Pennsylvania has so far been able to avoid wildfires. Climate and forestry scientists warn that could change

August 11 2022, by Nick Pasion

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Wildfires could make their way into the keystone state and possibly into your backyard, climate, fire and forestry scientists say.

As wildfires become increasingly common across the western United

States, Pennsylvania and its residents have so far remained insulated from the flames destroying communities worldwide.

But forest and climate experts say, that because of increasingly drier and hotter weather due to climate change over the next few decades, the chances of larger, more severe forest fires in the commonwealth will grow.

"The big picture is that by mid-century they think that the risk for large wildfires in sort of Western Pennsylvania down into West Virginia will probably about double," Alan Taylor, a Penn State University professor of geography and ecology who studies fires, said.

The period in which large fires are likely to occur in parts of Pennsylvania and down the Appalachians is expected to about double by mid-century due to warming temperatures and longer dry spells, according to a National Oceanic and Atmospheric Administration report.

Pennsylvania has averaged about 600 wildfires per year that vary in amount and severity depending on the given year, officials said. Those fires tend to be on a smaller scale, burning about an acre each, and Mr. Taylor noted those wildfires result from the burning of forests' understory, which are the small shrubs and trees between the forest canopy and floor.

The largest fire in recent memory was the 16-mile fire near Cresco, Monroe County, in 2016 that burned through more than 8,000 acres of forest and cost emergency services $2 million to extinguish.

Mr. Taylor said the size of the wildfires in Pennsylvania wouldn't match the ferocity and danger of the millions of acres burning in the western U.S. because Pennsylvania's wet climate prevents massive flame spread. But, he added that due to warming temperatures and human influence,

the state could experience big fires in the future.

Climate extremes, which scientists say have become less predictable, could prompt the drought and extreme heat that dries up the state's dense undergrowth and could serve as the fuel and kindling to a wildfire in the region.

"We are seeing and expecting more drying, drought and heat waves through our summers, and there's a logical link between drought, drying, heat, flammability and therefore fire that can occur," said Meg Krawchuk, a fire ecologist and an associate professor at Oregon State University.

"There's a number of ways that, within (Pennsylvania's) geography, there is a reason for concern of how fire could change with climate change," she added.

Wildfires soaring

According to the United States Environmental Protection Agency, the frequency, and severity of wildfires have soared since the mid-1980s.

Those forest fires are not limited to the United States. In London, England, some thought the country was fire resistant due to its high precipitation and climate. Still, multiple wildfires broke out across the city last month amid a record-breaking heatwave that was only worsened by climate change.

Lee Hendricks, a hydrologist at the National Weather Service, said Pittsburgh experienced two of its rainiest seasons during the past five years in 2018 and 2019, when there were 57.83 and 52.46 inches of precipitation, respectively. He explained those totals are well above the area's average of 39.61 inches of precipitation.

Scientists say those highs are due to climate change, which is increasing the amount of rainfall across the northeast region. However, Mike Kern, the state's chief forest fire warden, said that precipitation growth is "deceptive" because the amount of rain happens at a larger scale with longer, hotter dry spells between rainy periods.

"Climate is going to push toward the extremes here. So what happens when the pendulum swings the other way, and we get an extreme drought because our vegetation has not adapted to deal with that kind of weather? It's adapted to deal with regular precipitation," Mr. Kern said.

In Pennsylvania, forest fires are most likely to occur during the driest season in the late spring and early autumn months, Mr. Kern said.

The National Park Service reported that about 85% of wildfires are started by humans, with the other fires starting through lighting or overheating. But in Pennsylvania, 99% of wildfires are caused by people, according to the Pennsylvania Department of Conservation & Natural Resources.

Mr. Kern warned that "there's more population mixed in the wild areas. So even a small fire here can impact somebody's house ... or property or lives because there's more population and spread that spread throughout the area."

He added that the population living in the woods and the number of fire departments sprinkled throughout the state means fires that flare up can be quickly identified and extinguished.

The Pennsylvania DCNR recommends prescribed fires, or controlled burns, that can mitigate the scale of wildfires by removing old undergrowth and growing young trees.

However, some critics have concerns. With rising dry spells and increasing temperatures, they say those prescribed fires could become out-of-control blazes.

In New Mexico, a prescribed fire by federal officials turned into the largest wildfire in the state's history scorching more than 500 square miles and hundreds of homes. But their prescribed burn failed to account for climate change-related variables that worsened the out-of-control burn through, according to a Washington Post report.

Forestry and fire experts said those large-scale western fires are not realistic in Pennsylvania. Still, while the foliage in the state is accustomed to wetter seasons, with hotter weather and more extended dry periods, those plants are more susceptible to burns in the dry spring and autumn seasons.

Ryan Reed, a natural resource program specialist in the Bureau of Forestry at the DCNR, said state officials are taking added measures to protect the forests from climate change.

Disrupting invasive species, protecting native species and preserving the forests' biodiversity through assisted migration—where scientists introduce foliage more apt to deal with climate change—can help build resilient forests, Mr. Reed said.

He emphasized that reducing humans' environmental impact is the best way to prevent nature's erosion.

Mr. Reed encouraged individuals to be sure to completely extinguish their fires and call the appropriate fire and forest authorities to report any forest fires they see.

As climate change continues to put the state's forests at risk, Mr. Reed

said mitigation measures must be a collaborative effort between residents and officials to protect the forests.

"(Climate) changes just aren't occurring in a predictable way, so the idea is to expect the unexpected," Mr. Reed said.