

The Legend of the American Chestnut Tree

A story about one of America's greatest trees.

By Kirby Carmack & Nicole Rodriguez

Illustrations by Michael Torres



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The Legend of the American Chestnut Tree is dedicated to children around the world. Hopefully, this will inspire young minds to pursue the restoration of the fragile ecosystems that support life on earth. In the east coast of the United States of America a native species, the American chestnut tree, has been vital to the ecosystem it lives in. The decline of their population due to a blight from a relative species has had many consequences. This book aims to inform young readers and inspire them to make a change for this irreplaceable keystone species.

We would like to thank Mr. Steve Haggblade, our senior project sponsor, Mrs. Joyce Bailey, the head of the Global Ecology Science Program at Poolesville High School, Mr. Michael Torres our wonderful illustrator and The American Chestnut Foundation. Thank you for all your help and resources!

Poolesville High School, Global Ecology Science Program, Class of 2013

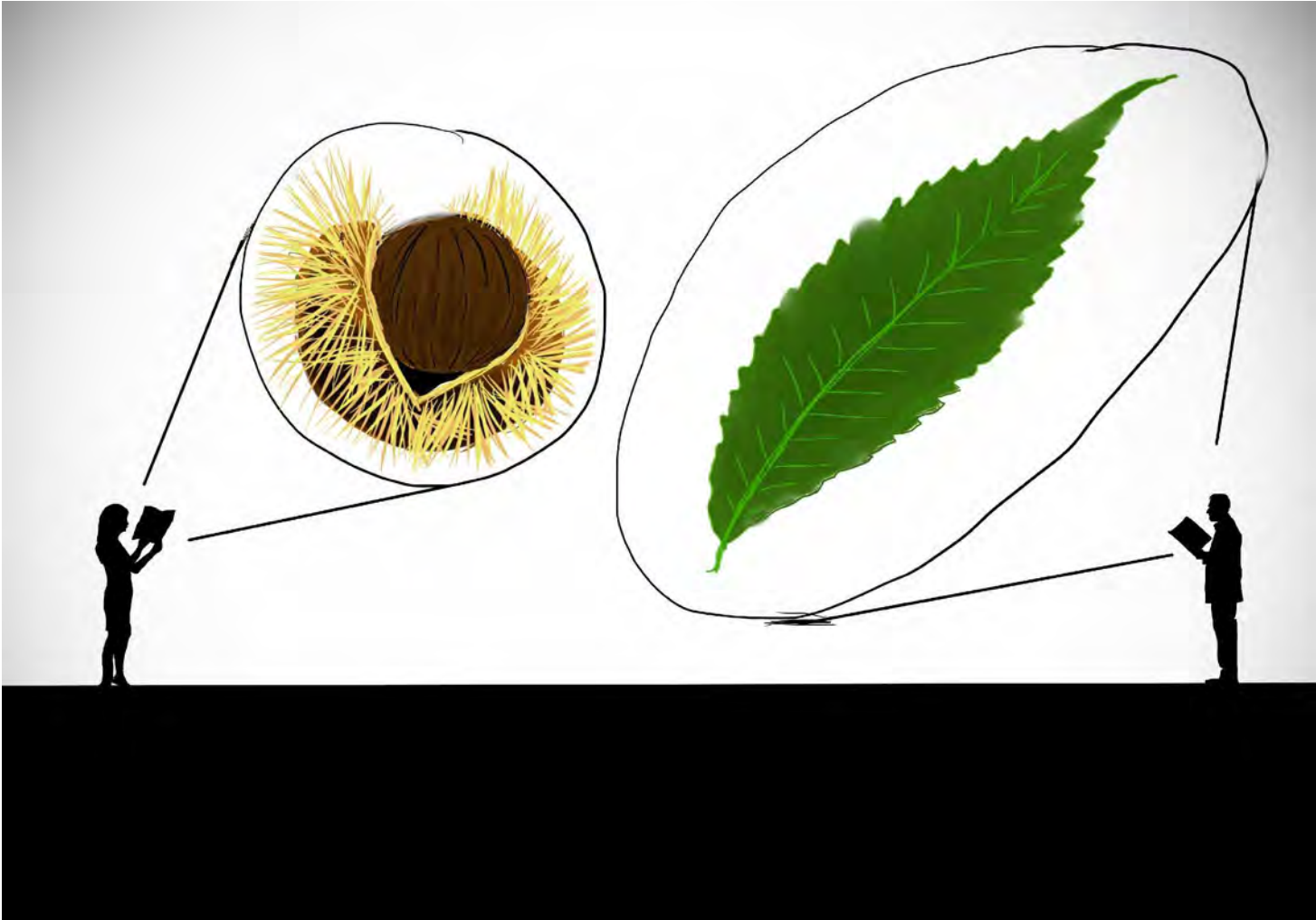
It is the late 1800s...

Along the east coast, rural communities can be found with forests thriving around their farms. If one was to enter the forest and look up, they would see a green sky with streaks of sunshine that break through the canvas of leaves to reach the ground.

Amongst the forest trees, there is one that can be easily identified from the rest. This tree has a strong trunk and long green leaves with edges that look like teeth, called saw-toothed edges. The tree also grows nuts that are surrounded by furry burs.

These tasty nuts can also be "roasted on an open fire"...

Can you guess what tree this is now?



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If you guessed the American chestnut tree....you are correct!

This tree covered the east coast and thrived in its ecosystems as a *keystone species*.

A keystone species has a large effect on the amount and variety of other species in the same ecosystem.

With this information we can see that the American chestnut tree is very, very important to other plants and animals in the forest!

But, this tree also provides many resources for humans too.

Humans can use the wood from the trunk and branches of the tree for almost anything. The wood is naturally rot-resistant and it is very durable, which means it can last for a long time!

Do you know what else the American chestnut provides? That's right! The actual chestnuts!

A popular Christmas holiday song was inspired from this nut. People roast, eat, and sell these now limited nuts for a tasty treat!

However, in the year 1904 the population of the American chestnut trees changed forever.

Imported Chinese and Japanese chestnut trees brought an unwanted visitor, most commonly known as the chestnut blight, scientifically known as *Cryphonectria parasitica*.

East coast residents continued their daily routines unknowing that a vital resource would soon be removed from the land that they lived on.

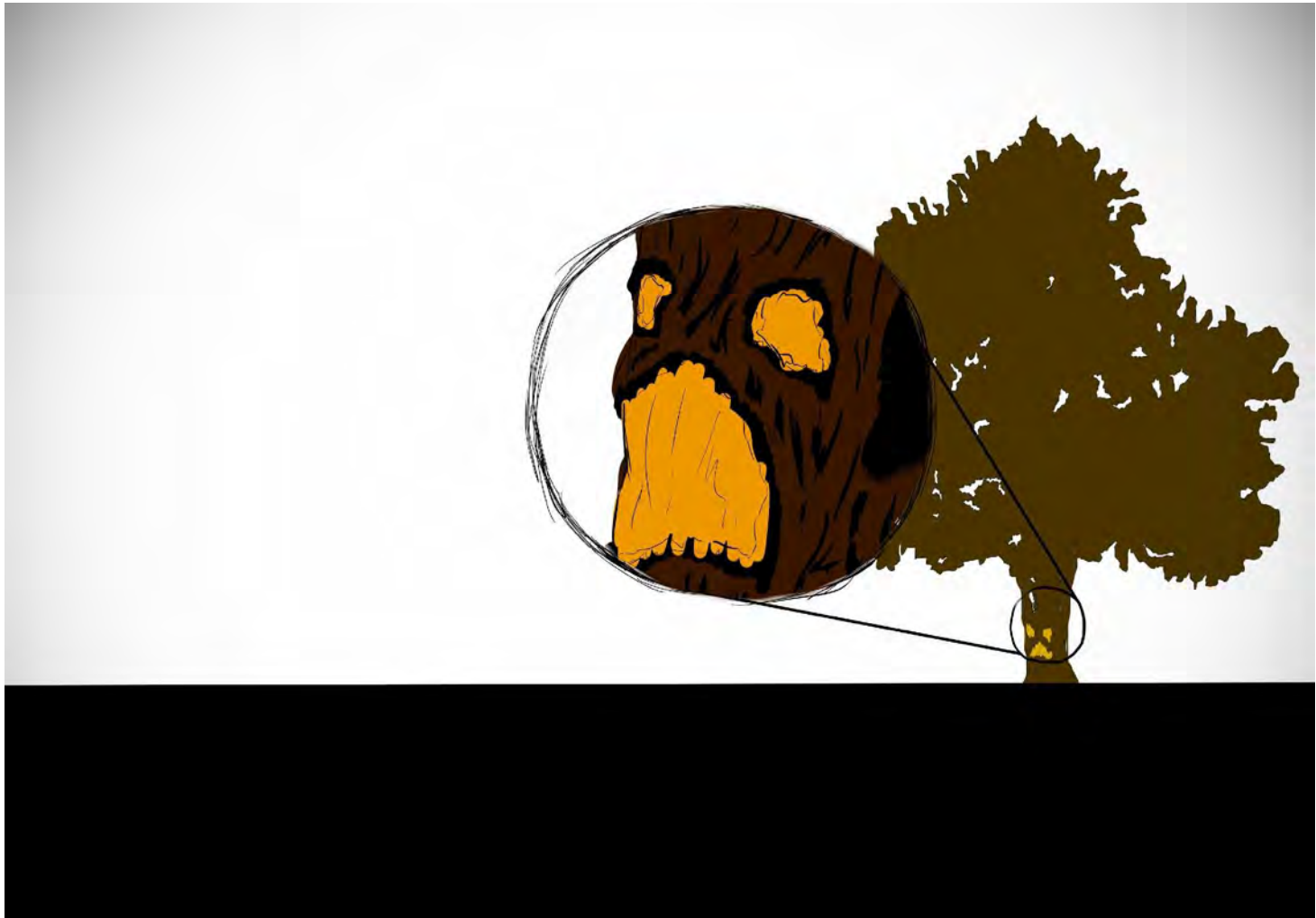
The blight was first noticed in New York just below the northern peak of the stretch of the American chestnut tree population. It soon spread throughout the entire natural range, from Maine all the way down to Florida, and by 1950 four billion chestnut trees were lost to the blight.

Do you know how that happened?

Factors such as the wind, animals and water spread the blight, and the American chestnut tree did not stand a chance.



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In a matter of those fifty years, the entire population up and down the east coast was gone, seemingly for forever.

Now, the natural American chestnut trees can only survive in the *understory* of the forest. The understory is where the lower levels of the forest's plants grow.

As a seed begins to spurt, it can grow a maximum of approximately 30 feet before the blight attacks.

The blight enters through an injury in the bark and eats away at the cambium tissue that is right underneath the bark. The fungus also creates cankers that cut off the path of nutrients to the rest of the tree and roots. Without the nutrients, the tree dies. A visible sign of the infection are the orange cankers on the tree's trunk.

Fortunately, for east coast residents, ecosystems, and the American chestnut tree population, The American Chestnut Foundation was created in 1983. Their main goal was to restore the population of the trees, thus restoring the ecosystems in which they lived.

Their method?

After some test trials of different ways to restore the population, the most successful has been the *backcross method*. This is where the foundation takes the Chinese chestnut and the American chestnut, genetically combines them a couple times to create a tree that is mainly American with one small part Chinese. This special seed was announced very recently in the year 2009 by The American Chestnut Foundation and it is called Restoration Chestnut 1.0.

The part that is Chinese is the resistant gene to the chestnut blight it originally brought over! Thus, when we take that gene and give it to the American chestnut tree, the new tree can look and produce the same nuts as an American but will not die from the blight!

There are many restoration and demonstration orchards in the east coast that produce these blight-fighting American chestnuts and show the visual differences between the trees!





Orchards throughout the east coast are expanding the growth of these new American chestnut trees. It may be a slow process, but it is working.

What the American chestnut tree needs is more people like you and me to inform others and join together to plant them!

Though it may seem like a small act, when you take everyone's effort for that change it then becomes a HUGE one. The environment needs protecting and we're the ones who can help it.

Don't be afraid, and help restore this vital tree to its original greatness!



Co-author Kirby Carmack and senior project sponsor Mr. Steve Haggblade pose with one of the growing demonstration chestnut trees in the orchard located in Poolesville, Maryland.



Co-author Nicole Rodriguez poses with one of the first chestnut seeds she planted located in the demonstration orchard in Poolesville, Maryland.

THE END



