Biden climate plan aims at Western wildfires

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If every person in the United States started driving electric cars powered by wind turbines tomorrow, and each country on earth agreed to dramatically reduce greenhouse emissions, the West Coast would still see catastrophic wildfires in the coming years and decades.

Climate change has tilted the future toward more fire and that's unlikely to change in the short term, experts say, even as President-elect Joe Biden unveils a climate plan aimed at combating human-caused warming of the planet.

"Even with a really good climate plan, we will still see decades of warming," said Chris Field, director of the Woods Institute for the Environment at Stanford University. "There's a lot we can do to reduce the risk of catastrophic fires, but when we think about those next steps, they need to be taken in the context that climate change will likely get worse in the next three to four decades."

The 2020 wildfire season was among the worst on record across the West Coast. More than 5 million acres burned in California, Oregon and Washington. Tens of thousands of homes were destroyed and 44 people killed.

Since 1895, the average annual temperature in California has increased by about 3 degrees, from 56.5 to 59.5 degrees. That's similar to Oregon and Washington and to other states across the West, Field said.

Aggressive action could limit warming to 3.6 degrees or less, compared to preindustrial levels, while continued high emissions could mean warming up to 7.6 degrees by 2100, according to the International Panel on Climate Change.

Biden's $1.7 trillion, 10-year plan for aggressively reducing greenhouse gas emissions and moving to a 100 percent clean energy economy no later than 2050 could help stave off the most catastrophic wildfire scenarios, particularly in the second half of the 21st Century, but it's not a cure-all.

"You have to start somewhere," said Erica Fleishman, director of Oregon Climate Change Research Institute at Oregon State University. "Even if the actions of today aren't seen in your lifetime, a lot of people want to think about their kids or grandkids and what kind of world they're going to live in."

In the meantime, say fire experts, aggressive action is needed to improve forest health and transform communities into places equipped to handle a future of more and bigger fires.

In this story, we'll look at how climate change has fueled larger and hotter fires, and the things experts say we can do now to mitigate the worst type of disasters.

Damage to the Oak Park Motel caused by the Beachie Creek wildfire is seen in Gates, Oregon on Sept. 18, 2020. BRIAN HAYES / STATESMAN JOURNAL

California firefighters on the front line of climate-fueled fires

Ground zero in the explosion of large and powerful wildfires is California, which saw over 4 million acres torched this season — far more than any other western state.

"Many firefighters are experiencing 'career' fires — what would normally be the most dangerous and destructive fire of their career — nearly every year," California Department of Forestry and Fire Protection spokeswoman Christine McMorrow said.

McMorrow said fire season has increased by 75 days across the Sierra Mountains, due in large part to a smaller snowpack in the mountains that melts earlier, due to warmer spring and summer temperatures that, in turn, dries out the forest and turns the state into a tinderbox by late summer and autumn.

Once fires do arrive, warmer nighttime temperatures leave firefighters less time for overnight recovery, while hotter daytime temperatures fuel growth.

Taken together, the result has been fires that roar with historic speed and intensity.

"The biggest change in fire behavior has been the incredible increase in rate of spread," said Timothy Ingalsbee, executive director of Firefighters United for Safety, Ethics, and Ecology. "Wildfires are hopscotching across the landscape, leap-frogging across fireline, roads, rivers, and other typical barriers to fire spread. The conventional tactic of 'anchor, flank, and hold' until crews can pinch off the headfire is not working, both because climate change-fueled severe weather conditions are not abating and because fires spread rapidly in all directions."

Ingalsbee noted that during Oregon's Labor Day fires — an event fueled by 50- to 75-mph dry winds last September — the Holiday Farm Fire roared 20 linear miles in just five hours.

"That rate of spread is beyond the living experience of anyone in fire management today," he said.

Drier forests in the Northwest

Drier forests are beginning to become more common in Oregon as well, a place so famous for being wet its state university's mascot is a duck.

This past Labor Day, the worst wildfires in state history roared into populated areas with a speed and force never before seen.

While a historic windstorm was the main reason, a quarter of the state was also mired in an extreme drought, something that's been increasingly common over the past two decades and particularly since 2015.

In the past two decades, only 2006 saw no drought whatsoever in Oregon and 16 of the past 20 years have seen some level of severe drought.

U.S. Forest Service fire analyst Rick Stratton said the Pacific Northwest is the place that's changing the quickest in terms of how likely wildfires are becoming.

"In the last 15 years, we've seen some places double or triple for burn probability," Stratton said. "(Oregon's Labor Day fires) were an extremely rare weather event, but a takehome is that most places in Oregon are now a potential fire environment. We have to understand that if conditions are right, that this can happen."

The loss of the West's mighty forests?

Drought hasn't just led to conditions ripe for wildfire in California, it's killed off an estimated 147 million trees, Cal Fire officials said.

And dead trees make explosive fuel for wildfires.

The 2020 Creek Fire, the largest single fire in state history at 379,895 acres, burned in an area of "significant tree mortality which was due to a bark beetle infestation caused by several years of severe drought," McMorrow said.

And the health of forests is a paramount concern, stressed Field. The western forests of the United States store massive amounts of carbon dioxide, and when they burn up, that storage is lost, leading to a negative feedback loop where bigger fires fuel more warming, and more warming brings more fire.

"When you look around the world, less than half the emissions from fossil fuels stay in the atmosphere while the other 55 percent are taken up in oceans and forest — we get a huge subsidy from forests," he said. "Wildfires push us in the opposite direction."

Long-term, Fields said, stakes couldn't be higher.

"I actually think the terrifying thing is that we need to avoid losing the forest across the Western United States," he said. "It's not that crazy. We have 30 million acres of forest in California and we burned 4 million in 2020. We could lose a majority of forests and the foothills could become so unsafe communities can't remain there. Forest protection needs to be a very high priority."

The rise of invasive plants prone to wildfire

It's not just dry forests and heat that's fueling wildfires. In some cases, climate change has changed the ecosystem in a way that can accelerate wildfires.

Fleishman has studied the rise of cheatgrass, an invasive plant that's been spreading across the Great Basin and the inland West, near cities such as Reno, Boise and Salt Lake City.

An invasive species that's believed to have arrived from Central Asia in the 1800s, cheatgrass is highly flammable and appears to be well-suited to the warm and wet winters, and hot, dry summers climate change is bringing across the West.

"Cheatgrass does really well with the type of rainy, wet winters we've been seeing and are expecting to see in the future," she said. "And when it dries out in the summer it becomes extremely flammable."

In areas where cheatgrass has become dominant, acres burned has increased 200 percent since 1980, Fleishman said.

"It's a big deal," she said.

Five big things we can do now to slow wildfire

Experts studying the effects of climate change on wildfires in the West point to four specific areas where people need to adapt as blazes grow deadlier and more destructive.

- Forests need better management.
- Homes built in areas where fires thrive should be more fire resistant.
- The threat of wildfire should be part of planning for new neighborhoods and other developments.
- Fire agencies need to stop aggressively fighting every fire, a policy they say has contributed to forests that have grown too dense.

So far, though, not enough is being done to address how climate change has contributed to making fires larger, more intense and more frequent.

"We're getting our butts kicked, to be blunt, spending more money and getting more fatalities and not being more effective, so we've got to address our fire management system," said John Bailey, a forestry professor at Oregon State University.

Using fire to fight wildfires

Climate change, coupled with aggressive fire management over the past 100 years or so have left forests overgrown and dense, causing them to burn hotter and faster during fires.

Communities across the West, especially where people live in the "wildland urban interface," need to do more controlled burns designed to reduce the amount of thick underbrush.

Fire managers say removing the underbrush keeps fires from growing up from the forest floor to the tree tops and killing bigger trees.

When trees and brush are thinned out, fires tend to burn less intensely. Much of California evolved to occasionally burn, but in the past 100 years, fire agencies have prevented that natural process.

Prescribed burns bring fire back, but it is used under controlled conditions and when the weather allows it.

"Before we went in and put out everything, fires were less intense and not as devastating. They didn't wipe everything out," Bailey said.

Nearby communities need to learn to live with some smoke from controlled burns, but it's a trade-off for reducing the risk of deadly, fast-moving blazes in the summer, he said.

"How do you like your smoke? Do you like it as these big wildfire massive events that trap you in your house a week at a time or some prescribed burning smoke in the spring and the fall when weather conditions aren't too bad," he said.

Since California's deadly Camp Fire, which killed 85 people and destroyed the town of Paradise in November 2018, state officials have increased the amount of prescribed burning annually, said McMorrow.

The state and U.S. Forest Service, which owns roughly half the forest land in California, have agreed to set fire to 1 million acres a year as prescribed burns by 2025, she said.

Even if the state reaches its goal, a million acres a year is a small fraction of the thinning needed statewide, said Rebecca K. Miller, a graduate student and researcher at Stanford University.

About 20%, or about 21 million acres, of California's forested areas need some type of prescribed burning or other fuel reduction treatment, she said.

Oregon needs $4 billion for fuels treatments

While California has invested heavily in home protection and forest management, Oregon is just beginning to ramp up its process.

In a special legislative session last month, Oregon's legislature approved $100 million for wildfire recovery and prevention — that could include a number of projects aimed at protecting communities and thinning forests.

Oregon Gov. Kate Brown has also proposed treating 5.6 million acres of forestland across Oregon, which her wildfire council estimated would cost about $4 billion.

But how that huge number would actually be paid for remains unclear.

Letting some fires burn

But along with forest thinning, experts say state, federal and local agencies also need to change the way they fight wildfires.

"We've got to change our fire management system that still to this day runs and puts out every fire, even under those conditions where we're wanting to prescribe burn, where we extinguish the fires just because that's the easiest decision to make, the lowest-risk decision to make," Bailey said.

"But that's not necessarily the best long term-decision because all that does is kick the can down the road to when it's hot, dry and windy," he said.

For decades, wildfires in some areas of Baja California in Mexico have been left to burn, keeping the forests and chaparral thinned out. As a result, blazes there don't burn as intensely, said Stephanie Pincetl, a professor at the UCLA Institute of the Environment and Sustainability.

"The Mexicans haven't been able to afford this kind of vast firefighting infrastructure that we have, and so they just let the fires burn. And you know what? They don't have the catastrophic fires because they haven't fought the fires. And they have low-intensity fires that were the norm in California before we decided to prevent burning," Pincetl said.

Building homes to survive the next wildfire

In addition to changing the forest, communities need to adapt, experts say.

Communities in the wildland urban interface — where development meets or intermingles with undeveloped wildland — should also be designed to be more fire resistant, said Max Moritz a wildfire specialist at the University of California, Santa Barbara's Bren School.

In 2020, Moritz co-wrote a guide for communities on how to build in the wildland-urban interface. To protect homes from oncoming wildfires, he suggests new construction should be built in areas to take advantage of barriers in the landscape such as water bodies, roads, parks, irrigated farmland and meadows.

And rather than spreading homes out, they should also be grouped away from hillsides and other sources where fire approaches.

"These are considerations that definitely should be codified into law at some level, if we are going to continue developing in fire-prone areas ... which we are going to do, given the need for housing and the fact that climate change is making many places more fire-prone," Moritz said.

After the Camp Fire, there was a record 181 bills introduced into the California Legislature dealing with wildland fire, Stanford's Miller said. Prior to that, lawmakers dealt with an average of 24 wildfire-related bills annually, she said.

Moritz's and others' guidelines for new construction include such features as fire-resistant roofing, soffits under outdoor eves, flame-resistant siding, double pane windows, external sprinklers and fine mesh attic vents, she said.

California law already requires homes built after 2008 to include those fire-resistant features.

About 51 percent of the 350 single-family homes built after 2008 survived the Camp Fire with little damage, according to a McClatchy News analysis.

By contrast, only 18 percent of the 12,100 homes built prior to 2008 escaped damage, according to McClatchy. However, Stanford's Miller said the vast majority of the state's housing stock was built before 2008.

Many fire agencies have long advocated keeping vegetation thinned up to 100 feet around homes, but recently they have also begun pushing homeowners to keep all vegetation at least 5 feet away from homes to prevent plants from being ignited by burning embers sent airborne by wildfires.

Wildfires are almost certainly going to continue getting larger and more destructive across the West, with or without a Biden climate plan.

States like California and Oregon have plans to safeguard communities, but the key will be funding.

"We have a wildfire problem and jobs and rural economy crisis," Field said. "Putting a lot of people in the forest could help with both issues. But it will also require funding and some compromise."

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