# The Mower Tract Ecological Restoration Project

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green forests work

APPALACHIAN REGIONAL REFORESTATION INITIATIVE ARRI

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FOREST SERVICE US DEPARTMENT OF AGRICULTURE

# Overview

- The Mower Tract is approximately 40,000 acres of National Forest Land purchased in the 1980's on Cheat Mt., WV.
- Site contains one of the largest Red Spruce communities south of Maine.
- High Allegheny plant community contains 145 state rare plant species, including 60 critically imperiled species, 56 imperiled species and 29 vulnerable species.

Red Spruce

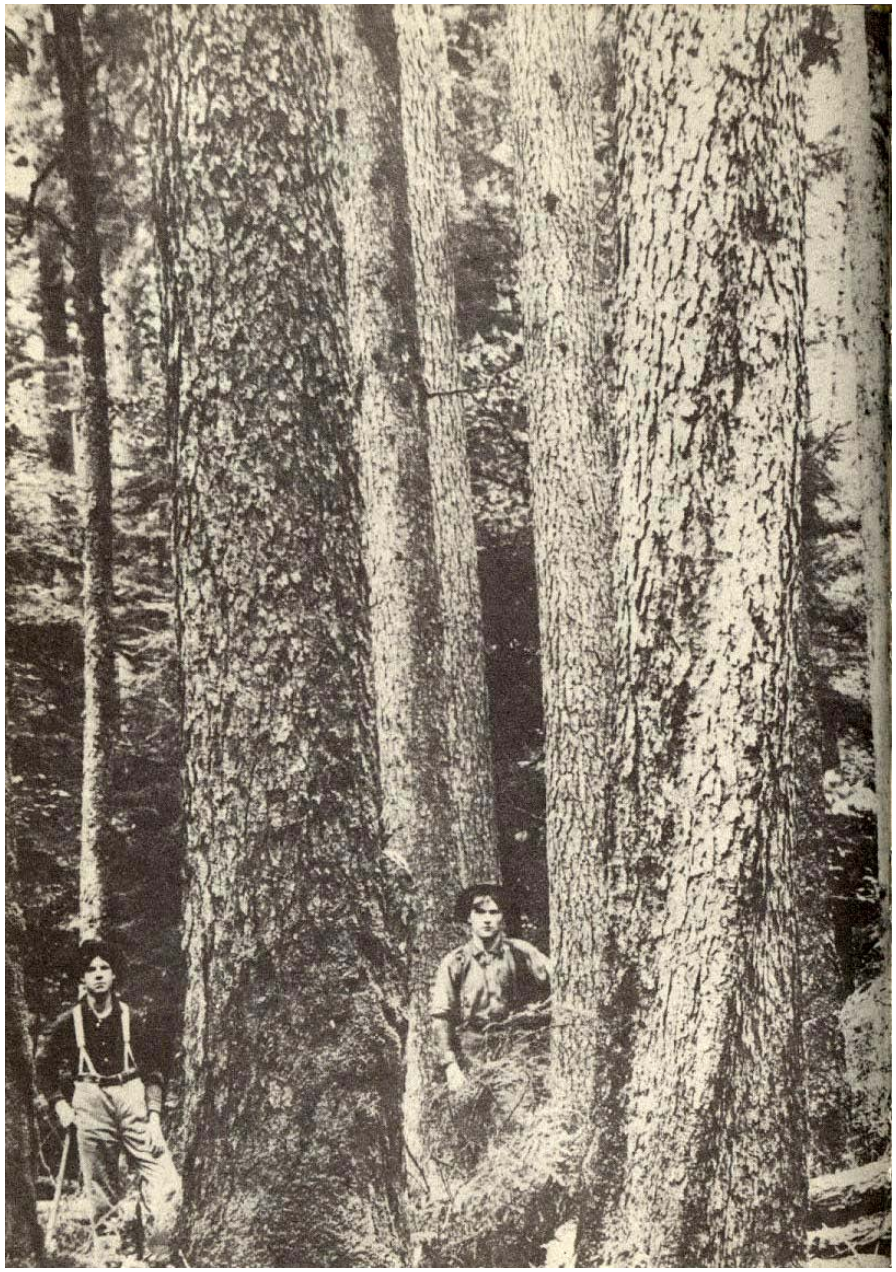
(*Picea rubens*)

# Overview

- There are also 137 wildlife "species of concern" at Cheat Mt. including:
  - WV Northern Flying Squirrel
  - Cheat Mt. Salamander
  - Saw-whet Owl
- Native Brook Trout restoration efforts underway at the site.
- Opportunities for wetland habitat conservation.
- ***Top priority for conservation and preservation for and enhancing biological diversity*.**

# The Problem

- **The red spruce-hardwood forest once occupied 500,000 acres of WV.**
- **Extensive logging of the area in the late 1800s and early 1900s for pulp and paper industry.**
- **Fires sparked by trains moving the lumber, camp fires and agricultural conversion (slash and burn) consumed peat and litter and led to extensive soil erosion and loss of seed banks.**
- ***Area regenerated to a hardwood dominated system and only about 40,000 acres of the original red spruce community remain*.**



# The Other Problem

- About 2,500 acres of the Mower Tract was contour mined in the 1980s.
- Site was reclaimed to pasture and forest.
- Forest consisted of red pine and Norway spruce plantations.
- Plantations are stunted in areas and contain little to no understory plant diversity.
- Pastures exhibit typical “arrested succession”.

# Post-Mining Landscapes

Pine Plantation

Pasture

# Early Restoration Efforts

- **In 2007, Forest Service, NRCS and partners began a native species propagation effort to reduce maintenance cost and improve probability of success.**
- **Local seed source genetics would favor natural vegetation community establishment.**
- **10,000 + plants were outplanted over 75 acres.**
- ***Limited Site Preparation.***

# Early Restoration Efforts

- Monitoring from early plantings showed poor results.
- Soil analysis showed heavy compaction.
- Poor infiltration resulted in runoff and erosion in many locations.
- Excessive competition from dense grass layer.
- Realization that additional site preparation was needed.

# Barton Bench – FRA Pilot Project

- **Forest Service partnered with ARRI to develop a plan for loosening compacted spoil via deep ripping.**
- **A 90 acre bench was ripped using a D-8 dozer in the fall of 2010.**
- **22,000 seedlings (mainly red spruce) were planted in spring 2011.**
- **Volunteer groups, AmeriCorps NCCC participated in the planting.**


Barton Bench – 2012


Barton Bench – 2016
≈90% Survival
But….

# Lambert Run – 2012-2014

# Lambert Run – 2012-2014

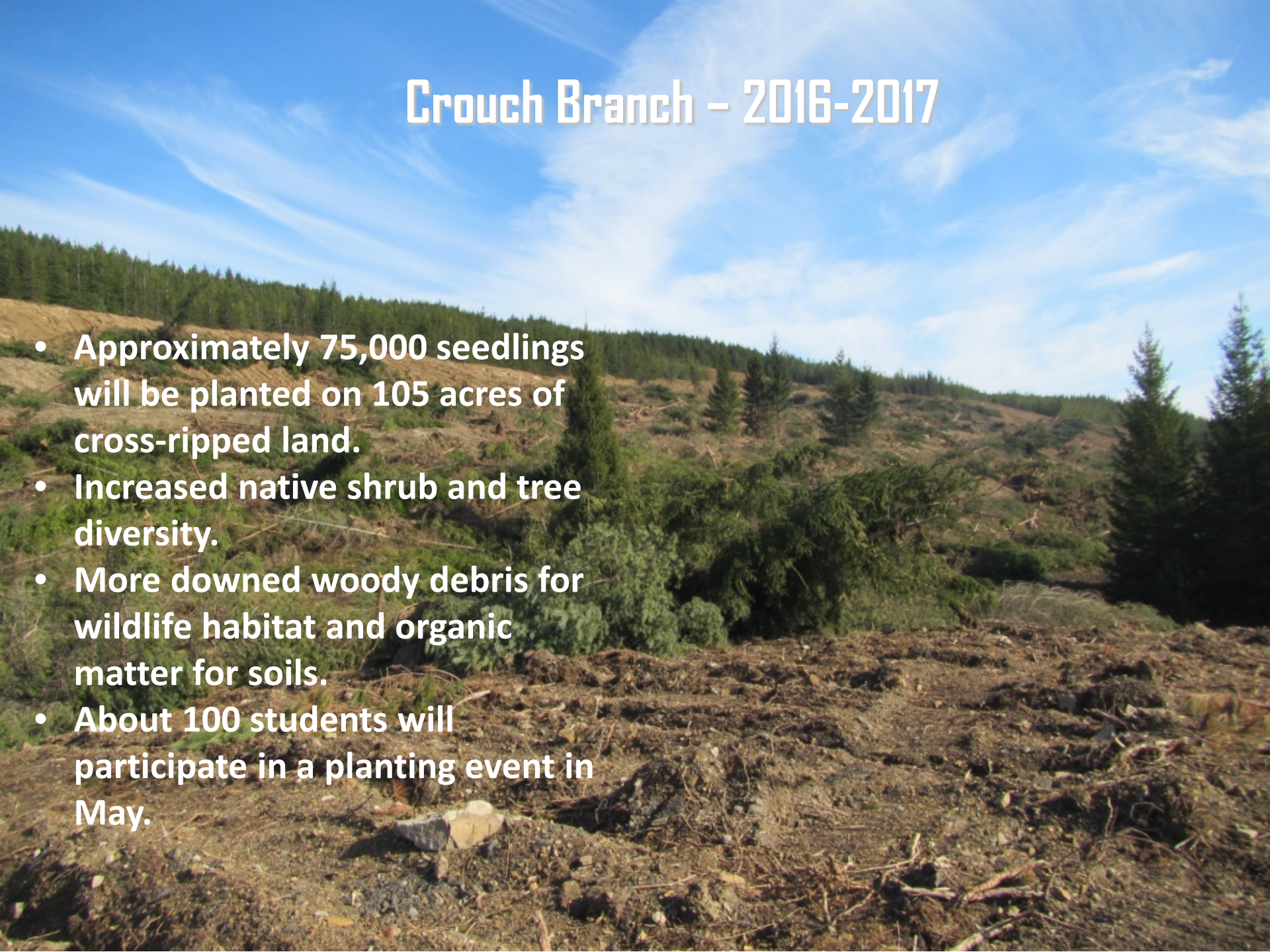
- 27,000 seedlings planted on 105 acres of cross-ripped land.
- 75 pounds of native seed from 80 native species spread in ripped area.
- Downed woody debris provides wildlife habitat and organic matter for soils.
- Volunteer groups participated in the planting.

# Lambert Run – 2015

# Lambert Southwest – 2015-2016

- **93,000 seedlings planted on 216 acres of cross-ripped land.**
- **Increased native shrub diversity.**
- **Downed woody debris provides wildlife habitat and organic matter for soils.**
- **Volunteer groups participated in the planting.**

# Crouch Branch – 2016-2017



- Approximately 75,000 seedlings will be planted on 105 acres of cross-ripped land.
- Increased native shrub and tree diversity.
- More downed woody debris for wildlife habitat and organic matter for soils.
- About 100 students will participate in a planting event in May.

# Mower Tract – Water Resources

- Over 700 vernal pools (wetlands) have been created in the ripped area for sediment control and wildlife habitat.
- Several roads have been decommissioned or improved to reduce erosions and sedimentation.
- Thousands of native wetland plants propagated from seed collected have been planted in and around these wetlands.
- Hydroperiods and wetland size vary to maximize use by different wildlife species.

# Outcomes

- By May, over 300,000 native tree and shrub species will have been planted on over 500 acres of reclaimed land at the Mower Tract. Nearly 50% red spruce.
- Over 700 vernal pool wetlands have been created on the site.
- Over 300 volunteers have participated in tree planting events.
- About $1 million has gone back to the region via contracts for equipment, tree planters and seedlings.
- NEPA for an additional 1,500 acres has been approved and we hope to complete the project over the next 5-7 years.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The Central Appalachian
Spruce Restoration Initiative


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# THANKS!


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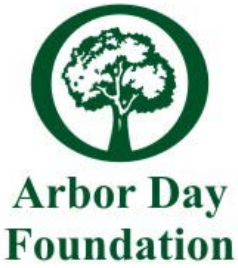
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