CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

Cleveland Metroparks

GENERAL INFORMATION

Project Label: PCAP

Project Name: OL WC 2010

Plot Name: Greenbrier hills

Plot No.: 1136

☐ Level 4 (no nested corners sampled)

■ Level 5 (nested corners sampled)

Date (mm/dd/yyyy): 05/03/2010

End date (if > 1 day): / /

Party	Role**
B Morgan	Plot leader
Bzzy	Botany/wood
Andy	Soil/wood

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

PLOT NOT SAMPLED: ☐ Other

☐ Perm. water ☐ Paved ☐ Slope ☐ Safety

SAMPLING QUALITY*

Effort Level:

☑ Very thorough

☐ Accurate

☐ Hurried

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

TAXONOMIC ACCURACY

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

TAXONOMIC STANDARD

Authority: G&C Pub Date: 1998

LOCATION

State: OH County: Cuy

Quadrangle: Cleveland South

Local Place Names: West Creek Landfill

Landowner: CMP

X-axis Bearing of plot: [174] °

Data Confidentiality:

Check one: ☑ Public data ☐ Private Data

☐ Fuzz 100m ☐ Fuzz 250m ☐ Fuzz 500m

Reason:

If data not public why?

Source of coordinates ☐ MAP ■ GPS

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

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

Coordinate system:	**Coord. Units**
■ Lat/Long ☐ UTM ☐ StatePlane	■ deg ☐ deg min
☐ Other (*specify*)	■ m ☐ ft ☐

Datum: ■ NAD83/WGS84 ☐ NAD27

Latitude: 41.38466

Longitude: 081.69235

Coord. Accuracy: ☑ m ☐ ft +- 3

GPS File Name: 1136A

Plot size for cover data: 0.1 (hectares)

☑ Stems not sampled on this plot ☐ Stems absent

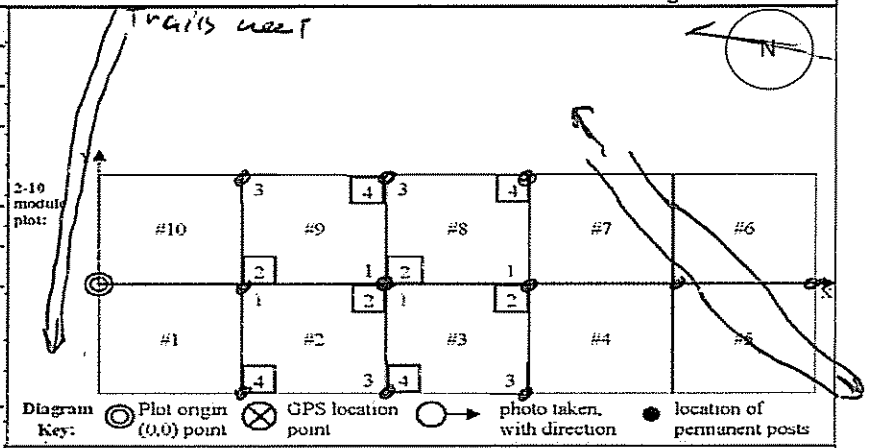
☐ Stems present **Plot size stems:** 0.1 (ha)

Depth: (1-5): 4

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

Camera No.: 3

Photo Nos.: 0275



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

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

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

Layout 2x5, crosses over a swale long-ways and runs perpendicular to slope of large hill

Rationale - origonally laid out in April by Terry, Sarah Eyesenbach and ~~myself~~ B. Morgan, We were trying to have the least topographic variation while representing the comm. type the point fell in

Veg Depauperate WC plot. Maple (red)/Oak (red, white) stand with some Blackgum, Sassafrass, beech mixed in. Just a few lucky greenbrier in the shrub layer (one greenbrier climed a tree up into the tree layer) Plus 2 Maples. Herb layer is all greenbrier and tree seedlings

Outside the plot I saw some M. L viburnum and more blueberry also a Magnolia accum. Just E of M 2 is the largest Serviceberry ever @ 14cm DBH

OVER

Minimum required fields in Bold and Underlined *Definitions and values in CM PCAP FOM v. 1.0 and CVS Field Guide

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Project Label: PCAP Project Name: _____ Plot No.: 113c

CLASSIFICATION

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

Hydrogeomorphic class (WETLANDS ONLY):

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

Ohio EPA VIBI Plant Community Class (WETLANDS ONLY):

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

MODIFIED NATURESERVE CLASS*

CODE (on separate form): A1 (c2) Fit=F Conf=M

COMMUNITY NAME: Dry Oak Forest (Maple/oak forest?)

LANDFORM TYPE*: Hill / Swale

STAND SIZE

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

DRAINAGE*

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

SALINITY*

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

DISTURBANCES

type*	severity**	yrs ago	% of plot	description
Human				
Natural				
Fire				
Cut				
Animal	VH	0	100	Browse
Other	L	0	10	Trail

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

Current Land Use: Park

Former Land Use: Park / Landfill close by

HYDROLOGIC REGIME*

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

HOMOGENEITY

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

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

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

Project Label: PCAP Project name: OI WC 2010 Plot no.: 1136

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

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

Cleveland Metroparks

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

Strata - Cov. entire plot

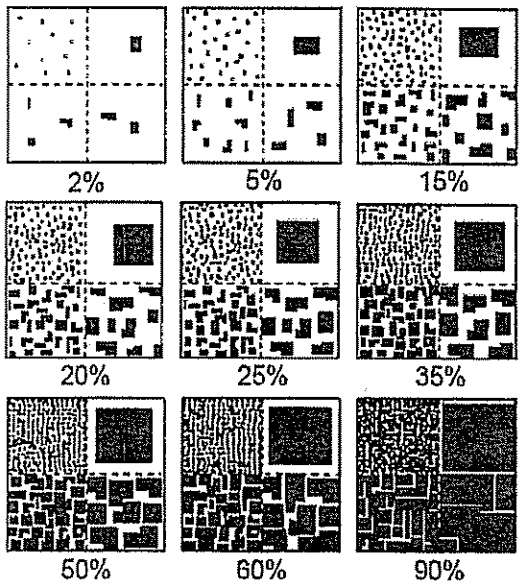
Estimate for the each intensive module:

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

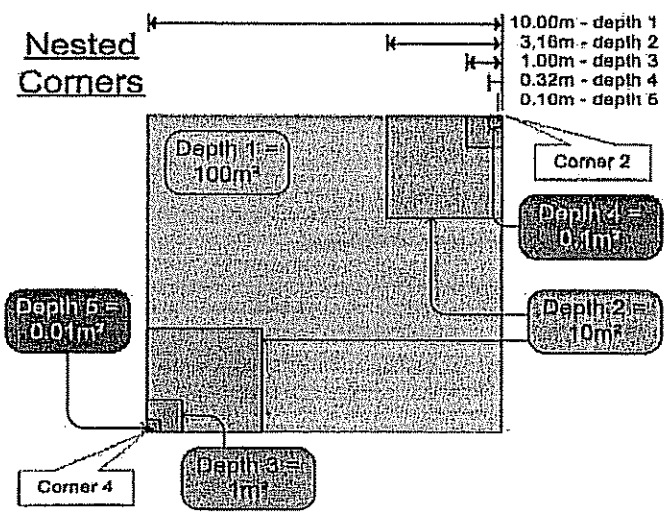
T	S	H	(F)	(A)	Br	Species	c	Voucher #	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	mod cov	corner depth	corner cov	mod depth	corner cov
9	2					Acer rubrum			4	7	4		4	9	4		4	9	4			4	5							9
7						Quercus rubra			4	6	4				3	5			4	#3		2	6	4						7
3	1					Fagus grandifolia																							1	5
4						Quercus coccinea			1	3												1	4							6
6					10	Quercus alba			2	8	4				4	6	4	7	3			1	22							7
4						Nyssa sylvatica			4	3			4	2	2									2						4
2	4					Amelanchier							1	5								1	2							
5					8	Prunus serotina			2	2	3		2	2			2	4	2			4	5	3					1	5
		2				Aer seedling			3	2	3		3	2	3		3	2	4			2	2	3					1	2
2	3	7			10	Smilax rotundifolia			4	6	3		3	3	3		4	6	4			4	6	3					1	6
4	2	2				Sassafras albidum					2	2	3	2			3	2	2			2	5	3					1	5
		2				bryophyte			3	2			2	2	2		1	2						2	2				1	
		2				Quercus seedling					2	2	1	1			3	2						2	2				1	2
		1			10	Rosa multiflora			1	1																				1
		1			10	Vaccinium vasciillans		Ph. 257-264	1	1																			1	1
		1						Ph. 265-268					1	1																
		2				Erichtites sp. hieracifolia							2	1															-	2
		2															1	1											1	1
		2				Ostrya virginiana																								3
		1				Vitis riparia																								1
		1				Rubus																								1
4						Quercus velutina																								5

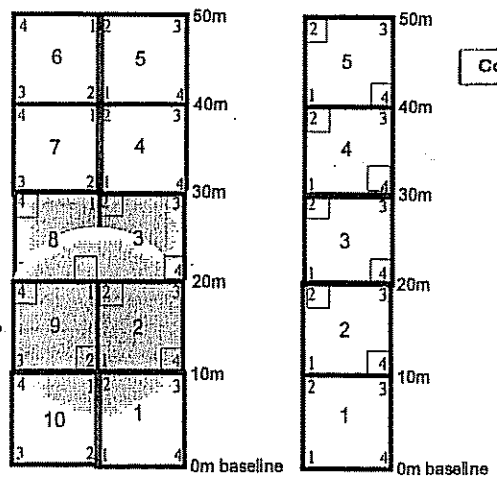
EXAMPLES OF PERCENT OF AREA COVERED

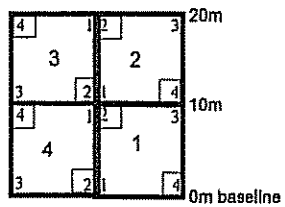
The following graphic can be used for various data elements to convey "Amount" or "Quantity". *NOTE*: Within any given box, each quadrant contains the same total area covered, just different sized objects.



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







BROWSE RATING NARRATIVE DESCRIPTION

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

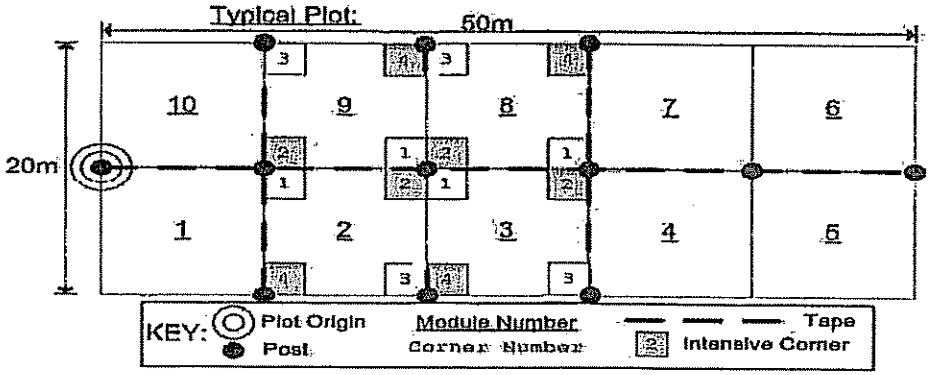
MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas.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

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

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

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

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



CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

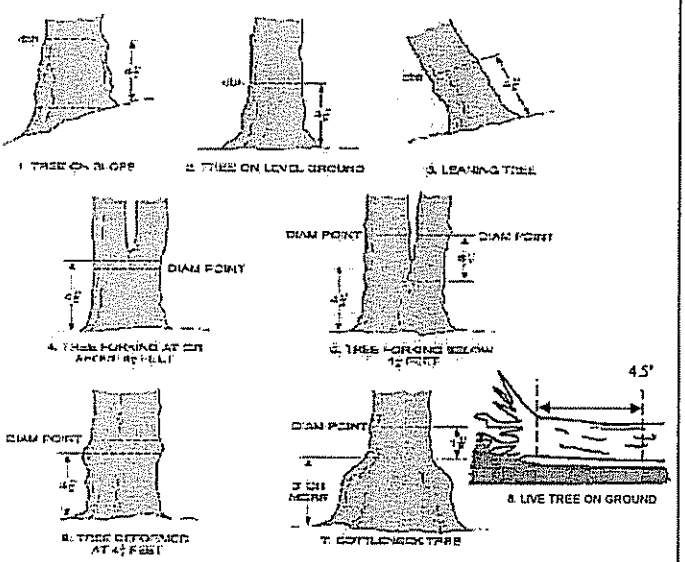
Cleveland Metroparks

Project Label: PCAP Project Name: Olmsted Plot No.: 1136 Page: 1 of 3

Explain subsample (additional room on back):

mod #	species	c	voucher#	% sub or super sample	# shrub clumps	size class (cm) woody stems >1m 1 0-<1	2 1-<2.5	3 2.5-<5	4 5-<10	5 10 - <15	6 15 - <20	7 20 - <25	8 25 - <30	9 30 - <35	10 35 - <40	11 >40 (record each tree)
1	Smilax				8											
1	Quercus rubra															
1	Standing dead															
1	Prunus serotina															
1	Acer rubrum															
1	Quercus coccinea															
1	Nyssa sylvatica															
2	Smilax				5											
2	Acer rubrum															
2	Standing dead															
2	Nyssa sylvatica															
2	Quercus alba															49.9
2	Quercus rubra															
3	Acer rubrum															40.5
3	Standing dead															
3	Amelanchier sp.										X					
3	Quercus rubra															
3	Smilax				5											
	continued on xlo															
	write in rain															

DBH Measurement Rules

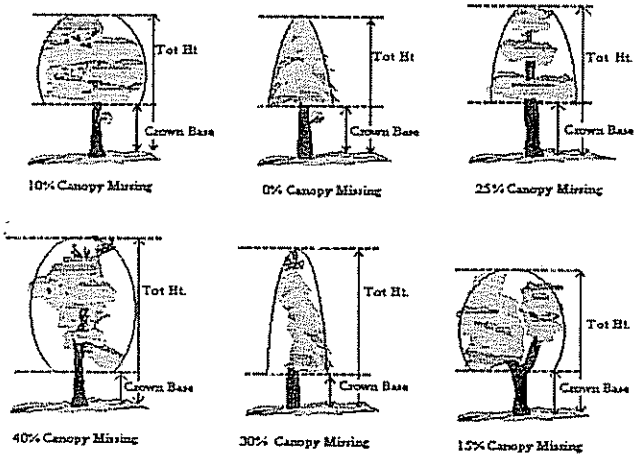


HEIGHT MEASUREMENTS (to nearest 0.1m)

Total tree height: Height to top (alive or dead) of tree. For dead trees, downed living trees, or severely leaning trees, height is considered the distance along the main stem from ground to tree top

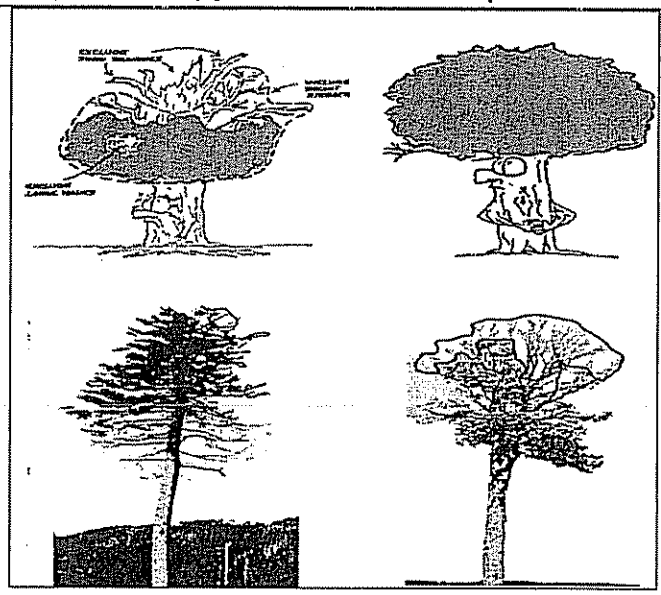
Height to live top: Same as total tree height unless the tree is alive but the top of the crown is dead. Cannot be greater than total tree height

Height to crown base: The live crown base is the point on the main trunk perpendicular to the lowest live foliage on the last branch that is included in the live crown. The live crown base is determined by the live foliage and not by the point where a branch intersects with the main bole. Epicormic branches are not counted as part of the live crown.



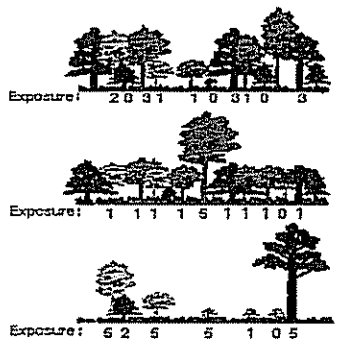
PERCENT CANOPY MISSING: Percent of crown volume not occupied by branches and leaves. Two people standing at perpendicular angles to the tree visualize the expected "typical crown outline" as a symmetrical silhouette created by the live crown width, total height, and height to base of live crown measurements. Assume crown to be symmetrical around the center point of the measured width of tree and filled with leaves as if it were a healthy tree in excellent condition. Now estimate percent foliage absent due to pruning, dieback, defoliation, uneven crown, or dwarf or sparse leaves. **Do not include** normal interior crown voids due to SELF-leaf shading. Take into account the natural crown shape for the particular species. Base measurement on existing crown that you have measured. A third of the crown may have been removed for power line clearance or the canopy could be very lopsided due to presence of a neighboring tree. However, the crown that remains could have a 0% missing value, if the existing crown is full.

Crown dieback: Percent dieback in crown. Does not include normal, natural branch dieback, i.e., self-pruning due to crown competition or shading in the lower portion of the crown. However, branch dieback on side(s) and top of crown area due to shading from a building or another tree would be included. Estimate crown dieback as a percentage of the live crown area, including the dieback area. Assume perimeter of crown is a two-dimensional outline from branch tip to branch tip, excluding snag branches and large holes or gaps in the crown. Crown dieback is obtained by two people. Record crown dieback as 0%, 100% or mid-points of 5% intervals (3, 8, 13, 18, etc.). [Record as 100% for dead trees].



CLE (crown light exposure)

0	Receives no full (direct) sunlight
1	Receives full light from top or 1 side
2	Receives full light from top and 1 side, or from 2 sides only
3	Receives full light from top and 2 sides, or from 3 sides only
4	Receives full light from top and 3 sides
5	Receives full light from top and 4 sides



ASH ONLY

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.

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

Cleveland Metroparks

Project Label: PCAP Project Name: 01wc2010 Plot No.: 1136 Page: 2 of 3

Explain subsample (additional room on back):

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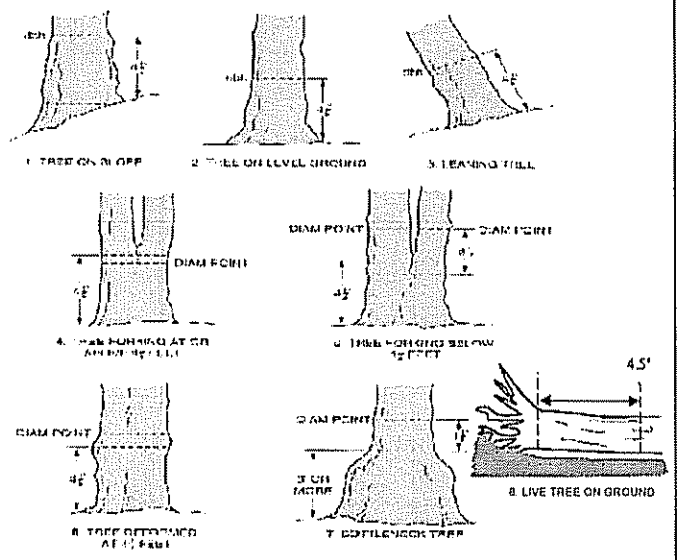
4	Smilax				5											
4	Acer rubrum															
4	Standing dead															
4	Prunus serotina															
5	Acer rubrum															
5	Standing dead															
5	Quercus rubra															
5	Nyssa sylvatica															
5	Ostrya virginiana															
5	Smilax				4											
6	Acer rubrum															
6	Standing dead															
7	Acer rubrum															
7	Standing dead															
7	Prunus serotina															
7	Fagus grandifolia															
7	Quercus rubra															
7	Smilax				5											
8	Acer rubrum															
8	Standing dead															
8	Quercus alba															43.7
8	Prunus serotina															
8	Smilax				4											
9	Smilax				8											

DBH Measurement Rules



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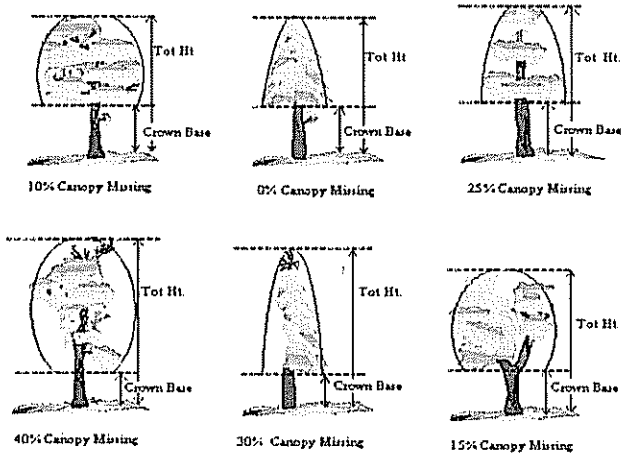

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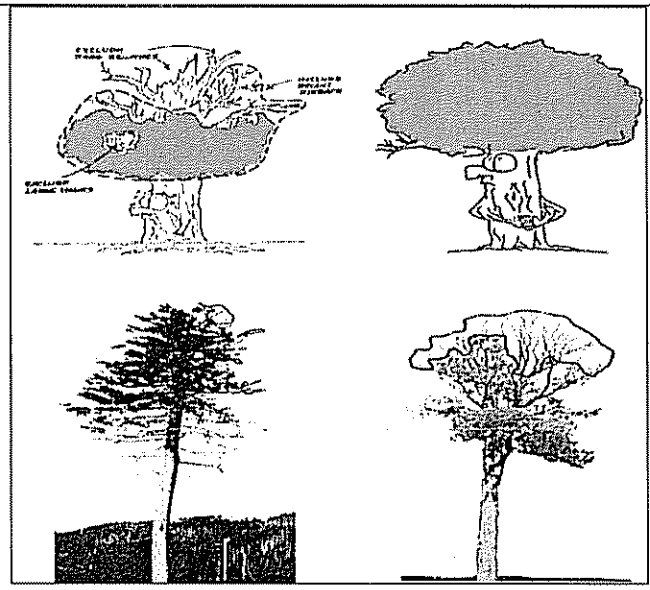

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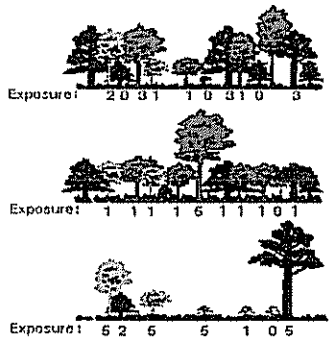
3	Receives full light from top and 2 sides, or from 3 sides only
4	Receives full light from top and 3 sides
5	Receives full light from top and 4 sides



ASH ONLY

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.

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

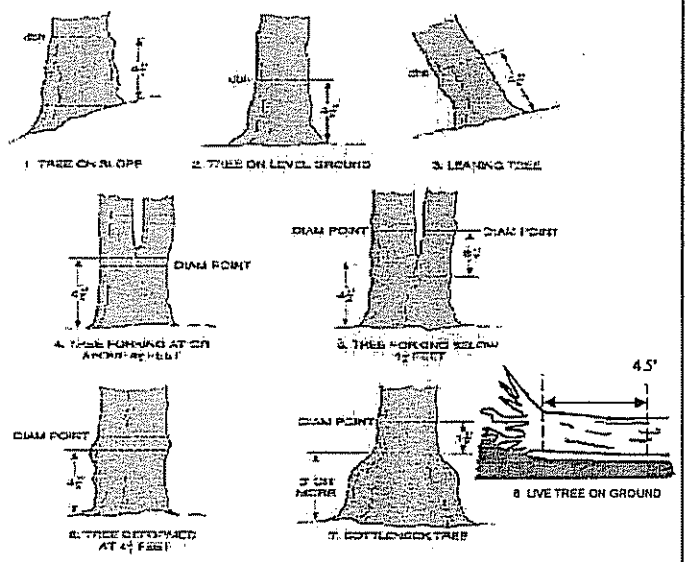
Cleveland Metroparks

Project Label: PCAP Project Name: OIWC2010 Plot No.: 1836 Page: 3 of 3

Explain subsample (additional room on back):

mod #	species	c	voucher#	% sub or super sample	# shrub clumps	size class (cm) woody stems >1m 1 0-<1	2 1-<2.5	3 2.5-<5	4 5-<10	5 10 - <15	6 15 - <20	7 20 - <25	8 25 - <30	9 30 - <35	10 35 - <40	11 >40 (record each tree)
9	Standing dead															
9	Prunus serotina															
9	Quercus rubra															
9	Acer rubrum															
9	Vitis															
9	Nyssa sylvatica															
9	Sassafras albidum															
10	Standing dead															
10	Quercus rubra															
10	Acer rubrum															
10	Sassafras albidum															
10	Quercus alba															
10	Quercus coccinea															
10	Fagus grandifolia															
10	Quercus velutina															
10	Smilax															

DBH Measurement Rules

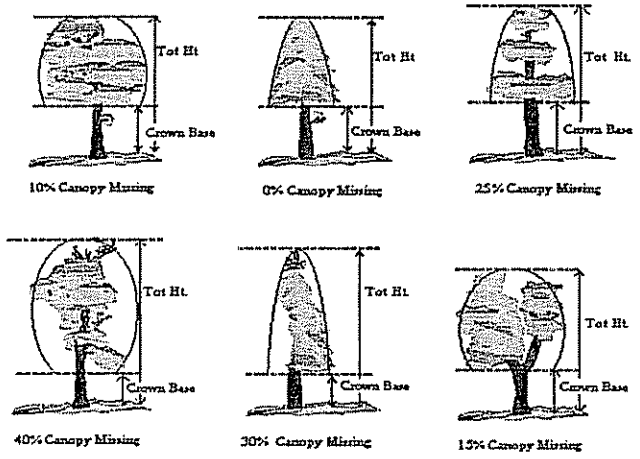


HEIGHT MEASUREMENTS (to nearest 0.1m)

Total tree height: Height to top (alive or dead) of tree. For dead trees, downed living trees, or severely leaning trees, height is considered the distance along the main stem from ground to tree top.

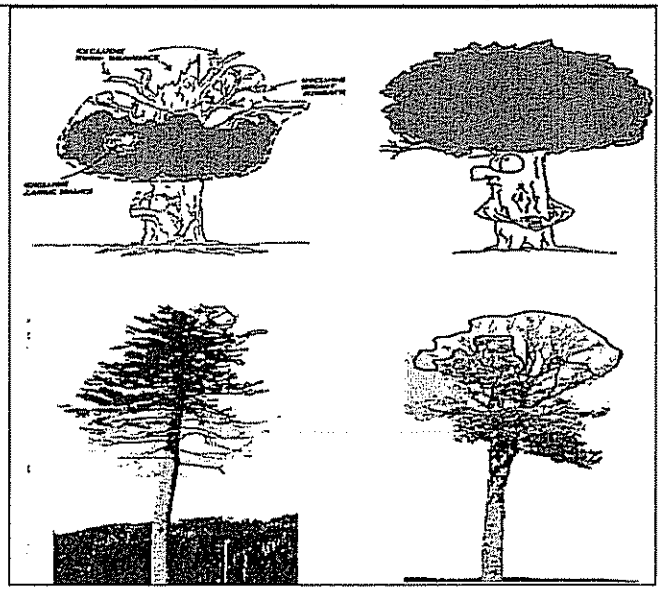
Height to live top: Same as total tree height unless the tree is alive but the top of the crown is dead. Cannot be greater than total tree height.

Height to crown base: The live crown base is the point on the main trunk perpendicular to the lowest live foliage on the last branch that is included in the live crown. The live crown base is determined by the live foliage and not by the point where a branch intersects with the main bole. Epicormic branches are not counted as part of the live crown.



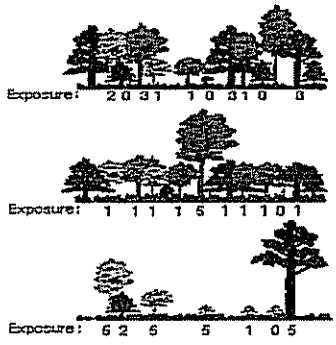
PERCENT CANOPY MISSING: Percent of crown volume not occupied by branches and leaves. Two people standing at perpendicular angles to the tree visualize the expected "typical crown outline" as a symmetrical silhouette created by the live crown width, total height, and height to base of live crown measurements. Assume crown to be symmetrical around the center point of the measured width of tree and filled with leaves as if it were a healthy tree in excellent condition. Now estimate percent foliage absent due to pruning, dieback, defoliation, uneven crown, or dwarf or sparse leaves. **Do not include** normal interior crown voids due to SELF-leaf shading. Take into account the natural crown shape for the particular species. Base measurement on existing crown that you have measured. A third of the crown may have been removed for power line clearance or the canopy could be very lopsided due to presence of a neighboring tree. However, the crown that remains could have a 0% missing value, if the existing crown is full.

Crown dieback: Percent dieback in crown. Does not include normal, natural branch dieback, i.e., self-pruning due to crown competition or shading in the lower portion of the crown. However, branch dieback on side(s) and top of crown area due to shading from a building or another tree would be included. Estimate crown dieback as a percentage of the live crown area, including the dieback area. Assume perimeter of crown is a two-dimensional outline from branch tip to branch tip, excluding snag branches and large holes or gaps in the crown. Crown dieback is obtained by two people. Record crown dieback as 0%, 100% or mid-points of 5% intervals (3, 8, 13, 18, etc.). [Record as 100% for dead trees].



CLE (crown light exposure)

0 Receives no full (direct) sunlight
1 Receives full light from top or 1 side
2 Receives full light from top and 1 side, or from 2 sides only
3 Receives full light from top and 2 sides, or from 3 sides only
4 Receives full light from top and 3 sides
5 Receives full light from top and 4 sides



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

Cleveland Metroparks

Project label: PCAP Project Name: 01wc2016 Plot No.: 1136

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

Soil pit module # 3 (one per entire plot)

5 cm	matrix color	10YR3/2
	mottle color	None
	%mottle	0%
	oxid roots	Y (N)
	texture*	1
	redox features**	Y (N)
	hydr. cond.***	I S (M) D
20 cm	matrix color	10YR 7/6
	mottle color	None
	%mottle	0%
	oxid roots	Y (N)
	texture*	1
	redox features**	Y (N)
	hydro. cond.***	I S (M) D

* refer to texture classes on reverse side

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

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

Notes:
Barely made soil pit deeper than 20cm. Pit shape. Pit contained large centipede.

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

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

Soil Series/Type:

Soil Series Source: Ohio Soil Survey

Rock Type*:

Surficial Deposits**:

Soil Description/notes:
No evidence of earthworms in soil samples

* refer to 8.1.5 rock type - most common limestone, sandstone, shale

** refer to 8.1.9 surf dep list

GEOMORPHIC POSITION
- ☐ Interfluve
- ☐ Head slope
- ☐ Nose slope
- ☒ Side slope
- ☐ Base slope
- ☐ Terrace riser
- ☐ Terrace tread

HILLSLOPE POSITION
- ☐ Summit
- ☒ Shoulder
- ☐ Backslope
- ☐ Footslope
- ☐ Toeslope

CHECK ONE BOX IN EACH COLUMN

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

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

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

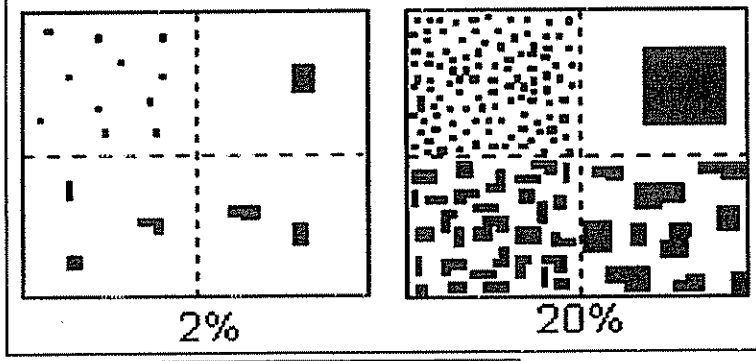
Module #	C?	Corner	Corner

PHYSIOGNOMY
- ☒ I Forest
- ☐ II Woodland
- ☐ III Shrubland
- ☐ IV Dwarf shrubland
- ☐ V Herbaceous
- ☐ VI Nonvascular
- ☐ VII Sparsely vegetated
- ☐ VIII Barren

SEASON
- ☒ Typ grow season
- ☐ Vernal
- ☐ Aestival
- ☐ Autumnal
- ☐ Winter
- ☐ Temp. flooded
- ☐ Temp. dry

PERCENT MOTTLES (USE CLASS CODES):

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



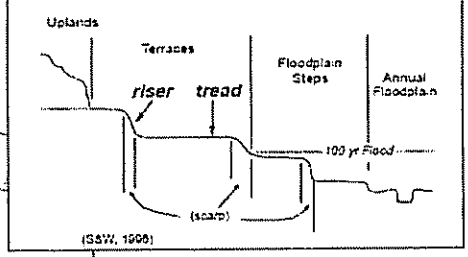
SOIL TEXTURE: Record the code for the soil texture of the 5 cm and 20 cm layers. To estimate texture, collect a soil sample from the appropriate layer and moisten it with water to the consistency of modeling clay/wet newspaper; the sample should be wet enough that all of the particles are saturated but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

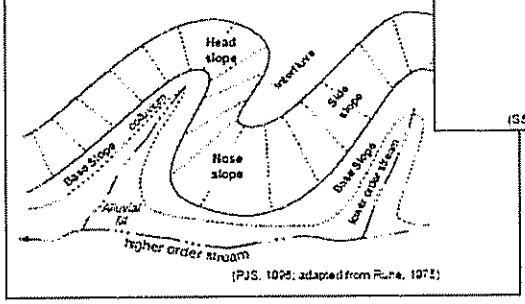
0= Organic
1= Loamy
2= Clayey
3= Sandy
4= Coarse Sand
9= Not measured - make plot note

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

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

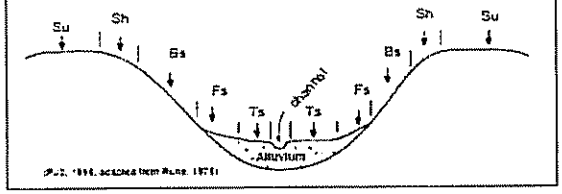
Terraces	Code
riser	RI
tread	TR





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

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



PHYSIOGNOMY — Formation Classes and are defined by the relative percent cover of the tree, shrub, dwarf shrub, herbaceous, and nonvascular strata

- FOREST — Trees over 5m with crowns interlocking (generally forming 60–100% cover). Shrubs, herbs and nonvascular plants may be present at any cover value.
- WOODLAND — Open tree stands usually over 5m tall with crowns not usually touching (generally forming 25-60% cover). Shrubs, herbs, and nonvascular plants may be present at any cover value.
- SHRUBLAND — Shrubs and/or small trees usually 0.5–5.0 meters tall with individuals or clumps not touching to interlocking (generally forming >25% canopy cover). Trees may be present, but with cover 10 percent or less. Herbs and nonvascular plants may be present at any cover value.
- DWARF SHRUBLAND — Low growing shrubs and/or dwarf trees usually under 0.5m tall (though known dwarf forms between 0.5 and 1m can be included), individuals or clumps not touching to interlocking (generally forming >25% cover). Trees and shrubs greater than 0.5m may be present but cover with canopy cover 10 percent or less. Herbs and nonvascular plants may be present at any cover value.
- HERBACEOUS — Graminoids and/or forbs (including ferns) generally forming >10% cover. Trees, shrubs, and dwarf shrubs may be present, but with cover 25 percent or less. Nonvascular may be present at any cover value. If a woody layer of 10-25% trees, shrubs, or dwarf-shrubs is present, it should be noted and described (e.g., herbaceous with scattered evergreen tree layer of 10-25%).
- NONVASCULAR — Non vascular vegetation (bryophytes, non-crustose lichens, and algae) generally exceeds 25%. Vascular vegetation is scattered or nearly absent at most 10 percent cover; in some cases the total cover of vascular vegetation may exceed 10 percent.
- SPARSE VASCULAR VEGETATION — Abiotic substrate dominates; vascular vegetation is scattered or nearly absent. The cover of each vascular lifeform (tree, shrub, dwarf shrub, herb) is at most 10 percent; in some cases the total cover of vascular vegetation may exceed 10 percent. Nonvascular vegetation is <25 %.

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

Cleveland Metroparks

Project Label: PCAP Project Name: olwc2010 Plot No.: 1136

COVER BY STRATA (Actual % estimate)

Strata	Height Range (m)	Total Cover (%)
Tree	5 - 1	98
Shrub	1.5 - 5	83
Herb	0 - 0.5	23
(Floating)*		
(Aquatic)**	-	

* rooted and floating or slightly emersed

** submersed, most plant mass below surface

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

EARTH SURFACE & GROUND COVER

Underlying Earth Surface* (Sum = 100%)	percent	Ground Cover (Each ≤ 100%)	percent
Histosol	0	Coarse Woody Debris***	8
Mineral Soil	98	Fine Woody Debris****	3
Gravel-Cobble*	2	Litter	93
Boulder**	0	Duff (Fenn. + Humus)	0
Bedrock	0	Bryophyte-Lichen	3
		Water	6
		Bare Soil	3
		Road/Trail	8
		Other	

* Gravel-Cobble = 1/16 to 10 in

**Boulder = > 10 in

*** >5 cm in diameter

**** <5 cm in diameter

McNAB INDICES (degrees) + for up - for down

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

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

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

* Landform Index (position within landscape)

** Terrain Shape Index (site microtopographic shape)

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Ranks for microhabitat features. Select one or select two and average the score.

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

mod#	corner	no. of tussocks depth 3 1x1m (count)	no. of hummocks depth 2 3.16x3.16m (count)	no. macro. depressions depth 1 10x10m (count)	c.w.d (2-12 cm) depth 1 10x10m (count)	c.w.d (12-40cm) depth 1 10x10m (count)	c.w.d >40 cm depth 1 10x10m (count)	microhab. interspers. depth 1 10x10m (rank)
2		0	0	1	9	0	0	3
3		0	0	1	17	1	0	3
8		0	0	0	10	3	0	3
9		0	0	0	12	2	0	3

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

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

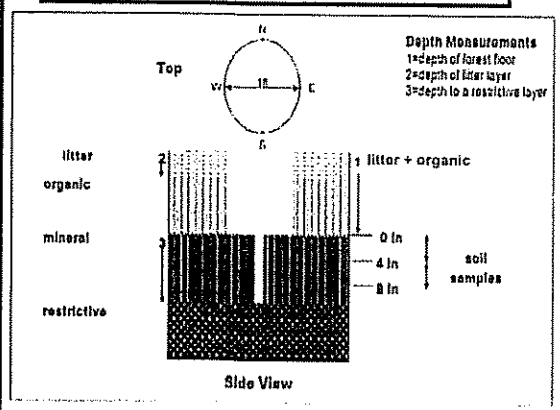
c.w.d. = course woody debris

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

SOIL DEPTH MEASUREMENT INSTRUCTIONS: Measure depths to the nearest 0.1 cm in center of each intensive module. If depth to saturated soil is >30.5 cm, record as >30

mod#	1 litter + organic depth (cm)	2 litter depth (cm)	3 restrict. depth (cm)	water depth (cm)	sat soil depth (cm)
2	0	4.5	45	0	>30
3	0	5.5	35	0	>30
8	0	7.0	37	0	>30
4	0	2.0	36	0	>30

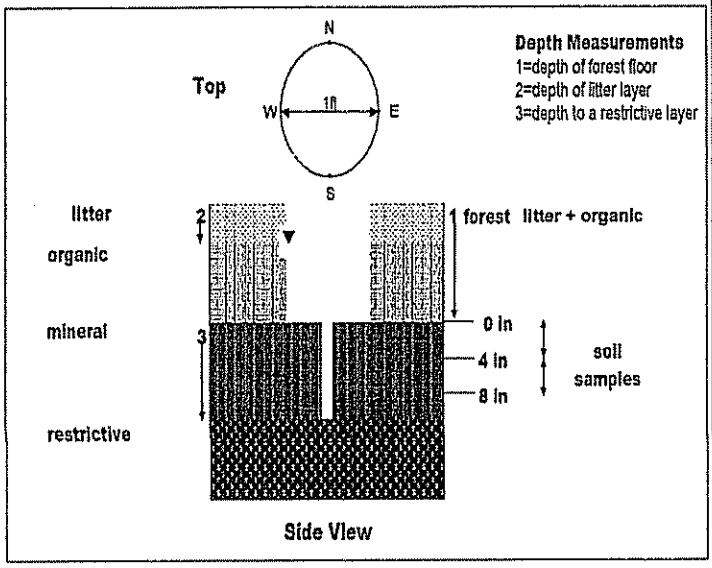
Length of soil probe = 125 cm



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.



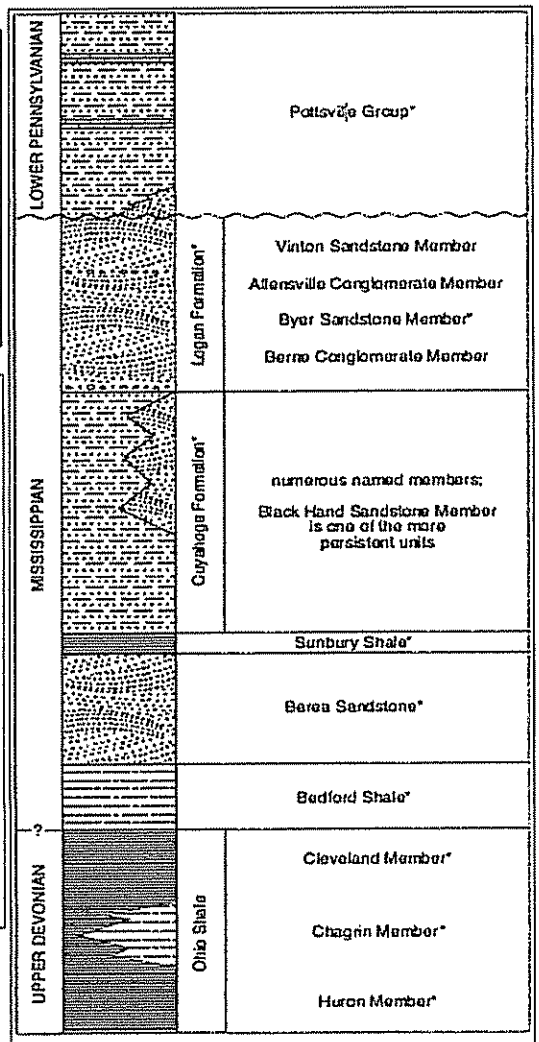


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses 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.

Walk to S SW Corner of knoll field and find "road" or trail. follow sandier trail to the left uphill to plot