**Drip, Drip - Using an IV**

What is the IV 300? Simply put, it is an index representing how dominant or representative a certain tree species is within a certain area. This index includes 3 important calculations: basal area, frequency, and density of each tree species. Each of these is calculated relative to the other tree species in a particular area.

First you will need to calculate tree basal area (B.A.). Multiply the d.b.h. by .00007854 (that’s four zeros-don’t worry it’s a constant-we won’t go into its derivation). Add this to the chart you’re creating. You will be creating multiple charts – one for each area. Sort first by species and then by plot. It should look something like this:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Flood Plain | | | | | | |
| Plot | Species | Dbh (cm) | Tree BA (m2 tree-1) | Species Frequency | Species Density | Species  Basal Area |
| Stems ha-1 | (m2 ha-1) |
|  |  |
| 1 | Oak | x | x | x | x | x |
| 1 | Oak | x | x |  |  |  |
| 2 | Oak | x | x |  |  |  |
| 2 | Oak | x | x |  |  |  |
| 1 | Pine | x | x | x | x | x |
| 1 | Pine | x | x |  |  |  |
| Total |  |  |  | x | x | x |

Next, calculate frequency by taking the number of plots you found a particular species in divided by the total number of plots in that area.

Density is measured by taking the total number of each tree species divided by the total area surveyed. Our plots were .01 hectare (ha, this is 10,000 square meters or roughly the size of a football field). This gives us trees per ha. In this example it would be 4 oaks/.02ha as we have two .01 ha plots.

Next is species B.A. calculated by summing the tree B.A. and dividing by the total area surveyed.

Now you have to calculate all values relative to each other. This is done by taking the absolute values as a percentage. For frequency divide each species frequency by the total frequency of all species. For density, divide each species density by the total density of all species. Are you getting it? For B.A. divide each species B.A. by the total B.A. of all species. It should look something like this:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Flood Plain | | | | | | | |
| Species | Species Frequency | Species Density | Species  Basal Area | Relative Frequency | Relative Density | Relative Basal Area | Importance Value |
| Stems ha-1 | m2 ha-1 |
|  |  |
| Oak | x | x | x | x | x | x | x |
| Pine | x | x | x | x | x | x | x |
| Total | x | x | x | x | x | x | x |

The IV 300 is simply the sum of the relative frequency, density and basal area.