

PREVALENCE INDEX WORKSHEET

LOCATION Worcester Co, MD DATE 4/19/96 EVALUATOR Inter-Agency Training
 HYDRIC UNIT NAME O4hells TRANSECT NO. 2

Frequency of Occurrence of Identified Plants with Known Indicator Status

Plant Species	Frequency of Occurrence Total for Each Species	F ₀ Obligate	F _{1w} Facult. Wet.	F _f Facult.	F _{fu} Facult. Upland	F _u Upland
Liriodendron Tulipifera	###### III				3	
Platanus occidentalis	############		2			
Acer rubrum	### III			8		
Hedera helix	I					
Alnus serrulata	II	2				
Podophyllum peltatum	III					
Liquidambar styraciflua	II			2		
Galium asperifolium	II	2				
Lindera benzoin	III		3			
Lonicera japonica	###			5		
Toxicodendron radicans	###			5		
Viburnum racematum	II		2			
Arisaema triphyllum	III		4			
Carpinus caroliniana	II			2		
Ilex opaca	###### II			2	12	
Thelypteris noveboracensis	II			2		
Total occurrence for all plant species	86					
Total occurrences ID'd with known indicator status	82	4	29	24	25	
E.I. value		1	2	3	4	5

Total occurrences identified with known indicator status = % valid occurrences
 Total occurrence for all plant species

$$PI_i = \frac{(1F_0) + (2F_{1w}) + (3F_f) + (4F_{fu}) + (5F_u)}{(F_0 + F_{1w} + F_f + F_{fu} + F_u)}$$

COMPUTATIONS

1. Computation of prevalence index (PI) for transect #1:

$$PI_i = \frac{(1F_o) + (2F_{fw}) + (3F_f) + (4F_{fu}) + (5F_u)}{(F_o + F_{fw} + F_f + F_{fu} + F_u)}$$

$$PI_1 = \frac{(1 \times 4) + (2 \times 29) + (3 \times 24) + (4 \times 25)}{4 + 29 + 24 + 25} = \frac{234}{82} = 2.85$$

where:

- PI_i = Prevalence index for transect i
- F_o = Frequency of occurrence of obligate wetland species
- F_{fw} = Frequency of occurrence of facultative wetland species
- F_f = Frequency of occurrence of facultative species
- F_{fu} = Frequency of occurrence of facultative upland species
- F_u = Frequency of occurrence of upland species

2. Computation of mean prevalence index (PI_M) for three transects:

$$PI_M = \frac{PI_T}{N}$$

where:

- PI_M = Mean prevalence index for transects
- PI_T = Sum of prevalence index values for all transects
- N = Total number of transects

For example: PI for Transect 1 = 2.85
PI for Transect 2 = 3.16
PI for Transect 3 = 2.93

$$PI_M = \frac{2.85 + 3.16 + 2.93}{3} = \frac{8.94}{3} = 2.98$$

3. Computation of standard deviation (s) for prevalence index (PI):

$$s = \sqrt{\frac{(PI_1 - PI_M)^2 + (PI_2 - PI_M)^2 + (PI_3 - PI_M)^2}{N - 1}}$$

For example:

Transect	PI_i	PI_M	$(PI_i - PI_M)$	$(PI_i - PI_M)^2$
1	2.85	2.98	-0.13	0.0169
2	3.16	2.98	0.18	0.0324
3	2.93	2.98	-0.05	0.0025
				0.0518

$$s = \sqrt{\frac{0.0518}{3 - 1}} = \sqrt{\frac{0.0518}{2}} = \sqrt{0.0259} = 0.161$$

4. Computation of standard error (\bar{s}) of the prevalence index:

$$\bar{s} = \frac{s}{\sqrt{N}} = \frac{0.161}{\sqrt{3}} = \frac{0.161}{1.73} = 0.093$$

Since 0.093 does not exceed 0.20, no additional transects are needed.

5. Record mean prevalence index value.

$$PI_M = 2.98$$

Since 2.98 is less than 3.0, the area has hydrophytic vegetation. If the wetland hydrology criterion is met, then the area is a wetland.