

Wildfires and Prescribed Burns: Part 3

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[Part 2](#) of this series began looking at Royal Lake Park's 2007 wildfire as a case study. Let's continue exploring the fire's consequences. For continuity, figure numbers resume where they last left off.



Figure 5. June 2008. The princess tree has huge leaves and a fast growth rate that outpaces native plants. The leafless oaks in back are already dying; others will follow.



Figure 6. A jam-packed thicket of sassafras (1) and pokeweed (2) emerged where the fire was hottest. This rampant growth was likely spurred by the increased sunlight after some large trees fell during the blaze and others that were too weakened failed to produce leaves.

The subsequent years revealed the true scope of this forest fire's devastation. Many of the mountain laurels and every single oak tree in the central burn zone eventually died. In their place, the princess trees became the dominant upper canopy tree while other invasive weeds including [Japanese honeysuckle](#) (*Lonicera japonica*), [winged burning bush](#) (*Euonymus alatus*), and [Himalayan blackberry](#) (*Rubus armeniacus*) overtook the undergrowth. Any native trees taking root were [early succession](#) species, especially tulip poplars (*Liriodendron tulipifera*). Another previously absent early succession plant now appearing here was [poison ivy](#) (*Toxicodendron radicans*), which cannot grow in mature forests. This species transition meant the fire degraded that rich forest into low-quality woodlands.

FPCA's Invasive Management Area (IMA) volunteers eradicated all princess trees. IMA volunteers continue weeding the other invasive species. As of March 2024, this site is a dense stand of fast-growing tulip poplars with some other natives such as sassafras. This woodland patch looks strangely out of place because the surrounding land still supports an older growth forest (Figure 7). Why did the steadfast oaks die and become replaced by invasive and early succession native plants, which is the opposite of what prescribed burns do? Consulting with Owen Williams, FPCA Ecosystems Restoration Program Manager, what likely happened is the wildfire was so intense that it topkilled many of the species present including oaks, which usually survive fires. The invasive weed seeds were either already present, survived the flames, and perhaps activated by the fire or were later introduced. Seeing the older forest species die and early succession natives and weeds arise means that this fire caused a soil disturbance—having much the same effect as digging around the woods and agitating the soil. Unlike other parts of the park, no oak seedlings were found here—again suggesting soil conditions were changed. Elsewhere, there are problems with deer eating and killing too many young oaks, but that was not the case here.

If no other calamities happen, the specialized soil microbes and organic lasagna layers will slowly build the topsoil back to where older growth plants can live again. This process takes decades—more on forest soil is in the [June 2014 article, "The World Beneath."](#) The price for those youths' so-called personal moment of experiencing nature and recreation is steep: over a century of recovery—time to rebuild the soil structure and time to grow hundred-year-old trees—for this site to return to its previous grandeur.

Thank you to Owen Williams and Chris King, Natural Resource Manager, Huntley Meadows Park, for technical consultation.



Figure 7. March 2024. Both pictures were photographed from the same spot. Image (A) gazes away from the fire site to reveal the habitat that once covered this hill. Image (B) looks toward the wildfire's hottest point. The fire did not radiate out from the campfire. It spread in one direction and because the source location was still relatively cool as the blaze grew, damage there was minimal. What was the fire's hottest zone is now dominated by a dense tulip poplar stand.

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For more information on wildfires in natural areas:

<https://earth.org/what-causes-wildfires/>

<https://www.nps.gov/articles/fire-prevention-52-spontaneous-combustion.htm>

<https://www.doi.gov/blog/10-tips-prevent-wildfires>

Two different perspectives on prescribed burns are in these articles:

Beech-Brown, Eli. February 24, 2024. Playing with Fire—My View from Prescribed Burns.

<https://www.nature.org/en-us/about-us/where-we-work/united-states/virginia/stories-in-virginia/prescribed-burns-allegheny-highlands/>

Brown, Hutch. 2000. Wildland burning by American Indians in Virginia. *Fire Management Today* 60(3):29-39.

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_000385.pdf

Additional websites on controlled burns are at:

<https://dwr.virginia.gov/wildlife/habitat/good-fire/history-of-prescribed-fire/>

<https://www.fairfax-county.gov/parks/nature/prescribed-burn>

<https://ourstoriesandperspectives.com/2012/03/20/controlled-burning-as-a-management-tool-for-fairfax-county-parkland/>