

NFs in North Carolina Restoration Issues



Pisgah National Forest

Nantahala/Pisgah Restoration Issues

- **Impaired Watersheds**
- **Fire Adapted Ecosystems**
- **Exotic Insect Pests**
- **Non-native Invasive Plants**
- **Loss of High Elevation Habitats**
- **Shift in Tree Species and Age Class Diversity**
- **Other Issues**

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Restoring Aquatic Ecosystems



- Realignment of road drainages away from stream channels.
- Replacement of fish barriers with bottomless arch structures.

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Mountain Golden Heather



Hudsonia montana



Table Mountain Pine



Pinus pungens



Buck Creek Serpentine Barrens 3 weeks following prescribed burn

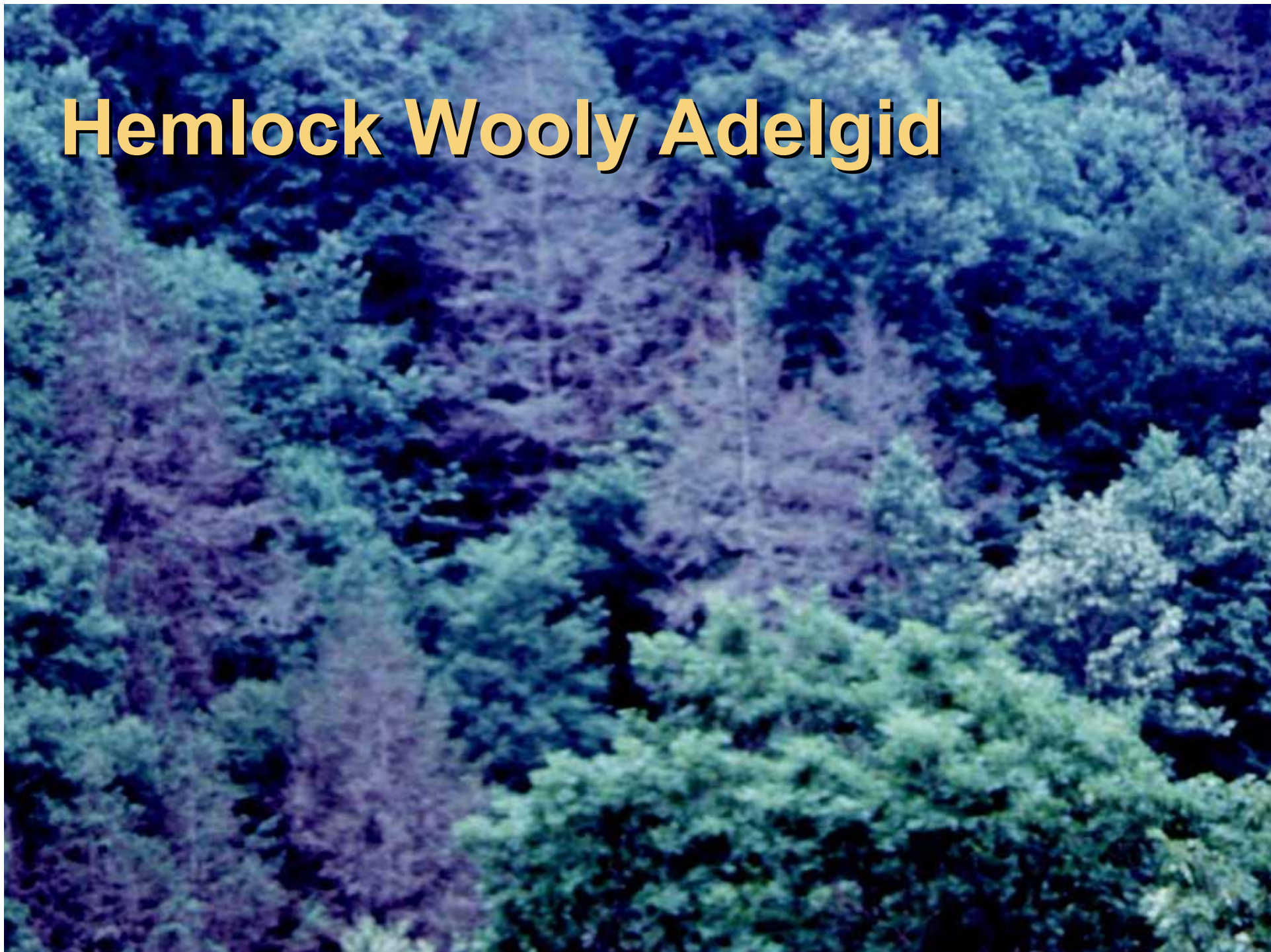


**Grandfather District Prescribed
Burn, April 16, 2008**

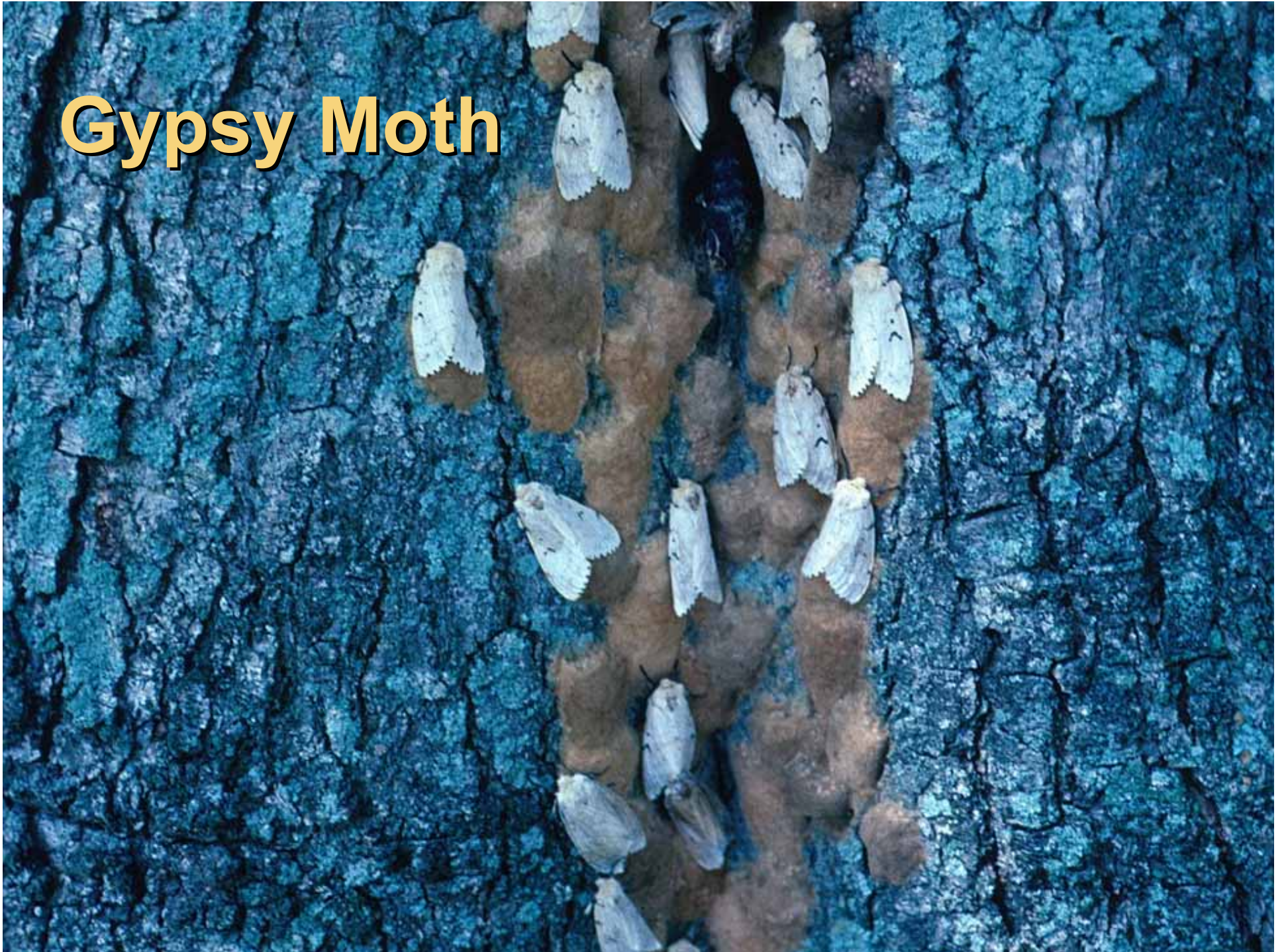
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Hemlock Woolly Adelgid



Gypsy Moth



Southern Pine Beetle

- Over 500 acres have been site prepared for natural regeneration and 2,500 acres planted with primarily Shortleaf pine.



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**Princess Tree (*Paulownia
tomentosa*)**



Princess Tree Emerging Immediately After Fire

Species	Year Introduced	Origin
Princess Tree Paulownia tomentosa	1834	East Asia
Mimosa Albizia julibrissin	1745	Asia, Iran
Tree of Heaven Ailanthus altissima	1784	Asia
Multiflora Rose Rosa multiflora	1868	Japan, Korea, China
Chinese Privet Ligustrum sinense	1852	China
Japanese Meadowsweet Spiraea japonica	1870's	Japan, Korea, China
Japanese Knotweed Polygonum cuspidatum	1800's ???	East Asia
Autumn Olive Elaeagnus umbellulata	1830	China, Japan
Oriental Bittersweet Celastrus orbiculatus	1870	China, Japan
Kudzu Pueraria montana	Early 1900's	China, Japan
Japanese Honeysuckle Lonicera japonica	1806	Japan, Korea, China
Chinese Yam Dioscorea oppositifolia	Early-Mid 1900's ???	China
Chinese Silvergrass Miscanthus sinensis	Early 1900's ???	China, Japan
Japanese Stiltgrass Microsetgium vimineum	1919	East Asia, India
Garlic Mustard Aillaria petiolata	Early-Mid 1800's	Europe
Coltsfoot Tussilago farafara	1700's ????	Europe

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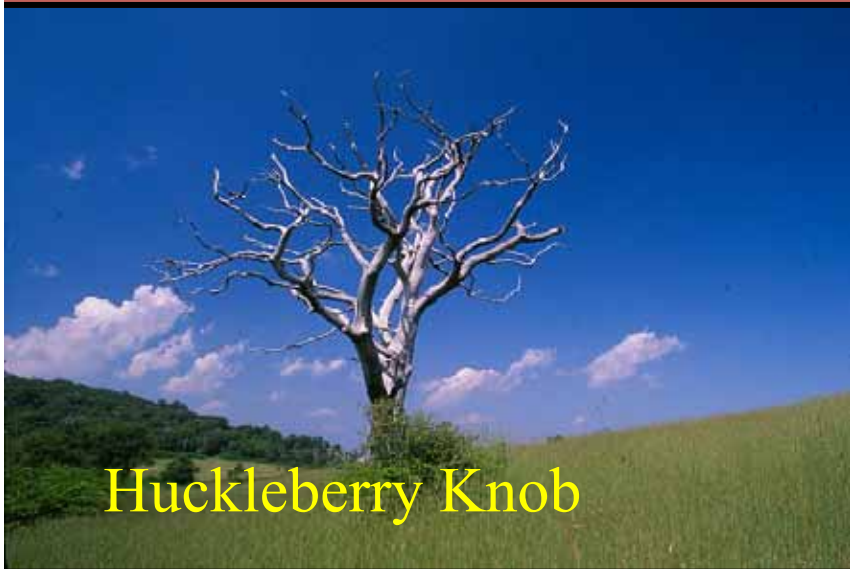
Fraser Fir Mortality from Balsam Woolly Adelgid



Max Patch



Roan Mt



Huckleberry Knob



Old Bald



Round Bald circa 1930s



Round Bald 2007



Roan Mountain Grassy Balds



Volunteers Return Goats to Roan

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Primary Community Types

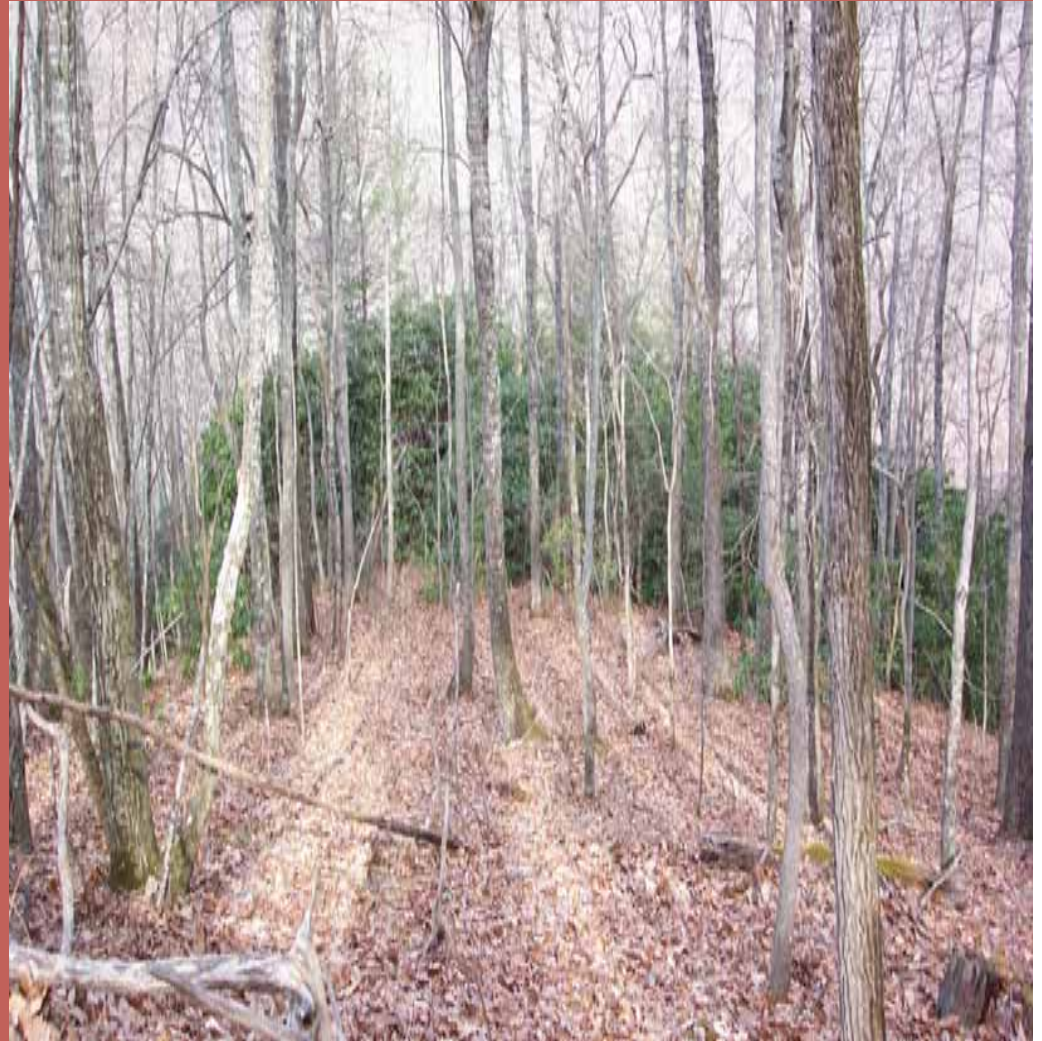
(Nantahala and Pisgah)

➤ Oak Hickory	45%	465,875 acres
➤ Rich Cove	25%	261,691 acres
➤ White Pine, Hemlock	11%	115,094 acres
➤ Yellow Pine	7%	70,521 acres
➤ Northern Hardwood	5%	54,326 acres
➤ Spruce Fir	2%	15,165 acres
➤ Other	5%	43,404 acres

9. 27. 2001

Changes in Tree Species Composition over Time

- Lack of fire has increased shade-tolerant midstory.
- Species like red maple, yellow poplar and white pine have increased.
- Oak species have declined.



White Pine Encroachment

- Forest that has developed based on past disturbances, or lack of them.
- Opportunities for reducing White Pine in areas better suited for other species.



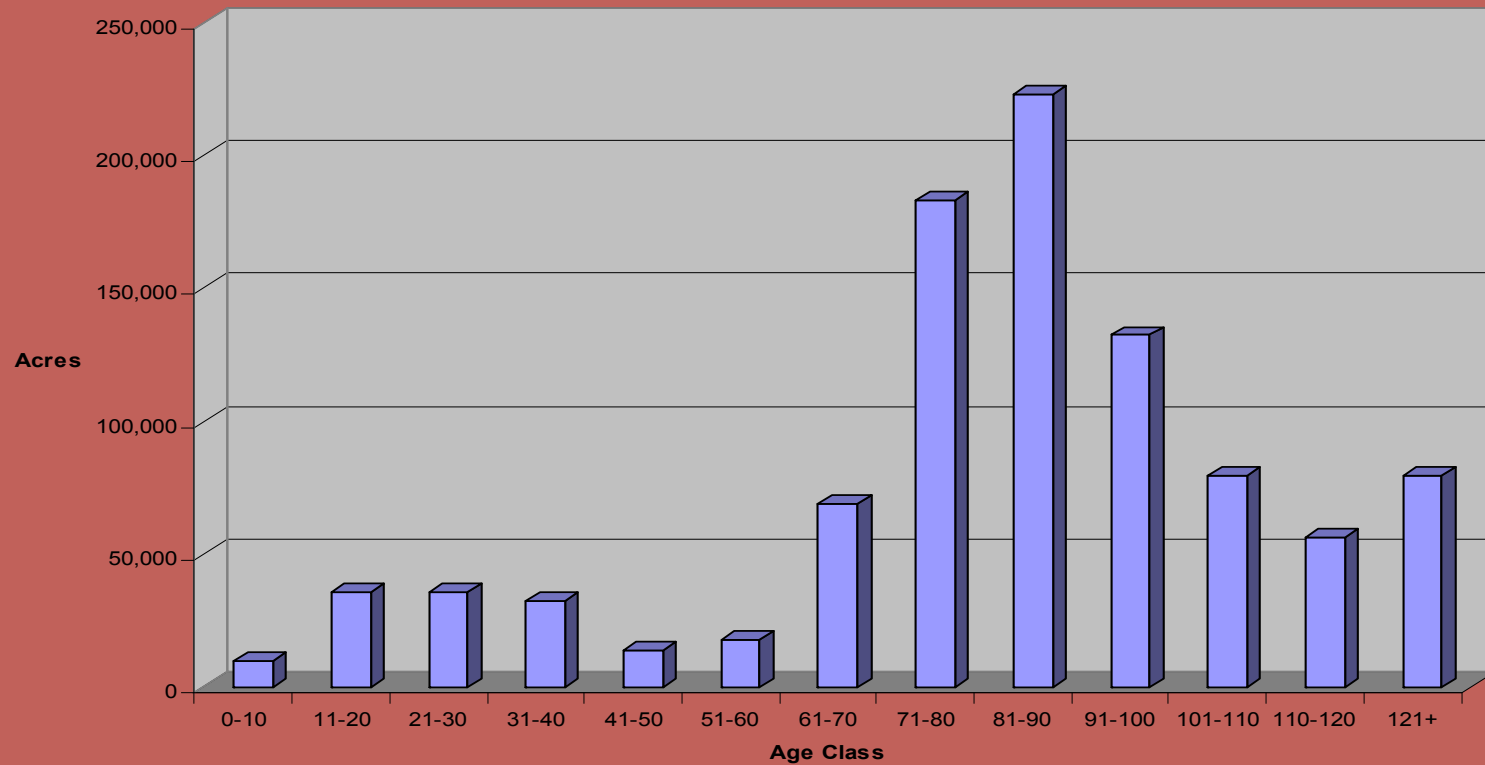
American Chestnut Restoration

- FY 2009 will receive approx. 125 blight resistant (BC3F3) chestnut seedlings.
- Spacing and site requirements currently being studied.
- We will probably be planting small blocks of 2-4 acres.



Age Class Distribution

Age Class by Total Forested Acres
Nantahala & Pisgah NF's



Age Class Distribution

- 85% of the N-P Forest is over 61 years old.
- 59% is over 81 years of age.
- 4.7% is under the age of 20 = 42,459 ac.
- 1% is under the age of 10 = 9, 838 ac.
- Not evenly distributed



Ruffed Grouse Is in Decline



Golden Winged Warbler

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Atmospheric Deposition

Sulfur deposition from haze, fog and rain has leached calcium and other nutrients from high elevation soils and increased aluminum to biologically toxic levels in some areas. This has also acidified brook trout streams .



Southern Appalachian Bog



Swamp Pink



Sundew



Purple Pitcher Plant

River Cane





Overharvest of ginseng and other botanical products

Seed Nursery Projects



**Collect
Local
Germplasm**

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