



Present and Possible Future Trends Which May Influence Silviculture

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(Retired)

Past Trends

- Steady drop in rotation ages
- Significant drop in target tree sizes
- Large leaps in manufacturing technology
- Increase in artificial regeneration
- Birth and growth of tree improvement and breeding
- Increased use of even-aged management
- Expansion of forest research based on agricultural models
- Use of fertilizers, herbicides, insecticides, irrigation
- Increasing regulatory requirements
- Increasing social concerns
- Increase in management intensity
- Shifts in forest products manufacturing

Climate Change and Forests

- Temperature
- Patterns of precipitation
- Extreme weather
- Starting and ending of growth cycles
- Shifts in flowering and seeding
- Shifts in species competition
- Insects and diseases
- Exotic invasives
- Global food deficits
- Forest type shifts
- Accelerated growth rates

Economic Forces

- Globalization
 - Forest Industry Development in Third World
 - Imports of Forest Products
 - Exports of Forest Products
 - Energy Costs

Economic Forces (cont.)

- Population Growth
 - Decreasing Tract Size
 - Increasing Land Values
- Payments for Ecosystem Services
 - Biodiversity Services
 - Hydrological Services
 - Scenic Beauty
 - Carbon Sequestration

Effects of Globalization (Some)

- Softwood Lumber
 - 1990 imported 27% of consumption
 - 2002 “ 37% “ “
- OSB
 - 1990 imported 18.9% of consumption
 - 2002 “ 38.7% “ “
- Softwood Plywood
 - 1990 Imported 0.2% of consumption
 - 2002 “ 5.8% “ “
- Hardwood Lumber (Furniture)
 - 2000 3.3 billion feet
 - 2003 1.7 billion feet

Environmental Services

- Hydrological Services
- Biodiversity Services
- Erosion Prevention
- Carbon Sequestration
- Scenic Beauty

Effect of Population Density On Probability of Forest Management

<u>People Per Square Mile</u>		<u>Probability of Management</u>
20		.75
45		.50
70		.25
150	nearly	.00

Rural People Per Square Mile 2000

<u>State</u>	<u>PSM</u>
CT	135
DE	94
KY	46
MD	93
MA	109
NJ	103
NH	60
NY	55
OH	70
PA	69
RI	145
VA	51
VT	41

FRED'S FORECAST FOR THE FUTURE

- Shrinking markets for traditional pulpwood sales
- Growing markets for non-traditional solid wood uses
 - Woody biomass for energy
 - Woody biomass as chemical feedstock
- Growing markets for non wood forest products
 - Forest recreation
 - Ecosystem services
- Increasing regulatory control over many forest practices
- Increasing social observation of and influence on forestry
- Fewer acres planted solely for timber production
- Increasing acres established for energy

FRED'S FORECAST FOR THE FUTURE (CONT.)

- Increasing intensity of management on both
 - Clonal plantations
 - Coppice production of wood energy
- Increasing forest restoration activities following weather extremes.
- Increasing non-intensive timber management of natural stands, i.e. ecosystem management on both public and private acres.
- Greater need to recognize subtle changes in forest conditions.
- Changes in forestry education i.e. more ecology
- An evolution of harvesting machinery toward smaller and lighter
- Fewer abandoned farm acres reverting to forest
- An initial decline in the vigor and health of natural stands as they adjust to the new conditions