

Lightning, Smoke and Fire: A Rigorous Response to Wildfire in Southwest Oregon

August 2013 - The smoke seems to penetrate the soul. It finds its way into every pore. It's hard to complete a sentence without a slight gag or cough. Rubbing the eyes only exacerbates the burning. The smoke has been here since July 26 and has no intentions of leaving soon. Its origin is southern Oregon, but it has spread as far as San Francisco. It reminds us of the fires that actively burn beneath it, in one of the most severe fire seasons in more than 25 years.

2013 takes its place in history

Each and every fire season is measured against 1987. And prior to that, the great Tillamook Burns of 1933, 1939, 1945 and 1951. The '87 fire season started early and finished late. On July 14, the human-caused Bland Mountain Fire near Canyonville burned more than 10,000 acres, reduced 14 homes to concrete foundations and took the lives of two men attempting to retrieve logging equipment. District resources kept human-caused fires at bay through aggressive initial attack – the first-line assault intended to put out fires quickly – for most of August, until a thunderstorm sparked fires throughout southern Oregon. By the time the smoke cleared and fall rains cooled the landscape, more than 200,000 acres had burned on lands protected by the Oregon Department of Forestry (ODF) and the U.S. Forest Service. With the 2013 season just under way – and more than 100,000 acres burned or burning and 5,000 firefighters on the ground in Southwestern Oregon alone – it is clear that this generation's 1987 is unfolding before us.

Lightning triggers fires – and an all-out response

Fire managers in southwest Oregon woke up the morning of Friday, July 26, to their stiffest challenge of the then-young 2013 fire season. Some 311 strikes from an unpredicted dry lightning thunderstorm had sparked 89 fires on public and private lands in Douglas, Coos and Josephine counties. Initial attack crews from the Douglas Forest Protective Association (DFPA), ODF, the Forest Service, rural fire departments and timberland owners joined forces to seek and suppress all fires. Seventy-seven of the 89 starts were successfully contained. Although overwhelmed by the number of fires, crews felt confident that all of them could be corralled. But afternoon wind blew the flames over containment lines on a few fires that proved too difficult to stop.

Adverse weather conspired with heavy loads of extremely dry fuel and remote, steep terrain. The combination outstripped available firefighting capacity and led to significant growth for about five fires. By Sunday, July 28, fires that threatened residents, infrastructure, natural resources and recreation were reported by DFPA, ODF, the Forest Service and the U.S. Bureau of Land Management (BLM), on both private and public lands.

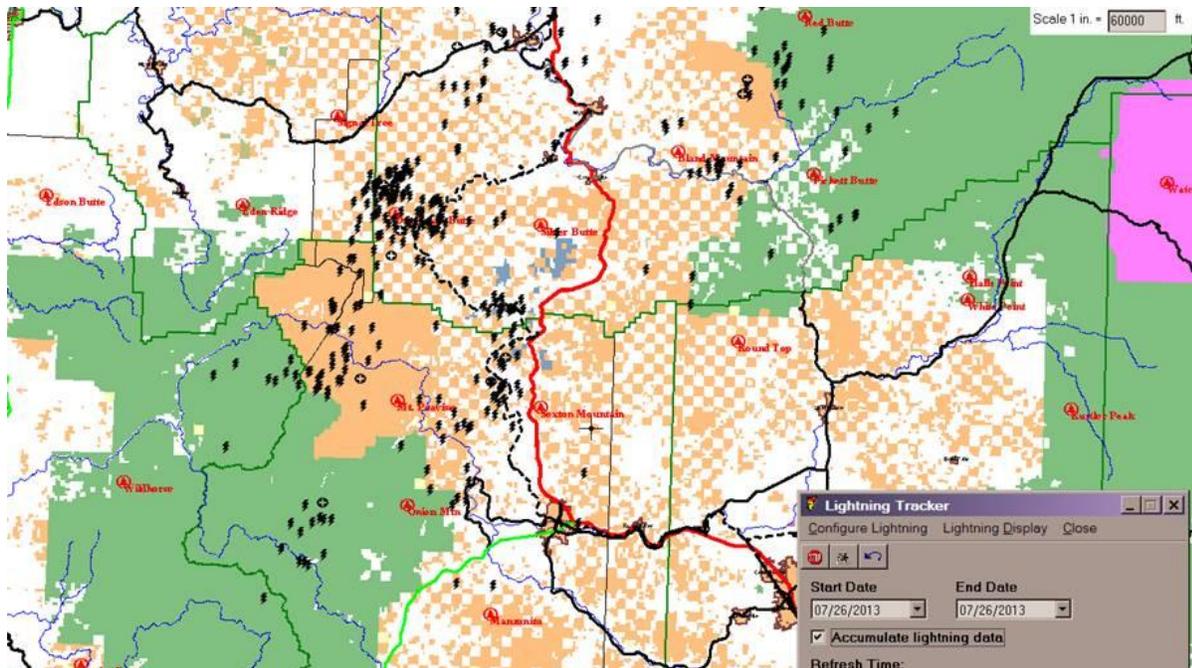


Chart shows lightning strikes across Southwestern Oregon on July 26, 2013

A threat long in the making

The prospect of a severe fire season took shape well before that late July day. Through the winter and spring, meteorologists predicted high potential for large summertime fires, based on a below-average snow pack, early snowmelt, low fuel-moisture content and ongoing drought. But the final piece of this ominous puzzle, the timing of dry lightning events, couldn't be predicted months in advance. When the lightning hit, it capped Medford's hottest, driest July since record-keeping started in 1900.

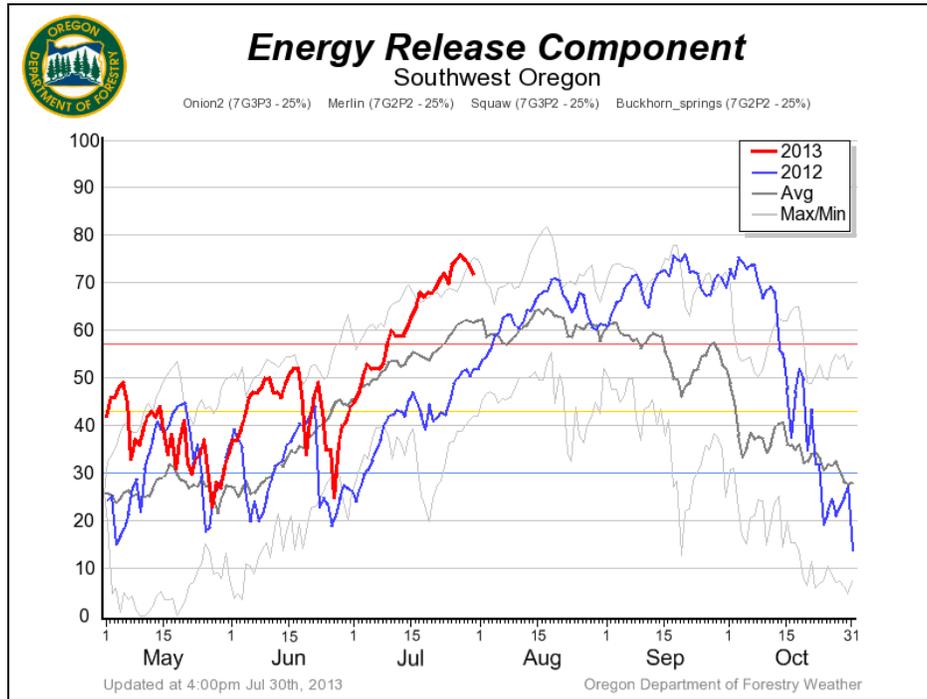
Human factors played into the mix as well. By the end of May, the number of human-caused fires across Oregon had doubled the 10-year average, and acres burned were more than triple. It wasn't necessarily that people were being less cautious, but rather that extreme fire danger left little margin for carelessness.

Lightning made an early appearance as well, peppering the region in early May with 43 fires, seven times the average for that time of year. In an unprecedented move so early in the season, the Rogue River-Siskiyou National Forest deployed smokejumpers on a back-county fire on the Siskiyou Mountains Ranger District.

The numbers don't lie

On the surface, it seems obvious when fire danger is high. Two words that come to mind are hot and dry. But how do we know when fire danger hits extreme, and when the slightest spark can lead in short order to a raging wildfire? Fire behavior analysts look deep to determine just what it takes for a fire to start and how it will spread. One tool is the Energy Release Component (ERC), a number related to the available energy within the flaming front at the head of a fire. As fuels dry, the ERC values go up. Fire danger moves from low to moderate when the number surpasses 30, to high at 42, and to extreme above 59. Record ERC numbers occurred daily during the last half of July in southwest Oregon. The stage

was set for an event that would stretch natural resource protection agencies in a way not seen in many years.



On top of that, Predictive Services from the National Weather Service in Medford issued a Fuels and Fire Behavior Advisory for Southwest Oregon on July 20, warning that fuel moistures were at levels typically seen in mid to late August. There was also a chance, although slight, that thunderstorms with little or no moisture could come up from northern California through southern Oregon.

None of this surprised fire managers. ODF's Southwest Oregon (SWO) District had been chasing fire the previous week, and since May. The human-caused Pacifica Fire on July 19 burned 500 acres and threatened several hundred homes in the wildland-urban interface, triggering a federal disaster declaration. The Brookside Boulevard Fire burned 70 acres the day before, and the Stratton Creek Fire accounted for another 32 acres on July 4. DFPA, just north of SWO, suppressed 21 fires in May alone that burned 260 acres. July 4 also proved busy for them: They responded to a 160-acre fire on Bland Mountain, historically known for large fires.

Agencies pool resources to meet the threat

Using a system decades in the making, fire protection agencies across Oregon and the Northwest responded collectively to the July 20 advisory by ramping up and prepositioning resources (aircraft, equipment, fire crews) to areas of the most concern. For instance, through an agreement with BLM during extreme fire danger, DFPA was able to bring on an extra helicopter in anticipation of the forecasted thunderstorm activity.

As always, every attempt would be made to catch ignitions during initial attack. The threat of lightning subsided by midweek and the consensus was that the region had dodged a bullet. Two task forces of engines returned to their home base on July 25 when the threat was judged to have passed.

When the storm hit the following day, the first indication of trouble appeared on remote fire detection cameras. Local resources answered the call and reconnaissance aircraft took to the skies. ODF and Forest Service staff immediately mobilized aviation resources that had been allocated for such an event. Additional fire fighting resources had been secured through the newly implemented state Wildfire Protection Act, allowing ODF to move more resources, such as air tankers, helicopters and fire crews into position for initial attack. On this occasion, an extra retardant-dropping air tanker was added, bringing the total in the area to three.

Early reports revealed 30 to 40 fires throughout southwestern Oregon. As previously undetected “sleeper” fires smoldered under the forest canopy, the number climbed closer to 90 by day’s end. Southwest Douglas County was hit hardest, with more than 50 fires burning independently or merging to form larger fires. ODF’s Grants Pass Unit faced similar challenges.

Priorities were set based on location, threat and potential of each fire. Crews worked tirelessly from fire to fire as the challenge grew. Despite the barrage of fire starts, crews, equipment operators and aircraft had stopped most blazes at under 10 acres, and at 1 p.m. the situation looked promising for the fires burning in Josephine County. That all changed when afternoon winds hit shortly after 3 p.m.

More help arrives

The fires grew rapidly in size and complexity, and incident management teams were called into the region to bring capacity and a reprieve for local crews. ODF’s Incident Management Team 2, made up of agency employees from across the state, got the call to relieve DFPA and manage the Douglas Complex, the largest of the fires and at that time the highest priority incident in the country. Governor Kitzhaber declared a State of Emergency for Douglas and Josephine counties. The announcement followed a previous conflagration order, which had authorized the State Fire Marshal to mobilize structural firefighters and equipment to assist local resources battling the fires and working to protect homes and other buildings. The State Fire Marshal managed the fire jointly, demobilizing in early August.

ODF’s Incident Management Team 3 – another complement of employees from across the agency – was deployed to battle the Brimstone Fire, and an interagency Type 1 team was assigned to the Big Windy Complex, burning on BLM Medford District lands under ODF protection in the Wild and Scenic Rogue River corridor. Other interagency teams took on the Umpqua National Forest’s Whiskey Complex (3 fires) and the the Rogue River- Siskiyou National Forest’s Labrador Fire.

Within three days of the big lightning storm, 3,600 firefighters, 17 helicopters, 142 wildland fire engines, 22 bulldozers, and as many as six state and federal air tankers were on the front lines beating back flames and building containment lines on more than 30,000 acres. Mobilized through the State Fire Marshal, 5 task forces representing 24 state, county and rural agencies with 74 firefighters protected homes and other structures, and responded to new fires.

Through a Multi-Agency Coordination Group assembled early on, ODF, the Forest Service and BLM worked closely with the five incident management teams to determine critical resource needs based on fire behavior and threat to life, natural resources and property. Resources brought in through this group allowed each fire team to meet pressing needs at critical times.

A crucial aspect of dealing with multiple fires is sharing information with the public, media, cooperators and partners. To do this, a Joint Information Center (JIC) was established at the Grants Pass Interagency

office. Representatives from each fire provided updated information to the JIC, which also served as a call center for Josephine and Douglas County residents seeking information on the fires in their area.

The July 26 lightning event brought together wildland fire protection agencies, the structural firefighting community and timberland owners and operators, all to protect communities, natural resources and property. Ownership boundaries faded into the landscape as everyone worked together to meet goals, and to limit damage and firefighting costs. The battle against these fires rages on. Each situation is different, from the Douglas Complex burning close to the community of Glendale, to the Big Windy Complex in remote and largely roadless terrain near the Rogue River.

Especially when mixed with extreme fuel and weather conditions, uncontrolled wildfire threatens safety, forest resources of all kinds, and our health. Which returns us to our starting point: pervasive smoke, serious degradation of air quality in some communities, and a reminder that the 2013 fire season is far from over.

A plea for caution, and a look ahead

As firefighters continue their work, it's extremely important to prevent human-caused fires. A week before the July 26 thunderstorm, ODF's Southwest Oregon District was mopping up the human-caused Pacifica Fire. In an effort to draw the public's attention to the extreme fire danger, ODF partnered with the Forest Service and the State Fire Marshal for a statewide fire prevention awareness campaign. Five television spots, made possible through a federal grant, were produced and began running with smoke still in the air. While visiting the Douglas Complex on August 3, the Governor added his voice, filming a public service announcement from the fire camp.

The prevention message is crucial, as the 2013 fire season stretches out before us, and the threat of lightning persists. As ODF Fire Operations Manager Doug Grafe said of the agency, a tradition of aggressive initial attack has created what amounts to a world-class sprinting organization. Now the department and its partners are running a marathon, and that requires pacing and persistence. Working together, and with support from communities, landowners, the state as a whole, and assistance from beyond the Pacific Northwest, natural resource agencies will reach their fire protection goals – and will provide the protection and service that the public expects.