Appendix 3

PROJECT FAUNA SOIL AND VEGETATION MEASUREMENT FIELD GUIDE

By Dr. Kimberly Epps

in Association with Drs. Jose M.V. Fragoso, J. Overman and J. Luzar

Stanford University and the State University of New York, USA

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PROJECT FAUNA Soil and Vegetation Field Guide

WHY MEASURE SOIL AND VEGETATION?
Vegetation affects the abundance and diversity of wildlife by providing food and habitat. Soils affect vegetation by providing nutrition or water. The soil and vegetation workshop will also help technicians understand where carbon is stored in the environment and how it is measured.

HOW ARE SOIL AND VEGETATION MEASURED IN A LARGE AREA?
Every tree and every bit of soil cannot be measured. Small areas, like transects and plots, can be used to measure the different vegetation types that appear on the land.

WHAT IS MEASURED? Soil, dead leaves, live grasses, and trees will be measured in plots located at specific points on each transect line.

WHAT ARE ALL THE STEPS?

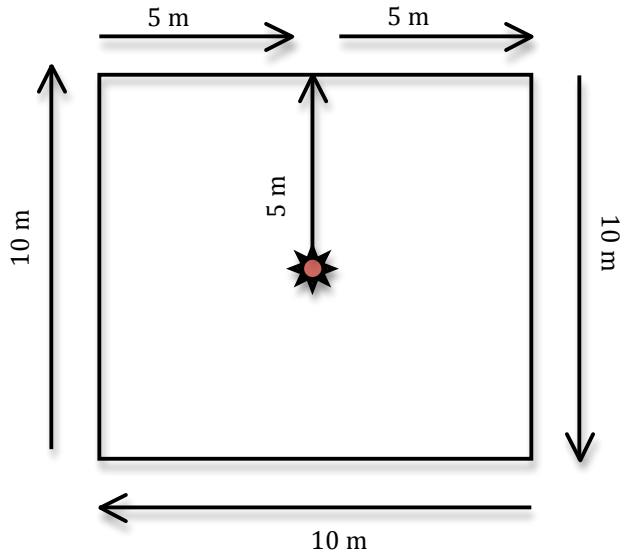
Preparation

Before starting, look at the data sheet to know where the plots will be made on the transect line. When you first return to the transect you will have to reopen it and measure the distance markers. Finally, measure the bearing of the transect. This will be used for all of the plots on the line.

Be certain to have all of your equipment you before you begin!

STEP 1: BUILD PLOT

- Make a 10 m square plot with the sample point at the center.
- Use the bearing of the transect to find all of the angles of the square.
- Draw a map of the plot showing the bearing of the transect and the square and back angles.



STEP 2: COLLECT SOIL

- Dig four (4) holes inside the plot.
- For each hole prepare three (3) bags and label each bag with the sample names on the data sheet.
- Collect soil from 0-10 cm, 10-20 cm and 20-30 cm. Three scoops is enough!
- From the next hole collect soil in the same way and combine top soil with top soil and middle soil with middle soil and so on. Do this for all four holes. This is called a *composite* sample.

- Tell the color and feel of the top soil of the first soil only. Give color by name of the color page (2.5Y, 7.5YR, GLEY 1 or GLEY 2) and then the Value/ Chroma.
- FOR GRAVEL SOIL collect only from0-10 cm.
- Do NOT collect soil from flooded areas.
- Place label in bag and close.

STEP 3: COLLECT LEAF LITTER

- Prepare three (3) bags and label each bag with the name of the plot and “Bag 1”, “Bag 2” or “Bag 3”.
- Throw the frame in the plot randomly three (3) times. Each time, collect leaves inside the frame. Use knife or pruning shears to cut leaves that go outside the frame. Place only dead leaves in the bag. Do not collect sticks, branches, flowers or fruits.
- Place label inside the bag and close.

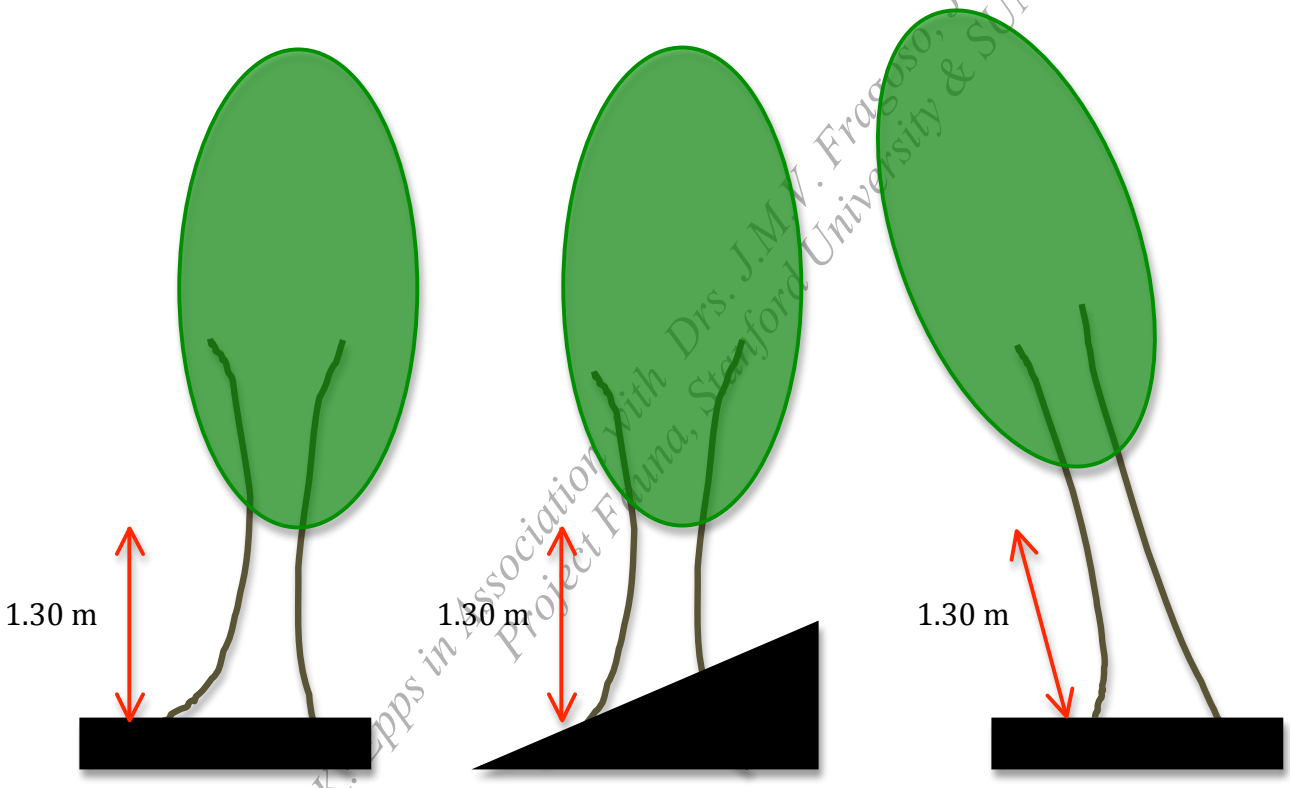
In Savanna

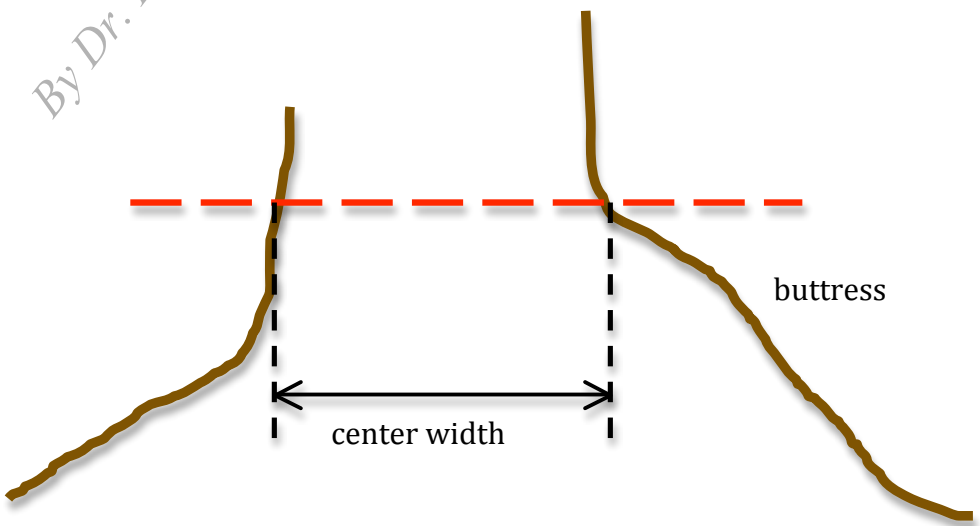
- In savanna, cut live grass in the frame (no roots) and place in the bag. Prepare three (3) bags for savanna grass and label each bag with the name of the plot and “Bag 1”, “Bag 2” or “Bag 3”.
- Place **dead leaves** that are also in frame **in a separate bag**. Label with name of the plot and “Bag 1 DEAD”, “Bag 2 DEAD” or “Bag 3 DEAD”. Live grass and dead leaves from the same throw have the same label name. Only tree savannah or muri scrub plots will have both grass and dead leaves.

STEP 4: MEASURE TREES

Circumference

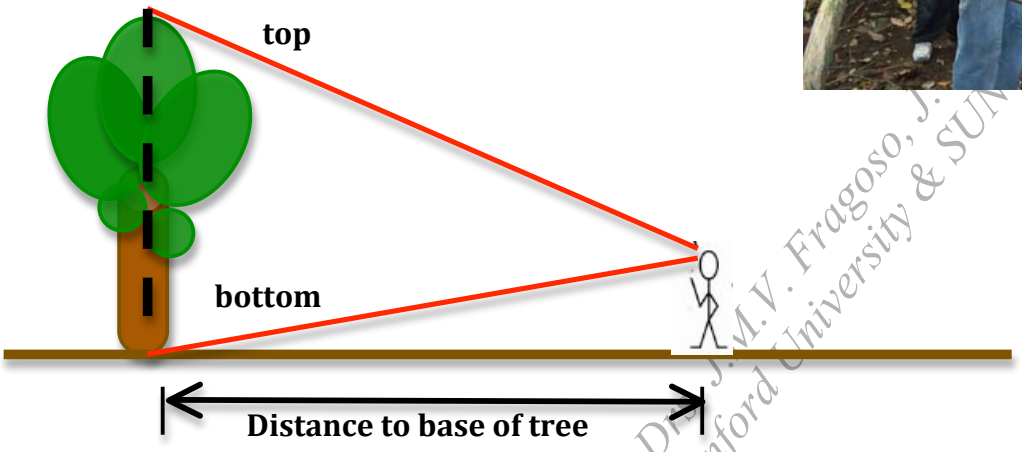
- Measure the diameter or circumference at reference height (1.30 m) for trees ***31 cm and up***.
- If there is more than one branch, measure all branches that are 31 cm and up. All branches on one tree have the same tree number.
- If tree is leaning, measure reference height from the down hill side.
- If the tree has a buttress measure at 1.30m or above the buttress.
- If the tree is very wide, estimate the diameter by measuring the **center width** of the tree with regular measuring tape. Write "Estimate" in the "Notes" column.



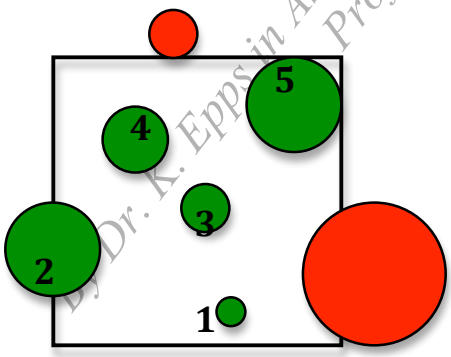


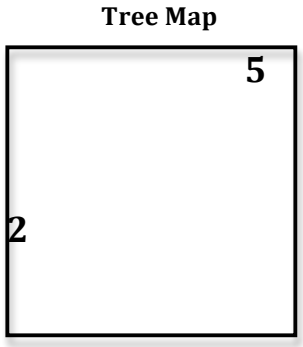
Height

- Measure top angle and bottom angle and distance from tree where you made the measurement.
- Look for the highest part of the canopy.
- If the clinometer runs out of numbers (above 150%), step farther away. If you cannot see the top of the tree, measure the highest part you can see and make a note in the "Notes" column.



- After all trees are measured, make a map of the trees with ***circumference 78 cm and up*** that are in the plot. Show in square, the number of the tree.
- When everything has been sampled inside the plot, count all of your samples to see that none is lost.





Measure only trees that are **INSIDE the plot. Trees are inside the plot if more than half the trunk is inside the plot.*

What do you do if the plot center has a tree fall, or rock cliff or is flooded?
Move the location of the plot center only if it the whole plot can stay inside the vegetation type. The start and end points of the vegetation type are on the sample sheet.