Forests for a Richer Future

Keeping Forests Working for People

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Global Forest Trends

- **Forest area**: ~ 9.8 billion ac; ~ 50% loss since 1850 (IPCC 2007)
  - Massive losses 1400-1900 ce (UN FAO 2005, Williams 2003)
- **Contemporary loss**: ~ 18 Million ac/yr 2000-2005 (UN FAO 2005)
- **Historic**: Population Growth + Economic Growth = Forest Loss
  - But not anymore: ~ 32 mil ac/yr in tropics, ~ 14 mil ac/yr in non-tropics
- **US forestland net area**: stable since 1920: 749 million acres
- **Demands** for forest benefits ever growing: 6-10 billion pop 2050
  - Space for human habitation: biggest force changing forests worldwide
  - Water quality, quantity: THE biggest future global forest resource issue
  - Wood use: + 0.3 to 0.5% year-long term growth; supply solid, illegal harvest
  - Biodiversity conservation: yes but public resonates with fish and wildlife
  - Carbon storage: accounting, trees + products, market uncertainty
  - Recreation, subsistence, & cultural uses: highly variable by ownership

Global & U.S. Wood Use

- **Industrial wood use** rose 40% from 1960 to 1990:
  - ~ 1.8 BCM in 2005, but post-1990 removals stable due to conservation
  - Football field covered with wood ~ 208 miles high, endzones included
- **Fuel wood use**: ~ 1.3 BCM in 2005, post-1990 annual removals ~ flat
- **Industrial wood use could increase** < 33% by 2050 if growing population uses more wood: + 0.6 BCM
- **Pile of wood**: ~ 277 miles high
- ~ 33% of global wood and fiber now comes from planted forests
- Monumental global transition in source of industrial wood
- ~ 31% of global solid wood consumption crossed an international boundary from tree to product in 2000; most likely to increase
- US imported ~ 38% of softwood lumber consumed in 2004 (Adams)

The Demand Crunch

![Graph showing acres of forest per person from 1850 to 2050](image)

US Net SW Lumber Imports

![Graph showing US net southwest lumber imports from 1985 to 2005](image)

Sources: Howard 2003, Random Lengths 2005
US in Global Context

<table>
<thead>
<tr>
<th>Category</th>
<th>People</th>
<th>Forest Land</th>
<th>Wood Volume in Forests</th>
<th>Plantation Forests</th>
<th>Reserve Forests</th>
<th>Solid Wood Produced</th>
<th>Solid Wood Used</th>
<th>Solid Wood Imported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of World Share</td>
<td>16.8</td>
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Oregon in US Context

<table>
<thead>
<tr>
<th>Category</th>
<th>People</th>
<th>Land</th>
<th>Forest Land</th>
<th>Reserve Forest</th>
<th>Timberland</th>
<th>Ind. Softwood Harvest</th>
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</thead>
<tbody>
<tr>
<td>Percent of National Share</td>
<td>11.4</td>
<td>14.6</td>
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Threats to U.S. Forests

1. Urban-exurban sprawl (< 1 million ac/yr 1990s; > 16 houses/m² of contiguous forestland)
2. Loss of share in global wood markets (drives disinvestment, land use change)
3. Invasive species (changes ecosystem structure, function)
4. Uncharacteristically intense fires, storms, pest epidemics (transforms forest condition, function)
5. Global climate change (reassembles species composition)
6. Rising regulatory costs (drives disinvestment, land use change)
7. Decline in capacity for management (access to capital, infrastructure)
8. Unmanaged recreation in some public forests (damages soils, waters, native flora and fauna)

Sustainable Forestry

The suite of policies, plans and practices that seek to protect, produce, and perpetuate forest ecosystems for the values, uses, products, and services desired by communities and landowners for this and future generations

National Commission on Science for Sustainable Forestry 2005

Breadth of Sustainable Forest Management

- Varies by forest type, ownership, primary purpose
- Primary forest purposes:
  - Wood and fiber production
  - Multiple resource values/uses
  - Reserves, nature preservation
  - Urban and community forests

Sustainability

- **Progressive** improvement in human well-being, economy, and environment
- **Equity** across societal sectors and generations
- **Engaging** people in policy choices that affect them
- **Adaptation** to pervasive change
Wood Production Forests

- Most of world's future wood will come from planted forests:
  - ~33% now, ~75% by 2050
  - ~5% or less of global forest area

- Primary purposes:
  - Grow trees for wood, fiber
  - Increase forest value to owner

- Management challenges:
  - Thrive in global markets
  - Increase wood yield = ~20 m³/ha/yr
  - Improve environmental outcomes
  - Improve wood quality, consistency
  - Produce high return on investment
  - Revenues from non-wood benefits
  - Maintain social license to operate

Why PNW for Wood?

- Estimates accurate only in relative sense; management intensity, rotation length vary

Site Class by Ownership

- Million Acres by Site Class in U.S. (annual growth in cu ft/acre)

Multi-resource Forests

- Most of the world's accessible forests have multiple resource purposes
  - ~40% of global forest area eventually
  - ~25% pf industrial wood

- Primary purposes:
  - Meet diverse landowner objectives
  - Increase forest value to owner(s)

- Challenges:
  - Deliver multi-resource/value outcomes at acceptable costs
  - Differentiate products in markets
  - Finance non-wood benefits
  - If US federal, clarify purposes and direction
  - Finance management of federal lands

Reserve Forests

- Parks, wilderness, natural areas:
  - ~9% worldwide in 2005
  - ~80% of global forest area eventually?

- Primary purposes:
  - Sustain at-risk species, natural processes, "wild" ecosystems
  - Recreation, cultural uses

- Management challenges:
  - Minimize human use impacts to nature values
  - Restore, promote wilderness, naturalness
  - Sustain cultural diversity
  - Ameliorate effects of invasive species, air pollution, explosive natives
  - Finance management

Urban, Community Forests

- Where 80% of Americans live

- Primary purposes:
  - Attractive communities, neighborhoods
  - Conserve resources: water, energy
  - Increase property values
  - Backyard wildlife habitats

- Management challenges:
  - Safety, infrastructure impacts
  - Minimize sprawl
  - Minimize invasive species escapes
Reserve Forests: Mostly federal, some state, tribal, private and ENGO.

Multi-resource Forests: Mostly state, tribal, some family, some federal.

Wood Production Forests: Mostly industry, TIMO, REIT, family, some state, tribal.

Urban, Community Forests: Forests where people live.

Social Benefits

Economic Benefits

Forest Sustainability

Environmental Benefits

Oregon's Current Balance

Forest Area by Primary Purpose

Reserve 31%
Wood Production 36%
Multi-resource* 33%

* This includes 2.5 million acres of federal matrix and AMAs which currently are not fully serving their designated purpose.

Global Balance

Social 4%
Unknown 9%
Protection 21%
Wood Production 33%
Multi-purpose 34%

UN FAO 2005

Wood Products Plantations

Rest 35%
China 26%
Indonesia 3%
Sudan 4%
Brazil 5%
Russia 11%
USA 16%

UN FAO 2005

~3% of total global forest area

Ownership Matters

Commodity Wood
Quality Wood
Multi-resource w/ Wood
Multi-resource w/o Wood
Managed Reserve
Un-managed Reserve

← Industry, TIMO, REIT →
← Private, large →
Family, small-medium
States, Tribes, ENGOs
Federal

♭ Streamside zones, leave trees, habitats as mini or micro reserves

Oregon Forests
Oregon Forest Owners

28 million acres; 45% of state

- Federal 57%
- Ind/TIMO/REIT 21%
- Other Public 6%
- Family 16%

Oregon Timber Harvest

- Federal Tribal State Family
- 57% 2% 7% 13%
- Ind/TIMO/REIT Other Public
- 45% 10% 1% 6%

Forest Sector in Economy

- Primary, Secondary, Services
  - $12.6 billion total industrial output (TIO); 6.3% of State TIO
  - > 25% of traded sector economy in 22/36 counties
  - 85,600 direct jobs; 4% of State total; 190,000 indirect; 8%
  - $3.5 billion wages; ave wage = $40,525;
    State ave. wage = $34,840
- Forest recreation/tourism
  - $1.6 billion TIO; 37,900 jobs

Challenges

1. Keep private forestland in forest uses for forest values
   - Sustain forests against global/US forces of change
   - Requires a globally competitive domestic forest cluster
2. Restore federal forest health, utilize capacity to meet a share of domestic demand for wood-based products, create wealth and rural jobs
   - Improve conservation and production efficiency
3. Boost productivity of private forests
   - Science and technologies for productivity enhancement
   - Product and practice innovations for competitive advantage
   - Science for regulatory efficiency: costs = outcomes
4. Attract capital investments

Everyone has a Role

- Consumers
- Government
- Mills/Manufacturers
- Educators
- Loggers
- Associations
- Forest Managers
- Universities
- Suppliers
- OFRI

Consumer Roles ...

- Be intelligent consumers of sustainably produced, domestic, renewable natural resources; Wood is Good!
- Avoid excessive use or use of non-renewable substitutes for wood that transfer effects of consumption and degrade ecosystems somewhere
- Make choices based on knowledge of full impacts over time and space of the entire life cycle of all resource uses
- Support policies and management that sustainably produce resources needed to enrich quality of human life
- Compensate producers fairly for the goods and services we use and expect
California is NOT the Model

Producer Roles ...
- Optimize value of land: value to acre
- Intensive silviculture on best lands to meet wood needs
- Revenues for non-wood forest values: C, recreation, habitat, NTFP
- Broaden "forest products" – wood + non-wood benefits
- Reserves that deliver conservation outcomes efficiently
- Real estate when all else fails
- Marketing: deliver what customers want from different lands
- Ownership efficiencies: lands to HB/V/O for purpose
- Focus on execution to purpose: minimum bureaucracy, outcomes over process, regulatory efficiency
- Product quality, niches, customer service
- Invest in R&D for production, quality, efficiency

Logger Roles ...
- Efficient harvest with exemplary environmental performance
- Cut to capture the full value potential in the tree
- Buck and sort for optimal value retention
- Leave the land ready for reforestation
- The link between growers and manufacturers
- Trees don’t get to mills without loggers and truckers
- Loggers and manufacturers don’t get optimum value without excellence in logging, bucking, sorting, transport
- Significant influence on future forests
- With efficient, environmentally sensitive logging all the rest is easier
- Without it everything costs more and doesn’t work as well

University Roles ...
- Educate a highly skilled, diverse, adaptable, problem-solving forest/mill workforce, future scientists, teachers
- Create a stronger science base for all forest management systems; improve regulatory efficiency
- R&D for improved market and environmental performance of forests, forest products, forest business
- R&D to increase productivity and sustainability of forest resources, forest products, forest businesses
- Educate citizenry on needs for production and conservation
- Advocate science objectivity in policies; 3rd party credibility
- Advocate for diverse, productive, resilient forests and associated economies and human communities

The Case for Management
- Wood Production Forests
  - Sustain progressive productivity and increase value as forests
  - Compete in global markets
  - Add value, differentiate wood and wood-based products: marketing
  - Sustain resilience to drought, insects, disease, fire
- Multi-resource Forests
  - Sustain joint resource production/conservation
  - Diversify revenues to finance management: quality wood + recreation + ecosystem services + biomass energy
  - Restore diversity, resilience to drought, insects, disease, fire
- Reserve Forests
  - Reserve wildness and natural processes
  - Contain human impacts
Richer Future Forests?

If we wisely use, conserve and manage forest resources to meet human needs and wants based on forest capabilities and local experience plus ever improving science and technologies, we will have healthy, productive, resilient future forests for all values.

If we do not use forests or use them unwisely, we will lose private forest to other land uses and we will lose public forest health and vitality to fires, insects, and invasive species.