

Weather Whiplash & Wildfire Risk: Why Wet Winters Aren't Enough

Winter's heavy rains may seem to promise a less severe wildfire season, but this assumption can be misleading. The relationship between winter rainfall and wildfire danger is complex, influenced by evolving weather patterns and the long-term impacts of climate change.

San Rafael native and UCLA climate scientist Daniel Swain describes California's current climate as increasingly subject to "weather whiplash." Historically, the state's wet winters and dry summers followed a predictable rhythm, supporting agriculture and ecosystems alike. Today, however, these wet and dry periods are becoming more intense. Heavy winter rains spur rapid vegetation growth, which then dries out during California's intensely arid summers, creating abundant fuel for wildfires.

The connection between winter rainfall and wildfire danger is far more complex, shaped by evolving weather patterns and the long-term impacts of climate change.

This dynamic is particularly stark in Marin County's Mediterranean climate, where summers can be some of the driest in the world with little to no precipitation. Even when yearly total rainfall seems average, the uneven distribution of rain leaves long dry spells that significantly increase wildfire risk. Climate change exacerbates this cycle by intensifying heat and dry periods. Rising temperatures amplify what Swain refers to as the atmosphere's "thirstiness." Essentially, the warmer the air, the more moisture it draws from vegetation and soils, leaving the landscape primed for ignition.

These shifting patterns mean wildfire seasons now start earlier, last longer, and pose greater risks.



When prolonged dry summers overlap with late autumn [Diablo winds](#), the risk of ignition becomes significantly higher and more hazardous.

Yet, we are not powerless. Practical steps like creating defensible space around homes, reducing fuel loads, and adopting fire-resistant landscaping can make a meaningful difference. Community-wide initiatives, like the work of Marin Wildfire, local Firewise Neighborhoods efforts, and ongoing public education helps us to adapt and protect what matters most. Understanding these trends and taking action now is essential to navigating Marin's changing climate and reducing wildfire impacts in the years to come.

Want to learn more?

[Listen](#) to a conversation with Ecologically Sound Practices, Marin Wildfire, and Daniel Swain

[Read](#) Swain's 2021 paper: A Shorter, Sharper Rainy Season Amplifies California Wildfire Risk

[Keep up](#) with Daniel Swain's research