

California's 2007 Firestorm

By Dr. Reese Halter

For millions of southern Californians including myself this past week has been a blur. Over 500,000 acres have been charred, almost 1,800 homes destroyed and at least six people are dead. And the now the public wants answers. Wall to wall media has descended upon southern California and I've been in the thick of the scrum.

Almost four years ago to the day southern California experienced another hellacious firestorm – 22 people died, 4,000 homes were incinerated and over 750,000 acres were burnt causing in excess of \$2 billion in damage.

How is it possible that just four years later another firestorm could inflict further devastation?

Welcome to a warmer world. Throughout the west and elsewhere this translates into droughts. Parts of southwestern U.S. are into the eleventh year of it. (Also southeastern U.S. is gripped by a fierce drought.)

The most precious natural resource we have is fresh water. And it's becoming scarce. The Los Angeles basin is home to about 16 million people. The freshwater that sustains the people and industries is derived from the snowpack of the eastern Sierra Nevada's – some 400 miles to the northeast. The 2006 snowpack was the second lowest ever recorded.

In addition, a 20 year survey examining tree growth along the Sierra Nevada range has revealed that significant tree mortality has resulted from drier conditions over the past couple decades. Moreover, tens of millions of thirsty pines throughout the state have been ravaged by western pine bark beetles and are now kindling.

Healthy trees are crucial for snow accumulation, slow springtime melt, and their awesome ability to filter and purify the melt-waters prior to entering streams and lakes.

Currently, southern California is enveloped by the worst drought since the inception of record keeping in 1877. Over the past 16 months a meager 3.75 inches of rainfall has fallen in the Los Angeles basin – the average for the period is 17 inches.

For the past 80 years or so there has been a Smokey Bear policy to suppress wild fires throughout California and the west. Yet all forest types have evolved to contend with fire. Humans have deliberately interrupted the fire cycle.

In California and elsewhere the structure and composition of the forests has changed as a result of fire suppression. In California, there are now hundreds of millions of highly volatile white fir and incense cedar seedlings and saplings carpeting the forest floor. On average the fire cycle in southern California, in valley bottoms, is about every 20 years. Normally, white fir and incense cedars do not accumulate like they presently exist.

There are hundreds of thousands of homes in southern California that are built along canyon mouths and at the urban/wildland interface.

The forests adjacent to these homes would normally have had surface fires which prevent combustible seedlings and saplings from accumulating. Since we stopped fire and built homes next to the forests we must now mimic a fire-like disturbance.

Californian prison inmates are used to fight fires. Ever since the 2003 firestorms there has been a movement afoot to have Governor Schwarzenegger utilize prison inmates whereby they exchange their chain saws for brush saws and begin to thin out these overcrowded forests. This is an enormous job that will take decades and unless prison inmates are employed at \$1 an hour the costs are otherwise prohibitive.

Each year, southern California experiences hot, dry winds called Santa Ana winds, named after the Santa Ana Mountains and canyons from which they blow. When a huge high-pressure system builds up over the Great Basin region of Nevada, southern Idaho and Utah strong winds in excess of 100 miles per hour pour into southern California through canyon mouths.

Santa Ana winds usually occur between October and February.

When ignition occurs the Santa Ana winds fan infernos like the firestorm of 2003 and that of October 21, 2007.

A warmer world has brought more intense and frequent wild weather. Since January 2005 strong Santa Ana winds have occurred in each month essentially continuously sucking out the precious remaining

water from southern California drought stricken forests.

Global warming has significantly affected the Santa Ana winds by increasing the efficacious effects year round.

Warmer temperatures, lower snowpacks, prolonged droughts, tens of millions of beetle-killed or water starved pines, continuous Santa Ana winds, and a Smokey Bear fire policy have all collided to form the perfect ingredients for yet another California firestorm.

Residents of southern California in particular but also people throughout the west can expect more fires in the decade ahead as greenhouse gases continue to rise and the weather gets wilder.

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