Basic Field Instruments & Site Orientation

OBJECTIVES

1. To (re-) acquire knowledge in using basic traversing tools through
    a. Calibrating one's pace, and
    b. Learning the two basic uses of the hand compass:
        i. Determining the direction to a *known object / landscape feature* (to transfer field measurements to a map), and
        ii. Determining what object / landscape feature is found in a *given direction,* (to transfer map measurements to the field),
        iii. Measuring the height of a standing tree, and
2. To gain familiarity with the field assessment site through (re-) acquainting oneself with a binary key for plant ID and by walking a major trail through a few stand types.

FIELD WORK

Equipment: (In addition to appropriate field apparel) 100-ft cloth tape, compass, clinometer, Rite-In-The-Rain™ notebook, Common PNW Tree/Shrub/Fern binary key.

Work in teams for this exercise. Each team member should perform the following tasks:

1) Calibrate your pace (a "left-right" pair of steps) by determining the average number of paces it takes to travel one chain (66 ft). Accomplish this by walking a three-chain course you set up with crew partners in a field in St. Edward State Park a total of *three (3) times* (be sure to record all three observations) and taking their average.

2) Measure the *circumference* of the grass "monument circle" by pacing.

3) Assess the claimed Representative Fraction (RF) on the map provided. To do this, first identify two objects on the map that you can locate in the field, pace between them, and record the result. Leave calculations for the "office." (NOTE: 'Scale' often has units attached, such as "1 inch = 100 ft" whereas the RF is unit-less, such as "1 : 1200")

4) From your assigned vantage point specified during lab, measure the direction to the named object / landscape feature (cf. Exhibit 1).

5) From the same assigned vantage point, identify the object / landscape feature found by looking in the given direction (cf. Exhibit 1).

6) Collect data needed to assess the height of your assigned tree (slope dist. & angle, % to top & base).

7) Using the dichotomous key, "key" out the sample vegetation species.

OFFICE WORK

The report for this lab should include the following (neatness counts!):

1) The pacing data you collected, the average, standard deviation, and standard error of number of paces **per chain** calibrated for yourself and separately for each of your team members.

2) The area you computed for the monument circle (assume it truly is a circle).

3) The RF for the map computed from your field observations; briefly compare it to the map RF. NOTE: RF is often considered more useful than "scale," since its meaning is the same using any units, e.g., 1:1000 means that 1 inch = 1000 inches or 1 cm = 1000 cm, etc.

4) (a) Direction to the given object / landscape feature from the vantage point assigned in the field AND (b) the identity of the object / landscape feature in given direction from your vantage point.

5) Exhibit 2 contains data representing several observations of land area for a certain parcel derived by each member of two teams through pacing. Compute the mean Team Area for both teams. Use a t-test to assess if the difference in population mean areas implied by the two team estimates is zero. Report and interpret the results of the test.

6) Report the species and height of your assigned tree.

Exhibit 1. Vantage point locations.

Vantage point 1: Seminary Trail Marker
For field work item 4, find direction to the cross atop the gymnasium
For field work item 5, identify the nearest human-made object along a _354_° line-of-sight

Vantage point 2: Pet Rules Post
For field work item 4, find direction to the tallest roof peak on the red shed across the lot.
For field work item 5, identify the human-made artifact along a _217_° line-of-sight

Vantage point 3: Drinking fountain next to gymnasium
For field work item 4, find direction to the cross atop the gymnasium
For field work item 5, identify the nearest human-made, taller-than-a-person object along a _304_° line-of-sight

Vantage point 4: Monument in the center of the monument circle
For field work item 4, find direction to the rooster wind vane atop the gymnasium
For field work item 5, identify the nearest human-made, taller-than-a-person object along a _254_° line-of-sight

Exhibit 2. Area calculations from two field crews.

Team A	Team B
1. 11483.06 ft^2	1. 12350.5 sq.ft
2. 10812.66 ft^2	2. 11659.2 sq.ft
3. 9314.20 ft^2	3. 11272.1 sq.ft
4. 12618.62 ft^2	4. 12064.6 sq.ft