College of Natural Resources

Department of Forest Resources
Forest Measurements and Inventory
Laboratory 9

The objectives of this laboratory exercise are to:

- Using several different types of basal area estimation gauges you will determine the relative basal area of two plots and compare it against the measured basal area.

Location: Meet at **the Gold Fire Hydrant beside the Old Arboretum**

Equipment:

- Reloskop (provided)
- Loggers Tape
- prisms (provided)
- angle gauge
- hard hat

Part 1: Basal Area Calculations

From plot center determine how many trees are within a 1/10th acre plot and record their diameters.

Tree # Diameter Basal Area

Total basal area in the plot:_____

Estimated basal area in 1 acre:_____

Now determine the basal area using the reloskop, prisms and angle gauges

Reloskop:_____
Prism:
BAF_____ and Basal Area _____
BAF_____ and Basal Area _____
BAF_____ and Basal Area _____
Gauge:
Type_____ , BAF _____, and Basal Area_____

Type_____ , BAF _____, and Basal Area_____

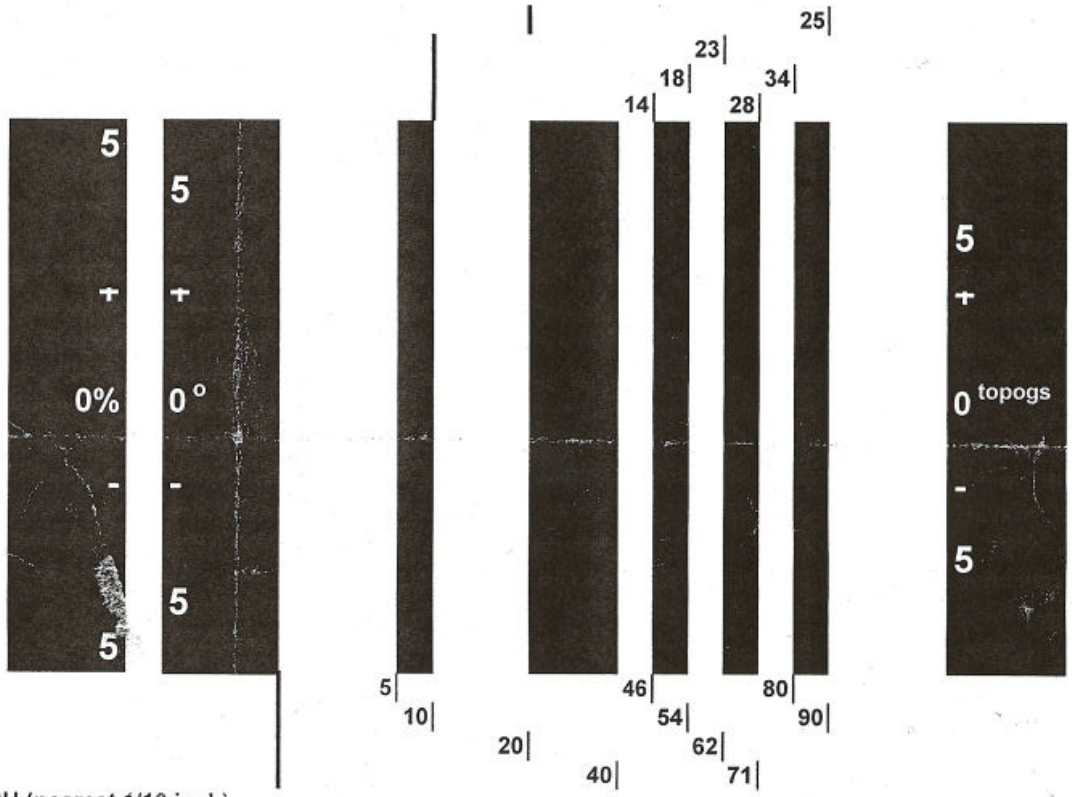
Type_____ , BAF _____, and Basal Area_____

Type_____ , BAF _____, and Basal Area_____

Question: Which instruments overestimated or underestimated the basal area per acre compared to the measured amount?

H01

BAF (Rounded)	BAF (Actual)	PRF (Face)	PRF (Side)
5	5.00	3.800	3.889
10	10.00	2.708	2.750
14	13.61	2.300	2.357
18	17.78		2.062
20	20.00	1.902	1.945
23	22.50	1.790	1.833
25	25.00		1.697
28	27.78	1.610	1.650
34	33.61	1.479	1.500
40	40.00	1.330	1.375
46	46.94	1.200	1.269
54	54.44	1.150	1.179
62	62.50		1.100
71	71.11		1.031
80	80.27		0.971
90	89.99		0.917



Horizontal Limiting Distance (HLD) in feet = PRF x DBH (nearest 1/10 inch)
Actual Horizontal Distance (AHD) in feet = Slope Distance in feet \ Slope Correction Factor

If Horizontal Limiting Distance (HLD) is less than Actual Horizontal Distance (AHD) than tree is "OUT"
If Horizontal Limiting Distance (HLD) is greater than or equal to Actual Horizontal Distance (AHD) than tree is "IN"