

Butternut Hunt Project: The Quest to Save Virginia's Remaining Butternut Trees

Project Overview

Butternut trees (*Juglans cinerea* - Walnut family) are a native tree to the eastern US whose population has declined by over 70% in the last half a century due to the butternut canker disease. For the Butternut Hunt project, we want to know where remaining butternuts are located in Virginia, their health and size, and determine whether they are pure butternut or hybrid with Japanese walnut. Our main priority is locating as many wild butternuts as possible. To achieve this, we plan to collaborate with citizen scientists across Virginia to locate wild butternut trees to help us collect leaf samples for genetic sequencing and assess their health by submitting photos to us. Once the genetic status is determined, large, relatively healthy, pure butternut trees will be monitored for seed production and returned in order for their seeds to be collected. Collected seeds will be propagated at [Blandy Experimental Farm](#) (Boyce, VA) in order to start planting trees to test for natural disease resistance. These initial efforts are the first steps to developing a comprehensive conservation plan that keeps butternuts in our forests for future generations.

Project Team and Contact Information

- Project Email: uvabutternuts@virginia.edu
- Principle Investigator: Dr. T'ai Roulston
- Graduate Student: Mia Murray

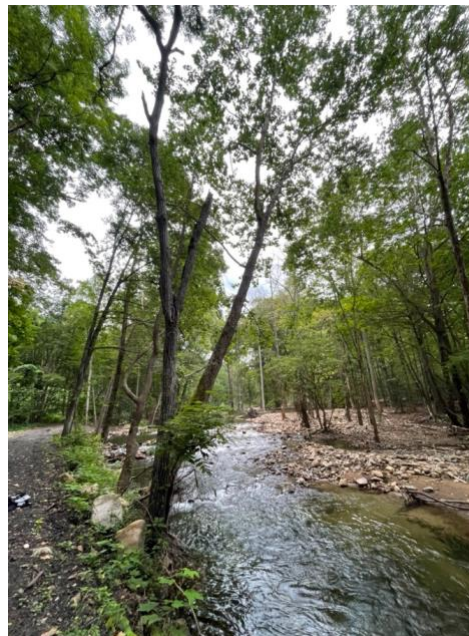
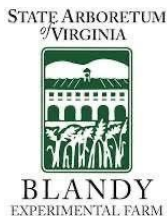


Figure 1. Butternut tree on Virginia Creeper Trail (Damascus, VA) - Summer 2025.

Project Objectives

The Butternut Hunt project encompasses field surveys and collections here in Virginia. We want to recruit citizen scientists and collaborate with environmental/conservation non-profits in order to:

1. locate remaining butternuts in Virginia
2. assess the health and genetic status of remaining wild individuals
3. collect seeds from large, pure butternut trees with little evidence of disease to begin propagating trees for future resistance testing.

Why do we need your help?

The status of Virginia butternuts remains largely unknown as the state has often been overlooked in previous regional monitoring projects. Considered an uncommon tree in the landscape, its potential range is across the majority of the state with the exception of the coastal plains

(pictured below, Figure 1). We need your help to locate butternut trees and send us locations, pictures and/or leaves to understand the health and genetic status of butternut trees in Virginia.

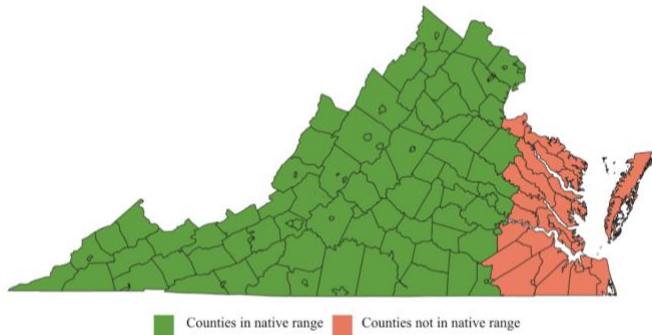


Figure 2. Native range of butternut trees in Virginia across counties.

How can you help?

We need help i) locating butternut trees, ii) collecting samples for genetic sequencing, iii) gathering basic biophysical data (size, health, habitat, etc), and iv) monitoring trees for seed production. If you know where a butternut is either on your property or someone you know, you can help! If you hike in Shenandoah NP or George Washington National Forest, you can help too! The first step is to send us a photo of a tree you think is a butternut to uvabutternuts@virginia.edu. If you think you have multiple trees, that is even better!

If it is a butternut tree, then there are three main ways to help:

1. **Sampler:** Collecting leaf samples on your property (or someone you know w/ permission) to send to us
2. **Sharer:** Granting us permission to come to your property (or someone else you know w/ permission) and assisting us (optional) with sample collection
3. **Surveyor:** Locating trees on state/federal land. Find a tree, send us photos and coordinates, and we will obtain the proper permits to go back to the tree for sample collection.

Participant Outcomes

Ultimately, these are the first steps we need to take in order to be able to restore our forests with butternut trees resistant to butternut canker. With

future testing and field collections, we hope to identify resistant lineages that can be used in restoration projects and support continued propagation efforts at arboreetums and botanical gardens. By participating in this project you can:

- Contribute to the first major comprehensive assessment of butternut trees in Virginia
- Learn how to:
 - Identify butternut trees
 - Recognize butternut canker disease
 - Collect leaves for genetic sequencing
- Get outside and gain a deeper understanding of your local ecosystem
- Receive an end of season report with easy-to-read results and analysis of the data collected by everyone
- Be a part of an interdisciplinary scientific community that includes universities, federal/state agencies, and non-profits

Basic Butternut Characteristics

The fruit is elongated and typically in bunches of 2 to 5.



Figure 3. Butternut fruit. Photo by Mia Murray.

The bark is greyish and has a diamond-shaped pattern.



Figure 4. Butternut bark. Photo by Mia Murray.

The leaves are compound and alternate, with 11-19 leaflets, including a terminal leaflet.



Figure 5. Butternut leaf. Photo by Mia Murray.

Signs of Butternut Canker

- Dark, elongated, sunken cankers on bark
- Cracks in bark - can be “oozing” in spring and then fluid dries in summer
- Canopy decline - dying or leafless branches in crown



Figure 6. Recent canker infection. Photo: Forest Gene Conservation Association.



Figure 7. Mature canker on trunk. Photo: [Forest Gene Conservation Association](#).



Figure 8. Oozing butternut canker. Photo: [Barb Boysen](#), MNR.



Figure 9. Canopy dieback. Photo: [University of Minnesota Extension](#)

Resources

- [Butternut Canker | Ontario's Invading Species Awareness Program](#)
- [Butternut Canker Canopy Dieback | University of Minnesota Extension](#)
- [Endangered Trees of Indiana: Part II – Butternut \(*Juglans cinerea*\) | Purdue Extension Forestry & Natural Resources](#)