2017 Forest Inventory Growth (FIG) at the Cathance River Preserve

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Fighting Trees! <—

Purpose: Which FIG plot of trees at the Cathance River Preserve will have more growth over the past year at diameter breast height level, the more mature plot near the water or a less mature plot near the main trail?

Hypothesis: The more mature plot near the water will have more growth over the past year, than the less mature plot by the main trail.

Procedure:

1.) Find the center of a 1/10th acre plot
2.) Find the northernmost tree with a minimum 5 inches diameter breast height
3.) Identify tree species
4.) Measure and record tree DBH (4.5 ft. off the ground)
5.) Check tree for damage at crown (top) and bole (main part of trunk)
6.) Record % of damage if there is any
7.) Repeat these steps until all trees in the plot are measured and recorded.

Summary Data Table:

More Mature Plot:

Tree Species	2016 AVG. DBH (Inches)	2017 AVG. DBH (Inches)	AVG. DBH change from 2016-2017 (Inches)
Eastern Hemlock	8.78	8.95	0.17
Eastern White Pine	8.2	8.63	0.43
Red Spruce	5.9	5.54	-0.36
Red Oak	7.7	7.7	0
Red Maple	6.5	6.5	0
White Birch	9.65	7.95	-1.7
Balsam Fir	2.83	2.87	0.04
American Beech	5.88	5.65	-0.23

Less Mature Plot:

Tree Species	2016 AVG. DBH (Inches)	2017 AVG. DBH (Inches)	AVG. DBH change from 2016-2017 (Inches)
Eastern Hemlock	6.78	7.08	0.3
Eastern White Pine	Not Measured	5.9	-
Red Spruce	5.45	5.85	0.4
Red Oak	6.45	6.2	-0.25
Red Maple	Not Measured	6.35	-
White Birch	None In Plot	None In Plot	-
Balsam Fir	None In Plot	None In Plot	-
American Beech	None In Plot	None In Plot	-

Conclusions:

- The hypothesis was incorrect.
- The less mature plot had more or equal growth over the past year than the more mature plot in the 3 common species.
- Eastern Hemlock showed .3 in. average DBH growth in the less mature plot and .17 in. average DBH growth in the more mature plot.
- Red Spruce showed .4 in. average DBH growth in the less mature plot and no DBH growth in the more mature plot.
- Red Oak showed no DBH growth in either the less mature or more mature plots.
- Errors that could have occurred include:

-Soil erosion affecting the DBH measuring location
-In the less mature plot some of the trees that the researchers measured in 2017 were not measured by the researchers in 2016. This decreased available data for the less mature plot.

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Kaitlyn recording data!! <—

Predicted Growth Using Forestry Models

Emma L recording data!!

Emma L Measuring DBH!!

Close-up measuring DBH —>

In future years the amount of trees will decrease, but some of the profits from the trees will increase. —>

Emma S measuring DBH!!

Graphs: