



Southern Timber Product Output (TPO) and Harvest and Utilization Studies

Mulch and Soil Council

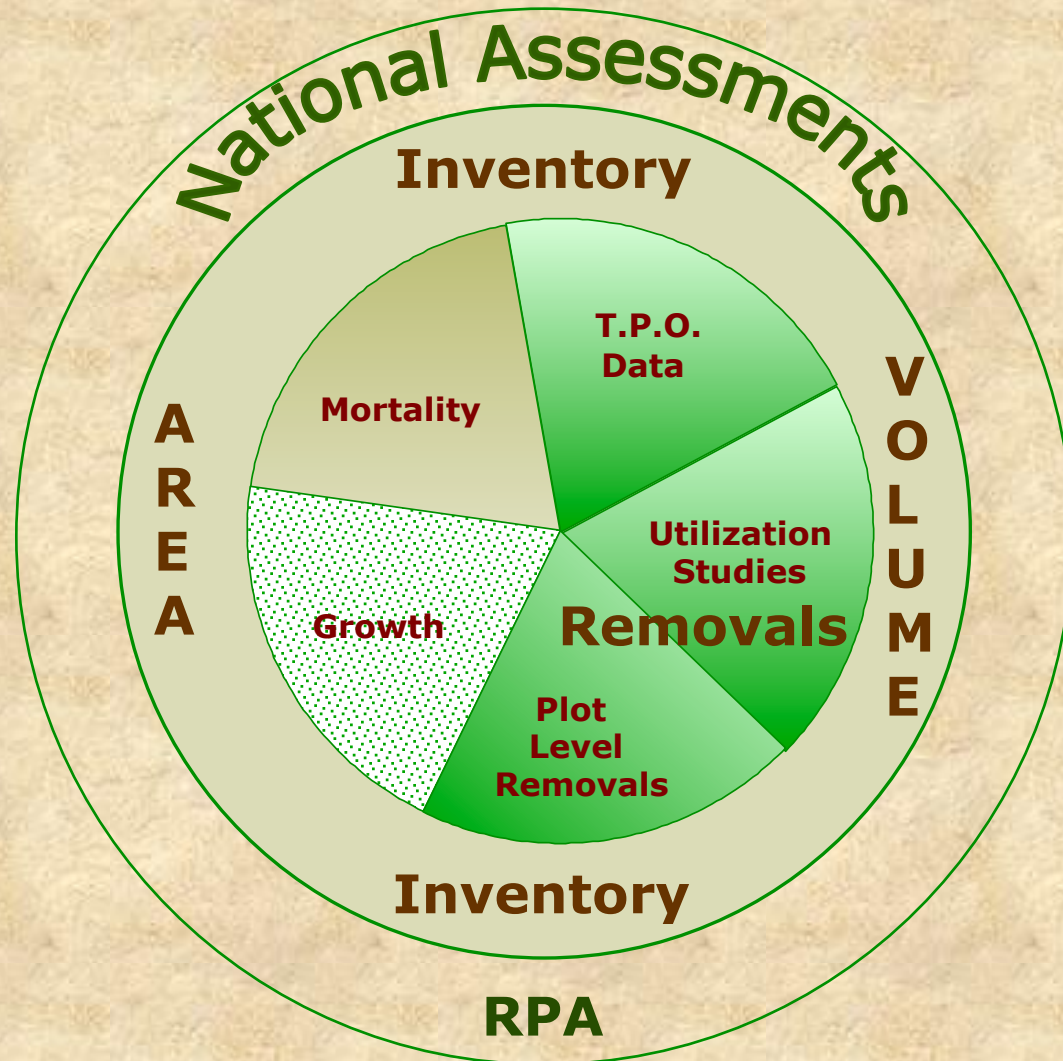
San Antonio, TX

October 16, 2014

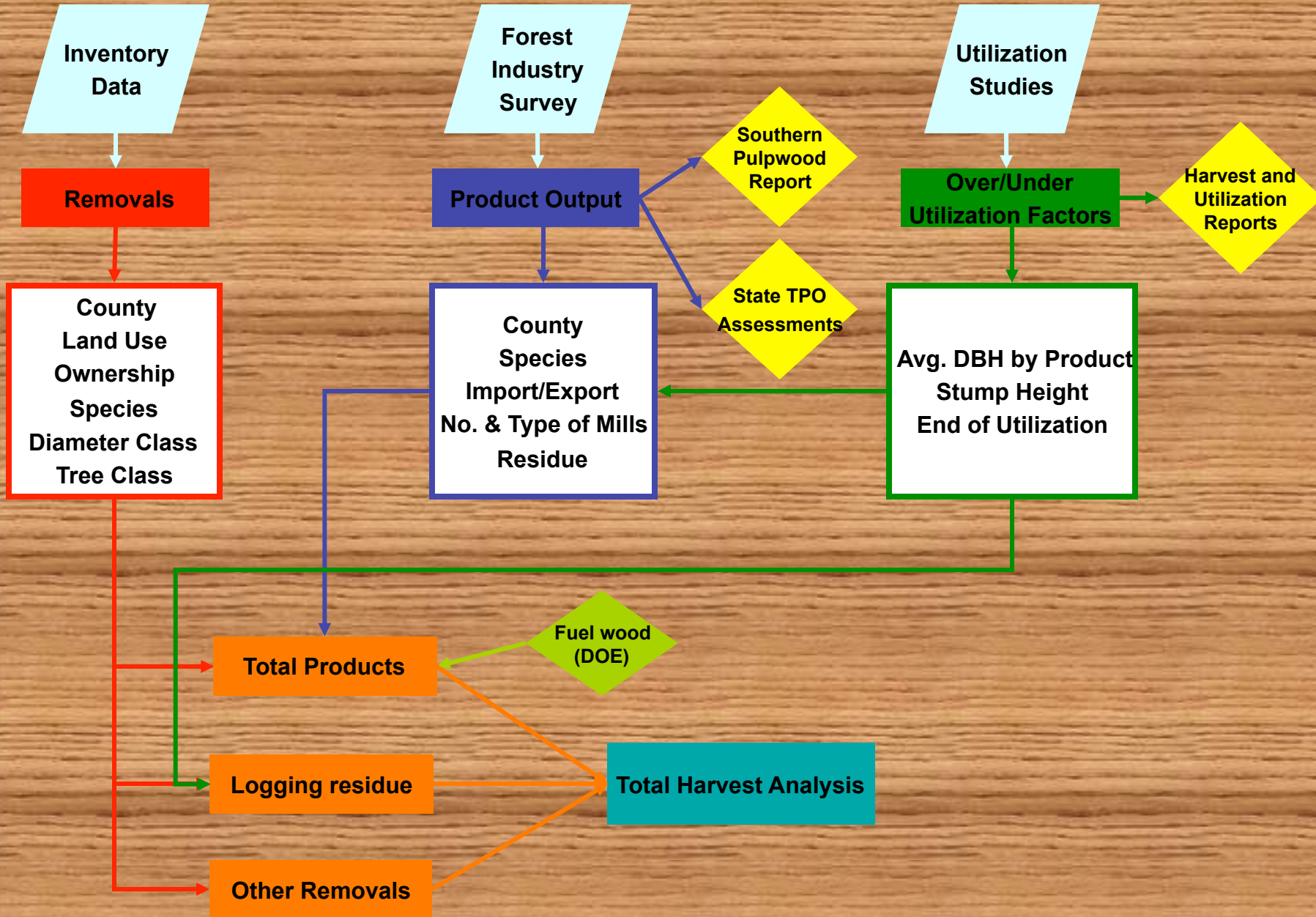
**James W. Bentley
Forest Resource Analyst
USDA Forest Service, SRS, FIA
Knoxville, TN 37919
jamesbentley@fs.fed.us**



Where TPO and Harvest and Utilization Studies fit in Broad Scale Inventories



Total Harvest Flowchart



TPO Studies





Goals of TPO Assessments

Forest Service

- **Another way of looking at harvest levels**
- **Check on inventory plot removals**
- **Product information**
- **Cross regional drain**

13 Southern States

- **Forest industry and Buyers Guide - used to characterize the State's forest industry**
- **Industrial expansion**
- **Cross State- and regional-wood movement**
- **Residue information**



Primary Wood-Using Mills in the South, 2011

Approximately 1,416 Mills

**Industrial
Timber Product Output**

=

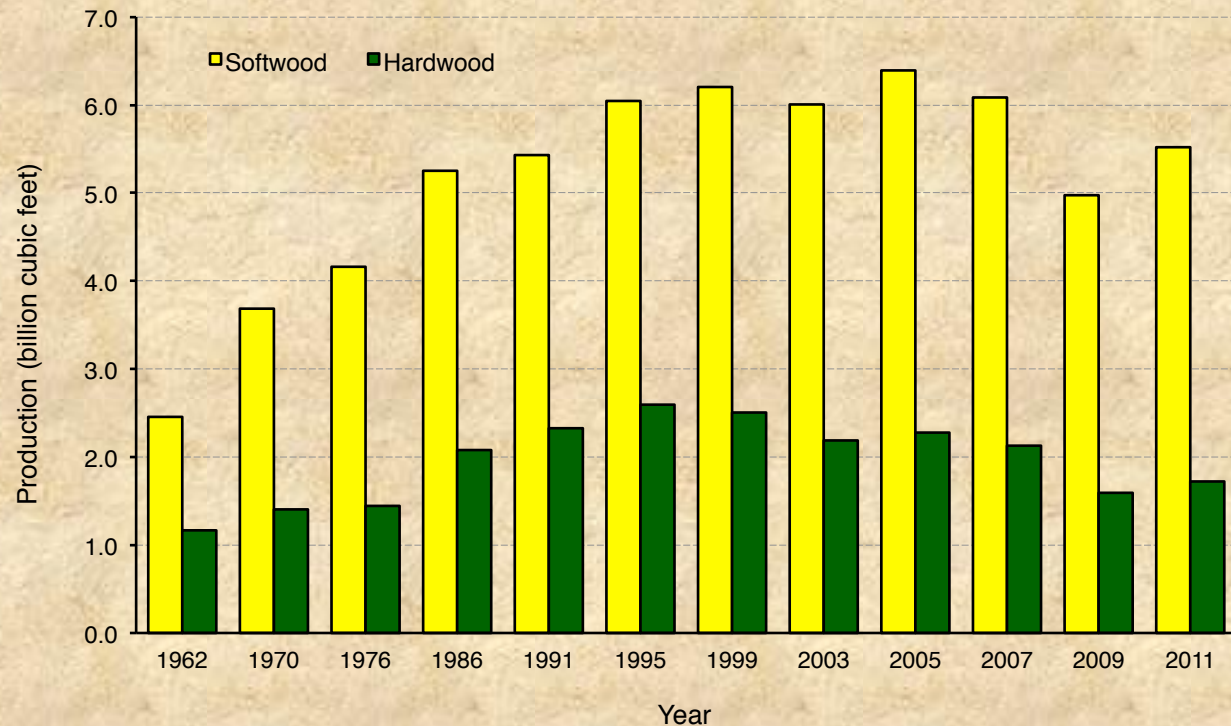
7.236 billion cubic feet

9.37 million truck loads/year
37,201/day
2,862/state/day



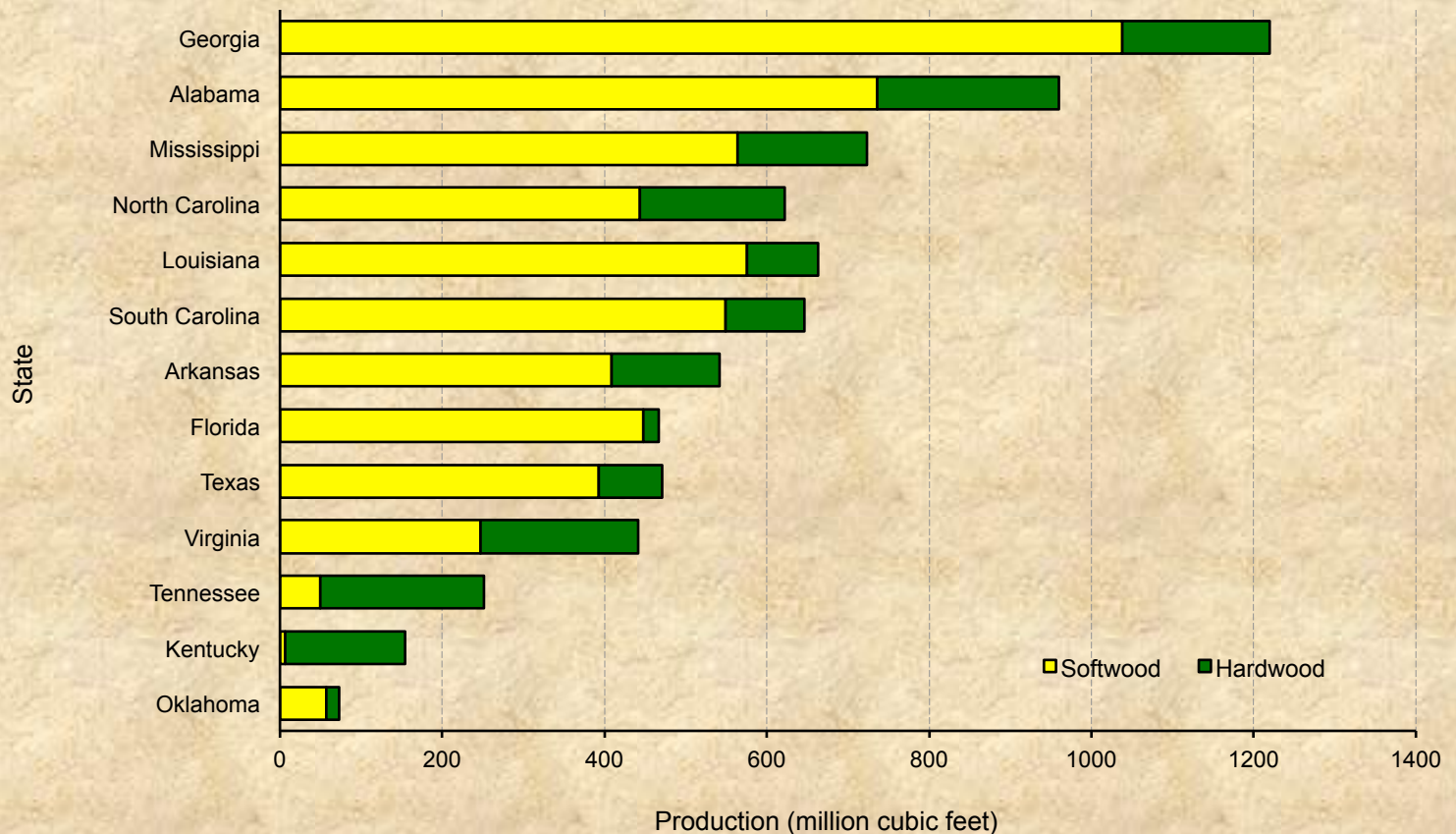


Roundwood Production for All Products, 1962-2011



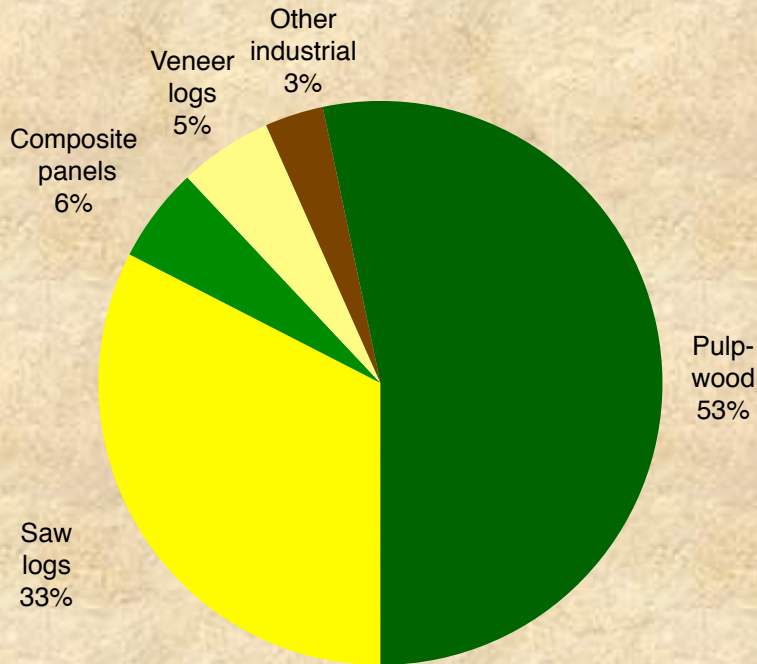


Roundwood Production by State, 2011



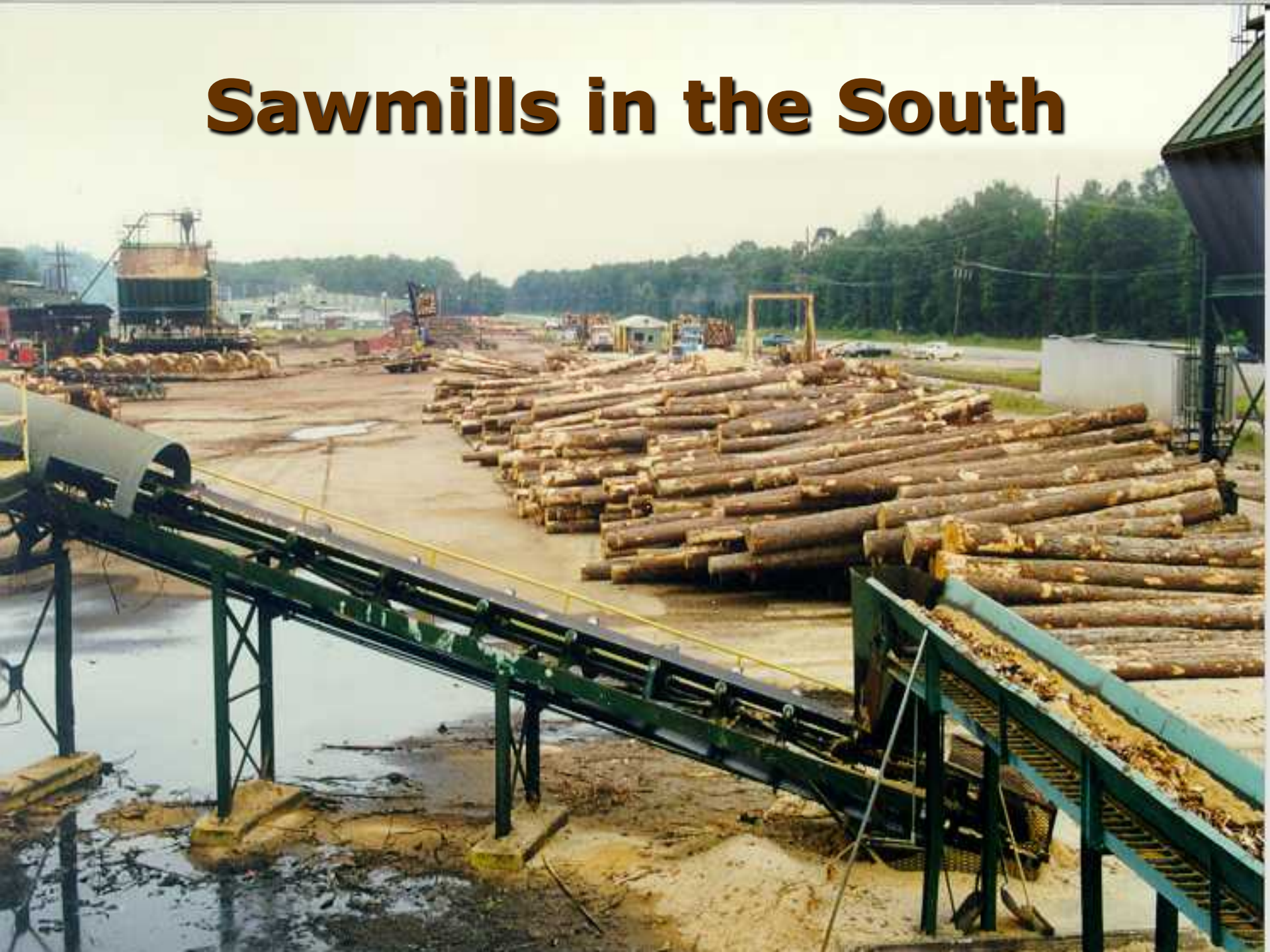


Percent Roundwood Production by Product, 2011



Total 7.24 billion cubic feet

Sawmills in the South





Sawmills in the South, 2011

Approximately 1,113 Mills

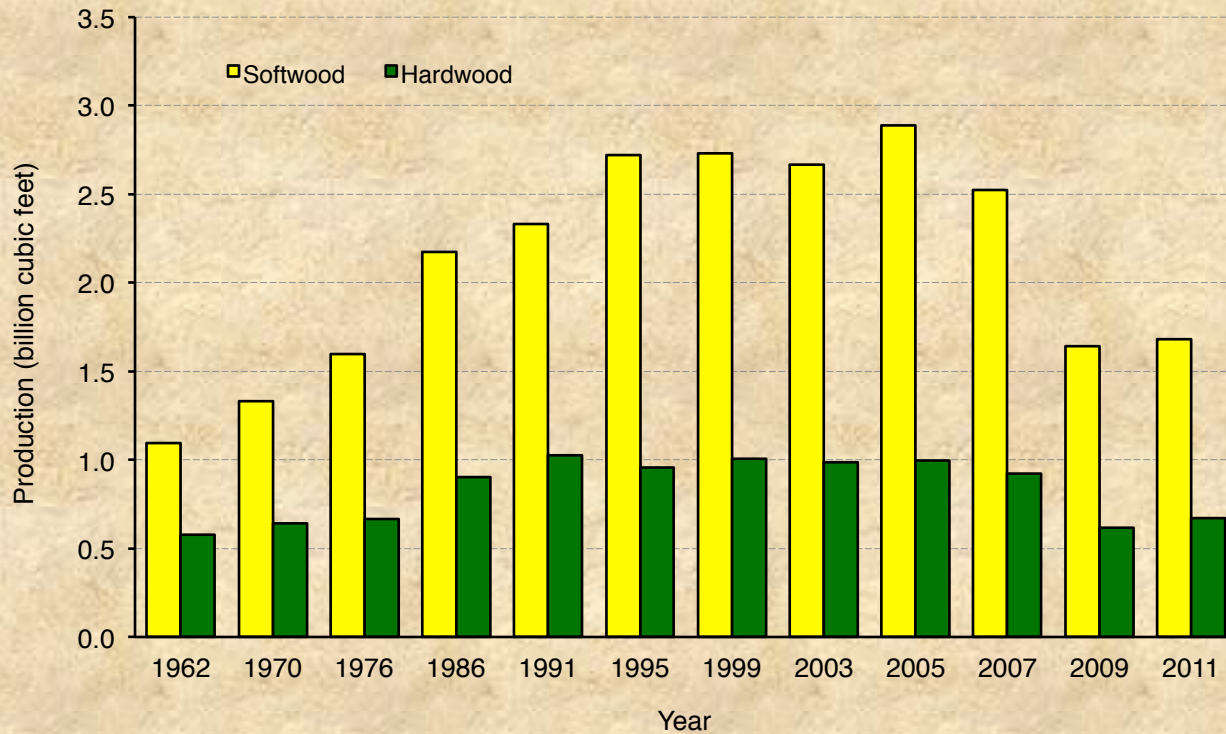
Saw log Output

=

2.355 billion cubic feet

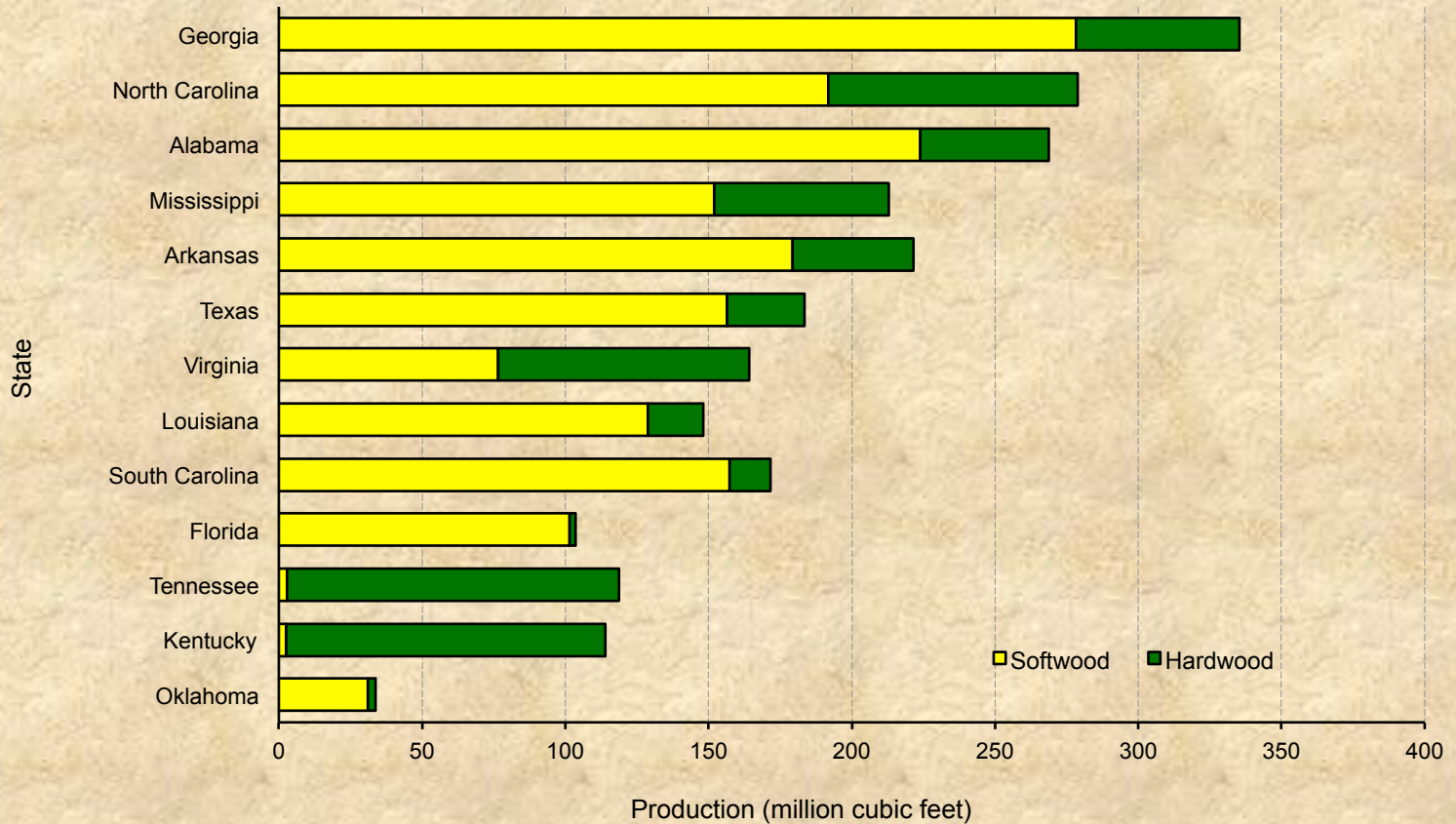


Roundwood Production for Saw logs, 1962-2011

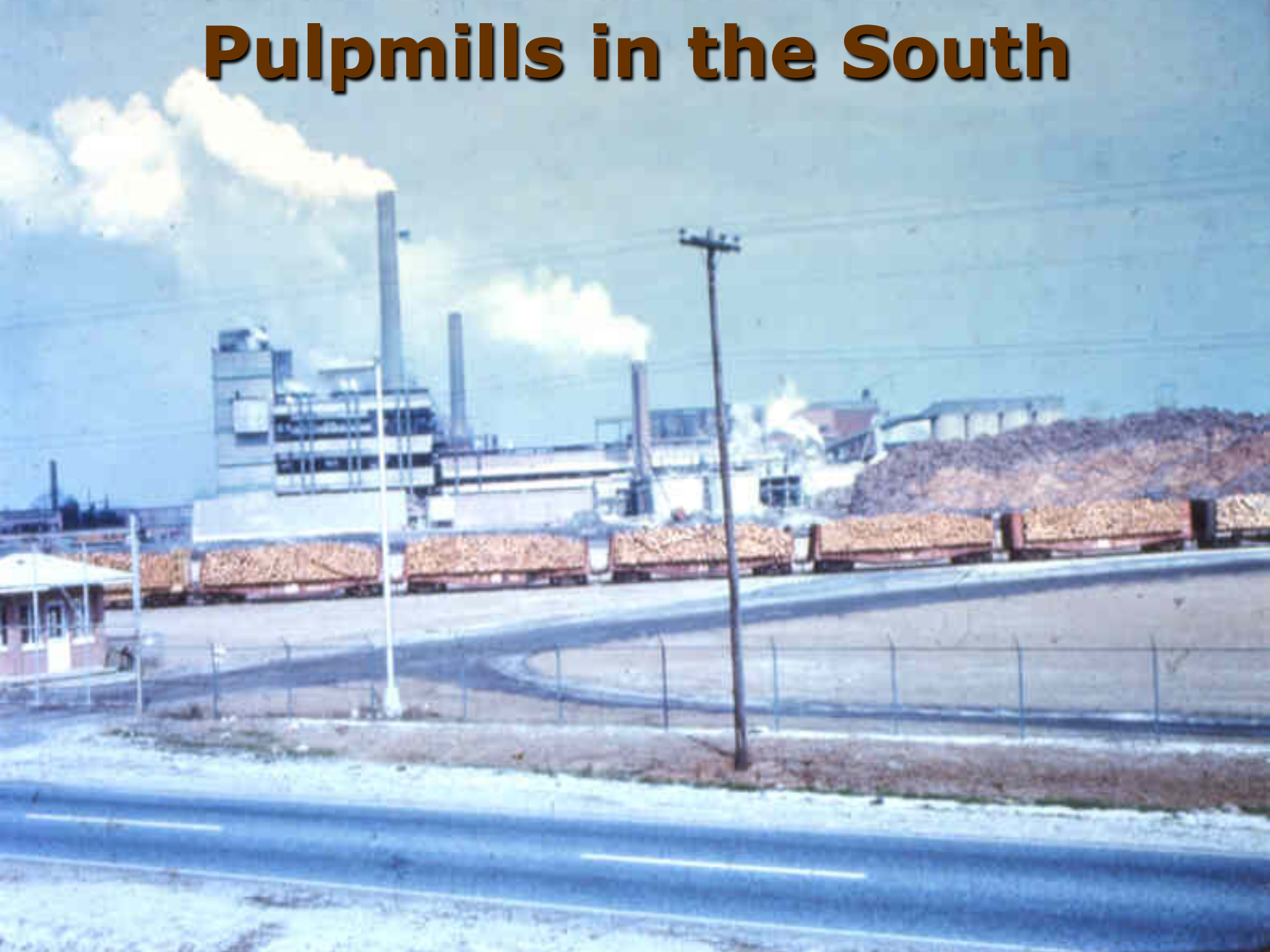




Saw log Production by State, 2011



Pulpmills in the South





Pulpmills in the South, 2011

81 Mills

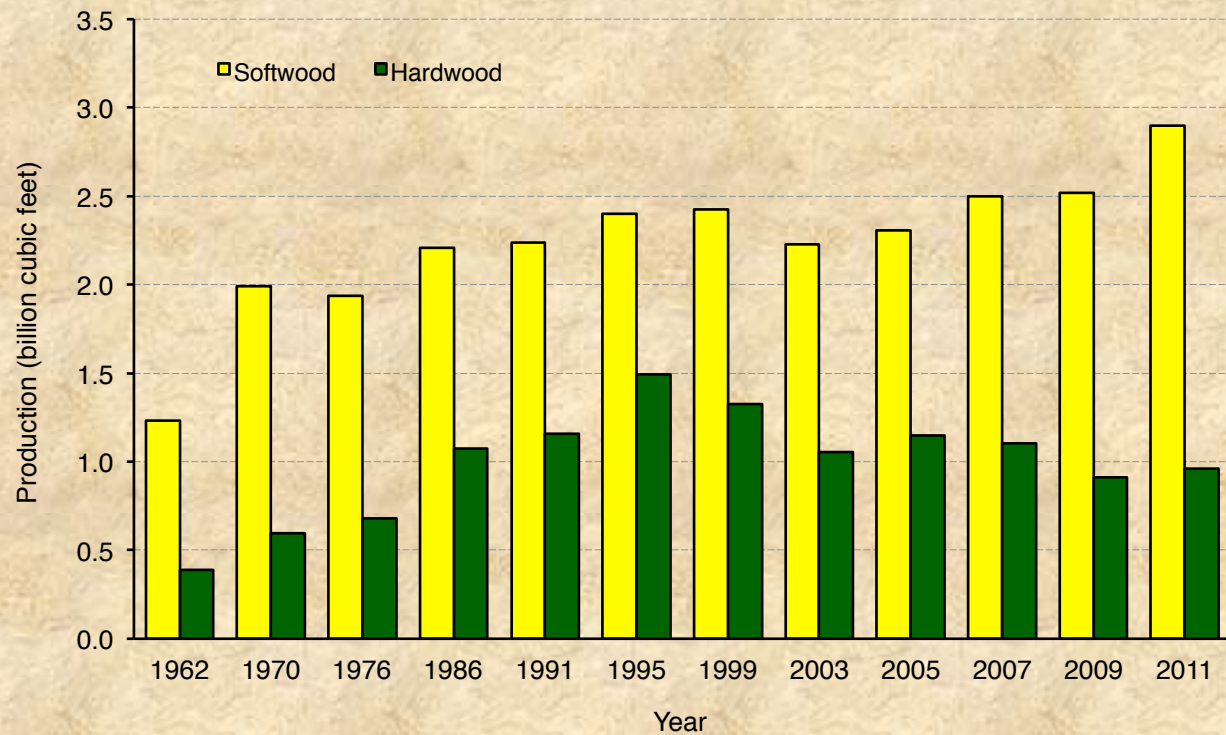
Pulpwood Output

=

3.855 billion cubic feet

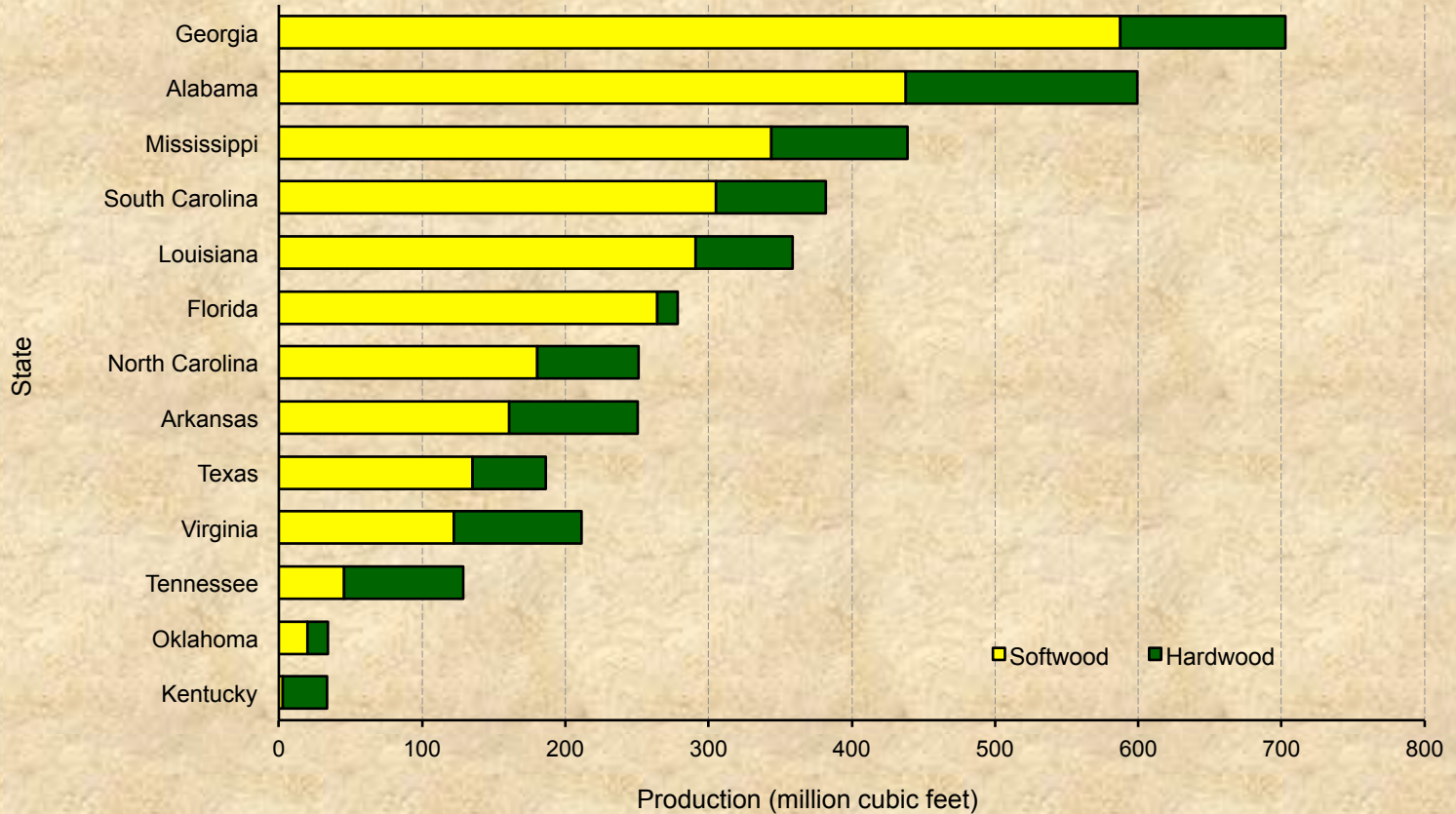


Roundwood Production for Pulpwood, 1962-2011

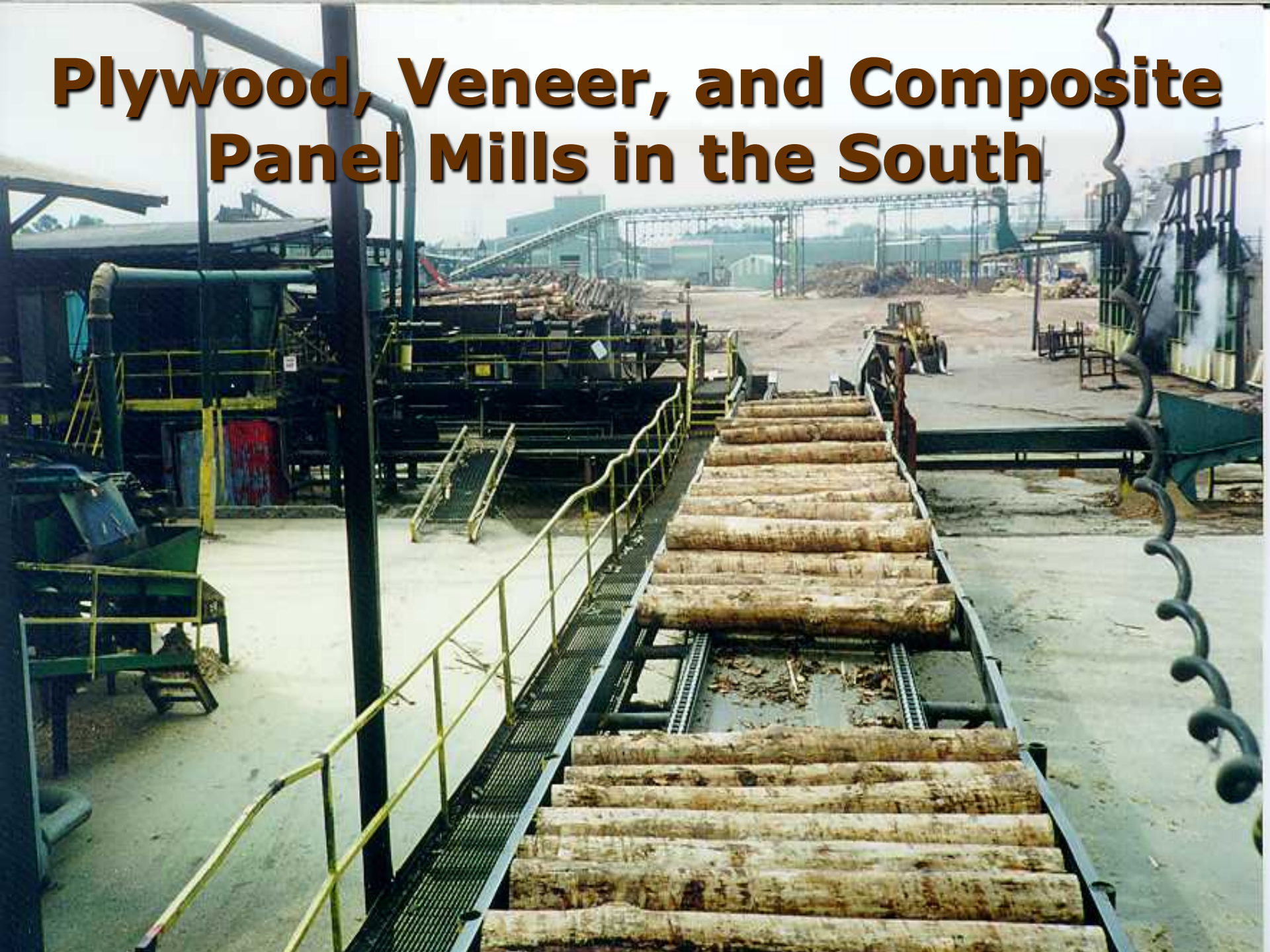




Pulpwood Production by State, 2011



Plywood, Veneer, and Composite Panel Mills in the South





Veener Mills in the South, 2011

Approximately 60 Mills

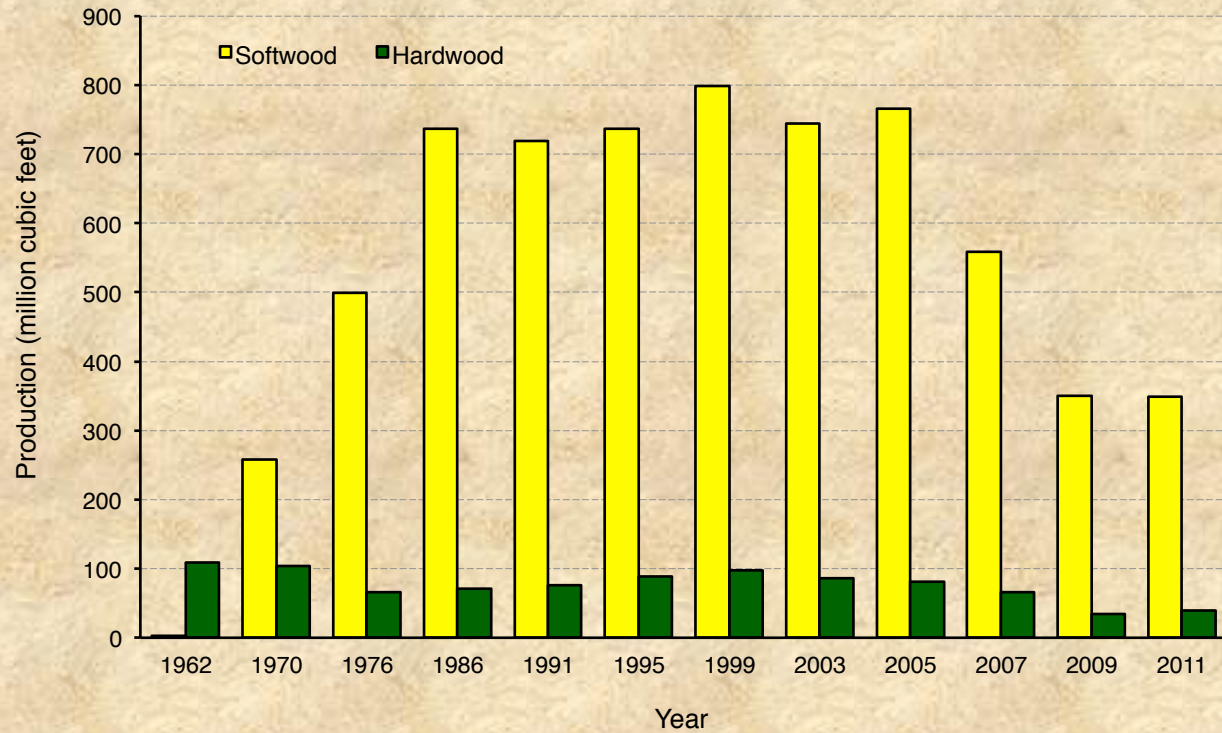
Veneer log Output

=

388 million cubic feet

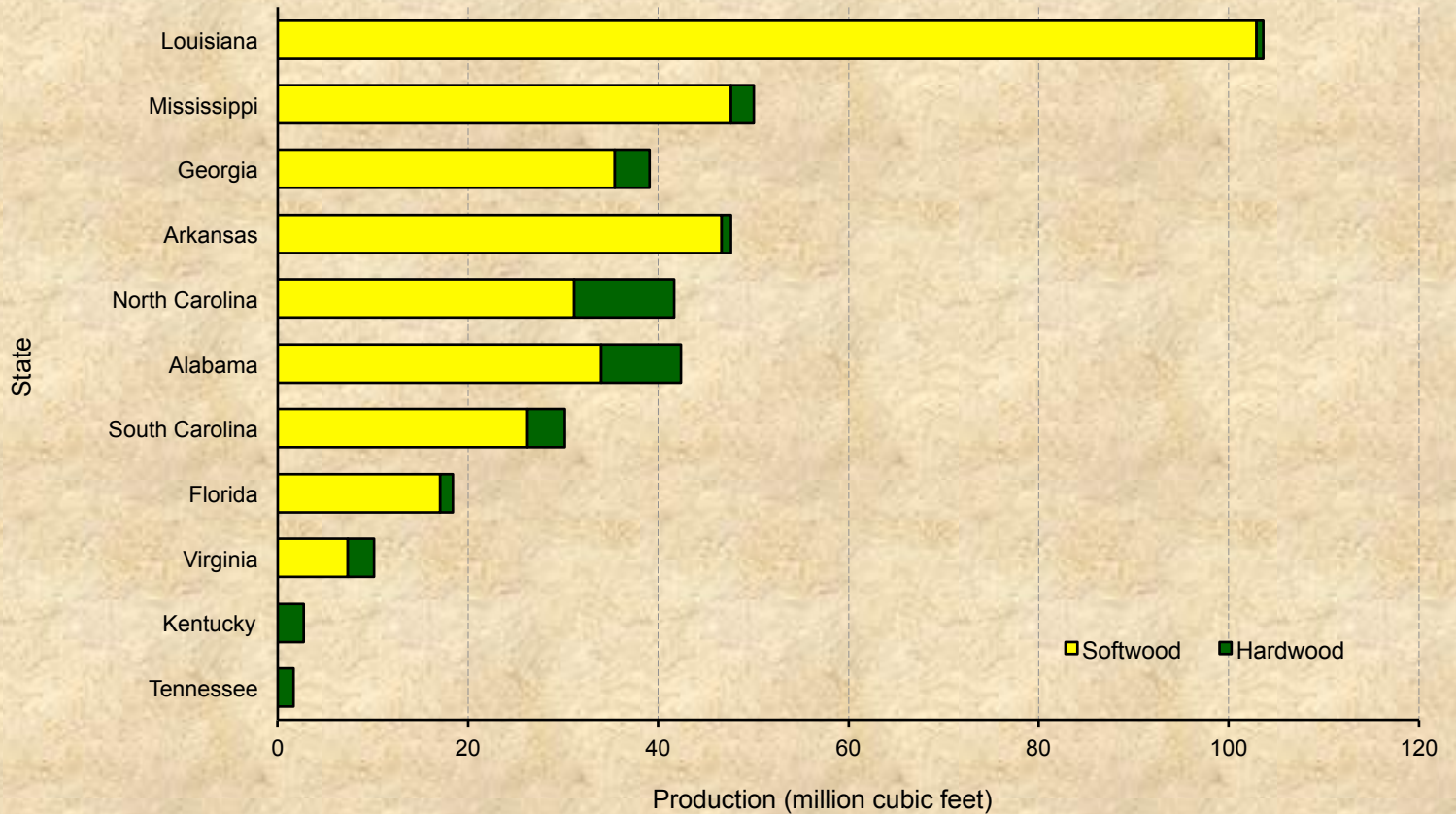


Roundwood Production for Veneer logs, 1962-2011





Veneer log Production by State, 2011



*Texas veneer production is included with composite panel production



Composite Panel Mills in the South, 2011

23 Mills

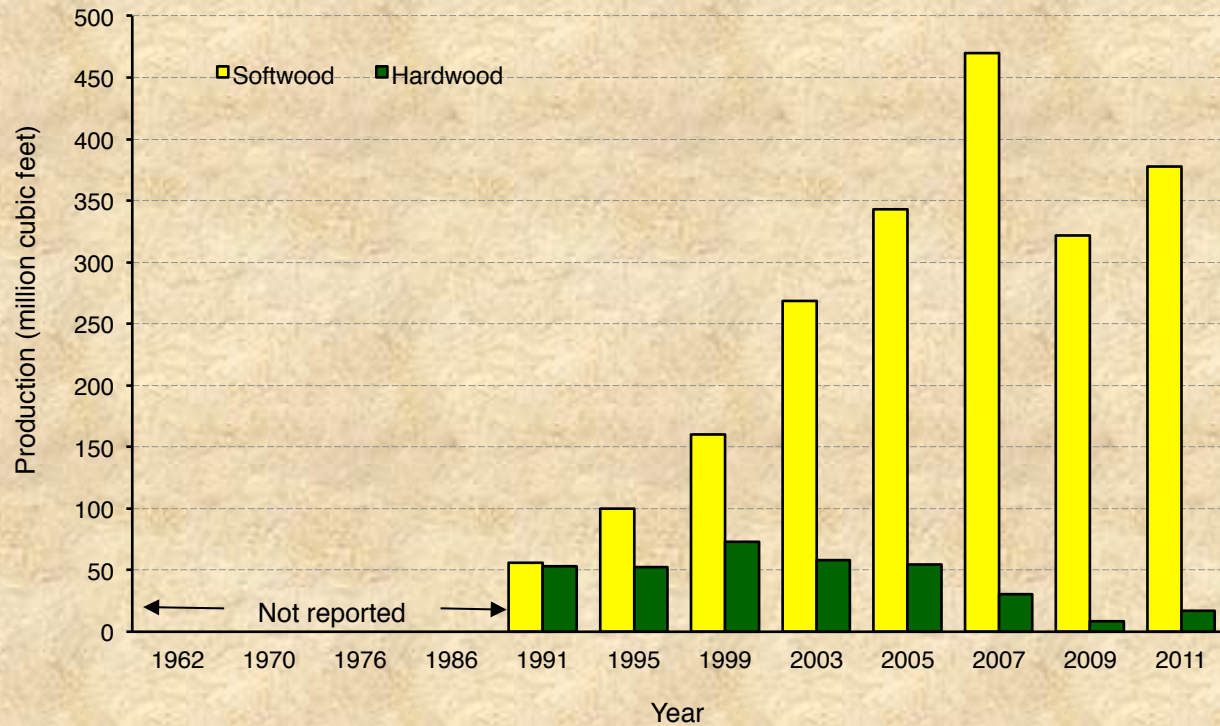
Composite Panel Output

=

395 million cubic feet



Roundwood Production for Composite Panels, 1991-2011



**This includes veneer production for the state of Texas*

A photograph of a lumber yard. In the foreground, several stacks of light-colored logs are arranged on a dark surface. In the background, there are stacks of dark-colored pipes or logs. The text "Other Mills in the South" is overlaid in the center of the image.

Other Mills in the South



Other Mills in the South, 2011

Approximately 139 Mills

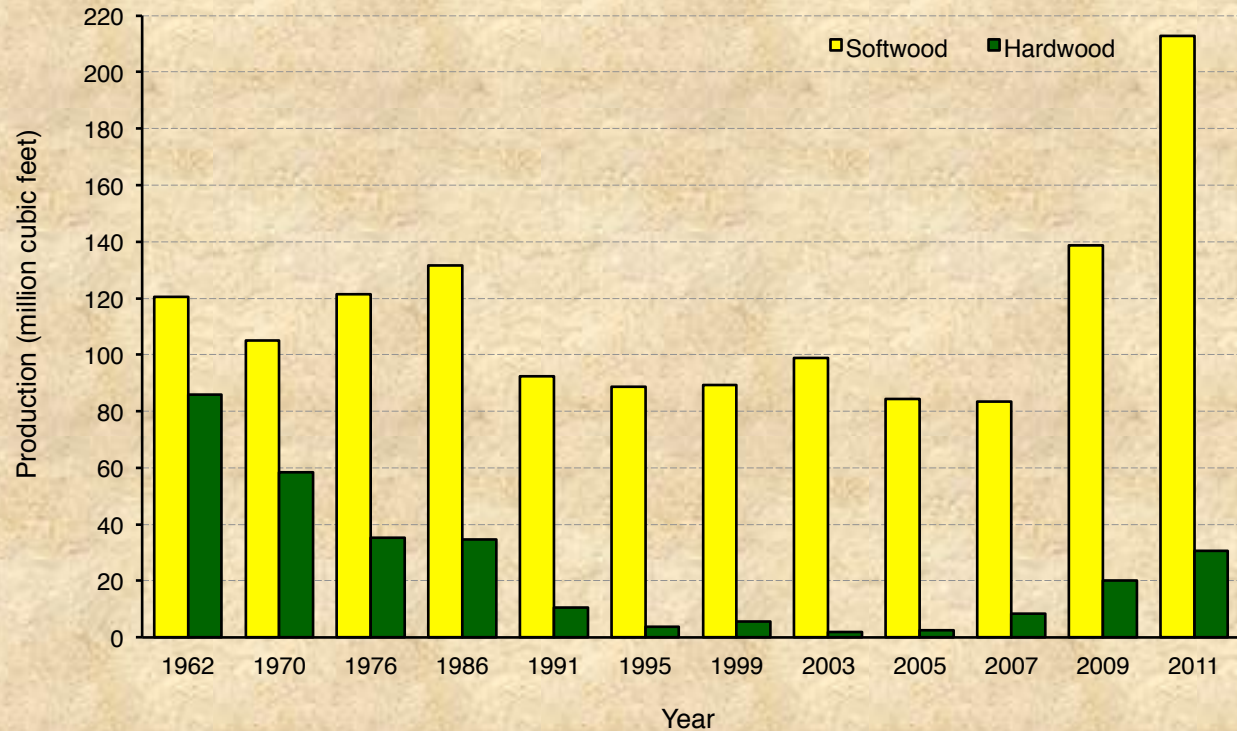
Other Product Output

=

243 million cubic feet



Roundwood Production for Other Products, 1962-2011





Mill Residue





What is Mill Residue?

- **Bark**
- **Coarse (slabs, edgings, veneer cores, etc.)**
- **Fine (shavings and sawdust)**





Total Product Output

billion cubic feet

Industrial Products **7.236**

+

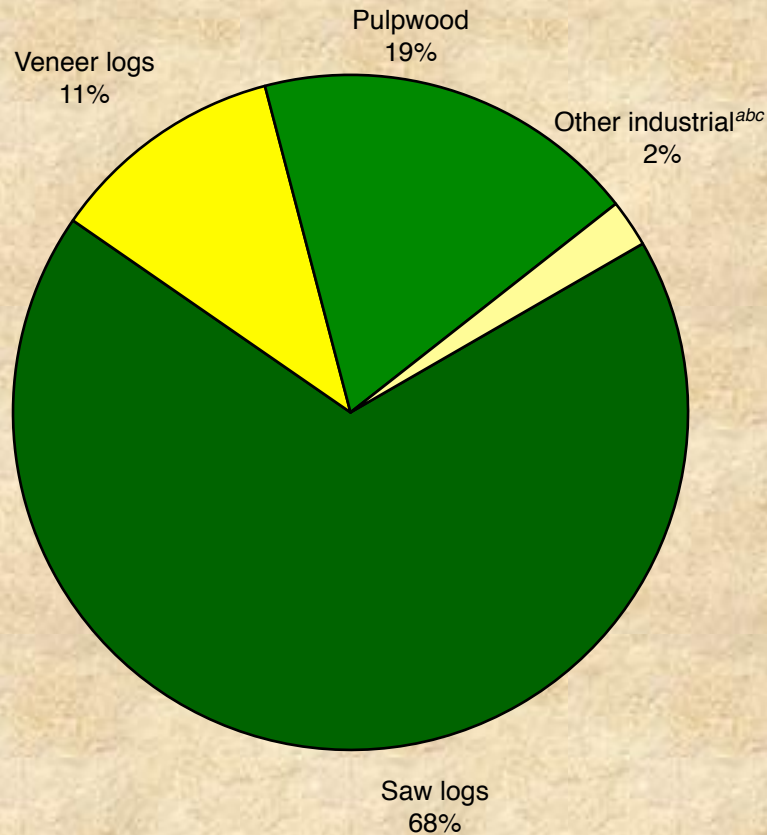
Byproducts **2.061**
(TX not included)

=

Total Output **9.297**



Residue Produced by Mill Type



Total 2.07 billion cubic feet

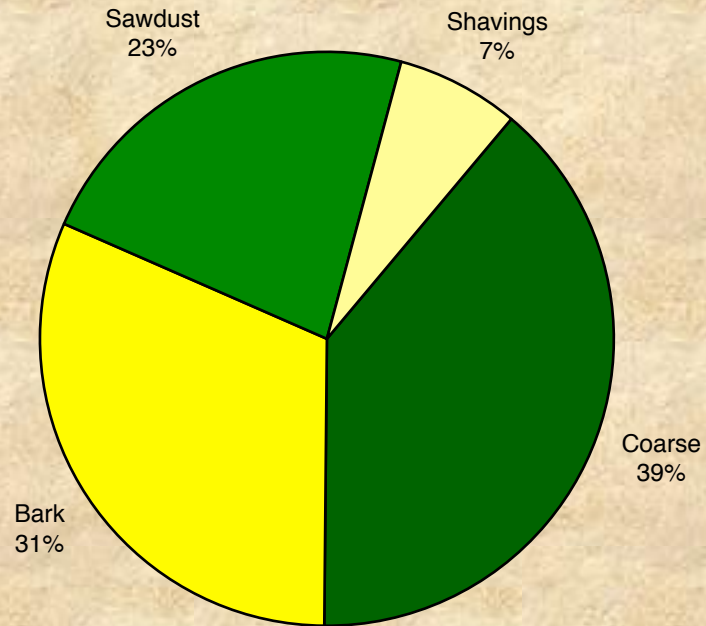
^a Includes poles, posts, composite panels, and other industrial products

^b Includes pulpwood for KY

^c Includes veneer logs for KY, TN, &VA



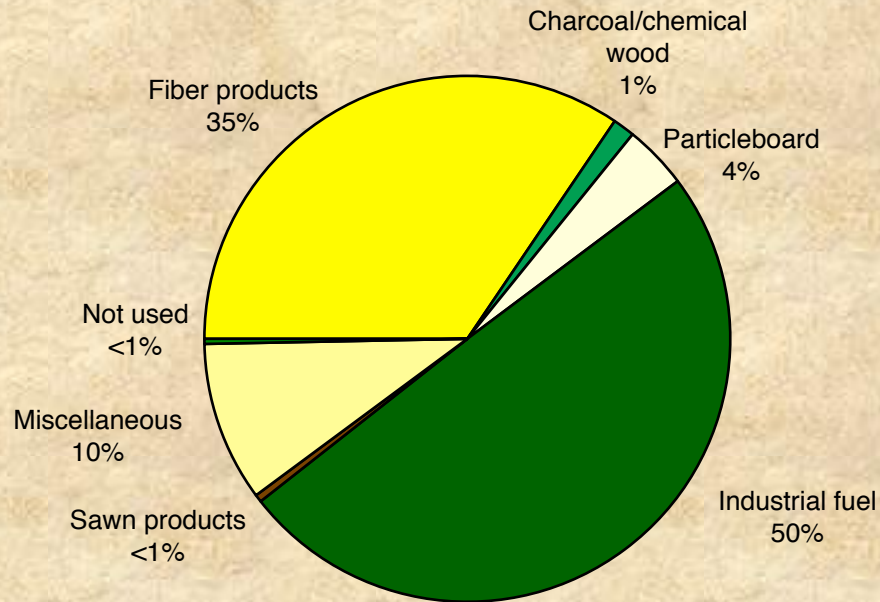
Mill Residue by Residue Type



Total 2.07 billion cubic feet



Disposal of Residue by Product



Total 2.07 billion cubic feet



National TPO

- **National data collection, processing, and reporting**
- **Annual TPO???**

Harvest and Utilization Studies





Currently in South

- **Collect approx. 80 operations per cycle per state**
- **15 to 18 operations collected annually per state, distributed evenly by product across the state**

Sawtimber tree

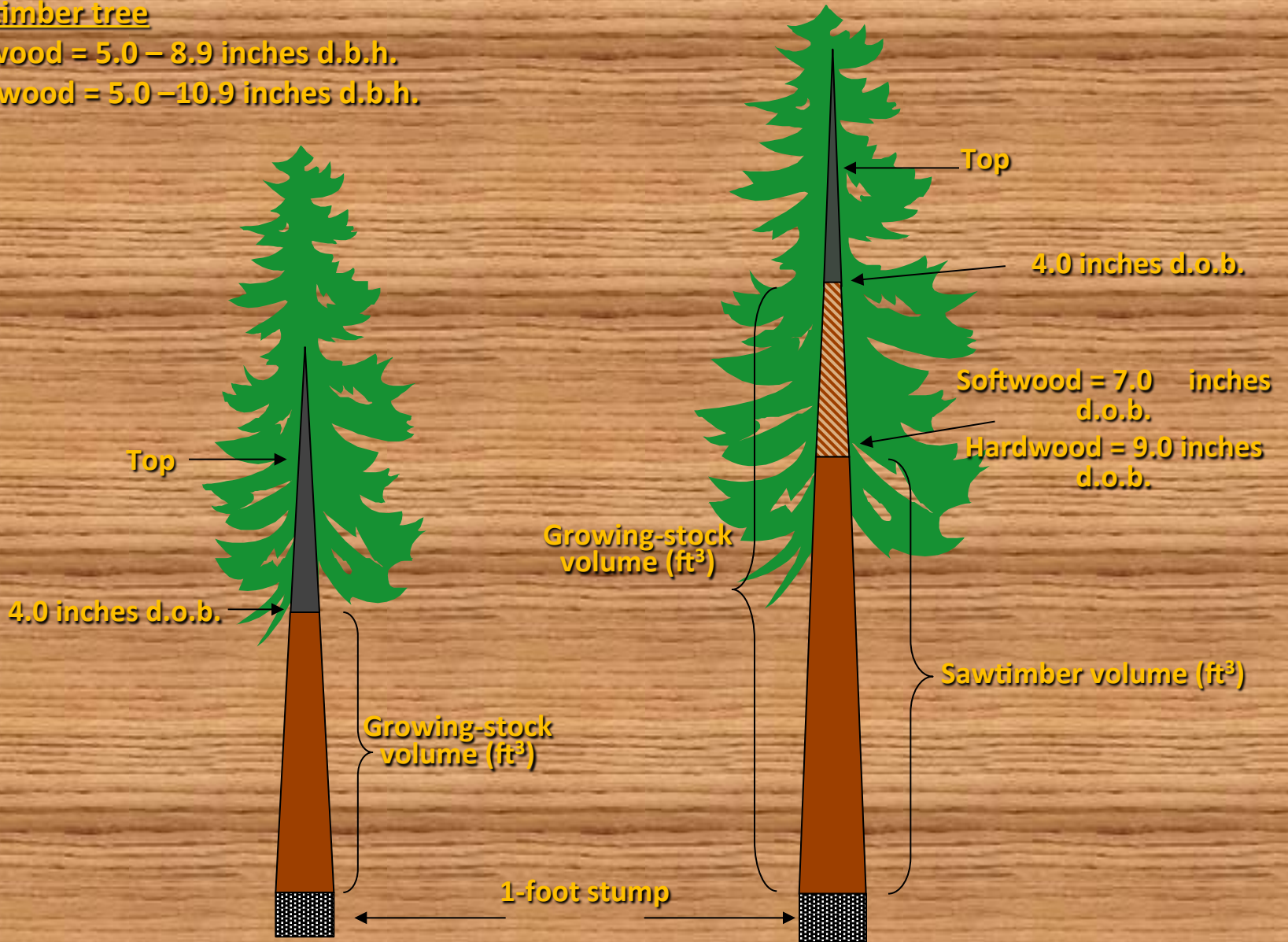
Softwood = at least 9.0 inches d.b.h.

Hardwood = at least 11.0 inches d.b.h.

Poletimber tree

Softwood = 5.0 – 8.9 inches d.b.h.

Hardwood = 5.0 – 10.9 inches d.b.h.





Goals of Utilization Studies

- **Over and Under utilization factors for estimates of growing stock and non-growing stock logging residue**
- **Ability to refine factors annually**

Average residual stump height



Average diameter of removals by product



JAN 12 2005

Average bole length (1' stump to 4" top)





Average d.o.b. at the end of utilization

JAN 12 2005



Additional Info

- **Harvest Area data (tract size, forest type, physiographic class, stand origin, etc.)**
- **Logging Equipment**
- **Logger Demographics**



National Utilization Studies

- **National data collection, processing, and reporting consistency**
 - **Felled Tree Studies(FTS 1.0)**
- **Biomass Equation Group**

Web Sites for Additional Information

Publications

www.srs.fs.fed.us

Inventory and TPO Data

<http://srsfia2.fs.fed.us>

that is changing such as the TPO database you can use [N.d.] for the data
U.S. Department of Agriculture, Forest Service. [n.d.]. Timber Product Output (TPO) Reports. Knoxville, TN: U.S. Department of Agriculture Forest Service, Southern Research Station.
http://srsfia2.fs.fed.us/php/tpo_2009/tpo_rpa_int1.php. [Date accessed: Month da, year].

TPO CONTACT INFORMATION

AREA	CONTACT
Southern Research Station Data	James Bentley
Northern Research Station Data	Ron Flva
Rocky Mountain Research Station Data	Todd Morgan
Pacific Northw est Station Data	Todd Morgan
report program bugs/problems to:	Helen Beresford

RPA 2012 data was added 04/15/2013

Two similar RPA / TPO applications are offered here.
 Tables may be generated for the United States, for Regions (Northeast, North Central, Southern, Rocky Mountains or Pacific Coast) for State(s) and/or Counties.
 The table screen output may be saved to an *.xls file:
 1) Right click on link
 2) Save target as
 change the file name extension to .xls
 leave the file type as HTML document.

The first set of tables are the same 12 tables that are repeated for the United States and each of the 5 regions in the USDA General Technical Report SRS-45, September 2001 publication:
[United States Timber Industry - An Assessment of Timber Product Output and Use, 1996](#)

<input type="radio"/> National RPA reports	The National RPA application generates tables based on RPA report years only.
<input checked="" type="radio"/> SRS TPO reports	The SRS TPO application generates tables based on report years or data years.

Select application
 Click on "Continue"

Continue

RPA / TPO PUBLICATIONS OF INTEREST	PUBLICATION LINK
------------------------------------	------------------

SRS 2009 data was posted on 5/12/2011
SRS 2009 data was re-posted on 8/??/2011 for AL,AR,KY,MS

Introduction and table/data Information

RPA REPORT YEAR	SRS REPORT YEAR	DATA YEAR	STATES	PRODUCTS
1997	1995	1996	AR, LA, OK	ALL
1997	1995	1995	AL, FL, GA, KY, MS, NC, SC, TN, VA	ALL
1997	1995	1994	TX	ALL
	1997	1997	AL, FL, GA, KY, NC, SC, TN, TX	ALL
	1997	1996	AR, LA, OK	ALL
	1997	1995	MS, VA	ALL
2002	1999	1999	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA	ALL
	2001	2001	GA, KY, NC, SC, TN, TX, VA	ALL
	2001	1999	AL, AR, FL, LA, MS, OK	ALL
	2002	2002	AR, LA, MS, OK, TX	ALL
	2002	2001	GA, KY, NC, SC, TN, VA	ALL
	2002	1999	AL, FL	ALL
2007	2003	2003	AL, FL, GA, KY, NC, SC, TN, TX, VA	ALL
2007	2003	2002	AR, LA, MS, OK	ALL
	2005	2005	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA	ALL
	2007	2007	AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, TX, VA	ALL
	2007	2005	OK	
2012	2009	2009	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA	
	2011	2011	AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, VA (2011 report data will be available in 2014)	
	2011	2009	TX, (2011 report data will be available in 2014)	ALL

Scroll down to make table criteria selections



	Total	Total	Total	Total	Total volume of	Total volume of	Total volume of	Total	

Region,State and/or County Selection Table

Region by SRS Report Year

- No Selection
- One Region

(Choose one of the following Regions)

Southern Region , SRS Reportyear: 2009

Phys iographic Regions by SRS Report Year

- No Selection
- Specific Physiographic Region

(Choose one of the following Physiographic Regions and SRS REPORT YEAR)

2009	Southern Region	Coastal Plain
2009	Southern Region	Mountain
2009	Southern Region	Piedmont
2007	Southern Region	Coastal Plain
2007	Southern Region	Mountain

Select either "One region" or specific state(s)

ATTENTION:

If you choose from either the SRS regions datasets or the SRS Physiographic datasets above - they CAN NOT be combined with any other State/county data.

If you choose from the datasets below - they will be combined into one entity. Any combination of the States /years /counties may be chosen.

county lists for each State are repeated:

List 1) county name, county #, unit name, unit #, physiographic region

List 2) unit name, unit #, county name, physiographic region

SRS physiographic region codes:(CP=Coastal Plain, M=Mountain, P=Piedmont)

Alabama 2009 Reportyear (2009 data)

- No Selection
- All Counties
- Specific Counties

(Choose one or more of the following counties)

Autauga---	: 001, Southeast-3, CP
Baldwin---	: 003, Southw est-South-1, CP
Barbour---	: 005, Southeast-3, CP
Bibb-----	: 007, West Central-4, P

Arkansas 2009 Reportyear (2009 data)

- No Selection
- All Counties
- Specific Counties

(Choose one or more of the following counties)

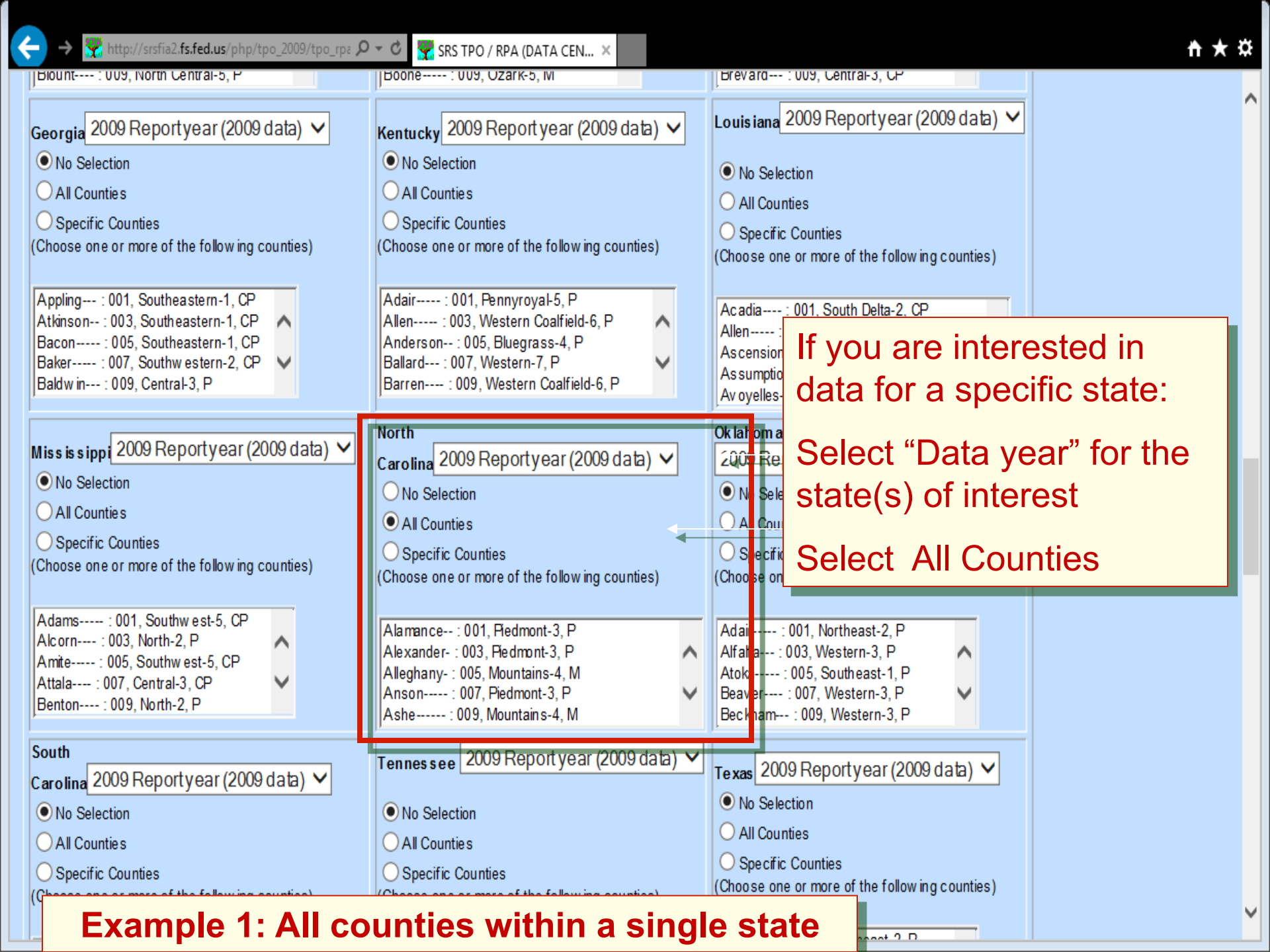
Arkansas--	: 001, South Delta-1, P
Ashley----	: 003, Southw est-3, P
Baxter----	: 005, Ozark-5, M
Benton----	: 007, Ozark-5, M

Florida 2009 Reportyear (2009 data)

- No Selection
- All Counties
- Specific Counties

(Choose one or more of the following counties)

Alachua---	: 001, Northeastern-1, CP
Baker-----	: 003, Northeastern-1, CP
Bay-----	: 005, Northw estern-2, CP
Bradford--	: 007, Northeastern-1, CP



If you are interested in data for a specific state:
Select "Data year" for the state(s) of interest
Select All Counties

Example 1: All counties within a single state

(Choose one or more of the following counties)

- Autauga--- : 001, Southeast-3, CP
- Baldwin--- : 003, Southeast-South-1, CP
- Barbour--- : 005, Southeast-3, CP
- Bibb----- : 007, West Central-4, P
- Blount---- : 009, North Central-5, P

(Choose one or more of the following counties)

- Arkansas--
- Ashley---- :
- Baxter---- : 005, Ozark-3, M
- Benton---- : 007, Ozark-5, M
- Boone---- : 009, Ozark-5, M

(Choose one or more of the following counties)

- Bay----- : 005, Northwest-2, CP
- Bradford-- : 007, Northeastern-1, CP
- Brevard--- : 009, Central-3, CP

Example 2: Multiple state table

Georgia 2009 Reportyear (2009 data) v

- No Selection
 - All Counties
 - Specific Counties
- (Choose one or more of the following counties)

- Appling--- : 001, Southeastern-1, CP
- Atkinson-- : 003, Southeastern-1, CP
- Bacon----- : 005, Southeastern-1, CP
- Baker----- : 007, Southeastern-2, CP
- Baldwin--- : 009, Central-3, P

Kentucky 2009 Report year (2009 data) v

- No Selection
 - All Counties
 - Specific Counties
- (Choose one or more of the following counties)

- Adair----- : 001, Pennyroyal-5, P
- Allen----- : 003, Western Coalfield-6, P
- Anderson-- : 005, Bluegrass-4, P
- Ballard--- : 007, Western-7, P
- Barren---- : 009, Western Coalfield-6, P

Louisiana 2009 Reportyear (2009 data) v

- No Selection
 - All Counties
 - Specific Counties
- (Choose one or more of the following counties)

- Acadia---- : 001, South Delta-2, CP
- Allen----- : 003, Southeast-3, CP
- Ascension- : 005, South Delta-2, CP
- Assumption : 007, South Delta-2, CP
- Avoyelles- : 009, South Delta-2, CP

Mississippi 2009 Reportyear (2009 data) v

- No Selection
 - All Counties
 - Specific Counties
- (Choose one or more of the following counties)

- Adams----- : 001, Southeast-5, CP
- Alcorn---- : 003, North-2, P
- Amite----- : 005, Southeast-5, CP
- Attala---- : 007, Central-3, CP
- Benton---- : 009, North-2, P

North Carolina 2009 Reportyear (2009 data) v

- No Selection
 - All Counties
 - Specific Counties
- (Choose one or more of the following counties)

- Alamance-- : 001, Piedmont-3, P
- Alexander- : 003, Piedmont-3, P
- Alleghany- : 005, Mountains-4, M
- Anson----- : 007, Piedmont-3, P
- Ashboro--- : 009, Mountains-4, M

Oklahoma 2009 Reportyear (2009 data) v

- No Selection
 - All Counties
 - Specific Counties
- (Choose one or more of the following counties)

- Adair----- : 001, Northeast-2, P
- Alfalfa--- : 003, Western-3, P
- Atoka----- : 005, Southeast-1, P
- Beaver---- : 007, Western-3, P
- Beckham--- : 009, Western-3, P

South Carolina 2009 Reportyear (2009 data) v

Tennessee 2009 Report year (2009 data) v

Texas 2009 Reportyear (2009 data) v

Example 3: Multiple county table

Specific counties

If "Specific counties" is selected, you must then select the counties of interest from the list box (Hold down the control key in order to select multiple counties)

All Counties
Specific Counties
(Choose one or more of the following counties)

Appling--- : 001, Southeastern-1, CP
Atkinson-- : 003, Southeastern-1, CP
Bacon----- : 005, Southeastern-1, CP
Baker----- : 007, Southeastern-2, CP
Baldwin--- : 009, Central-3, P

Mississippi 2009 Report year (2009 data) ▾

No Selection

All Counties

Specific Counties

(Choose one or more of the following counties)

Adams----- : 001, Southw est-5, CP
Alcorn---- : 003, North-2, P
Amite----- : 005, Southw est-5, CP
Attala---- : 007, Central-3, CP
Benton---- : 009, North-2, P

South

Carolina 2009 Report year (2009 data) ▾

No Selection

All Counties

Specific Counties

(Choose one or more of the following counties)

Abbeville- : 001, Piedmont-3, P
Aiken----- : 003, Southern Coastal Plain-1, CP
Allendale- : 005, Southern Coastal Plain-1, CP
Anderson-- : 007, Piedmont-3, P
Bamberg--- : 009, Southern Coastal Plain-1, CP

All Counties
Specific Counties

Adair----- : 001, Pennyroyal-5, P
Allen----- : 003, Western Coalfield-6, P
Anderson-- : 005, Bluegrass-4, P
Ballard--- : 007, Western-7, P
Barren---- : 009, Western Coalfield-6, P

North

Carolina 2009 Report year (2009 data) ▾

No Selection

All Counties

Specific Counties

(Choose one or more of the following counties)

Alamance-- : 001, Piedmont-3, P
Alexander- : 003, Piedmont-3, P
Alleghany- : 005, Mountains-4, M
Anson----- : 007, Piedmont-3, P
Ashe----- : 009, Mountains-4, M

Tennessee 2009 Report year (2009 data) ▾

No Selection

All Counties

Specific Counties

(Choose one or more of the following counties)

Anderson-- : 001, East-5, M
Bedford--- : 003, Central-3, P
Benton---- : 005, West Central-2, P
Bledsoe--- : 007, Plateau-4, P
Blount---- : 009, East-5, M

All Counties

Acadia---- : 001, South Delta-2, CP
Allen----- : 003, Southw est-3, CP
Ascension- : 005, South Delta-2, CP
Assumption : 007, South Delta-2, CP
Avoyelles- : 009, South Delta-2, CP

Oklahoma

2009 Report year (2009 data) ▾

No Selection

All Counties

Specific Counties

(Choose one or more of the following counties)

Adair----- : 001, Southeastern-1, CP
Alfalfa--- : 003, Southeastern-1, CP
Atoka----- : 005, Southeastern-1, CP
Beaver--- : 007, Southeastern-1, CP
Beckham--- : 009, Southeastern-1, CP

Texas 2009 Report year (2009 data) ▾

No Selection

All Counties

Specific Counties

(Choose one or more of the following counties)

Anderson-- : 001, Northeast-2, P
Angelina-- : 005, Southeast-1, CP
Bowie----- : 037, Northeast-2, P
Camp----- : 063, Northeast-2, P
Cass----- : 067, Northeast-2, P

Specific Counties

(Choose one or more of the following counties)

- Accomack-- : 001, Coastal Plain-1, CP
- Albemarle- : 003, Northern Piedmont-3, P
- Alleghany- : 005, Northern Mountains-4, M
- Amelia--- : 007, Southern Piedmont-2, P
- Amherst--- : 009, Northern Piedmont-3, P

Table format from the USDA publication General Technical Report SRS-45 September 2001
United States Timber Industry - An Assessment of Timber Product Output and Use, 1996. Tony G. Johnson, Editor

Select which output tables to generate for Table set 1

FOR Table 1 enter state/years to compare:

YEAR 1: 2007 YEAR 2: 2009

Table 1: Output of roundwood products by product, species group and year (year 1 vs year 2)
Table 1B: Output of Industrial roundwood products by product, species group and year (year 1 vs year 2)

Select which years and output tables to generate for Table set 3 (AVERAGING TABLES)

YEAR 1: 1995 YEAR 2: 1997 YEAR 3: 1999 YEAR 4: 2001 YEAR 5: 2002 YEAR 6: 2003 YEAR 7: 2005 YEAR 8: 2007 YEAR 9: 2009 YEAR 10: none

Enter Title
such as Southern Region, 2007

Empty text input field for title

add an additional predefined limitations clause here to apply to ALL tables

- no extra limitations
- ... and r.ow n=1 --NATIONAL FOREST
- ... and r.ow n=2 --OTHER PUBLIC
- ... and r.ow n in (1,2)--ALL PUBLIC
- ... and r.ow n=3 --FOREST INDUSTRY

add an additional predefined limitations clause here to apply to ALL tables

- no extra limitations
- ... and r.own=1 --NATIONAL FOREST
- ... and r.own=2 --OTHER PUBLIC
- ... and r.own in (1,2)--ALL PUBLIC
- ... and r.own=3 --FOREST INDUSTRY

add additional user defined limitations clauses here
 the user defined clause must begin with the word AND
 do not use ... and r.co=X, if you want to limit counties chose Specific counties above

- units in thousand cubic feet
- units in million cubic feet
- units in green tons

[Conversion factors used for green tons are based on the most current State Inventory data applied to all removal categories (roundwood products, logging residues and other removals), they are not based on specific product conversion rates.]

latest conversion factors for green tons (2009)

STATE_NAME	SOFTWOOD CONVERSION FACTORS LBS PER CUBIC FOOT	HARDWOOD CONVERSION FACTORS LBS PER CUBIC FOOT	FACTORS WERE BASED ON DATA YEAR
Alabama	69.96250099	76.00521854	2009
Arkansas	69.34387873	78.71233875	2009
Florida	69.58313497	74.52628821	2009
Georgia	69.76494698	75.45764617	2009
Kentucky	70.98939981	77.15902998	2009
Louisiana	69.17438989	75.72698222	2009
Mississippi	69.72915132	76.31453542	2009
North Carolina	68.59254626	74.78111994	2009
Oklahoma	69.36610531	80.09686851	2009

STATE_NAME	FACTORS LBS PER CUBIC FOOT	FACTORS LBS PER CUBIC FOOT	BASE ON DATA YEAR
Alabama	69.96250099	76.00521854	2009
Arkansas	69.34387873	78.71233875	2009
Florida	69.58313497	74.52628821	2009
Georgia	69.76494698	75.45764617	2009
Kentucky	70.98939981	77.15902998	2009
Louisiana	69.17438989	75.72698222	2009
Mississippi	69.72915132	76.31453542	2009
North Carolina	68.59254626	74.78111994	2009
Oklahoma	69.36610531	80.09686851	2009
South Carolina	69.46562828	75.34710473	2009
Tennessee	69.09486591	77.08643836	2009
Texas	69.00085748	77.36424023	2009
Virginia	68.38581635	76.52069472	2009

[conversion factors for green tons for past data](#)

- do not show SQL query
- show SQL query

optional section for CUSTOMTABLES (choose 2 columns to display)

Volume of roundwood

Volume of logging residue

Volume of other removals

Volume of mill residue

Select column 1

Select column 2

none

none

Continue

Table name	link
Tables 1-13	Tables 1-13,removals and avg (all but county & custom)
County Tables C5,C10,C11*	County Tables
Table 1: Output of industrial roundwood products by product, species group and year	Table 1
Table 1B: Output of roundwood products byproduct, species group,and year	Table 1B
Table 2: Volume of roundwood products by source, species group and type of product	Table 2
Table 2B: Volume of roundwood products by product, species group and source	Table 2B
Table 3: Volume of roundwood products by ownership group, species group and type of product	Table 3
Table 4: Volume of roundwood products by detailed species group and type of product	Table 4
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Table 1. — Output of Industrial roundwood products by product, species group and year,

Product	Species Group	NC/OK 2007	NC/OK 2009	Change	Percent Change
<i>thousand cubic feet</i>					
Saw logs	Softwood	299,348	206,504	-92,844	-31.0
	Hardwood	110,563	72,995	-37,568	-34.0
	Total	409,911	279,499	-130,412	-31.8
Veneer logs	Softwood	46,602	32,871	-13,731	-29.5
	Hardwood	14,518	6,130	-8,388	-57.8
	Total	61,120	39,001	-22,119	-36.2
Pulpwood	Softwood	170,976	186,960	15,984	9.3
	Hardwood	146,042	108,475	-37,567	-25.7
	Total	317,018	295,435	-21,583	-6.8
Composite panels	Softwood	45,716	25,033	-20,683	-45.2
	Hardwood	6,356	5,082	-1,274	-20.0
	Total	52,072	30,115	-21,957	-42.2
Posts, poles and pilings	Softwood	5,756	1,632	-4,124	-71.6
	Hardwood	0	0	0	0.0
	Total	5,756	1,632	-4,124	-71.6
Other Industrial	Softwood	742	4,667	3,925	529.0
	Hardwood	1,000	1,053	53	5.3
	Total	1,742	5,720	3,978	228.4
Total (Industrial)	Softwood	569,140	457,667	-111,473	-19.6
	Hardwood	278,479	193,735	-84,744	-30.4
	Total	847,619	651,402	-196,217	-23.1

QUESTIONS?

