Wildfires erupt across Alaska as climate change drives up temperatures in the Arctic

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Record wildfires have erupted this year across Alaska. The National Interagency Fire Center (NIFC) reports that year-to-date, 547 wildfires have burned across Alaska encompassing more than 3 million acres, making this the worst fire season in the state since 2015.

More than 1 million acres are currently burning in the state, including three fires that have so far burned more than 100,000 acres. The largest, the Paradise Complex, has burned 275,703 acres and is only 65 percent contained, while the Poorman Complex has burned 140,356 and has no containment currently. Several other major fires have burned across the state this year, including the Clear Fire, which has burned 73,284 acres and is located 10 miles northwest of Anderson, Alaska.

The 2022 fire season in the US continues to break records. More than 40,500 fires have burned nearly 5.9 million acres to date nationwide, both of which numbers are well above the 10-year average. Only the devastating fire seasons of 2015 and 2017 saw more land burned and only 2017 saw more fires ignited.

A pattern of catastrophic wildfires in the Arctic region of the planet has been emerging in recent years. In July 2017, Greenland experienced unprecedented large-scale wildfires that spread rapidly and burned for weeks. In 2015, massive forest fires engulfed large parts of northern British Columbia, Alberta, Saskatchewan, the Yukon, the Northwest Territories and Alaska.

The impacts of climate change and wildfire activity in the upper latitudes is expected to increase in the future. Areas of the far north like Alaska have seen a sharp increase in large forest fires over the past few decades. The Arctic is already warming more than twice as fast as the rest of the planet.

The fires burning this year in Alaska are another expression of this process. One of the largest wildfires this season, the Lime Complex, burned through 865,620 acres of the historically fire-resistant southwest region near Bristol Bay through June and July. Other groups of fires blazed through the boreal forests and produced smoke that drifted hundreds of miles away to the town of Nome on the Bering Sea, where smoke threatened those with respiratory conditions.

Fires are also starting earlier in the year in the region. The East Fork complex, which ignited in western Alaska on May 31 just a few miles from the city of St. Mary’s, burned an estimated 170,000 acres in June. Both months were among the driest on record.

While rain during the last half of July helped dampen the fires, longer-term forecasts are indicating a weather pattern similar to 2004, when rains in July of that year evaporated to be followed by high-pressure systems, heat, dry conditions and lightning strikes that created Alaska’s most extreme year for fire. More than 6.5 million acres were burned by wildfires that year.

As warming temperatures continue to transform Arctic ecosystems, increased fire activity is also releasing immense troves of carbon stored in the soil, darkening and destabilizing ice sheets, releasing global warming gases into the atmosphere, and aggravating the changes already under way. Higher temperatures for longer periods of time in turn induce more droughts and are making wildfires more frequent, more destructive, and harder to control over increasingly vast areas.

“The frequency of these big seasons has doubled from what it was in the second half of the 20th century,” Rick Thoman, a climate specialist with the Alaska Center for Climate Assessment and Policy at the University of Alaska’s International Arctic Research Center, told the Associated Press. “And there’s no reason to think that’s not going to

continue.”

A fire started by lightning on May 31 in the Yukon-Kuskokwim Delta was directly attributable to climate change, Thoman said. Due to warmer temperatures there is more vegetation growing on the tundra, willow and alder trees are thicker in the transition area between the tundra and forests, and spruce along river valleys are growing thicker and moving farther uphill from those valleys.

“There’s been a significant increase in the amount of fuel available, and that’s from decades of warmer springs and summers in the region, direct result of a warming climate,” Thoman said. “And, of course, fires with more fuels available burn hotter. They burn longer. They’re more resistant to changes in weather.”

The Yukon-Kuskokwim fire became the largest wildfire recorded in that area at 259 square miles. Communities in the area with a population of around 700 were at risk, but no evacuations were ordered, and firefighters were able to protect the area.

The cool, rainy weather that set in late July over much of Alaska has dampened this year’s fire season, which was shaping up to be one of the worst in recorded history. State and federal agencies are sending some crews home, but officials warn that the fires could come roaring back after a day or two of dry, warm weather.

In response to the change in weather, officials reduced the fire danger level in many areas and lifted the statewide emergency burn ban.

Global warming is also inducing increased melting of glaciers in Greenland. For a few days in early July, temperatures hovered around 60 degrees Fahrenheit (15.5 Celsius), more than 10 degrees warmer than the average for July.

Those unusually high temperatures triggered wide-scale snow and ice melt across Greenland’s ice sheet. In only three days, from July 15-17, the landmass lost about 18 billion tons of water.