



Welcome to Georgia!



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Overview



Georgia's Forests – Rural and Urban
Emerging Markets
Challenges ahead...



Georgia's Forests

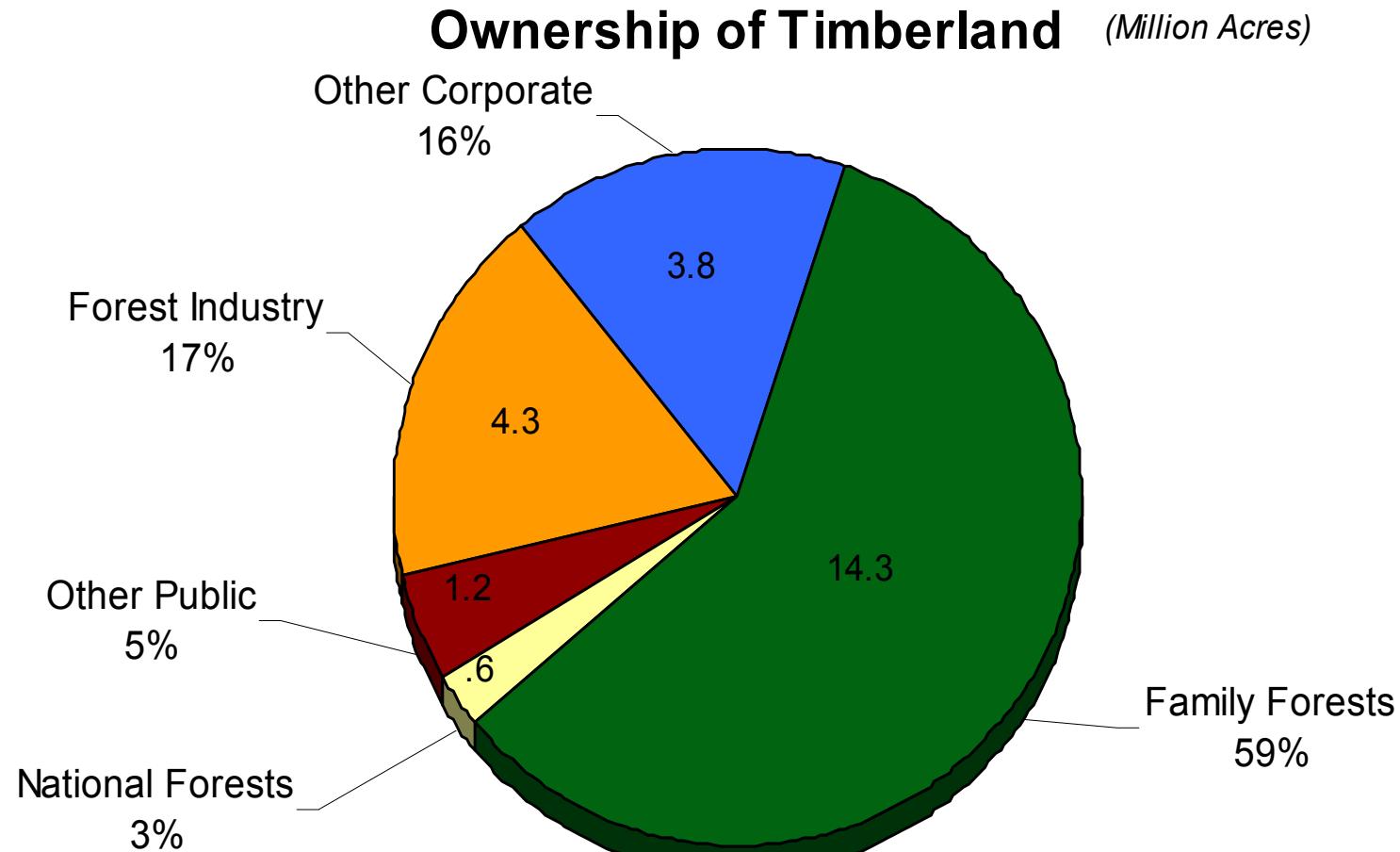
Quick Facts

- 24.8 million acres of forest land (2/3 of Georgia)
 - Most in the southeastern U.S.
- About half hardwood-type, half pine-type species
- Rural forest acreage has increased in the past 10 years
- Urban canopy cover has been declining for more than 20 years



Georgia's Forest Ownership

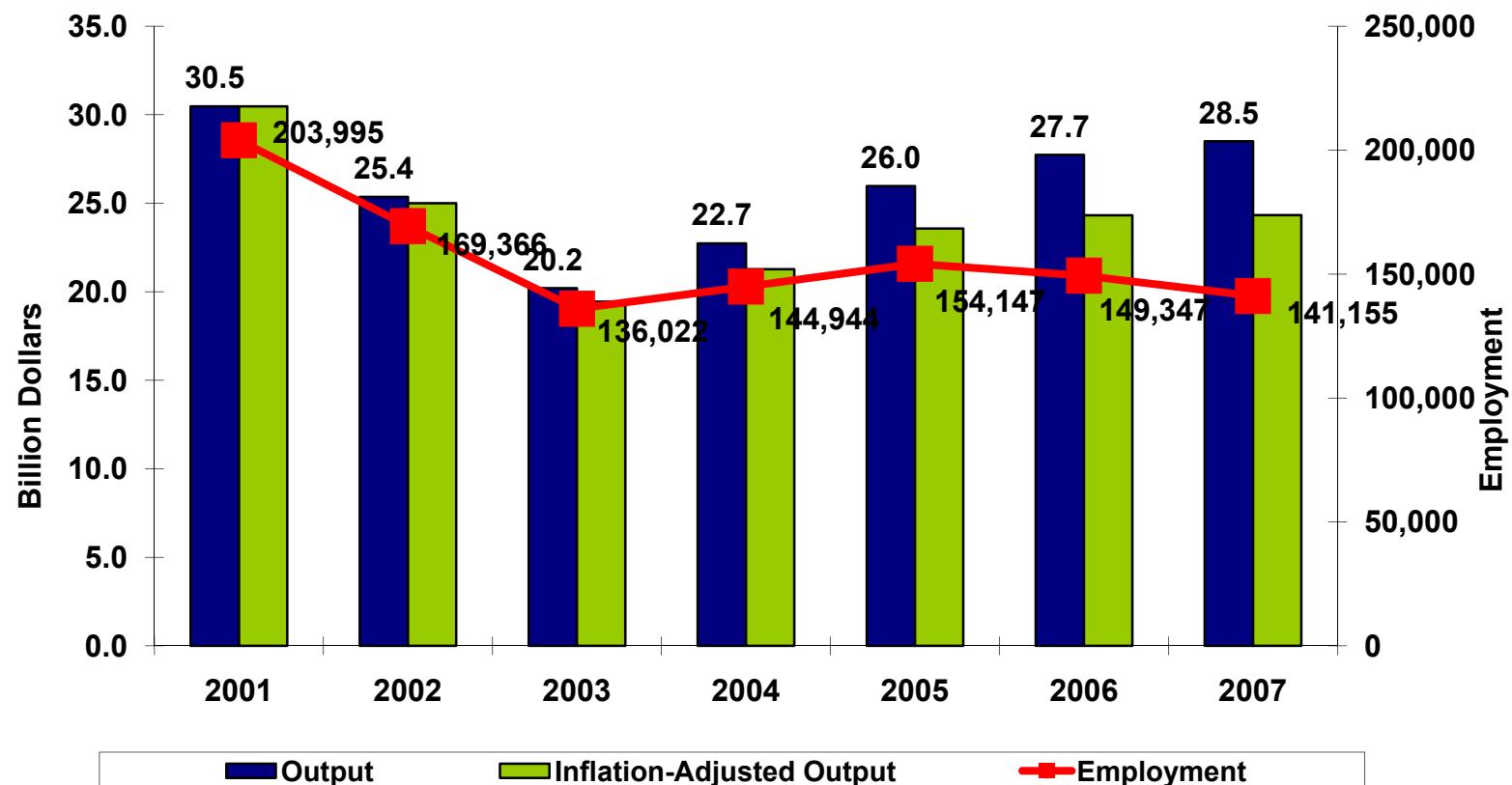
92% of Georgia Forest's are privately owned!





Forestry is a leading industry in Georgia

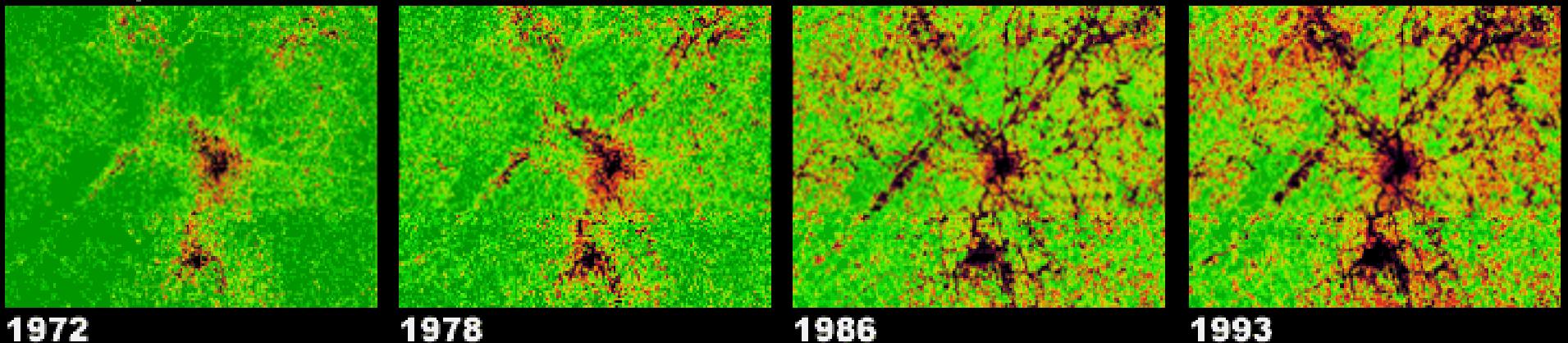
- Contributes \$28.5 Billion to Georgia's Economy
- Creates 141,000+ Jobs





Atlanta's Tree Loss: 1972 - 1993

Atlanta, GA.

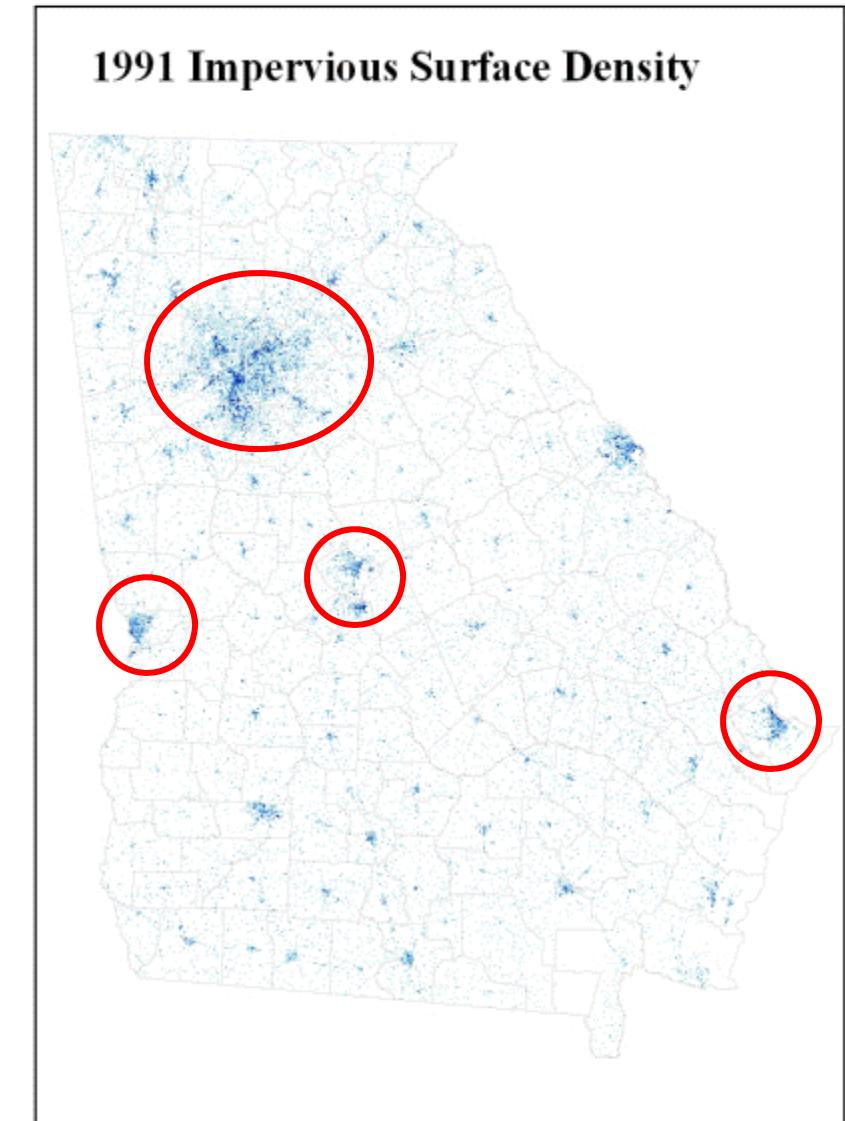




Georgia: Tree Canopy Losses – 1991-2005

77% of Georgia's 9+million residents
live in urban areas

- **Atlanta** - Loss of 50 acres of tree canopy per day.
- **Savannah Area** – Tree canopy decreased by 28%
- **Columbus** - Tree canopy decreased by 8%
- **Macon** – Tree canopy decreased by 10%



NARSAL

- <http://narsal.uga.edu/>



Urban Forestry Response

Georgia Urban Forest Council

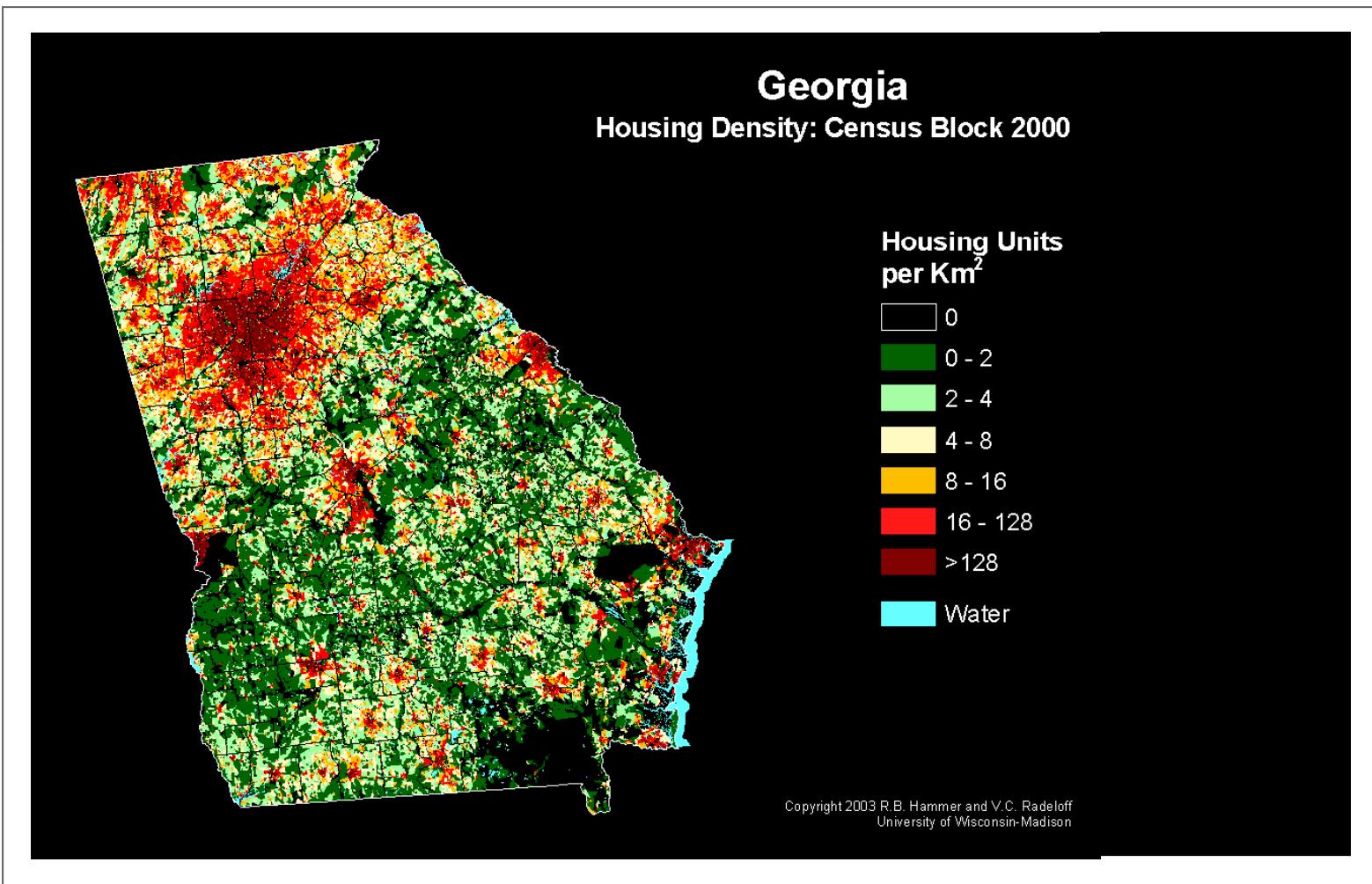
- More than 300 members
- Standards for Excellence
- Programs: Annual Conference and Awards, Landmark & Historic Trees; Basic Tree Care Workshops





Georgia's Housing Density

More than 50% of Georgia homes are in the wildland-urban interface





Georgia's Forests Are Diverse





Georgia's Forests Are Diverse





Georgia's Forests Are Diverse





Georgia's Forests Are Diverse





Georgia's Forest Health Challenges Are Diverse



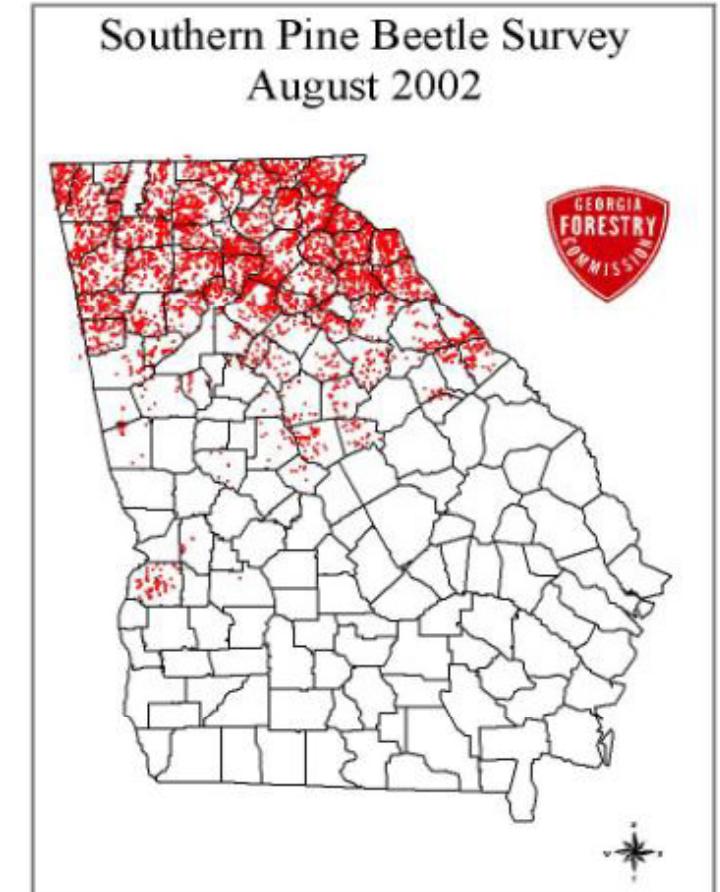


Perspective...



The largest fire in Georgia's history –
Spring, 2007

Caused \$60 million in damage to timber



2001-02 Southern Pine Beetle Epidemic
caused \$72 million in timber losses

2007 - \$14.5 million



Georgia's Forest Health Challenges Are Diverse



Hemlock Woolly Adelgid

Annosum Root Disease





Georgia's Forest Health Challenges Are Diverse



Laurel Wilt
Disease





Georgia's Forest Health Challenges Are Diverse

Top 5 – Invasive Plants

1. Chinese Privet
2. Cogongrass
3. Autumn Olive
4. Chinese Tallowtree
5. Multiflora Rose



Cogongrass Eradication...

Cogongrass detection and eradication is a priority for our agency.
USFS support is vital to the effort!





Forest Health Within Our Agency

Forest Health Staff

5 foresters dedicated full time

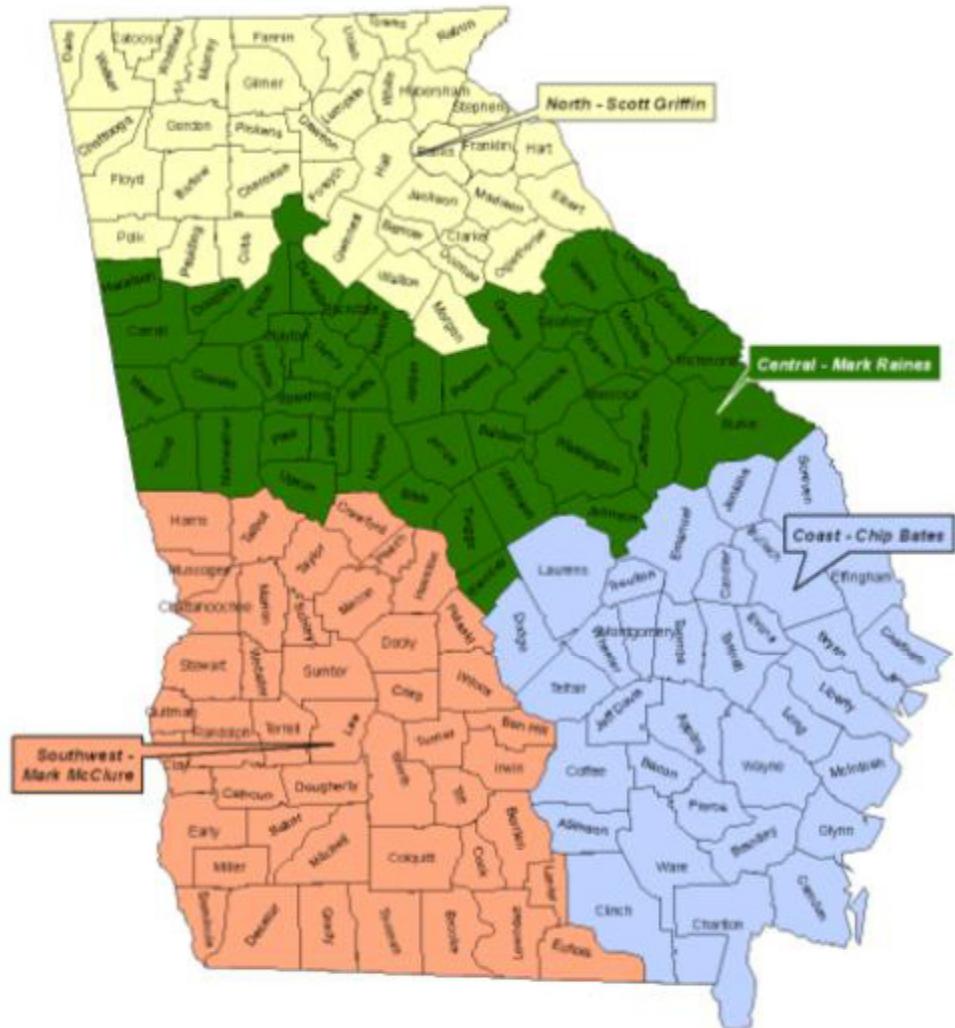
- 1 statewide coordinator
- 4 regional specialists

37 field foresters

129 county rangers



Forest Health Specialist Zones





Don't Move Firewood

Educational Campaign to Campers

- Refrigerator Magnets
- Bulletin Board Posters
- 150,000+ campers in Georgia State Parks annually
- Forest Health Staff have provided the parks with training and these materials to engage the public

**Don't Bring Firewood with You
Use Firewood from Local Sources**

Emerald Ash Borer Laurel Wilt Disease Gypsy Moth Sirex Woodwasp

Help stop invasive pests that can be present in firewood.

GEORGIA FORESTRY COMMISSION
GaTrees.org • 1-800-GA-TREES

**Help Stop Invasive Pests
Don't Bring Firewood With You**



Pests can be present in firewood.



Emerald Ash Borer

Laurel Wilt Disease

Gypsy Moth

Sirex Woodwasp

How you can help:

- Do not transport firewood to campgrounds or parks.
- Use firewood from local sources.
- If you brought firewood, burn all of it before leaving your campsite.



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Funding by USDA Forest Service



Emerging Markets

- Protect quality and quantity of water that provides for the \$1.5 billion fishing industry
- Sequester 12.6 million metric tons of carbon dioxide from our air every year (USFS), offsetting 8% of GA's CO₂ emissions every year
- Alternative Utilization Markets



Emerging Markets

The Bioenergy Corridor

- Sustained support of the bioenergy industry because forest growth exceeds removals for all species by 30%
- Cellulosic ethanol & other fuels
- Electricity
- Industrial & Residential heat/steam
- Compressed & torrefied wood fuel pellets

Carbon Sequestration Registry

- Big K Farm – Georgia's first registry applicant



Georgia's Forest Volume Growth

Georgia's forest volume growth is well exceeding removals

- 78% more cubic feet of volume than fifty years ago
- Softwood 26%, Hardwood 46% (2006 FIA)
- Excess softwood growth=9.7 million tons=21 new mills receiving 450,000 tons of wood per year.





Untapped Sources of Fiber



Unmerchantable Timber



Untapped Sources of Fiber



Logging Slash



Urban Waste



Georgia's Bioenergy Benefits

- Maintains environmental benefits of forests
- Reduces carbon emissions by reducing amount of fossil fuels used
- Provides a new product for forestry industry
- Provides a much needed new market for forest landowners
- Rural vs. foreign economic development & jobs
- Promotes energy independence



Wood Ethanol

- Ethanol can be blended with gasoline to create E85, a blend of 85% ethanol and 15% gasoline.
- Vehicles that run on E85 are called Flexible Fuel Vehicles & are offered by several vehicle manufacturers; there are currently more than 7 million flex fuel vehicles in the US.
- Any gasoline engine can burn E10, which is 10% ethanol



Compressed Wood Pellets





Biomass Electrical Generation

- Potential to co-fire 15% wood pellets or 30% torrefied wood pellets with coal in existing coal power plants.
- Potential to co-fire up to 15% wood chips with coal in existing coal power plants.
- Potential to convert coal plants or build new plants that burn wood chips in an industrial boiler to generate steam. The steam expands in a turbine to generate electricity.
- Construct new plants which gasify wood chips into syngas and fire the syngas in a turbine.



Wood Energy for Poultry Heat





Poultry Wood Use Objectives

- Develop a local market for compressed wood pellets
- Provide poultry growers with a cleaner & better method of heat
 - Compares favorably with liquid propane gas
- Continuously improve wood pellet furnace system to maximize efficiency & minimize labor
- Determine possible broiler performance benefits that may be associated with wood pellet heating



Existing & Proposed Wood Bioenergy Facilities

- Two new ethanol refineries proposed to produce 150 million gallons of cellulosic ethanol annually
- Ten new electrical generating plants proposed to produce 667 Mega Watts
- Five recently built and proposed wood pellet mills manufacturing 600,000 tons of pellets annually
- Existing forest products industry uses 10.4 million tons of biomass per year for energy



Challenges Ahead

- Higher population densities with less rural knowledge
- Reaching all our customers
- Adapt and encourage new markets for the future
- New forest pest risks
 - Stem the tide of new introductions
 - Mitigate exotics already here
- Declining state budgets



Georgia Sustainable Forest Management Report

GEORGIA FORESTRY
COMMISSION

Executive Summary
of the Georgia Sustainable
Forest Management Report

Prepared by the Georgia Forestry Commission
for the Georgia General Assembly July 1, 2008



Enjoy the Conference – Enjoy Savannah!



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