Unit 3: Chestnuts in Trouble

There were once almost 4 billion American chestnut trees in eastern North America. Around the year 1900 many American chestnut trees started to get sick and die. In 1904 scientists found a fungus called chestnut blight was causing the trees to get sick, and most of the American chestnut trees died.

There are many fungi in the forest, and most of them are very helpful to the trees! Some of them send messages and nutrients between the trees through their mycelium. Some fungi eat the dead stumps, logs, and branches which makes new soil for the forest. Some fungi though, can hurt the trees. These fungi are called parasitic fungi.

If a group of trees is familiar with a certain pathogen (which is what we call things that make us sick) they start to produce their own medicine to fight it off! Through the mycelial network of the friendly fungi trees can share things like water, nutrients, and chemical compounds to help fight pathogens. This kind of communication can take a long time though, so if a brand new pathogen gets introduced the trees don't have the medicine to heal themselves. This invasive pathogen can take the lives of many trees, and the loss of one tree affects its whole forest community.

Would you like to see how the mycelial network of the forest works? Grab a few friends and give this a try!

You will need about 8 people (but more is better!) and four differently colored balls (clean rolled up socks, bean bags, or even pinecones work well too!). Have everyone scatter themselves like trees growing in a forest. Begin passing three of the balls randomly between each other, but no tossing and remember to keep your roots in the ground! These balls represent resources: water, nutrients, and chemical signals being passed from tree to tree.

When you are ready, add the final ball. This is the invasive pathogen! If you get passed the invasive pathogen you must sit down after handing it to someone else. You are now a stump, and are no longer in the mycelial network. Remember trees, no tossing the balls and no moving around, if you cannot reach another tree you must hold on to your resources.

Suggested follow up questions:

What happened to the resources?

Are all the trees still able to pass them along to each other?

Are there any trees with no resources at all?

Did parts of the forest die off faster than others?

How do you think the other plants, animals, and fungi were affected by the loss of the trees?

Teacher's Bio

Sonia Horowitz

Sonia is a homesteader, forager, and artist living in Mason, WI. She is passionate about inspiring families and individuals to safely and respectfully get out and explore the natural world. Along with online education, Sonia also enjoys live learning presentations from local walks and classes to conference lectures and workshops. This year she will be leading classes on ethnomycology at the Midwest Women's Herbal Conference Mycelium Mysteries event, the Georgia Mushroom Club, and the South Carolina Upstate Mycological Society.

Sonia's heart truly belongs to the forests of Lake Superior, but she is also heavily involved in leading women's empowerment groups and researching cultural history especially the history, mythology, and culture of her own ancestors, the Norse and Germanic peoples.

Sonia has a certification in the study of the Icelandic Sagas and is available to speak on topics of Norse culture and mythology as well as on the European witch crazes. It is Sonia's belief that the earth supports all people and by exploring our roots we can find good medicines for our own individual minds, bodies, and souls and learn more about how we can help support the earth in turn.

Her goals currently in progress are to transform her homestead (Amanita Acres) into a place of community and family learning. You can find Sonia at the Amanita Acres facebook page and at www.amanitaacres.com