CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

GENERAL INFORMATION

Project Label: PCAP

Project Name: 015C 2011

Plot Name: Polo Field Oxbow

Plot No.: 1108

○ Level 4 (no nested corners sampled)

■ Level 5 (nested corners sampled)

Date (mm/dd/yyyy): 07/12/2011

End date (if > 1 day): / /

Party	Role**
S. Eysenbach	Plot leader
J. Mack	botanist
J. Murphy	Asst
J. Vanderhorn	Asst
M. Brath	Asst

** 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.	X			n/a
bryo			X	
lichen			X	

TAXONOMIC STANDARD

Authority: G&C **Pub Date:** 1998

LOCATION

State: OH **County:** Cuyahoga

Quadrangle: Chagrin Falls

Local Place Names: Polo Field

Landowner: C. M.

X-axis Bearing of plot: [108] °

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: 41.45249

Longitude: 81.40716

Coord. Accuracy: ■ m ○ ft 22 --

GPS File Name: 1108a

Plot size for cover data: 0.05 (hectares)

○ Stems not sampled on this plot ■ Stems absent

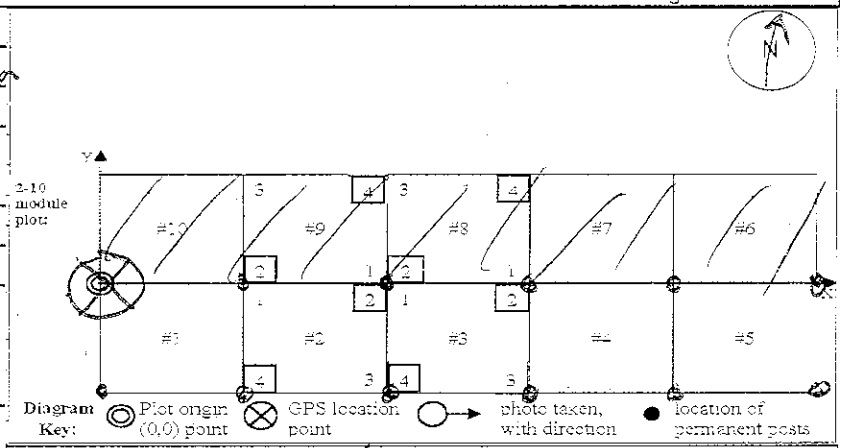
○ Stems present **Plot size stems:** _____ (ha)

Depth: (1-5): 4

Intensive modules: ~~2, 3, 8, 9~~ 1, 2, 3, 4 (EDITED/MODIFIED)

Camera No.: 2

Photo Nos.: 1061



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.

Plot is old oxbow on floodplain with broken canopy over middle. Canopy trees outside wetland edge (Sycamore, walnut buckeye. Dense emergent vegetation mix of shade spp. ~~except some spring flowers~~ with more full sun. Plot more shade spp in mods 1-2 grading to sunnier in mods 3-5

OVER

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

CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

Project Label: PCAP Project Name: OIS 2011 Plot No.: 1108

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=E Conf=H
- ☐ 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=G Conf=M
- ☑ EMERGENT ☑ marsh ☐ wet meadow ☐ open bog Fit=F Conf=H
- ☐ SHRUB ☐ shrub swamp ☐ tall sh. bog ☐ tall sh. fen Fit=___ Conf=___

MODIFIED NATURESERVE CLASS*:

CODE (on separate form): Q3 Fit=G Conf=M

COMMUNITY NAME: mixed emergent marsh / forest seep / Shale River / shale seep

STAND SIZE

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

SALINITY*

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

(by default unless plot is a wetland)

DISTURBANCES

type*	severity**	yrs ago	% of plot	description
Human	H?	250	100	farming ?
Natural				
Fire				
Cut				
Animal	MH	0	100	deer browse
Other				

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

Current Land Use: wetland in park

Former Land Use: farmed ?

HYDROLOGIC REGIME*

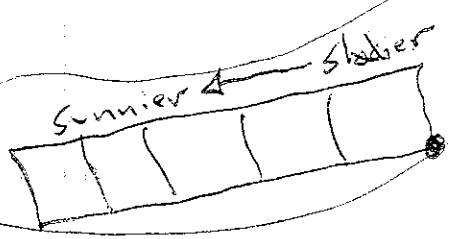
- ☐ Upland (seldom flooded)
- ☐ Intermittently/seasonally saturated (seldom flooded)
- ☐ Permanently/Semipermanent. saturated (dry <1/yr, seldom flooded)
- ☐ Occasionally flooded (<1/yr)
- ☐ Temporarily flooded
- ☑ Intermittently flooded
- ☐ Semipermanently flooded
- ☐ Permanently flooded
- ☐ Tidal/Seiche 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

somewhat atypical marsh w/ partial canopy in old ox bow

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



to polo field

CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet Page 1 of 2

Project Label: PCAP Project name: 015c 2011 Plot no.: 1108

Total modules: 5 Intensive modules: 4 Plot configuration: 1 x 5 Plot area (ha): 0.05

Visual est. % open water entire site: 0 Visual est. %unveg.o.w. entire site: 0 Visual est. %invasives entire site: 2

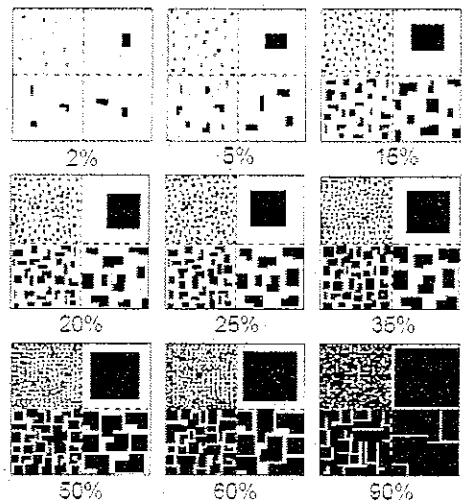
Br = Browse Level. Use cover classes to describe amount of browse per species over entire plot

Strata - Cov. entire plot

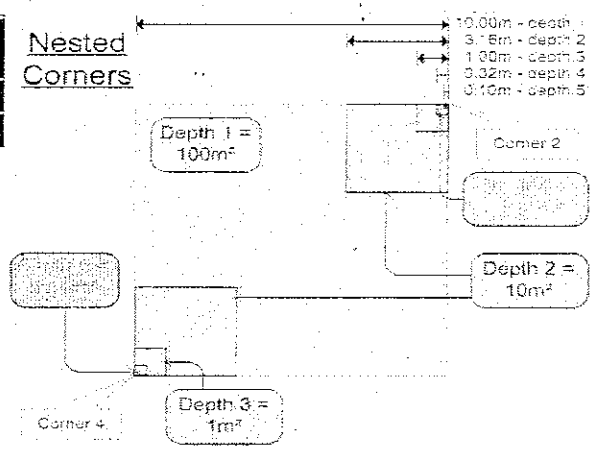
T	S	H	(F)	(A)	Br	Species	c	Voucher #	mod 1 depth	mod 1 cov	corner 1 depth	corner 1 cov	mod 2 depth	mod 2 cov	corner 2 depth	corner 2 cov	mod 3 depth	mod 3 cov	corner 3 depth	corner 3 cov	mod 4 depth	mod 4 cov	corner 4 depth	corner 4 cov	mod R depth	mod R cov	corner R depth	corner R cov
						Estimate for each intensive module:			1	4	1	2	2	4	2	2	3	4	3	2	4	4	4	2	R	R		
						%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	4			1	3			1	4			1	5						
						%unveg. litter (bare litter)			1	0			1	0			1	0			1	0						
		6			0	Symplocarpus foetidus			4	6			1	4														
		6			0	Boehmeria cylindrica			3	6			1		2	3			3	1	3	2						
		6			0	Carex emoryi	X	① JJM 045	3	6							-1	1			1	2						
		5			0	Canna arundinacea			3	5			3	2														
		4			8	Solanum dulcamara			3	4			3	4			2	2										
		1			0	Myosotis scorpioides	/	② JJM 044	2	1			4	1					2	4	2	5	4					
		1			0	Bidens sp.			2	1																		
		6			0	Lysimachia nummularia			2	6			2	4					4	5								
		6			0	Onoclea sensibilis					4	6	4	5			4	6			4	5	4					
		4			0	Iris pseudacorus			1	4											1	4						
		3			10	R. beg. americanum	/	③ JJM 046			2	3																
		1			10	Peltandra virginica			1	1											-1	1						
		1			10	Scutellaria sp.					2	1																
	4	4			0	Lonicera morrowii					4	4			3	4												
		5			0	Sparganium eurycarpum					3	5			3	5	4	6	3		2	5	3					
		1			0	Mosses sp.					3	1	/	/														
		1			0	Galium palustre agg.	X	④ JJM 047			3	1																
		4			0	Leersia oryzoides			1	4			4	7			3	6			2	6	2					
		1			0	Bidens frondosa							-1	1														
		5			0	Polygonum sp.							1	3					2	5								
		1			0	Alisma subcordatum									2	1			3	1	2	2						
		1			10	Penthorum sedoides																						
		2			0	Carex lupulina													2	2	-1	2						
		2			6	Lysamachia terrestris		⑤ JJM 048											2	2	2	3	2					
		2			6	Sagittaria latifolia																	3	3				

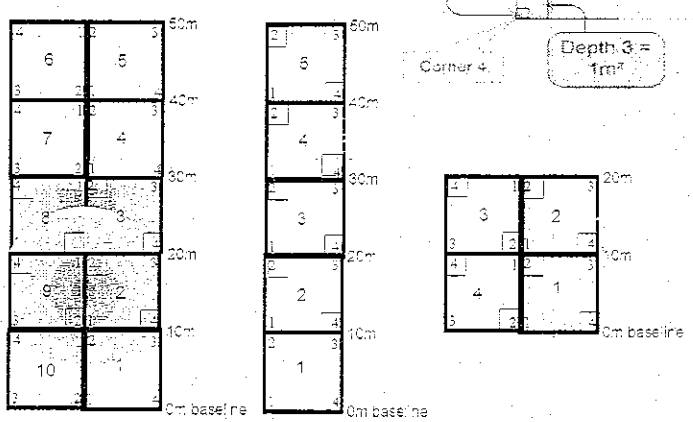
EXAMPLES OF PERCENT OF AREA COVERED

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.

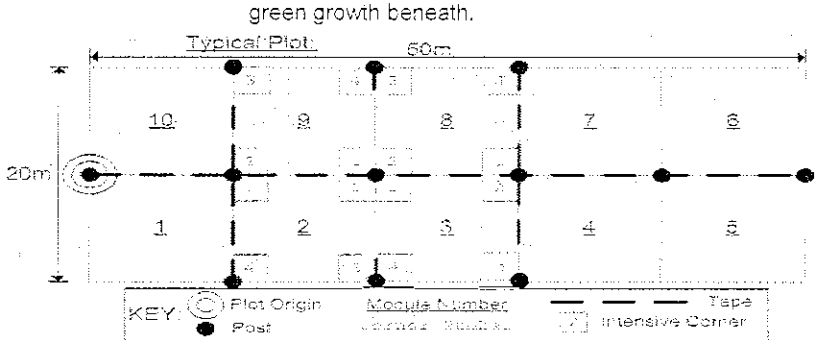
MEDIUM LOW values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse areas.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



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Visual est. % open water entire site: 0 Visual est. %unveg.o.w. entire site: 0 Visual est. %invasives entire site: 2

The Natural Metroparks

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

Strata - Cov. entire plot

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	mod cov	corner depth	corner cov
						Estimate for each intensive module:			R	R	4	–	3	2	2	4	2	2	1	4	1	2					R	R				
						%open water			1				1				1				1											
						%unvegetated open water			1				1				1				1											
						%unveg. ground (bare soil)			1				1				1				1											
						%unveg. litter (bare litter)			1				1				1				1											
		1				Lysamachia ciliata			R	1																						
	1					Fraxinus pennsylvanica			R	1																						
		1				Asclepias incarnata			R	1																						
						Acer CANOPY		TREES		ADDED				BELOW																		
3						Aesculus glabra				F	1	4																				
6						Platanus occidentalis				F	3	6			4	6			4	7												
6						Juglans nigra					1	5	4	6			4	5			4	6										
		1				Apios americana			R	1																						

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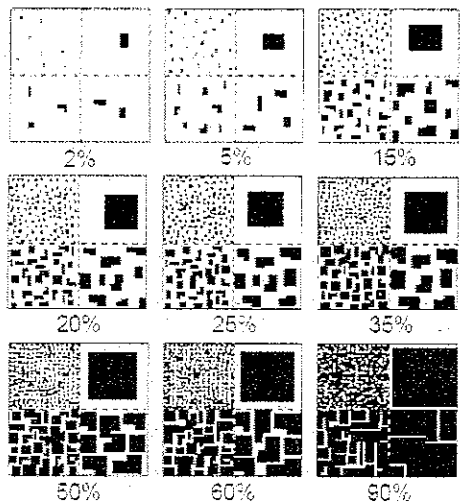

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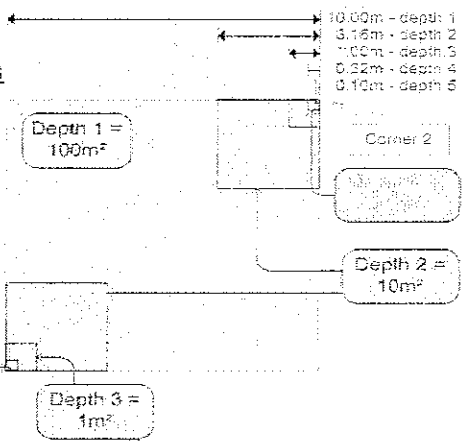
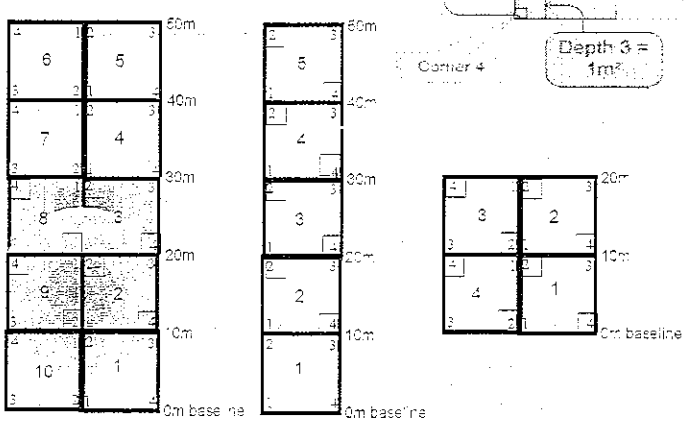
Nested Corners





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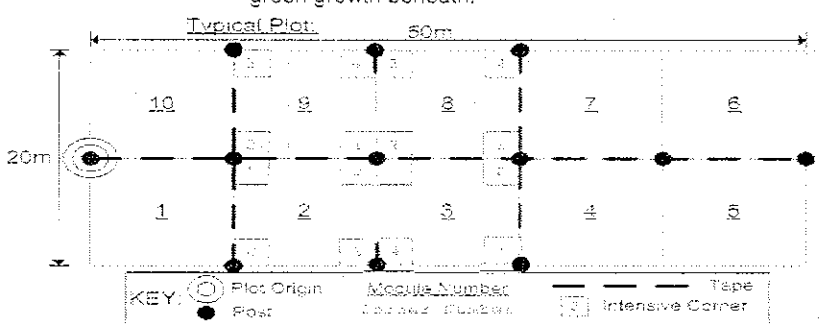


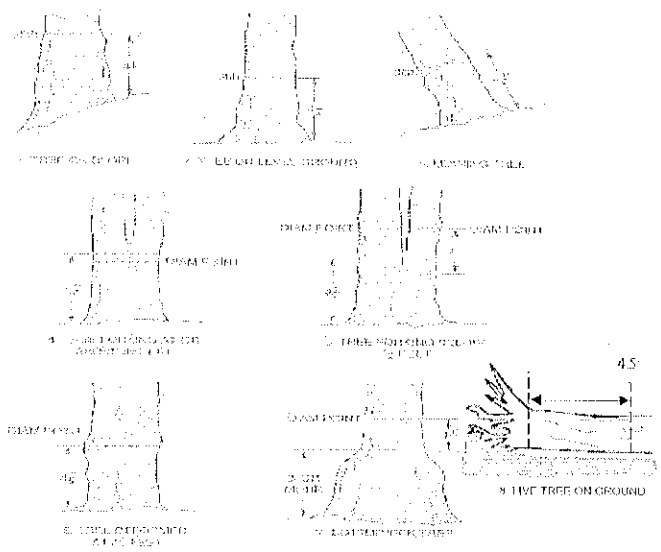
CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet

Project Label: PCAP Project Name: OISC2011 Plot No.: 1108 Page: 1 of 1

Explain subsample (additional room on back):

mod #	species	c	voucher#	# stems 0.5-1m browsed	% 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)
	No Woody																

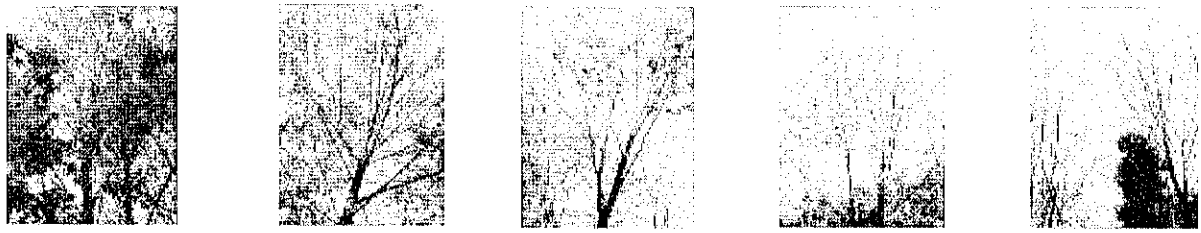
DBH Measurement Rules



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 - Plant Cover and Earth Surface

Project Label: PCAP Project Name: 01SC2011 Plot No.: 1108

COVER BY STRATA (ID estimate using midpoints of 5 ex: 3, 8, 13, 18%)

Strata	Height Range (m)	Total Cover (%)
Tree	7 - 5	43
Shrub	15 - 5	3
Herb	< 1.5	80
(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*		Ground Cover	
(Sum = 100%)	percent	(Each ≤ 100%)	percent
Histosol	0	Coarse Woody Debris***	3
Mineral Soil	100	Fine Woody Debris****	3
Gravel-Cobble*	0	Litter	0
Boulder**	0	Duff/Ferm. - Humus	0
Bedrock	0	Bryophyte-Lichen	3
		Water	0
		Bare Soil	13
		Road/Trail	0
		Other	0

* Gravel-Cobble = 1/16 to 10 in

** Boulder = > 10 in

*** ≥ 3 cm in diameter

**** <3 cm in diameter

TRAIL INFORMATION: If trail falls in plot record type and cover for each

Type	%Cover
□ All Purpose	
□ Bridle	
□ Hiking sanctioned	
□ BootLeg unsanctioned	
□ Gravel	
□ Dear	

No Trail

Remember: in a standard 2x5 plot each module = 10% cover

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

Module	N	S	E	W
1	19	16	28	25
2	16	29	49	39
3	33	[illegible]	40	25
4	11	7	34	30

714

MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Ranks for microhabitat features. Select one or select two and average the score. NOTE: if mod falls on a slope automatically gets ranked based on steepness (1-3)

Slope 1 = slight elevational grade across module (hill) Slope 2 = falls on slope ~20° Slope 3 = maximum steepness that can be safely sampled ~45°

0 feature is absent or functionally absent (Golf Course Flat)

3 feature is present 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 hussocks depth 3 1X1m (count)	no. of hummocks depth 2 3.16X3.16m (count)	no. macro. depressions depth 1 10x10m (count)	c.w.d 3-12 cm depth 1 10x10m (count)	c.w.d 13-40cm depth 1 10x10m (count)	c.w.d >40 cm depth 1 10x10m (count)	microhab. interspers. depth 1 10x10m (rank)	microhab. interspers. SLOPE 10x10m (rank)
1	2,4	0	0	2	3	3	0	6	0
2	2,4	0	0	2	1	0	0	5	0
3	2,4	0	0	3	0	0	0	5	0
4	2,4	0	0	2	2	0	0	5	0

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

macro depressions = macrotopographic depressions within 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

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 or person standing ~1.6 m away.

* Landform Index (position within landscape)

** Terrain Shape Index (site microtopographic shape)

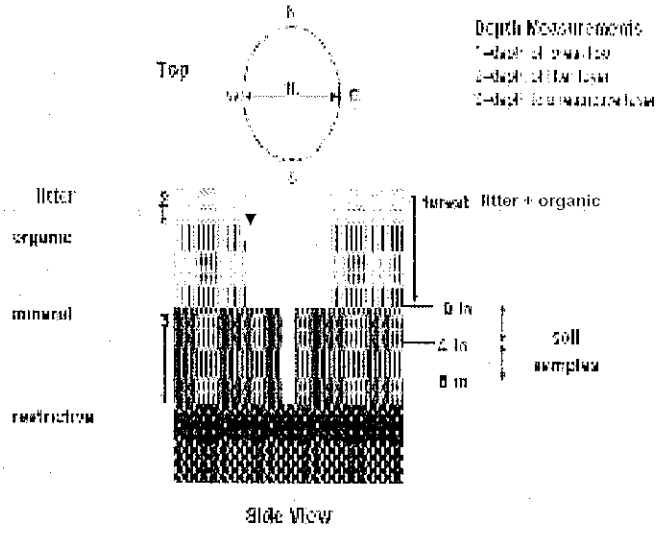
COVER BY STRATA

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.



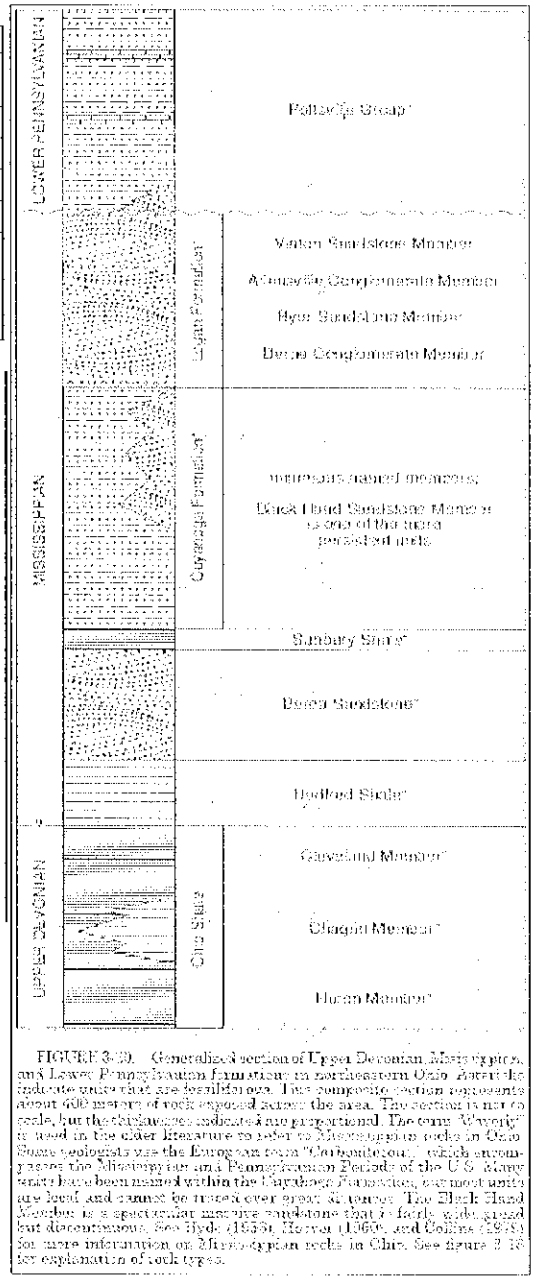


FIGURE 3-30. Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Arrows indicate units that are fossiliferous. This composite section represents about 600 meters of rock exposed across the area. The section is not to scale, but the thicknesses 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 conglomerate that is fairly widespread but discontinuous. See Hyde (1953), Horvat (1960), and Collins (1979) for more information on Mississippian rocks in Ohio. See figure 2-16 for explanation of rock types.

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

Project label: PCAP Project Name: CISC 2011 Plot No.: 1108

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

Soil pit module # ____ (one per entire plot)

5 cm	matrix color	10 YR 4/2
	mottle color	NONE
	%mottle	NONE
	oxid roots	Y (N)
	texture*	2
	redox features**	Y (N)
	hydr. cond.***	I S (M) D
20 cm	matrix color	10YR 4/2
	mottle color	NONE
	%mottle	NONE
	oxid roots	Y (N)
	texture*	2
	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=inundated S=saturated M=moist D=dry

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

Earthworms throughout the plot when setting up. None in the pit.

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)
1, 2, 3, 4 ~~2,3,4,9~~ composited	A

Soil Description/notes:

Web Soil Survey Information:

Soil Series/Type: Tioga loam

Soil Series Source: Ohio Soil Survey

Landform type: flood plains

Parent Material: Alluvium

DRAINAGE

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

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
1	✓	1	3
2	✓	1	3
3	✓	1	3
4	✓	1	3

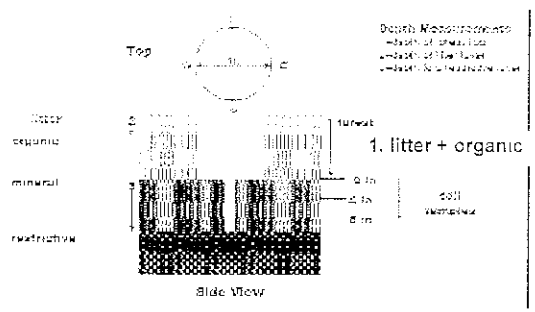
SOIL DEPTH MEASUREMENT INSTRUCTIONS: Measure to the nearest 0.1 cm in center of intensive modules. If >30.5 cm, record as >30

mod#	1 litter – organic depth (cm)	2 litter depth (cm)	3 restrict. depth (cm) WSS*	water depth (cm)	depth sat soil (cm)
1	0	0	>100	0	>30
2	0	0	>100	0	>30
3	0	0	>100	0	>30
4	0	0	>100	0	>30

Length of soil probe = 125 cm

* Use Web Soil Survey for #3 Restrictive layer dept.

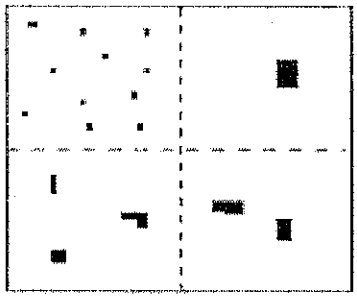
Depth to restrictive layer greater than 80"



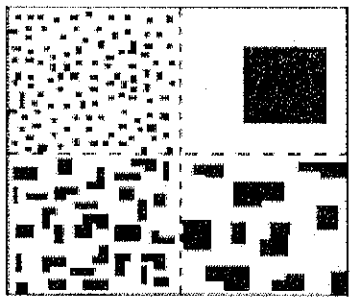
WSS AM 7/15/11

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%



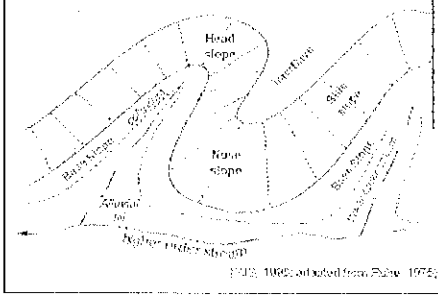
20%

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.

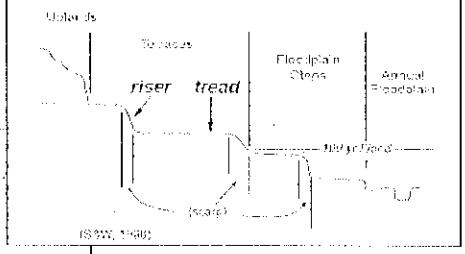
0= Organic
1= Loamy
2= Clayey
3= Sandy
4= Coarse Sand
9= Not measured - make plot note

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
interfluve	IF	IF
head slope	HS	HS
nose slope	NS	NS
side slope	SS	SS
base slope	---	BS

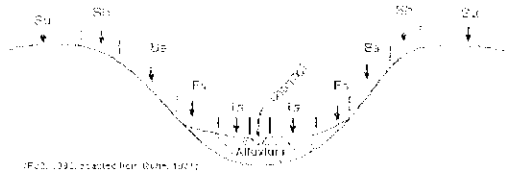


Terraces	Code
riser	RI
tread	TR



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



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/SEMIPERMANENTLY 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

SEMIPERMANENTLY 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

CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey

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

Presence
X: yes

Tier 2: Assess as Needed		# of Plants				comments
		NE	SE	SW	NW	
Acer platanoides	Norway Maple					
Ailanthus altissima	Tree of Heaven					
Lonicera japonica (vine)	Japanese Honeysuckle					
Lythrum salicaria (wetland)	Purple Loosestrife					
Aegopodium podagraria (G-cover)	Bishop's Goutweed					
Celastrus orbiculatus (vine)	Asian Bittersweet	1		~2		
Torilis sp.	Hedgeparsley					
Conium maculatum	Poison Hemlock					
Rhamnus cathartica	Common Buckthorn (shrub)					
Berberis thunbergii	Japanese Barberry (shrub)	1	1	1		
Alnus glutinosa	European Alder					
Dipsacus laciniatus	Cut-leaf Teasel					
Elaeagnus umbellata	Autumn Olive (shrub)					
Lonicera maackii	Amur Honeysuckle (shrub)					
Euonymus fortunei	Wintercreeper					

of Plants
1: 1-10
2: 11-50.
3: 51-100
4: 101-1,000
5: >1,000

Tier 3: Presence is of Interest		# of Plants				comments
		NE	SE	SW	NW	
Convallaria majalis (G-cover)	Lily of the Valley					
Coronilla varia (G-cover)	Crown Vetch					
Eleutherococcus pentaphyllus	Five-leaf Aralia (shrub)					
Pachysandra terminalis (G-cover)	Japanese Pachysandra					
Philadelphus coronarius	Mock Orange (shrub)					
Pulmonaria officinalis (G-cover)	Lungwort					
Rubus phoenicolasius	Wineberry					
Iris pseudacorus (wetland)	Yellow Flag Iris					
Ornithogalum umbellatum	Star of Bethlehem					
Viburnum opulus var. opulus	European Cranberry (shrub)				1	
Viburnum plicatum	Doublefile Viburnum (shrub)					

of Plants
1: 1-10
2: 11-50.
3: 51-100
4: 101-1,000
5: >1,000

Tier 4: Widespread and abundant		Presence				comments
		NE	SE	SW	NW	
Alliaria petiolata	Garlic Mustard	X	X	X	X	
Ligustrum vulgare	Common Privet (shrub)	X	X	X	X	Taking over NW
L. morrowii, L. tatarica	Bush Honeysuckles (shrub)	X	X	X	X	
Phalaris arundinacea	Reed Canarygrass					
Phragmites australis (wetland)	Phragmites					
Polygonum cuspidatum	Japanese Knotweed					
Frangula alnus	Glossy Buckthorn (shrub)			X	X	
Rosa multiflora	Multiflora Rose (shrub)	X	X	X	X	
Typha angustifolia, T. x.glauca	Cattails (wetland)					
Cirsium arvense	Canada thistle					
Dipsacus fullonum	Common Teasel					
Hesperis matronalis	Dame's Rocket	X	X	X	X	
Vinca minor (G cover)	Periwinkle					

Presence
X: yes

Note: For Ground-cover plants record "stem #" but in comment field describe # of colonies and patch size (S,M, L)

CLEVELAND METROPARKS Emerald Ash Borer - Fraxinus Sheet

Project Label: POAP Project Name: OISC2011

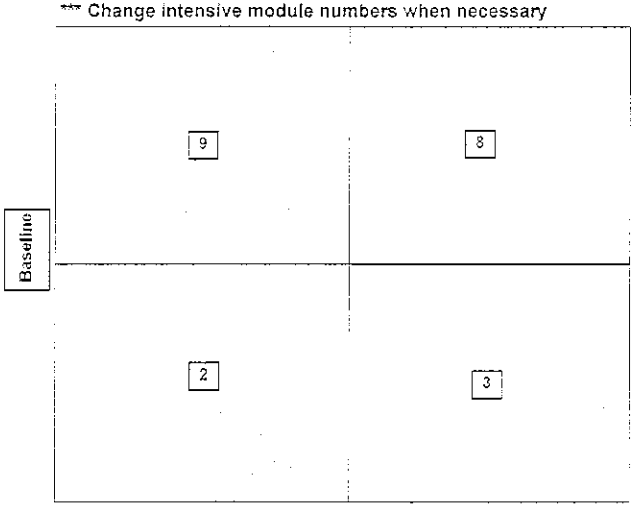
INTENSIVE MODULES ONLY *TREES ≥ 10CM ONLY*

Plot No.: 1108 Date: 7-12-2011

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

N

*** Change intensive module numbers when necessary



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

* If Ash Condition scores 5 (dead) provide breakup score (A-E)

Count EAB exit holes 1.25m≥ x ≥1.5m

Woodpecker and epicormic marked present (1) or absent (0)

FORM B-1: BUFFER SAMPLE PLOTS (PAGE 1)

Reviewed by (initials): _____

Site ID: PCBP SC 1108

DATE: 07 / 12 / 2011

Location: ○ AA Center ○ N ○ S ● E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply. Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent, 1 = Sparse(<10%), 2=Moderate(10-40%), 3 = Heavy (40-75%), 4 = Very Heavy (>75%)

	Buffer Plot 1	Buffer Plot 2	Buffer Plot 3
Canopy Type / Leaf Type	D / B	D / B	D / B
Absent	○	○	○
Flag			
Big Trees (>0.3m DBH)	4	4	3
Small Trees (<0.3m DBH)	4	3	4
Woody Shrubs, Saplings (0.5m-5m HIGH)	3	3	2
Woody Shrubs, Saplings (<0.5m HIGH)	3	3	3
Herbs, Forbs and Grasses	4	4	4
Bare ground	2	1	1
Litter, duff	3	3	2
Rock	1	1	1
Water	1	1	1
Submerged Vegetation	1	1	1

Stressor Presence/Absence – Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble.

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	●	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Till/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Roof Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEET FLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT TILLING, ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	●	●	●	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER, OR OVERUSE)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement, F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form.

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (Initial): _____

Site ID: PCAR 1108 SC **DATE:** 07/12/2011

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	○	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	◉	○	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other:	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other:	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other:	○	○	○	
										Other:	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ○ N3 ○ S3 ◉ E3 ○ W3 ○ Nearest practicable location (flag and comment below)

Flag: ☐

Latitude North: 41 45269 Longitude West: 81 46543

Use Decimal Degrees: NAD83

Flag	Comments

79666223548

Form B-1: BUFFER SAMPLE PLOTS (FY11)

Reviewed by (initial) _____

Site ID: PCAP SC 1108 DATE: 07/12/2011

Location: ○ AA Center ◉ N ○ S ○ E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply. Canopy Type: D = Deciduous, E = Evergreen. Leaf Type: B = Broadleaf, N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent, 1 = Sparse(<10%), 2= Moderate(10-40%), 3 = Heavy (40 -75%), 4 = Very Heavy (>75%)

Buffer Plot 1	Canopy Type: D ◉ E ○ Absent: ○ Leaf Type: B ◉ N ○ Flag				
	Fill	0	1	2	3	4
Big Trees (>0.3m DBH)	○	○	○	○	◉
Small Trees (<0.3m DBH)	○	○	○	◉	○
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	◉	○	○	○
Woody Shrubs, Saplings (<0.5m HIGH)	○	◉	○	○	○
Herbs, Forbs and Grasses	○	◉	○	○	○
Bare ground	◉	○	○	○	○
Litter, duff	○	○	○	○	◉
Rock	◉	○	○	○	○
Water	◉	○	○	○	○
Submerged Vegetation	◉	○	○	○	○

Buffer Plot 2	Canopy Type: D ◉ E ○ Absent: ○ Leaf Type: B ◉ N ○ Flag				
	Fill	0	1	2	3	4
Big Trees (>0.3m DBH)	○	○	◉	○	○
Small Trees (<0.3m DBH)	◉	○	○	○	○
Woody Shrubs, Saplings (0.5m-5m HIGH)	○	○	◉	○	○
Woody Shrubs, Saplings (<0.5m HIGH)	○	○	◉	○	○
Herbs, Forbs and Grasses	○	○	○	○	◉
Bare ground	○	◉	○	○	○
Litter, duff	○	○	◉	○	○
Rock	◉	○	○	○	○
Water	◉	○	○	○	○
Submerged Vegetation	◉	○	○	○	○

Buffer Plot 3	Canopy Type: D ○ E ○ Absent: ◉ Leaf Type: B ○ N ○ Flag				
	Fill	0	1	2	3	4
Big Trees (>0.3m DBH)	◉	○	○	○	○
Small Trees (<0.3m DBH)	◉	○	○	○	○
Woody Shrubs, Saplings (0.5m-5m HIGH)	◉	○	○	○	○
Woody Shrubs, Saplings (<0.5m HIGH)	◉	○	○	○	○
Herbs, Forbs and Grasses	○	○	◉	○	○
Bare ground	○	○	○	○	◉
Litter, duff	◉	○	○	○	○
Rock	◉	○	○	○	○
Water	◉	○	○	○	○
Submerged Vegetation	◉	○	○	○	○

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble ◉

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	◉	
Road - two-lane	○	○	○	
Road - four-lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	○	◉	○	
Highly Grazed Grasses (OVERALL <6" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil Erosion (FROM WIND, WATER, OR OVERUSE)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement., F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial): _____

Site ID: PCOP 1108 SC DATE: 07/12/2011

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	○	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	●	●	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile A Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other: _____	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other: _____	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other: _____	○	○	○	
										Other: _____	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ● N3 ○ S3 ○ E3 ○ W3 ○ Nearest practicable location (flag and comment below)

Flag: ☐

Latitude North 41.45362 Longitude West 81.40716

Use Decimal Degrees; NAD83

Flag	Comments

FORM B-1: BUFFER SAMPLE PLOTS (Rev. d)

Reviewed by (initial): _____

Site ID: PCAP SC 1108 DATE: 07/12/2011

Location: ● AA Center ○ N ○ S ○ E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous; E = Evergreen Leaf Type: B = Broadleaf; N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%); 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

	Buffer Plot 1	Buffer Plot 2	Buffer Plot 3
	Canopy Type: ● D ○ E Absent: ○ Leaf Type: ● B ○ N Flag	Canopy Type: ○ D ○ E Absent: ○ Leaf Type: ○ B ○ N Flag	Canopy Type: ○ D ○ E Absent: ○ Leaf Type: ○ B ○ N Flag
Big Trees (>0.3m DBH)	○ ○ ● ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Small Trees (<0.3m DBH)	○ ● ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Woody Shrubs, Saplings (0.5m-5m HIGH)	○ ○ ● ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Woody Shrubs, Saplings (<0.5m HIGH)	○ ● ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Herbs, Forbs and Grasses	○ ○ ○ ○ ●	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Bare ground	○ ○ ● ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Litter duff	● ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Rock	● ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Water	● ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Submerged Vegetation	● ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ●

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROP FIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	●	○	○	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER, OR OVERUSE)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement, F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

2428168304

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial):_____

Site ID: PCAP SC 1108 **DATE:** 07 / 12 / 2011

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	○	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	○	○	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other:	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other:	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other:	○	○	○	
										Other:	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

Flag

● AA CENTER ○ N3 ○ S3 ○ E3 ○ W3 ○ Nearest practicable location (flag and comment below)

Latitude North 41.45246 Longitude West 81.40700

Use Decimal Degrees; NAD83

Flag	Comments

B-1: BUFFER SAMPLE PLOTS

Reviewed by (initial): ____

Site ID: PCAP SC 1108 DATE: 07/12/2011

Location: ○ AA Center ○ N ○ S ○ E ◉ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply: Canopy Type: D = Deciduous, E = Evergreen; Leaf Type: B = Broadleaf, N = Needle Leaf; Absent: No tree canopy
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent, 1 = Sparse(<10%), 2=Moderate(10-40%), 3 = Heavy (40-75%), 4 = Very Heavy (>75%)

	Buffer Plot 1	Buffer Plot 2	Buffer Plot 3
	Canopy Type: D E; Leaf Type: B N; Absent; Flag	Canopy Type: D E; Leaf Type: B N; Absent; Flag	Canopy Type: D E; Leaf Type: B N; Absent; Flag
Big Trees (>0.3m DBH)	4	3	0
Small Trees (<0.3m DBH)	1	0	4
Woody Shrubs, Saplings (0.5m-3m HIGH)	2	3	1
Woody Shrubs, Saplings (<0.5m HIGH)	1	3	2
Herbs, Forbs and Grasses	4	4	4
Bare ground	1	0	0
Litter, duff	2	4	4
Rock	0	0	0
Water	0	0	0
Submerged Vegetation	0	0	0

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble.

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: ____	○	○	○	
Other: ____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	○	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEET FLOW)	○	○	○	
Other: ____	○	○	○	
Other: ____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT CLEARING, ROW CROP FIELD)	○	○	○	
Fallow Field (OLD: GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: ____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: ____	○	○	○	
Other: ____	○	○	○	
Other: ____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	◉	◉	◉	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil erosion (FROM WIND, WATER, OR OVERUSE)	○	○	○	
Other: ____	○	○	○	
Other: ____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement, F1,F2,etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (Initial): _____

Site ID: PCAP SC 1108 **DATE:** 07/12/2011

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water Hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	○	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	○	○	●		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other: _____	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other: _____	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other: _____	○	○	○	
										Other: _____	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ○ N3 ○ S3 ○ E3 ● W3 ○ Nearest practicable location (flag and comment below)

Flag: ☐

Latitude North: 41 45216 Longitude West: 081 40825

Use Decimal Degrees; NAD83

Flag	Comments

B-1: BUFFER SAMPLE PLOTS

Reviewed by (initials): _____

Site ID: PCAPSC 1108 DATE: 07/12/2011

Location: ○ AA Center ○ N ● S ○ E ○ W

Fill in bubble(s) if plot(s) could not be sampled and flag → ○ Plot 1 ○ Plot 2 ○ Plot 3

Buffer Natural Cover Strata

Fill in bubbles for all that apply. Canopy Type: D = Deciduous; E = Evergreen. Leaf Type: B = Broadleaf, N = Needle Leaf. Absent: No tree canopy.
Strata Section: Fill in appropriate cover class bubble for each strata type for each plot. 0 = Absent; 1 = Sparse(<10%); 2=Moderate(10-40%); 3 = Heavy (40-75%); 4 = Very Heavy (>75%)

Buffer Plot 1	Canopy Type: D E	Absent:	Leaf Type: B N	Flag

	0	1	2	3	4
Big Trees (>0.3m DBH)	○	○	○	●	○
Small Trees (<0.3m DBH)	●	○	○	○	○
Woody Shrubs, Saplings (0.5m-5m HIGH)	●	○	○	○	○
Woody Shrubs, Saplings (<0.5m HIGH)	●	○	○	○	○
Herbs, Forbs and Grasses	○	○	○	○	●
Bare ground	●	○	○	○	○
Litter, duff	○	●	○	○	○
Rock	●	○	○	○	○
Water	●	○	○	○	○
Submerged Vegetation	●	○	○	○	○

Buffer Plot 2	Canopy Type: D E	Absent:	Leaf Type: B N	Flag

	0	1	2	3	4
Big Trees (>0.3m DBH)	○	○	○	●	○
Small Trees (<0.3m DBH)	○	●	○	○	○
Woody Shrubs, Saplings (0.5m-5m HIGH)	●	○	○	○	○
Woody Shrubs, Saplings (<0.5m HIGH)	●	○	○	○	○
Herbs, Forbs and Grasses	○	○	○	○	●
Bare ground	●	○	○	○	○
Litter, duff	○	●	○	○	○
Rock	●	○	○	○	○
Water	●	○	○	○	○
Submerged Vegetation	●	○	○	○	○

Buffer Plot 3	Canopy Type: D E	Absent:	Leaf Type: B N	Flag

	0	1	2	3	4
Big Trees (>0.3m DBH)	○	●	○	○	○
Small Trees (<0.3m DBH)	○	●	○	○	○
Woody Shrubs, Saplings (0.5m-5m HIGH)	●	○	○	○	○
Woody Shrubs, Saplings (<0.5m HIGH)	●	○	○	○	○
Herbs, Forbs and Grasses	●	○	○	○	○
Bare ground	●	○	○	○	○
Litter, duff	●	○	○	○	○
Rock	✕	●	○	○	○
Water	○	○	○	○	●
Submerged Vegetation	●	○	○	○	○

Stressor Presence/Absence - Confirm that a filled data bubble indicates presence and an unfilled bubble indicates absence by filling this bubble. ●

Residential and Urban Stressors

Fill bubble if present - Plot	1	2	3	Flag
Road - gravel	○	○	○	
Road - two lane	○	○	○	
Road - four lane	○	○	○	
Parking Lot/Pavement	○	○	○	
Golf Course	○	○	○	
Lawn/Park	○	○	○	
Suburban Residential	○	○	○	
Urban/Multifamily	○	○	○	
Landfill	○	○	○	
Dumping	○	○	○	
Trash	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Hydrology Stressors

Fill bubble if present - Plot	1	2	3	Flag
Ditches, Channelization	○	○	○	
Dike/Dam/Road/RR Bed (IMPEDE FLOW)	○	○	○	
Water Level Control Structure	○	○	○	
Excavation, Dredging	○	○	○	
Fill/Spoil Banks	○	○	○	
Freshly Deposited Sediment (UNVEGETATED)	○	○	○	
Soil Loss/Root Exposure	○	○	●	
Wall/Riprap	○	○	○	
Inlets, Outlets	○	○	○	
Point Source/Pipe (EFFLUENT OR STORMWATER)	○	○	○	
Impervious surface input (SHEETFLOW)	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Agricultural & Rural Stressors

Fill bubble if present - Plot	1	2	3	Flag
Pasture/Hay	○	○	○	
Range	○	○	○	
Row Crops	○	○	○	
Fallow Field (RECENT-RESTING ROW CROPFIELD)	○	○	○	
Fallow Field (OLD - GRASS, SHRUBS, TREES)	○	○	○	
Nursery	○	○	○	
Dairy	○	○	○	
Orchard	○	○	○	
Confined Animal Feeding	○	○	○	
Rural Residential	○	○	○	
Gravel Pit	○	○	○	
Irrigation	○	○	○	
Other: _____	○	○	○	

Industrial Development Stressors

Fill bubble if present - Plot	1	2	3	Flag
Oil Drilling	○	○	○	
Gas Wells	○	○	○	
Mine (surface)	○	○	○	
Mine (underground)	○	○	○	
Military	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	
Other: _____	○	○	○	

Habitat/Vegetation Stressors

Fill bubble if present - Plot	1	2	3	Flag
Forest Clear Cut	○	○	○	
Forest Selective Cut	○	○	○	
Tree Plantation	○	○	○	
Tree Canopy Herbivory (INSECT)	○	○	○	
Shrub Layer Browsed (WILD OR DOMESTIC)	●	○	○	
Highly Grazed Grasses (OVERALL <3" HIGH)	○	○	○	
Recently Burned Forest Canopy	○	○	○	
Recently Burned Grassland (BLACKENED)	○	○	○	

Fill bubble if present - Plot	1	2	3	Flag
Herbicide Use	○	○	○	
Mowing/Shrub Cutting	○	○	○	
Trails	○	○	○	
Soil Compaction (ANIMAL OR HUMAN)	○	○	○	
Offroad vehicle damage	○	○	○	
Soil Erosion (FROM WIND, WATER OR OVERUSE)	○	○	●	
Other: _____	○	○	○	
Other: _____	○	○	○	

Flag codes: K = No measurement made, U = Suspect measurement, F1,F2, etc. = misc. flags assigned by each field crew.
Explain all flags in comment section on the back of this form

FORM B-1: BUFFER SAMPLE PLOTS - TARGETED ALIEN SPECIES (Back)

Reviewed by (initial):_____

Site ID: PCAP SC 1108 **DATE:** 07/12/2011

Confirm a filled data bubble indicates presence and an unfilled bubble indicates absence by filling in this bubble

Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag	Fill bubble if present - Plot	1	2	3	Flag
Eurasian Watermilfoil	○	○	○		Purple Loosestrife	○	○	○		Johnson Grass	○	○	○	
Water hyacinth	○	○	○		Knotweed	○	○	○		Kudzu	○	○	○	
Yellow Floating Heart	○	○	○		Japanese Knotweed	○	○	○		Multiflora Rose	○	○	●	
Giant Salvinia	○	○	○		Perennial Pepperweed	○	○	○		Common Buckthorn	○	○	○	
Garlic Mustard	●	●	○		Giant Reed	○	○	○		Himalayan Blackberry	○	○	○	
Poison Hemlock	○	○	○		Cheatgrass	○	○	○		Tamarisk	○	○	○	
Mile-A-Minute Weed	○	○	○		Reed Canary Grass	○	○	○		Other: _____	○	○	○	
Birdsfoot Trefoil	○	○	○		Common Reed	○	○	○		Other: _____	○	○	○	
Canada Thistle	○	○	○		Leafy Spurge	○	○	○		Other: _____	○	○	○	
										Other: _____	○	○	○	

PLOT COORDINATES

Provide GPS coordinates at the center of the Buffer Plot (#3) at the far end of each Buffer Transect and for the Buffer Plot at the AA CENTER. Indicate the location of the plot coordinates by filling in the appropriate bubble.

If Buffer Plot 3 can not be accessed, take the coordinates at the nearest practicable location ALONG THE TRANSECT. This is important because all Buffer Plots are centered on the Buffer Transects and the coordinates will indicate the location of the transect. Fill in the "nearest practicable location" bubble, fill in the flag box, and describe where the coordinates were taken and why in the comment section below. The coordinates of the nearest practicable location can be either placed as close to the center of Plot 3 as possible or at the center of the last accessible Buffer Plot.

Location of coordinates (choose one):

○ AA CENTER ○ N3 ○ S3 ○ E3 ○ W3 ● Nearest practicable location (flag and comment below)

Flag: 1

Latitude North 41 43.168 Longitude West 081 40.670

Use Decimal Degrees; NAD83

Flag	Comments
1	Southern buffer ended just in the Chagrin River. We took GPS pt on the river bank