# 12 Summer 2025 Applegater Elemental equilibrium

#### **BY AARON KRIKAVA**

This issue's elemental theme, "Fire and Water," had me contemplating fire and its place among the four classic elements, both how it relates to and differs from the other elements. Water, air, and earth feel more like tangible objects or materials to me. In contrast, fire is more ephemeral. It's a process, it's the element of change, it's the release of energy, it's the dynamic equilibrium of nature. Fire combines with the other three elements as a natural process. The basic chemical equation of combustion demonstrates this relationship clearly.

At its simplest, combustion combines oxygen (air) with plant matter like trees, brush, grass, or any hydrocarbon (the earth element) and changes those elements into H2O (water), carbon dioxide (air), and energy (fire).

#### Earth + Air = Water + Air + Fire

When this reaction begins, whether from lightning striking a dry forest, your match lighting your woodstove, or the spark plug in your car's engine igniting gasoline, the energy released causes a chain reaction, allowing the process to continue until one of the elements is depleted and the combustion stops. Interestingly, the reverse of the chemical equation of combustion is photosynthesis!

The chemical reaction of photosynthesis combines energy from the sun (fire) with carbon dioxide (air) and H2O (water) and changes them into oxygen (air) and plant matter or hydrocarbons (earth).

#### Fire + Air + Water = Air + Earth

We see that the process of photosynthesis is the reverse of the process of combustion. The way in which these two processes are balanced leads directly to the effects of wildfire and our experience of it. Whenever the sun is shining, the process of photosynthesis occurs (as long as temperatures are above freezing). This process allows us to have beautiful forests, woodlands, fields, flowers, and food—the natural bounty of our valley and our lives. As this plant matter builds up from photosynthesis, the natural balance is maintained through the process of combustion. How much plant matter has accumulated—and the weather conditions when fire occurs determine how intensely we experience the element of fire.

This is why activities like pile burning and understory burning are so critical to maintaining the natural balance and health of our forests. Low- to moderateintensity fire on a regular basis is much less destructive than high-intensity fire that occurs rarely. Regular, low-intensity fire is beneficial to our natural ecosystems, as it cycles nutrients, germinates native flower seeds, and invigorates perennials as fresh, nutritious browse for animals.

When we consider this elemental balancing act—photosynthesis creating plant matter, combustion changing it back to base elements—it's clear that fire is as important and necessary for the health of nature as all the other elements: air, water, and earth.

We can't, and shouldn't, stop all fire from occurring, anymore than we can (or should!) stop the rain from falling or the wind from blowing. For our part in this natural equilibrium, we have a responsibility to actively use fire—safely and appropriately—for the health and resilience of our community and landscape.

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## Wildfire risk in the Applegate: Partnership leads to protection

### **BY NATHAN GEHRES**

Residents of the Applegate Valley, and local organizations and agencies, are working hard to prepare for the upcoming fire season. The elevated wildfire risk is increasingly evident, as homeowners' insurance becomes unaffordable, summertime smoke disrupts plans and forces residents indoors, and anxiety rises with the temperatures. Big challenges require robust partnerships, such as those being forged in the Applegate.

Collaboration is essential, as the diversity that makes the Applegate unique also complicates the implementation of large projects. Our valley spans two states, three counties, and three fire districts in a checkerboard of private and public lands. Because permits and other requirements vary across land ownerships and wildfires don't recognize property boundaries, pooling resources in an "All-Lands" approach is the only viable way to reduce wildfire risk across the landscape.

The Applegate Valley Fuels Management Taskforce (AVFMT) is a collaborative effort between the Applegate Partnership and Watershed Council (APWC) and the Applegate Valley Fire District (AVFD). This partnership has developed a wildfire risk reduction program that offers technical and financial assistance to landowners.

APWC brought together a diverse coalition of non-governmental organizations, agencies, and communitybased partners in developing the Upper Applegate All-Lands Wildfire Resiliency Project (UAAWRP), securing \$2 million in funding through the Natural Resource Conservation Service's (NRCS) Conservation Implementation Strategy (CIS). The NRCS, a federal agency, works with private landowners to improve soil, water, and natural resource conservation on working lands. Additional funding for the UAAWRP has been secured by AVFMT through a \$2 million grant from the US Department of Agriculture, as well as hundreds of thousands in funding from Oregon Department of Forestry (ODF) and Bureau of Land Management (BLM) grants. The project is designed to reduce hazardous fuels on private lands, build landscape-scale wildfire resilience, support the economy by employing local contractors, and contribute to long-term ecosystem health and habitat connectivity across the valley.

The ODF Southwest Oregon District is nearing the completion of a three-year effort through the Western State Fire Managers grant to reimburse landowners for defensible space creation, fuelsreduction treatments, and improvement of access and egress routes on private lands. Firebrand Resiliency Collective's Ready NOW Program (Neighborhoods Organized for Wildfire) is dedicated to empowering communities in wildfireprone areas to prepare for and mitigate wildfire risks. Firebrand has partnered with AVFMT to establish and support new Firewise USA® communities, conduct home wildfire risk assessments, and incentivize home hardening measures that align with broader defensible space efforts. The Rogue Forest Partners (RFP), a partnership of four federal (NRCS, USFS, BLM, USFWS), two state (ODF and OSU Extension Service), and four nonprofit organizations, has worked for the last five years on the Upper Applegate Watershed (UAW) project, completing over 17,000 acres of understory restoration thinning since 2019, with an additional 8,700 acres of pile and underburning. These



Applegate Valley Fire District assists US Forest Service (USFS) with a prescribed burn along Upper Applegate Road, near Jackson Campground, on April 23, 2025. Photo: Lindsey Negherbon, USFS Fire Ecologist.



USFS crew performs mop-up actions on a prescribed burn along Upper Applegate Road, which help protect this important evacuation route. Photo: Kristofer Colbenson, USFS.

treatments were strategically located near private lands and roadways. In Williams, RFP completed 278 acres of understory restoration treatments.

The Southern Oregon Forest Restoration Collaborative (SOFRC), a member of the RFP, completed the Prescription for Safety Project (P4S) with BLM and ODF funding. The project treated fuels on 242 acres across 31 properties along Sterling Creek, Little Applegate, and Humbug Creek Roads, helping to secure egress and ingress for residents and firefighters.

In addition to the projects listed above, the BLM has several active and planned projects in the Applegate Valley. The Bear Grub Project, for example, calls for 3,381 acres of small diameter thinning and hazardous fuels reduction, 898 acres of which have been completed, with another 802 planned for 2025. The Strategic Operations for Safety (SOS) Project, with planned fuels treatments targeted near private lands, is slated to start in late 2025. In addition to the RFP project listed above, the USFS has plans to utilize prescribed fire to enhance the treatments in the UAW and to protect the US Army Corps of Engineers infrastructure around the Applegate Dam. The USFS is also developing the Yellowjacket Project to connect the fuels reduction work in the UAW with the previous work around Ashland and RFP's West Bear Project near Jacksonville. Several organizations in the Applegate are proactively working to decrease the threat of uncharacteristically severe wildfire, because doing nothing is not an option.



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If you have questions, please contact me at the email or phone number listed below.

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