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Opinion

OPINION | LEILA PHLIP

The trade-offs of burning wood for fuel

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I am splitting firewood. The sun has finally hoisted itself up over the trees, while down at the beaver pond, a skin of new ice twitches, pushing up in layers, but there's still

time to split and stack a final pile of logs. Like many who live in rural New England, we heat primarily with wood.

The wood splitter, a large hydraulic-powered anvil we borrowed from our neighbor, roars. Together, my partner and I heave a round of wood up onto the slide, and while I hold it steady, he pushes the lever. The anvil moves smoothly, with almost no hesitation when it meets the dense hard wood. Beneath my hands I can feel the tension build in the log as the anvil cuts deeper. With a sharp crack, it splits. We continue in a steady rhythm. The woodpile grows. How good this work feels: a physical way of readying for the winter.

When I turn over a large chunk, the bark slips off, revealing wood already blackened with the start of decay and streaked with orange, yellow, and white. It is as if I stare into the colored lines of some vast circulatory system, which in a way I am. These rotting logs are beginning to host mycorrhiza, the fungal networks that function as the forest's Internet, creating pathways of communication that enable a complex bartering of nutrients through the roots of trees. Other logs have begun popping with fungi. Some stick out like bright orange ears, some scallop down the sides in a parade of brown. Others are white doilies slapped down on a surface of grey bark. This is the fantastic story of trees, which take energy from the sun and, through photosynthesis, combine it with carbon to create sugars, which in turn feed cellular growth, resulting in twigs, branches, more trees. When trees die, their decaying wood, the biomass, helps feed fungi and lichen as it slowly releases the carbon initially absorbed back into the atmosphere.

I stare at these colonies of fungi, struck by an unsettling thought: Given where we are now, is heating with wood a truly "green" alternative? We know we are failing to curb

the human-generated carbon emissions that accelerate climate change. In 2018, we reached the highest level of annual carbon emissions ever, reversing two years of stabilization. The way we live in the United States is a problem; even Americans with the lowest energy use still produce more than double the global average of carbon per capita. Climate change is a systemic international problem; we can't "save" or "efficiency" our way out of the mess we are in as individuals. If we don't cap carbon emissions from big industries through policy and increase carbon sequestration through smarter land use, individual choices will mean almost nothing. Even so, I want to know that I am doing whatever I can.

Burning trees to generate heat or electricity has been considered "carbon neutral," because burning a tree gives off the same amount of carbon as it would if it decayed naturally. Also because the carbon dioxide released during burning is either recaptured by photosynthesis as trees regrow, or the carbon already sequestered by trees can be thought to cancel out the emissions. But this equation of carbon neutrality fails to take into account that it takes little time to burn wood but years to grow that tree back; there is a long carbon payback time. Even more significant, carbon emissions from combusting wood for heat can be 2.5 times higher than those of natural gas and 30 percent higher than those of coal per unit of generated energy. Burning wood also contributes to air pollution, producing high levels of particulate matter.

So should I stop heating my house by burning wood? The answer is complex. To heat our house through winter, we need four cords of firewood. Because we use local wood, it is an inexpensive renewable resource and the carbon footprint of cutting, splitting, and transporting it is low. Thus it is a better choice than heating with fuel oil or electricity. Because of our wooded location, solar panels are not yet practical.

Then there are the other outcomes. All winter a fire will burn in the center of our house; the beauty of that fire and the atavistic joy of being near its warmth are intangible outcomes, like the way splitting and stacking my own wood connects me to this place, creating meaning. As we face climate change, we each need to consider what choices we have.

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