

# Shrub/Sapling Measurements- Standard Site- Student Field Guide

## Shrub/Sapling Team - 2-3 people

### Task

Use diagonal transects to collect a sub-sample of shrub/sapling data, height and # of hits (to estimate % cover) in order to calculate biomass and carbon stock using allometric equations.

### Definitions

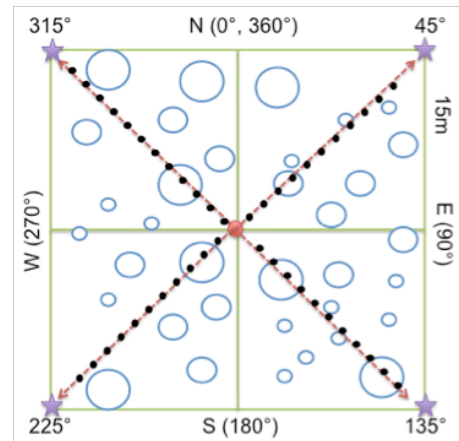
- *Shrub* = a woody plant with multiple stems
- *Sapling* = a tree < 15 cm CBH

### Materials

- Compass
- 2-3 m stick marked by centimeter
- Clinometer (optional)
- Pencil
- Calculator (optional)
- Shrub/Sapling Data Sheet*

### Procedure

1. Select one team member to stand at the center of the sample site with the compass. This person will keep other team members on the correct azimuth (diagonal transect), heading toward one of the sample site corners: NE, SE, SW, or NW.
2. Choose a team member to pace. The pacer should take 1 pace (two steps) and place the measuring stick straight down.
3. The data recorder should record the following in column 2 of the *Shrub/Sapling Data Sheet*:
  - 'H' (for 'Hit') if it is touching a shrub or sapling (go to [step 5](#))
  - 'M' (for 'Miss') if it is not touching a shrub or sapling (leave the other columns blank, return to [step 3](#))
4. If you recorded 'H' in column 2, in column 3 of the Standard *Shrub/Sapling Data Sheet* record:
  - 'E' if the species is an Evergreen
  - 'D' if the species is Deciduous
5. Use the measuring stick to measure a representative height of the whole shrub/sapling and record it in column 4 of the *Standard Shrub/Sapling Data Sheet*.
6. Repeat [steps 3-5](#) until you reach the corner.
7. Return to the center of the site and repeat steps 3-6 until all four directions have been measured.
8. If your teacher directs you to, use the *Shrub/Sapling Calculations Sheet*.



9. If your teacher directs you to, enter your data on the GLOBE website. The number of hits of deciduous and evergreen shrubs will be converted to percent cover. Percent cover and average shrub height will be used in allometric equations to determine biomass and carbon stock of shrubs/saplings on your sample site.

What do I do if...

**...the shrub or sapling is taller than the height of the meter stick?**

*Option 1.* Set the meter stick next to the shrub as a reference, and estimate the height.

*Option 2.* Use a clinometer following the instructions given to you by your teacher.

**...the shrub is so big it covers multiple sample points?**

For each sampling point it touches, record it as a hit ('H') and record its height at that point.