

## CLEVELAND METROPARKS Plant Community Assessment Program: Quality Control Form



Project Label: \_\_\_\_\_

PCAP

Plot No: 1094Date Sampled: 8/3/15Lead: CKM

Comment required if item answer is NO

|  |                                    |                                      |  |
|--|------------------------------------|--------------------------------------|--|
| Parking/Access outside of Park Boundaries:             | Y                                  | <input checked="" type="radio"/> N   | If yes, write details in Comments section below            |
| Field journals completed                               | <input checked="" type="radio"/> Y | N                                    |  |
| Site sketch made on 1:3000 map?                        | <input checked="" type="radio"/> Y | N                                    |  |
| Check cover page                                       | X-axis Bearing of plot recorded    | <input checked="" type="radio"/> Y N |  |
|  | GPS coords. Recorded               | <input checked="" type="radio"/> Y N |  |
|  | North direction recorded           | <input checked="" type="radio"/> Y N |  |
|  | Photographs taken?                 | <input checked="" type="radio"/> Y N |  |
|  | Relocated Pins Mapped              | <input checked="" type="radio"/> Y N |  |
| Plot No., Date agreement on all pages?                 | <input checked="" type="radio"/> Y | N                                    |  |
| Header data completed all pages?                       | <input checked="" type="radio"/> Y | N                                    |  |
| Cover classes recorded in all Intensive modules        | <input checked="" type="radio"/> Y | N                                    |  |
| Browse Level By Species                                | <input checked="" type="radio"/> Y | N                                    |  |
| Woody stem quality control check                       | <input checked="" type="radio"/> Y | N                                    | Check every line and cross check with the Tree Cover Sheet |
| Invasive plant quality control check                   | Y                                  | N                                    | NA   |
| Ash trees mapped                                       | <input checked="" type="radio"/> Y | N                                    |  |
| Completed Forest Pest/Pathogen Datasheet               | <input checked="" type="radio"/> Y | N                                    |  |
| Cover by Strata? (confirm cover type)                  | <input checked="" type="radio"/> Y | N                                    |  |
| Soil samples collected with matching plot #.           | <input checked="" type="radio"/> Y | N                                    |  |
| Cross check 2010 information                           | <input checked="" type="radio"/> Y | N                                    | Highlight any changes from 2010 information                |
| Vouchers labeled on datasheet with initials and number | <input checked="" type="radio"/> Y | N                                    |  |
| Vouchers labeled on collection bag                     | <input checked="" type="radio"/> Y | N                                    |  |
| Pink flags removed                                     | <input checked="" type="radio"/> Y | N                                    |  |
| Data sheet QA before leaving site?                     | <input checked="" type="radio"/> Y | N                                    |  |
| Common equipment returned to tub.                      | Y                                  | N                                    |  |
| Data sheets scanned?                                   |                                    |                                      | Enter date to left   |
| Final data sheets scanned?                             |                                    |                                      | Enter date to left   |
| Buffer Widths measured?                                | Y                                  | N                                    |  |
| Web Soil Survey  | Y                                  | N                                    |  |
| Voucher Location                                       | Refrigerator                       | Y N                                  |  |
| (# vouchers collected)<br>CKM 314-<br>315              | Press (#)                          |                                      | Enter number to left                                       |
|  | Drier                              | Y N                                  |  |
|  | Identified                         | Y N                                  |  |
|  | Mounted                            | Y N                                  |  |
|  | Thrown away                        | Y N                                  |  |

## GRTS point verification: Is plot sampleable?

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

## Additional Comments:

All pins except origin and 10m Rightside Round

D

Q

# CLEVELAND METROPARKS Plant Community Assessment Program - Background Data Sheet

Picture  
Page 1 of 1

| GENERAL INFORMATION  |  |           |               |
|--|--|-----------|---------------|
| Project Label:   | PCAP   |           |               |
| Project Name:  | 02RR2015   |           |               |
| Plot Name:   | Smelly Slope   |           |               |
| Plot No.:  |  |           |               |
| <input type="checkbox"/> Level 4 (no nested corners sampled)<br><input checked="" type="checkbox"/> Level 5 (nested corners sampled) |  |           |               |
| Date (mm/dd/yyyy):   | 8/13/2015  |           |               |
| End date (if > 1 day):   | / /  |           |               |
| Party:   | Role**   |           |               |
| C. Minney  | Plot leader  |           |               |
| D. Sweet   | Bot. Asst.   |           |               |
| R. Eagle-Malone  | Woody Tech   |           |               |
| E. Knauss  | Woody Tech   |           |               |
| ** Roles: Co-leader, Asst. Guide, Observer, Taxonomist, etc.   |  |           |               |
| PLOT NOT SAMPLED:  | <input type="checkbox"/> Other<br><input type="checkbox"/> Perm. water <input type="checkbox"/> Paved <input type="checkbox"/> Slope <input type="checkbox"/> Safety |           |               |
| SAMPLING QUALITY*  |  |           |               |
| Effort Level:  | subjective evaluation of how much effort put into sampling. Hunted plots may still provide good data   |           |               |
| <input checked="" type="checkbox"/> Very thorough<br><input type="checkbox"/> Accurate<br><input type="checkbox"/> Hunted            |  |           |               |
| TAXONOMIC ACCURACY   |  |           |               |
|  | high   | modera.   | low not simpl |
| vascular.  | X  |           | n/a           |
| herb.  |  | X         |               |
| lichen   |  |           | X             |
| TAXONOMIC STANDARD   |  |           |               |
| Authority:   | G&C  | Pub Date: | 1998          |
| Minimum required fields in Bold and Underlined   |  |           |               |

| LOCATION                |  |
|-------------------------|--|
| State:                  | OH County: Cuyahoga  |
| Quadrangle:             | Lakewood (Bad End)   |
| Local Place Names:      | W. 191st and Golf View Dr  |
| Landowner:              |  |
| Data Confidentiality:   |  |
| Check one:              | <input checked="" type="checkbox"/> Public data <input type="checkbox"/> Private Data<br><input type="checkbox"/> Fuzz 100m <input type="checkbox"/> Fuzz 250m <input type="checkbox"/> Fuzz 500m  |
| Reason:                 |  |
| If data not public why? |  |
| Source of coordinates:  | <input type="checkbox"/> MAP <input checked="" type="checkbox"/> GPS<br><input type="checkbox"/> Lat/Long <input type="checkbox"/> UTM <input type="checkbox"/> StatePlane <input type="checkbox"/> deg <input type="checkbox"/> deg min <input type="checkbox"/> Other (specify)  |
| Coordinate system:      | Coord. Units   |
| Datum:                  | <input checked="" type="checkbox"/> NAD83/WGS84 <input type="checkbox"/> NAD27<br>GPS location in plot (x=0 to 5, y=1.0 to 1.1):<br>x = 0 y = 0 (base of plot x=0, y=0)<br>Latitude: 41.43916<br>Longitude: 81.83196<br>Coord. Accuracy: X m <input type="checkbox"/> ft <input type="checkbox"/> ft +/- 3<br>GPS File Name: 1094A<br>Plot size for cover data: .1 (hectares)<br>X-axis Bearing of plot: [62]°<br>Depth: (1-5): 4<br>Intensive modules: 2, 3, 8, 9 (EDIT IF MODIFIED)<br>Camera No.: 4<br>Photo Nos.: C4708<br>Plot placement: <input checked="" type="checkbox"/> GRTS <input type="checkbox"/> Representative<br><input type="checkbox"/> Random <input type="checkbox"/> Stratified Random <input type="checkbox"/> Transect component<br><input type="checkbox"/> Systematic (grid) <input type="checkbox"/> Capture specific feature <input type="checkbox"/> Other |

**Diagram**

**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.

**Diagram**

**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.

OVER

சென்னை மாநகராட்சி

Plot No.: 1094 Page 2 of 2

**Project Name:** OZRR2015

Project Label: PCAP

### **MODIFIED NATURE RESERVE CLASS\***

**CODE (on separate form):**

Fit= Conf=

**COMMUNITY NAME:**

## Mixed Forests

## HOMOGENEITY

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

## HYDROLOGIC REGIME\*

- | SALINITY*  |  | <input checked="" type="checkbox"/> Upland (seldom flooded)<br><input type="checkbox"/> Intermittently/seasonally saturated<br>(seldom flooded)<br><input type="checkbox"/> Permanently/Semipermanent. saturated<br>(dry <1/yr. seldom flooded)<br><input type="checkbox"/> Occasionally flooded (<1/yr)<br><input type="checkbox"/> Temporarily flooded |  | <input type="checkbox"/> Intermittently flooded<br><input type="checkbox"/> Semipermanently flooded<br><input type="checkbox"/> Permanently flooded<br><input type="checkbox"/> Tidal/Seiche flooded daily<br><input type="checkbox"/> Tidal/Seiche flooded monthly<br><input type="checkbox"/> Tidal/Seiche flooded irregular<br>(e.g. wind, storms)<br><input type="checkbox"/> Unknown |  |
|--|--|--|--|---|--|
| <input type="checkbox"/> Saltwater               |  |  |  |   |  |
| <input type="checkbox"/> Brackish                |  |  |  |   |  |
| <input type="checkbox"/> Fresh                   |  |  |  |   |  |
| <input checked="" type="checkbox"/> Upland (n/a) |  |  |  |   |  |
- (by default unless plot is a wetland)

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

The stand is somewhat un-even-aged but is also not really mature. Some big trees dead with canopy gaps and erosion. Plot is covered in trash. Plot has a slight tendency to possess "seepy" traits. These seeps are mostly dominated by Call's foot though. Erosion and canopy gaps give this plot a disturbed character, many weedy species. Norway Maple is the dominant canopy tree and well established in shrub layer.

## DISTURBANCES

| type*   | severity** | yrs ago | % of plot | description                 |
|---------|------------|---------|-----------|-----------------------------|
| Human   | H          | 0       | 100       | Trash dump - high volume    |
| Natural | MH         | 0       | 50        | Erosion - top soil movement |
| Fire    |            |         |           |                             |
| Cut     |            |         |           |                             |
| Animal  | ML         | 0       | 100       | deer Browse                 |
| Other   |            |         |           |                             |

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

**Current Land Use:** CMP - Trash dump

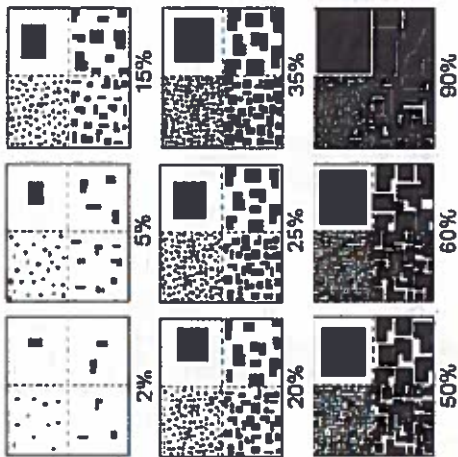
**Former Land Use:** Trash dump



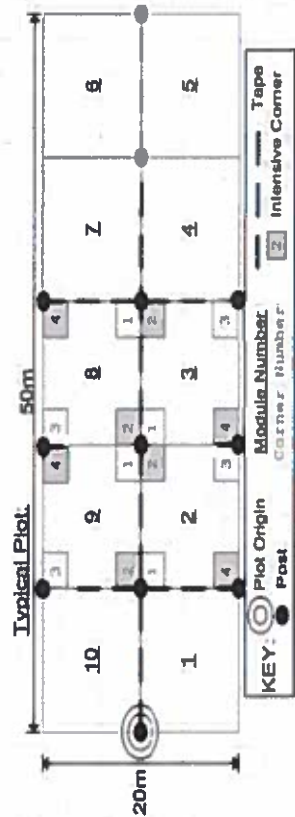
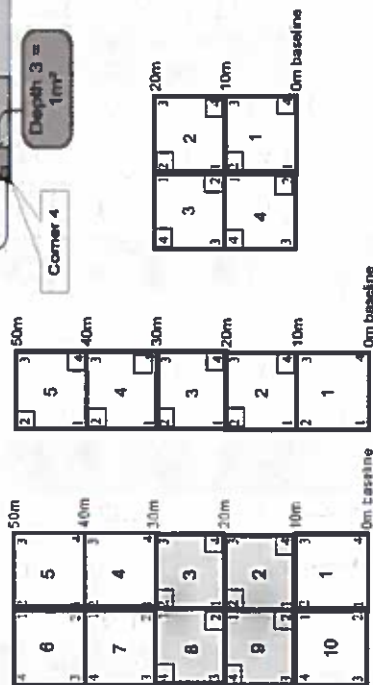
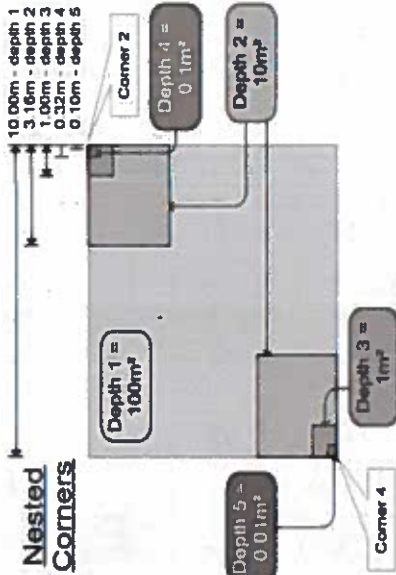


# EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used by 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.

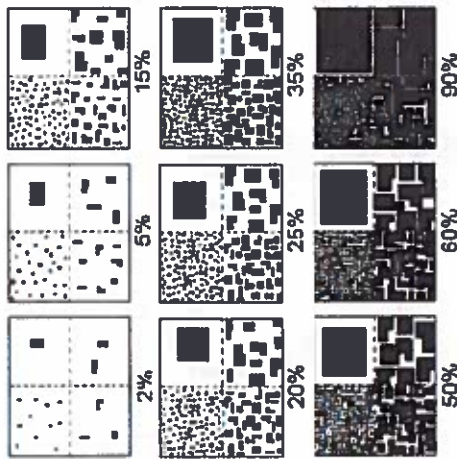
**VERY HIGH** values include extensive browse conditions, where the browse line is very evident AND almost all seedlings and herbs are severely browsed or missing. Browse line may be 5 to 6 feet in height with no or little green growth beneath.





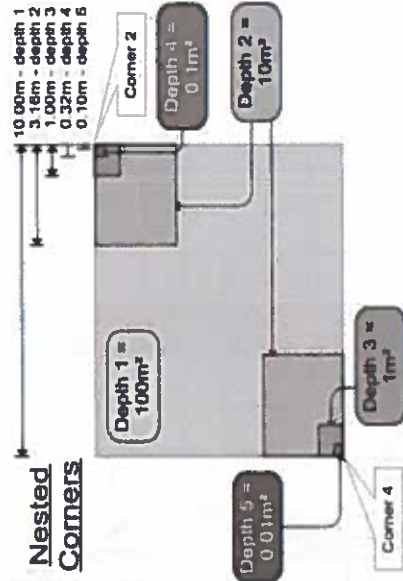
# EXAMPLES OF PERCENT OF AREA COVERED

The following graphic can be used for various data elements in canopy "Amount" or "Cover". NOTE: When any given box, each quadrant contains the same data as the other, just different sized objects.



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## Nested Corners



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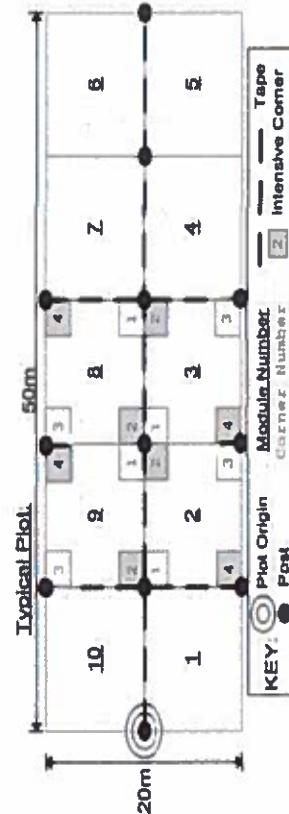
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Plot area (ha): 0.1



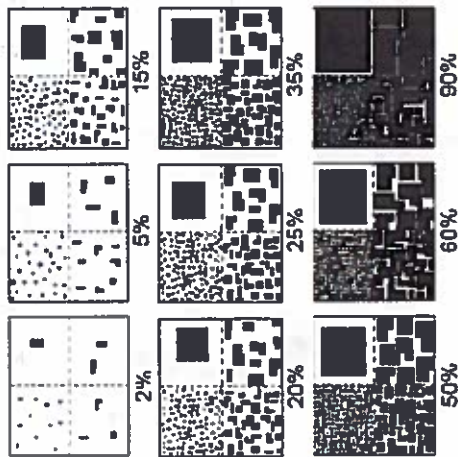
Species

| Estimate for each intensive module: |           |
|-------------------------------------|-----------|
| %open water                         | Voucher # |
| %unvegetated open water             |           |
| %unveg. ground (bare soil)          |           |
| %unveg. litter (bare litter)        |           |

[illegible][illegible]

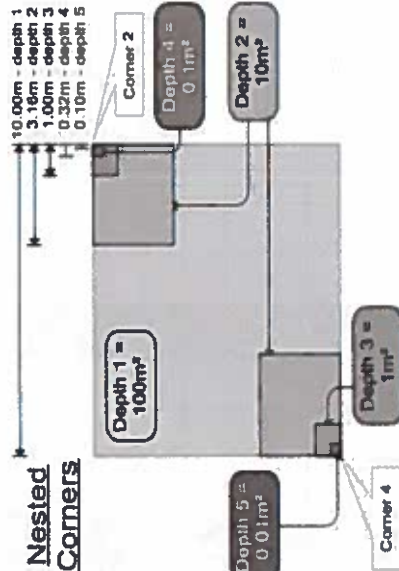
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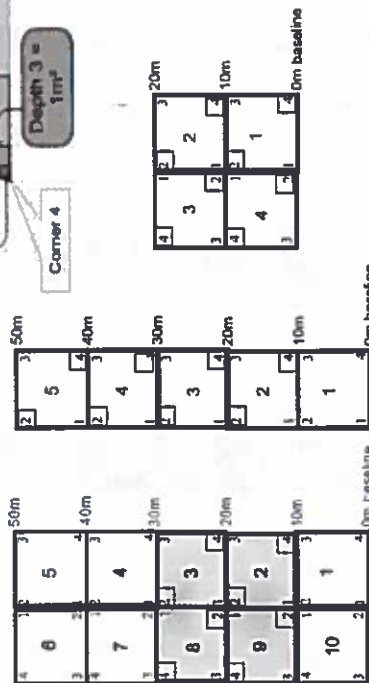
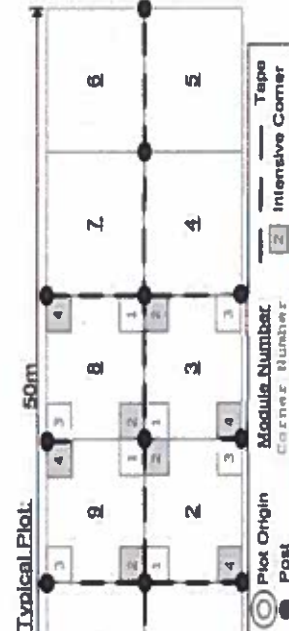
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o.: 1094



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Plot no.: \_\_\_\_\_

[illegible]

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

Project Label: PCAP

Project Name: 0244-2015

Plot No.: 1094

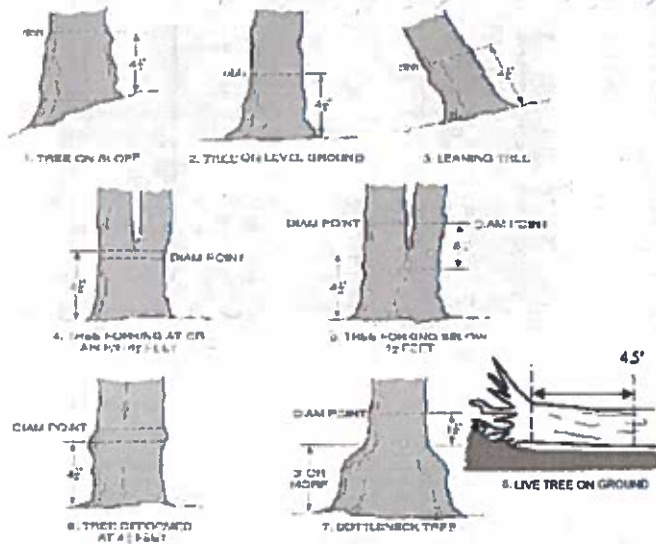
Page: 1 of 3



Explain subsample (additional room on back):

| mod # | species                    | c | voucher# | # stems<br>0-1.4m<br>browed | % sub<br>or super<br>sample | #<br>shrub<br>clumps | size class (cm) woody stems > 1.4m |            |            |           |            |            |            |            |            |             |                              |
|-------|----------------------------|---|----------|-----------------------------|-----------------------------|----------------------|------------------------------------|------------|------------|-----------|------------|------------|------------|------------|------------|-------------|------------------------------|
|       |                            |   |          |                             |                             |                      | 1<br>0-1                           | 2<br>1-2.5 | 3<br>2.5-5 | 4<br>5-10 | 5<br>10-15 | 6<br>15-20 | 7<br>20-25 | 8<br>25-30 | 9<br>30-35 | 10<br>35-40 | 11<br>>40 (record each tree) |
| 1     | Fraxinus pennsylvanica     |   |          | 1                           |                             |                      | 1                                  |            |            |           |            |            |            |            |            |             |                              |
| 1     | Standing dead              |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 1     | Ulmus sp.                  |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 1     | Acer platanoides           |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 1     | Acer saccharum             |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 2     | Fraxinus pennsylvanica     |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 2     | Acer saccharum             |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 2     | Acer platanoides           |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 2     | Standing dead              |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 2     | Cercis canadensis          |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 3     | Fraxinus pennsylvanica     |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 3     | Acer saccharum             |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 3     | Rindera banylin            |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 4     | Quercus rubra              |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 4     | Fraxinus pennsylvanica     |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 4     | Acer platanoides           |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 5     | Acer platanoides           |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 5     | Acer saccharum             |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 5     | Fraxinus sp. pennsylvanica |   |          | 1(5)                        |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 5     | Standing dead              |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 6     | Acer saccharum             |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 6     | Acer platanoides           |   |          |                             |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 6     | Fraxinus pennsylvanica     |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |
| 6     | Solanum dulcamara          |   |          | 1                           |                             |                      |                                    |            |            |           |            |            |            |            |            |             |                              |

### 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: 02RR 2015

Plot No.: 1094

Page: 2 of 43



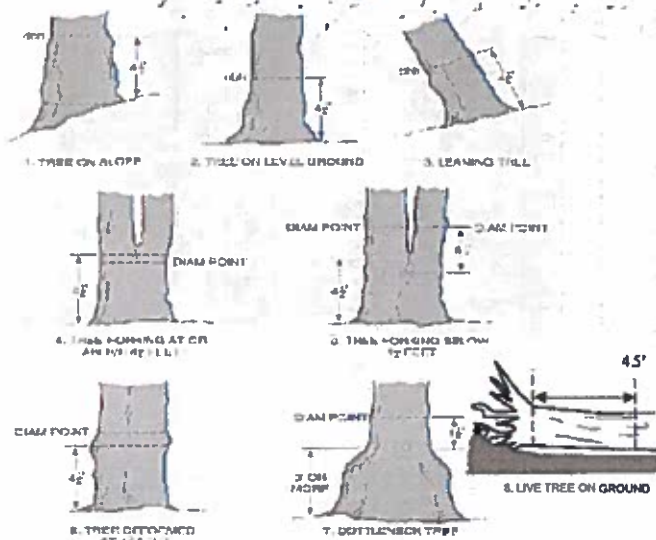
Explain subsample (additional room on back):

| mod | species                | c | voucher# | # stems<br>0-1.4m<br>browsed | % sub<br>or super<br>sample | #<br>shrub<br>clumps | size class (cm) woody stems >1.4m | 1<br>0-1 | 2<br>1-2.5 | 3<br>2.5-5 | 4<br>5-10 | 5<br>10-15 | 6<br>15-20 | 7<br>20-25 | 8<br>25-30 | 9<br>30-35 | 10<br>35-40 | 11<br>>40 (record each tree) |
|-----|------------------------|---|----------|------------------------------|-----------------------------|----------------------|-----------------------------------|----------|------------|------------|-----------|------------|------------|------------|------------|------------|-------------|------------------------------|
| ✓   | Standing dead          |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             | 44.9                         |
| ✓   | Aesculus glabra        |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Donica mofjovi         |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Ulmus americana        |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Tilia americana        |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Standing dead          |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Fraxinus pennsylvanica |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Acer platanoides       |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Acer platanoides       |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Acer saccharum         |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Fraxinus pennsylvanica |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Tilia americana        |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Ulmus sp.              |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Aesculus glabra        |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Fraxinus pennsylvanica |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Standing dead          |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             | 55.6                         |
| ✓   | Acer platanoides       |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Acer saccharum         |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | LIUSTRUM VULGARIS      |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Ulmus sp.              |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Acer saccharum         |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Acer platanoides       |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Tilia americana        |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             |                              |
| ✓   | Platanus occidentalis  |   |          |                              |                             |                      |                                   |          |            |            |           |            |            |            |            |            |             | 53.2                         |

10  
1  
2  
2

516 906 55866

### 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.

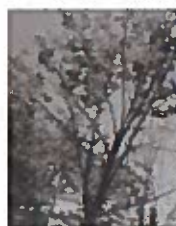
Record using the tally system from 1 to 10



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)

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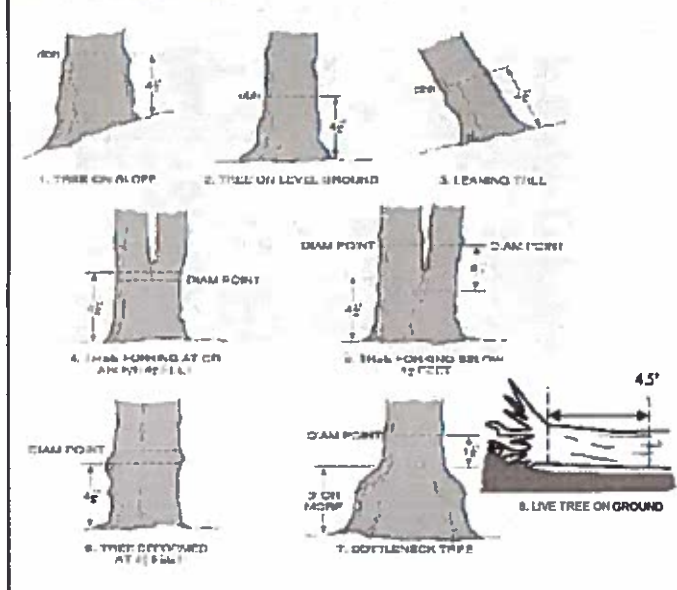
ॐ नमो भगवते वासुदेवाय

**Explain subsample (additional room on back):**

**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



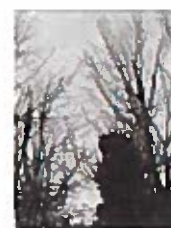
2



3



4



5

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A

B

C

D

E

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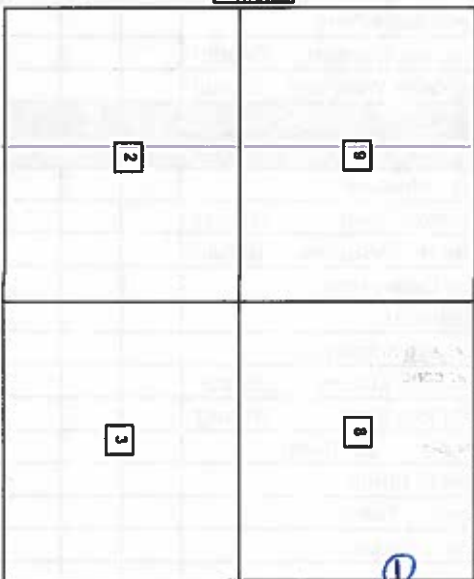
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| Module ID | Tree ID | Species             | DBH (cm) | HT (m) | Ash condition | Dead condition | # Exit holes | Economic present | Woodpecker holes |
|-----------|---------|---------------------|----------|--------|---------------|----------------|--------------|------------------|------------------|
| 8         | 1       | Fraxinus denslyrata | 24.9     |        | 2             | -              | 0            | 0                | 0                |
|           | 2       |                     |          |        |               |                |              |                  |                  |
|           | 3       |                     |          |        |               |                |              |                  |                  |
|           | 4       |                     |          |        |               |                |              |                  |                  |
|           | 5       |                     |          |        |               |                |              |                  |                  |
|           | 6       |                     |          |        |               |                |              |                  |                  |
|           | 7       |                     |          |        |               |                |              |                  |                  |
|           | 8       |                     |          |        |               |                |              |                  |                  |
|           | 9       |                     |          |        |               |                |              |                  |                  |
|           | 10      |                     |          |        |               |                |              |                  |                  |
|           | 11      |                     |          |        |               |                |              |                  |                  |
|           | 12      |                     |          |        |               |                |              |                  |                  |
|           | 13      |                     |          |        |               |                |              |                  |                  |
|           | 14      |                     |          |        |               |                |              |                  |                  |
|           | 15      |                     |          |        |               |                |              |                  |                  |
|           | 16      |                     |          |        |               |                |              |                  |                  |
|           | 17      |                     |          |        |               |                |              |                  |                  |
|           | 18      |                     |          |        |               |                |              |                  |                  |
|           | 19      |                     |          |        |               |                |              |                  |                  |
|           | 20      |                     |          |        |               |                |              |                  |                  |
|           | 21      |                     |          |        |               |                |              |                  |                  |
|           | 22      |                     |          |        |               |                |              |                  |                  |
|           | 23      |                     |          |        |               |                |              |                  |                  |
|           | 24      |                     |          |        |               |                |              |                  |                  |
|           | 25      |                     |          |        |               |                |              |                  |                  |

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



\*\*\* Change intensive module numbers when necessary



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

CLEVELAND METROPARKS Plant Community Assessment Program: Invasive Species Survey



| Tier 1: Early detection/ Rapid response |                             | Presence    |    |    |    | GPS      |              |
|---|-----------------------------|-------------|----|----|----|----------|--------------|
|   |                             | NE          | SE | SW | NW |          | Presence     |
| Microstegium vimineum                   | Japanese stiltgrass         |             |    |    |    |          | X: yes       |
| 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 |          | # of Plants  |
| Acer platanoides                        | Norway Maple                |             |    |    |    |          | 1: 1-10      |
| Ailanthus altissima                     | Tree of Heaven              |             |    |    |    |          | 2: 11-50.    |
| Lonicera japonica (vine)                | Japanese Honeysuckle        |             |    |    |    |          | 3: 51-100    |
| Lythrum salicaria (wetland)             | Purple Loosestrife          |             |    |    |    |          | 4: 101-1,000 |
| Aegopodium podagraria (G-cover)         | Bishop's Goutweed           |             |    |    |    |          | 5: >1,000    |
| Celastrus orbiculatus (vine)            | Asian Bittersweet           |             |    |    |    |          |              |
| Torilis sp.                             | Hedgeparsley                |             |    |    |    |          |              |
| Conium maculatum                        | Poison Hemlock              |             |    |    |    |          |              |
| Rhamnus cathartica                      | Common Buckthorn (shrub)    |             |    |    |    |          |              |
| Berberis thunbergii                     | Japanese Barberry (shrub)   |             |    |    |    |          |              |
| Alnus glutinosa                         | European Alder              |             |    |    |    |          |              |
| Dipsacus laciniatus                     | Cut-leaf Teasel             |             |    |    |    |          |              |
| Elaeagnus umbellata                     | Autumn Olive (shrub)        |             |    |    |    |          |              |
| Lonicera maackii                        | Amur Honeysuckle (shrub)    |             |    |    |    |          |              |
| Euonymus fortunei                       | Wintercreeper               |             |    |    |    |          |              |
| Tier 3: Presence is of Interest         |                             | # of Plants |    |    |    | comments |              |
|   |                             | NE          | SE | SW | NW |          | # of Plants  |
| Convallaria majalis (G-cover)           | Lily of the Valley          |             |    |    |    |          | 1: 1-10      |
| Coronilla varia (G-cover)               | Crown Vetch                 |             |    |    |    |          | 2: 11-50.    |
| Eleutherococcus pentaphyllus            | Five-leaf Aralia (shrub)    |             |    |    |    |          | 3: 51-100    |
| Pachysandra terminalis (G-cover)        | Japanese Pachysandra        |             |    |    |    |          | 4: 101-1,000 |
| Philadelphus coronarius                 | Mock Orange (shrub)         |             |    |    |    |          | 5: >1,000    |
| Pulmonaria officinalis (G-cover)        | Lungwort                    |             |    |    |    |          |              |
| Rubus phoenicolasius                    | Wineberry                   |             |    |    |    |          |              |
| Iris pseudacorus (wetland)              | Yellow Flag Iris            |             |    |    |    |          |              |
| Ornithogalum umbellatum                 | Star of Bethlehem           |             |    |    |    |          |              |
| Viburnum opulus var. opulus             | European Cranberry (shrub)  |             |    |    |    |          |              |
| Viburnum plicatum                       | Doublefile Viburnum (shrub) |             |    |    |    |          |              |
| Tier 4: Widespread and abundant         |                             | Presence    |    |    |    | comments |              |
|   |                             | NE          | SE | SW | NW |          | # of Plants  |
| Alliaria petiolata                      | Garlic Mustard              |             |    |    |    |          | 1: 1-10      |
| Ligustrum vulgare                       | Common Privet (shrub)       |             |    |    |    |          | 2: 11-50.    |
| L. morrowii, L. tatarica                | Bush Honeysuckles (shrub)   |             |    |    |    |          | 3: 51-100    |
| Phalaris arundinacea                    | Reed Canarygrass            |             |    |    |    |          | 4: 101-1,000 |
| Phragmites australis (wetland)          | Phragmites                  |             |    |    |    |          | 5: >1,000    |
| Polygonum cuspidatum                    | Japanese Knotweed           |             |    |    |    |          |              |
| Frangula alnus                          | Glossy Buckthorn (shrub)    |             |    |    |    |          |              |
| Rosa multiflora                         | Multiflora Rose (shrub)     |             |    |    |    |          |              |
| Typha angustifolia, T. x. glauca        | Cattails (wetland)          |             |    |    |    |          |              |
| Cirsium arvense                         | Canada thistle              |             |    |    |    |          |              |
| Dipsacus fullonum                       | Common Teasel               |             |    |    |    |          |              |
| Hesperis matronalis                     | Dame's Rocket               |             |    |    |    |          |              |
| Vinca minor (G-cover)                   | Periwinkle                  |             |    |    |    |          |              |

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



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

Project Label: PCAP

Project Name: 62822015

Plot No.: 1094

Page: 1 of 1

| mod # | species | voucher# | # shrub clumps | size class (cm) woody stems > 1m |          |          |         |          |          |          |          |          |           |                           |
|-------|---------|----------|----------------|----------------------------------|----------|----------|---------|----------|----------|----------|----------|----------|-----------|---------------------------|
|       |         |          |                | 1 0-<1                           | 2 1-<2.5 | 3 2.5-<5 | 4 5-<10 | 5 10-<15 | 6 15-<20 | 7 20-<25 | 8 25-<30 | 9 30-<35 | 10 35-<40 | 11 >40 (record each tree) |
| 1     | None    |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 2     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 3     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 4     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 5     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 6     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 7     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 8     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 9     |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |
| 10    |         |          |                |                                  |          |          |         |          |          |          |          |          |           |                           |

\* IF EVIDENCE OF PEST OR PATHOGEN RECORD TOTAL SPECIES POPULATION IN THE PLOT EVEN THE NOT INFECTED

| Strata   | # of stem infected | Severity (H, M, or L) |
|--|--------------------|-----------------------|
| Tree (size class 3 or above)                         |                    |                       |
| Shrub (size class 2 or below including shrub clumps) |                    |                       |

\* Write None Present if no evidence:

|                          |      |              |
|--------------------------|------|--------------|
| Beech (Fungus)           | None | Oct. 8-14-15 |
| Hemlock (HWA)            |      |              |
| Walnut (Thousand Canker) |      |              |
| Asian Longhorned Beetle  |      |              |
| Other Pest or Pathogen   |      |              |

Severity

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

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

Low = Only a few leaves or branches are exhibiting symptoms



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

| Module # | C7 | Corner | Corner |
|----------|----|--------|--------|
|          |    |        |        |
|          |    |        |        |
|          |    |        |        |
|          |    |        |        |

### CLASSIFICATION

HTT = excellent, g Fit and Confidence

Hydrogeomorphic class (WETLANDS ONLY)

|   |      |       |
|---|------|-------|
| <input type="checkbox"/> DEPRESSION   | Fit= | Conf= |
| <input type="checkbox"/> IMPOUNDMENT <input type="checkbox"/> Beaver <input type="checkbox"/> Human                                     | Fit= | Conf= |
| <input type="checkbox"/> RIVERINE <input type="checkbox"/> Headwater <input type="checkbox"/> Mainstem <input type="checkbox"/> Channel | Fit= | Conf= |
| <input type="checkbox"/> SLOPE (ground water hydrology or on a physical slope)  | Fit= | Conf= |
| <input type="checkbox"/> PRINGING <input type="checkbox"/> Reservoir <input type="checkbox"/> Natural Lake                              | Fit= | Conf= |
| <input type="checkbox"/> COASTAL (specify subclass)   | Fit= | Conf= |
| <input type="checkbox"/> BOD (strongly, moderately, weakly ombrotrophic)  | Fit= | Conf= |

Other EPA VIBI Plant Community Class (WETLANDS ONLY):

|   |      |       |
|---|------|-------|
| <input type="checkbox"/> FOREST <input type="checkbox"/> swamp forest <input type="checkbox"/> bog forest <input type="checkbox"/> forest seep  | Fit= | Conf= |
| <input type="checkbox"/> EMERGENT <input type="checkbox"/> marsh <input type="checkbox"/> wet meadow <input type="checkbox"/> open bog          | Fit= | Conf= |
| <input type="checkbox"/> SHRUB <input type="checkbox"/> shrub swamp <input type="checkbox"/> tall sh. bog <input type="checkbox"/> tall sh. fen | Fit= | Conf= |

### MICROTOPOGRAPHIC FEATURE COUNTS - Intensive modules only

Grades 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 (sh)  
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# | sewer | (count) | no. of tussocks | no. of hummocks   | no. micro. depressions | C.W.D. (2-12 cm) | C.W.D. (12-40cm) | C.W.D. >40 cm  | microhab. interspers. | microhab. SLOPE |
|------|-------|---------|-----------------|-------------------|------------------------|------------------|------------------|----------------|-----------------------|-----------------|
|      |       |         | depth 3 1x1m    | depth 2 3.1x3.1cm | depth 1 10x10m         | depth 1 10x10m   | depth 1 10x10m   | depth 1 10x10m | depth 1 10x10m        | depth 1 10x10m  |
| 2    | ( )   |         | 0               | 0                 | 0                      | 10               | 3                | 0              | 2                     | 3               |
| 3    | ( )   |         | 0               | 0                 | 0                      | 16               | 2                | 1              | 2                     | 3               |
| 8    | ( )   |         | 0               | 0                 | 0                      | 21               | 3                | 0              | 2                     | 3               |
| 9    | ( )   |         | 0               | 0                 | 0                      | 15               | 4                | 0              | 2                     | 3               |

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

### MCNAB INDICES (degrees) + for up - for down

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

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

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

Landform Index (question when landscape)  
Terrain Shape Index (sets microtopographic shape)

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

| Module | N  | S | E  | W  |
|--------|----|---|----|----|
| 2      | 20 | 4 | 16 | 2  |
| 3      | 19 | 9 | 5  | 23 |
| 8      | 5  | 4 | 8  | 8  |
| 9      | 10 | 1 | 2  | 7  |



# 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.

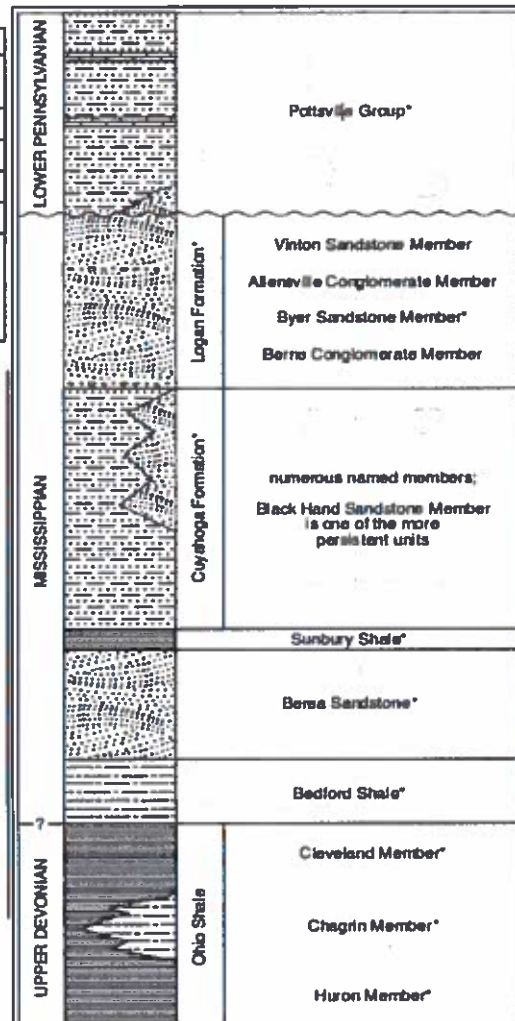
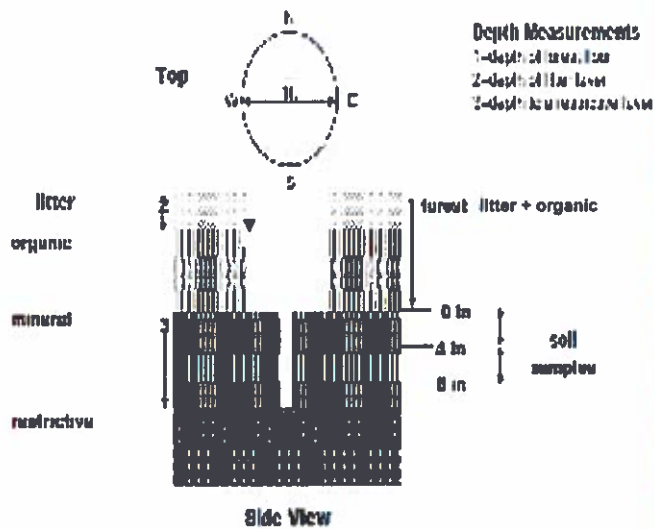


FIGURE 3-20.—Generalized section of Upper Devonian, Mississippian, and Lower Pennsylvanian formations in northeastern Ohio. Asterisks indicate units that are fossiliferous. This composite section represents about 400 meters of rock exposed across the area. The section is not to scale, but the thicknesses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

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

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

Soil pit module # \_\_\_\_\_ (one per entire plot)

|       |                       |
|-------|-----------------------|
| 5 cm  | matrix color          |
|       | mottle color          |
|       | %mottle               |
|       | oxid roots 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  |
|       | hydr. cond*** I S M D |

\* refer to lecture classes on reverse side

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

\*\*\* Circle one:

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

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

2-castings + 1 worm  
3-castings, no worms  
8-castings, no worms  
9-castings, no worms

|  |   |
|--|---|
| Soil Collection Module (Horizon A, B, C)     | A   |
| 2.3 g core profile                           |   |
| Web Soil Survey Information                  |   |
| Soil Series/Type:                            |   |
| Soil Series Source: Ohio Soil Survey         |   |
| Landform type:                               |   |
| Depth to root layer:                         |   |
| Parent Material:                             |   |
| <b>DRAINAGE*</b>                             |   |
| <input type="checkbox"/> Excessively dr      | <input type="checkbox"/> Somewhat excessively |
| <input type="checkbox"/> Well drained        | <input type="checkbox"/> Moderately well dr.  |
| <input type="checkbox"/> Somewhat poorly dr. | <input type="checkbox"/> Very poorly dr.      |
| <input type="checkbox"/> Impermeable surface |   |

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

| module | 1 liter+ organic depth (cm) | 2 liter depth (cm) | water depth (cm) | depth sat soil (cm) |
|--------|-----------------------------|--------------------|------------------|---------------------|
| 2      | 2.5                         | 2.5                | 0                | 0                   |
| 3      | 0.6                         | 0.6                | 0                | 0                   |
| 8      | 0.9                         | 0.9                | 0                | 0                   |
| 9      | 1.2                         | 1.2                | 0                | 0                   |

**EARTH SURFACE & GROUND COVER**

| Underlying Earth Surface*  | Ground Cover           | percent |
|----------------------------|------------------------|---------|
| Run = 100%                 | percent                | percent |
| Humus                      | Coarse Woody Debris*** | 15      |
| Mineral Soil               | Fine Woody Debris****  | 7       |
| Gravel-Cobble*             | Litter                 | 61      |
| Boulder**                  | Duff (Ferm. + Humus)   | 0       |
| Bedrock                    | Bryophyte- Lichen      | 1       |
| * Gravel-Cobble = 1/16-10" | Water                  | 0       |
| ** Boulder = > 10 in       | Bare Soil              | 9       |
| *** >5 cm in diameter      | Gravel Trail           | 4       |
| **** <5 cm in diameter     | Other                  | 1       |

**COVER BY STRATA**

estimate using midpoints of 5, 6, 7, 8, 13

| Strata      | Height Range (m) | Total Cover (%) |
|-------------|------------------|-----------------|
| Tree        | 5.0-7            | 68              |
| Shrub       | 0.5-5.0          | 53              |
| Herb        | 0-0.5            | 63              |
| (Floating)* | -                | -               |
| (Aquatic)*  | -                | -               |

\* rooted and floating or slightly emergent

\*\* submerged, most plant mass below surface

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

**TRAIL INFORMATION:**

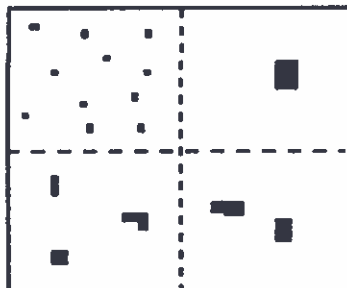
| record type and cover for each                | %Cover |
|---|--------|
| Type  |        |
| <input type="checkbox"/> All Purpose          |        |
| <input type="checkbox"/> Bridle               |        |
| <input type="checkbox"/> Hiking sanctioned    |        |
| <input type="checkbox"/> Booding unsanctioned |        |
| <input checked="" type="checkbox"/> Gravel    |        |
| <input checked="" type="checkbox"/> Dirt      | 4      |

**STAND SIZE**

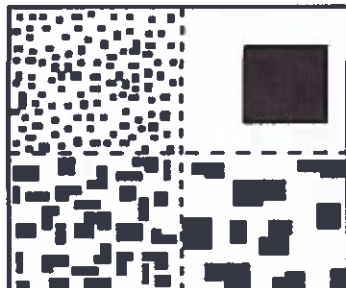
- ☐ >600 x plot size
- ☐ > 100 x plot size
- ☒ 10-100 x plot size
- ☐ 3-10 x plot size
- ☐ 1-3 x plot size
- ☐ < plot size

# PERCENT MOTTLES (USE CLASS CODES):

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



2%



20%

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

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

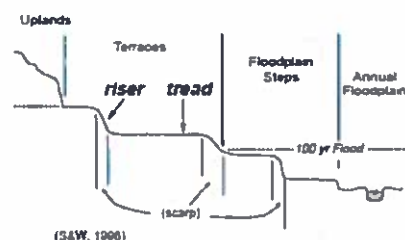
**Geomorphic Component -** Three-dimensional descriptors of parts of landforms or microfeatures that are best applied to areas. Unique descriptors are available for Hills, Terraces, Mountains, and Flat Plains; e.g., (for Hills) *nose slope* or *NS*.

| Hills        | Code | NASIS |
|--------------|------|-------|
| interfluvium | IF   | IF    |
| head slope   | HS   | HS    |
| nose slope   | NS   | NS    |
| side slope   | SS   | SS    |
| base slope   | —    | BS    |



(PJS, 1900; adapted from Ruess, 1975)

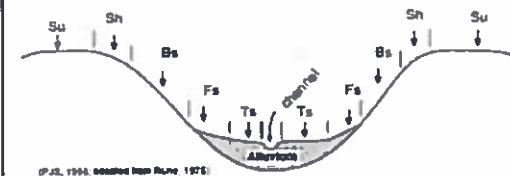
| Terraces | Code |
|----------|------|
| riser    | RI   |
| tread    | TR   |



(SAW, 1996)

**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   |



(PJS, 1990, modified from Ruess, 1975)

**HYDROLOGIC REGIME** Modified from Grossman et al 1998. (Frequency and duration of flooding.)

**UPLAND:** Not a wetland. Very rarely flooded.

**INTERMITTENTLY/SEASONALLY SATURATED:** Dry at least once per year. Surface water is seldom present, but substrate is saturated to surface for extended periods during the growing season.

**PERMANENTLY/SEMPERMANENTLY SATURATED:** Dry less than once per year. Surface water is seldom present, but substrate is saturated to surface for extended periods during the growing season. Equivalent to Cowardin's Saturated modifier.

**OCCASIONALLY FLOODED:** Surface water can be present for brief periods during growing season, but not in most years. Often characterizes flood-plain upper terraces.

**TEMPORARILY FLOODED:** Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Often characterizes flood-plain levees and lower terraces. Equivalent to Cowardin's Temporary modifier.

**INTERMITTENTLY FLOODED:** Substrate is usually exposed, but surface water can be present for variable periods without detectable seasonal periodicity. Inundation is not predictable to a given season and is dependent upon highly localized rain storms. This modifier was developed for use in the arid West for water regimes of Playa lakes, intermittent streams, and dry washes but can be used in other parts of the U.S. where appropriate. This modifier can be applied to both wetland and non-wetland situations. Equivalent to Cowardin's Intermittently Flooded modifier.

**SEMPERMANENTLY FLOODED** (exposed <1/year): Surface water persists throughout the growing season in most years. Land surface is normally saturated when water level drops below soil surface. Includes Cowardin's Intermittently Exposed and Semipermanently Flooded modifiers.

**PERMANENTLY FLOODED:** Water covers the land surface at all times of the year in all years. Equivalent to Cowardin's "permanently flooded".

**UNKNOWN:** The hydrologic regime cannot be determined from the available information.