RCW Habitat Evaluation

Lab objective: Evaluate suitability of stand as RCW habitat based on current stand structure and composition.

Assignment: Submit: 1) written methods (past-tense, proofread, error free, your words.);
2) results table (properly formatted) showing the stand average for overstory basal area (ft^2/ac), sapling density (stems/ac), seedling density (stems/ac), and percent ground cover by growth form (*may be helpful to refer back to your succession and stand development lab from FORS 2309);
3) discussion: are current stand conditions suitable for RCW habitat (may need to do some additional research)? if not, how could you improve with management? how would you manage in the future?

In Field: **Collect the following data and record in table on Page 2:**

At 4 sampling point locations (2 chains apart; instructor will direct you to first plot):

1) Determine total overstory (≥ 4" dbh) basal area (ft^2/ac) in a **1/10th** acre plot;
2) Tally the number of seedling (< 1 in. dbh) & sapling (≥ 1 in. dbh) stems within a **1/500th** acre circular nested subplot;
3) Estimate % ground cover by shrub, forb, and grass growth forms within a **1/1,000th** acre circular nested subplot. Remember that total percent cover can exceed 100% for all growth forms combined as foliage often overlaps. **See visual guide on Page 6.**

   Growth forms:

   S = shrub (non-arborescent woody species)
   V = vine (woody)
   F = forb (deciduous, broadleaf, herbaceous species)
   G = grasses, sedges, and rushes

Plot	Overstory (dbh ≥ 4 in.) basal area (ft^2/ac)	Sapling (≥ 1 in. dbh) density (stems/ac)	Seedling (< 1 in. dbh) density (stems/ac)	% Ground cover: shrubs, forbs, grasses
1				S- V- F- G-
2				S- V- F- G-
3				S- V- F- G-
4				S- V- F- G-

Comments:

Fixed Area Plots

1) Circular plots-Determine radius

For a **fixed area plot** of known area, follow these steps to determine the plot dimensions.

1. Determine the equation relating your plot's area to its dimensions. THIS WILL VARY BASED ON THE SHAPE OF YOUR PLOT. Equations for common shapes are:
   a. **Circle: Area = π * radius^2**
   b. Square: Area = (side length)^2
   c. Rectangle: Area = (long side) * (short side)
2. Solve the equation algebraically for the dimension you'll need (radius for circle, side length for square, both side lengths for a rectangle, such as long = 2x and short = x)
3. Convert the area of an acre into square feet, and plug this number into area in your new equation. If you do the math right, you'll calculate the correct radius, side length, etc.

Constants to know: **1 acre = 43,560 square feet** **π = 3.141592654**

Overstory calculations:

2) Tally ALL trees (DBH ≥ 4 inches) within plot and record DBH to the nearest 0.1 inch.

3) Calculate basal area for each tree tallied. Use formula below:

DBH^2 x 0.005454 = ft^2

4) Sum the basal areas for all trees tallied. This gives you ft^2/plot.

5) Expand to a per acre basis (ft^2/ac) by multiplying by the expansion factor (e.g., 20 for the 1/20th ac plot).

Overstory Fixed Area Plots

Plot 1 (1/10th ac: radius = _____ft.)

Tree #	Species	DBH (inches)	Basal area (ft^2)

Total Plot Basal Area: _____ ft^2 **Expanded to per acre: _____ft^2/ac**

Plot 2

Tree #	Species	DBH (inches)	Basal area (ft^2)

Total Plot Basal Area: _____ ft^2 **Expanded to per acre: _____ft^2/ac**

Overstory Fixed Area Plots

Plot 3

Tree #	Species	DBH (inches)	Basal area (ft^2)

Total Plot Basal Area: _____ ft^2 **Expanded to per acre: _____ft^2/ac**

Plot 4

Tree #	Species	DBH (inches)	Basal area (ft^2)

Total Plot Basal Area: _____ ft^2 **Expanded to per acre: _____ft^2/ac**

Visual guide for estimating percent cover

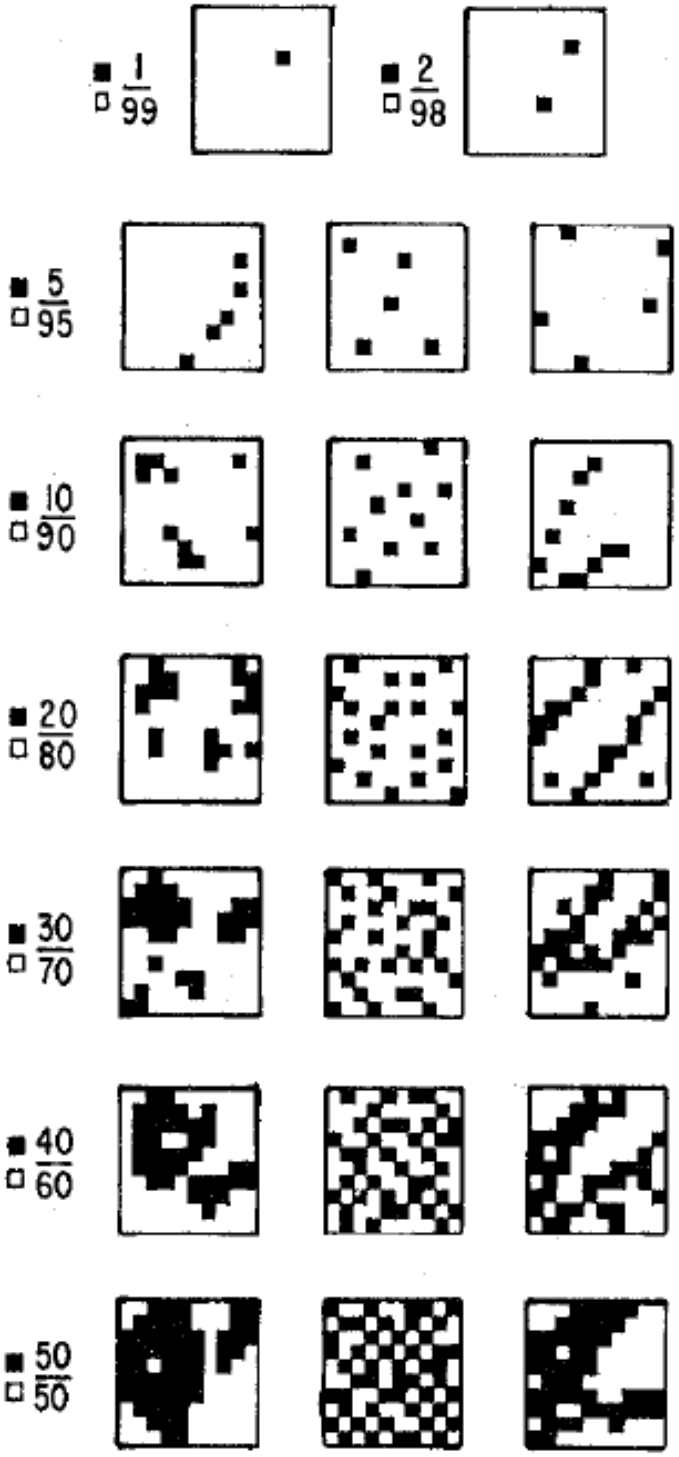

Figure 5.—Guide for estimating density of bare soil, canopy, fine roots and steps.