Zigzag Transect: CMU 2c (North End)

Tree No.	Species	Distance (ft.)	DBH (in.)	Condition	Notes
1	Conifer1	19	12	GOOD	
2	Conifer1	21	14	FAIR	
3	Conifer2	14	16	GOOD	
4	Conifer1	17	12	GOOD	
5	Conifer3	15	12	POOR	Diseased
6	Conifer1	23	14	GOOD	
7	Conifer1	18	12	FAIR	
8	Conifer1	16	12	POOR	Broken top
9	Conifer1	15	12	FAIR	
10	Conifer1	21	14	GOOD	
11	Conifer2	16	16	GOOD	
12	Conifer1	19	14	FAIR	
13	Conifer1	17	12	POOR	Scar at base
14	Conifer1	13	12	GOOD	
15	Conifer2	14	14	GOOD	
16	Conifer1	13	12	FAIR	
17	Conifer2	20	14	GOOD	
18	Conifer1	15	12	POOR	Insects
19	Conifer1	18	12	FAIR	
20	Conifer1	16	14	POOR	Forked top
	Totals:	340	262		
	Average:	17	13.1		

Sampling Methods

The zigzag transect method is just one of the sampling methods that can be employed by planners. Other common methods include strip sampling, fixed plot sampling, and variable plot sampling.

The strip sampling and fixed plot sampling methods are based on a percentage system. A limited proportion of the area is measured, on the assumption that the samples are typical of the entire stand. The percentage of the area sampled depends on the uniformity of the stand and the size of the area to be sampled. In uniform stands, typical sampling percentages range from 20 percent on small areas of from 20 to 40 acres to 5 percent on areas larger than 80 acres. In areas where trees are of irregular distribution, the percentage of the area sampled may need to be increased to give adequate results.

The variable plot sampling method does not require measurement of the plot radius or dimension like strip or fixed plot sampling. This is because each tree has its own plot size dependent on the diameter of the tree.

An approximation of the species composition for this stand can be made from the zigzag transect species information:

Species	Percent of stand composition
Conifer1	85
Conifer2	10
Conifer3	5

This was determined by dividing the number of trees counted for each individual species by the total number of trees counted and multiplying by 100.

Calculation: (15 trees of Conifer1 ÷ 20 total trees) X 100 = 85.

The diameter of each transect tree was measured with a diameter tape. Average DBH of the trees was found to be 13 inches. Average stand diameter was obtained by dividing the total of tree diameters by the number of trees sampled.

For example: Average diameter = 262 ÷ 20 = 13.1 inches; round to 13 inches.

The spacing between each transect tree was measured with a logger's tape. Average spacing between the trees was 17 feet. Average tree spacing was found by dividing the total of distances between trees by the number of trees sampled. For this example spacing = 329 ÷ 20 = 17 feet.

The number of trees per acre may be calculated as follows:

$$\text{Number of trees per acre} = 43560 \div (\text{spacing})^2$$

For example: 43560 ÷ (17X17) = 150 trees/acre

An increment borer (figure 1) was used to take a radial core of tree wood at DBH. The ring count indicated that the trees were 40 years old. Examination of the width of the growth rings showed that the trees had grown 1 inch in radial growth in the last ten years.

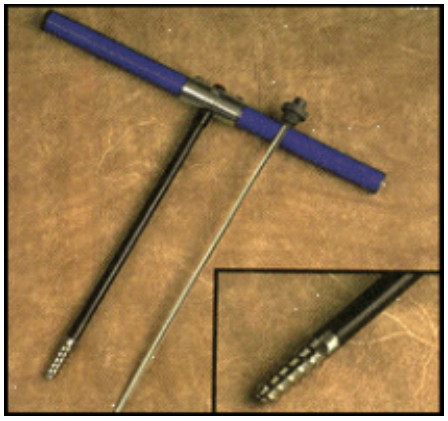

Figure 1: Increment Borer