



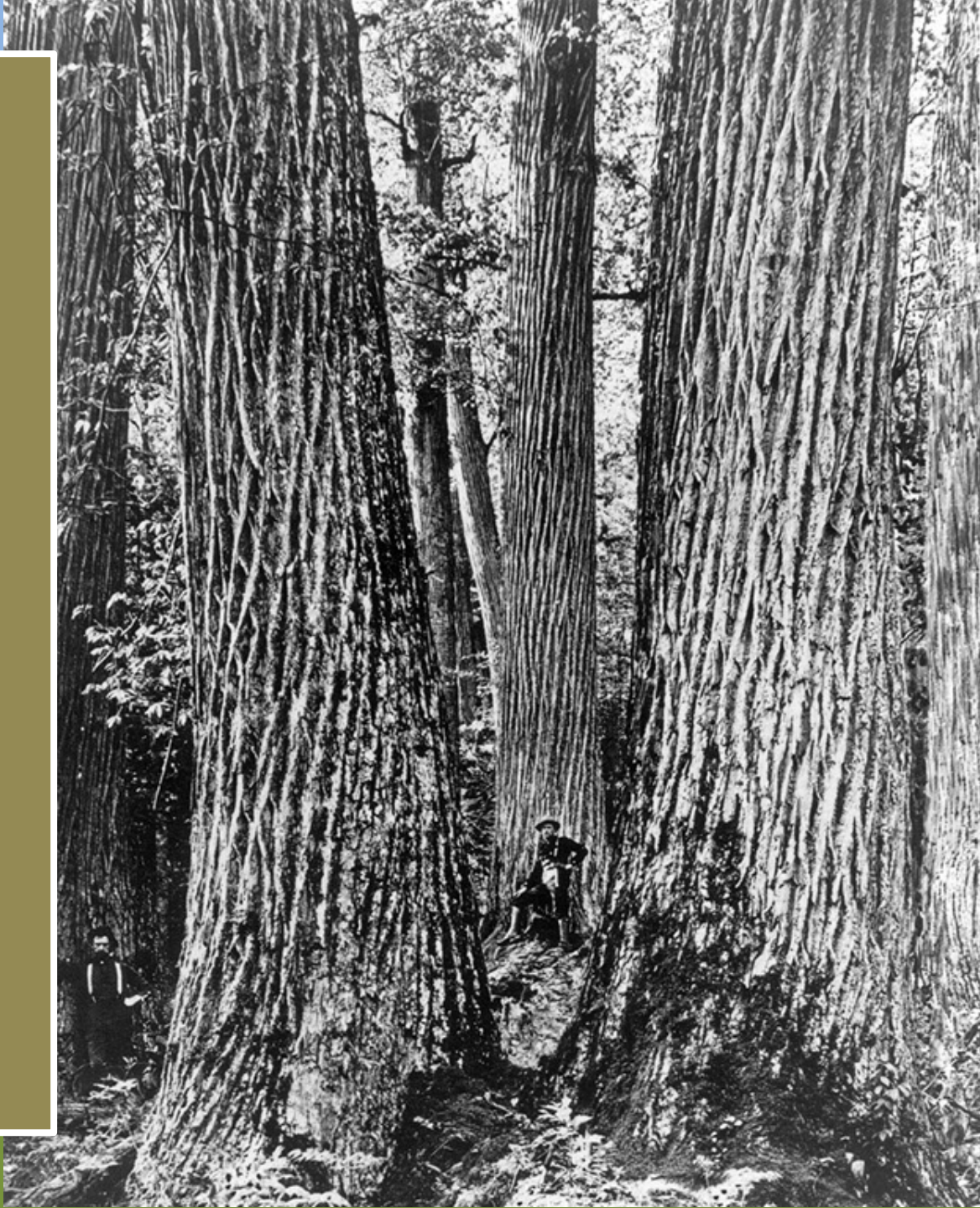
Restoring the American Chestnut



The return of
**A Mighty
Giant!**

Our Mission:

*Our mission is to
return the iconic
American chestnut
to its native range*





In many areas across the Appalachian range, as many as

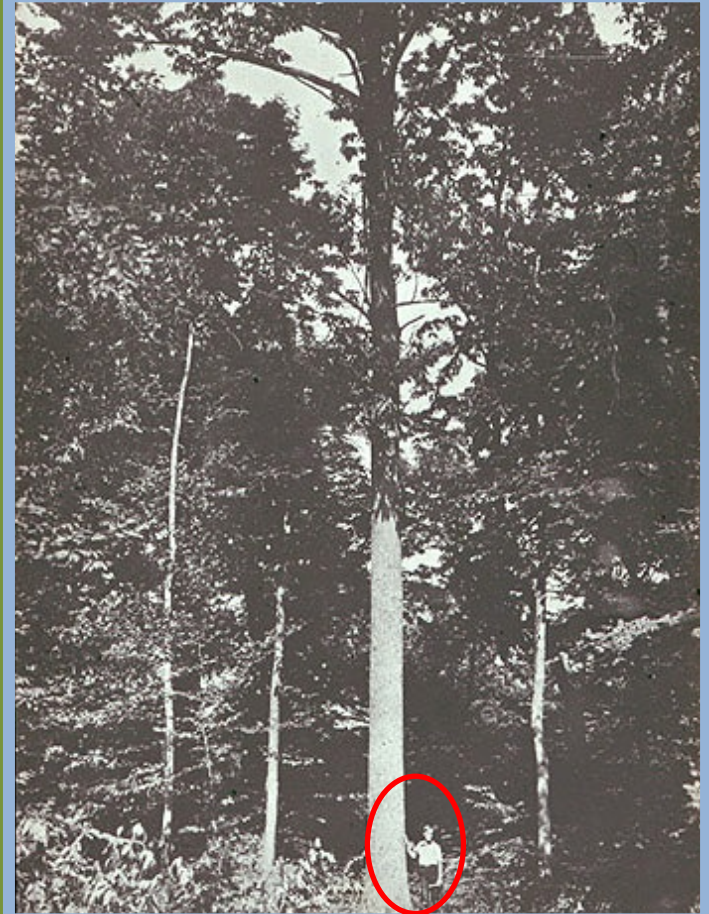
ONE IN FOUR

trees was **American chestnut.**

The natural range of the American chestnut (Castanea dentata) extended from Mississippi to southern Ontario and as far northeast as Maine.

American Chestnut
Native Range

King of Eastern Forests



- 100 + feet tall
- Up to **15 feet** in diameter
- Up to 500 years old

Gifts of the American Chestnut



Food Source

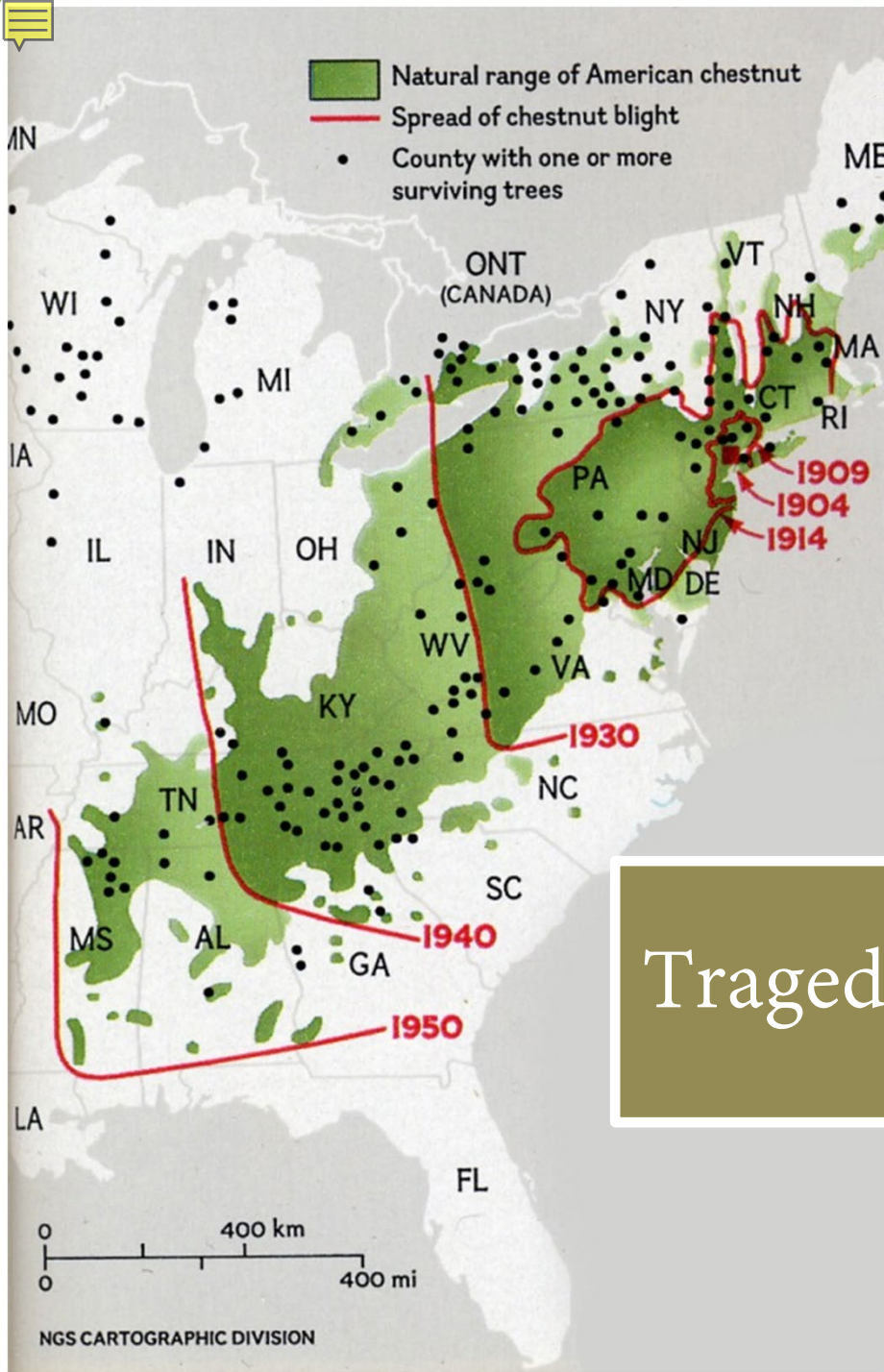


Timber



Tannins





Travelled up to **50 miles per year** post-introduction

Tragedy Strikes: Chestnut Blight

In the Wake of Tragedy



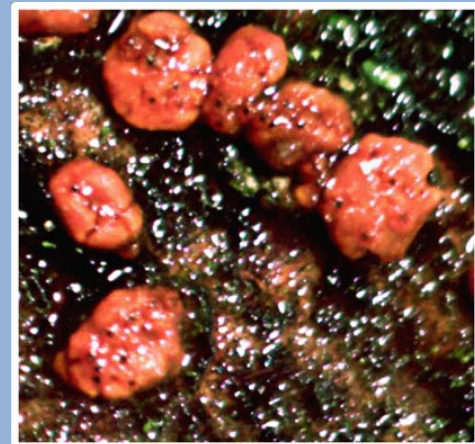
An estimated

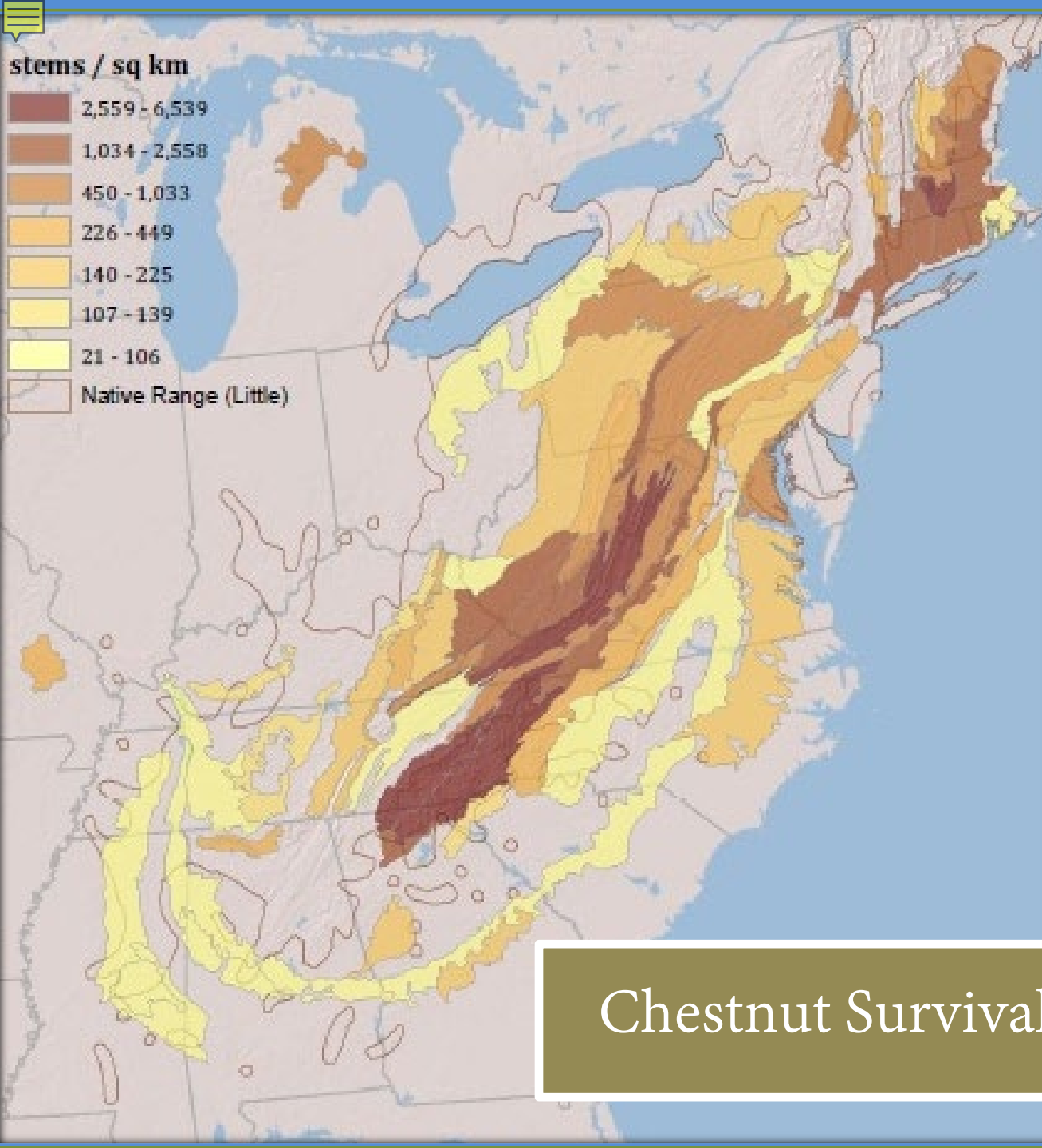
4 billion

American chestnut trees gone



Blight: *Cryphonectria parasitica*





Chestnut Survival Data, FIA 2010

Finding Chestnuts



- Most easily found when in bloom or fruit
- Male flower: strong scent; long fuzzy flowers
- Bur: large, green and very spiny



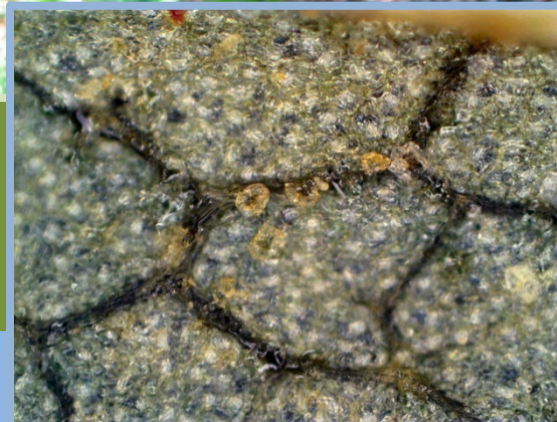
Chestnut Species

- American
- Chinese
- European
- Japanese



American chestnut

- Leaf **hairless**
- Leaf **thin**
- Leaf **canoe-shaped**
- **Breaking ocean wave** dentation
- Twig **hairless** and red to chestnut-brown
- Bud **smooth**, and brown, **pointed**



Chinese chestnut

- Leaf **glossy**, usually **hairy** on underside
- Leaf **thick** and **leathery**
- Leaf **oval** with wedge-toothed margins
- Twig **pea-green** and **hairy**
- Bud **round** and pea-green





*Our mission is to return the iconic
American chestnut to its native range*

American chestnut

(*Castanea dentata*)



Not resistant to blight

Height: 80 – 100 feet ★

Form:
Dominant canopy tree
straight trunk ★
few lower branches

Chinese/Japanese chestnut

(*Castanea mollissima/crenata*)



Resistant to blight ★

Height: 40 – 60 feet

Form:
Orchard tree
many branches

How to develop a disease-resistant American chestnut?

3BUR Strategy

Breeding, Bio-control, and
Biotechnology United for Restoration



Breeding



Selection



Biocontrol



Uninfected Bark

Non-lethal Canker



Biotechnology – Sequencing and Genomics

American Chestnut

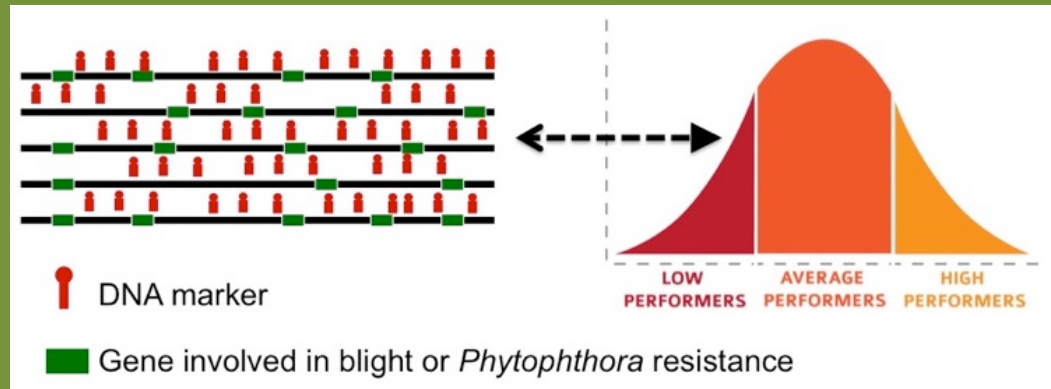


Chinese Chestnut

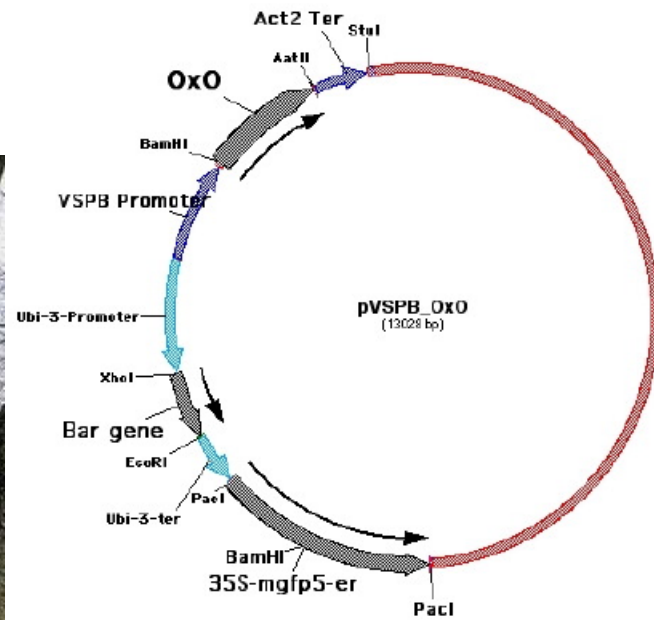


Selection prior
to planting

Genomic selection



Biotechnology



Permitting and Testing

Left - Andy Newhouse at SUNY-ESF shows wire bags used to collect chestnuts from transgenic chestnuts in Syracuse, NY



How Can You Help?

- Become a member of TACF
- Outreach
 - Give a presentation to an interested group in your area
- Plant something
 - **Americans**
 - Hybrids
- Help someone at their orchard
- **Find Trees – especially new Americans**



Why Plant Native American Chestnuts?

1. To preserve native germplasm
2. Early successional habitat
3. Nuts for wildlife (and you!)
4. To accustom oneself to the care and maintenance that chestnut trees require. Side effects of planting and growing chestnuts can be several:
 - nut crops--yummy!
 - wood for making stuff
 - an opportunity to educate others about the tree, and
 - learn about how quickly the fungus can attack and kill a tree with no intervention.



Haun Orchard

Sandy Lake, PA



Haun Harvests





**Questions?
Got chestnuts?**

Contact sara@acf.org