

The California Fires: A Desperate Race Against Wind and Flames

Fighting a Fire of the Future: Making a Stand Where Homes Can Be Saved

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ALTADENA, Calif., Oct. 28 — In this city where the sprawl of Los Angeles meets the scrubland of the San Gabriel Mountains, exhausted firefighters have been fighting what experts call the fire of the future.

Employing everything from air assaults to prison crews on the ground clearing away brush, firefighters have struggled for the last two days to outpace hungry wildfires and outwit the changeable Santa Ana winds while setting up a fire line to protect vulnerable homes at the city's fringes.

They have had to combine rural and urban fire-fighting techniques: to make frontal attacks on fast-moving and unpredictable brush fires, which, if they had been in uninhabited scrublands, would be allowed to burn free within a perimeter of fire breaks. This strategy is more and more common as more and more of California's homes have spread into canyons and up hillsides.

Hot Tub Can Save a House

"What we are seeing right now is what we have termed the fire of the future, with wildfires destroying large numbers of structures," said Karen Terrill, a spokeswoman for the State Department of Forestry and Fire Protection. "This is what we are going to see more and more frequently."

In places like Altadena, firefighters have also learned to make their stands where homes are defensible and abandon those that are closely surrounded by brush or trees.

The most defensible houses, Ms. Terrill said, are those with open space around them, with fire-retardant roofs or with swimming pools to provide water. "Hot tubs have been known to save houses," she said.

The Altadena fire, which still raged today on the hillsides but no longer threatened homes, has been an example of this new complex challenge, said Clark Pearson, an inspector with the Los Angeles County Fire Department.

On Wednesday, fire destroyed or damaged 115 homes and forced the evacuation of 500 others, injuring 29



Marissa Roth for The New York Times

The wildfire that swept Altadena, Calif., destroyed or damaged 115 homes on Wednesday and forced the evacuation of 500 other homes. The damage amounted to at least \$15 million. Harry Higley surveyed what was left of his home of 29 years on Kinneloa Canyon Road.

firefighters and causing at least \$15 million in damage as it swept through 5,500 acres along the northern edges of Altadena and Pasadena.

A row of blackened walls and chimneys was all that was left today of some of the exclusive homes overlooking the city along Kinneloa Mesa at the foot of the San Gabriel Mountains.

The police arrested a transient, Andres Huang, 39, who they say started the blaze after the nighttime campfire he built on a hillside on the edge of Angeles National Forest jumped out of control.

Mr. Huang was scheduled to be arraigned on Friday on a charge of setting an unlawful fire. He was not accused of arson; at least two of the

dozen other fires that have swept Southern California in the last two days have been attributed to arson. About 90 percent of the 12,000 large and small wildfires in California each year are caused by people rather than by other sources, like lightning.

The first report of the Altadena fire came at 3:49 A.M. on Wednesday, and the heavy response reflected the les-

sons firefighters have learned in recent years in responding to wildfires in urban areas.

Five engines, four hand crews, two helicopters and a bulldozer were called in, Inspector Pearson said. In most cases, the bulk of the crew would immediately withdraw when the fire was determined to be minor.

At first, the crew was overwhelmed.

Rural and urban fire-fighting techniques are combined.

The fire raced down scrub-filled Eaton Canyon, attacking a number of homes at the northwest edge of Pasadena.

As it threatened the city, a full-fledged mobilization was put into effect.

The first part of a four-pronged tactic included, at its height, 141 fire engines from around the state, mobilized on the streets to await the unpredictable spread of the fire from the brush-covered canyons and hillsides.

The second involved a half-dozen crews of 15 or so men and women, including prison inmates, who were dispatched onto the hillsides with picks and shovels to cut firebreaks. Most of the injuries to firefighters were among these crews, Inspector Pearson said, though none of the injuries were serious.

The third attack was by air, with a C-130 aircraft spreading fire retardant chemicals in the path of the blaze and six helicopters fitted with 360-gallon canisters, making repeated runs to dump water on the flames.

Finally, an air-ground assault was mounted, with helicopters ferrying crews into remote areas to cut fire lines, Inspector Pearson said.

The more California is threatened by these "fires of the future," Ms. Terrill said, the more sophisticated the crews become in combating them. But with virtually every fire, she added, "Mother Nature is more powerful than we are."

Firefighters are learning to be satisfied with small victories. "We have isolated successes here and there," Ms. Terrill said. "We have our biggest successes when Mother Nature settles down a bit."