**CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form** Cleveland Metroparks

**Project Label:** PCAP **Plot No:** 1017 **Date Sampled:** 6/24-6/25 **Lead:** CWCE

| | | | | 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 | 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 | N/A |
| Completed Forest Pest/Pathogen Datasheet | | Y | N | |
| Cover by Strata? (confirm cover type) | | Y | N | |
| Soil samples collected with matching plot #. | | Y | N | |
| 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 | |
| Data sheet QA before leaving site? | | Y | N | |
| Common equipment returned to tub. | | Y | N | |
| Data sheets scanned? | | DS 6/26 | | 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 |
| ACL 327-325 | Drier | Y | N | |
| | Identified | Y | N | |
| | Mounted | Y | N | |
| | Thrown away | Y | N | |

| **GRTS point verification: Is plot sampleable?** | |
|---|---|
| ☑ Yes | Original GRTS point is sampleable |
| ☐ No | Original GRTS point lands in a non-sampleable area (fill in category below) |
| | ☐ Point falls in a water (i.e. river, lake) |
| | ☐ Managed mowed area (i.e. golf course, picnic area, right-of-way) |
| | ☐ Paved area (i.e. parkinglot, road) |
| | ☐ Unsafe to sample (i.e. steep slope) |
| | ☐ Other |

**Additional Comments:**

2015 Collect Sam's Soils

# CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet



## GENERAL INFORMATION

**Project Label:** PCAP

**Project Name:** 02NC2015

**Plot Name:** Plot of Two Trails

**Plot No.:** 1017

☐ Level 4 (no nested corners sampled)

■ Level 5 (nested corners sampled)

**Date (mm/dd/yyyy):** 6/24/2015

**End date (if > 1 day):** 6/25/2015

| Party | Role** |
|---|---|
| A. Lance | Plot leader |
| S. Eysenbach | Bot. |
| M. Geitgey | Bot. Asst. |
| T. Cochran | Crew |
| E. Knauss | Crew |

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

**PLOT NOT SAMPLED:** ☐ Other

☐ Perm. water ☐ Paved ☐ Slope ☐ Safety

## SAMPLING QUALITY*

**Effort Level:**

✓ Very thorough

☐ Accurate

☐ Hurried

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

## TAXONOMIC ACCURACY

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

## TAXONOMIC STANDARD

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

## LOCATION

**State:** OH **County:** LAKE

**Quadrangle:**

**Local Place Names:** Sunset Lane/Buttermilk Pkwy

**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 = +1 (base of plot x=0, y=0)

**Latitude:** 41.57051

**Longitude:** 81.43229

**Coord. Accuracy:** ✓ m ☐ ft 1.3 +-

**GPS File Name:** 1017A

**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)

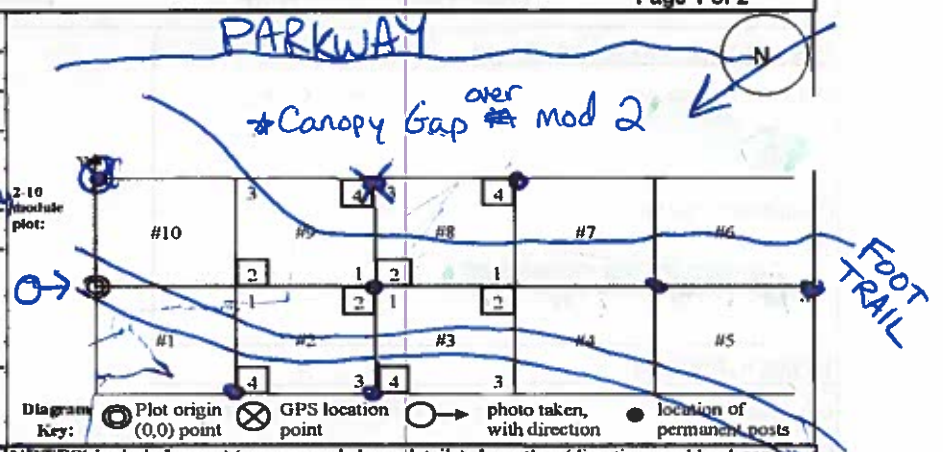
**Camera No.:** 3

**Photo Nos.:** 092

**Plot placement:** ✓ GRTS ☐ Representative

☐ Random ☐ Stratified Random ☐ Transect component

☐ Systematic (grid) ☐ Capture specific feature ☐ Other




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

Layout → 2x5

Location → Plot is approx. 30 m north of Buttermilk Pkwy. Two trails run directly through the plot.

Rationale → GRTS; PCAP re-sample

Veg. Characteristics → Canopy is diverse, with red oak, red maple sugar maple, beech, and hemlock all present. Lots of shagbark hickory as well. The planted pines are near the end of their life and →

OVER

* Beech disease noted on shrub layer trees approx. 20 m orth on the foot trail through plot.

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: 02NC2015 Plot No.: 1017 

**MODIFIED NATURESERVE CLASS***

CODE (on separate form): D Fit=___ Conf=___

COMMUNITY NAME: Mixed Forest

**DISTURBANCES**

| type* | severity** | yrs ago | % of plot | description |
|---|---|---|---|---|
| Human | VH | 50 | 35% | trails |
| Natural | M | 0 | 100% | planted pine die-back |
| Fire | | | | |
| Cut | | | | |
| Animal | H | 0 | 100% | browse |
| Other | | | | |

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

**HOMOGENEITY**

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

**Current Land Use:** PARK - RECREATION

**Former Land Use:** UNKNOWN

**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

**SALINITY***

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

(by default unless plot is a wetland)

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

are in the process of dying back. Lots of young beech and hemlock present in the shrub layer. Sparse herb layer with lots of species introduced at the trail's edges. A nice moss mat encompasses the side line of mods 8, 9.

Large canopy gap in mod 2. This area is also very wet.

**CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet** Page 1 of 3

Project Label: PCAP Project name: 02NC2015 Plot no.: 1017

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

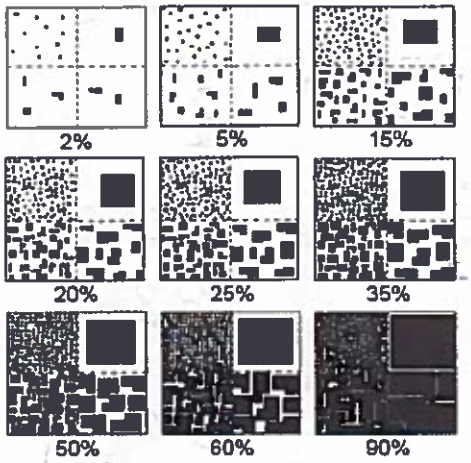
Estimate for each intensive module:

| | mod | corner | mod | corner | mod | corner | mod | corner | mod | corner | mod | corner | mod | corner | mod | corner | mod |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 4 | 2 | 2 | 3 | 4 | 3 | 2 | 8 | 4 | 8 | 2 | 9 | 4 | 9 | 2 | R |
| | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth |
| %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 | 8 | | | 1 | 7 | | | 1 | 7 | | | 1 | 6 | | | |
| %unveg. litter (bare litter) | 1 | 4 | | | 1 | 5 | | | 1 | 6 | | | 1 | 7 | | | |

| S | H | (F) | (A) | Br | Species | C | Voucher # | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3 | | | | Impatiens capensis | | | 3 | 4 | | | 4 | 2 | 3 | | | | | 2 | 2 | | | | 2 | 3 | |
| | 2 | | | | Toxicodendron radicans | | | 3 | 2 | | | 1 | 1 | | | 3 | 2 | | | | | | | | | |
| 5 | 2 | | | | Fagus grandifolia | | | 3 | 2 | | | 2 | 5 | | | 1 | 5 | | | | | 6 | 3 | | | |
| | 1 | | | | Carya sp. | | | 2 | 1 | | | 3 | 1 | | | | | | | | | | | | | |
| | 1 | | | | Parthenocissus quinquefolia | | | 2 | 2 | 2 | | | | | | | | | | | | | | | | |
| 3 | 2 | | | 7 | Fraxinus pensylvanica | | | 2 | 3 | | | | 3 | 2 | | | 3 | 2 | | | | 5 | 2 | | | |
| | 2 | | | | Ulmus sp. | | | 2 | 2 | | | | 2 | 2 | | | | | | | | | | | | |
| | 2 | | | | Rhamnus frangula | | | 2 | 2 | | | | | | | 2 | 2 | | | | | | | | | |
| | 2 | | | | Polygonum persicaria | | | 2 | 1 | | | | 2 | 2 | | | | | | | | | | | | |
| | 3 | | | | Leersia virginica | | | 2 | 3 | | | 2 | 3 | 3 | | | 2 | 2 | | | | 2 | 3 | | | |
| | 2 | | | | Veronica officinalis | | | 2 | 2 | | | 2 | 1 | | | 1 | 1 | | | 1 | 2 | | | | | |
| | 2 | | | 7 | Aster lateriflorus | | | 2 | 2 | | | 2 | 2 | 3 | | | | | | 3 | 2 | | | | | |
| | 2 | | | | Quercus sp. | | | 2 | 2 | | | | | | | | | | | 1 | 2 | | | | | |
| 2 | 2 | | | 7 | Smilax rotundifolia | | | 2 | 2 | | | 4 | 4 | | | | | | | | | | | | | |
| | 2 | | | | Prunella vulgaris | | | 2 | 2 | 2 | | | 2 | 2 | | | | | | | | | | | | |
| | 2 | | | | Prunus serotina | | | 2 | 2 | 3 | | 2 | 2 | | | 2 | 2 | | | 3 | 2 | | | | | |
| | 2 | | | | Geum canadense | | | 2 | 2 | 2 | | 2 | 2 | | | | | | | 2 | 2 | | | | | |
| | 2 | | | | Solidago caesia | | | 2 | 2 | 3 | | 1 | 2 | | | 2 | 2 | | | 2 | 2 | 3 | | | | |
| | 2 | + | | | Taraxacum officinale | | | 2 | 2 | | | 1 | 1 | | | 1 | 1 | | | 1 | 1 | | | | | |
| | 1 | | | | Vitis sp. | | | 2 | 1 | | | | | | | | | | | 1 | 1 | | | | | |
| | 5 | | | | Moss sp. | | | 2 | 2 | 2 | | | | | | 2 | 6 | | | 4 | 4 | | | | | |
| 5 | * | | | | Acer saccharum | | | | 5 | 4 | | 4 | 3 | | | | | | | | 5 | 2 | | | | |
| | 2 | | | 6 | Viburnum acerifolium | | | | 3 | 2 | | | | | | | | | | 1 | 5 | | | | | |
| | 2 | | | | Glyceria striata | | | | 2 | 2 | | 1 | 2 | | | | | | | | | | | | | |
| | 2 | | | | Veronica serpyllifolia | | | | 2 | 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 |

**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.

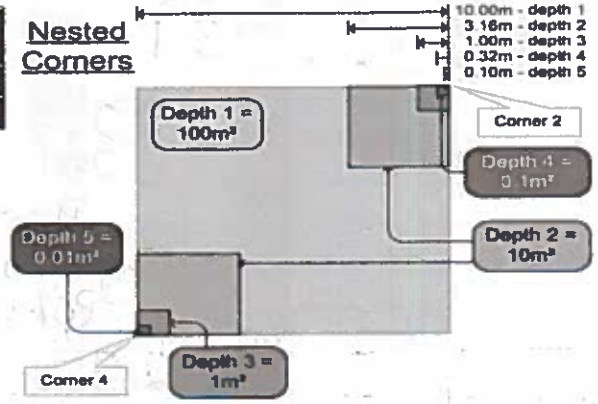
**MEDIUM LOW** values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse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

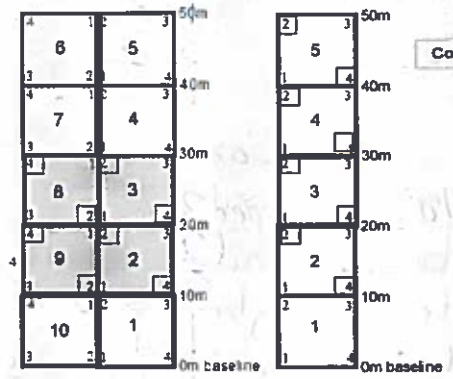
**MEDIUM:** browse affects greater than 10 percent and less than 25 percent of stems in the 1 m2 nested quadrat and intensive module. A browse line is usually not evident or obvious for all classes and species of vegetation, but careful examination may show preferential browse and/or browse lines for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

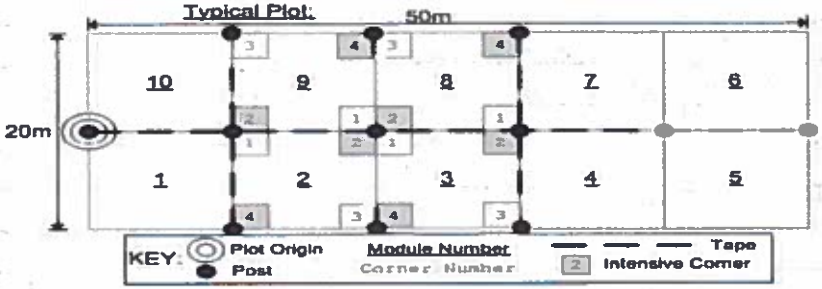
**VERY HIGH** values include extensive browse conditions, where the browse line is very evident AND almost all seedlings and herbs are severely browsed or missing. Browse line may be 5 to 6 feet in height with no or little green growth beneath.







**CLEVELAND METROPARKS Plant Community Assessment Program Species Cover Data Sheet** Page 2 of 3

Project Label: PCAP Project name: 02NC2015 Plot no.: 1017

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

Estimate for each intensive module:

%open water

%unvegetated open water

%unveg. ground (bare soil)

%unveg. litter (bare litter)

| S | H | (F) | (A) | Br | Species | c | Voucher # | mod 2 depth | mod 2 cov | corner 4 depth | corner 4 cov | mod 2 depth | mod 2 cov | corner 2 depth | corner 2 cov | mod 3 depth | mod 3 cov | corner 4 depth | corner 4 cov | mod 3 depth | mod 3 cov | corner 2 depth | corner 2 cov | mod 8 depth | mod 8 cov | corner 4 depth | corner 4 cov | mod 8 depth | mod 8 cov | corner 2 depth | corner 2 cov | mod 9 depth | mod 9 cov | corner 4 depth | corner 4 cov | mod 9 depth | mod 9 cov | corner 2 depth | corner 2 cov | mod R depth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | | | Asteraceae sp. 1 Unk dicot | | | | 2 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Poa alsodes | | | | 2 | | 2 | | | | | 1 | 2 | | | | | 3 | 2 | | | | | | 3 | 2 | 3 | | | | | | | | |
| 5 | | | | | Acer rubrum | | | 1 | 5 | | | | | | | 1 | 5 | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Ranunculus recurvatus | | | 1 | 2 | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Oxalis stricta | | | 1 | 2 | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | Asteraceae sp. 2 Unk dicot | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Ansaema triphyllum | | SRE 12-10-15 | 1 | 2 | | | | | | | | | | | | | | | | 4 | 2 | | | | | | | | 2 | 3 | | | | | |
| | 1 | | | | Scirpus sp. atrovirens | X | ACL327 | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | Tilia americana | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Maianthemum racemosum | | | 1 | 2 | | | | | | | | | | | | | | | | | 2 | 2 | | | | | 1 | 1 | | | | | | |
| | 2 | | | | Polygonum virginianum | | | 1 | 2 | | | | | | | 1 | 2 | | | | | | | | | 2 | 2 | | | | | 2 | 2 | | | | | | |
| | | | | | ~~Unknown sp. 1 (Brassicaceae)~~ | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Liriodendron tulipifera | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Cardamine pensylvanica | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | ~~Fra~~ Ostrya virginiana | | | 1 | 1 | | | | | | | 2 | 1 | | | | | | | | 2 | 2 | 3 | | | | | 2 | 2 | | | | | | |
| 2 | | | | | Quercus rubra | | | | | | | | | | | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | 7 | Fraxinus sp. | | | | | | | | | | | 2 | 2 | | | | | | | | 2 | 2 | 2 | | | | | 3 | 2 | 2 | | | | | |
| | 2 | | | | Viburnum opulus | | | | | | | | | | | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Rumex obtusifolius | | SRE 11-19-15 | | | | | | | | | | | 2 | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | ~~Poa sp. 1~~ trivialis | X | ACL328 | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Potentilla simplex | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | Ranunculus ~~arboreus~~ abortivus | | | | | | | | | | | 1 | 1 | | | | | | | | 1 | 1 | | | | | | | | | | | | | |
| | 2 | | | | Podophyllum peltatum | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Viola sp. | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | Plantago sp. | | | | | | | | | | | 1 | 1 | | | | | | | | | | | | | | | | | 2 | 2 | | | | |

Larval basal

***EXAMPLES OF PERCENT OF AREA COVERED***

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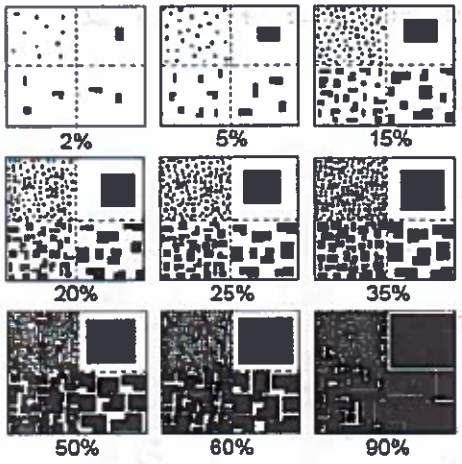


| cover class | % cover | midpoint |
|---|---|---|
| 1 | solitary or few | 0.0001 |
| 2 | 0-1% | 0.005 |
| 3 | 1-2% | 0.015 |
| 4 | 2-5% | 0.035 |
| 5 | 5-10% | 0.075 |
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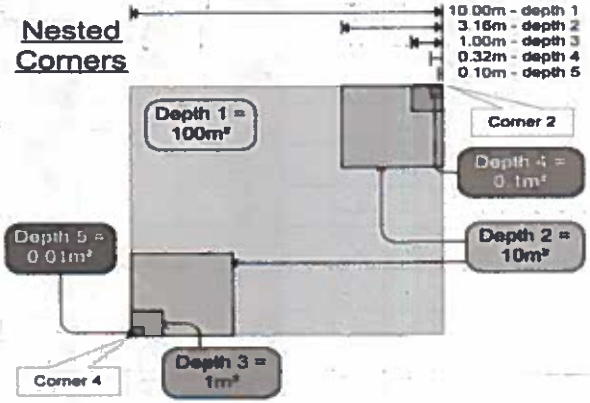
| 7 | 25-50% | 0.375 |
| 8 | 50-75% | 0.625 |
| 9 | 75-95% | 0.850 |
| 10 | 95-100% | 0.975 |




**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.

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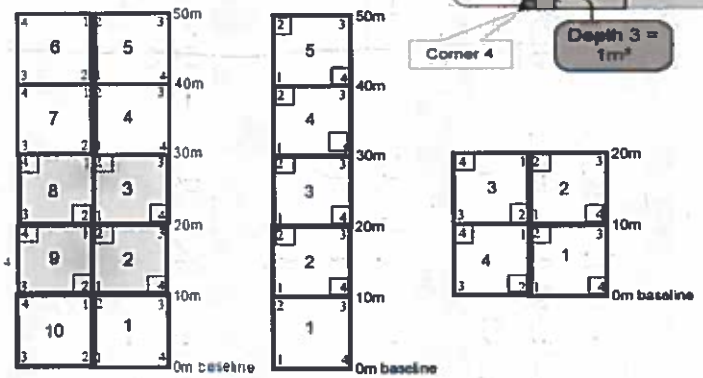
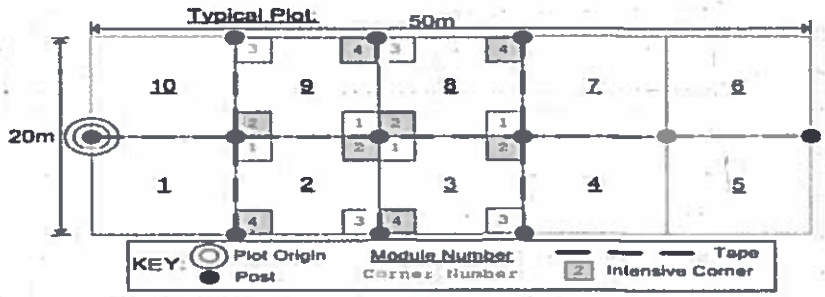
**HIGH**: greater than 25 percent of the stems of plants in the 1 m2 nested quadrat and intensive module AND a browse line is evident.

**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 2a** Page 3 of 3

Project Label: PCAP Project name: 02NC205 Plot no.: 1017

Total modules: 10 Intensive modules: 4 Plot configuration: 2×5 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

Estimate for each intensive module:

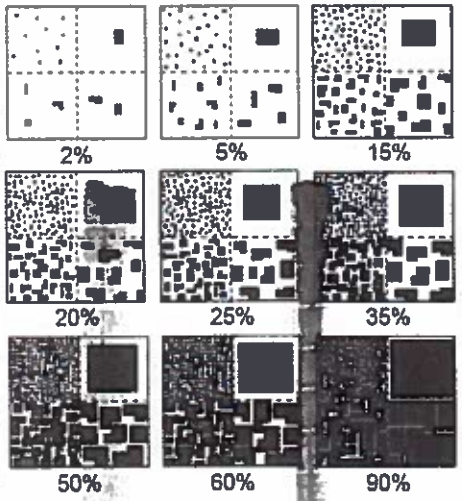
| | mod 2 | corner 4 | mod 2 | corner 2 | mod 3 | corner 4 | mod 3 | corner 2 | mod 8 | corner 4 | mod 8 | corner 2 | mod 9 | corner 4 | mod 9 | corner 2 | mod R | corner R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov |
| %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 | | | | | |

| T | S | H | (F) | (A) | Br | Species | c | Voucher # | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov | depth | cov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | | | | Carex swanii | | | | | | | 1 | 1 | | | 2 | 2 | | | | | 1 | 2 | | | | | | |
| | | 2 | | | | Bidens sp. | | | | | | | 1 | 1 | | | 1 | 2 | | | | | | | | | | | | |
| | | 2 | | | 8 | Lindera benzoin | | | | | | | 1 | 5 | | | 1 | 3 | | | | | | | | | | | | |
| | | 2 | | | | Euonymus obovatus | | | | | | | 1 | 2 | | | | | | | | | | | | | | | | |
| | 2 | | | | | Fraxinus americana | | | | | | | 1 | 3 | | | | | | | | | | | | | | | | |
| | 5 | 2 | | | | Tsuga canadensis | | | | | | | | | | | 4 | 4 | | | | | 2 | 3 | 2 | 2 | | | | |
| | | 1 | | | | Unknown sp. 2 | | C2-4352-55 | | | | | | | | | 3 | 1 | | | | | | | | | | | | |
| | | 2 | | | | Acer sp. | | | 1 | 2 | | | 1 | 2 | | | 2 | 2 | 3 | | | | 3 | 2 | 3 | | | | | |
| | | 2 | | | | Dasthonia spicata | | | | | | | | | | | 2 | 1 | | | | | | | | | | | | |
| | | 2 | | | | Prenanthes sp. | | SRB12-10-15 | | | | | | | | | 1 | 2 | | | | | | | | | | | | |
| | | 2 | | | | ~~Unknown dicot 3~~ Houstonia caerulea | X | ACL329 | | | | | | | | | 1 | 2 | | | | | 4 | 2 | | | | | | |
| | | 1 | | | | Mitchella repens | | | | | | | | | | | | | | | | | 4 | 1 | | | | | | |
| | | 2 | | | | Viburnum dentatum | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | |
| | | | | | | ~~Unknown woody dicot~~ | | | | | | | | | | | | | | | | | | | 2 | | | | | |
| | | 1 | | | | ~~Dup~~ Pyrus sp. | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | |
| | | 2 | | | | Sanicula canadensis | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | |
| | | 2 | | | | Maianthemum canadense | | | | | | | | | | | | | | | | | | | | | | | R | 2 |
| | | 1 | | | 8 | Crataegous sp. | | | | | | | | | | | | | | | | | | | | | | | R | 2 |
| | | 1 | | | | Unknown dicot 4 | | | | | | | | | | | | | | | | | | | | | | | R | 1 |
| | | 2 | | | | Rosa multiflora | | | | | | | | | | | | | | | | | | | | | | | R | 2 |
| | | 2 | | | | Circaea lutetiana | | | | | | | | | | | | | | | | | | | | | | | R | 2 |
| | | 2 | | | | Carya ovata | | | | | | | | | | | | | | | | | | | | | | | R | 2 |
| | | 2 | | | | ~~Morus sp.~~ | | | | | | | | | | | 1 | 2 | | | | | | | | | | | | |
| | 2 | | | | | Amelanchier sp. | | | | | | | | | | | | | | | | | | | | | | | R | 4 |

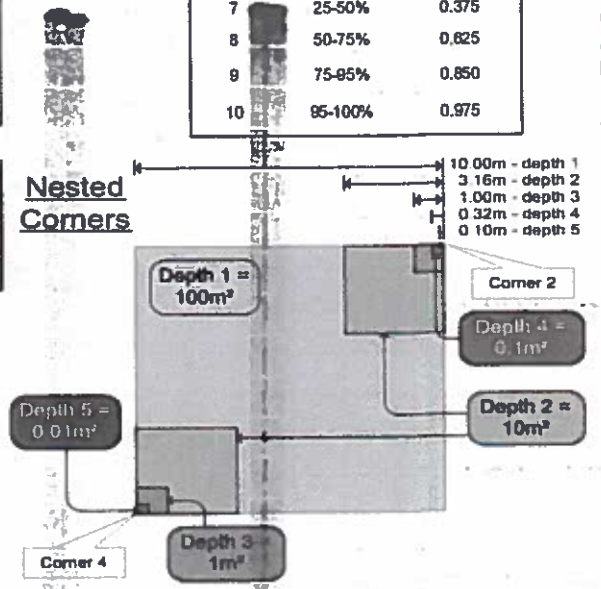
Draba verna

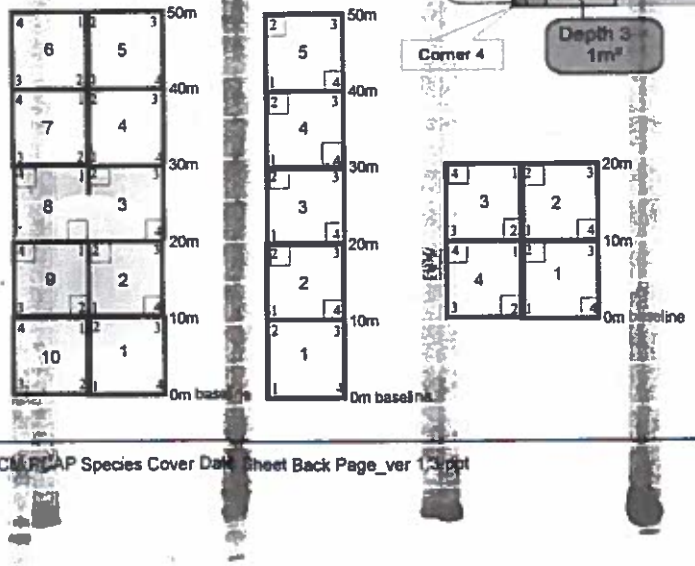
## EXAMPLES OF PERCENT OF AREA COVERED

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




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




**BROWSE RATING NARRATIVE DESCRIPTION**

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

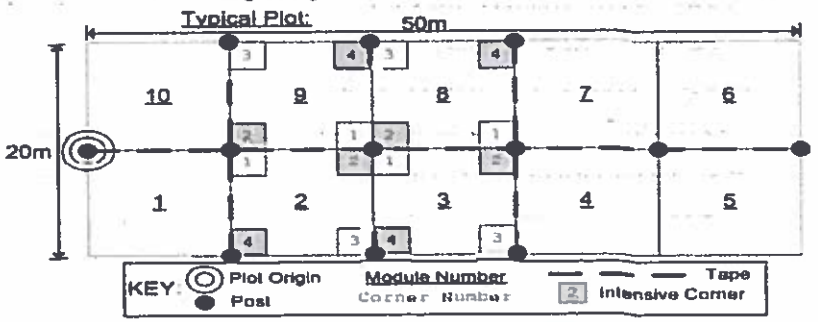
**MEDIUM LOW** values include evidence of browse at about 10 percent of the stems with no significant impact to plant reproduction evident. In this rating, plants are browsed but preferential species are observed to be reproducing in numbers that appear normal or near-normal in comparison to low browse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

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

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

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

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



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

Project Label: PCAP Project name: 02NC2015 Plot no.: 1017

| % COVER Strata - Cov. entire plot | | | | Prensence of tree species (X) | mod 2 | mod 3 | mod 8 | mod 9 | R R |
|---|---|---|---|---|---|---|---|---|---|
| T | Br | Species | c | Voucher # | | | | | |
| 6 | | Carya ovata | | | X | X | X | X | |
| 7 | | Acer rubrum | | | X | X | X | X | |
| 6 | | Acer saccharum | | | X | X | X | X | |
| 7 | | Quercus rubra | | | X | | X | X | |
| 4 | | Prunus serotina | | | X | | X | | |
| 3 | | Fraxinus americana | | | X | | | | |
| 4 | | Magnolia acuminata | | | | X | | | |
| 6 | | Fagus grandifolia | | | | X | | | |
| 4 | | Ostrya virginiana | | | | | X | X | |
| 6 | | Tsuga canadensis | | | | | X | X | |
| 5 | | Pinus nigra | | | | | | X | |

**CLEVELAND METROPARKS Plant Community Assessment Program Tree Cover Data Sheet** *Page ___ of ___*

Project Label: PCAP Project name: _____ Plot no.: _____

| % COVER<br>Strata - Cov. entire plot | | | | Prensence of tree species (X) | mod | mod | mod | mod | R<br>R |
|---|---|---|---|---|---|---|---|---|---|
| T | Br | Species | c | Voucher # | | | | | |
| | | | | | | | | | |
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**CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet**

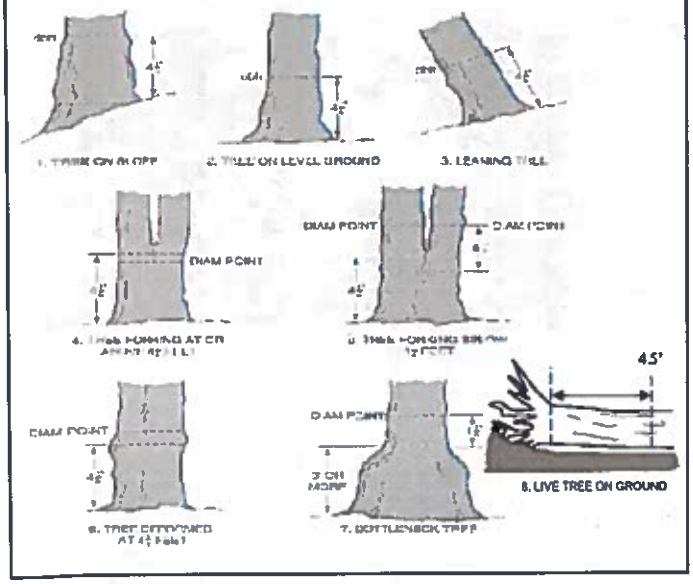
Project Label: PCAP  Project Name: 02NC2015  Plot No.: 1017  Page: 1 of 4

Cleveland Metroparks

Explain subsample (additional room on back):

| mpd # | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Fraxinus sp. | | | | | | | | | | • | | | | | | |
| 1 | Fagus grandifolia | | | | | | •• | | • | • | | | • | | | | |
| 1 | Acer saccharum | | | | | | •• | •• | •X | • | | | | | | | |
| 1 | Magnolia acuminata | | | | | | | | | | • | | | | | | |
| 1 | Fraxinus pensylvanica | | | | | | • | | | | | | | | | | |
| 1 | Carya ovata | | | | | | | | | | | | | | | | 50.1 |
| 1 | Vitis sp. | | | 1 | | | | | | | | | | | | | |
| 1 | Viburnum acerifolium | | | 1 | | | | | | | | | | | | | |
| 1 | Fraxinus sp. seedling | | | 1 | | | | | | | | | | | | | |
| 2 | Acer saccharum | | | 1 | | | •• | | • | •• | | | | | | | |
| 2 | Carya ovata | | | | | | | | | | | | | • | | | 42.4 |
| 2 | Standing dead | | | | | | | | •• | • | | | | • | | | |
| 2 | Quercus rubra | | | | | | | | • | • | | | | | | | |
| 2 | Prunus serotina | | | | | | | | | | | • | | | | | |
| 3 | Acer rubrum | | | | | | | | • | • | | | | | | | |
| 2 | Fraxinus sp. seedling | | | 3 | | | | | | | | | | | | | |
| 2 | Smilax rotundifolia | | | 1 | | | | | | | | | | | | | |
| 2 | Viburnum acerifolium | | | 1 | | | | | | | | | | | | | |
| 3 | Smilax rotundifolia | | | 1 | | • | | | | | | | | | | | |
| 3 | Acer rubrum | | | | | | | | • | | | | | | | | |
| 3 | ~~Quercus rubra~~ | | | | | | | | X | | | | | | | | |
| 3 | Standing dead | | | | | • | •• | | | | • | | | | | | |
| 3 | Carya ovata | | | | | | | | | | | | | • | • | | |
| 3 | Acer saccharum | | | | | | | | •• | •• | • | | | | | | |

**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.

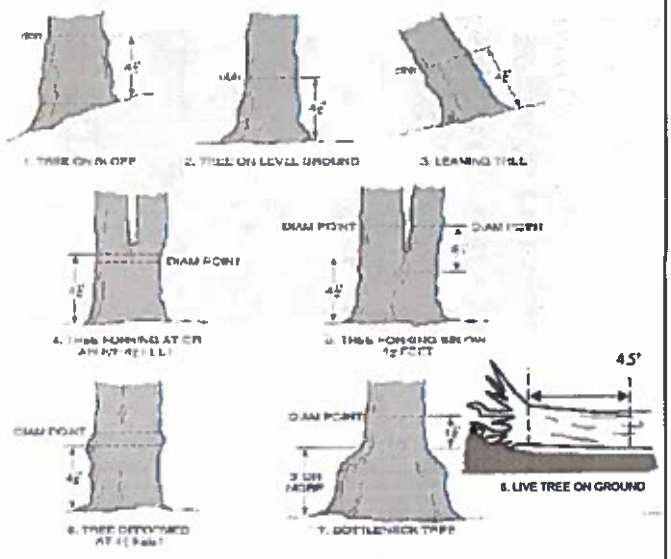
**CLEVELAND METROPARKS Plant Community Assessment Program Natural Woody Stem Data Sheet**

Project Label: PCAP Project Name: ~~[illegible]~~ 02NC2015 Plot No.: 1017 Page: 2 of 4

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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Fagus grandifolia | | | | | | | • | | | | | | | | | |
| 3 | Lindera benzoin | | | 1 | | • | | | | | | | | | | | |
| 3 | Fraxinus sp. seedling | | | 5 | | | | | | | | | | | | | |
| 3 | Viburnum acerifolium | | | 1 | | | | | | | | | | | | | |
| 3 | Crataegus sp. | | | | | | • | | | | | | | | | | |
| 4 | Acer rubrum | | | | | | | | | | | | • | | •• | | |
| 4 | Acer saccharum | | | | | | | •• | | | | | | | | | |
| 4 | Quercus rubra | | | | | | | | | | | | | | | | 46.9 |
| 4 | Pinus nigra | | | | | | | | | | | | | | • | | |
| 4 | Fraxinus sp. seedling | | | 4 | | | | | | | | | | | | | |
| 4 | Smilax rotundifolia | | | 3 | | | | | | | | | | | | | |
| ~~4~~ | ~~Prunus~~ • | | | * | | | | | | | | | | | | | |
| 5 | Acer saccharum | | | | | | | •• | X• | | | | | | | | |
| 5 | Acer rubrum | | | | | | | | • | • | | | | • | | | |
| 5 | Fagus grandifolia | | | | | | • | • | • | | | | | | | | |
| 5 | Prunus serotina | | | 1 | | | | | | | | | • | | | • | |
| 5 | Standing dead | | | | | | • | | | | | | | | | | |
| 5 | Amelanchier sp. | | | 1 | | | • | • | | | | | | | | | |
| 5 | Tsuga canadensis | | | | | | | | | | • | | | | | | |
| 5 | Fraxinus sp. seedling | | | ~~4~~ 3 | | | | | | | | | | | | | |
| 6 | Fraxinus pennsylvanica | | | | | | | •• | • | | | | | | | | |
| 6 | Fagus grandifolia | | | | | | •• | •• | •• | • | | | | | | | |
| 6 | Acer rubrum | | | | | | | • | | | | | | | | | |
| 6 | Quercus rubra | | | | | | | | | | | | | | | • | 57 |

**DBH Measurement Rules**




**Woody Stem Deer Browse**

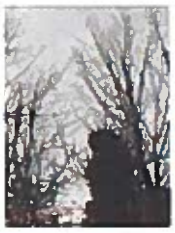
Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

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**

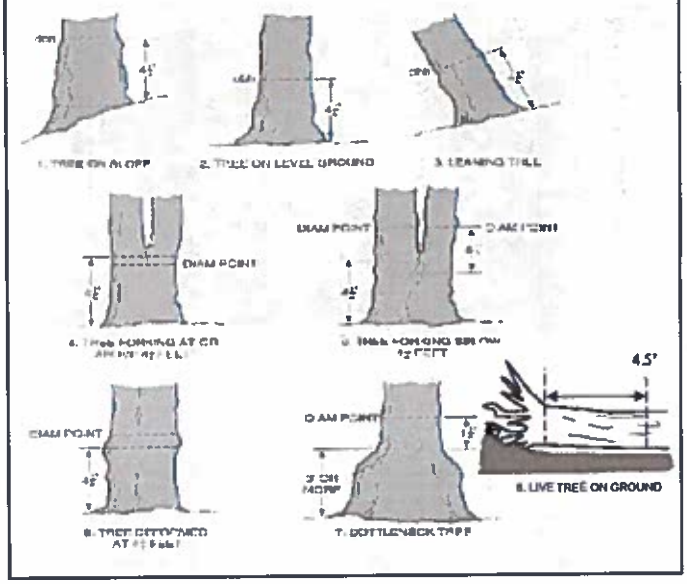
Project Label: PCAP Project Name: 02NC2015 Plot No.: 1017 Page: 3 of 4

Cleveland Metroparks

Explain subsample (additional room on back):

| period # | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Standing dead | | | | | | | | • | • | •• | | | | | | |
| 6 | Smilax rotundifolia | | | 5 | | | | | | | | | | | | | |
| 6 | Fraxinus sp. seedling | | | 4 | | | | | | | | | | | | | |
| 6 | Acer sp. seedling | | | 1 | | | | | | | | | | | | | |
| 7 | Fagus grandifolia | | | | | | | • | | •• | •• | | | | | | |
| 7 | Carya ovata | | | | | | | | | | | | • | | | | |
| 7 | Standing dead | | | | | | • | | | • | •• | •• | | | | | |
| 7 | Quercus rubra | | | | | | | | | | | | | | | | 43.5 |
| 7 | Acer saccharum | | | | | | | • | | • | | | | | | | |
| 8 | Tsuga canadensis | | | | | | | | | • | | | | | | | |
| 7 | Fraxinus sp. seedling | | | 3 | | | | | | | | | | | | | |
| 7 | Smilax rotundifolia | | | 1 | | | | | | | | | | | | | |
| 7 | Toxicodendron radicans | | | 1 | | | | | | | | | | | | | |
| 8 | Carya ovata | | | | | | | | | | | | • | • | | | |
| 8 | Acer saccharum | | | | | | | | | | •• | | | | | | |
| 8 | Prunus serotina | | | | | | | | | | | | | | • | | |
| 8 | Ostrya virginiana | | | | | | | | | • | | | | | | | |
| 8 | Fagus grandifolia | | | | | | | • | | | | | | | | | |
| 8 | Quercus rubra | | | | | | | | | | | | | | | | 65.3 |
| 8 | Fraxinus sp. seedling | | | 3 | | | | | | | | | | | | | |
| 8 | Rhamnus/Crataegus sp. | | | 1 | | | | | | | | | | | | | |
| 9 | Pinus nigra | | | | | | | | | | | | | | | • | 43.2 |
| 9 | Acer saccharum | | | | | | •• | •• | • | • | | | | | | | |
| 9 | Fagus grandifolia | | | | | | •• | • | •• | •• | | | | | | | |

**DBH Measurement Rules**




**Woody Stem Deer Browse**

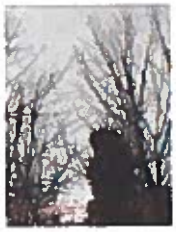
Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

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: 02NC2015 Plot No.: 1017 Page: 4 of 4

Cleveland Metroparks

Explain subsample (additional room on back):

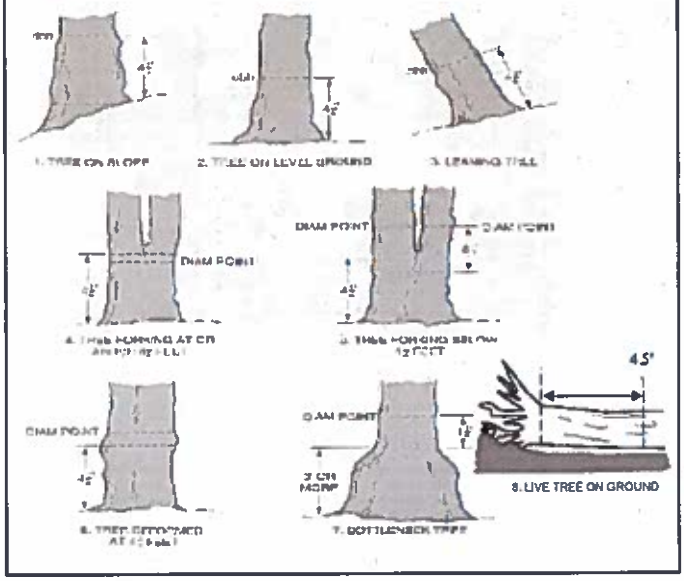
| mod # | species | c | voucher# | # stems 0-1.4m browsed | % sub or super sample | # shrub clumps | size class (cm) woody stems >1.4m 1 0-<1 | 2 1-<2.5 | 3 2.5-<5 | 4 5-<10 | 5 10-<15 | 6 15-<20 | 7 20-<25 | 8 25-<30 | 9 30-<35 | 10 35-<40 | 11 >40 (record each tree) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Fraxinus sp. seedling | | | 2 | | | | | | | | | | | | | |
| 9 | standing dead | | | | | | | | | | | | 1 | | | | |
| 10% | Quercus rubra | | | | | | | | | 0 | | 6 | | | | | 42.6 |
| 9 | ~~Acer saccharinum~~ | | | | | | | | | | | | | | | X | |
| 10 | Fraxinus sp. seedling | | | 2 | | | | | | | | | | | | | |
| 10 | Carya ovata | | | | | | | | | | | | | | | X | |
| 10 | Tsuga canadensis | | | | | | | 1 | 2 | 2 | | 1 | 1 | | | | |
| 10 | Acer saccharum | | | | | | | 1 | 1 | | | | | | | X | |
| 10 | standing dead | | | | | | 1 | 1 | | 1 | | | | | | | |
| 10 | Fagus grandifolia | | | 1 | | | 2 | 2 | 2 | 2 | | | | | | | |
| 10 | Pinus nigra | | | | | | | | | | | | | | | | 41.2 |
| 10 | ~~Quercus rubra~~ | | | | | | | | | 1 | | 1 | | | | | |
| 10 | Crataegus sp. | | | 1 | | | | | | | | | | | | | |
| 10 | Acer rubrum | | | | | | | | | | | | | | | 1 | |

combine QRE 7-30-15

3aCM PCAP Natural Woody Stem Data Sheet ver 2.0.xls last revised 5/29/2012 jjm

Natural Resources Management FORM NR/2010-03a

**DBH Measurement Rules**




**Woody Stem Deer Browse**

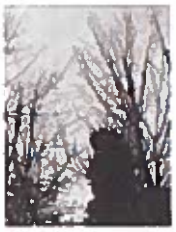
Record the number of stems/plants between 0.5-1.0 meters tall that exhibit evidence of this years deer browse.

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)**

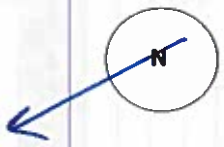
A: All main branches contain fine twigs (newly dead).
B: Over 50% of main branches have fine twigs.
C: Less than 50% of main branches have fine twigs.
D: Stem still standing and tertiary main branches present.
E: Central stem still standing.

**CLEVELAND METROPARKS Emerald Ash Borer - Fraxinus Sheet** *INTENSIVE MODULES ONLY* *TREES ≥ 10CM ONLY*

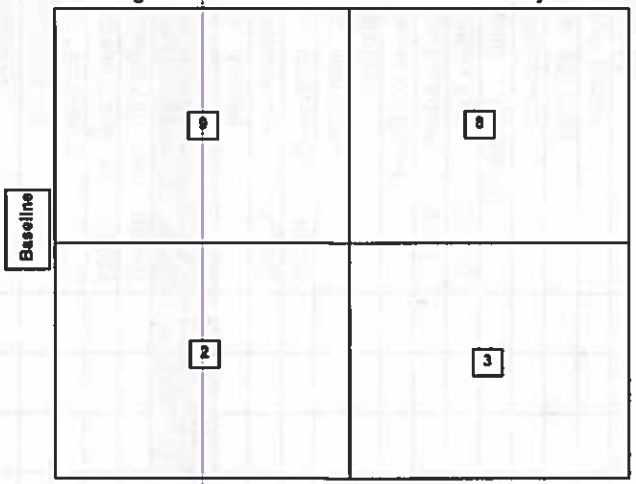
Project Label: PCAP Project Name: 02NC2015 Plot No.: 1017 Date: 6/24/15



| Module | Tree ID. | Species | Dead | c | Voucher # | DBH (cm) | Ht @ DBH | ASH Only: Ash condition | *Dead condition | # Exit holes | Epicormic present | Woodpecker holes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | None present | | | | | | | | | | |
| | 2 | | | | | | | | | | | |
| | 3 | | | | | | | | | | | |
| | 4 | | | | | | | | | | | |
| | 5 | | | | | | | | | | | |
| | 6 | | | | | | | | | | | |
| | 7 | | | | | | | | | | | |
| | 8 | | | | | | | | | | | |
| | 9 | | | | | | | | | | | |
| | 10 | | | | | | | | | | | |
| | 11 | | | | | | | | | | | |
| | 12 | | | | | | | | | | | |
| | 13 | | | | | | | | | | | |
| | 14 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |
| | 16 | | | | | | | | | | | |
| | 17 | | | | | | | | | | | |
| | 18 | | | | | | | | | | | |
| | 19 | | | | | | | | | | | |
| | 20 | | | | | | | | | | | |
| | 21 | | | | | | | | | | | |
| | 22 | | | | | | | | | | | |
| | 23 | | | | | | | | | | | |
| | 24 | | | | | | | | | | | |
| | 25 | | | | | | | | | | | |




*** 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)

**CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey**

Cleveland Metroparks

| 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 | | | | | |
| **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 | | | | | |
| Torilis sp. | Hedgeparsley | | | | | |
| Conium maculatum | Poison Hemlock | | | | | |
| Rhamnus cathartica | Common Buckthorn (shrub) | | | | | |
| Berberis thunbergii | Japanese Barberry (shrub) | | | | | |
| Alnus glutinosa | European Alder | | | | | |
| Dipsacus laciniatus | Cut-leaf Teasel | | | | | |
| Elaeagnus umbellata | Autumn Olive (shrub) | | | | | |
| Lonicera maackii | Amur Honeysuckle (shrub) | | | | | |
| Euonymus fortunei | Wintercreeper | | | | | |
| **Tier 3: Presence is of Interest** | | **# of Plants** | | | | **comments** |
| | | NE | SE | SW | NW | |
| 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) | | | | | |
| Viburnum plicatum | Doublefile Viburnum (shrub) | | | | | |
| **Tier 4: Widespread and abundant** | | **Presence** | | | | **comments** |
| | | NE | SE | SW | NW | |
| Alliaria petiolata | Garlic Mustard | | | | | |
| Ligustrum vulgare | Common Privet (shrub) | | | | | |
| L. morrowii, L. tatarica | Bush Honeysuckles (shrub) | | | | | |
| Phalaris arundinacea | Reed Canarygrass | | | | | |
| Phragmites australis (wetland) | Phragmites | | | | | |
| 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 | | | | | |

| Presence |
|---|
| X: yes |

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

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

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

**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**

Cleveland Metroparks

Project Label: PCAP Project Name: 02NC2015 Plot No.: 1017 Page: 1 of 1

Explain subsample (additional room on back):

| mod # | species | voucher# | % sub or super sample | # shrub clumps | size class (cm) woody stems >1m 1 0-<1 | 2 1-<2.5 | 3 2.5-<5 | 4 5-<10 | 5 10 - <15 | 6 15 - <20 | 7 20 - <25 | 8 25 - <30 | 9 30 - <35 | 10 35 - <40 | 11 >40 (record each tree) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

NONE PRESENT

| Strata | Total % Cover |
|---|---|
| Tree | |
| Shrub | |
| Herbacous | |

* Write **None Present** if no evidence:

-Beech (Fungus) -Asian Longhorned Beetle

-Hemlock (HWA) -Other Forest Pest or Pathogen

-Walnut (Thousand Canker)

★ Disease on Fagus discovered approx. 20 m outside of plot. Pictures 03 093, 094 document this. ★

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

Project Label: PCAP Project Name: 02NC2015 Plot No.: 1017

Cleveland Metroparks



**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 |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**CLASSIFICATION**

(FIT = excellent, g Fit and Confidence

**Hydrogeomorphic class (WETLANDS ONLY):**

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

**Ohio EPA VIBI Plant Community Class (WETLANDS ONLY):**

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

**McNAB INDICES (degrees) + for up - for down**

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

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

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

* Landform Index (position within landscape)

** Terrain Shape Index (site microtopographic shape)

**MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only**

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

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

0 feature is absent or functionally absent from the wetland

3 feature is present in the wetland in very small amounts or if more common, of low quality

7 feature is present in moderate amounts, but not of highest quality, or in small amounts of highest quality

10 feature is present in moderate or greater amounts and of highest quality

c.w.d. - count for pieces with minimum 1m length

| mod# | corner | no. of tussocks depth 3 1x1m (count) | no. of hummocks uplands (Tip-Ups) depth 2 3.16x3.16m (count) | no. macro. depressions depth 1 10x10m (count) | c.w.d (2-12 cm) depth 1 10x10m (count) | c.w.d (12-40cm) depth 1 10x10m (count) | c.w.d >40 cm depth 1 10x10m (count) | microhab. interspers. depth 1 10x10m (rank) | microhab. SLOPE 10x10m (rank) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | | 0 | 0 | 2 | 16 | 5 | 0 | 2 | 1 |
| 3 | | 0 | 0 | 2 | 12 | 0 | 0 | 2 | 1 |
| 8 | | 6 | 0 | 1 | 10 | 0 | 0 | 2 | 1 |
| 9 | | 0 | 0 | 1 | 11 | 0 | 0 | 2 | 1 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

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

2 — 16,16 — 5,5 — 0,0

3 — 11,13 — 0,0 — 0,0

8 — 10,9 — 0,0 — 0,0

9 — 10,13 — 0,0 — 0,0

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

| Module | N | S | E | W |
|---|---|---|---|---|
| 2 | 15 | 1 | 3 | 17 |
| 3 | 6 | 1 | 6 | 2 |
| 8 | 0 | 2 | 1 | 0 |
| 9 | 0 | 4 | 1 | 1 |
| 2 | 12,18 | 1,1 | 2,5 | 16,18 |
| 3 | 9,4 | 2,1 | 4,7 | 3,2 |
| 8 | 0,0 | 2,3 | 1,1 | 0,0 |
| 9 | 0,0 | 5,4 | 1,1 | 2,1 |

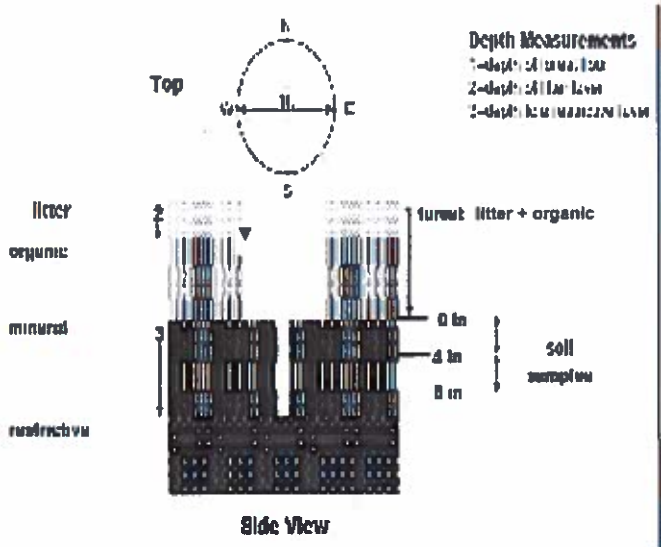
**COVER BY STRATA**

| STRATUM | GENERAL FORM |
|---|---|
| Tree (generally >5 m) | Tree (overstory), very tall shrubs*, liana, epiphyte) |
| Shrub (generally 0.5 to 5 m) | Tree (sapling), shrub, liana, epiphyte) |
| Herb (Field) | Herb, dwarf-shrub**, tree (seedling***) |
| Floating | Floating |
| Aquatic (submerged) | Submerged |

*Very tall shrubs are sometimes included in the tree stratum

**Can also include seedlings of shrubs, i.e. all shrubs <0.5m

***Tree seedlings are often defined as up to 1.4 m height or as <2.5 cm DBH in which case they would span the herb and shrub layers.



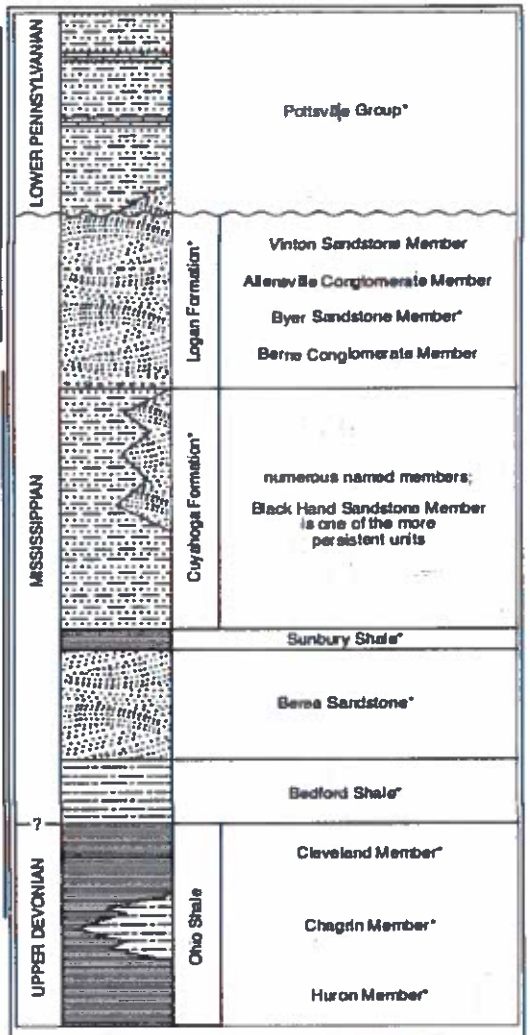




FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses indicated are proportional. The term "Waverly" is used in the older literature to refer to Mississippian rocks in Ohio. Some geologists use the European term "Carboniferous," which encompasses the Mississippian and Pennsylvanian Periods of the U.S. Many units have been named within the Cuyahoga Formation, but most units are local and cannot be traced over great distances. The Black Hand Member is a spectacular massive sandstone that is fairly widespread but discontinuous. See Hyde (1953), Hoover (1960), and Collins (1979) for more information on Mississippian rocks in Ohio. See figure 3-18 for explanation of rock types.

**CLEVELAND METROPARKS Plant Community Assessment Program - Soils, Crown Cover, Standing Biomass Data Sheet 6a**

Project label: PCAP  Project Name: 02NCC015  Plot No.: 1017

Cleveland Metroparks



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

Soil pit module # ____ (one per entire plot)

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 cm | matrix color | | | | | |
| | mottle color | | | | | |
| | %mottle | | | | | |
| | oxid roots | Y | | N | | |
| | texture* | | | | | |
| | redox features** | Y | | N | | |
| | hydr. cond.*** | I | S | M | D | |
| 20 cm | matrix color | | | | | |
| | mottle color | | | | | |
| | %mottle | | | | | |
| | oxid roots | Y | | N | | |
| | texture* | | | | | |
| | redox features** | Y | | N | | |
| | hydro. cond.*** | I | S | M | D | |

* refer to texture classes on reverse side

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

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

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

2 - Worms present
3 - Worms present
7 - Worms present
9 - Castings present

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

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

**Web Soil Survey Information:**

Soil Series/Type:

Soil Series Source: Ohio Soil Survey

Landform type:

Depth to rest. Layer:

Parent Material:

**DRAINAGE***

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

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

| mod# | 1 litter+ organic depth (cm) | 2 litter depth (cm) | water depth (cm) | depth sat soil (cm) |
|---|---|---|---|---|
| 2 | 0.3 | 0.3 | 0 | 0 |
| 3 | 0.3 | 0.3 | 0 | 0 |
| 8 | 0.6 | 0.6 | 0 | 0 |
| 9 | 2.0 | 2.0 | 0 | 0 |

**EARTH SURFACE & GROUND COVER**

| Underlying Earth Surface* | | Ground Cover | |
|---|---|---|---|
| (Sum = 100%) | percent | (Each ≤ 100%) | percent |
| Histosol | — | Coarse Woody Debris*** | 10% |
| Mineral Soil | 65% | Fine Woody Debris**** | 6% |
| Gravel-Cobble* | 35% | Litter | 60% |
| Boulder** | — | Duff (Ferm.+ Humus) | 60% |
| Bedrock | — | Bryophyte- Lichen | 7% |
| * Gravel-Cobble = 1/16-10" | | Water | 0% |
| **Boulder = > 10 in | | Bare Soil | 2% |
| *** >5 cm in diameter | | Road/Trail | 35% |
| **** <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 - | 83% |
| Shrub | .5 - 5 | 38% |
| Herb | 0 - .5 | 33% |
| (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.

**TRAIL INFORMATION:**
record type and cover for each

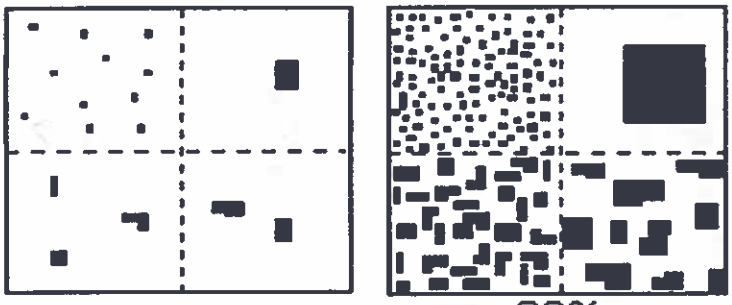
| Type | %Cover |
|---|---|
| ☐ All Purpose | |
| ☑ Bridle | 25% |
| ☑ Hiking sanctioned | 10% |
| ☐ Bootleg unsanctioned | |
| ☐ Gravel | |
| ☐ Deer | |

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

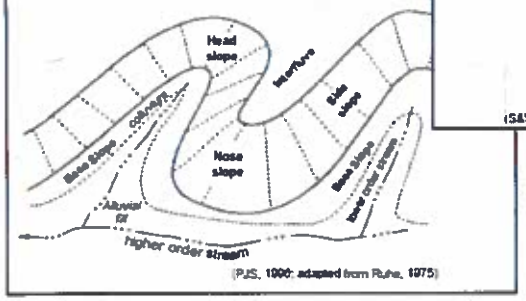



**SOIL TEXTURE**: Record the code for the soil texture of the 5 cm and 20 cm layers. To estimate texture, collect a soil sample from the appropriate layer and moisten it with water to the consistency of modeling clay/wet newspaper; the sample should be wet enough that all of the particles are saturated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

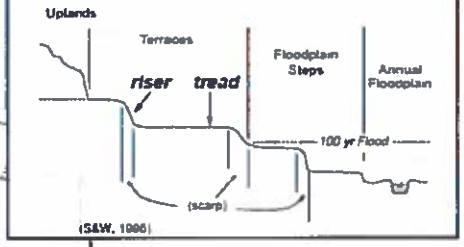
0= Organic
1= Loamy
2= Clayey
3= Sandy
4= Coarse Sand
9= Not measured - make plot note

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

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

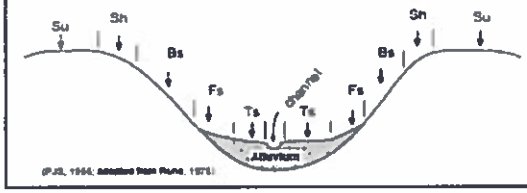



| Terraces | Code |
|---|---|
| riser | RI |
| tread | TR |




**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.