

“The spread of wildfires and its devastating effects.”

By Dayna Matassa

The number of wildfires is growing exponentially, studies show from 2000-2009 a total of 78,352 wildfires were documented throughout this nine year period although compared to 2020 where in a single year 58,950 wildfires were documented such as ‘The Siberia Wildfires’ which reached a soaring temperature of 100.4 °F (38.0 °C) and consumed over 14 million hectares (35 million acres); along with ‘The August Complex’ as of December 3rd, 2020, there had been 9,279 fire incidents in California alone with a staggering 4,197,628 total acres burned. Unfortunately, 10,488 structures were damaged or destroyed and at least 31 fatalities were left. The 4.2 million acres (about half the area of Belgium) burned in 2020 are the most in a single year ever recorded in California. “Ten years ago, we weren’t really seeing fires move like that,” quoted by Lenya Quinn-Davidson, a fire adviser for the University of California Cooperative Extension, the last decade was the hottest in 125,000 years, which in turn creates an abundance of dry fuel such as trees and dead grass. Due to the rise in temperature, the high heat and longer fire season have made these fires more extreme. Although climate change has been a large contributor to the increase in wildfires, climate change is not the only factor in the intensity of these wildfires. 90% of wildfires in the United States are caused by humans, the most common human causes of wildfires are equipment generating sparks such as lawn mowers, powerlines and outdoor power tools, a single spark from any powered equipment or utility can cause the start of a wildfire which can destroy animal habitats and engulf thousands of acres of land; leaving behind devastating effects which not only are harmful towards humans and the wildlife, the wildfires have long last effects on earth.

Wildfires have many long-lasting effects such as the increase air pollution in surrounding areas and can affect regional air quality. These effects of smoke from wildfires can range from eye and respiratory tract irritation to more serious disorders, including reduced lung function and heart failure or in serious cases premature death. The increase in air pollution harms wildlife in the proximity of the fires as it causes damage to their organs, weakens their immune systems and makes them more vulnerable to many diseases. Wildfires tend to produce large quantities of finer particulates known as PM2.5 which are even finer nanoparticles, are known to be particularly harmful to human health. This is largely due to the tiny particles which are more than 30 times smaller than the width of a human hair which is too small to see with the naked human eye, PM2.5 [penetrates the lung membranes](#) when breathed in, in turn damaging the respiratory system and [passing into the blood stream](#). A study estimated that between 2004 and 2009, around 46 million people in the western US were exposed to at least one wave of smoke from wildfires. When high levels of PM2.5 were present, there was a [7.2% increase in hospital admissions](#) due to respiratory illnesses. Increases in PM2.5 have also been found to be [accompanied by a spike in cases of cardiac arrest](#). The impact of wildfires is not just on human health, but the health of the planet as a whole; as Burning forests and peat release huge amounts of carbon dioxide and other

greenhouse gases into the atmosphere. In addition to adding heightened levels of greenhouse gasses, the ashes destroy the nutrients and erode the soil, causing flooding and landslides. Buildings and homes that lie within the path of a wildfire are destroyed, exposing hazardous materials that pose a threat on human health for first responders and during the clean-up process. Older homes built before the 1970's often contain a mineral called asbestos. Once asbestos is disturbed, the fibers become airborne and when inhaled can lead to the [development of pleural mesothelioma](#) in the lining of the lungs.

Wildfires are evitable although there are precautions that can help reduce the number of wildfires happening all over the world, prevention methods are essential to ensure wildlands, and those who live in and around them are safe. Ensure to extinguish campfires and fire pits when finished as if done incorrectly hot embers may cause a potential wildfire; tidy up the area to verify there is nothing that could catch fire from an errant spark and create clearings where all flammables have been removed. The width or radius of the clearing will vary with the conditions from ten to twenty-five feet. When in a mobile vehicle do not park a hot vehicle near an area with flammable tinder, when in the presence of gasoline ensure that no spillages occur as if met with the vegetation may trigger a wildfire. Do not dispose of cigarettes on the ground, cigarettes act as a fire starter when not put out correctly, if not doused properly and disposed of near flammable dry timber a wildfire is likely to occur. Due to wildfires being caused mostly by humans many procedures should be taken to reduce the risk of wildfires from transpiring.