

## Protocol 5: Vegetation Type

### Materials:

- Field book or field sheets and pencil or waterproof pen
- Tree identification book(s)
- 100' Tape measure (32.8 feet is 10 meters)
- Compass
- Flagging tape
- Flexible tape measure for tree DBH

### Method (Quadrat):

You can sample using 1/20<sup>th</sup> acre plots (10 x 10 meters). Using the 100' tape measure, flagging tape and compass measure and mark a square that is 10 m by 10 m (10 meters is 32.8 feet).

Some key things to measure- depending on your research question- are:

1. Tree species – count the number of individuals of each species. Typically, very small trees are excluded (<3 cm diameter). When in doubt take good pictures of leaves, buds and bark of the tree (record the photo numbers next to the tree identification in your field notes).
2. Diameter at breast height (DBH). The diameter of a tree measured from a point 4.5 feet above the ground. Use a tape measure to measure the circumference of the tree at this height, then divide by pi (3.14...) to get the diameter.
3. Mean density, which can be measured for the plot by measuring the distance to nearest neighbor for each tree in the plot.
4. Shrub and (or) herb layer: species presence/absence (for species diversity), density of stems, or estimates of cover in the same 10mX10m plot, or number of different species.

Relative density is calculated from species counts (#1), as:

$$\frac{\text{Number of individuals of species A}}{\text{Total number of individuals}} \times 100$$

(results are in percent)

*Note: Very detailed information about plotless sampling (another sampling design using a transect instead of a 10 x 10 m quadrat) and many formulas used in forest mensuration are available at:*

<http://faculty.clintoncc.suny.edu/faculty/michael.gregory/files/BIO%20206/206%20Laboratory/Point-Quarter%20Method/point-quarter%20instructions.htm>

### Method (Transect):

Beginning from your water sampling location extend the measuring tape 30 meters upstream. This is your transect.

Every 5 meters along the transect identify and count all the trees and shrubs in the overstory and understory that occur within a one meter circle from that point on the transect.

Apply the same key measurements as are listed above (species, DBH, density, shrub and herb layer).