

Forested Wetlands

ORNL SE US Biomass Tour

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Weyerhaeuser Company

Weyerhaeuser Company

- 116 years old
- Own 13.2 million acres (5.3 million ha) of timberland including 7.3 million acres (3 million ha) of that in the US South
- 100% of our timberlands are certified
- 14,000 employees
- We planted 650 million trees in the last five years

Weyerhaeuser Company



Most Admired Companies

FORTUNE Magazine, 1988-2014



World's Most Ethical Companies

Ethisphere Institute, 2009-2010, 2012-2014



Winning Rating

2020 Women on Board

2013-Present



Top 100 S&P 500

Clean Capitalism Ranking

Corporate Knights, 2013-Present



100 Best Corporate Citizens

Corporate Responsibility Magazine, 2008-2014

Top 10 Best Corporate Citizens, 2014



Global 100

Global 100 Most Sustainable Corporations in the World
2011, 2014

Dow Jones Sustainability Index

2005-2014 (North America)

2011-2015 (World)



The Sustainability Yearbook

RobecoSAM, 2011-2014



FTSE4Good Index Series

FTSE Group, 2005-2008, 2011-2015



FTSE4Good

Maplecroft

Climate Innovation Indices

Cycles 1-3 (#16)



ECPI Global Equity Indices

Global Ethical Equity

Global Eco Real Estate and Building

2007-Present



STOXX ESG Leaders Indices

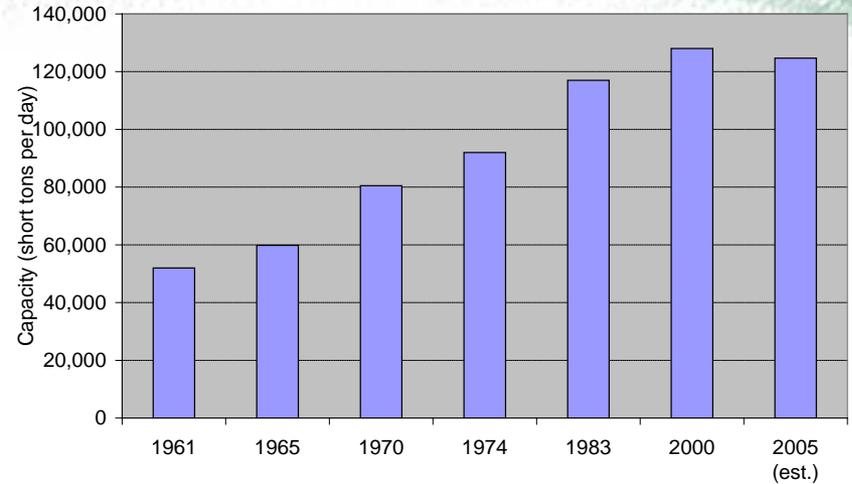
2012/2013, 2013/2014



US South: Historical Supply/Demand Perspective

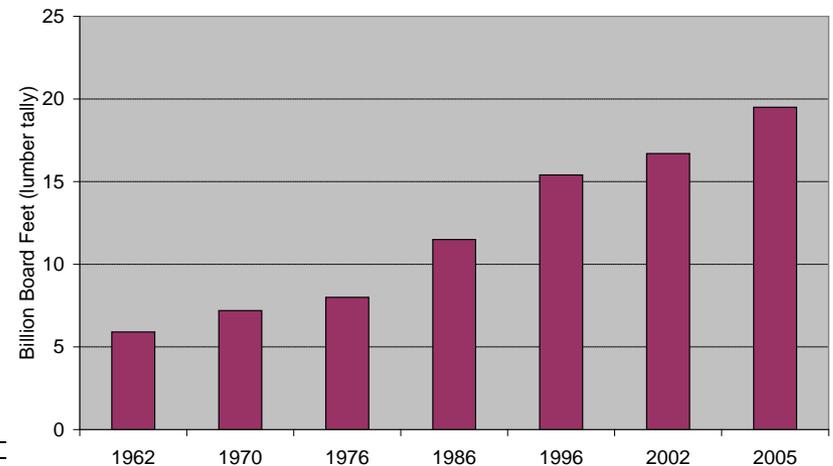
The US South has seen a substantial increase in production of wood products over the last 50 years.

US South Pulp Output Processing Capacity



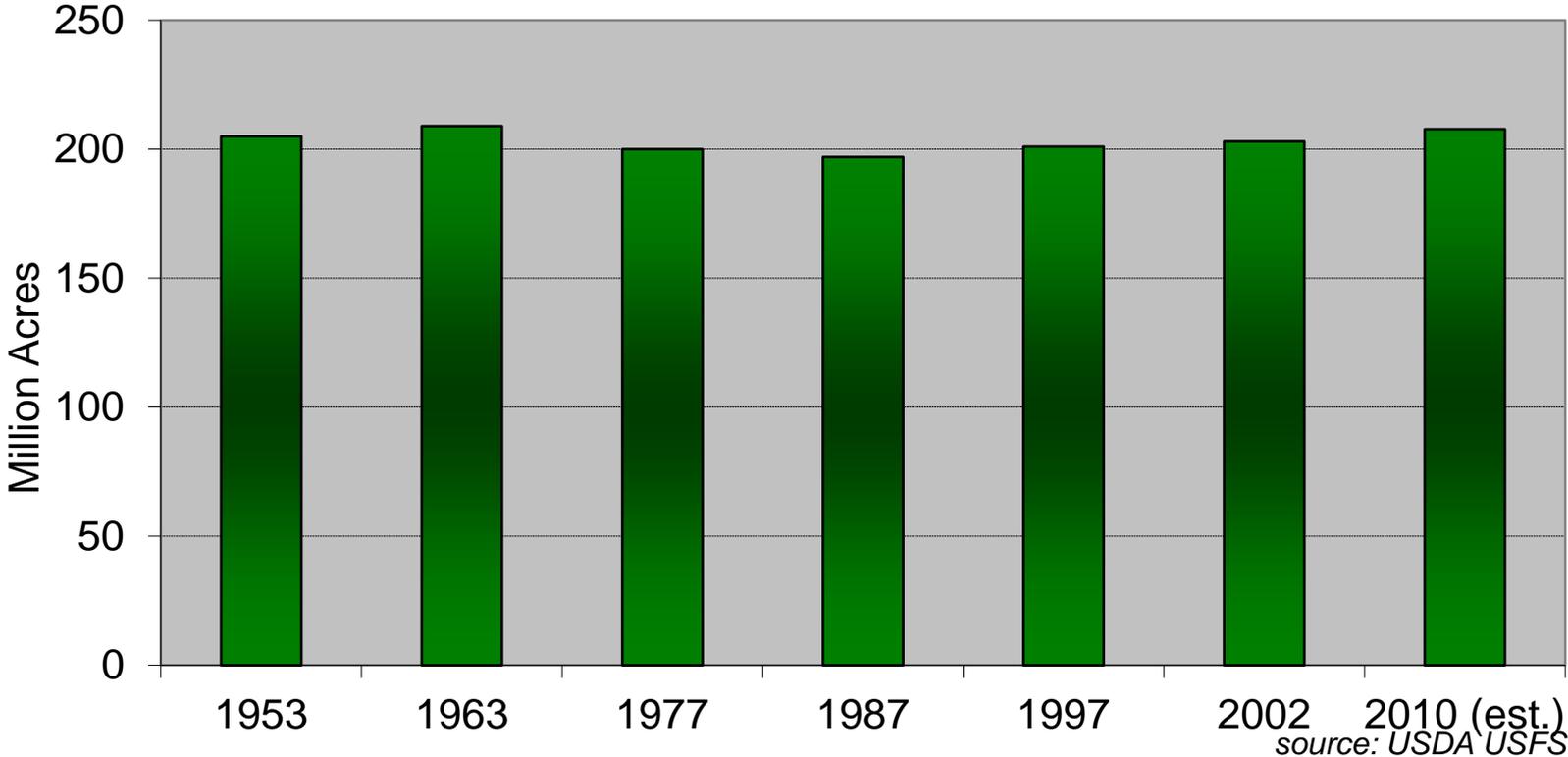
source: USDA USFS, RISI

US South Softwood Lumber Production



source: USDA USFS, RISI

US South Timberland Area

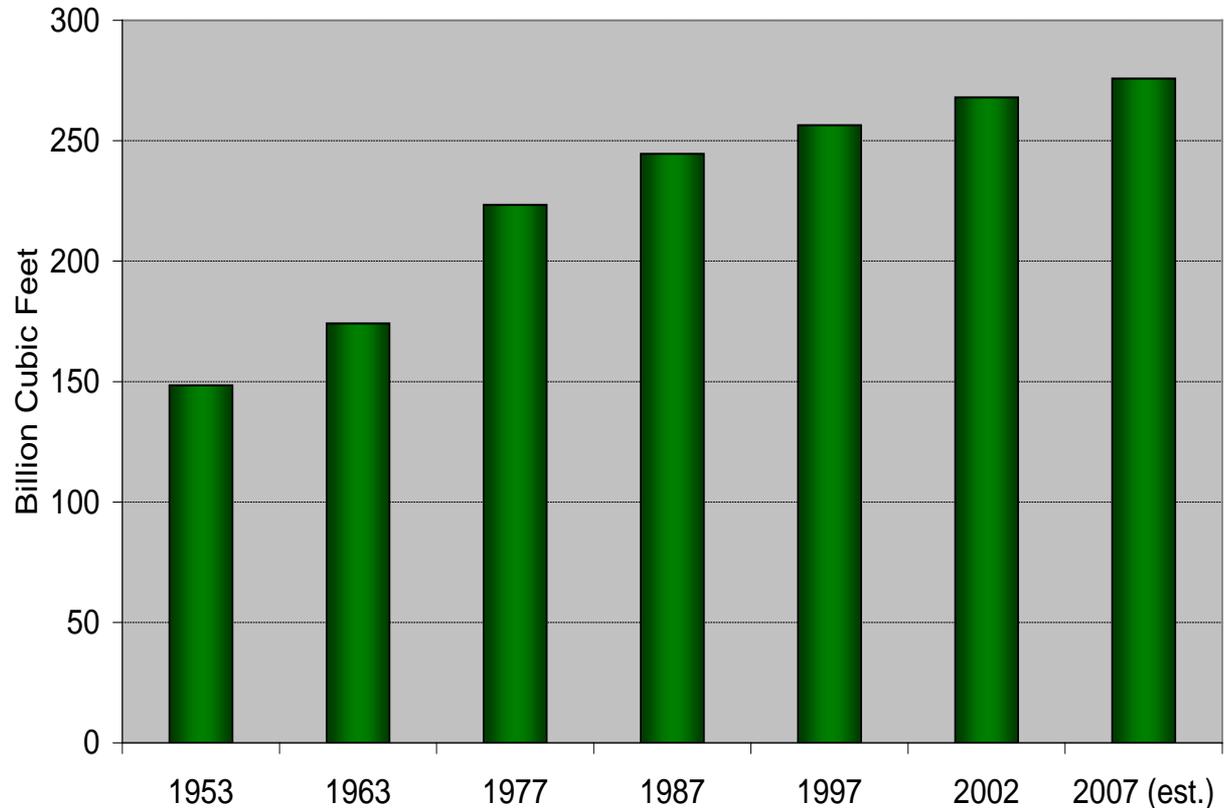


Historical Supply/Demand Perspective

US South Timber Inventory Volume

Forest management in the south is a success story:

- Stable land base
- More harvest volume
- More inventory volume



source: USDA USFS

Wetlands

In the US “wetlands” include a very broad range of land types and forest types

Can lead to confusion

EU biomass regulations and standards focus on avoiding an incentive to permanently drain land that was “wetland” or “peatland” in 2008.

We will look at applicable US regulations

FIRST, A BASIC QUESTION: JUST WHAT IS A “WETLAND?”

Tidal or non-tidal?

Emergent wetlands? (Brushy species such as cattails, reeds, bulrushes, etc.)

Shrub wetlands? (willows, buttonbush, titi, maybe some red maple)

Forested wetlands? Could be river flood plain wetlands (often hardwood or cypress dominated), streamside systems somewhat similar, or isolated wetland types (cypress- gum systems common in South). Varied soil conditions.

US Fish & Wildlife Service

Marine (associated with ocean shores)

Estuarine (mix of salt and fresh water)

Riverine (channels of rivers and streams)

Lacustrine (Lakes, reservoirs and deep ponds)

Palustrine (mostly freshwater wetlands and shallow ponds)

US Fish & Wildlife Service National Wetlands Inventory System (NWI)

Wetlands Defined:

Lands that are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, and that have one or more of the following attributes:

- At least periodically, the land supports predominantly hydrophytes
- The substrate is predominantly undrained hydric soil and
- The substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year

Note that this definition does not require all three (vegetative, soil and hydrologic factors to be present)

NWI assessments can and are often done through aerial photo coverage

FEDERAL REGULATIONS IMPLEMENTING SECTION 404, Clean Water Act

Wetlands Defined:

Those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas (40 CFR 232.2(r))

So, jurisdiction requires a three-pronged analysis of vegetation, soils, and hydrologic conditions. On-the-ground reality is that vegetation analysis and to some extent, soils, tend to “carry the burden” of proof.

ON THE GROUND REALITY?

Extensive areas of counties in SE Coastal Plain will qualify as federal “jurisdictional” wetlands.

Hardwood swamps, cypress gum ponds, riparian areas qualify obviously as jurisdictional

For this group, important to note that extensive areas of low, wet pine flatwoods also qualify as jurisdictional wetlands or “Waters of the United States.”

Examples of US Jurisdictional Forested Wetlands



Multiple Layers of Protection

Forestry operations have some limited exemptions from permitting for their operations under Section 404. However, **none of these activities can be associated with the conversion of the wetland to another land use or the conversion of the wetland to a non-wetland.**

The following activities are exempt from Section 404 permitting requirements:

- *Normal farming, ranching, silviculture and ranching activities such as plowing, seeding, cultivating, minor drainage, and harvesting for the production of food, fiber, and forest products,.....*
- *To fall under this exemption, the activity must be part of an on-going operation*

More details on defining these terms are in Federal Regulations.

Multiple Layers of Protection

FOREST ROAD CONSTRUCTION AND
MAINTENANCE IN WETLANDS IS ALSO EXEMPT,
BUT SUBJECT TO A LIST OF 15 DIFFERENT
REQUIRED BEST MANAGEMENT PRACTICES

These BMPs involve guidance such as minimum needs to serve the purpose, distance from waterbodies, no restriction of flood flows, stabilizing fill material, minimizing vegetative disturbance, endangered and other species protection, restoring temporary fills to original elevations, etc.

Multiple Layers of Protection

Environmental Protection Agency's 1995 Site Preparation Guidance

Essentially prohibits mechanical site preparation for conversions of nine wetland forest types, including riverine bottomland hardwood wetlands and cypress-gum swamps, to pine plantations.

Extensive Legal/Regulatory Debates

Multiple Regions of EPA and the Corps of Engineers are involved with implementation. Some variations in interpretation sometimes occur

Environmental groups sometimes pressure the federal agencies for tighter interpretations

Sometimes, legal cases involved

Debate in New Orleans District of the COE with regard to the nature of “ongoing silvicultural operations

Multiple Layers of Protection - Other Statutes/Agencies

Example – Rivers and Harbors Act in New Orleans District, COE

State Water Quality agencies sometimes have their own wetland programs (sometimes in conjunction with EPA/COE but not always)

County governments can have their own wetland protection programs

State Forestry Agencies have developed their own sections of BMP manuals pertaining to wetlands. Often, they are attempting to help landowners comply with spirit of federal statutes, but sometimes these go beyond federal regulations (Florida Example)

Summary

Forested wetlands take in a wide variety of forest types

Forest management is compatible (and essential) use of forested wetlands

There are multiple layers of protection

- Clean Water Act Section 404 prohibits conversion of wetlands to non-wetlands or another land use
- Road construction in forested wetlands is subject to 15 required best management practices
- EPA Site Prep Guidance limits conversion of certain forested wetlands to pine plantations
- Many states have their own wetlands protection programs

Summary

The South's forests are abundant and productivity is increasing

Markets provide an incentive for landowners to retain their forests as forests

There are many layers of protection, both regulatory and voluntary, that keep wetlands as wetlands

Questions