

NACD FORESTRY NOTES presents...

COST OF FIRE

A Special Report

The (true) cost of fighting wildfire



In 2006, Forestry Notes published a special report on the growing costs of managing wildfires across the country. Nearly a decade later, the problem continues to grow, but with better cost analysis and tracking figures to paint a more accurate picture of the true devastation catastrophic wildfire is having on America's public and private forest lands.

For decades, wildfire damage was measured by acres burned, buildings devoured, and the estimated cost of putting the fire out. It was simple math, and the figures were scary enough that few bothered to take a deeper look at just how bad the problem really was. More recently, wildfire resource managers have tried to calculate the real cost of fire. But it's an imposing task; some factors take years to fully realize, while others such as loss of life are incalculable.

"I don't know if there's such a thing as an accurate number," admits Lisa Dale, who works for the Colorado Department of Natural Resources. "I do know we're getting closer to that number."

A few years ago Dale gave it a shot. She authored a 2009 publication for the

Western Forestry Leadership Coalition (WFLC), *The True Cost of Wildfire in the Western U.S.*, that examined the direct and indirect costs of six well-documented fires that had occurred between 2000 and 2003 (Montana's Canyon Ferry Complex Fire, the Cerro Grande Fire in New Mexico, the Hayman and Missionary Ridge Fires of Colorado, Arizona's Rodeo-Chediski Fire, and the Old, Grand Prix, Padua Complex Fire in California).

At the heart of Dale's findings was the same point fire specialists had been arguing for years – that suppression costs alone cannot tell the full story of wildfire. There are educational materials. There are unaccounted for supplies. "And the Red Cross is handing out PB&J sandwiches," quips Dale.

What of the damage caused by the flooding that follows the fire? Or the empty streets in the town that relies on tourism to keep the local economy afloat? The fire itself can come and go in a matter of weeks; in some instances it can take decades to repair all the fire consumes. By then those totaling the suppression costs and damage have long gone home.

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Districts can help with fire

The Community Wildfire Desk Guide and Toolkit – released by NACD in 2009 – illustrates the power of conservation districts. Time and time again, both before and after the fire, districts have proven valued partners. And during the fire districts can offer fire management teams and local residents support, evidenced this summer by Washington's Okanogan Conservation District.

Soon after the Carlton Complex Fire began the district worked to prepare local residents for life after the fire. The district helped collect data from landowners in need and organized a Carlton Complex Recovery Resource Fair, where more than a dozen natural resource agencies and organizations visited with landowners to address concerns regarding post-fire recovery of the landscape.

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Dale believes the evolving science of tracking wildfire costs finally has the ear of state and federal policy makers. She is asked to provide regular input to the Colorado governor and state legislators, and last year was invited to serve on a special Colorado wildfire and insurance task force.

“We used to just say ‘36 homes burned,’” she says. “Now it’s, ‘44 homes burned, this many roads closed, this many families displaced and so on, and so on.’”

As fire cost investigators like Dale find out, fire’s reach stretches well beyond the communities and lands it disrupts, and the indirect costs often exceed the number the public is given (WFLC estimates real fire costs are two to three times the suppression total).

But before taking a look at the ‘true’ costs of fire, it is best to get an understanding for what’s driving up the ‘old’ numbers in recent years...

WUI: Catalyst for increased suppression costs

A favorite acronym among fire managers is WUI, or wildland urban interface – that which describes areas where civilization has ventured into the wild. It represents a boy’s dream – a Jeremiah Johnson-like adventure – but it’s also become perhaps the biggest factor in the fight to control wildfire spending. Many homes built in the WUI come with a considerable price tag. They are hidden, by design, but also vulnerable to the elements and difficult for fire and emergency response professionals to reach.

Although fire response agencies have differing priorities, all take action to protect lives first. During the fire season, a large percentage of available resources are assigned to combat fire in the WUI, often leaving thousands, if not tens of thousands of unattended public acres burning simultaneously.

And the WUI is growing. According to a 2013 report commissioned by the Forest Service, of the estimated 47 million homes located in high-risk fire areas, 10 million were built in the past decade alone. Colorado State University predicts that Colorado’s urban interface will grow from 715,000 acres in 2000 to 2.1 million acres by 2030. Wrote former Forest Service Associate Deputy Chief and one-time Director of Colorado State Parks Lyle Laverty in the Summer issue of *National Woodlands* magazine, “The two principle causes (rising fire suppression costs) are the accumulation of hazardous fuels on the nation’s wildlands and the continued urban development in and near these areas.”

Adding fuel to the fire: The ‘lost’ costs

Wildfire draws out a range of emotion from the people it touches. There is the fear of the unknown, the anger of why, the stress brought on by discomfort. For many, depression sets in and can have a lasting effect, often requiring the treatment of professionals and medication. These bills will never show on a post-fire balance sheet, even though they can clearly be linked to the blaze.

This summer, wildfire consultant Ann Walker was dispatched to the Waterman Complex in Mitchell, Oregon, where the average age is 78. Some of the townspeople were less concerned with the loss of their homes than the stress on the local water supply. ‘If the water goes away, this small community goes away,’ they told Walker.

At one point, the city was told that Highway 26 would need to be closed for a week, virtually isolating the small community from the outside world. “For some fires, this would seem a small sacrifice,” says Walker, “but for these folks it meant a delay in the shipment of the prescription medication they need. That put a whole different spin on the problem.”

Fear, anger, stress... How can one measure emotional damage? “You can’t,” admits Walker, “but it’s real.”

In 2012, Manitou Springs, Colorado experienced flooding for months after the Waldo Canyon Fire. “Not one event, or a day of flooding, but several events,” says Walker. “How do you calculate the costs incurred by the community’s emergency actions and negative impacts to recreational activities that are the lifeblood of these rural economies?”

And what of the wildlife habitat improvements ruined by wildfire? Consider that it can cost millions of dollars to protect sensitive species habitat. Fire has the potential to wipe away that investment.

Insurance is another matter. According to Dale, whereas uncovered loss due to wildfire is added to final calculations, those damages covered by insurance are often left off. Certainly the insurance companies, Dale argues, view those as costs, even if no one else chooses to.

The Oregon Department of Forestry pays a \$2 million annual premium for the insurance policy it has with Lloyds of London. The state has tapped into the policy – which carries a \$25 million deductible – the past two years; figures from this year’s fire season were more than triple Oregon’s 10-year average.

Walker adds that there is no way of fully tracking the costs associated with community support teams that assist fire teams, or the lost wages and inconveniences incurred by the families evacuated during the fire.

“While we focus solely on protection of lives when putting out the fire, we sometimes lose sight of the long-term effect it can have on daily life,” she says.

As wildfire resource managers gain more information they are able to paint a more accurate picture of the full impact of catastrophic wildfire. And the creation of the National Cohesive Wildland Fire Management Strategy, established in 2010 and approved by the Wildland Fire Leadership Council, the highest collaborative wildland fire management committee in the Nation, has helped pull stakeholders together. Through the development of the Strategy, stakeholders established guiding principles and core values, and the Strategy takes a holistic approach to the future of wildland fire management, recognizing the interconnectedness of resilient landscapes, fire-adapted communities, and wildfire response.

“There is still so much to do, including implementation of updated performance measures for federal agencies and addressing the National Barriers and Critical Success Factors determined by all three regions,” says Walker. “But I believe we’re on the right path.”



CASE STUDY: California's Mokelumne watershed

Kim Carr accepted the task of contributing to a wildfire cost analysis project a few years ago with the hope of alerting central California policymakers that “the big one was coming” and before the publication wrapped the state was devastated by 2013's Rim Fire.

The cost analysis project recruited representatives from the Sierra Nevada Conservancy, The Nature Conservancy and Forest Service to look at the potential benefits fuel treatments might have on the Mokelumne watershed. The Rim Fire only reaffirmed what the group suspected. “It demonstrated how conservative our estimates are,” says Carr, Sierra Nevada Conservancy's sustainability specialist.

The Rim Fire covered more than 250,000 acres with suppression costs estimated at \$127 million, but a report commissioned by California Governor Jerry Brown found that number to be five times greater.

“The counties surrounding the Rim Fire suffered a huge loss in the weeks after the fire when they were smoked out of peak tourism season,” says Carr. “For so long we just looked at the environmental impact and it's time we take a closer look at the economic impact.”

The report, *Mokelumne Watershed Avoided Cost Analysis: Why Sierra Fuel Treatments Make Economic Sense*, focuses on avoided wildfire losses and cost savings. The group analyzed the size and intensity of five potential representative fires based on fire history in the region, current forest conditions and state-of-the-art wildfire models. It relied on the model to identify how active forest management would likely modify wildfire behavior and post-fire erosion over a 30-year period.



The report, finalized in April 2014, offered the following conclusions:

- Fuel treatments can significantly reduce the size and severity of wildfires

The fuel-treatments model scenario reduced the size of the five fires by 41 percent, and it reduced the number of high-intensity burned acres by 75 percent.

- The economic benefits of modeled fuel treatments are two to three times the costs

To come to this conclusion, the group subtracted the value of structures saved from wildfire and the costs of fire suppression and post-fire restoration, and credited potential revenue from carbon sequestration, merchantable timber and biomass that could be used for energy.

- There are many beneficiaries from increased fuel treatments, especially taxpayers

According to the report, the primary ben-

eficiaries of fuel treatments are the State of California, federal government, residential private property owners (and their insurers), timber owners, and water and electric utilities. The report also assumed jobs created by fuels treatment work.

Since the release of the report, Carr has been flooded with requests to present the group's findings. Lately, she says, she has received requests to speak at water quality seminars. “The California drought has a lot to do with that. Water holds the highest value of all resources in western states.” And water, Carr believes, could be the indirect factor of wildfire that finally gets policymakers to sit up straight and take notice.

“(Before) we were not telling the full story,” she says. “We need to account for associative costs and evaluate whether money would be best spent on the front end.”

Wildfire's stranglehold on federal programs

In a column he penned this past August, USDA Secretary Tom Vilsack wrote of escalating wildfire costs: “Year after year, fire seasons grow longer and longer, destroying homes, threatening critical infrastructure and the watersheds that provide clean drinking water to millions of people.”

According to statistics provided by the National Interagency Fire Center (NIFC), the average number of burned acres over the past decade (2004 to 2013) was 7.2 million per year – a 66 percent increase over the decade prior. But the bigger problem is agency spending. As Vilsack pointed out, in 1995, wildfire suppression accounted for 16 percent of the Forest Service's annual budget; today, firefighting accounts for 42 percent of Forest Service spending. The Forest Service had to transfer

\$440 million from other programs to assist firefighting in 2012, and \$505 million last year.

It doesn't take a forestry degree to understand the vicious cycle: more money spent on fighting fire means less money available to nurture America's forests, which in turn leads to more fires and so on. “A fix is needed, and needed urgently,” added Vilsack. “The current system is untenable, dangerous, and simply irresponsible.”

Most land managers agree fire can be a valuable tool in the long-term management of forest lands. The problem is the intensity of these recent fires seasons. Neglected forest land is thick with understory that acts as kindling; well-managed forest land is less likely to burn as hot or as quickly.

The solution is simple: invest in the forest

before the fire. But how?

This summer, President Obama proposed the Wildfire Disaster Funding Act, which aimed to limit wildfire's ability to steal from other agency program budgets. It was the fruit of bipartisan efforts to solve wildfire's two-decade-long financial stranglehold on agency spending. But it was a tough summer to sell wildfire spending reform; for just the second time in the past decade less than four million acres burned in the U.S. Still, even in a “good year” wildfire made national news regularly, ravaging Southern California early and Northern California late, and setting records in Washington State sometime between.

For at least another year, the vicious cycle continues...

Districts... continued from front page

“People are happy to have someone to turn to, and if we don’t have the answer we can steer them in the right direction,” Okanogan Conservation District Education and Outreach Coordinator Kirsten Cook said.

Here are more examples that showcase the many ways America’s conservation districts are able to help combat wildfire...

- Oregon’s **Douglas Soil and Water Conservation District** (SWCD) uses Title II funding from the Bureau of Land Management (BLM) and U.S. Forest Service to help local landowners purchase water impoundments used to assist in local fire-fighting efforts.

According to District Manager Walt Barton, ponds are strategically located to allow for helicopter and tanker truck access during times of emergency. The goal is to place ponds no more than six miles apart. “It might mean the difference between getting a fire contained or it getting out of hand,” he says.

Barton says the program cannot keep up with landowner demand.

- California’s **Placer County Resource Conservation District** (RCD) is the managing partner of one of the state’s most successful community chipper programs.

The program not only assists the county in encouraging landowners to abide by the state’s defensible space requirements, but it also limits the number of potentially dangerous fires that can occur when landowners choose to burn their slash piles. Says Rui Cunha, Assistant Director of Emergency Services for Placer County, “Every year there are incidents where property owners do burning and we have escaped burn piles – usually two or three times a year, all over the county. Having a pro-



Residents and resource managers gathered for the Carlton Complex Recovery Resource Fair organized by Okanogan Conservation District.

gram such as this one that offers an alternative to burning is a very, very valuable tool.”

- The **Apache and Navajo Natural Resource Conservation Districts** (NRCD) both played a key role in assisting with fuel treatment work credited by the Forest Service for slowing Arizona’s Wallow Fire in 2011. The work began with a \$1 million grant award through University of Arizona Extension. Part of Navajo NRCD’s work included helping to organize the state’s first Community Wildfire Protection Plan (CWPP).

Said Springerville District Fire Management Officer Rob Lever in the report: “Without the fuel treatments, I would never have had a firefighter there.”

- Through a memorandum of understanding (MOU), New Mexico’s **Claunch-Pinto, Ciudad, Edgewood and East Torrance SWCDs** have coordinated forest thinning projects with more than 200 landowners –

some projects as small as one or two acres, some as large as a few hundred acres.

Claunch-Pinto SWCD District Manager Dierdre Tarr estimates the group has thinned 400 acres a year. The secret, she says, has been the districts’ ability to match federal funds, administered through the New Mexico State Forestry Division, with funds provided by the local Water Trust Board. The program’s 20 percent cost-share option is attractive to the area’s low- to moderate-income residents.

Project work is guided by a watershed steering committee made up of representatives from more than a dozen organizations, including each of the four participating districts. The committee also includes representatives from the U.S. Forest Service, the New Mexico State Forestry Division, the New Mexico State Land Office, and the New Mexico Forest and Watershed Restoration Institute.

Resources

The True Cost of Wildfire in the Western U.S.

Several case studies within this report illustrate a range of the full extent of fire impacts. www.wflccenter.org/news_pdf/324_pdf.pdf

Community Wildfire Desk Guide and Toolkit

This package of materials was designed for use by conservation districts, RC&Ds and Extension professionals who assume roles during pre- during and post-fire efforts. www.nacdnet.org/policy/community-wildfire-desk-guide-and-toolkit

NIFC

The National Interagency Fire Center (NIFC) is the nation’s support center for wildland firefighting. The group’s website offers a wealth of fire statistics. www.nifc.gov

WFLC

The Western Forestry Leadership Coalition (WFLC) represents a unique partnership between the Council of Western State Foresters and federal government forestry leaders. The Coalition is comprised of 34 members from across the federal and state agencies of the west. <http://wflccenter.org>

Ann Walker Consulting

Ann’s areas of expertise include project management, community wildfire planning, interagency fire dispatch management, and bipartisan wildfire and forest policy/legislative analysis. She is currently working for the Western Governors’ Association, FireWatch America and the Oregon Department of Forestry. 541-993-1139 annwalkerconsulting@yahoo.com

Earth Economics

Earth Economics provides “robust, science-based, ecologically sound economic analysis, policy recommendations and tools to positively transform regional, national and international economics, and asset accounting systems.” www.earthconomics.org

Mokelumne Watershed Avoided Cost Analysis: Why Sierra Fuel Treatments Make Economic Sense

The report analyzes the size and intensity of five potential representative fires to identify how active forest management would likely modify wildfire behavior and post-fire erosion over a 30-year period. <http://www.sierranevada.ca.gov/our-work/mokelumne-watershed-analysis/MokeExSummaryFINAL.pdf>