

CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label:

PCAP

Plot No:

1093

Date Sampled:

8/17/15

Lead:

CKM

Comment required if item answer is NO

Parking/Access outside of Park Boundaries:	Y	<input checked="" type="radio"/> N	If yes, write details in Comments section below
Field journals completed	<input checked="" type="radio"/> Y	N	
Site sketch made on 1:3000 map?	<input checked="" type="radio"/> Y	N	
Check cover page	<input checked="" type="radio"/> Y	N	
X-axis Bearing of plot recorded	<input checked="" type="radio"/> Y	N	
GPS coords. Recorded	<input checked="" type="radio"/> Y	N	
North direction recorded	<input checked="" type="radio"/> Y	N	
Photographs taken?	<input checked="" type="radio"/> Y	N	
Relocated Pins Mapped	<input checked="" type="radio"/> Y	N	
Plot No., Date agreement on all pages?	<input checked="" type="radio"/> Y	N	
Header data completed all pages?	<input checked="" type="radio"/> Y	N	
Cover classes recorded in all Intensive modules	<input checked="" type="radio"/> Y	N	
Browse Level By Species	<input checked="" type="radio"/> Y	N	
Woody stem quality control check	<input checked="" type="radio"/> Y	N	Check every line and cross check with the Tree Cover Sheet
Invasive plant quality control check	<input checked="" type="radio"/> Y	N	NA
Ash trees mapped	<input checked="" type="radio"/> Y	N	
Completed Forest Pest/Pathogen Datasheet	<input checked="" type="radio"/> Y	N	
Cover by Strata? (confirm cover type)	<input checked="" type="radio"/> Y	N	
Soil samples collected with matching plot #.	<input checked="" type="radio"/> Y	N	NA
Cross check 2010 information	<input checked="" type="radio"/> Y	N	Highlight any changes from 2010 information
Vouchers labeled on datasheet with initials and number	<input checked="" type="radio"/> Y	N	
Vouchers labeled on collection bag	<input checked="" type="radio"/> Y	N	
Pink flags removed	<input checked="" type="radio"/> Y	N	
Data sheet QA before leaving site?	<input checked="" type="radio"/> Y	N	
Common equipment returned to tub.	<input checked="" type="radio"/> Y	N	
Data sheets scanned?			Enter date to left
Final data sheets scanned?			Enter date to left
Buffer Widths measured?	<input checked="" type="radio"/> Y	N	
Web Soil Survey	<input checked="" type="radio"/> Y	N	
Voucher Location	Refrigerator	<input checked="" type="radio"/> Y	N
(# vouchers collected)	Press (#)		Enter number to left
CKM 386-388	Drier	<input checked="" type="radio"/> Y	N
	Identified	<input checked="" type="radio"/> Y	N
	Mounted	<input checked="" type="radio"/> Y	N
	Thrown away	<input checked="" type="radio"/> Y	N

GRTS point verification: Is plot sampleable?

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

Additional Comments:

8/17/15 - All pins found



100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

100

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

GRASSLAND STRIP

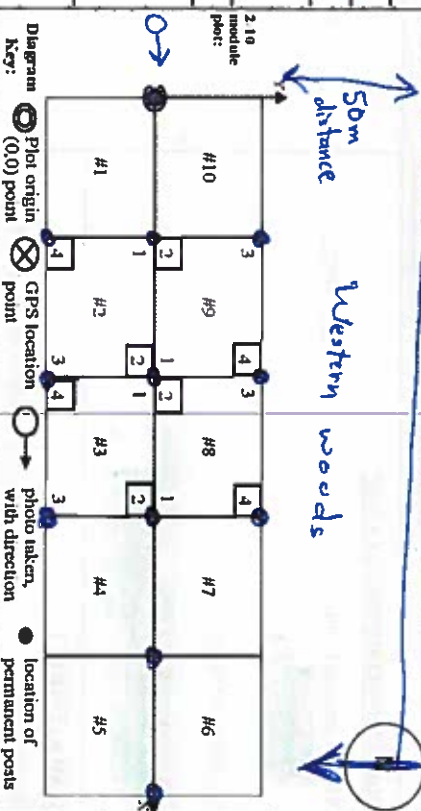
Page 1 of 2

GENERAL INFORMATION	
Project Label:	PCAP
Project Name:	02 BR 2015
Plot Name:	Stingers on the side
Plot No.:	
<input type="checkbox"/> Level 4 (no nested corners sampled) <input checked="" type="checkbox"/> Level 5 (nested corners sampled)	
Date (mm/dd/yyyy):	8/17/2015
End date (if > 1 day):	1/1
Party:	C. Minner
Role**	Plot leader
	Robert D. Sweet Bot. Asst.
	M. Gentry Woody Tech
	T. Cochran Woody Tech
** Roles: Co-leader, Asst. Guide, Observer, Taxonomist, etc. PLOT NOT SAMPLED: <input type="checkbox"/> Other <input type="checkbox"/> Perm. water <input type="checkbox"/> Paved <input type="checkbox"/> Slope <input type="checkbox"/> Safety	
SAMPLING QUALITY*	
Effort Level:	subjective evaluation of how much effort put into sampling. Hurried plots may still provide good data
<input checked="" type="checkbox"/> Very thorough	
<input checked="" type="checkbox"/> Accurate	
<input type="checkbox"/> Hurried	
TAXONOMIC ACCURACY	
high	moderate
low	not simpl
vascular	n/a
bryo	
lichen	
TAXONOMIC STANDARD	
Authority:	G&C Pub Date: 1998

Minimum required fields in Bold and Underlined

LOCATION	
State:	OH
County:	Cuyahoga
Quadrangle:	Northfield
Local Place Names:	Buckeye Trail
	Jaitie Mill Historic District
Landowner:	CMP
Data Confidentiality:	
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:	Coord. Units
<input checked="" type="checkbox"/> Lat/Long <input type="checkbox"/> UTM <input type="checkbox"/> StatePlane	<input type="checkbox"/> deg <input type="checkbox"/> deg min
<input type="checkbox"/> Other (specify)	<input type="checkbox"/> m <input type="checkbox"/> ft
Datum:	NAD83/WGS84 <input type="checkbox"/> NAD27
GPS location in plot x=0 to 5, y=-1, 0, +1:	
x = 0 y = 0 (base of plot x=0, y=0)	
Latitude:	41.28979
Longitude:	81.58172
Coord. Accuracy:	X m <input type="checkbox"/> ft + - 5
GPS File Name:	1093
Plot size for cover data:	.1 (hectares)
X-axis Bearing of plot:	[254]°
Depth: (1-5):	4
Intensive modules: 2, 3, 8, 9	(EDIT IF MODIFIED)
Camera No.:	4
Photo Nos.:	4846
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



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

Layout: 2x5

Location: Jaitie Mill Historic District is located at the intersection of Riverside Rd and Vaughn Rd. There are two gravel pull offs on Riverside Rd NW of Jaitie Mill (yellow houses). The first ~700 ft NW of intersection is on the east side. The second is several hundred feet further north and is larger. Rationale: GRTS from this second spot the veg. characterization: The canopy is dominated by Tulip and Maple. The shrub layer is dominated by Maple. The herb layer is sparse and dominated by Ash seedlings.

OVER

The plot is ~50m off this grassland strip. Grassland strip

Plot No.: 1093

Project Name: 02BR2015

Project Label: PCAP

MODIFIED NATURESERVE CLASS*

CODE (on separate form): 105c

Fit= Conf=

COMMUNITY NAME:

Old Post Clearcut

HOMOGENEITY

☒ Homogeneous ☐ Compositional trend across the plot

☐ Conspicuous inclusions ☐ Irregular/pattern mosaic

DISTURBANCES

type*	severity**	yrs ago	% of plot	description
Human				
Natural				
Fire				
Cut				
Animal	M	0	100	Deer browse
Other				

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

Current Land Use: CMP

Former Land Use:

HYDROLOGIC REGIME*

☒ Upland (seldom flooded)

☐ Intermittently/seasonally saturated (seldom flooded)

☐ Permanently/Semipermanent, saturated (dry <1/yr, seldom flooded)

☐ Occasionally flooded (<1/yr)

☐ Temporarity flooded

☐ Intermittently flooded

☐ Semipermanently flooded

☐ Permanently flooded

☐ Tidal/Seiche flooded daily

☐ Tidal/Seiche flooded monthly

☐ Tidal/Seiche flooded irregular (e.g. wind, storms)

☐ Unknown

(by default unless plot is a wetland)

SALINITY*

☐ Saltwater

☐ Brackish

☐ Fresh

☒ Upland (n/a)

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

The stand is even-aged and almost assuredly clear cut a while ago 25+ years. The browse line is well-defined, with a very sparse herb layer. The browse was very heavy for a sustained time but interestingly was only moderate this season. Ash seedlings are the dominant component of herb layer. The large tulips in the plot seemed a little stressed, perhaps it is the time of year, but they are not pumping out seeds in desperation just yet.

Page 1 of 2

Plot area (ha): 1



**Cleveland
Metroparks**

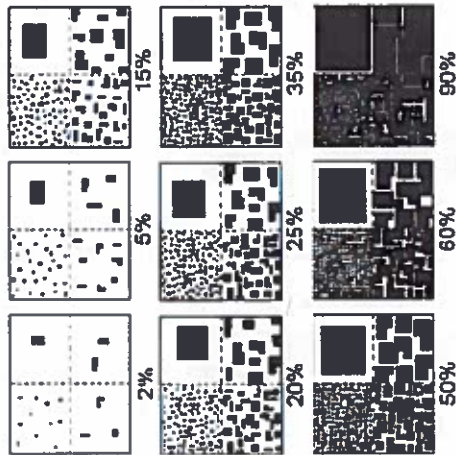
Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

[illegible]

EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used to record data elements to canopy "Amount" or "Density". NOTE: Within any given box, each quadrant contains the same 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.

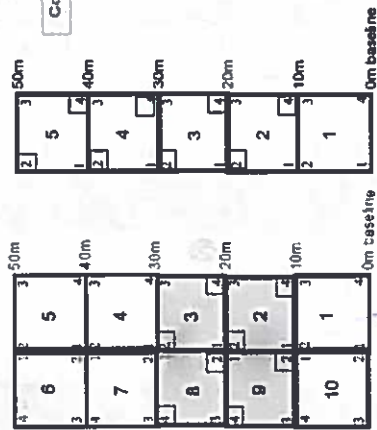
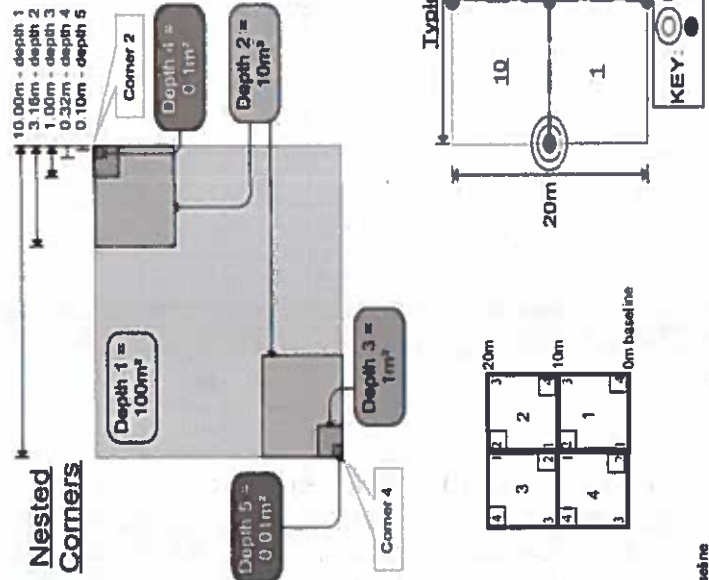
MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas.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

Plot no.: 1093

Plot area (ha): 1.1



Cleveland Metroparks

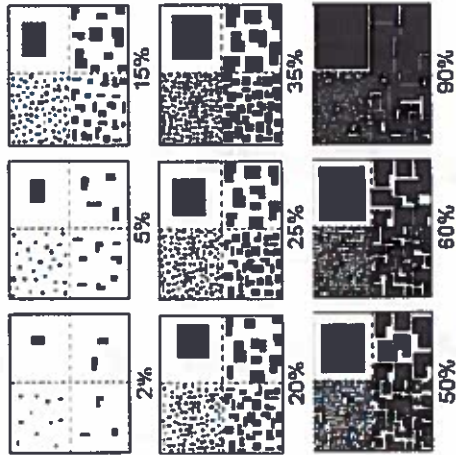
Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

[illegible]

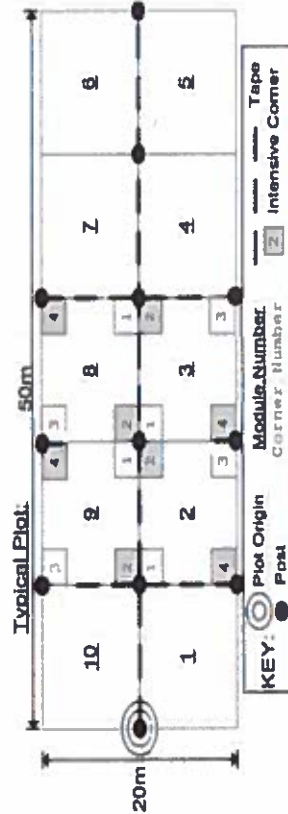
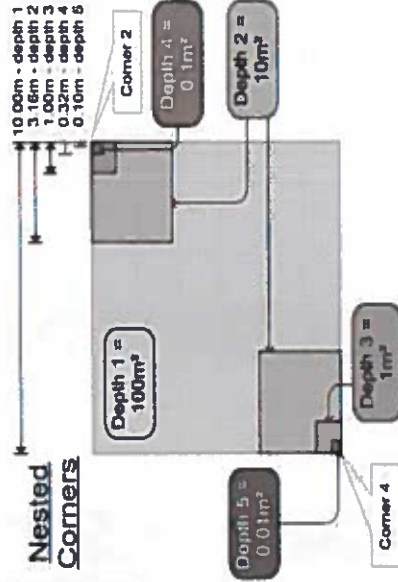
EXAMPLES OF PERCENT OF AREA COVERED

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



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

Nested Corners



BROWSE RATING NARRATIVE DESCRIPTION

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

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

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

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

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

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

Page 1 of 1

[illegible]

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

Project Label: PCAP

Project Name: QBR2015

Plot No.: 1093

Page: 1 of 3

Cleveland Metroparks

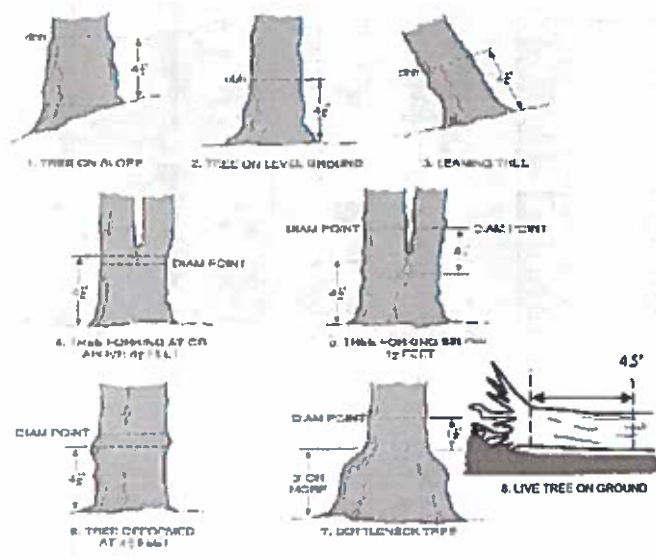
Explain subsample (additional room on back):

mod #	species	c	voucher#	# stems 0-1.4m browed	% sub or super sample	# shrub clumps	size class (cm) woody stems > 1.4m												
							1 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	Acer rubrum																		
1	Acer saccharum							••											
1	Liriodendron tulipifera																		
1	Quercus alba								•										
1	Viburnum dentatum		CKM388	1															
1	Fraxinus sp.																		
2	Quercus alba									•									
2	Acer saccharum							••											
2	Fagus grandifolia								•										
2	STANDING DEAD								•										
2	Ostrya virginiana									•									
2	Liriodendron tulipifera										•								
2	Quercus velutina									•	•	•							49.3
2	Acer rubrum																		
2	Prunus serotina								•										
2	NO BROWSE																		
3	Acer saccharum							••	••										
3	Acer rubrum																		61.8
3	STANDING DEAD							•	••										
3	Liriodendron tulipifera																		
3	NO BROWSE									•									
4	STANDING DEAD																		
4	Pinus strobus									•									
4	Acer rubrum							••			••								

May have been mis-measured 2010 20-25.
2010 ID'd as Q. rubra

2010 measured as
twisted stems

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.

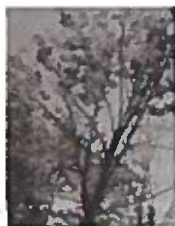
Record using the tally system from 1 to 10



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.

CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

Project Label: PCAP

Project Name: Q2BR2015

Plot No.: 1093

Page: 2

of

3 Cleveland Metroparks

Explain subsample (additional room on back):

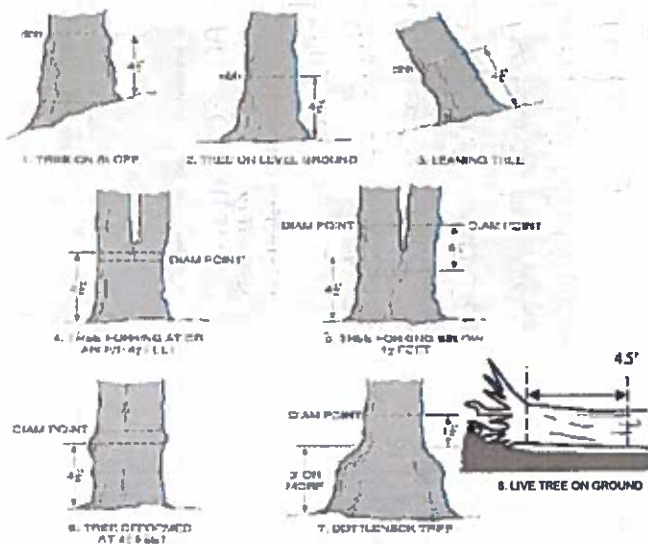
mod #	species	c	voucher#	# stems 0-1.4m browsed	% sub or super sample	# shrub clumps	size class (cm) woody stems > 1.4m												
							1	2	3	4	5	6	7	8	9	10	11		
							0-1	1-2.5	2.5-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	>40 (record each tree)		
4	Acer saccharum							••	•										
4	Eucalyptus ^{Alnus}			1															
4	Fraxinus sp.			1															
4	Vitis sp.																		
5	Acer rubrum																		
5	STANDING DEAD																		
5	Acer saccharum			1			•	••	••	••									
5	Liriodendron tulipifera																		
5	Fraxinus Sp.																		
6	Acer saccharum						•	••	••	••									
6	STANDING DEAD																		
6	Liriodendron tulipifera																		
6	NoBrowse																		
7	Acer rubrum								•	••	••	••	••	••	••	••	••		
7	Acer saccharum								••	••									
7	Liriodendron tulipifera																		
7	STANDING DEAD																		
7	Pinus strobus resinosa																		
7	Fraxinus sp.			2															
7	Acer sp.			1															
8	Liriodendron tulipifera																		
8	Acer saccharum						•	••	••	••									
8	Acer rubrum																		
8	Prunus serotina																		

43.2

47.1

40.2

DBH Measurement Rules



Woody Stem Deer Browse

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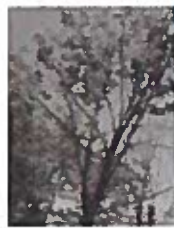
Record using the tally system from 1 to 10



1



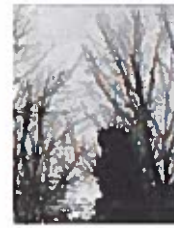
2



3



4



5

ASH CANOPY CONDITION

- 1. Healthy, full canopy:** A healthy ash canopy is normally thinner than many other trees such as maple.
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- 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.
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A

B

C

D

E

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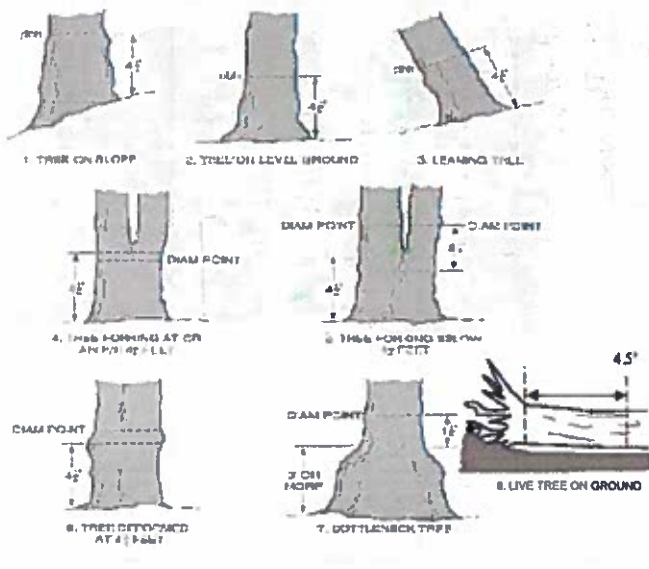
Develand Medspa

Page: 2 of 2

3

Measured 10'd as rubra
as stem * 2010

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



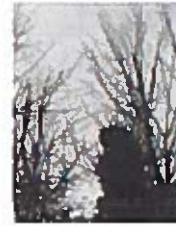
2



3



4



5

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A

B

C

D

E

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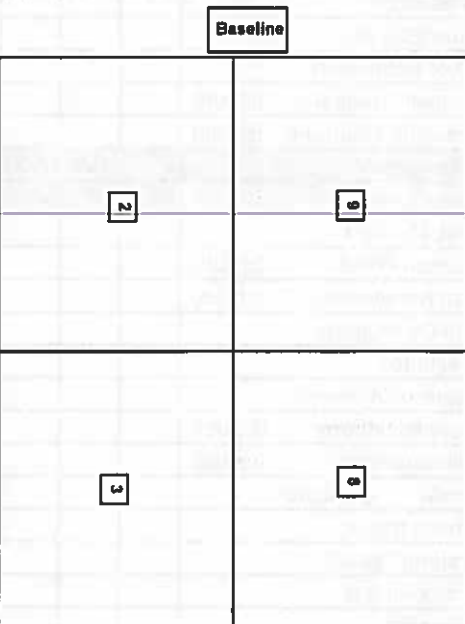
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- E:** Central stem still standing.

Tree ID	Species	Dead	Voucher #	DBH (cm)	HT (m)	Ash condition	Dead condition	# Exit holes	Epiloric present	Woodpecker holes
1	NONE PRESENT									
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 x 1.5m
Woodpecker and epiloric marked present (1) or absent (0)



*** Change intensive module numbers when necessary



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

CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey



Tier 1: Early detection/ Rapid response		Presence				GPS	Presence X: yes
		NE	SE	SW	NW		
Microstegium vimineum	Japanese stiltgrass						
Ranunculus ficaria	Lesser Celandine						
Cynanchum louiseae (vine)	Black Swallow-wort						
Butomus umbellatus (wetland)	Flowering Rush						
Heracleum mantegazzianum	Giant Hogweed						
Tier 2: Assess as Needed		# of Plants				comments	# of Plants
		NE	SE	SW	NW		
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	# of Plants
		NE	SE	SW	NW		
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	# of Plants
		NE	SE	SW	NW		
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)

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



Project Label: PCAP

Project Name: Q2BR2015

Plot No.: 1093

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	<u>None Present</u>													
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 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 Longhorned Beetle

Hemlock (HWA)

Other Pest or Pathogen

Walnut (Thousand Canker)

Severity

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

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

Low = Only a few leaves or branches are exhibiting symptoms

STANDING BIOMASS (required for emergent wetland) collected in 0.1m clip plots (32x32 cm) from corners 1 and 3 in each intensive module. Required for VIB-E score calculation. C7-check when collected

Module #	C7	Corner	Corner

CLASSIFICATION

(FTT - excellent, F and Confidence)

Hydrogeomorphic class (WETLANDS ONLY):

<input type="checkbox"/> DEPRESSION	File=	Conf=
<input type="checkbox"/> IMPONDMENT	File=	Conf=
<input type="checkbox"/> RIVERINE	File=	Conf=
<input type="checkbox"/> SLOPE (ground water by/drainage or on a physical slope)	File=	Conf=
<input type="checkbox"/> FRINGING	File=	Conf=
<input type="checkbox"/> COASTAL (specify subclass)	File=	Conf=
<input type="checkbox"/> BOG (strongly, moderately, weakly ombrotrophic)	File=	Conf=

Other EPA VIB Plant Community Class (WETLANDS ONLY):

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

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

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

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

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

	no. of tussocks	no. of hummocks (TTP-1/ps)	no. macro depressions	C.W.D. (2-12 cm)	C.W.D. (12-10cm)	C.W.D. >10 cm	microhab. interspers	microhab. SLOPE
depth 3 1x1m		depth 2 3, 6x3 1cm	depth 1 10x1cm	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m	depth 1 10x10m
module	(count)	(count)	(count)	(count)	(count)	(count)	(rank)	(rank)
corner								
2	0	0	0	17	0	0	2	1
3	0	0	0	29	0	0	2	1
8	0	0	0	27	0	0	2	1
9	0	0	0	32	0	0	2	1

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

08/17/2015

McNAB INDICES (degrees) + for up - for down

FILLED BUT USING GAS 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								

Landform Index (position within landscape)
Ternit 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
2	1	0	2	0
3	0	0	0	0
8	0	0	1	0
9	0	0	0	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.

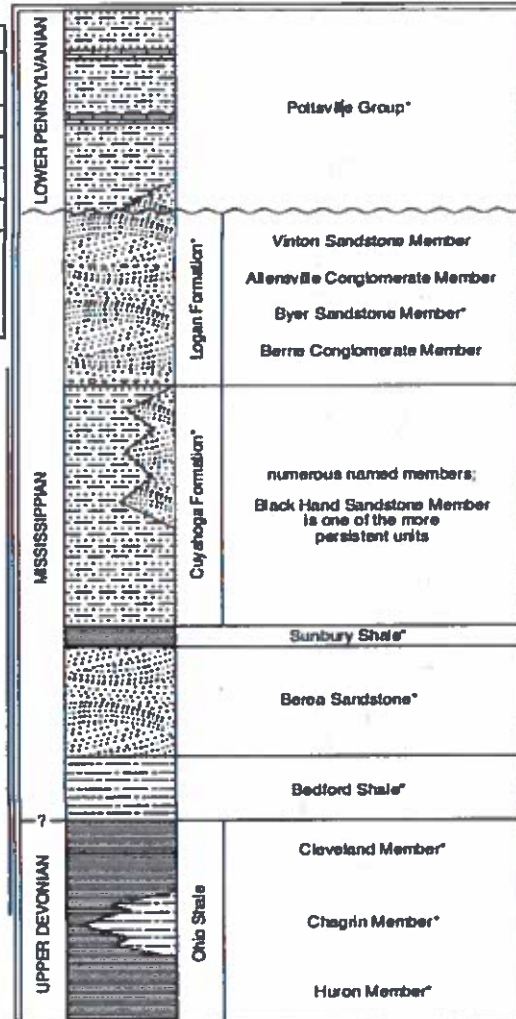
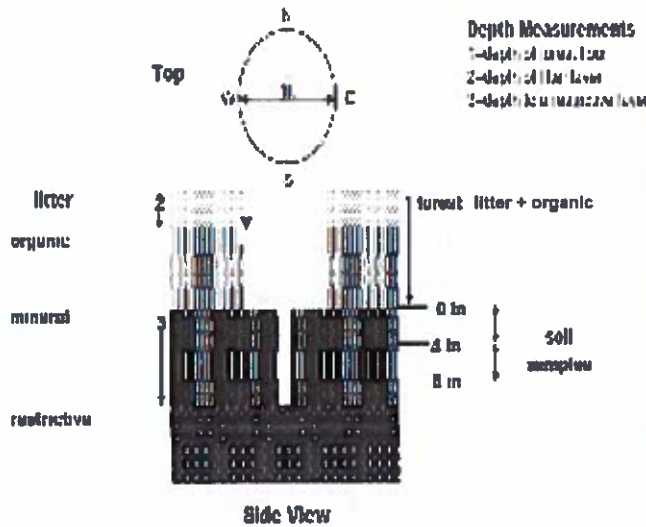


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses 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 (1978) for more information on Mississippian rocks in Ohio. See figure 3-16 for explanation of rock types.

08/17/2015

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.***

* refer to texture classes on reverse side

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

*** Circle one:

Indurated S-saturated M-moist D-dry

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

MOD2: worms not present, castings and middens present.
 MOD3: castings present.
 MOD8: castings present
 MOD9: castings present

Soil Collection Module	Horizon (A, B, C)
2.3.9 cm profiled	A

Use Soil Survey Information

Soil Series/Type:

Soil Series Source: Ohio Soil Survey

Landform type:

Depth to root layer:

Parent Material:

Drainage*

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

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

module	1 liter+ organic depth (cm)	2 liter depth (cm)	water depth (cm)	depth sat soil (cm)
2	0.7	0.7	0	0
3	0.5	0.5	0	0
8	0.3	0.3	0	0
9	0.1	0.1	0	0

EARTH SURFACE & GROUND COVER

Underlying Earth Surface*	Ground Cover	Percent
Gravel = 100%	percent	(Each ≤ 100%)
Historical	Coarse Woody Debris***	4
Mineral Soil	Fine Woody Debris****	20
Gravel-Cobble*	Litter	74
Boulder**	Duff (Fem + Humus)	0
Bedrock	Bryophyte-Lichen	1
* Gravel-Cobble = 1/16-10"	Water	0
** Boulder = > 10 in	Bare Soil	1
*** > 5 cm in diameter	Dead Trail	3
**** < 5 cm in diameter	Other	1

COVER BY STRATA

estimate using midpoints of 5,ex:3, 8, 13

Strata	Height Range (m)	Total Cover (%)
Tree	5.0-7	88
Shrub	1.5-5.0	43
Herb	0-1.5	23
(Floating)*	-	-
(Aquatic)*	-	-

* rooted and floating or slightly emerged

** submerged, most plant mass below surface

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

TRAIL INFORMATION:

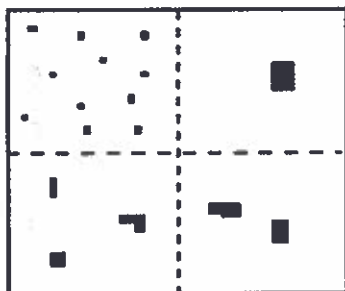
Trail type and cover for each	%Cover
Type	
All Purpose	
Bridle	
Hiking sanctioned	
Bicycling unsanctioned	
Gravel	
Deer	3

STAND SIZE

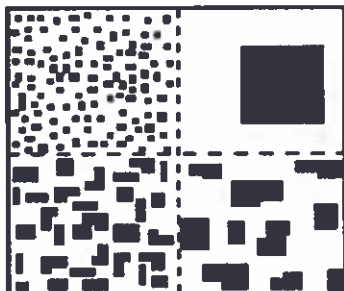
- ☐ >600 x plot size
☐ > 100 x plot size
☒ 10-100 x plot size
☐ 3-10 x plot size
☐ 1-3 x plot size
☐ < plot size

PERCENT MOTTLES (USE CLASS CODES):

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



2%



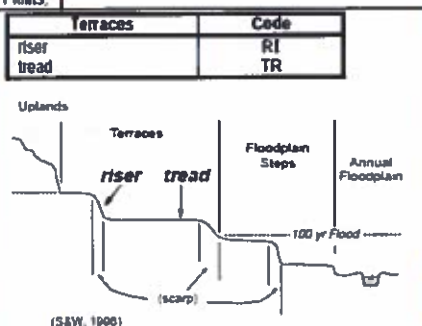
20%

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

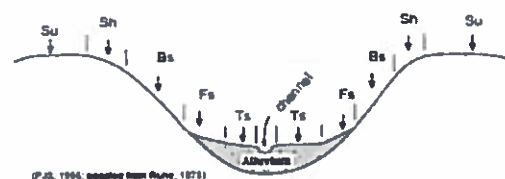
Geomorphic Component - Three-dimensional descriptors of parts of landforms or microfeatures that are best applied to areas. Unique descriptors are available for Hills, Terraces, Mountains, and Flat Plains; e.g. (for Hills) nose slope or NS.

Hills	Code	
	PDP	NASIS
interfluvial	IF	IF
head slope	HS	HS
nose slope	NS	NS
side slope	SS	SS
base slope	—	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/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.