

CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label:

PCAP

Plot No:

3367

Date Sampled:

8/10/15

Lead:

CKM

Comment required if item answer is NO

Parking/Access outside of Park Boundaries:	Y	(N)	If yes, write details in Comments section below
Field journals completed	(Y)	N	
Site sketch made on 1:3000 map?	(Y)	N	
Check cover page	(Y)	N	
X-axis Bearing of plot recorded	(Y)	N	
GPS coords. Recorded	(Y)	N	
North direction recorded	(Y)	N	
Photographs taken?	(Y)	N	
Relocated Pins Mapped	(Y)	N	
Plot No., Date agreement on all pages?	(Y)	N	
Header data completed all pages?	(Y)	N	
Cover classes recorded in all Intensive modules	(Y)	N	
Browse Level By Species	(Y)	N	
Woody stem quality control check	(Y)	N	Check every line and cross check with the Tree Cover Sheet
Invasive plant quality control check	Y	N	N/A
Ash trees mapped	(Y)	N	
Completed Forest Pest/Pathogen Datasheet	(Y)	N	
Cover by Strata? (confirm cover type)	(Y)	N	
Soil samples collected with matching plot #.	Y	N	N/A
Cross check 2010 information	(Y)	N	Highlight any changes from 2010 information
Vouchers labeled on datasheet with initials and number	(Y)	N	
Vouchers labeled on collection bag	(Y)	N	
Pink flags removed	(Y)	(N)	Left up -
Data sheet QA before leaving site?	(Y)	N	
Common equipment returned to tub.	Y	N	
Data sheets scanned?			Enter date to left
Final data sheets scanned?			Enter date to left
Buffer Widths measured?	Y	N	
Web Soil Survey	Y	N	
Voucher Location	Refrigerator	Y	N
(# vouchers collected)	Press (#)		Enter number to left
CKM 403 413	Drier	Y	N
	Identified	Y	N
	Mounted	Y	N
	Thrown away	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)
	<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:

Found all pins except Left 30m

Will have to cross Rocky River
take waders/
rubber boots

5

9

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

GENERAL INFORMATION

LOCATION

State: OH County: Cuyahoga

Quadrangle: North Olmsted

Local Place Names: Spafford Rd and Valley Parkway

Landowner: CMP

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

Coordinate system: ☐ Coord. Units

☒ Lat/Long ☐ UTM ☐ StatePlane ☐ deg ☐ deg min

☐ Other (specify): ☐ m ☐ ft

Datum: ☒ NAD83/WGS84 ☐ 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: 41.39968

Longitude: 81.88037

Coord. Accuracy: ☒ m ☐ ft +/- 3

GPS File Name: 3367

Plot size for cover data: .1 (hectares)

X-axis Bearing of plot: 216 []

Depth: (1-5): 4

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

Camera No.: 4

Photo No.: C4878

Plot placement: ☒ TRTS ☐ Representative

☐ Random ☐ Stratified Random ☐ Transect component

☐ Systematic (grid) ☐ Capture specific feature ☐ Other

Minimum required fields in Bold and Underlined

Authority: G&C Pub Date: 1998

TAXONOMIC STANDARD

high modera. low not simpl

vascul. ☒ n/a

bryo ☒

lichen ☒

TAXONOMIC STANDARD

Effort Level: ☒ Very thorough

☐ Accurate ☐ Hurried

☐ Hurried

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

Plot NOT SAMPLED: ☐ Other

Perm. water ☐ Paved ☐ Slope ☐ Safety

SAMPLING QUALITY*

Effort Level: ☒ Very thorough

☐ Accurate ☐ Hurried

☐ Hurried

Diagram: ☒ Plot origin ☒ GPS location ☐ photo taken, ☐ location of

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

Location: Park on gravel pull-off on NE side of Spafford Rd. at the intersection of Valley Pkwy and Spafford Rd. Plot is ~350m NE of parking area. You will need to cross Rocky River and the whole area is thick with

Rationale: GRTS

Veg Characterization: The canopy is dominated by drying Ash and Fraxinus with Box Elder and a Sycamore. The shrub layer is dominated by Lindera and Crataegus. The herb layer is dominated by Lindera, Monarda, and Leersia.

OVER

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

Project Label: PCAP

Project Name: 02RR 2015

Plot No.: 3367

Page 2 of 2

MODIFIED NATURESERVE CLASS*

CODE (on separate form):

L01

COMMUNITY NAME:

Mesic Floodplain Forest

HOMOGENEITY

☒ Homogeneous
 ☐ Compositional trend across the plot

☐ Conspicuous inclusions
 ☐ Irregular/pattern mosaic

DISTURBANCES

type*	severity**	yrs ago	% of plot	description
Human	MH	5-10	50	Power line canopy tree management
Natural	MH	5+	50	EAB
Fire				
Cut	ML	0	100	Deer browse, SFI
Animal				↓ 10-1-15
Other				

HYDROLOGIC REGIME*

☐ Upland (seldom flooded)
 ☐ Intermittently flooded

☐ Intermittently/seasonally saturated
 ☐ Semipermanently flooded

☐ (seldom flooded)
 ☐ Permanently flooded

☐ Permanently/Semipermanent. saturated
 ☐ Tidal/Seiche flooded daily

☐ (dry <1/yr. seldom flooded)
 ☐ Tidal/Seiche flooded monthly

☐ Occasionally flooded (<1/yr)
 ☐ Tidal/Seiche flooded irregular

☒ Temporarily flooded
 ☐ (e.g. wind, storms)

☐ Unknown

SALINITY*

☐ Saltwater
 ☐ Brackish
 ☐ Fresh

☒ Upland (n/a)

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

The stand is somewhat un-even-aged and sparse. Mature Ash are dying from EAB and other species under the power lines are declining. At least one tree was girdled and more outside the plot are the same. This plot is terrible to set up and work in. There is a botanical hot spot on the left side of Mod 8. Microstegium is established in at least 3 patches throughout the plot. There is a significant amount of flood debris in the back of the plot. Some Lindera are in decline.

Current Land Use: CMP

Former Land Use:

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

CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet

Page 1 of 4

Project Label:

PCAP

Project name: 02RR2015

Plot no.: 3367

Total modules:

10

Intensive modules: 4 Plot configuration: 2x5

Plot area (ha): .1



Cleveland Metroparks

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

Estimate for each intensive module:

%open water
%unvegetated open water
%unveg. ground (bare soil)
%unveg. litter (bare litter)

Strata - Cov. entire plot

S H (F) (A) Br

Species

C

Voucher #

depth

corner

mod

corner

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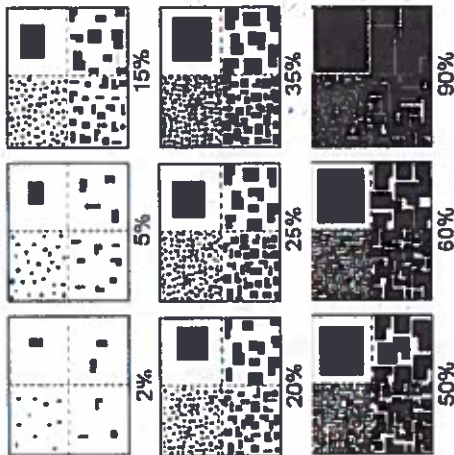
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EXAMPLES OF PERCENT OF AREA COVERED

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



BROWSE RATING NARRATIVE DESCRIPTION

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

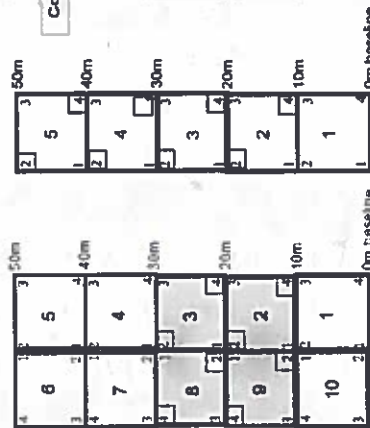
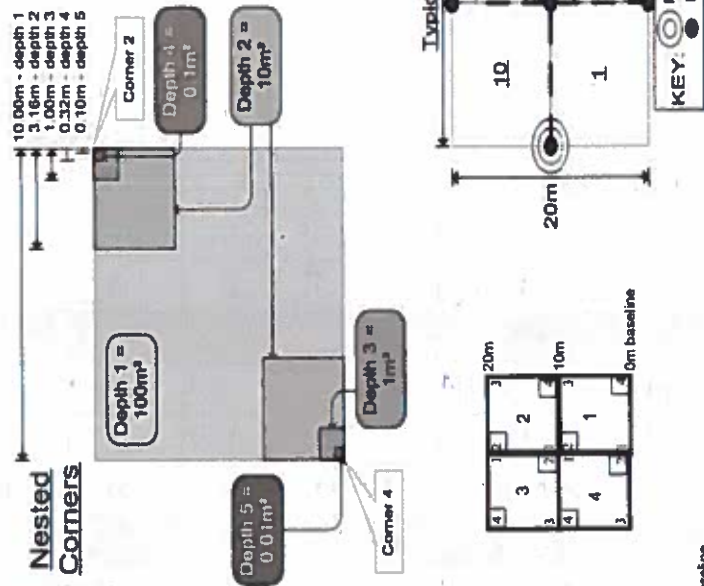
MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas.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

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

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

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

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



CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet

Page 2 of 4

Project Label:

PCAP

Project name: 02RRZ015

Plot no.: 3367

Total modules:

10

Intensive modules: 4 Plot configuration: 2x5

Plot area (ha): .1



Cleveland Metroparks

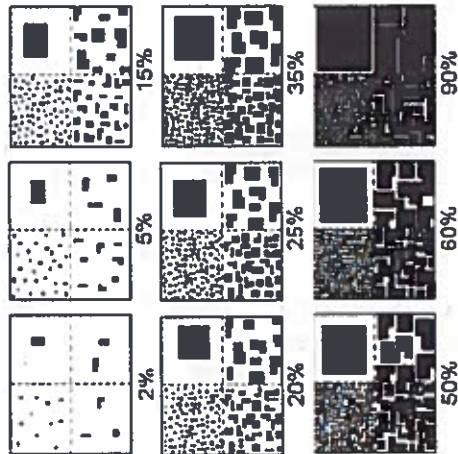
Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

S	H	(F)(A) Br	Species	C	Voucher #	Estimate for each intensive module:		%unvegetated open water		%unveg. ground (bare soil)		%unveg. litter (bare litter)	
						mod	corner	mod	corner	mod	corner	mod	corner
2	2		Arisaema triphyllum var. triphyllum			2	4	2	2	3	4	3	2
2	2		Geranium maculatum			2	3	2	2	2	2	2	2
3	3		Polypodium virginianum			2	3	2	2	2	2	2	2
1	1		Erechtites hieracifolia			1	3						
2	2		ALIBERIA PETIOATA			2	2	2	2	2	2	2	2
2	2		Boehmeria cylindrica			2	2	2	2	2	2	2	2
2	2		Aster rugosus			1	2	2	2	2	2	2	2
2	2		Quercus sp. (seedling)			1	1						
2	2		Oxalis stricta			1	2						
2	2		Myosotis scorpioides			1	3						
2	2		Geranium maculatum			1	5						
2	2		Carex X amphibola			1	2						
2	2		Carex X radiata			1	2						
2	2		Viburnum dentatum			1	2						
1	1		Prunus serotina			1	2						
2	2		Asteraceae			1	2						
2	2		Arisaema draconium			1	2						
2	2		Viola			1	2						
2	2		Geranium maculatum			1	3						
2	2		10 Solanum dulcamara			1	3						
2	2		Carex X scirpita var. scirpita			1	3						
2	2		Eriophorum			1	3						
2	2		Vitis sp. (seedling)			1	2						
2	2		Juncus tenuis			1	2						
2	2		Hypericum punctatum			1	2						

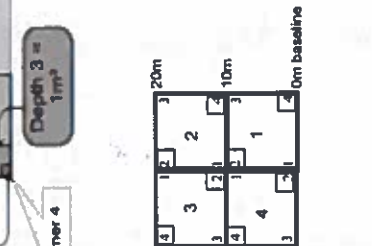
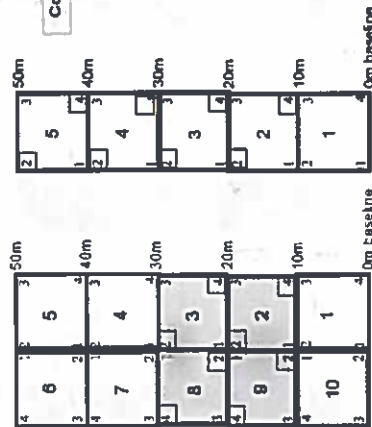
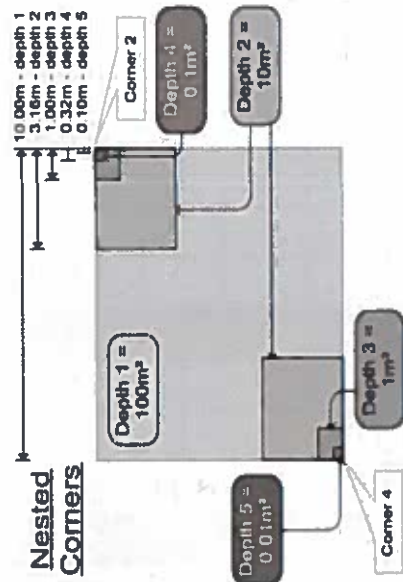
EXAMPLES OF PERCENT OF AREA COVERED

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.

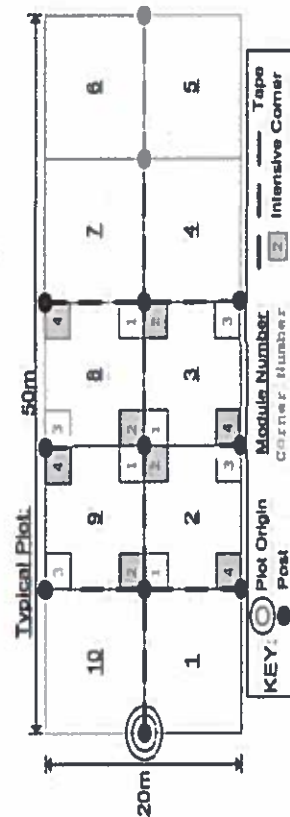
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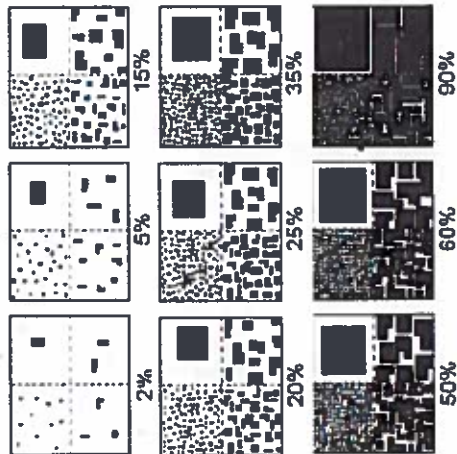
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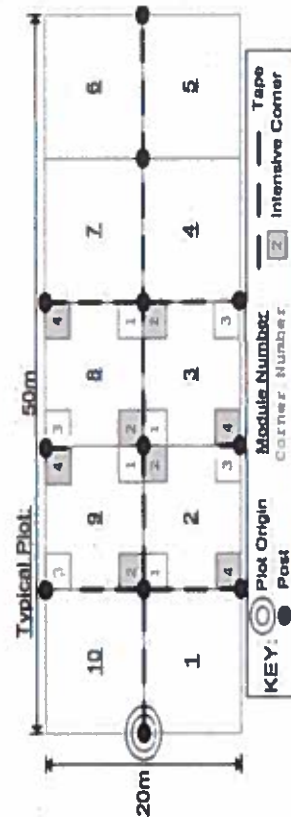
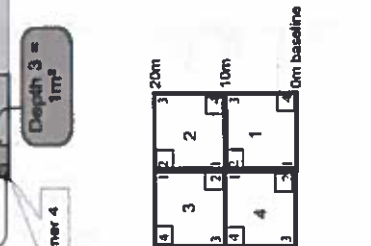
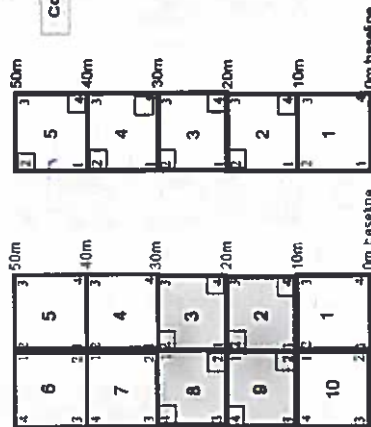
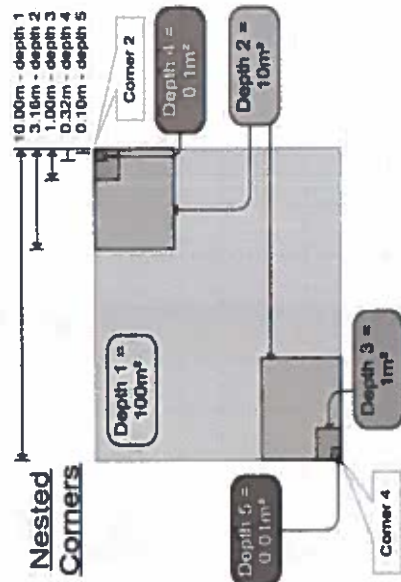
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4	2-5%	0.035
5	5-10%	0.075
6	10-25%	0.175
7	25-50%	0.375
8	50-75%	0.625
9	75-95%	0.850
10	95-100%	0.975

Nested Corners



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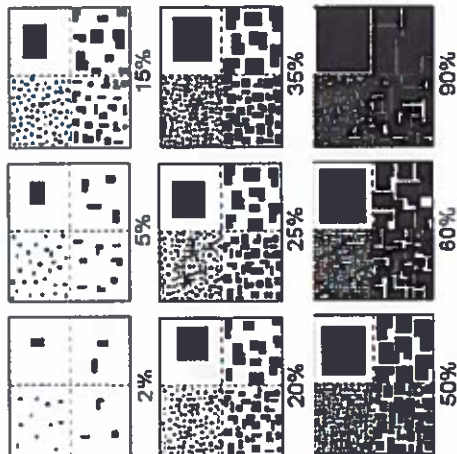
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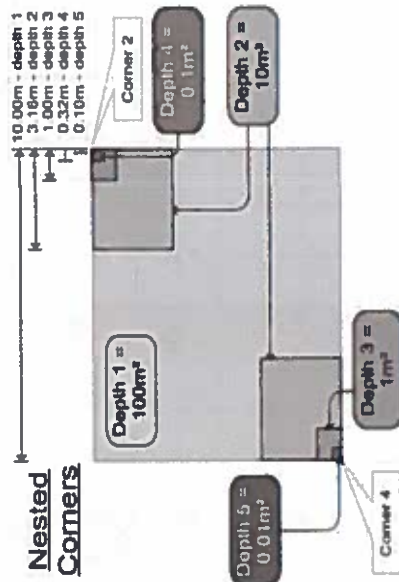
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1	solitary or few	0.0001
2	0-1%	0.005
3	1-2%	0.015
4	2-5%	0.035
5	5-10%	0.075
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Nested Corners



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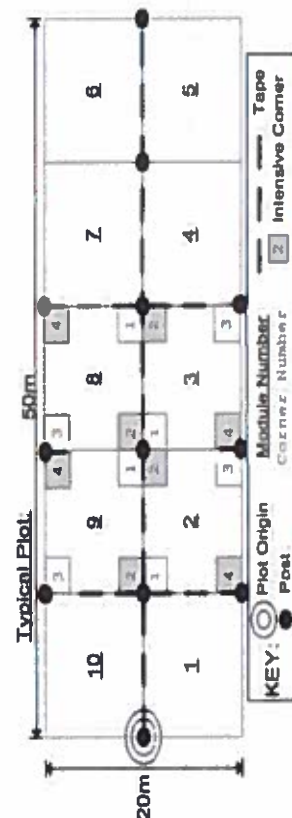
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Page 1 of 1

02 ~~01~~ RFR2015 Plot no.: 3367

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Page of

Plot no.: _____

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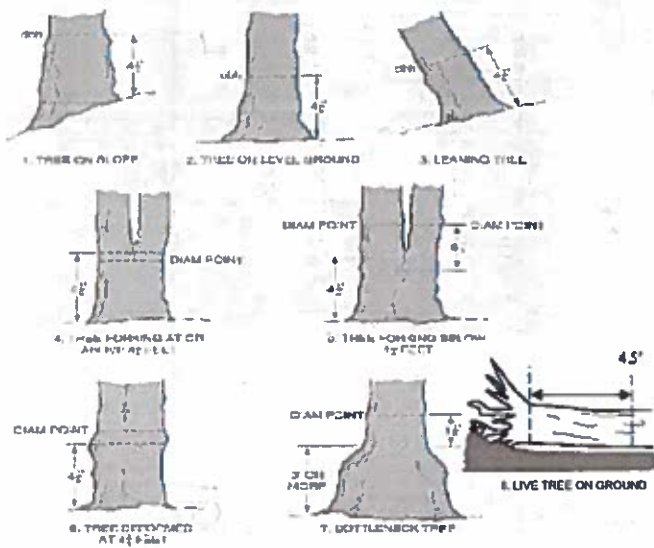
08/19/2015

Page: 1 of 1

08/19/2015

may have grown since - CKM

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: 01 RR 2015

Plot No.: 3367

Page: 2

of

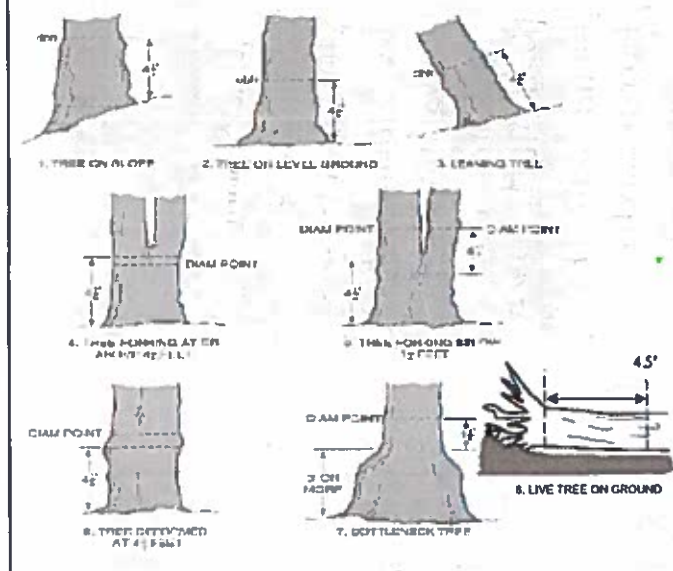


Explain subsample (additional room on back):

mod #	species	c	voucher#	# stems 0-1.4m browsed	% sub or super sample	# shrub clumps	size class (cm) woody stems > 1.4m												
							1 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)		
4	Juglans nigra																		
4	Crataegus sp.								••	••									
4	STANDING DEAD																		
4	Toxicodendron radicans								•										
4	Ulmus americana																		
4	Acer negundo																		
4	ROSA MULTIFLORA			4															
5	Lindera bentayn			8	86%	10													
5	Acer negundo																		
5	Juglans nigra			2															
5	Vitis riparia							•••											
5	Parthenocissus quinquefolia							•											
5	Crataegus sp.			3					••	••									
5	STANDING DEAD																		
5	Toxicodendron radicans			1															
5	ROSA MULTIFLORA			2															
6	Lindera bentayn			15	35%	12													
6	Fraxinus sp.																		
6	Phytolacca occidentalis																		
6	Vitis riparia			2				••	•										
6	Crataegus sp.								••	••									
6	Parthenocissus quinquefolia								•										
6	STANDING DEAD																		
6	ROSA MULTIFLORA			8															

2010 10/14 as Fraxinus

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)

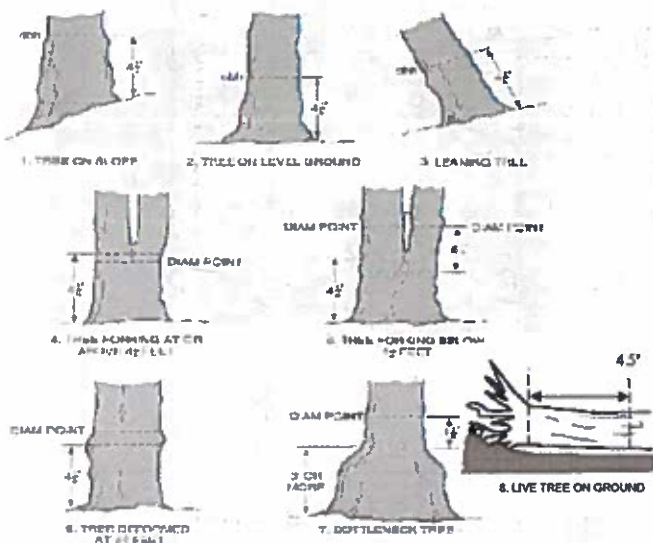
- All main branches contain fine twigs (newly dead).
- Over 50% of main branches have fine twigs.
- Less than 50% of main branches have fine twigs.
- Stem still standing and tertiary main branches present.
- Central stem still standing.

Chemical Medications

Chemical Medications

[illegible]

DBH Measurement Rules



Woody Stem Deer Browse

Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

Record using the tally system from 1 to 10



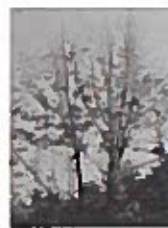
1



2



3



4



5

ASH CANOPY CONDITION

1. **Healthy, full canopy:** A healthy ash canopy is normally thinner than many other trees such as maple.
2. **Thinning canopy:** There aren't as many leaves as there ought to be, but all top branches exposed to sunlight have leaves.
3. **Dieback:** Canopy is thinning and some top branches exposed to sunlight are dead (have no leaves). Lower branches, not exposed to sunlight, die naturally and are not considered.
4. **>50% Dieback:** The canopy has less than half of the leaves that should be there and/or half of the top branches are dead.
5. **Dead canopy:** No leaves remain in the canopy portion of the tree. It still counts as a 5 even if there are epicormic sprouts below the canopy (lowest branch) on the trunk.



A

B

C

D

E

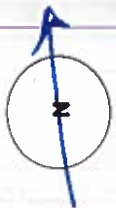
ASH CANOPY BREAKUP CONDITION (for dead trees):

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

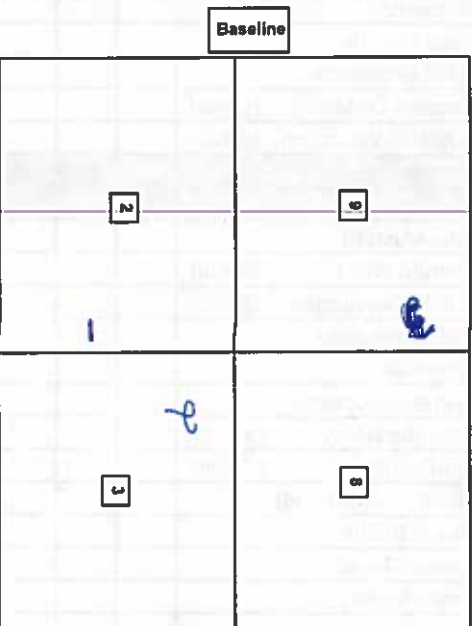
- A: All main branches contain fine twigs (newly dead).
- B: Over 50% of main branches have fine twigs.
- C: Less than 50% of main branches have fine twigs.
- D: Stem still standing and tertiary main branches present.
- E: Central stem still standing.

Module ID	Tree ID	Species	Dead	Voucher #	DBH (cm)	HT (m)	Ash condition	Dead condition	# Exit holes	Epilimnic present	Woodpecker holes
2	1	FRAXINUS SP.			41	4	4	5	0	1	1
3	2	FRAXINUS SP.			59.2	5	5	1	4	1	1
4	3	FRAXINUS SP.			18.3	2	2	0	4	1	1
5	4	FRAXINUS SP.									
6	5										
7	6										
8	7										
9	8										
10	9										
11	10										
12	11										
13	12										
14	13										
15	14										
16	15										
17	16										
18	17										
19	18										
20	19										
21	20										
22	21										
23	22										
24	23										
25	24										

• If Ash Condition scores 5 (dead) provide breakup score (A-E)
Count EAB exit holes 1.25m² x 21.5m
Woodpecker and epicormic marked present (1) or absent (0)



*** 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	INW		
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: BAR 2015

Plot No.: 3367

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 time)
1	NONE PRESENT													
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	Asian Longhorned Beetle
NONE PRESENT	Hemlock (HWA)		Other Pest or Pathogen
NONE PRESENT	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

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.

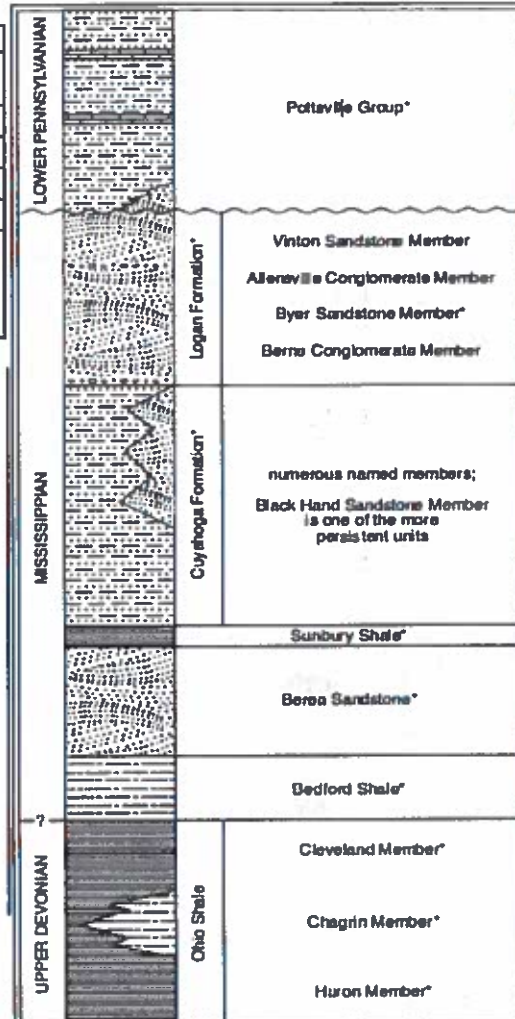
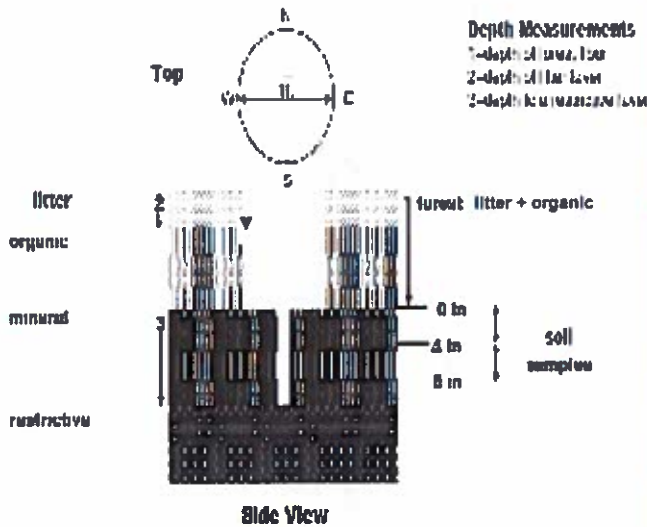


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses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

08/18/2015

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
	moisture color
	%moist
	oxid roots
	texture*
	redox features**
	hydr. cond.***
20 cm	matrix color
	moisture color
	%moist
	oxid roots
	texture*
	redox features**
	hydr. cond.***

* refer to texture classes on reverse side

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

*** Circle one:

I=indurated S=saturated M=moist D=dry

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

MOD 2: Castings present
 MOD 3: Castings present
 MOD 8: Worms and castings present

MOD 9: Castings present

Soil Collection Method	Herzen (A, B, C)
2.2.2.9 composite	A
Soil Survey Information	
Soil Series/Type:	
Soil Series Source:	Ohio Soil Survey
Landform type:	
Depth to root layer:	
Parent Material:	
Drainage:	
<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

module	1 liter+ organic depth (cm)	2 liter depth (cm)	water depth (cm)	depth sat soil (cm)
2	0.2	0.2	0	0
3	0.1	0.1	0	0
8	0.4	0.4	0	0
9	0.4	0.4	0	0

EARTH SURFACE & GROUND COVER			
Underlying Earth Surface*	Ground Cover	percent	percent
Gravel = 100%	percent	(2x) < 100%	
litic soil	0	Coarse Woody Debris***	13
Mineral Soil	100%	Fine Woody Debris***	8
Gravel-Cobble*	0	Litter	4
Boulders*	0	Duff (Ferm. + Humus)	2
Bedrock	0	Bryophyte-Lichen	2
Gravel-Cobble = 1/16-10"	Water		2
Boulder = > 10 in	Bare Soil		3
*** > 5 cm in diameter	Root Trail		
**** < 5 cm in diameter	Other		

COVER BY STRATA

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

%

Strata	Height Range (m)	Total Cover (%)
Tree	5	33
Shrub	0.5-5	93
Herb	0 - 0.5	88
(Floating)*		
(Aquatic)*		

* rooted and floating or slightly emersed

** submerged, most plant mass below surface

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

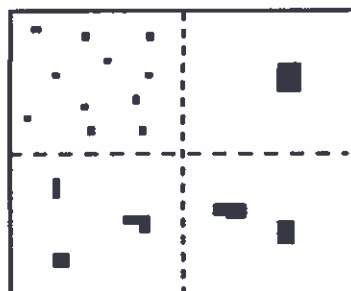
TRAIL INFORMATION:	
record type and cover for each	%Cover
Type	
All Purpose	
Bridle	
Hiking sanctioned	
Boatleg unsanctioned	
Gravel	
Other	3

STAND SIZE

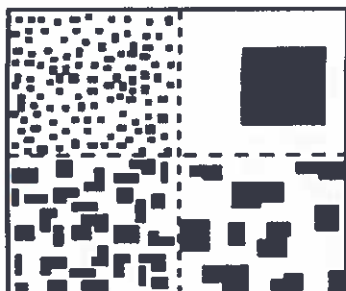
- ☐ >600 x plot size
- ☐ > 100 x plot size
- ☒ 10-100 x plot size
- ☐ 3-10 x plot size
- ☐ 1-3 x plot size
- ☐ < plot size

PERCENT MOTTLES (USE CLASS CODES):

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



2%



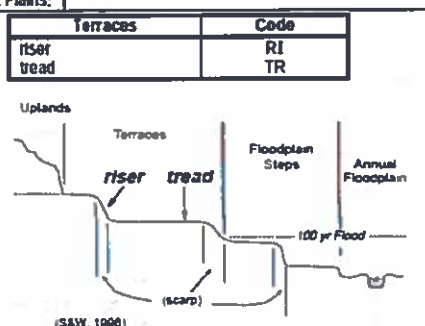
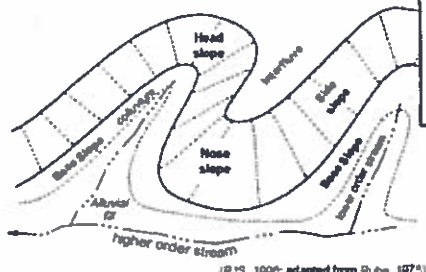
20%

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

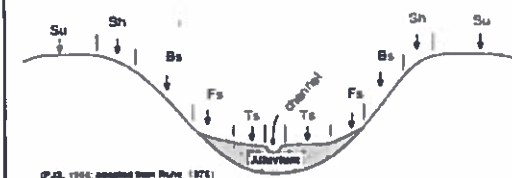
Geomorphic Component - Three-dimensional descriptors of parts of landforms or microfeatures that are best applied to areas. Unique descriptors are available for Hills, Terraces, Mountains, and Flat Plains: e.g., (for Hills) nose slope or NS.

Hills	Code	NASIS
	PDP	
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.