2	4				4	2	3							
2					<i>Polemonium reptans</i>			3	2	3					2	2							
2					<i>Elymus riparius</i>	X	CKM223	3	2														
1					<i>PRUELIA VULGARIS</i>			3	1														
2					<i>Traxinus sp. (seedling)</i>			3	2	3					2	2							
7					<i>Verbesina alternifolia</i>			3	6	2				4	6	2							
2					<i>V. #1 SP</i>			3	2	2				4	2								
4					<i>Abies #1 Helioscopia</i>		CKM224	3	4					2	2								
7				8	<i>Impatiens capensis</i>			3	2	4					2	3							
2					<i>Clematis sp. virginiana</i>		SP# 12-15-15	3	2	4				1	2								
3					<i>Solidago gigantea</i>			3	2	2				1	2								
6					<i>Lysimachia ciliata</i>			2	3	3				2	2								
4					<i>LYSIMACHIA NUMMULARIA</i>			2	4	2													
2					<i>CELASTRUS ORBICULATUS</i>			2	2					1	2								

# EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used in 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.



**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.

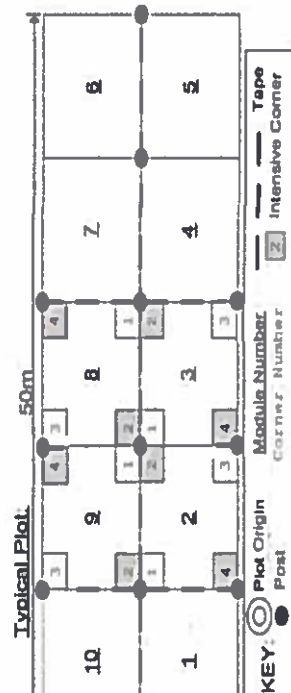
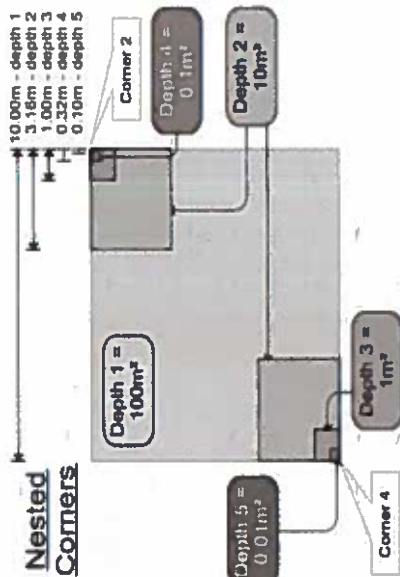
**MEDIUM LOW** values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse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





## Page 2 of 5

PCAP

02 HI 2015

Plot no.: 1034

222

### Plot configuration

Plot area (ha)



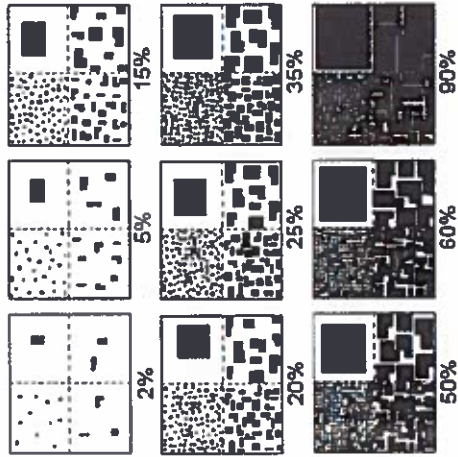
**Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot**

Strata - Cov. entire plot

SRE\_CM PCAP Species Cover Data.xls last revised 6/10/2015 jjm

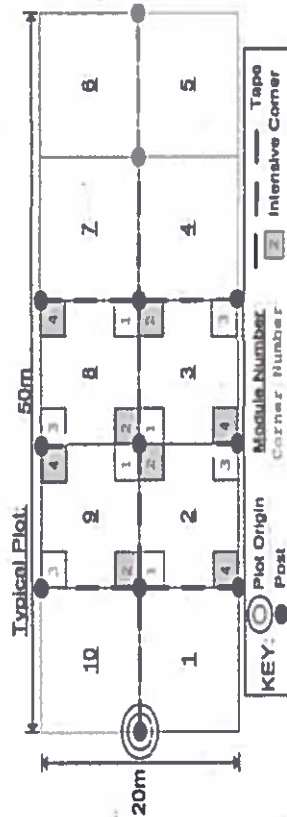
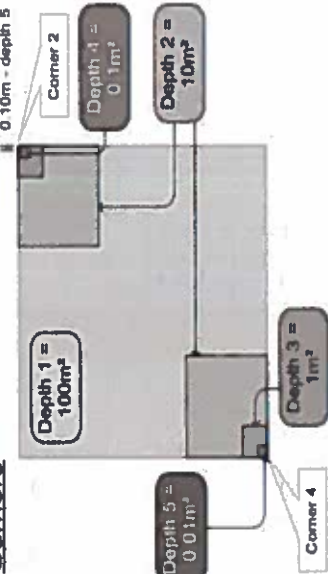
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cover class	% cover	midpoint
1	solitary or few	0.0001
2	0-1%	0.005
3	1-2%	0.015
4	2-5%	0.035
5	5-10%	0.075
6	10-25%	0.175
7	25-50%	0.375
8	50-75%	0.625
9	75-95%	0.850
10	95-100%	0.975

## Nested Corners



**BROWSE RATING NARRATIVE DESCRIPTION**

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## Page 3 of 5

Plot area (ha):



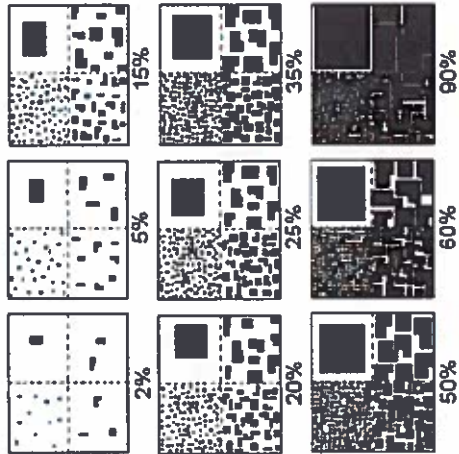
**Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot**

**Suzala - Cov. entire plot**

Natural Resource Management FORM NR/2010-02a

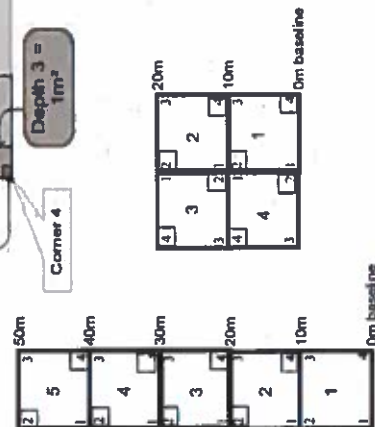
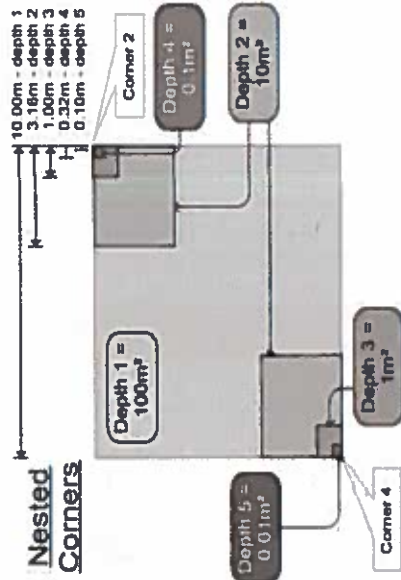
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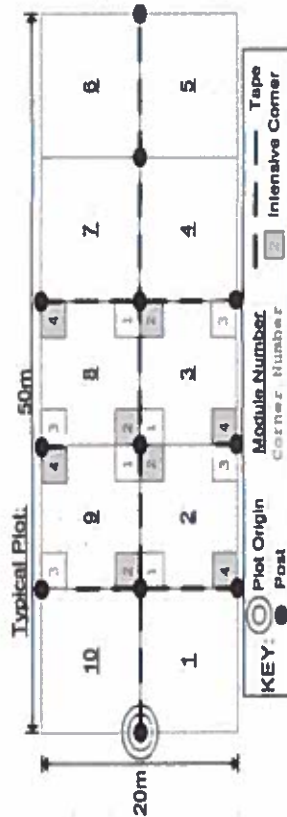


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7	25-50%	0.375
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9	75-85%	0.850
10	85-100%	0.975

## Nested Corners



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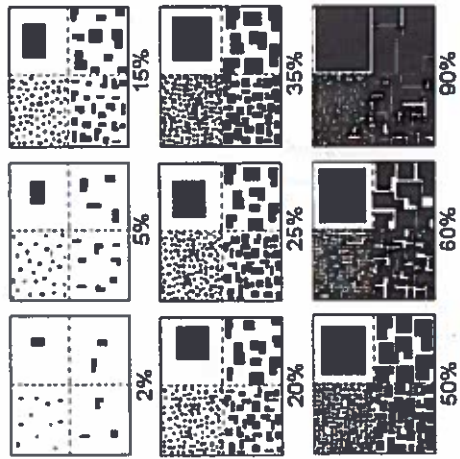






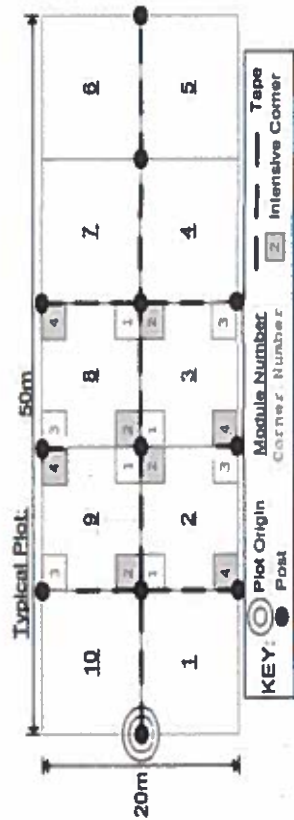
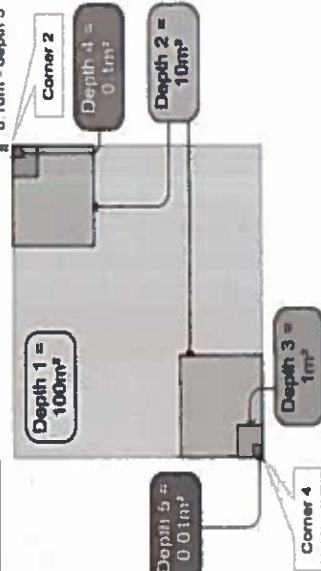
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## Page 5 of 5

Plot area (ha): ~~0.05~~ 0.02

**Cleveland  
Metroparks**

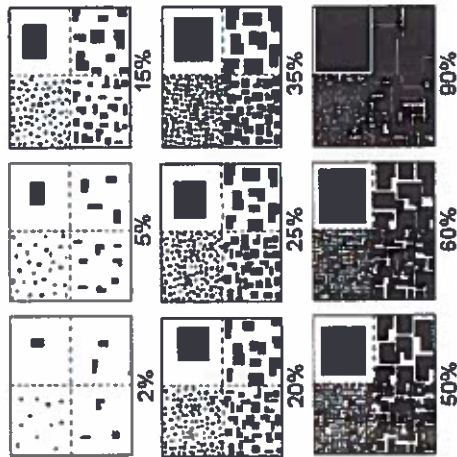
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Strata - Cov. entire plot

[illegible]

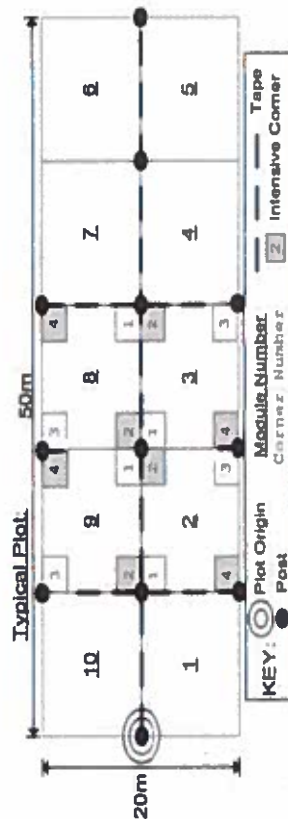
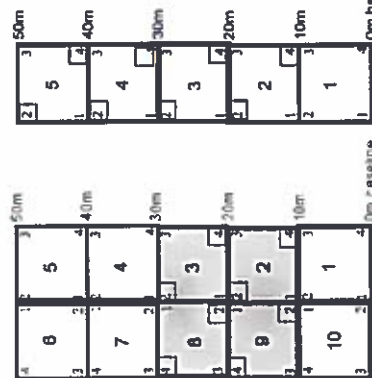
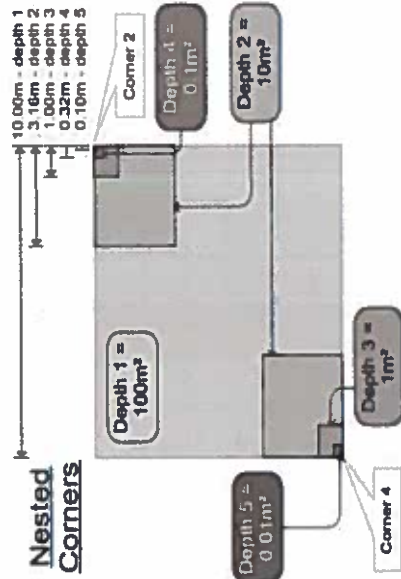
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## Page 1 of 1

037

Plot no.: \_\_\_\_\_

[illegible]

# CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

Project Label: PCAP

Project Name: 02-H-2015

Plot No.: 1034

Page: 1

of



Explain subsample (additional room on back):

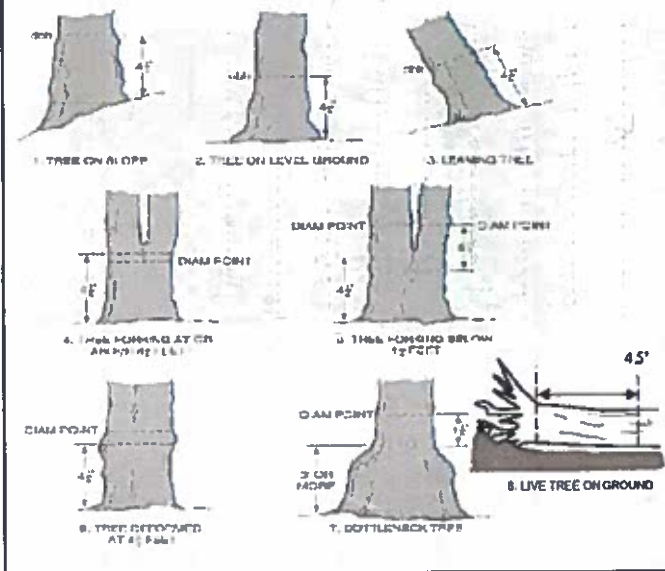
tag #	species	c	voucher#	# stems 0-1.4m browed	% sub or super sample	# shrub clumps	size class (cm) woody stems > 1.4m										>40 (record each tree)		
							1 0-1	2 1-2.5	3 2.5-5	4 5-10	5 10-15	6 15-20	7 20-25	8 25-30	9 30-35	10 35-40			
1	honicera <del>macrocarpa</del> morrowii					1													
1	Platanus occidentalis																		
1	Juglans nigra																		
1	Standing dead																		
1	Lindera benzoin																		
1	<del>Wimus filifolia</del> Wimus filifolia																		
1	Rosa multiflora																		
1	Tilia americana																		
1	Populus deltoides																		52.3
1	Toxicodendron radicans																		
1	Ligustrum VULGARE																		
1	Fraxinus pennsylvanica																		
1	Astrua virginiana																		
1	Parthenocissus quinquefolia																		
1	Crataegus <del>sp.</del> sp.																		
1	Smilax <del>rotundifolia</del> rotundifolia																		
2	Lonicera moroni					1													
2	Standing dead																		
2	Carya laciniformis																		
2	Astrua virginiana																		
2	Quercus rubra																		
2	Parthenocissus quinquefolia					1													
2	Acer nigrum																		
2	Ligustrum vulgare					1													

Previously  
tagged  
popul

8-21-15



### 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 year's deer browse.

Record using the tally system from 1 to 10



1



2



3



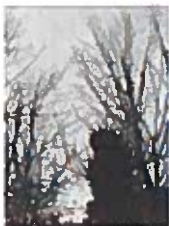
4



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

Project Label: PCAP

Project Name: 02th 2015

Plot No.: 1034

Page: 2

of

Cleveland Metropolitan

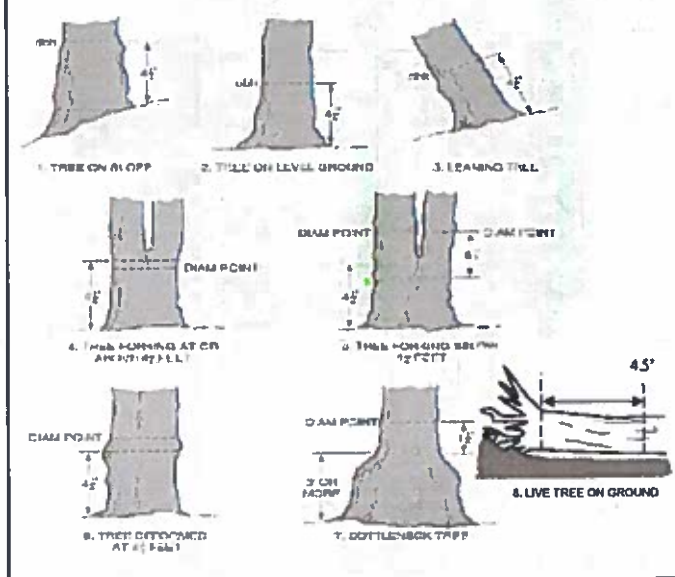
Explain subsample (additional room on back)

mod #	species	c	voucher#	# stems 0-1.4m browed	% sub or super sample	# shrub clumps	size class (cm) woody stems > 1.4m	1	2	3	4	5	6	7	8	9	10	11
2	<del>Coccyz cordiformis</del>																	
1/2	Populus deltoides																	40.5
2	Smilax hispida																	
2	<del>Rosa</del> <del>malus</del>																	
2	Rosa multiflora																	
2	Buonymus atropurpureus																	
2	Fraxinus pennsylvanica																	
2	<del>Larix laricina</del>																	
2	Toxicodendron radicans																	
2	Lindera benzoin																	
2	Cornus alternifolia																	
1	Ulmus rubra																	
2	Juglans nigra																	
1	Carpinus caroliniana																	

not in 2010 data

comb

### 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.

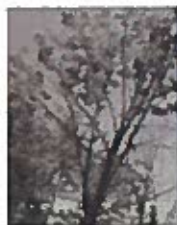
Record using the tally system from 1 to 10



1



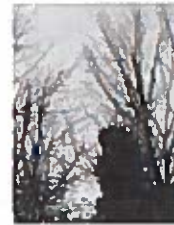
2



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):

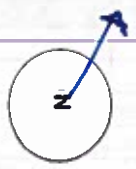
(If an ash receives a score of 5 (dead) under canopy condition it must also receive a breakup condition rank as described below)

- 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.

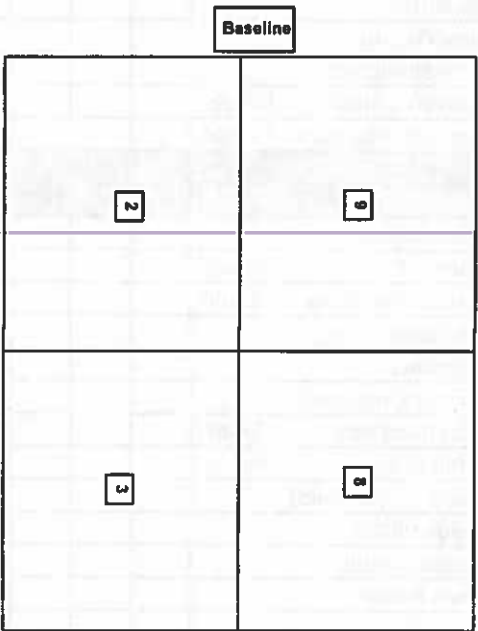


Module ID	Tree ID	Species	DBH (cm)	HT @ DBH	Ash condition	Dead condition	# Exit holes	Epicormic present	Woodpecker holes
1		No ash							
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16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

ASH ONLY



\*\*\* 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<sup>2</sup> 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
		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)

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

Project Label: PCAP

Project Name: 02452015

Plot No.: 1084

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	<i>No dry forest</i>													
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)	<u>/</u>	<u>/</u>
Shrub (size class 2 or below including shrub clumps)	<u>/</u>	<u>/</u>

* Write None Present if no evidence:			
<u><del>None</del></u>	Beech (Fungus)	<u>None</u>	Asian Longhorned Beetle
<u><del>None</del></u>	Hemlock (HWA)	<u><del>None</del></u>	Other Pest or Pathogen
<u>None</u>	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 plots (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

GET = excellent, F = Fair and Confidence

Hydroscorable class (WETLANDS ONLY)

<input type="checkbox"/> DEPRESSION	Fit =	Conf =
<input type="checkbox"/> INFUNDMENT <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 (ground water hydrology 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 (specific subtypes)	Fit =	Conf =
<input type="checkbox"/> BOG (terrestrial, moderately, wetland, ombrotrophic)	Fit =	Conf =

Ohio 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

Plots for microhabitat features. Select one or select two and average the score. NOTE: If most falls on a slope automatically gets marked based on steepness (1-2) to begin + any features present

Slope 1 = slight elevational grade across module (n8)

Slope 2 = tabs on slope -20°

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

- 0 feature is absent or functionally absent from the wetland
- 1 feature is present in the wetland in very small amounts or if more common, of low quality
- 2 feature is present in moderate amounts, but not of highest quality, or in small amounts of highest quality
- 3 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 uplands (TTP-L/jr)	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
module	corner	(count)	(count)	(count)	(count)	(rank)	(rank)
1	3	0	0	1	0	3	1
2	1	0	13	1	1	3	1

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

MCNAB INDICES (degrees) + for up - for 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								

Landform Index (position within landscape)

Terrain Shape Index (like microtopographic shape)

CROWN COVER (DENSIMETER) Males 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
1	1	10	1	8
2	1	1	4	1

# 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.

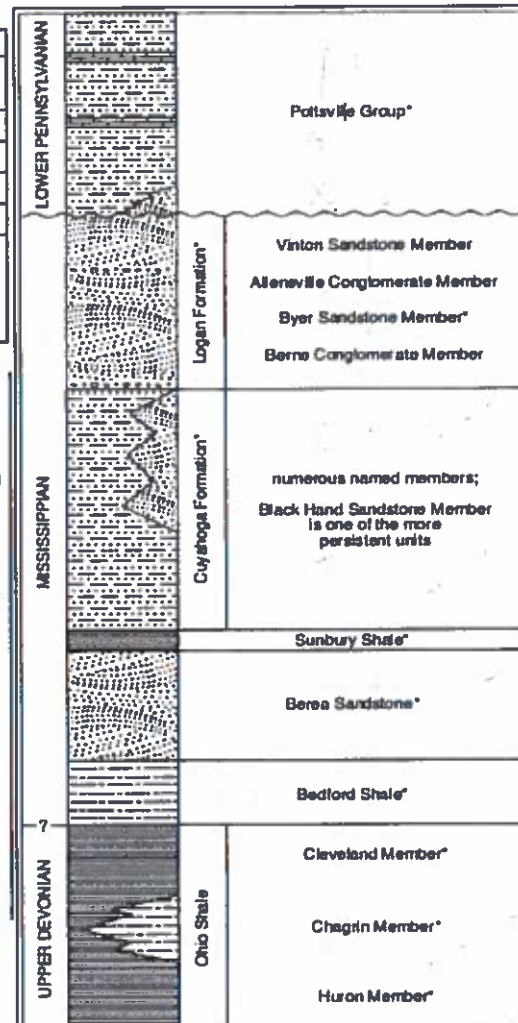
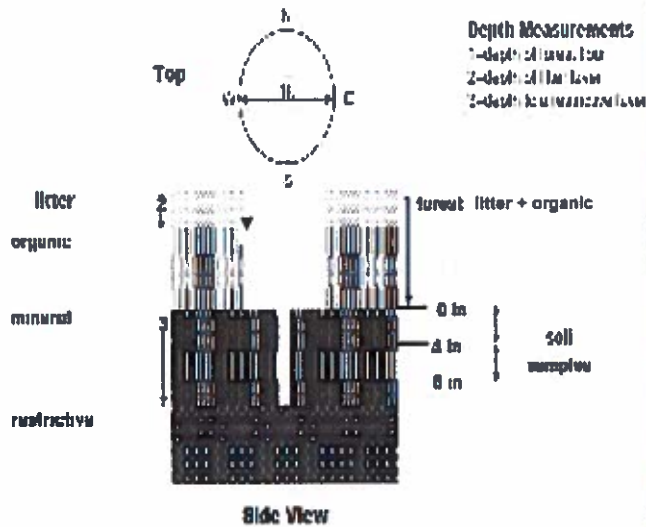


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses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

Soil Collection Method/ horizon (A, B, C)	A
2.3.4.9 comp. listed	
Field Soil Survey Information	
Soil Series/Type:	
Soil Series Source:	Ohio Soil Survey
Landform type:	
Depth to root layer:	
Parent Material:	
<b>DRAINAGE*</b>	
<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 litter+ organic depth (cm)	2 litter depth (cm)	water depth (cm)	depth sat soil (cm)
1 - WORMS OBSERVED	1.4	1.4		
2 - castings present	1.6	1.6		

EARTH SURFACE & GROUND COVER			
Underlying Earth Surface*		Ground Cover	
Grass - 100%	percent	(Each ≤ 100%)	percent
Hicoccol	1	Coarse Woody Debris***	13
Mineral Soil	100	Fine Woody Debris****	13
Gravel-Cobble*	1	Litter	72
Boulder**	1	Duff (Ferm + Humus)	0
Bedrock	1	Bryophyte- Lichen	1
* Gravel-Cobble = 1/16-10"		Water	0
** Boulder = > 10 in		Bare Soil	1
*** > 5 cm in diameter		Road/Trail	5
**** < 5 cm in diameter		Other	

TRAIL INFORMATION:	
second type and cover for each	
Type	%Cover
<input type="checkbox"/> All Purpose	
<input type="checkbox"/> Bridle	
<input type="checkbox"/> Hiking sanctioned	
<input type="checkbox"/> Bicycling unsanctioned	
<input type="checkbox"/> Gravel	5
<input checked="" type="checkbox"/> Other	

**COVER BY STRATA**  
estimate using midpoints of 5, ex: 3, 6, 13 %

Strata	Height Range (m)	Total Cover (%)
Tree	5 - 1	58
Shrub	2 - 5	18
Herb	0 - 2	98
(Floating)*		
(Aquatic)*		

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

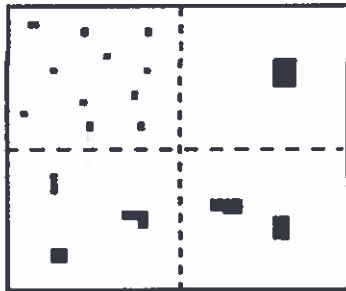
SEE BACK OF PAGE FOR TYPICAL STRATA DESCRIPTIONS. STRATA CAN VARY BY COVER TYPE.

**STAND SIZE**

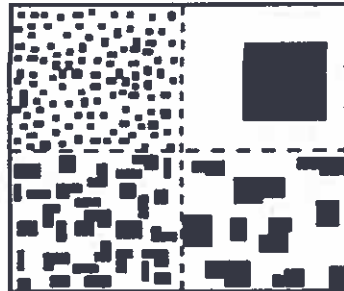
- ☐ > 600 x plot size
- ☐ > 100 x plot size
- ☐ 10-100 x plot size
- ☒ 3-10 x plot size
- ☐ 1-3 x plot size
- ☐ < plot size

**PERCENT MOTTLES (USE CLASS CODES):**

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



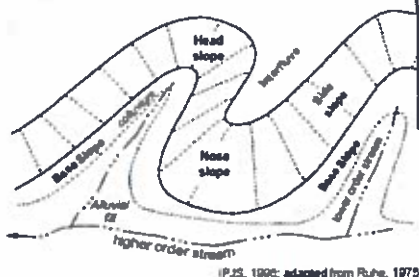
2%



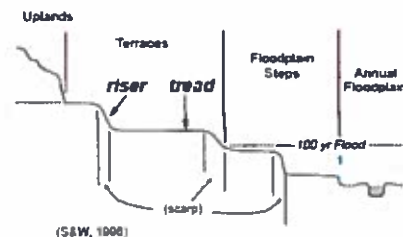
20%

**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
POP		
interfluvio	IF	IF
head slope	HS	HS
nose slope	NS	NS
side slope	SS	SS
base slope	BS	BS

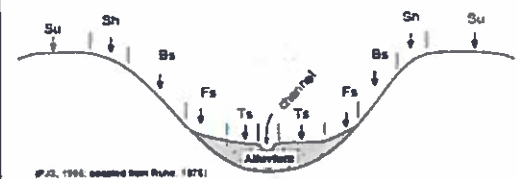


Terraces	Code
riser	RI
tread	TR



**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/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.