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PAFS Training

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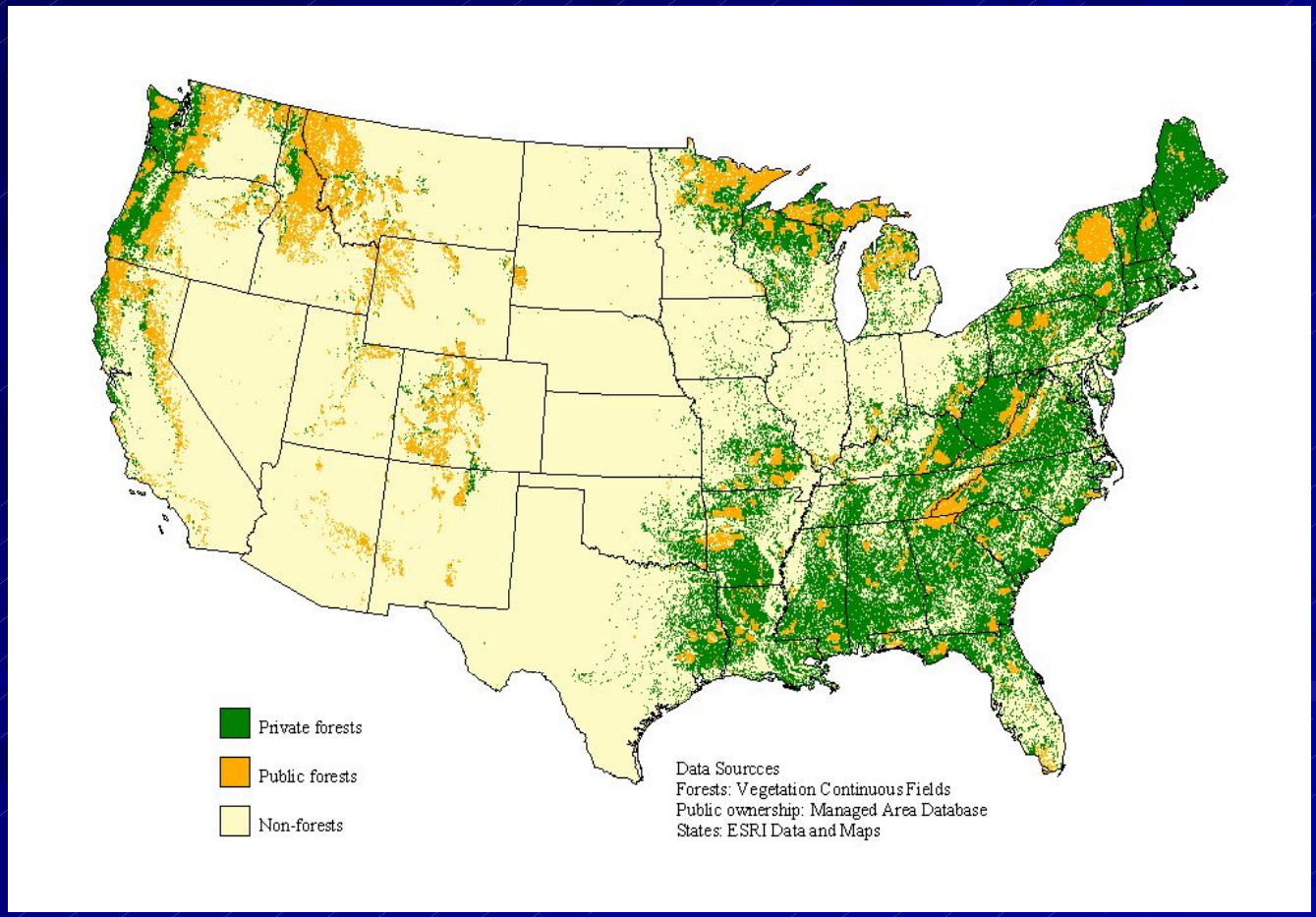
# LEGAL (POLICY) ISSUES FOR FOREST LANDOWNERS

Penn State Extension

# Topics

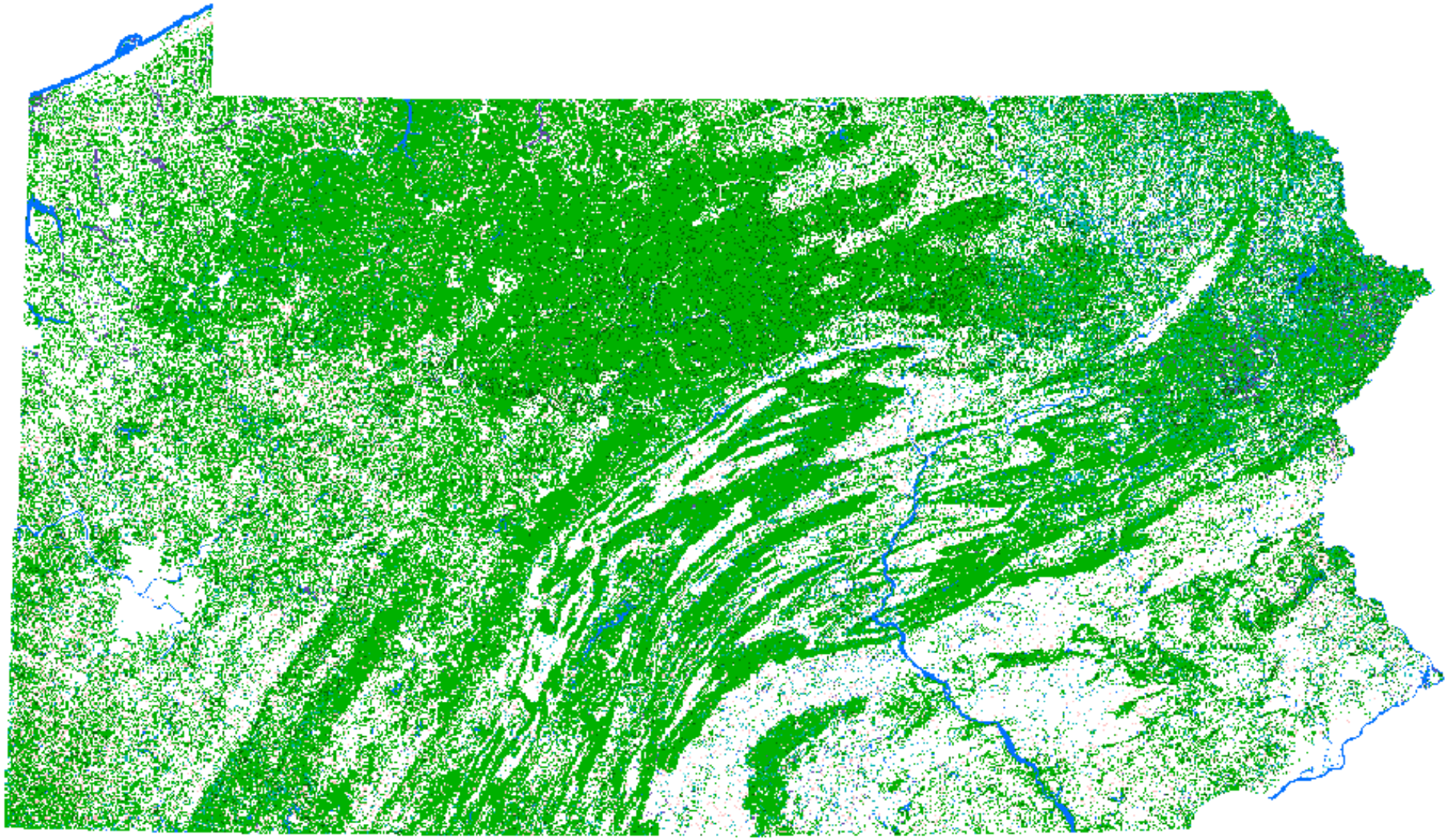
- PA Forest Economy
- Timber harvesting ordinances
- Timber trespass/theft
- Liability/leases
- Public goods

# Forest Ownership in the U.S.



# Pennsylvania is 58 percent forested

## 16 Million acres

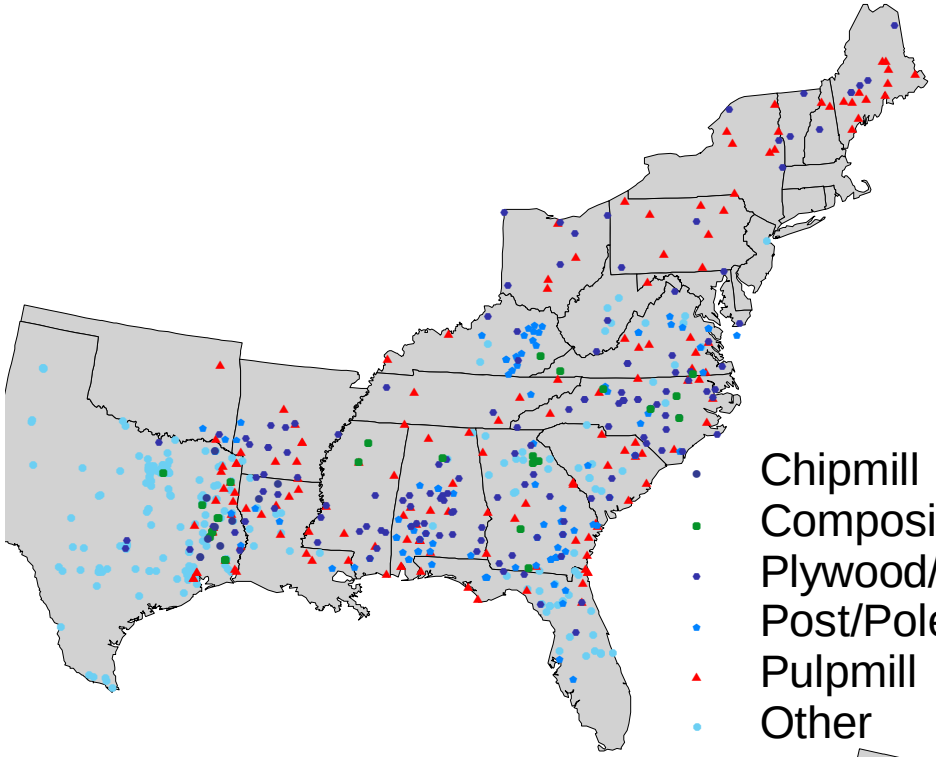


# Importance of Forests to PA

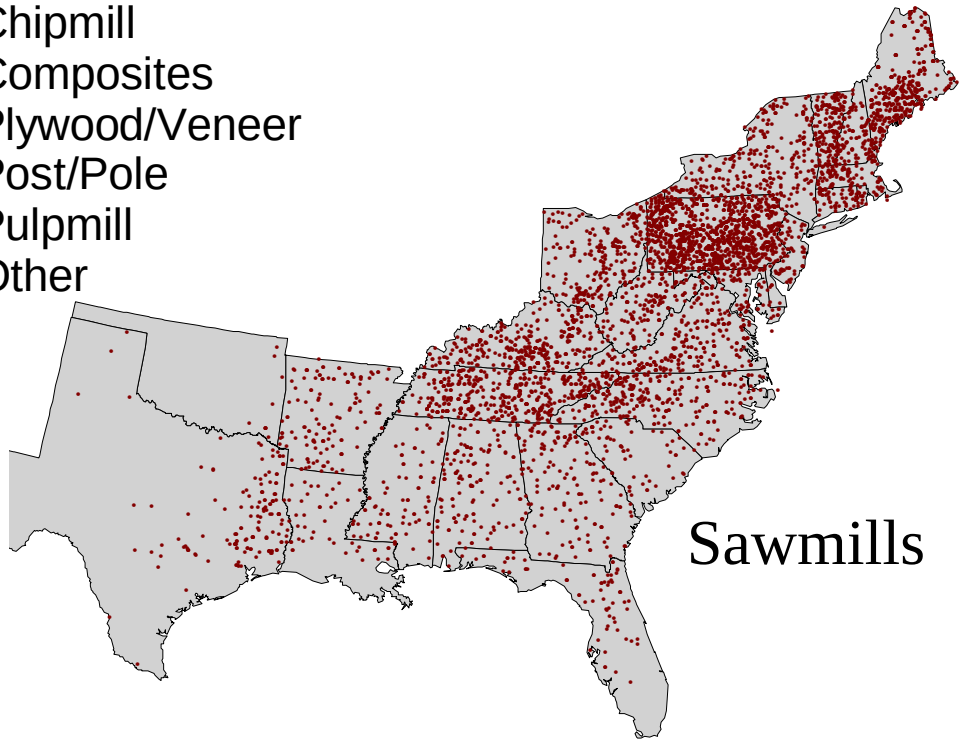
- Over 90,000 workers and 2,500 firms
- 4th largest sector in PA
- $5 billion annual impact

- Tourism - 2nd largest industry
  - $21.4 billion in total traveler expenditures
  - Generating 563,000 jobs statewide.

PENNSYLVANIA HARDWOOD STANDS FOR QUALITY



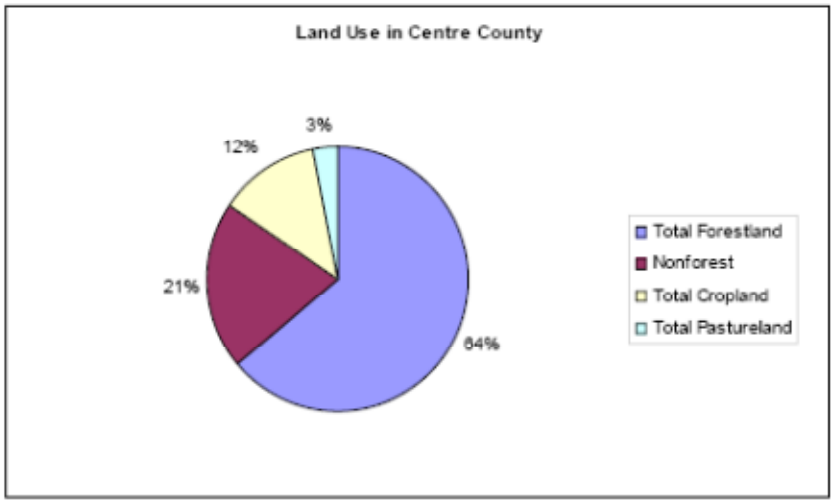
Chipmill
Composites
Plywood/Veneer
Post/Pole
Pulpmill
Other

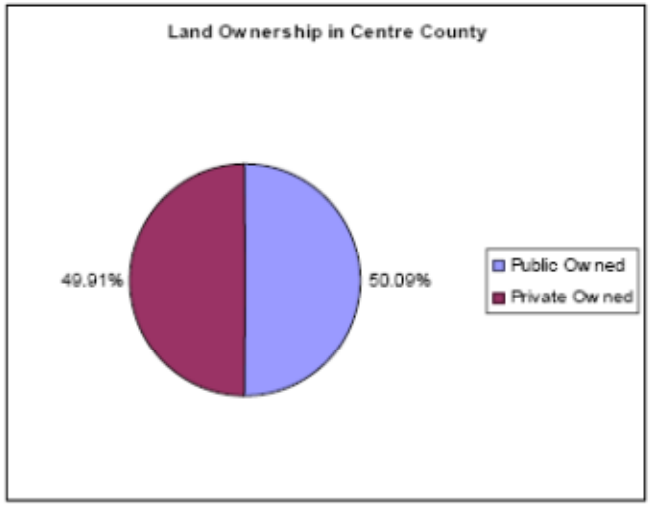


Sawmills

## How important is forestry in Centre County?

Almost sixty percent (17 million acres) of Pennsylvania's 28 million acres is forested. The estimated half a million private forest landowners own about 12 million acres (70 percent) of the forest land. The timber and forest products industry is one of the largest manufacturing sectors in the state, employing over 80,000 workers in 2,500 firms. The value added contribution to the state's economy by the forest sector is over 5 billion dollars annually. For the agricultural production sector and processing sector value added is approximately $2 billion and $8 billion respectively. State wide there is over 86 billion board feet of standing timber valued at about $24 billion. Nationally, Pennsylvania ranks number one in hardwood production and forest-based recreation in Pennsylvania is a large component of tourism, the state's second-largest industry. **The following shows the importance of forestry to Centre County:**




Centre County has 708,886 acres of land. Forests cover 535,082 acres.

| | |
|---|---|
| Estimated number of private forestland owners in Centre County | 11,312 |
| Number of forestry and wood products establishments | 23 |
| Number of forestry and wood products employees | 586 |
| Estimated volume of standing timber | 2,259.363 mil bdft |
| Estimated value of standing timber | $635.08 million |
| Annual economic contribution (value added) of forestry sector | $40.11 million |

Forests provide many other environmental and economic goods and services such recreation, wildlife, water protection, biodiversity, carbon sequestration, and aesthetics. These benefits to Pennsylvania residents are not reported in this data set.

**How does forestry compare to agriculture in Centre County?**

| | |
|---|---|
| Annual economic contribution of agricultural production sector | $22.6 million |
| Annual economic contribution of agricultural processing sector | $7.63 million |

Prepared by Dr. Michael Jacobson and Mr. Andrew Filipczak, Penn State, School of Forest Resources

Sources: 2004 FIA Database (http://www.fia.fs.fed.us/tools-data/default.asp); 2007 Penn State Timber Market Report (http://www.sfr.cas.psu.edu/TMR/TMR.htm); USDA Census of Agriculture 2002(www.agcensus.usda.gov); 2007 PA Department of Labor(www.dli.state.pa.us); Minnesota IMPLAN group, Inc. 2004 data (www.implan.com).

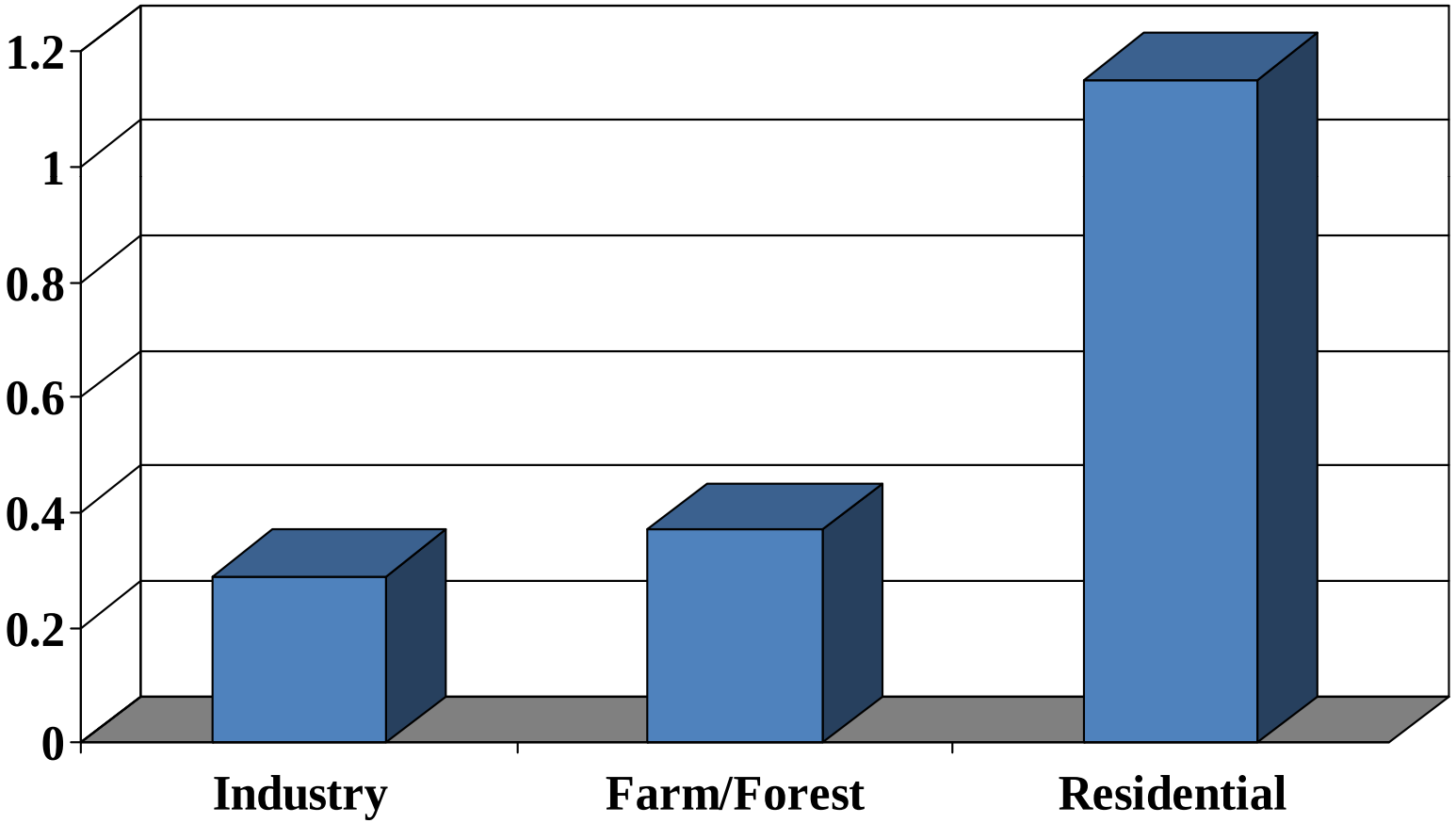
# Pennsylvania is Rural and Forested

- Three quarters of our municipalities are rural
- 42 counties are at least 50% rural
- Tyranny of small decisions
  - 2,500+ municipalities
    - 75% have less than 5,000 people
  - 12,000 + officials

# Why Forest Regulations/Laws?

- Forest provide public goods but also may cause negative impacts
- What causes negative  impacts?
  - High grading
  - Invasive species (+ deer)
  - Sprawl/parcelization
- Should government intervene?

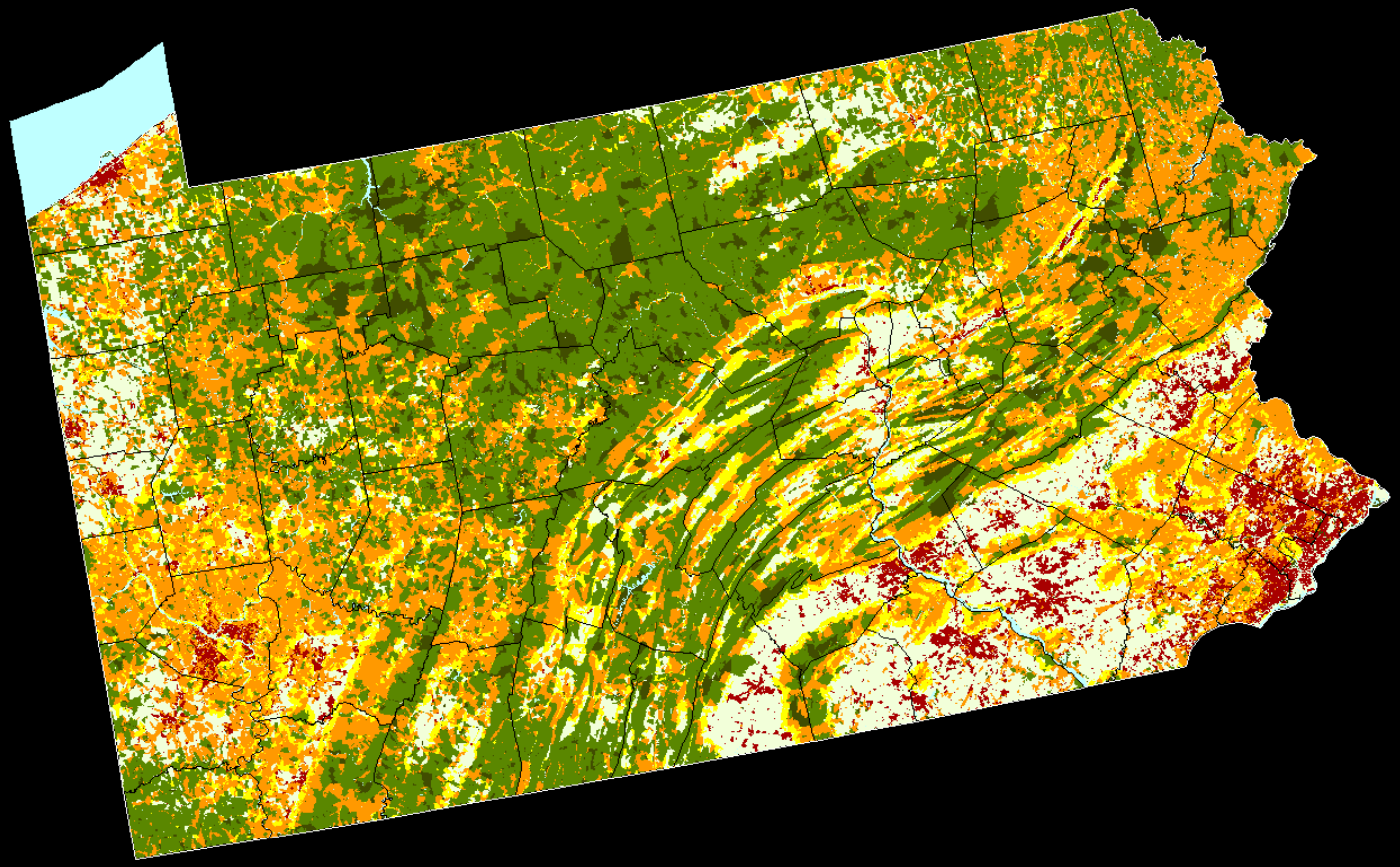
# Median cost/dollar of revenue raised to provide public services to different land-uses




Source: American Farmland Trust

# Pennsylvania

## Wildland Urban Interface 2000



**WUI**

- Intermix
- Interface

**Non-WUI**

**Vegetated**

- Very Low Density Housing
- No Housing

**Non-Vegetated or Agriculture**

- Medium and High Density Housing
- Low and Very Low Density Housing

- Water

# Loss of Agricultural and Forest Land in Bradford County, PA

October 2011

# Regulations Affecting Harvesting

- Erosion and sedimentation
  - 25 Pa. Code Ch. 102 (Clean Stream laws)
    - E &S plan and permit for disturbance > 25 acres
- Stream Crossings/ Wetlands
- Fish habitat
- No state-wide timber harvesting regulations
  - “right to practice forestry”
  - Local ordinances
- Best management practices

# Forestry and the Municipal Planning Code

- Right to Practice Forestry Act (1992)
- "zoning ordinances may not reasonably restrict forestry activities - 53 P.S. 10603 (f)
- Act 67/68 amendments (2001)
- "…forestry activities, including but not limited to timber harvesting, shall be a permitted use by right in **all zoning districts in every municipality**." - Zoning (article 6, section 603f)

# Timber Harvesting Ordinances

- What are they?
  - Adopted under Municipal Code
  - Sometimes incorporated in zoning ordinance
  - To protect environment, aesthetics – road damage
  - 'timber harvest is prelude to land development'
  - Different to tree protection ordinances

- How many are out there?
  - In 22 selected counties, there were 625 townships identified - 106 townships had ordinances (17%)
  - Some counties over 70% of townships have ordinances

# Issues with Ordinances

- Impact on forestry
  - ‘reasonable’ silvicultural practices
- Few written by professional forester
- Harvesting plan – only 25% require it to be prepared by a forester
- Burdensome permit process

# What the Future Holds

- Does your community need timber harvesting regulations? (get Timber Harvesting booklets & model ordinance)
- Consider all factors
- Promote careful planning and zoning
- Can regulate forestry, if reasonable regulations

# Personal Injury Liability

- Status of duty owned to party at time injury occurs:
  - Trespasser
    - Avoid willful or malicious conduct
  - Licensee (e.g., social guest)
    - Warn of dangers known
  - Invitee (business visitor [e.g., logger] or public invitee)
    - Inspect premises and correct or warn
      - Reasonable care

# Trespasser

- Children exception
  - Do children trespass in the area?
  - Are conditions harmful to children?
  - Are children to young to realize risk?
- Weigh factors – condition vs. risk

# Recreational Use of Land and Water Act

- Encourage owners to make land available
- Limiting liability to those who enter for recreational purposes
- Except as provided in the act,
  - No duty or care to keep premised safe for entry or use by others, or to give any warning of dangers on property

# How does RULW work?

- Owners covered by RULW do not:
  - Assure users premises are safe
  - Confer status of licensee or invitee
  - Assume responsibility for injury caused by users
- Exception to protection:
  - Willful or malicious failure to warn/guard
  - Any injury where owner imposed a charge (fee)

6

Forest Finance

# Leasing Your Land for Hunting: Income and More

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# Contracts

- Aware that all parties hold responsibility
- Contracts do prevent lawsuits
- Can shift financial responsibility
- Well-written contract must include
  - Indemnity provision and adequate insurance
  - Workmen's compensation waiver (PA)
- Informed by sources such as OSHA
- Assistance (superior knowledge and negligent hire)

# Timber Theft (handout)

- Judiciary procedure (Title 42 - PA consolidated statutes)
  - 3 options – depending on action
- Criminal law (Title 18 - PA consolidated statutes)
  - Restitution (section 1107)
    - Amount paid is twice value of timber
  - Criminal trespass (section 3503)

# Incentives for Private Forest Management

- Certification
- Conservation easements
- Property taxes (Clean and green)
- Cost share programs
- Ecosystem service markets
- Bioenergy markets
- Technical assistance and education

# Incentive Programs

- EQIP - Environmental Quality Incentives Program
- CSP - Conservation Stewardship Program
- WHIP - Wildlife Habitat Incentives Program
- Healthy Forests Initiative
- Forest Stewardship Program (FSP)
- Biomass  Crop Assistance Program (BCAP)

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# RENEWABLE AND ALTERNATIVE ENERGY FACT SHEET

## A Primer on Woody Biomass Energy for Forest Landowners

### Introduction

Woody bioenergy is not a new idea; people have been using wood as a fuel for ages. However, rising oil prices, new technologies, and increased interest in renewable energy have spurred renewed growth in this sector. Commercial wood furnaces, pellet factories, power plants, and even liquid fuel refineries are all examples of wood energy facilities that are springing up throughout the region. What does this mean for forest landowners? Is this an opportunity or a risk? This fact sheet gives an overview of the scope and issues involved when considering whether managing a forest for energy production is a good option.

Private forest landowners represent the first step in the woody bioenergy supply chain. They control the feedstock that is used in the production of heat, power, or other energy sources. For example, in Pennsylvania private forest landowners own more than 70 percent of the forest resource. There are numerous potential economic and environmental benefits to forest landowners from bioenergy production, including revenues from biomass sales, forest management cost savings, potential carbon credits, and potential forest health improvements. However, there are also potential negative impacts on forest sustainability if bioenergy harvests are not carried out correctly.

### What Is Woody Biomass?

Woody biomass is any woody material from trees or shrubs. In a forest, timber (sawtimber and pulpwood) is usually the most valuable product, so forest woody biomass for energy usually comes from the trees and woody debris or residues that cannot be used for timber. This can include:

- Trees cut during a "thinning" operation when the stand is too densely planted
- Trees left after all other economic materials are removed during a timber harvest, such as twisted or diseased trees
- Cut residues left after a timber harvest, which can include small-diameter logs, branches and limbs, bark, needles, and stumps

Typically, logging residues can make up about 25–45 percent of the tree's biomass when trees are harvested for sawtimber or pulpwood.

Much of the harvesting that occurs in the Northeast, especially unsustainable "high-grade" cutting, leaves large amounts of residues, especially the small-diameter or low-value trees. This results in a forest that becomes less valuable in terms of future timber growth and ecological quality because most of the preferred trees are removed, leaving less desirable species to regenerate. Some logging residues are used in pulp markets, but in areas where the demand for pulpwood has decreased, bioenergy can provide a valuable market for this material.

Other woody biomass sources include mill residues dedicated to short-rotation woody crops (e.g., hybrid poplars and willows) and urban wood waste. In some cases woody biomass is combined with other biomass sources such as agricultural residues, perennial grasses (e.g., switchgrass), or municipal solid waste.

### What Are the Products and Markets for Woody Biomass?

Woody biomass can be converted into useful forms of energy (heat or electricity), valuable bio-based fuels (i.e., solid, liquid, or gaseous fuels), or other products (e.g., polymers, bio-plastics, biochar, sorbents, and acids) using a number of different processes. Thermochemical processing, one of the most common processing methods, uses heat and chemical action as a means of extracting and creating products and energy. Biochemical processing, another common approach, depends on microbes, enzymes, and other biological processes to transform the biomass.

Most landowners are familiar with products that go directly into heat, such as cordwood (for residential use) and chipped wood (for commercial and industrial use). The most important characteristics that define these products are size, moisture content, and "cleanness" (presence of soil, sand, or bark) of chips.

Wood bioenergy markets are complex. Woody biomass is used across a range from small to large scale and from low to high value. At the low value and small scale, residential heat represents the largest share of wood used as a fuel in the United States. Many houses have wood heating and wood pellet furnaces. Commercially, heat, perhaps using gasification technologies, is used in public institutions, including schools, hospitals, prisons, and municipality-owned district heating projects. Heat is also used for industrial processes such as sawmills, which may also produce electricity. One of the most common bioenergy markets includes bioenergy facilities within the forest industry that produce most residues internally.

Woody biomass becomes more valuable when used for co-firing in coal plants or co-generation such as for combined heat and power (CHP) generating facilities. Alternately, the woody biomass can be processed into a higher value fuel such as wood pellets or briquettes. These facilities often prefer mill residues rather than biomass direct from the woods because of the clean,

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# RENEWABLE AND ALTERNATIVE ENERGY FACT SHEET

## A Primer on Woody Biomass Energy for the Forest Community

### Introduction

Wood-based energy is an appealing and growing opportunity for the forestry community in the northeastern United States. Demand for wood energy is increasing as society seeks more renewable sources of energy. Using woody biomass as an energy source is both a tremendous opportunity and challenge. The opportunity is for economic growth that works hand in hand with improved forest management and ecosystem enhancement. The challenge is that, if poorly carried out, forests can be damaged and livelihoods endangered. Therefore, the development of wood energy requires careful consideration and good information for decision makers to analyze options. This fact sheet discusses some of these issues with respect to those in the forestry business such as timber harvesters and forest managers.

### Woody Biomass

Woody biomass comes from a number of sources, including logging residues, small-diameter or low-value trees, mill residues, and other forms of wood waste. Logging residues are the most prevalent form of woody biomass and are defined as slash, tops, limbs, and other woody materials left after conventional forest products are harvested. The amount of logging residue available is large, often constituting 25–45 percent of the harvested timber in a logging operation in northeastern forests. Therefore, biomass production from logging residue is feasible if the market exists.

Another potential source of woody biomass is short-rotation woody crops (SWRC) that are usually grown using agronomic techniques in open fields. Willow and poplar are the two most common species used for SRWC in the Northeast, although other species may be good candidates as well.

Woody biomass removals can assist with other management goals such as timber stand improvement, reduction of insect, disease, or fire risk, and reduced use of herbicides to control competition and improve aesthetics and wildlife habitat. Since much of the harvesting that occurs in the Northeast, especially "high grades," leaves large amounts of logging residues, these degraded, low-value forests could be used for bioenergy as part of the stand-improvement process.

Woody biomass markets are either for heat, electricity, or for "biomass to liquid fuel" plants (such as for cellulosic ethanol production). In most cases, they will purchase the wood as chips. "Dirty" chips (with bark included) or "hogged" fuels (pulverized wood with variable composition and size) are the lowest value material from a harvest because they have leaves and bark included or are not of uniform in size, which is a real problem for some handling systems. Clean chips are manufactured from debarked wood, resulting in a higher value chip that can leave more nutrients in the forest (most tree minerals are in the leaves, twigs, and bark).

### Feedstock Availability

The total availability of forest biomass is promising: total growth of wood in the Northeast exceeds removals and has done so for decades now. The actual practical supply of forest biomass for bioenergy is not as simple as that, though, because it will be affected by an array of factors, including economic, environmental, and social considerations. In most cases, the forester or logger will be responsible for procuring feedstock for a bioenergy energy system. Assessments of existing woody biomass feedstock volumes that could be available are necessary for planning the development of individual biomass projects or for developing a regional bioenergy industry. Regional assessments are needed to determine the best areas to target for development of this industry. More localized assessments are needed to determine the economic viability of a planned facility at a specific location. Many states use the U.S. Forest Service Forest Inventory and Analysis (FIA) to develop biomass assessments.

### Production Costs

Technologies for forest management, biomass harvesting and transportation, and energy conversion will dictate the production costs of forest biomass and bioenergy. To maximize efficiency, loggers should be thinking about full utilization of biomass processing equipment. Customers need to match production to equipment capacity. For example, if you expect to harvest 50,000 tons of wood chips per year, you should buy equipment that is sized to harvest that amount only—don't waste money on oversized equipment.

Handling logging residue presents a challenge for forest operations since existing logging equipment is largely designed to handle roundwood. Logging residue has a low bulk density, is dispersed across the site, and is therefore costly to collect. The proportion of solids in logging residue and chips can be less than 20 percent. To make it profitable, many argue that "in the woods" chipping is the most effective option.

Specialized equipment has been designed to facilitate woody biomass processing and is commercially available, but these machines represent significant capital investment and additional cost. Capital costs to purchase chipper/grinder and chip

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# Summary

- Be proactive
- Know you land and boundaries
- Talk to neighbors
- Regulations can creep up unexpectedly
- Think about liability and prepare
- Make use of incentives