

How Air Resources Are Utilized On Wildland Fires

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We are asked this over and over again. Why can't we just put this fire out with water and retardant drops ?

When a fire burns in extremely dry brush, it is a difficult animal to cage. Often there are areas that haven't burned in many years.

Fires that occur in these conditions burn with power and can have flame lengths up to 100-200 feet. With fire behavior like this, we are unable to put firefighters in front of it.

Firefighters, hand crews and dozers can only be put in place **after** you've removed some of the heat from it; this is done with (air) tankers and helicopters.

There have been many comments made by those who are not familiar with fire behavior and firefighting that believe wildland fires can be put out with a few water drops and retardant dropped by helicopters and air tankers. It is a mistake to make this assumption.

Aircraft only helps to slow the fire and cool it, but typically doesn't extinguish it. The bright red retardant - a phosphorus-based compound commonly known as Phos-Chek, is dropped on the vegetation which is often dense and can be as much as 6 feet tall (or more). With these conditions, the Phos-Chek cannot saturate the fuel enough to extinguish the fire, but it will slow it down.

Fires of this nature can only be stopped by **removing** the fuel in its path. This is typically done by hand crews and dozers. We refer to the successful removal of fuels and vegetation as a "black line" or containment line when it is wide enough to stop the fire's progression.

Fire retardant is dropped from heights of up to 300 feet by helicopters, air tankers or the newest tool in air resourced, the DC-10. Helicopters, depending on their size, can carry up to 800 gallons of water or retardant per load. Air tankers can be loaded with up to 2,500 gallons of retardant per flight, and the DC-10 can hold up to 12,000 gallons of retardant. Their drops are usually not directed at the flames themselves, but the area in front of the flames or where crews are working to remove fuel/vegetation to create a containment line. The bright coloring of the retardant lets the pilots know where their drops have landed. The retardant adheres to the vegetation as it falls, making it more fire-resistant, but not fire proof. This doesn't always work when the heat from a fire is too extreme, or winds drive the flames over and beyond where the retardant is dropped.

Water drops from helicopters are made on the leading edge of the fire, specifically to remove the heat from the flames and absorb its energy. The water does evaporate from the heat, but in doing so, it dissipates some of the energy from the fire. A steady stream of air resources on a fire line can be an effective way to slow the fire enough to safely put firefighters, hand crews and dozers in to make effective fire containment lines, thus stopping the fire from moving forward.

Air resources are tools in the toolbox of firefighting. The incident commanders consider all tools, and choose the ones that are most affective, and available when deciding how to fight any fire.

