

CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label:

PCAP

Plot No: 1068

Date Sampled: 7/21/15

Lead: CKM

Comment required if item answer is NO

Parking/Access outside of Park Boundaries:	Y <input checked="" type="radio"/> N <input type="radio"/>	If yes, write details in Comments section below
Field journals completed	Y <input checked="" type="radio"/> N <input type="radio"/>	
Site sketch made on 1:3000 map?	Y <input checked="" type="radio"/> N <input type="radio"/>	
Check cover page	X-axis Bearing of plot recorded	Y <input checked="" type="radio"/> N <input type="radio"/>
	GPS coords. Recorded	Y <input checked="" type="radio"/> N <input type="radio"/>
	North direction recorded	Y <input checked="" type="radio"/> N <input type="radio"/>
	Photographs taken?	Y <input checked="" type="radio"/> N <input type="radio"/>
	Relocated Pins Mapped	Y <input checked="" type="radio"/> N <input type="radio"/>
Plot No., Date agreement on all pages?	Y <input checked="" type="radio"/> N <input type="radio"/>	
Header data completed all pages?	Y <input checked="" type="radio"/> N <input type="radio"/>	
Cover classes recorded in all Intensive modules	Y <input checked="" type="radio"/> N <input type="radio"/>	
Browse Level By Species	Y <input checked="" type="radio"/> N <input type="radio"/>	
Woody stem quality control check	Y <input checked="" type="radio"/> N <input type="radio"/>	Check every line and cross check with the Tree Cover Sheet
Invasive plant quality control check	Y <input checked="" type="radio"/> N <input type="radio"/>	NA
Ash trees mapped	Y <input checked="" type="radio"/> N <input type="radio"/>	
Completed Forest Pest/Pathogen Datasheet	Y <input checked="" type="radio"/> N <input type="radio"/>	
Cover by Strata? (confirm cover type)	Y <input checked="" type="radio"/> N <input type="radio"/>	
Soil samples collected with matching plot #.	Y <input checked="" type="radio"/> N <input type="radio"/>	NA
Cross check 2010 information	Y <input checked="" type="radio"/> N <input type="radio"/>	Highlight any changes from 2010 information
Vouchers labeled on datasheet with initials and number	Y <input checked="" type="radio"/> N <input type="radio"/>	
Vouchers labeled on collection bag	Y <input checked="" type="radio"/> N <input type="radio"/>	
Pink flags removed	Y <input checked="" type="radio"/> N <input type="radio"/>	
Data sheet QA before leaving site?	Y <input checked="" type="radio"/> N <input type="radio"/>	
Common equipment returned to tub.	Y <input checked="" type="radio"/> N <input type="radio"/>	
Data sheets scanned?		Enter date to left
Final data sheets scanned?		Enter date to left
Buffer Widths measured?	Y <input checked="" type="radio"/> N <input type="radio"/>	
Web Soil Survey	Y <input checked="" type="radio"/> N <input type="radio"/>	
Voucher Location	Refrigerator	Y <input checked="" type="radio"/> N <input type="radio"/>
(# vouchers collected)	Press (#)	Enter number to left
CKM 210 - 219	Drier	Y <input checked="" type="radio"/> N <input type="radio"/>
	Identified	Y <input checked="" type="radio"/> N <input type="radio"/>
	Mounted	Y <input checked="" type="radio"/> N <input type="radio"/>
	Thrown away	Y <input checked="" type="radio"/> N <input type="radio"/>

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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Intensives  
1,2,3,4

Nested Corners

MOD 1 (2,4)

MOD 2 ~~(4,2)~~ (4,2)

MOD 3 (4,2)

MOD 4 (4,2)



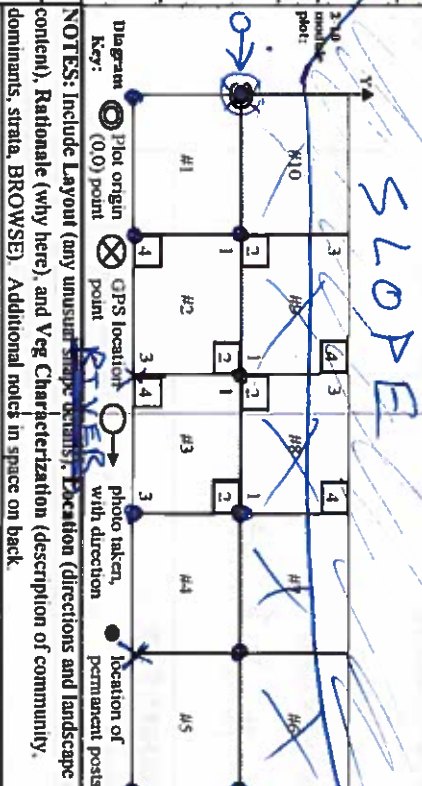
# CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

<b>GENERAL INFORMATION</b>																					
Project Label:	PCAP																				
Project Name:	02BE2015																				
Plot Name:	Lunchtime Scenery																				
Plot No:	1068																				
<input type="checkbox"/> Level 4 (no nested corners sampled) <input checked="" type="checkbox"/> Level 5 (nested corners sampled)																					
Date (mm/dd/yyyy):	7 / 21 / 2015																				
End date (if > 1 day):	/ /																				
Party:	C. Minney Plot leader D. Sweet Bot. Asst. R. Eagle-Malone Woody Tech T. Cochran 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																					
<b>SAMPLING QUALITY*</b> Effort Level: <input checked="" type="checkbox"/> Very thorough <input type="checkbox"/> Accurate <input type="checkbox"/> Hunted <small>subjective evaluation of how much effort put into sampling. Hunted plots may still provide good data</small>																					
<b>TAXONOMIC ACCURACY</b> <table border="1"> <tr> <td></td> <td>high</td> <td>modera.</td> <td>low</td> <td>not simpl.</td> </tr> <tr> <td>vascul.</td> <td>X</td> <td></td> <td></td> <td>n/a</td> </tr> <tr> <td>br/yo</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	modera.	low	not simpl.	vascul.	X			n/a	br/yo			X		lichen				X
	high	modera.	low	not simpl.																	
vascul.	X			n/a																	
br/yo			X																		
lichen				X																	
<b>TAXONOMIC STANDARD</b> Authority: G&C Pub Date: 1998																					

<b>LOCATION</b>	
State:	OH County: Cuyahoga
Quadrangle:	Shaker Heights
Local Place Names:	Egbert Picnic Area
Landowner:	CMP
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 type="checkbox"/> UTM <input type="checkbox"/> StatePlane <input type="checkbox"/> deg <input type="checkbox"/> deg min <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, +1.1: x = 0 y = 0 (base of plot x=0, y=0)
Latitude:	41.38706
Longitude:	81.54060
Coord. Accuracy:	X m <input type="checkbox"/> ft +- 3
GPS File Name:	1068A
Plot size for cover data:	(hectares)
X-axis Bearing of plot:	[354]°
Depth: (1-5):	4
Intensive modules:	2, 3, 8, 9 (EDIT IF MODIFIED)
Camera No.:	4
Photo Nos.:	4613
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

OVER







## Page 1 of 4

Plot no.: 1068

Plot area (ha): 0.5



## Cleveland Metroparks

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

Strata - Cov. entire plot

Estimate for each intensive module:											
mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner
1	2	1	4	2	4	2	2	3	4	3	2
depth	cov	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
	0.3			1	0.7			1	0		
%unvegetated open water	1	0.80		1	0.7			1	0		
%unveg. ground (bare soil)	1	2		1	2			1	3		
%unveg. litter (bare litter)	1	5		1	5			1	6		

S	H (F)	(A) Br	Species	c	Voucher #	depth	cov	depth	cov	depth	cov	depth	cov	depth	cov
Z			Acer sp. (seedling)			4	2	3							
Z			7. Parthenocissus quinquefolia +			4	2	4							
2			Faxinus sp. (seedling)			4	2								
2=Z			Eragrostis grandifolia			4	2								
Z=			Betula alleghaniensis			4	3								
6=Z			7. Gaultheria procumbens			3	7	2							
Z			7. Fagopyrum esculentum			3	3								
Z=3			Moss sp.			3	4								
1=Z			ALBERTA PETIOLATA			3	2	2							
Z			8. Impatiens pallida			3	1								
6=Z			Dryopteris intermedia			2	6								
Z			Sanguinaria canadensis			2	2								
5			6. Amphicarpaea bracteata			2	2	2							
Z			5. Viola * sp.		CKN 210 CHG 11-612	2	2								
Z			Eupatorium rugosum			2	1								
Z			Trollium sp.		CHG 4	2	2								
Z			Hepatica acutiloba			2	2								
Z			Maianthemum racemosum			2	2								
Z			10 ROSA MULTIFLORA			2	2								
Z			Viola pubescens CKN	X	CKN 211	2	2								
2=Z			5. Carex cordiformis		CKN 12-5-15 CKN 15-617	2	2	4							
Z			<del>CKN 15-617</del>			2	2	4							
Z			5 Linodendron tulipifera			2	1	2							
3=			Acer saccharum			4	4								
Z			<del>CKN 15-617</del>			2	3								

Head & Ventrals  
right  
from bone  
with V.  
opulus

bsc pubescens

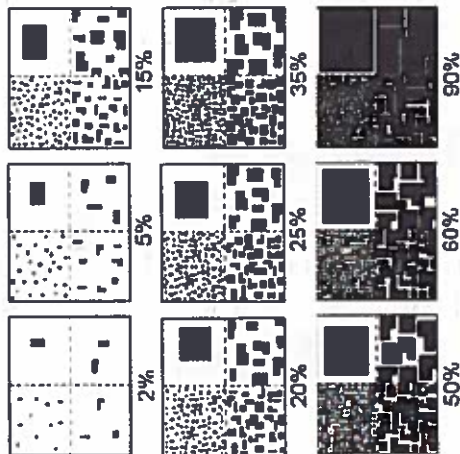
zaklona

-basal

SAE  
12-3-15

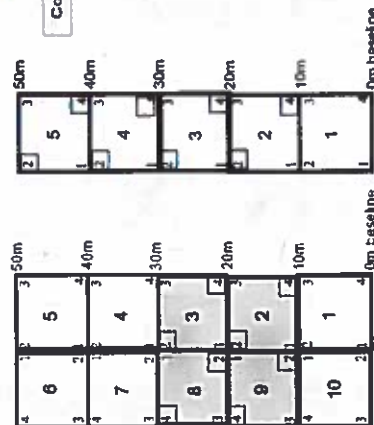
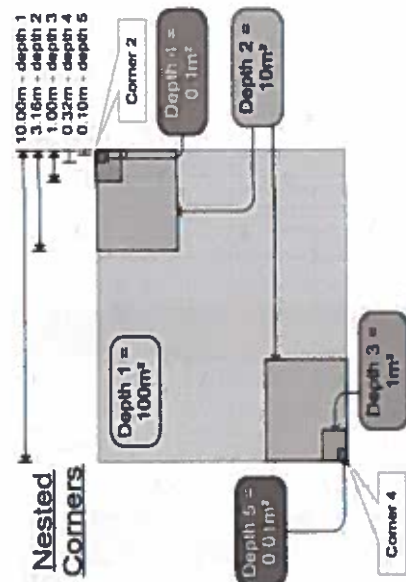
# EXAMPLES OF PERCENT OF AREA COVERED

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	75-85%	0.850
10	85-100%	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.

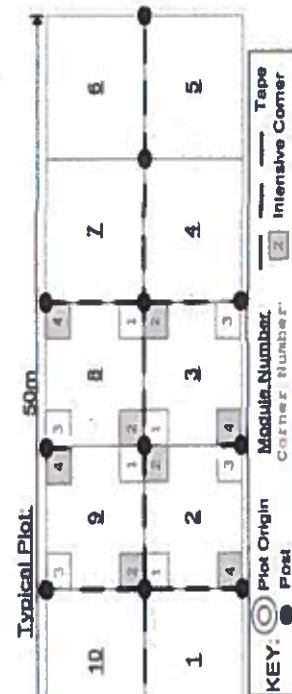
**MEDIUM LOW** values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse 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 4

Project Label: PCAP  
Total modules: 5

Project name: 02BE2015  
Intensive modules: 4 Plot configuration: 1x5

Plot no.: 1068  
Plot area (ha): 0.05



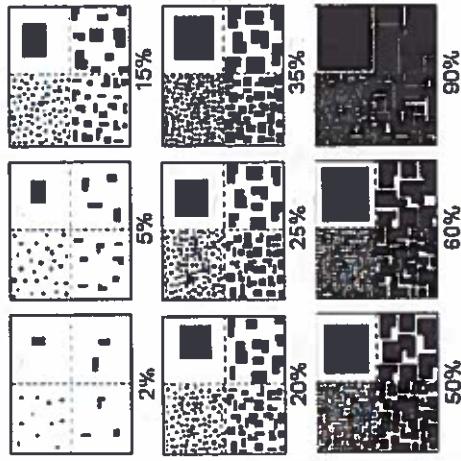
Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

S	H (F)(A) Br	Species	c	Voucher #	Estimate for each intensive module:			Estimate for each intensive module:			Estimate for each intensive module:			Estimate for each intensive module:			Estimate for each intensive module:			R
					%open water	%unveg. ground (bare soil)	%unveg. after (bare litter)	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	mod	corner	
2	2	Fraxinus pennsylvanica						1	2	1	4	2	4	2	2	3	4	3	2	4
2	2	Rubus pennsylvanicus						1	2	3										2
2	2	Arisaema triphyllum var. triphyllum						1	2	2	3	2	4	2	2	2	2	2	2	2
2	2	Hackelia virginiana						1	2	2										2
2	2	Circaea intermedia						1	2	2										2
2	2	Panicum <del>sp.</del> <u>latifolium</u>						1	2	2										2
2	2	Carex <del>sp.</del> <u>flaccida</u>						1	2	2										2
3	3	Lindera benzoin						1	2	2										2
2	2	Prunus serotina						1	2	2										2
2	2	Crataegus sp.						1	2	2										2
2	2	Euonymus alatus						1	2	2										2
2	2	Cardamine pennsylvanica						1	2	2										2
2	2	Aster lateriflorus						1	2	2										2
2	2	Verbena alternifolia						1	2	2										2
2	2	Acer rubrum						1	2	2										2
2	2	Quercus sp. (seedling)						1	2	2										2
2	2	Geranium maculatum						1	2	2										2
2	2	Lonicera morrowii						1	2	2										2
2	2	Toxicodendron radicans						1	2	2										2
2	2	Onoclea sensibilis						1	2	2										2
2	2	Euonymus alatus						1	2	2										2
2	2	Carex plantaginifolia						1	2	2										2
2	2	<del>Athyrium filix-femina</del> <u>Athyrium filix-femina</u>						1	2	2										2
2	2	Vitis sp.						1	2	2										2

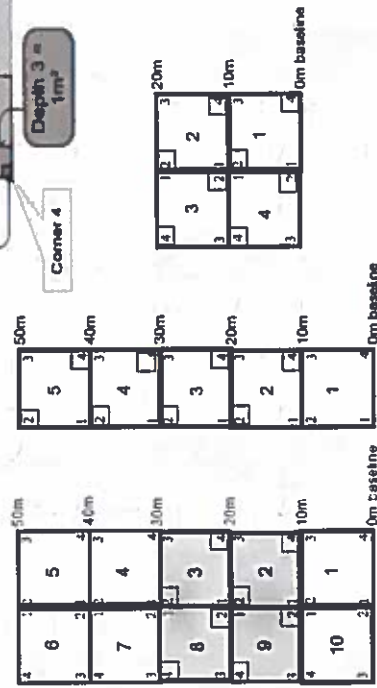
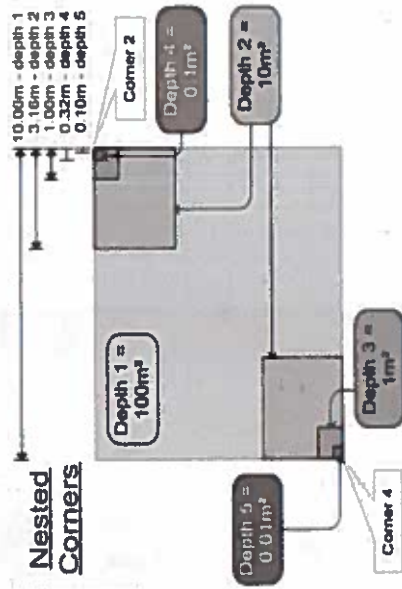
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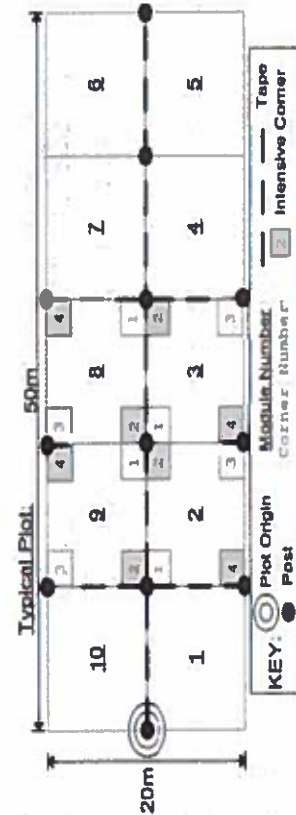
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# CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet

Page 3 of 4

Project Label: PCAP  
Total modules: 5

Project name: 02862015  
Intensive modules: 4

Plot no.: 1066  
Plot configuration: 1x5  
Plot area (ha): 0.05



Cleveland  
Metroparks

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

Strata - Cov. entire plot

# Cleveland Metroparks

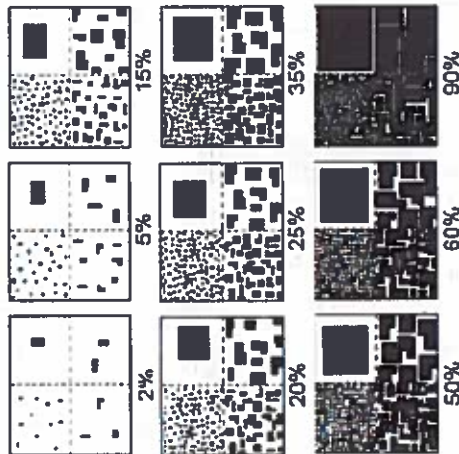
Br = Browse Level Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

S	H	(F)	(A)	Br	Species	c	Voucher #	Estimate for each intensive module:										Estimate for each intensive module:											
								%open water		%unvegetated open water		%unveg. ground (bare soil)		%unveg. litter (bare litter)		depth		corner		mod		corner		mod		corner		mod	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
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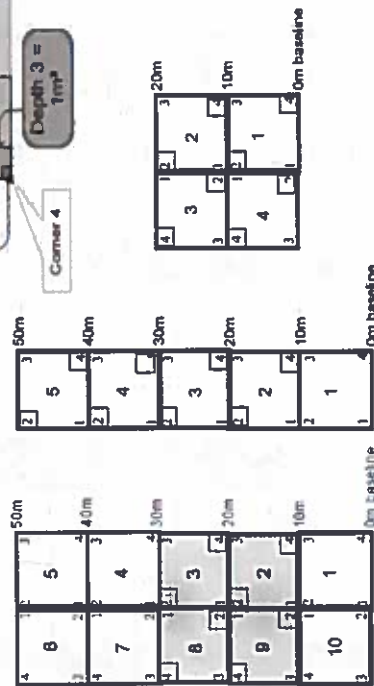
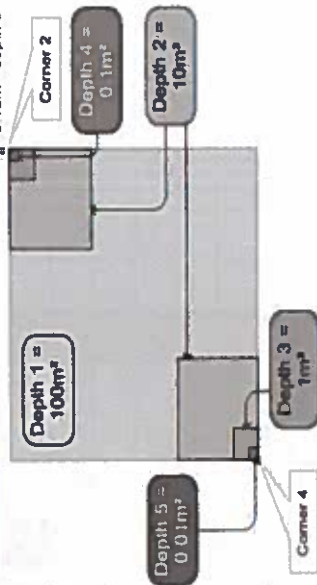
# EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used for various data elements to convey "Amount" or "Quantity". NOTE: When any given box, each quadrant contains the same total area covered, but 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	75-85%	0.850
10	85-100%	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.

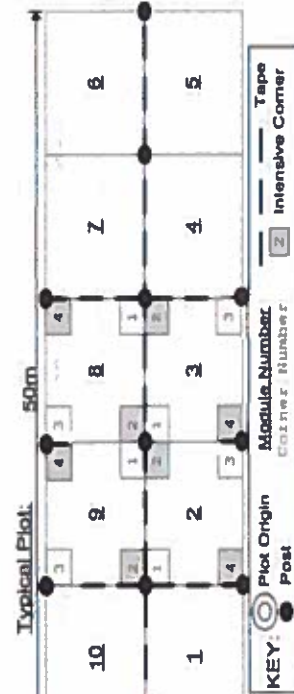
**MEDIUM LOW** values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse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



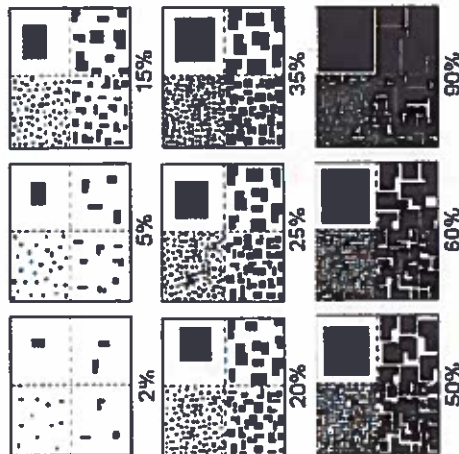






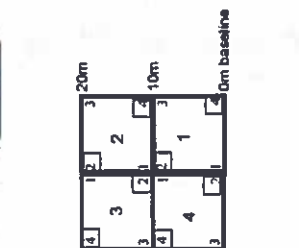
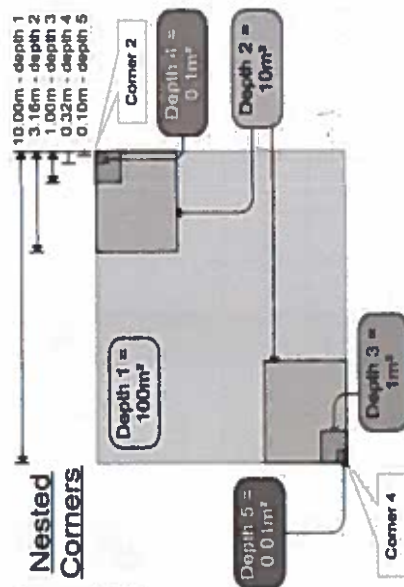
# EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used to estimate the amount of cover in a given area. NOTE: Within any given box, each quadrant contains the same but 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.

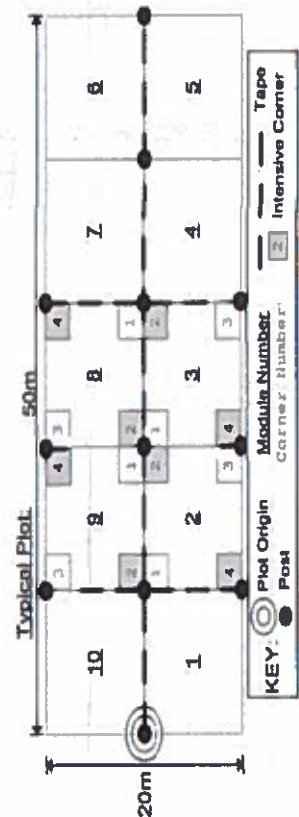
**MEDIUM LOW** values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse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



## Page 1 of 1

Project name: 02BE2015 Plot no.: 1068

7 5 3 4 5 2 2 6 3-4

[illegible]



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

07/21/2015

Project Label: PCAP

Project Name: 02 BE 2015

Plot No.: 1008

Page: 1 of 2

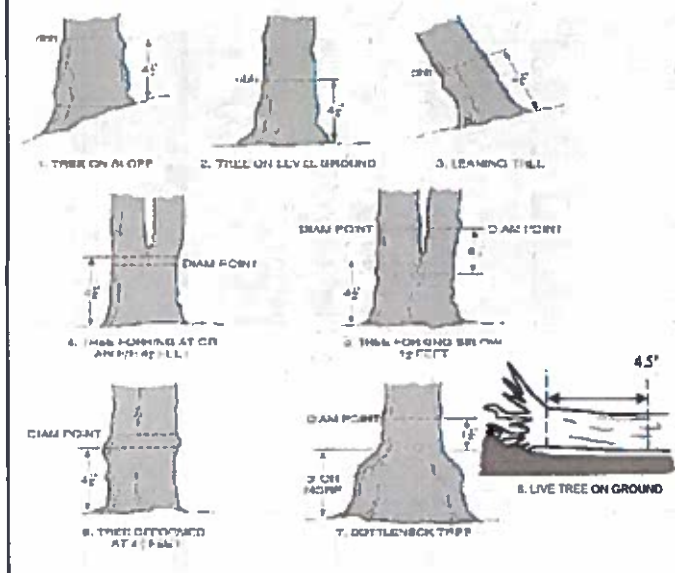
Cleveland Metroparks

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
1	Acer rubrum																		
1	Liriodendron tulipifera			1															57.6
1	Fraxinus pennsylvanica																		
1	Fagus grandifolia																		
1	Carya cordiformis			1															
1	Rosa multiflora			1															
1	Lindera benzoin																		
2	Acer saccharum																		
2	Fagus grandifolia																		
1	Eucnymos obovatus			1															
2	Fraxinus pennsylvanica			1															
2	parthenocissus quinquefolia			8															
2	Eucnymos obovatus			5															
2	Acer sp. (seedling)			1															
2	Carya cordiformis			1															
2	Rubus occidentalis			1															
2	Lindera benzoin			3															
3	Acer saccharum																		41.6
3	STANDING DEAD																		
3	Betula alleghaniensis			1															
3	Fraxinus pennsylvanica			4															
3	Eucnymos obovatus			7															
3	Rubus alleghaniensis			4															
3	Parthenocissus quinquefolia			17															

Previous Sample (2010) M51D as #americana

### 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.

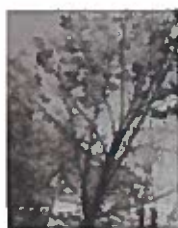
Record using the tally system from 1 to 10



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.

07/21/2015

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

Project Label: PCAP

Project Name: 02BE2015

Plot No.: 106B

Page: 2 of 2



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										>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	
3	Smilax hispida			2													
3	Toxicodendron radicans			2													
4	Vitis aestivalis																
4	Fagus grandifolia																
4	Acer saccharum																
4	Parthenocissus quinquefolia			2													
4	Carya cordiformis			2													
4	Eurogynous obovatus			14													
4	Quercus sp.			1													
4	Viburnum opulus var. opulus			1													
5	Tsuga canadensis																
5	Vitis aestivalis																
5	Liriodendron tulipifera																
5	Acer saccharum																
5	Parthenocissus quinquefolia			14													
5	STANDING DEAD																
5	EUDYMOUS OBOVATUS			6													
5	Carya cordiformis			3													
5	<del>Quercus sp.</del>																
5	Quercus sp.			2													
3	Ligustrum vulgare			1													

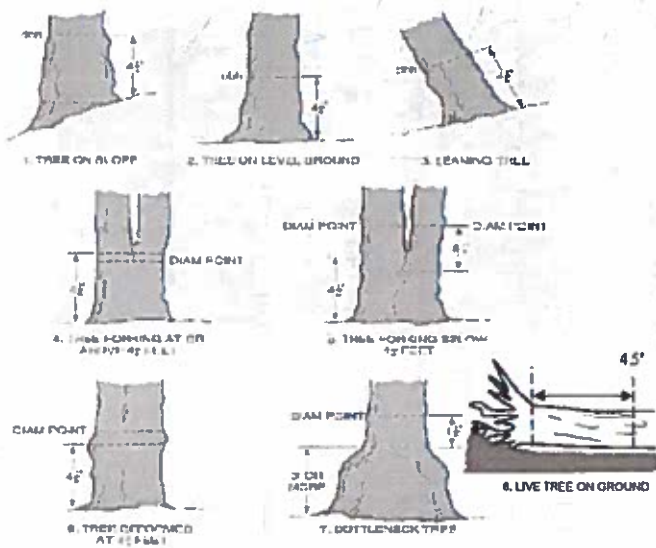
Seedling

Seedling

52.5, 58.0



### 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



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

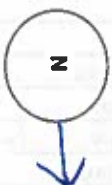
### ASH CANOPY BREAKUP CONDITION (for dead trees):

(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.

Tree ID	Species	DBH (cm)	HT (m)	Ash condition	Dead condition	ASH ONLY		
						# Ext holes	Epilimic present	Woodpecker holes
1	NONE							
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 1.25m<sup>2</sup> x 21.5m  
Woodpecker and epilimic marked present (1) or absent (0)



\*\*\* Change intensive module numbers when necessary

Baseline	
9	8
2	3

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		Presence
Microstegium vimineum	Japanese stiltgrass						X: yes
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		# of Plants
Acer platanoides	Norway Maple						1: 1-10
Ailanthus altissima	Tree of Heaven						2: 11-50.
Lonicera japonica (vine)	Japanese Honeysuckle						3: 51-100
Lythrum salicaria (wetland)	Purple Loosestrife						4: 101-1,000
Aegopodium podagraria (G-cover)	Bishop's Goutweed						5: >1,000
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		# of Plants
Convallaria majalis (G-cover)	Lily of the Valley						1: 1-10
Coronilla varia (G-cover)	Crown Vetch						2: 11-50.
Eleutherococcus pentaphyllus	Five-leaf Aralia (shrub)						3: 51-100
Pachysandra terminalis (G-cover)	Japanese Pachysandra						4: 101-1,000
Philadelphus coronarius	Mock Orange (shrub)						5: >1,000
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		# of Plants
Alliaria petiolata	Garlic Mustard						1: 1-10
Ligustrum vulgare	Common Privet (shrub)						2: 11-50.
L. morrowii, L. tatarica	Bush Honeysuckles (shrub)						3: 51-100
Phalaris arundinacea	Reed Canarygrass						4: 101-1,000
Phragmites australis (wetland)	Phragmites						5: >1,000
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)



Project Label: PCAP

Project Name: 02 BE2015

Plot No: 1066

Page: 1 of 1

07/31/2015

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														
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

NONE PRESENT

Strata	# of stems 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)

NONE PRESENT

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



07/21/2015

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

Project Label: PCAP

Project Name: 0285.2015

PLOT No.: 10668

STANDING BIOMASS (required for emergent wetlands) collected in 0.1m clip plots (3x3.32 cm) from corner 1 and 3 in each intensive module. Required for VIBI-E score calculation. C7=check when collected

Module #	C7	Corner	Corner

CLASSIFICATION

UFI = excellent, F = fair and Confidence

Hydrogeomorphic class (WETLANDS ONLY):

DEPRESSION

IMPOUNDMENT ☐ Beaver ☐ Human

RIVERINE ☐ Headwater ☐ Mainstem ☐ Channel

SLOPE (ground water hydrology or on a physical slope)

FRINGING ☐ Reservoir ☐ Natural Lake

COASTAL (specify subclass)

BOG (generally, moderately, wet, ombrotrophic)

Other EPA VIBI Plant Community Class (WETLANDS ONLY):

FOREST ☐ swamp forest ☐ bog forest ☐ forest seep

EMERGENT ☐ marsh ☐ wet meadow ☐ open bog

SHRUB ☐ shrub swamp ☐ tall sh. bog ☐ tall sh. for.

FI=

FI=

FI=

FI=

FI=

FI=

FI=

FI=

FI=

FI=

FI=

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Rank for microhabitat features. Select one or select two and average the score. NOTE: If mod falls on a slope automatically gets ranked based on steepness (1-3) to begin + any features present

Slope 1 = slight elevational grade across module (F8)

Slope 2 = falls on slope -20°

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

- feature is absent or functionally absent from the wetland
- feature is present in the wetland in very small amounts or if more common, of low quality
- feature is present in moderate amounts, but not of highest quality, or in small amounts of highest quality
- feature is present in moderate or greater amounts and of highest quality

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

module	correct	no. of tussocks	no. of hummocks (Tip-Ups)	no. macro depressions	C.W.D (2-12 cm)	C.W.D (12-30 cm)	C.W.D >40 cm	microhab. intercept.	microhab. SLOPE
1	0	0	0	1	8	2	0	3	1
2	0	0	0	3	3	1	0	3	1
3	0	0	0	1	2	4	0	3	1
4	0	0	0	0	3	3	0	2	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 OUR PROGRAM - DO NOT FILL OUT IN FIELD

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

LFI = angle of plot to the horizon. TSI is angles formed by local slopes. For TSI measure angle from recorder eye to 9 o'clock person standing ~10 m away.

Landscape Index (position within landscape)

Termin Shape Index (also microtopographic shape)

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

Module	N	S	E	W
1	5	2	1	1
2	1	3	3	0
3	0	0	2	0
4	1	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.

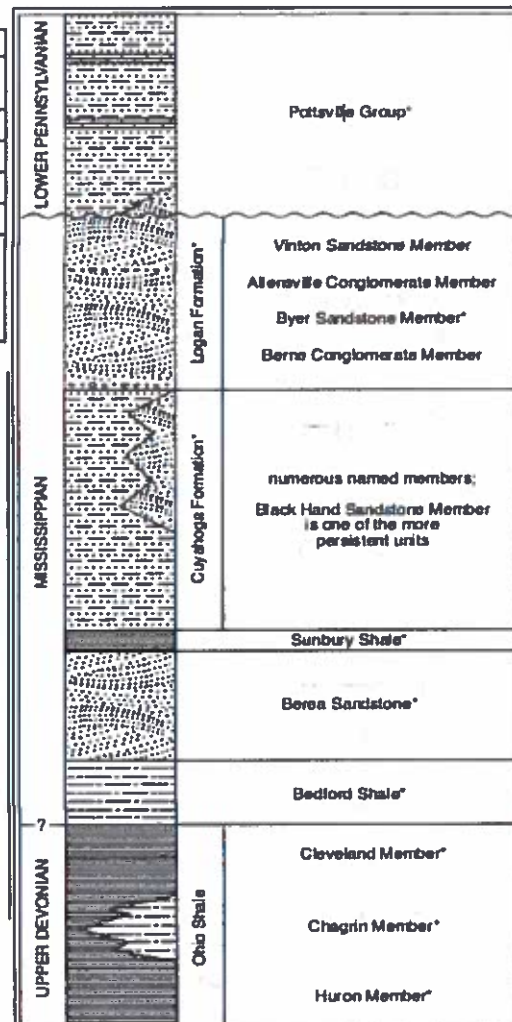
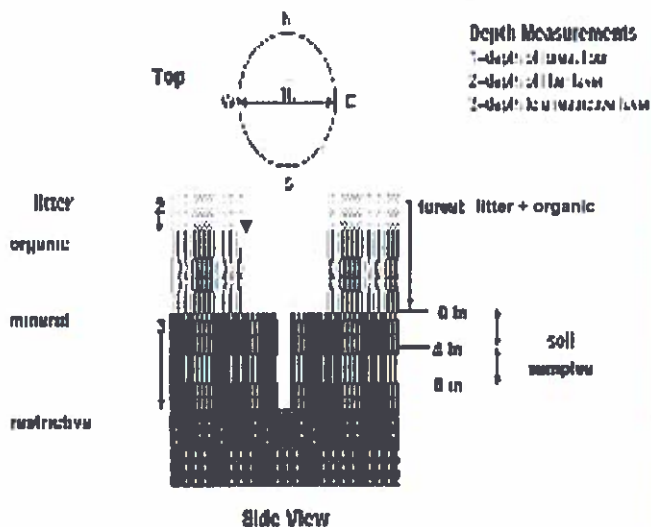


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses 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 SAMPLES** Standard procedure: collect a soil sample of the top 10 cm of soil from center of each intensive module and composite the sample

Soil Collection Method	Hertzog (A, B, C)
2.3.4.9 completed	A

Soil Series/Type:	
Soil Series Source: Ohio Soil Survey	
Landform type:	
Depth to next 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

modif	1 liter+ organic depth (cm)	2 liter depth (cm)	water depth (cm)	depth sat soil (cm)
1	2.1	2.1	0	0
2	4.5	4.5	0	0
3	2.0	2.0	0	0
4	4.5	4.5	0	0

## EARTH SURFACE & GROUND COVER

Underlying Earth Surface*	Ground Cover
Gravel = 100%	Percent
Hissokoi	-
Mineral Soil	2%
Gravel-Cobble*	2%
Boulder**	45%
Bedrock	0
* Gravel-Cobble = 1/16-10"	Bryophyte-Lichen
** Boulder = > 10 in	Water
> 5 cm in diameter	Sand Soil
< 5 cm in diameter	Road/Trail
	Other

### TRAIL INFORMATION:

recond type and cover for each	
Type	%Cover
<input type="checkbox"/> All Purpose	
<input type="checkbox"/> Bridle	
<input type="checkbox"/> Hiking sanctioned	
<input checked="" type="checkbox"/> Hiking unsanctioned	101
<input type="checkbox"/> Gravel	
<input checked="" type="checkbox"/> Other	2

## COVER BY STRATA

Strata	Height Range (m)	Total Cover (%)
Tree	5 - ∞	73
Shrub	0.5 - 5	28
Herb	0 - 0.5	48
(Floating)*	-	0
(Aquatic)*	-	0

\* 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
- ☒ 1-10 x plot size
- ☐ 1-3 x plot size
- ☐ < plot size

- refer to texture classes on p. 77 v. n. side
- e.g., hydrogen sulfide odor, glistening, etc.
- Circle one:
  - 1 - undulated S - undulated M - moist D - dry

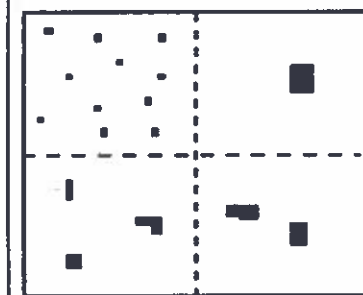
Notes: include evidence of earthworms (worms, castings, middens)

MOD1: worms, middens and castings observed
MOD2: worms, castings and middens observed
MOD3: worms, middens and castings observed
MOD4: worms, castings and middens observed

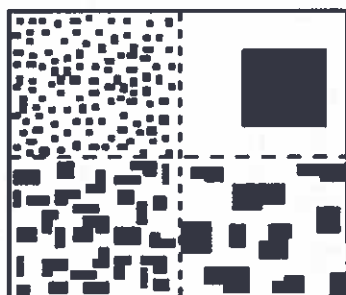
ACM PWS: Sals, C. (2007). *Amphibian and Reptile Signs*. Cambridge, MA: Academic Press.

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

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



2%



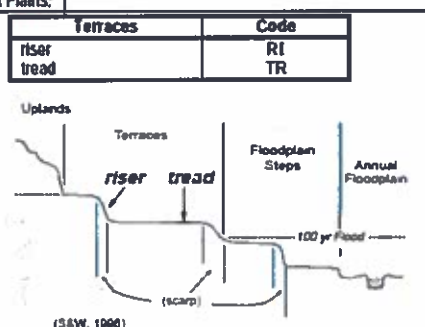
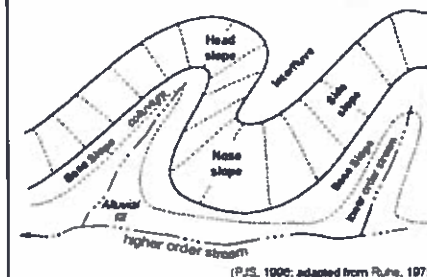
20%

**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

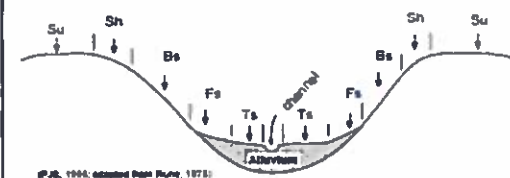
**Geomorphic Component - Three-dimensional descriptors of parts of landforms or microfeatures that are best applied to areas. Unique descriptors are available for Hills, Terraces, Mountains, and Flat Plains; e.g., (for Hills) nose slope or NS.**

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



**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.