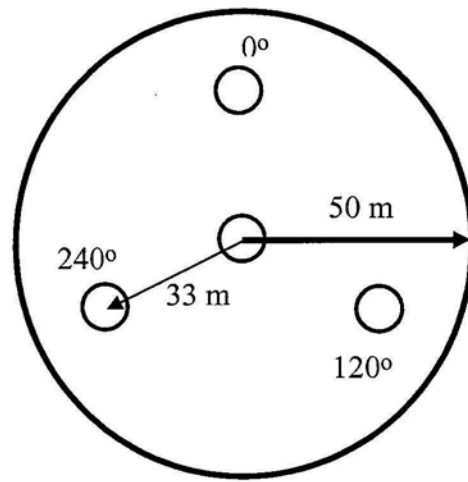


## INSTRUCTIONS ON VEGETATION MEASUREMENTS

Vegetation will be measured in 4 circular subplots within each 50-m radius bird survey point.

The first subplot will be centered on the center of the bird point and the 3 other subplots will be positioned 33 m from the center in directions of 0° 120° and 240° (see below). **On your data sheet, please record the subplot numbers as 1 (for center), 0, 120, or 240.**



Within each of the 5-m-radius subplots use the following protocol:

1. Mark (with flagging) the boundaries of your 5-m-radius subplot. 4 perpendicular points should be adequate to mark the perimeter.
2. Tally the number of **each species** of **live** tree/shrub that is >1.4 m tall (breast height), and give the diameter-at-breast-height (DBH) category of each. Use your DBH measuring stick to categorize the size of the main vertical stem of each plant. Count all stems that are primary stems of a plant and are separate at breast height (e.g., trees that are double-trunked at breast height will be considered as 2 stems). For shrubs and saplings, measure all woody stems that can be considered a separate individual stem at a height of 25 cm. Do not count branches as stems.

Record common names of species. For some species, such as oaks and hickories, where field identification of individual species is sometimes difficult, it is fine to simply record "red oak sp." or "hickory sp." Make an effort to identify all trees/shrubs to family or genus if not species. When a species cannot easily be identified in the field, take a specimen back with you for later identification and record the plant on the data form in such a way that the identity can be changed later (e.g., unid. shrub 1 vs. unid. shrub 2). Ultimately, we will have a miscellaneous category for unidentified species.

Dead trees are recorded under the name “SNAG”. Only record snags that are >1.4 m tall and that fall into the DBH category “**D**” or larger.

Tally the number of vines that occur at breast height. Record these by species name (e.g., greenbriar, grape sp.) or simply as “VINE” if species is not known.

Any herbaceous plants that reach breast height (e.g. raspberry, wing stem) should also be tallied in the tree count, but they won’t occur in the forb/seedling count.

3. Seedling/shrub/forb count: Tally the number of **live woody stems** that are at least 25 cm tall but less than 1.4 m tall. Count only the number of stems present at a height of 25 cm. If a single species of other forbs/herbaceous plants are present in more than 20% of the circle, note their presence and the proportion of circle covered by them (e.g. if you are in an extensive patch of mayapple, jewelweed, wing stem, etc.).
4. Vegetation profile: Profile number 1 is always in the center of the subplot, the other 4 profiles can be in any 4 perpendicular directions, chosen “haphazardly” at approximately 3.0 m from the center point. Record a vegetation “hit” with an X and a miss with a 0. Record coniferous and deciduous hits separately (as C or D) if both occur on the plot. Only contact from foliage—leaves and petioles—not branches, are considered vegetation “hits.”
5. Canopy height (CANHT): estimate in meters. Estimate this at center of subplot for both deciduous and coniferous trees (if conif >15% in canopy).
6. Canopy cover (CANCOV): use densiometer. Measure only once (instead of four times) at center of subplot. Measure cover of deciduous and coniferous separately if conif is >15% cover. Total cover is combination of decid and conif cover.
7. Slope: estimated as 0-5, 6-15, 16-25, 26-35, 36-45 and >45 degrees. You can record these as 0, 10, 20, 30, 40 and >45 respectively.
8. Aspect: facing direction of slope—record compass bearing.
9. Distance to water: estimate to closest body of water within 100 m. Note what type of water (e.g., creek, river, pond, lake). If no water within 100 m, record >100. Creeks that don’t always have water in them should be noted as “ephemeral”.
10. Distance to edges: estimate to closest edge and note the type of edge (e.g., road, gas well, picnic area, etc.).

**Large edges** are canopy openings > than 1000 m<sup>2</sup> (33 m x 33 m), or >30 m wide (for linear edges such as roads). **Only estimate distance to large edge up to 200 m.** If no large edge within 200 m, record as >200.

**Small edges** are canopy openings between 100 m<sup>2</sup> (10 m x 10 m) and 1,000 m<sup>2</sup>, or between 10 and 30 m wide for linear edges. **Only estimate distance up to 100 m.** If no small edge in 100 m, record as >100.