

Reforestation in the US: Trends and Implications

Brooks Mendell, Forisk Consulting
Amanda Lang, Forisk Consulting

Wood Supply Research Institute
Annual Meeting
Panama City Beach, FL
March 1, 2011

Objectives

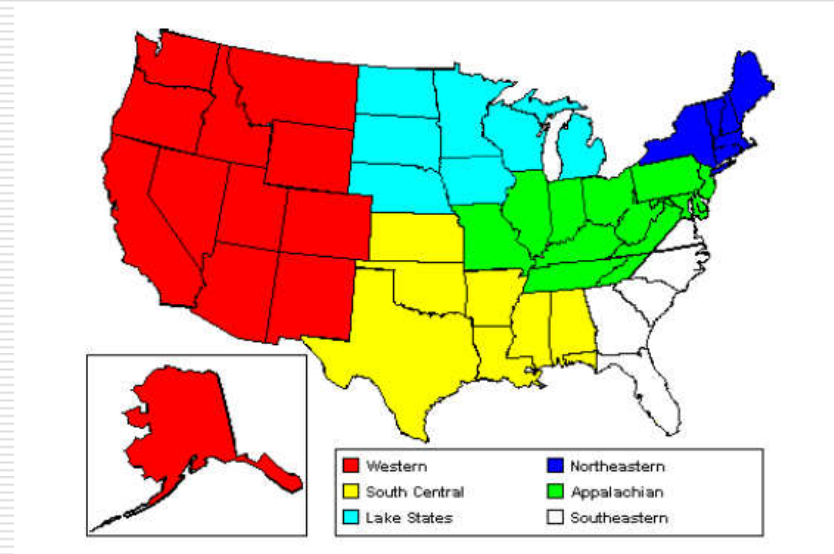
- ❑ Quantify reforestation trends in the United States over the past 10-20 years.
- ❑ Assess potential effects of US reforestation rates on the availability of pulpwood and woody biomass supplies.

- ❑ *Includes analysis of reforestation data, forest inventories/supplies and timberland ownership.*

Study Regions = FRA Regions

Five regions

- Western
- Lake States
- Appalachian
- Northeast
- South (SE + SC)

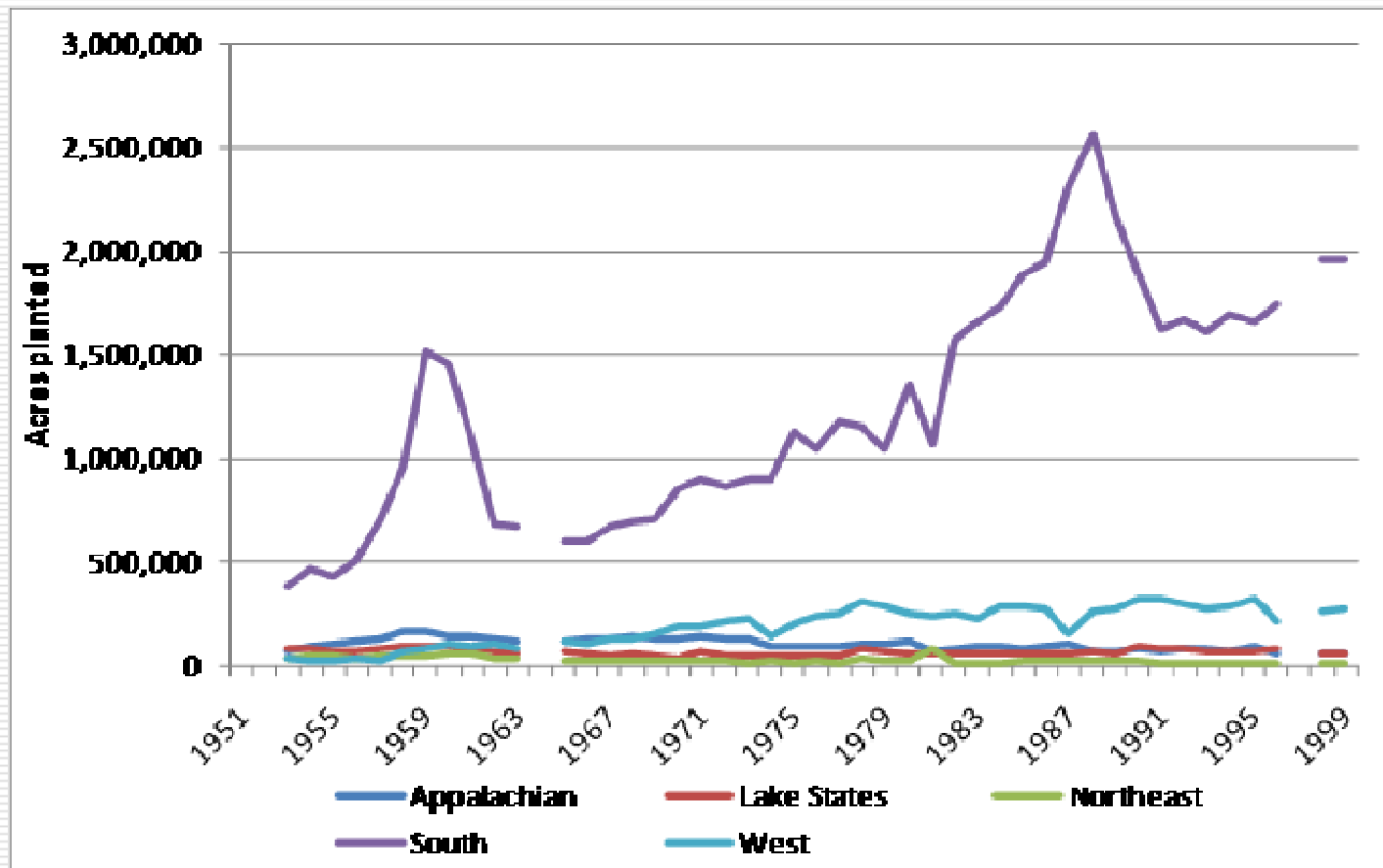


Methodology: collected data from 26 states, representing 64% of merchantable US forest inventory

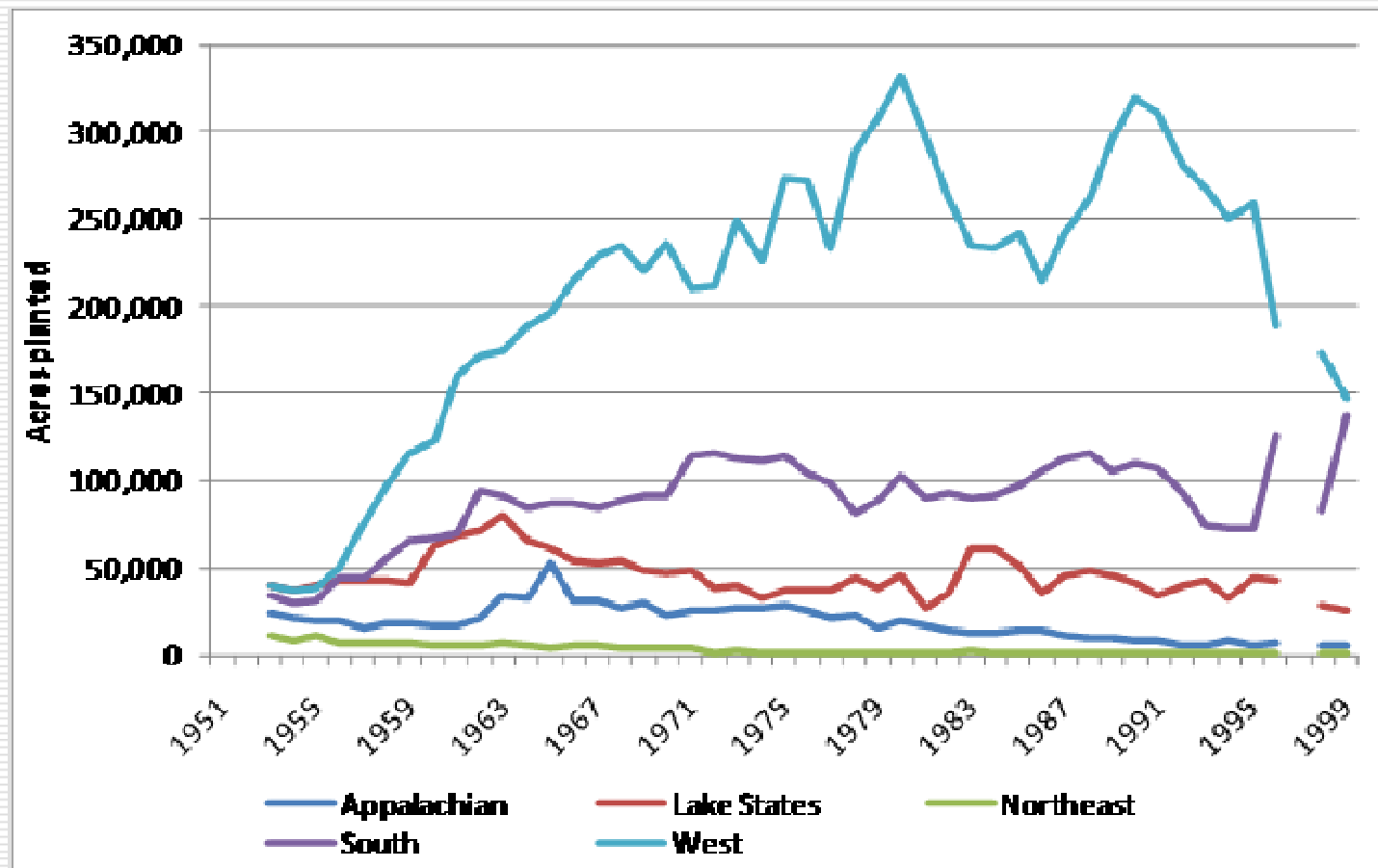
- ❑ Aggregated planting data from USFS for 1951-99.
- ❑ Contacted Auburn Southern Forest Nursery Mngmt Coop for seedling production data for 2000-2009.
- ❑ Attempted to contact reps in 35 other states.
- ❑ Aggregated data by region where possible.

Region	Total Merch (green tons)	Total Merch in States with Reforestation Data (green tons)	% Coverage by volume
Appalachian	7,043,337,216	2,400,106,594	34%
Lake States	2,714,649,352	1,580,488,012	58%
North East	3,307,980,318	1,673,472,658	51%
South	10,454,117,972	10,454,117,972	100%
West	10,839,646,366	6,006,728,346	55%
Total	34,359,731,224	22,114,913,582	64%

Acres Planted on Private Timberlands 1951-1999; Source: USFS

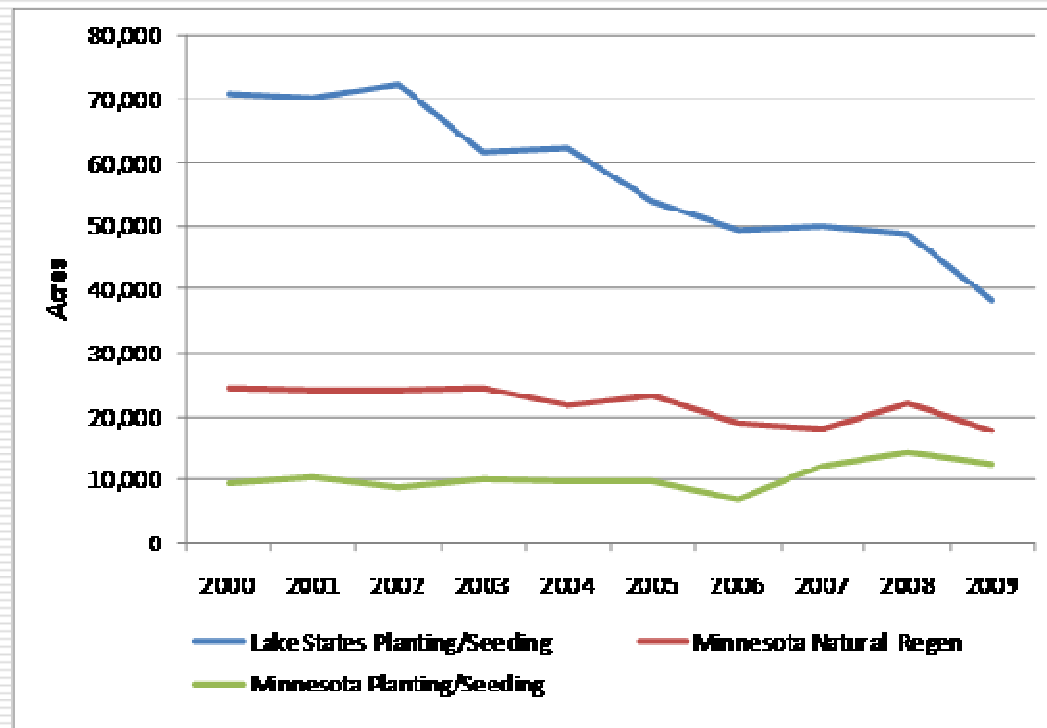


Acres Planted on Public Timberlands 1951-1999; Source: USFS

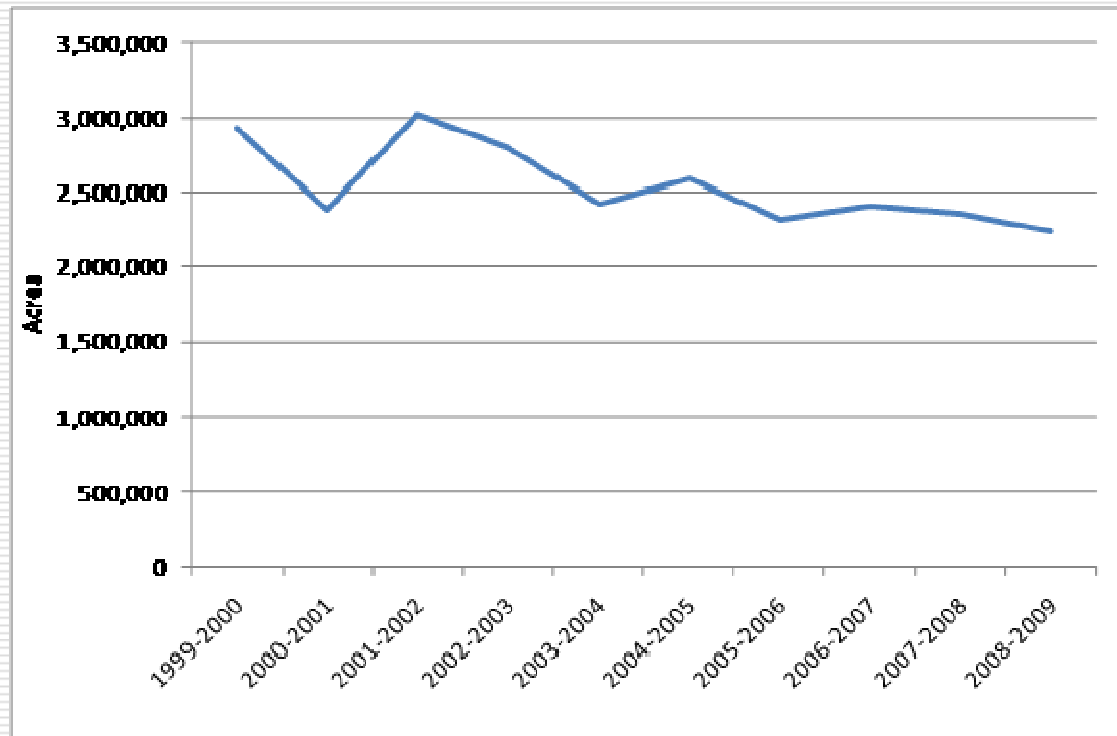


Reforestation methods and approaches vary across regions.

- Natural regeneration prevalent in Northeast, Appalachian and Lake States.



South relies on artificial regeneration;
nursery seedling production proxies acres
replanted.



- *Source: Auburn Southern Forest Nursery Management Cooperative. Includes Southern nursery seedling production (including TN) and seedling sales for CRP program in KS. Seedlings divided by 450 TPA.*

How could economic downturn, and decline in reforestation, affect biomass supplies (pulpwood-sized materials)?

□ Key factors:

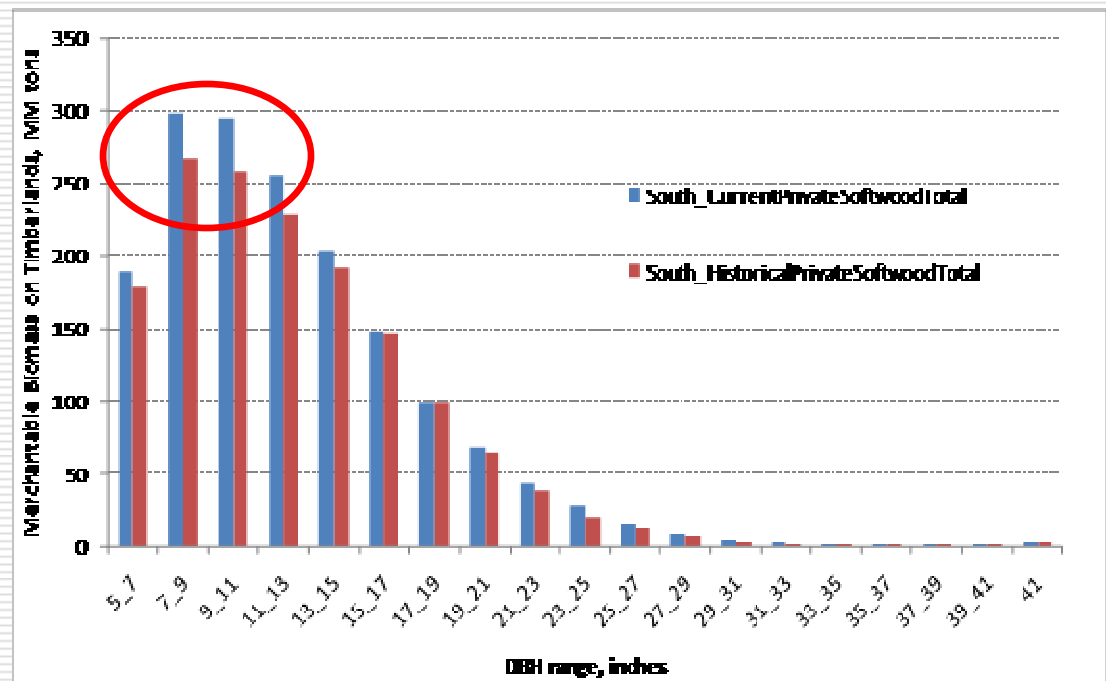
- Harvesting type
- Reforestation activity
- Types of potential raw material supplies

□ Key relationships and assumptions:

- Reforestation linked to final harvests.
 - Less planting could be reduced wood flows or harvesting; at minimum, it's a shift in harvest type.
- Clearcuts provide two raw materials for pulpwood users: roundwood & mill residuals.
 - Falling pulpwood flows can be partially offset by residual chip production.

Observations based on timberland acres and biomass supplies over time

- Total timberland acres increased from 466 million in 1987 to 513 million in 2007.
- Most reforestation in South & West.
- More softwood biomass growing today than ever in past 10-20 years.



As pulpwood “leader”, US South most exposed to potential impacts on supplies from reduced reforestation.

- Impacts flow from two potential threats:
 1. Fewer clearcut harvests and resulting fewer acres replanted to grow into pulpwood; and
 2. Increased thinning activity, which reduces future pulpwood supplies from clearcuts.
 - Between 2000 and 2008, US South decreased seedling production by 24% and final harvests decreased from 53% to 43% of all harvests.

However, from 2006-2010, residual chip flows fell 10+ million tons/year in South (Source: *Wood Demand Report*).

- Increased demand for sawtimber replenishes residual chip supplies.
 - Also provides incentive to increase residual chips from chip-n-saw manufacturers.
- Regional analysis “averages out” potential pulpwood constraints in any given wood basin.
 - In practice, wood procurement is a local operation.

Questions?

We appreciate the support of WSRI and its members, and our fellow researchers at UGA's Center for Forest Business.