



# Southern Timber Supply Analysis

## Case Study – Large Pine Sawmill

You receive a call from a group of investors wanting to know the feasibility of opening a new mill in Lufkin, Texas. They are proposing a state-of-the-art, large pine sawmill capable of producing 150 million board feet of dimensional lumber per year. The group plans to procure sawtimber from private landowners within 100 miles of the mill site. Before they start their environmental assessments, they want to make sure there is enough wood available for this new venture and are asking for your help.

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.

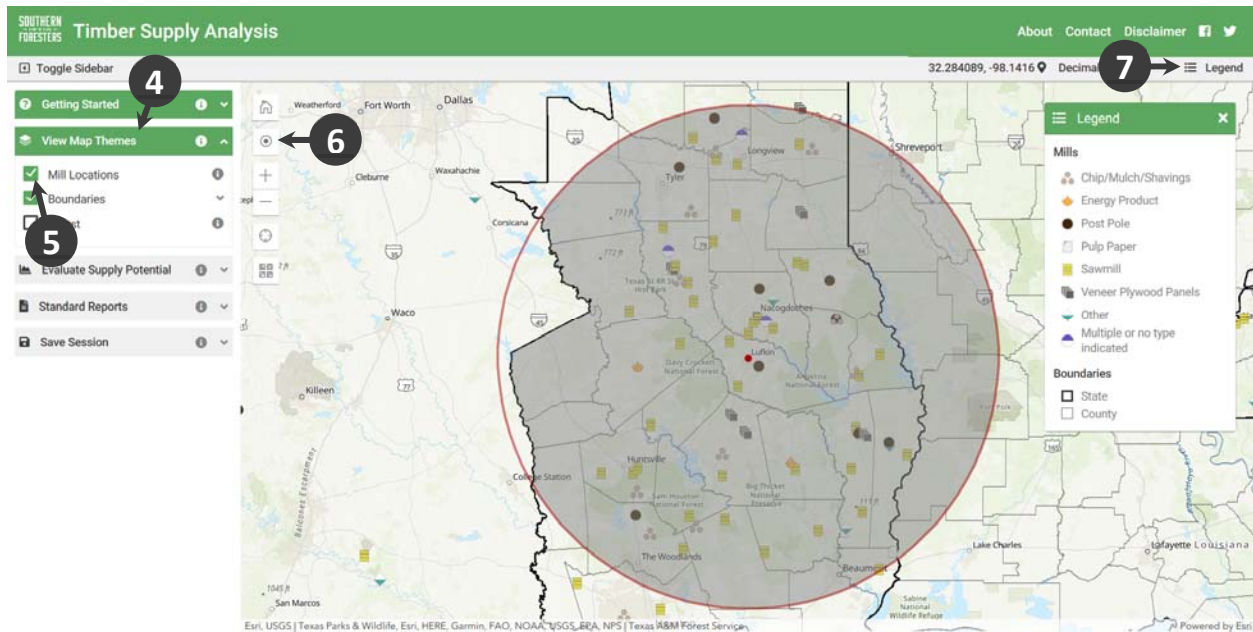
To begin, open the application by browsing to <http://southerntimbersupply.com>.

### Exercise 1: Define supply area and explore existing mills

1. Click **Evaluate Supply Potential** in the left panel.
2. Your mill expects to source sawtimber from a 100-mile radius, so in **Step 1**, keep **Radius (miles)** selected and choose **100 miles** in the dropdown menu.
3. In **Step 2**, click in the **Find address or place** box and type “Lufkin, TX”. Select Lufkin 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 100-mile radius (red boundary) extends outside of the available data area – only the portion shaded in gray will be included in the analysis by default. If you want to include data from Central/West Texas, make sure to select Texas (West) in *Step 3: Filter State*. This analysis will use common data years from the two regions, and may not include the most recent data from East Texas.

4. Click **View Map Themes** in the left panel.
5. Check the box next to **Mill Locations** to turn on the mill layer.
6. Click the supply circle icon on the map to zoom closer to your supply area.
7. Click **Legend** on the right end of the gray toolbar to open the map legend.



Available mill symbols (obtained from the [Primary Forest Products Network](#)) are now shown on the map, and the key for the symbols appears in the legend. You can click on a mill icon on the map for more information about a particular mill. Use the map to answer the following question.

**Question 1: How many existing sawmills are located in the same county as your proposed mill (hint: counties are displayed by default with a gray boundary; you can turn them on and off under **Boundaries** in **View Map Themes**)? \_\_\_\_\_**

## Exercise 2: Define parameters and calculate supply statistics

1. Return to **Evaluate Supply Potential** in the left panel (you can turn the mill layer back off and close the legend first if you want to). Click the information icon (i) next to **Evaluate Supply Potential** to find out more about the estimates and parameters.
2. Read the information in the box, and then click the link to **More information about the data**. This opens another tab with detailed information about the data.

**SOUTHERN FORESTERS Timber Supply Analysis**

**Evaluate Supply Potential**

The **Timber Supply Analysis** web application estimates the amount of timberland and timber volume, weight, growth, and removals in the U.S. South within a user-specified distance from a point of interest. Estimates are derived from Forest Inventory and Analysis (FIA), a U.S. Forest Service program conducted in partnership with state forestry agencies.

[More information about the data](#)

If you wish to generate a report, you need to allow pop-ups in your browser. To do this on an Apple device, turn off the "Block Pop-ups" option in Settings > Safari.

**Ownership**  
**Private** includes corporate, non-governmental conservation/natural resources organizations, unincorporated local partnerships/associations/clubs, Native American, and family forest landowners. **Public** includes federal, state, county, and municipal land. The **all** category includes both public and private.

**Evaluate Supply Potential Statistics**

Estimates presented in the Evaluate Supply Potential part of the Timber Supply Analysis program conducted in partnership with state forestry agencies. A brief description provided here.

**Timberland Area**  
 Timberland is land 1) with at least 10 percent canopy cover by live trees of any size regenerated, 2) not withdrawn by statute or administrative regulation prohibiting timber harvest for a certain number of years.

Forest type is based on species composition. If softwoods predominate (50 percent or more), it is softwood; if hardwoods comprise more than 25 percent, it is hardwood. Nonstocked timberland and will be regenerated.

**Volume – All Live**  
 Volume is the net volume of wood in the central stem of a live sample tree 5.0 inches diameter outside bark, or to where the central stem breaks into limbs all of which are less than 5.0 inches diameter outside bark. Rotten, missing, and form cull are not included.

**Volume – Pulpwood**  
 Pulpwood is softwoods with diameter at breast height from 5.0 to 8.9 inches and stem of live trees, from a 1-foot tall stump to a minimum 4-inch top diameter outside bark. Rotten, missing, and form cull are not included.

Hardness refers to the general durability of the wood and is influenced by its resist to decay, rot, and insect attack. Hard hardwoods include species such as oak, hickory, and maple.

Use the information on the **Evaluate Supply Potential Statistics** page to answer the following questions.

Question 2: What diameter trees are included in softwood sawtimber volume estimates? \_\_\_\_\_

Question 3: What is the minimum top diameter for softwood sawtimber? \_\_\_\_\_

Question 4: What is the diameter cutoff between small and large softwood for sawtimber volume estimates? \_\_\_\_\_

Question 5: When was the data in the application downloaded from the Forest Inventory and Analysis Datamart? \_\_\_\_\_

When finished, close the **Evaluate Supply Potential Statistics** tab in your browser and return to the main application window.

- Steps 1 and 2 are already completed from Exercise 1. **Step 3** allows you to select which states to use for your analysis if your supply area overlaps more than one state. Keep both Louisiana and Texas (East) selected for this analysis. The calendar icon links to a table that shows the most recent data year available for the states.

**Most Recent Data**

Multi-state analyses will use the most recent data common to all of the included states. For example, a supply area spanning Alabama (2019) and Georgia (2017) will use 2017 data. If the state filter is used to limit the area to Alabama, 2019 data will be used.

Southern Region					
State	Year	State	Year	State	Year
Alabama	2019	Louisiana	2016	South Carolina	2018
Arkansas	2018	Mississippi	2018	Tennessee	2016
Florida	2016	North Carolina	2019	Texas (East)	2018
Georgia	2017	Oklahoma (East)	2017	Texas (West)	2016
Kentucky	2016	Oklahoma (West)	2017	Virginia	2017

Northern Region					
State	Year	State	Year	State	Year
Delaware	2018	Maryland	2018	Pennsylvania	2018
Illinois	2019	Missouri	2019	West Virginia	2018
Indiana	2019	New Jersey	2018		
Kansas	2018	Ohio	2018		

- In **Step 4**, you can choose whether to include only private land, only public land, or both. In this case, we're interested in privately-owned timber, so select **Private** from the dropdown menu.
- Finally, in **Step 5**, you can choose whether to display the results by volume (cubic feet and board feet) or weight (tons). For this analysis, we are interested primarily in board footage of sawtimber, so keep volume selected. The last step is to click the **Summary Statistics** button.

**Supply Potential Details**

Area of privately-owned timberland in LA, TX within 100 miles of the point of interest

Year	Softwood	Mixed	Hardwood	Non-stocked	All
2011	5,395.6	1,381.1	4,294.1	87.5	11,158.3
2012	5,424.6	1,406.8	4,237.5	90.9	11,159.8
2013	5,505.1	1,374.3	4,155.7	99.4	11,134.5
2014	5,563.9	1,341.8	4,208.2	119.5	11,233.4
2015	5,588.0	1,319.3	4,203.3	110.7	11,221.2
2016	5,682.4	1,295.8	4,046.4	119.3	11,143.9

Timberland area in thousand acres

A box with statistics for the supply area opens. The question mark icon in the upper right corner of the box opens the Evaluate Supply Potential Statistics page you used earlier. Use the information in the **Supply Potential Details** box to answer the following questions. The default view is timberland area – click on the tabs at the top to switch views. In **Standing Timber** and **Growth & Removals**, you can toggle between **All Live**, **Pulpwood**, and **Sawtimber** in the gray bar that appears. **Pulpwood** and **Sawtimber** in **Standing Timber** have additional tables and charts below the main one that you can expand to see more detail.

Question 6: How much privately-owned timberland was in the analysis area in the latest year of data? \_\_\_\_\_

Question 7: How much of the timberland in Question 6 is a softwood forest type? \_\_\_\_\_

Question 8: How many board feet of softwood sawtimber were in the most recent inventory (hint: switch to **Standing Timber** and click **Sawtimber**; expand the **Softwood Size** bar below the main table and chart)? \_\_\_\_\_ small softwood? \_\_\_\_\_ large softwood? \_\_\_\_\_

Question 9: What is the growth to removals ratio of softwood sawtimber (hint: switch to **Growth & Removals** and click **Sawtimber**)? \_\_\_\_\_

Question 10: Is there excess softwood sawtimber growth? \_\_\_\_\_ If so, how much, and is it enough to sustainably supply a 150 million board foot capacity sawmill? \_\_\_\_\_

*Note: Softwood is not limited to pine species; in the supply area for this case study, eastern redcedar and baldcypress are also present, but the vast majority of the softwood supply is pine.*

*If your analysis criteria includes multiple states, the application will use the most recent data commonly available to all selected states at time of download (see Question 5). If you are primarily interested in one state, you may want to restrict your analysis to that state to ensure you're using the most recent data available for that state.*

## Exercise 3: Generate PDF report

1. Carrying over all the parameters from Exercises 1 and 2, click the **Report** button to generate a PDF report containing all the supply statistics for your analysis area.

The image shows the application interface on the left and the generated PDF report on the right. The interface includes a sidebar with options like 'ADD POINT', 'CLEAR AREA', 'Filter State(s)', 'Choose Ownership', and 'Statistics & Report'. The 'REPORT' button is highlighted with a circled '1'. The PDF report features the Texas A&M Forest Service logo, a title 'Southern Timber Supply Analysis', a subtitle 'An analysis of timberland area, standing timber, growth, and removals.', a map of the analysis area, and a table of statistics.

**Table 1: Timberland Area**

Area	Volume	Weight	Value
Area 1	1,024	104	13,174
Area 2	1,105	104	13,174
Area 3	1,123	104	13,174
Area 4	1,215	105	13,174
Area 5	1,265	107	13,174
Area 6	1,294	107	13,174

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.

## 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 (i) 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=casestudy1](https://texasforestinfo.tamu.edu/tsa/?session=casestudy1).

## Answers

1. 2
2.  $DBH \geq 9.0$  inches
3. 7.0 inches
4. 11.0 inches DBH is large softwood
5. 12/8/18
6. 11.1 million acres
7. 5.7 million acres
8. 5.4 billion board feet; 30.5 billion board feet
9. 1.14
10. Yes; 269.7 million board feet; Yes