The Day

imminent horizons

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Does climate change increase wildfire risk in southeastern Connecticut?

Volunteer firefighters from Lyme and surrounding departments used water tanks, rakes, shovels and leaf blowers to extinguish a 50-acre brush fire in Nehantic State Forest in Lyme on April 23, 2025. (Photo Courtesy/Lyme Fire Department)

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Between the recent first anniversary of the Palisades wildfires in California, the Canadian wildfire smoke that reached Connecticut the past three summers, and the approach of spring's brush fire season, some may wonder whether climate change has increased Connecticut's brush fire risk.

After all, state officials have begun planning for potential fire risk. In January, UConn's fire chief presented a webinar on wildfire ecology and planning for "a changing future."

Last August, Governor Ned Lamont announced the launch of **Fire Safe CT**, a state initiative to reduce fire-related tragedies through public education and providing local fire departments with equipment, training and gear.

However, despite increased droughts, hotter summers and higher winds, Connecticut's and New London County's fire risk is low, about 22% and 23%, respectively.

Recently, **UConn Fire Department Fire Chief Christopher Renshaw** and **Emily Wilson**, educator with UConn Extension and Center for Land Use Education and Research (CLEAR), collaborated to create a tool to educate firefighters, residents and businesses to prepare for and adapt to potential future wildfires, called brush fires.

Wilson, with Renshaw's help, created the "**Wildfire In Connecticut, Changing Forest Health, Fire Ecology, and the Wildland-Urban Interface/Intermix**" tool. Using geographic information systems (GIS), Wilson provided a platform for viewing land-use information. The layers compiled within the tool that Wilson built can help answer questions about the response capacities of different towns and fire departments. The various maps show the causes of tree damage and mortality rates, the footprints of previous fires, the locations of fire departments around the state and the proximity between human developments and wildlands.

Hotter temperatures, stronger winds, and prolonged droughts collectively contribute to wildfires, Renshaw said.

The two years of drought in 2014 and 2015 put stress on trees, he said. However, the state has relatively stable long-term precipitation levels and mostly deciduous forests, with oaks, maples and other trees that leaf out early and stay green until late fall, according to UConn. **Scientists** predict precipitation levels in Connecticut to increase.

As the climate warms, precipitation and humidity increase because warmer air holds more moisture, fueling heavy rainfall. Connecticut is seeing rain precipitation increase mostly in winter and early spring, according to a report by the Department of Energy and Environmental Protection, "**Connecticut: Our Changing Climate**." This trend results in more short-term droughts during the summer months. These frequent dry periods cause stress to forests and agricultural systems and increase the potential for fires.

The window for brush-fire risk opens for a few weeks in the spring and fall, and drought and wind have to be present during this window for brush fires to take hold. But in the past few years, Renshaw said, that season has expanded. About 50 acres of Nehantic State Forest in

Lyme burned on April 23, 2025, and about 125 acres burned in the Hawthorne fire in Berlin on Oct. 23, 2024, while the leaves were still on the trees.

What does the science say about Connecticut's wildfire risk?

Property insurance companies calculate risk based on science, since their profits depend on getting it right, said Ethan Aumann, senior director, Environmental Issues and Resiliency, **American Property Casualty Insurance Association**.

When assessing risk, insurers factor in drought, temperature, wind, humidity levels and fuel, he said. Insurers also evaluate fire suppression capacity and firefighting resources.

Statewide, Connecticut's risk score for wildfire is 22%, he said. According to the USDA Forest Service's **Wildfire Risk to Communities** site, New London County's fire risk is 23%.

About 75% of Connecticut falls into an area called a "wildland-urban interface," where homes are in proximity to forests. While this increases the risk, the region does not face anywhere near the likelihood of western-style wildfire behavior, Aumann said. New England's largely deciduous forests green up rapidly in the spring and contain moisture, making them more fire resistant.

In Connecticut, people cause 90% of brush fires, and lightning causes 10%, said **Richard Schenk**, fire control officer with the state Forestry Division's Eastern District, DEEP. Human causes include campfires not fully extinguished, sparks from motor vehicles, discarded cigarettes, bonfires, fireworks and powerlines.

Changing weather patterns could potentially increase small brush fires' size, Schenk said. Typically, when brush fires start on level ground on a calm day, they burn slowly, moving about three to four feet a minute, he said. Under the same terrain, if winds are blowing 15 to 20 miles an hour, brush fires can burn about 100 feet a minute.

Fires need fuel to burn, and Schenk said the proliferation of invasive shrubs in forest understories provides a fuel source that can help a fire spread. During the fire on April 23, 2025, at the Nehantic State Forest, the flames burned Japanese barberry but left the trees standing.

The invasive spongy moth and emerald ash borer insects have weakened oaks and killed ash trees, respectively, which Renshaw said provides potential fuel for brush fires.

However, said **Ed Faison**, senior ecologist with **Highstead Foundation** in Redding, "much of the scientific literature does not support the idea that more dead trees and downed wood from insect outbreaks increases fire risk."

He cited peer-reviewed scientific papers, such as a **Natural Areas Journal paper**, in which researchers studying the impact of pine beetle and spruce beetle outbreaks in forests in

western states reported that the outbreaks “do not appear to substantially increase the risk of subsequent fire.”

Standing dead trees and fallen, decomposing trees do not burn easily, even during droughts, ecologists said.

“Dead wood holds water,” said forest ecologist **Neil Pederson**, a research affiliate with Highstead. For a large brush fire, he said, “what you need is a month or two of no rain, and then you need very high temperatures and once in a hundred-year wind events.”

In the summer, when it’s hottest, Connecticut tends to have a lot of rainfall that reduces a large wildfire's chances, said ecologist George Wuerthner, author of “**Wildfire: A Century of Failed Forest Policy**” [2006]. “That doesn’t mean you won’t get an ignition,” he said, but it’s less likely to spread beyond five acres.

“The majority of all wildfires are small, usually less than one acre in size. You can have a whole lot of fires, but they don’t amount to a hill of beans,” he said.

For example, in Yellowstone National Park, from 1972 to 1987, when the National Park Service didn’t put out any of their backcountry, lightning-caused fires, there were 235 wildfires; only 15 were larger than 100 acres, Wuerthner said.

The regions of the state with a high percentage of conifer forests are at greater risk of brush fires than areas with deciduous forests, Wuerthner added.

“Dead trees are less flammable than live conifer trees,” he said. “What burns in a forest fire is the same thing that burns in a campfire: small, flammable fuels like needles, branches, leaves.”

Preparing for the worst

Some fire departments, such as Lyme Volunteer Fire Department, have purchased wildland firefighting protective gear for volunteer firefighters, said Lyme Fire Chief John Evans. To fight brush fires, firefighters hike into the forest carrying metal water-filled cans on their backs. They use rakes, shovels, fire retardants and leaf blowers.

Evans and other fire professionals urged residents and businesses to pay attention to “red flag warnings” and avoid outdoor burning, including using firepits, when conditions are dry and winds are high. Sparks can travel several miles on windy days.

Aumann, from the insurance association, recommended a research-backed “Wildfire Prepared Home” program at **www.wildfireprepared.org**.

To determine an individual property's risk, a state Insurance Department representative recommended **FirstStreet.org**, which allows people to enter their address and learn their fire risk.

In an informal survey of eight staffers from The Day who live in New London County, three homes had a 30% fire risk, one had a 20% risk and four had a 10% risk.