

FOR 240 Lab 3 - Assignment
Analysis of DBH and Merchantable Height of Trees
With Excel Regression and Chart Tools
Introduction to Computing in Natural Resources

The following table is a small portion of the University forest cruising data set and presents the relationship between DBH and merchantable height for 30 trees. The DBH was measured in inches and the merchantable height is the number of 16-foot logs.

| DBH | Observed MHT |
|-----|--------------|
| 8 | 0 |
| 10 | 0.5 |
| 11 | 0.5 |
| 12 | 0.5 |
| 12 | 1 |
| 12 | 1.5 |
| 12 | 1 |
| 12 | 1.5 |
| 13 | 2 |
| 14 | 1.5 |
| 14 | 2 |
| 15 | 2 |
| 15 | 1 |
| 16 | 1.5 |
| 17 | 2 |
| 17 | 2 |
| 18 | 1.5 |
| 18 | 2 |
| 19 | 2 |
| 19 | 2.5 |
| 22 | 2.5 |
| 22 | 2.5 |
| 22 | 2.5 |
| 23 | 2.5 |
| 23 | 2 |
| 23 | 2 |
| 26 | 3 |
| 27 | 3 |
| 28 | 3.5 |
| 30 | 4 |

Create an Excel workbook and save it as DBH_MHT.xls, which must include the data in the above table. Once you have this workbook, you need to accomplish the following things:

1. Draw an x-y scattered chart to check the relationship between these two variables visually.
2. Use the Correlation analysis tool to verify if your visual assessment of the relationship between the DBH and the merchantable height is correct.
3. Use the regression tool to obtain a mathematical model of $MHT = a + b \cdot DBH$. List the parameters in the model, evaluate the fitness of the model based on: R-square, MS or root MSE, F-value, and P-value, and explain how well the model fit is.
4. Draw a line chart of the predicted MHT vs. DBH.

Please provide me a typed summary report using Excel chart and regression tools, which should also include the charts and the outputs of analysis tools by the beginning of lab next week.