Southern Timber Supply Analysis

Case Study — Large Grade Hardwood Mill

You receive a call from a consultant representing a forest products company with an interest in establishing a hardwood sawmill in Virginia to produce high grade sawtimber for export. The majority of species cut would be red and white oak, and yellow poplar. They plan to produce 25 million board feet per year. Although the resource is critical, distance from the port is also important. Where are the most promising locations to establish a mill that is looking at a maximum 75 mile procurement radius?

This case study was designed to help users become familiar with the Timber Supply Analysis application. Follow the steps in the following exercises to conduct a preliminary feasibility analysis for the proposed mill.

To begin, open the application by browsing to http://southerntimbersupply.com.

Exercise I: Overview of State Hardwood Resources

1. Click **Standard Reports** in the left panel.

2. *Select state*. In this case we will be looking at the state of **Virginia.**

3. *Choose the ownership* of lands you are looking at. Since we are looking at an overview of all state resources, leave the selection at **All**.

4. Select **volume** for the *standard report* and then click **download**.

The report will open in a new tab in your browser. If you don't see it appear after the wheel stops spinning, check that your browser didn't block the pop-up. Use your browser tools to save the PDF as a file on your device.
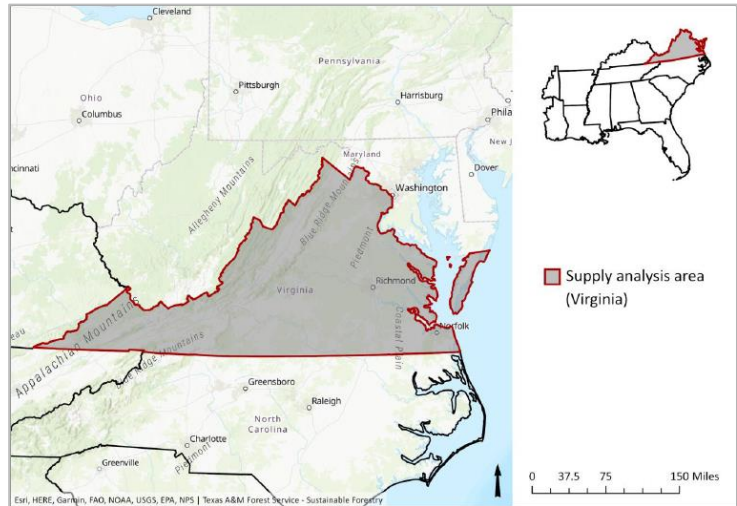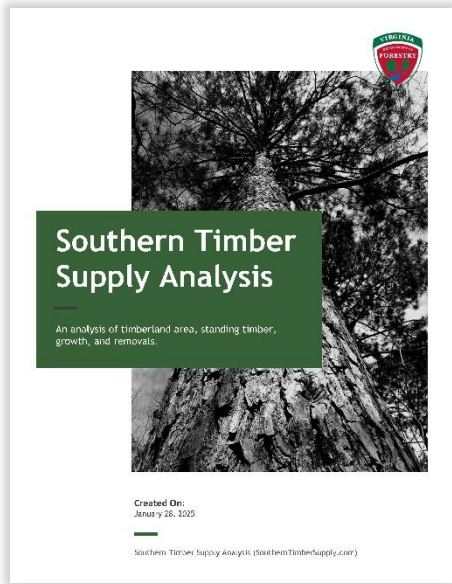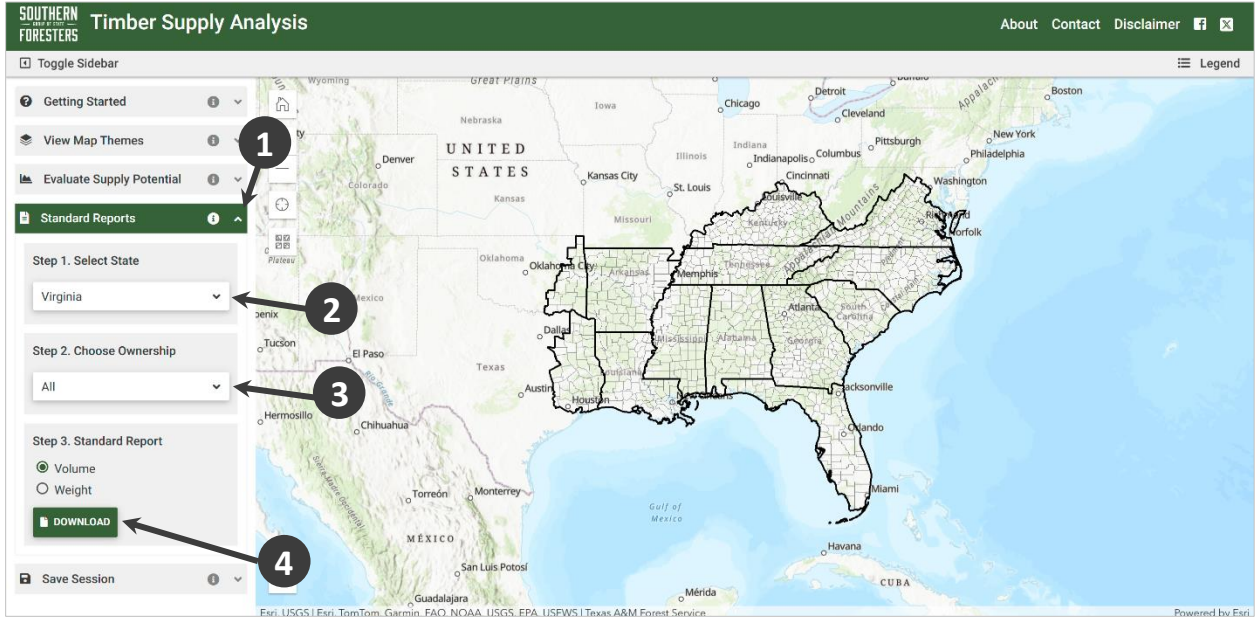
Since this project will be producing grade hardwood lumber, the amount of quality timber is important. Look at the hardwood volume table by grade and answer the questions below. (*Hint: The table is on page 12 of the report.*)

Question 1: What is the volume of Grade 1 hardwood sawtimber in Virginia for the most recent year that data is available? _____

Question 2: What is the volume of Grade 2 hardwood sawtimber in Virginia for the most recent year that data is available? _____
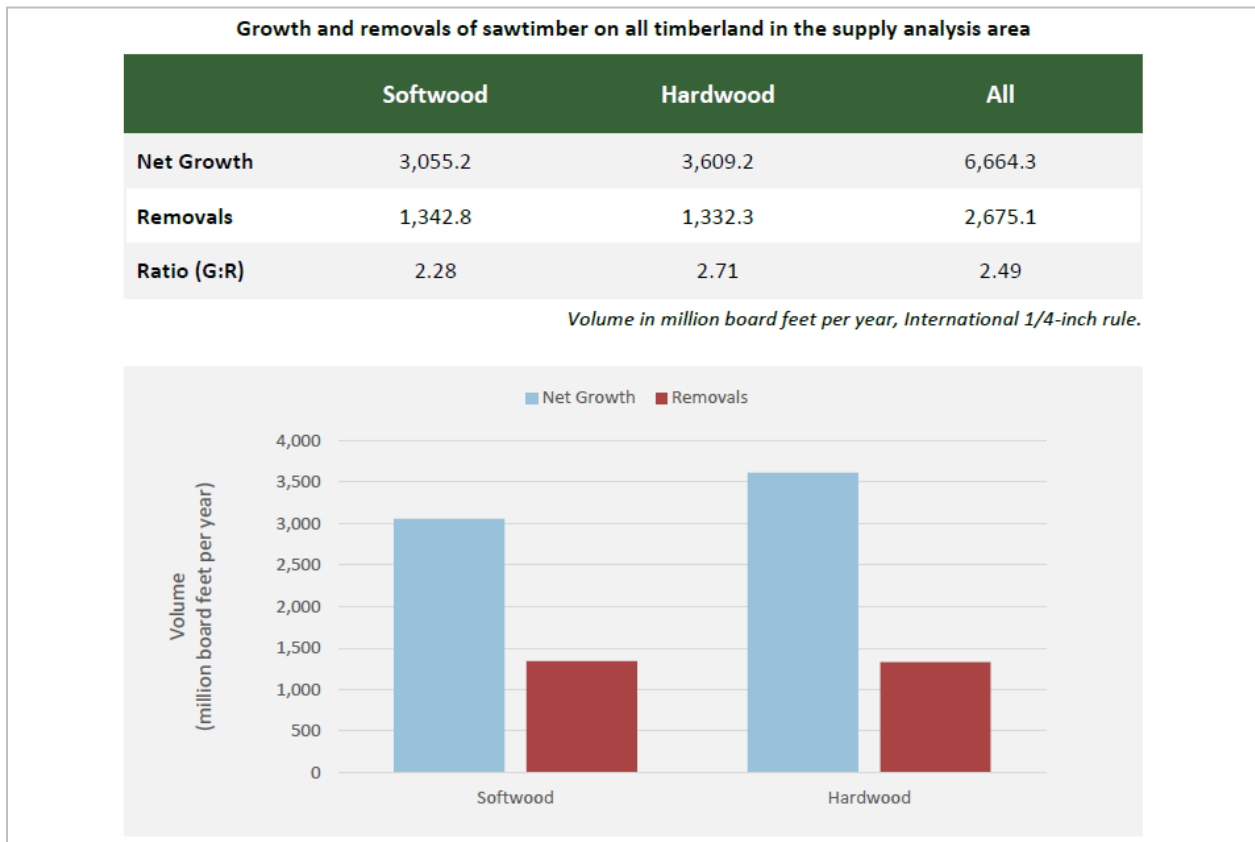
The volume estimates for Grade 1 and 2 hardwood sawtimber in Virginia together are over 1000 times greater than this mill is expected to utilize. Since oaks and yellow poplar comprise the majority of hardwood sawtimber in Virginia, this initial analysis indicates that there is timber available for this prospective mill.

A second concern would be the sustainability of increasing grade hardwood sawtimber harvest by 25 million board feet annually. Using the same standard report for Virginia, answer the questions below:

Question 3: What is the difference in hardwood sawtimber volume between net growth and removals in Virginia? _____

Question 4: What is the ratio of Growth to Removals for hardwood sawtimber in Virginia? _____

Question 5: Is there currently a sustainable supply of hardwood sawtimber in Virginia? _____

Growth and removals of sawtimber on all timberland in the supply analysis area

	Softwood	Hardwood	All
Net Growth	3,055.2	3,609.2	6,664.3
Removals	1,342.8	1,332.3	2,675.1
Ratio (G:R)	2.28	2.71	2.49

Volume in million board feet per year, International 1/4-inch rule.

Exercise II: Selecting a Location

Since the first analysis indicated that Virginia has an abundant supply of hardwood timber, the next step is to identify a more specific location for this mill. Considering the importance of both wood supply and easy access to coastal ports for exporting, Lynchburg, VA was selected. The 75 mile radius from this location includes a supply area primarily in Virginia, though parts of North Carolina and West Virginia are also included. Since this application covers the 13 southern states, no resource data from West Virginia will be included.

To produce a supply analysis report for the Lynchburg area:

1. Click **Evaluate Supply Potential** in the left panel.

2. Keep **Radius (miles)** selected and choose **75 miles** (**Step 1**) from the drop down menu.

3. Click in the **Find address or place** box and type "*Lynchburg, VA, USA*" (**Step 2**). Select Lynchburg, VA, USA from the list that appears or hit enter to complete the search. The application will automatically use the result to define your point of interest.

    Note that the 75-mile radius (red boundary) extends outside of Virginia and the Southern Region. Data for the full supply area will be included, though supply points can only originate within the Southern Region (State/County outline).

4. Leave **NC, VA, WV** selected in the Filter State(s) box (**Step 3**) since the 75 mile supply area falls within these states.

5. Choose **All** from the drop down menu in the Choose Ownership box (**Step 4**).

6. Select **Volume** in the Statistics & Report box and then click **Report** (**Step 5**).
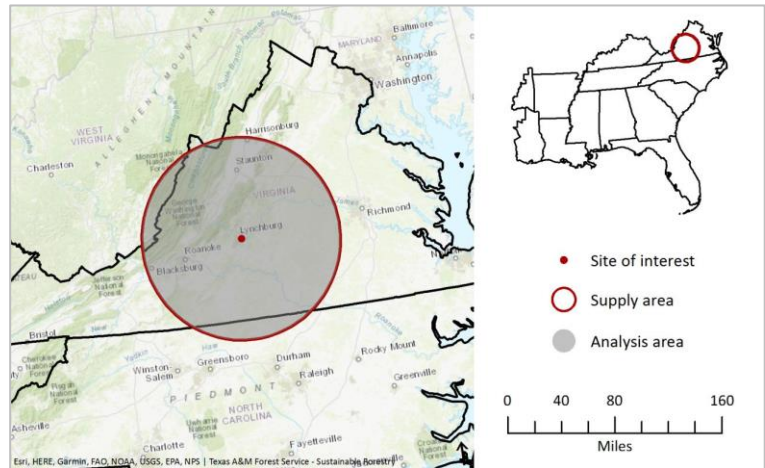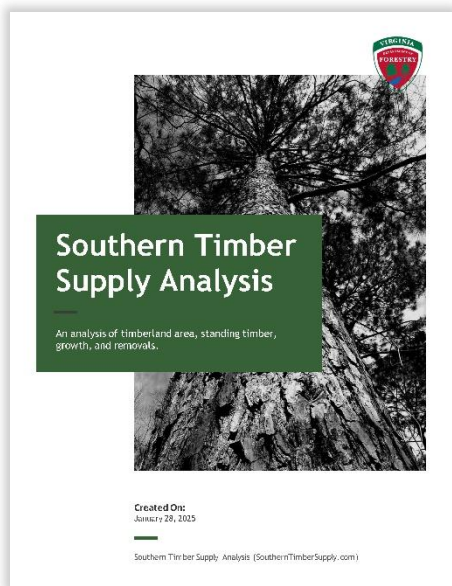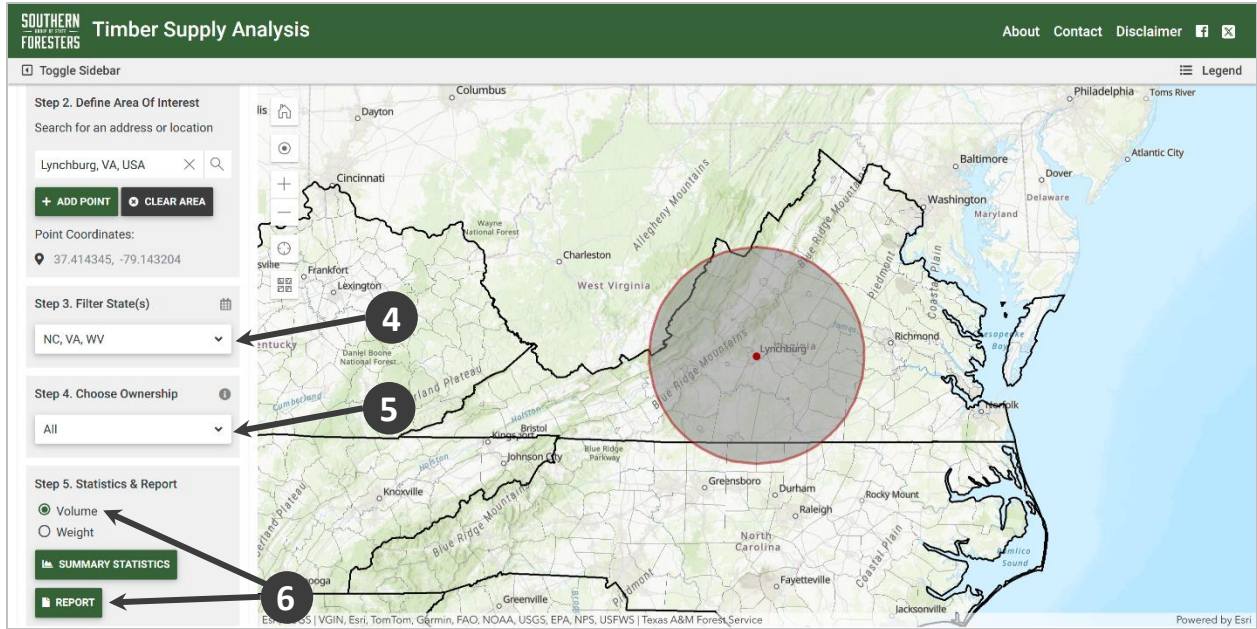
The report will open in a new tab in your browser. If you don't see it appear after the wheel stops spinning, check that your browser didn't block the pop-up. Use your browser tools to save the PDF as a file on your device.

Note: Since this analysis includes multiple states, the application will use the most recent data commonly available to all selected states at the time of download. If you are primarily interested in one state, you may restrict your analysis to that state by selecting it in the drop down box in Step 3 to ensure you are using the most recent data available for that state.

Use the downloaded report to answer the following questions. The summary statistics box also contains this information.

Question 6: How many acres of hardwood timberland are in the supply area in the most recent year of available data? _____

Question 7: What is the volume of hardwood sawtimber in the supply area for the most recent year of available data? _____

In order to determine if Lynchburg is a suitable area for a large grade hardwood mill, we first need to look at the volume of grade hardwood sawtimber on timberland within the supply area. The timber supply analysis report that you just generated includes this information in a table on page 12 (see below). Using this table, the volume of hardwood sawtimber on timberland in the top two grades (1 and 2) is almost 15 billion board feet.

Question 8: Is there enough grade hardwood sawtimber in the supply area to supply the proposed mill? _____

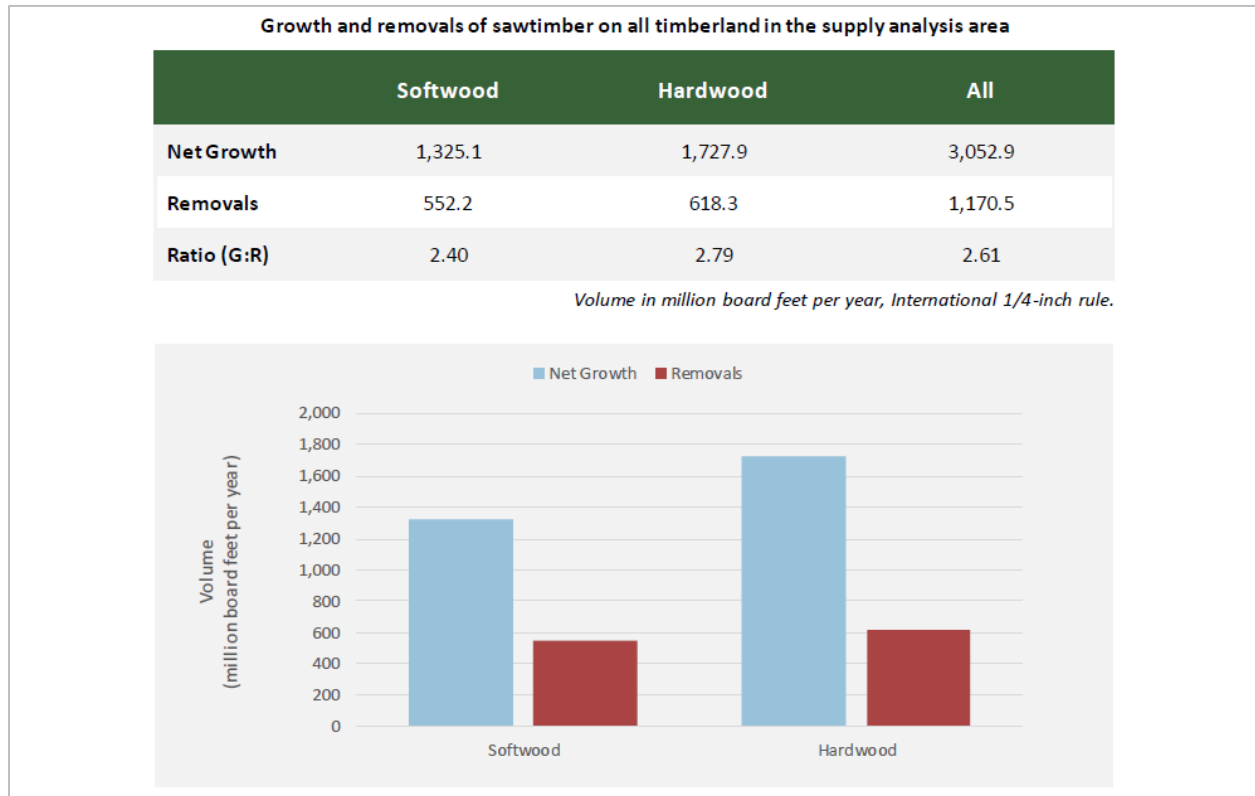**Volume of hardwood sawtimber by grade on all timberland in the supply analysis area**

Year	Grade 1	Grade 2	Grade 3	No Grade	All
2016	9,087.5	7,727.1	16,517.6	9,225.9	42,558.1
2017	7,842.7	8,108.0	17,044.5	10,790.8	43,786.0
2018	7,482.4	8,174.2	17,748.4	11,818.2	45,223.2
2019	7,420.6	8,300.6	17,852.8	12,303.5	45,877.5
2020	7,252.5	8,435.6	18,156.4	13,059.3	46,903.8
2021	7,208.1	8,293.5	17,815.6	13,878.3	47,195.5

Volume in million board feet, International 1/4-inch rule.

Next, we need to assess the sustainability of the resource if harvests were increased by 25 million board feet annually in the supply area. Net growth and removals data can provide a better understanding of potential future supply and are included in the report starting on page 13. These data are often displayed as a ratio. Inventory levels are expected to increase when the ratio is higher than "1", while ratios lower than "1" indicate that inventory levels are declining.

According to this data, hardwood sawtimber within the supply area is growing at a rate greater than 4 times the amount removed each year, resulting in an increase of over one billion board feet per year. Assuming that the increased growth in hardwood sawtimber matches the same grade percentages as the current standing inventory, over 200 million board feet of grade one hardwood sawtimber is being produced in excess of removals each year.

Question 9: What is the Growth and Removals Ratio for hardwood sawtimber in the supply area? _____

Growth and removals of sawtimber on all timberland in the supply analysis area

	Softwood	Hardwood	All
Net Growth	1,325.1	1,727.9	3,052.9
Removals	552.2	618.3	1,170.5
Ratio (G:R)	2.40	2.79	2.61

Volume in million board feet per year, International 1/4-inch rule.

Conclusion

The preliminary analysis indicates that there is a sustainable supply of grade hardwood sawtimber within the procurement area of the new proposed mill. This timber supply analysis can be used to justify moving to more in depth research on specific species availability and other requirements needed for locating a new high-grade hardwood sawmill.

Help

Scroll to the next page to see the results for this case study.

If you have questions about the application, please refer to the **Getting Started** tour and the info icons (ⓘ) on the toolboxes. There are also other case study exercises you can complete. If you have a question or experience a problem not covered by these resources, please submit feedback and questions through the **Contact** link in the top right corner of the application.

A saved session of this case study is available at texasforestinfo.tamu.edu/tsa/?session=casestudy2.

Answers

1. 14.0 billion board feet
2. 17.0 billion board feet
3. 2.3 billion board feet
4. 2.71
5. Yes
6. 4.9 million acres
7. 47.2 billion board feet
8. Yes
9. 2.79