

It all happened so fast—and now you're running, desperately scrambling away from the furious roars behind you. The sky is an ashy black, trees towering over you as you race between them, blinded. The scarlet flames reach to the clouds and lick at your back, burning flesh, and your screams of agony make nothing but a dent in the chaos. There! Between two trees, there's a way out. With the last of your energy, you burst into the cool, night air. Ashes stick to your clothes and plaster your face, but what a relief it is to be safe—for now. As you stand in the open area, you watch as the flames grow bigger and brighter, swallowing the world.

This is what's known as a wildfire. These vicious flames—along with many other factors, including invasive insects—destroy our beloved trees, and can wipe out whole forests. That is, if we don't make an effort to prevent them. With quickly rising climate change, wildfires are becoming more and more common, with more trees disappearing every year. But wildfires are not the only menace to nature—invasive species also play a role.

An invasive species is a non-native organism that grows from its original location and can severely harm native organisms of that area. Invasive species have been a problem since the 20th century, but more recently has it become a major problem. The USGS specifically states, “Harmful, non-native species can be found in all ecosystems across the United States. These species can cause costly economic and ecological damage each year including crop decimation, clogging of water facilities and waterways, wildlife and human disease transmission, threats to fisheries, increased fire vulnerability, and adverse effects for ranchers and farmers.” Over the past 200 years, the number of invasive species has risen greatly, and even more are expected to join in the near future.

One example of an invasive species in Kentucky is the tree-of-heaven. The Nature Conservancy explains, “The tree of heaven was brought from China to the United States in the late 1700s as a horticultural specimen and shade tree. Its ease of establishment, rapid growth and absence of insect or disease problems made it popular when planning urban landscaping.” However, this plant isn't all sunshine and rainbows when it comes to how its been treating native trees. From the Forest Health Extension, UK, Dr. Ellen Crocker cautions, “[The] tree-of-heaven is a rapidly-growing early colonizer that can out-compete the native species you *want* to be seen. This is especially true on those poor quality sites.” In addition, the tree is thought to produce chemicals that stunt the growth of other, native plants.

On the other end of the spectrum, wildfires could kill off any and all trees. The UK Department of Forestry & Natural Resources states, “Most of Kentucky's wildfires are caused by humans - 99%...Forest fires in Kentucky usually burn close to the ground so they usually don't kill trees. Come springtime, the trees leaf out giving the false impression that the fire did no harm. However forest fires cause trees to continue to lose hardwood lumber value throughout their life spans -- even if there are no obvious, visible signs of damage.” 99% of Kentucky wildfires are caused by humans. Most of these people are merely careless with cigarettes or campfires, but some have more sinister intentions, starting the fires on purpose.

The UK Department of Forestry & Natural Resources also says, “Forest fires create entrances for diseases and insects.” Remember those invasive species? Invasive insects will feast

on these trees in their vulnerability. This can cause the lumber to be less valuable as the wood has been greatly damaged by the fire and insects, decreasing the price by hundreds of dollars. How can that be, you may ask, when the fire could have happened years before? Look at the bark. Trees rely on their bark for food. When a forest fire has affected a tree, there will be large openings where the fire has created entrances for insects and rot has continued on.

However, there are things we can do to stop both invasive species and wildfires. Next time you take a hike, clean your boots afterward to stop seeds from growing. Never take firewood from other states into Kentucky to make sure nuisance trees don't spread. If you use cigarettes, put them out in water and then put them in an ashtray. Only make campfires in designated areas, and never leave a fire unattended, lest it grows into something uncontrollable. And never, ever let kids play with matches.

These are all simple tasks that don't take a lot of time or thought. However, when it comes to saving our forests, it can make all the difference. Don't you agree?

# Credits

University of Kentucky Department of Forestry & Natural Resources

<https://forestry.ca.uky.edu/wildfire>

Forestry and Natural Resources Extension

Pesky Plants: Tree of Heaven

<https://www.youtube.com/watch?v=7x1B2z1C1Ok>

The Nature Conservancy

<https://www.nature.org/en-us/about-us/where-we-work/united-states/indiana/stories-in-indiana/journey-with-nature--tree-of-heaven/>

The U.S. Geological Survey

<https://data.usgs.gov/datacatalog/>

EOS Data Analytics

<https://eos.com/blog/wildfire-prevention/>