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## PRESERVING OUR *Edible Heritage*

**VANESSA HARMONY**  
COLORADO EDIBLE FOREST

In the late 1800s and early 1900s, homesteads and orchards in Colorado grew over 500 varieties of apples and a diversity of peaches, plums, apricots, cherries, and pears. The quality and flavor of these fruits were often regarded as superior to fruits grown in Eastern states, despite Colorado's shorter growing season and harsher climates. Over time, productive farmland was subdivided for residential and commercial development. Diversity of fruit varieties in American orchards dwindled because cultivars that were easiest to pack and ship long distances were favored by markets. Time began to swallow up the historic fruit trees of our agricultural heritage. Is it too late to find and preserve them?

### JOHNNY APPLESEED WASN'T JUST A TALL TALE.

Imagine all of the historic fruit trees planted by homesteaders and orchardists in Colorado around the turn of the 20th century. Their genetics likely exceeded the quality, character, and nutrition of most fruits available commercially today. Furthermore, they were acclimated to our region.

Where did all those fruit trees go? Some are still here, living and growing today, and they might even be in your own backyard! We can find them, map them, reproduce them, replant them, and enjoy their delicious fruits for centuries to come.

### FINDING OUR HERITAGE TREES.

A heritage fruit tree is one you suspect was planted a long time ago. It may have a wide trunk with cavities, gnarled branches, its new growth may be dwindling, and nevertheless it may still produce fruit, although the fruit may be small. I collaborate with an organization called Heritage Fruit Tree Project (HFTP) to locate, map, and document heritage fruit trees in the Roaring Fork Valley and Grand River Valley. I propagate heritage fruit trees in my plant nursery, Colorado Edible Forest, so these varieties can be kept alive in backyards, open spaces, and commercial orchards throughout our region.

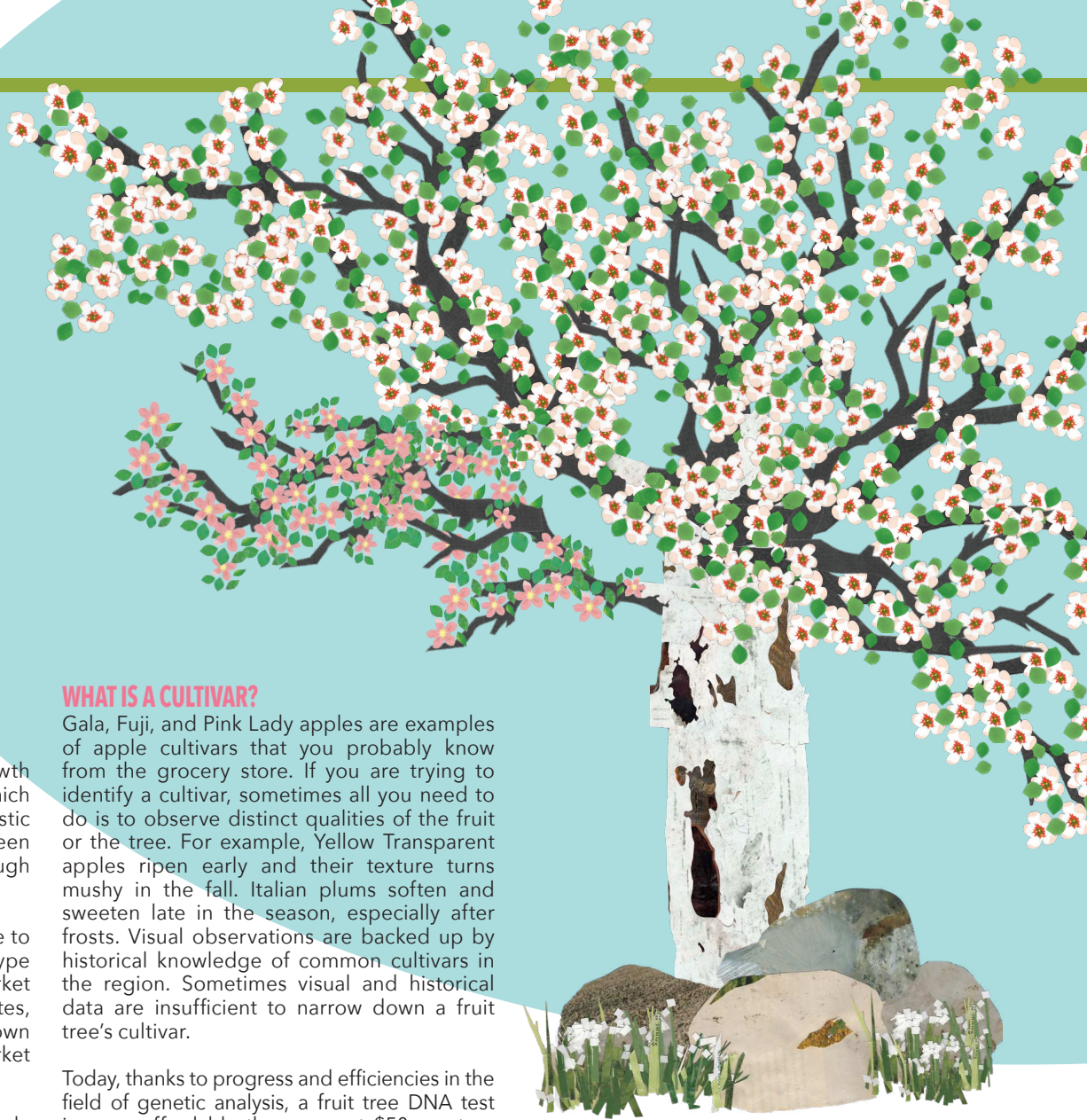
### PROPAGATION.

Propagation is the practice of growing new versions of an existing plant. For example, planting a vegetable seed, rooting an aloe cutting, or dividing a houseplant are all methods of propagation. One main tool in fruit tree propagation is grafting.

In grafting, you take a clipping of a dormant fruit tree during late winter and early spring before the leaf and flower buds have opened. Then, like plant surgery, you attach the clipping (called scionwood) to the stem of an actively-growing fruit tree.

To give you a visualization, imagine taping together the eraser-end of a red pencil (imagine this as the stem of a tree growing in the ground or in a pot) and the tip-end of a green pencil (imagine this as the scionwood of the tree you want to clone). These have matching diagonal cuts, and you line up the edges of both pencils so they touch.

When the wound heals, the actively-growing tree (growing in the ground or in a pot) begins to send energy up to the dormant buds of the clipping/scionwood, causing the buds to open up and grow. The new growth will be a clone, or exact genetic copy, of the scionwood.



### IT'S MAGICAL.

The new growth will exhibit the same growth habits, flowers, and fruits as the tree from which you clipped the scionwood. In our simplistic analogy, the new growth would grow green from the tip of the green pencil, even though the red pencil is providing all the energy.

Cloning through grafting makes it possible to grow trees that produce exactly the same type of fruit. This is why a Fuji apple at City Market that was grown in Washington state tastes, smells, and looks just like a Fuji apple grown in Japan that you can find at any supermarket across the country or around the world.

More exciting for me and others who are working to preserve our heritage fruit trees, cloning makes it possible to propagate a 100-year-old tree and keep its genetic information alive.

A common question I hear is, "Can you graft multiple types of fruits onto a single tree?" The answer is, "yes and no." It depends. You can graft multiple types of apples onto a single apple tree, and multiple types of pears onto a single pear tree. It gets even more fun in the *Prunus* genus because you can graft peach, plum, and apricot together onto a single peach, plum, or apricot tree.

### MAPPING HERITAGE FRUIT TREES.

As of this spring, HFTP has documented more than 100 heritage fruit trees in Garfield, Eagle, and Pitkin counties. It starts with visiting a tree and talking with property owners or land managers about the tree's characteristics.

We discuss the history of the property, then we plot the tree on a map. Property owners and land managers can choose whether they would like the tree to appear on a public map, or kept private to be part of the organization's research: helping HFTP identify, propagate, and maintain our historic trees. HFTP will return to fruit trees during harvest season to document and photograph fruit, which aids in cultivar identification.

### WHAT IS A CULTIVAR?

Gala, Fuji, and Pink Lady apples are examples of apple cultivars that you probably know from the grocery store. If you are trying to identify a cultivar, sometimes all you need to do is to observe distinct qualities of the fruit or the tree. For example, Yellow Transparent apples ripen early and their texture turns mushy in the fall. Italian plums soften and sweeten late in the season, especially after frosts. Visual observations are backed up by historical knowledge of common cultivars in the region. Sometimes visual and historical data are insufficient to narrow down a fruit tree's cultivar.

Today, thanks to progress and efficiencies in the field of genetic analysis, a fruit tree DNA test is more affordable than ever, at \$50 per tree sample. In 2024, HFTP will begin sending leaf samples of local, heritage fruit trees for DNA fingerprinting. This will tell us whether the fruit tree is a known cultivar or something unmatched by nationwide DNA testing of fruit trees.

### SOLVING A MYSTERY.

If a tree's DNA is unmatched, this could mean that the tree is the only one like it on the planet. This could be a tree grown from a seed, made up of a truly unique combination of genes that has never been propagated, representing a completely new, original variety.

Or if it was a grafted/cloned tree, it could be a "lost" cultivar that historically was copied and shared but has not yet been genetically documented by heritage fruit researchers. Sometimes, although unmatched to known fruit cultivars, it may genetically match other fruit trees growing around the state or around the country. This would tell us the fruit tree was intentionally propagated, shared, and planted.

A homesteader may have brought infant trees or scionwood with them when they settled here, or they may have ordered the tree through mail order from a fruit tree nursery. It's thrilling to know that, thanks to the availability of DNA fingerprinting and a new national fruit tree database, fruit explorers like me can begin to solve more and more fruit mysteries.

WANT TO KEEP OUR HERITAGE ALIVE?

[coloradoedibleforest.com](https://coloradoedibleforest.com)

Grow food, build soil, and nurture nature by planting heritage fruit trees and other edible, perennial plants on your property.

The nursery offers heritage fruit trees, berry bushes, and perennial vegetable plants.

[heritagefruitcolorado.squarespace.com](https://heritagefruitcolorado.squarespace.com)

Invite Colorado Edible Forest and Heritage Fruit Tree Project to document, identify, and/or propagate heritage fruit trees on your property or in your neighborhood.

Volunteer for efforts related to mapping, tree maintenance, and fruit harvesting.

[uprootcolorado.org](https://uprootcolorado.org)

Volunteer for or invite this regional organization to harvest your fruit in the fall.

Harvested fruit is shared between property owners, volunteers, and local food banks.

(ILLUSTRATION: ELANA ROYER)