Europe’s heat wave is about to bake the Arctic

Concerns grow regarding sea ice and Greenland’s ice sheet.
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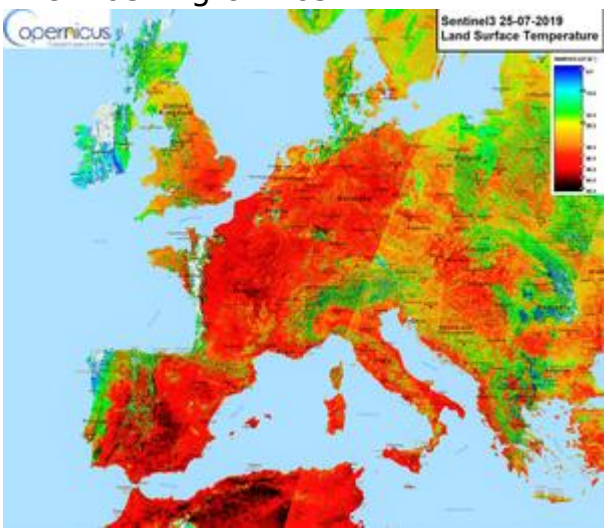

European land surface temperatures Thursday as sensed via satellite.

Picture Credit:
(European Union, Copernicus Sentinel-3 imagery, processed by Antonio Vecoli)

It’s what this system, characterized by a strong area of high pressure aloft — often referred to as a heat dome — will do to the Arctic that has some scientists increasingly concerned.

Temperatures in parts of Scandinavia will reach into the 90s or higher, on the heels of an intense heat wave in 2018 that led to an outbreak of damaging wildfires. Bergen, Norway, already set an all-time record high Friday with a temperature of 91 degrees (32.8 Celsius).

Accelerating Arctic ice melt

So far this year, Arctic sea ice extent has hovered at record lows during the melt season. Weather patterns favorable for increased melt have predominated in this region, and an unusually mild summer has also increased melting of the Greenland ice sheet. Unlike with sea ice melt, runoff from the Greenland ice sheet increases sea levels, since it adds new water to the oceans.

If the entire ice sheet were to melt, it would raise global average sea levels by 23 feet.

Ruth Mottram, a researcher with the Danish Meteorological Institute, tells The Washington Post that as the high-pressure area, also referred to as a “blocking ridge,” sets up over Greenland, it could promote a widespread and significant melt event like the one in 2012. During that summer, nearly all of the ice sheet experienced melting, including the highest elevations that rarely exceed 32 degrees.

“Assuming this comes off (and it seems likely) we would expect a very large melt event over the ice sheet,” Mottram said via email. “This was a very similar situation to 2012 where melt reached all the way up to Summit station. As you have probably seen the Arctic sea ice is already at record low for the time of year so clearly we may be looking at a situation where both Arctic sea ice and Greenland ice sheet have record losses even over and above 2012 — though we won’t know for sure until after the event.”

Zack Labe, a climate researcher at the University of California at Irvine who focuses on Arctic climate change, says the upcoming Arctic heat wave could have major ramifications and may push sea ice to another record low at the end of the melt season.

“This appears to be a very significant event for the Arctic,” he says.

“A massive upper-level ridge will position itself across the North Atlantic and eventually Greenland in the next few days. This negative North Atlantic Oscillation-like pattern will be associated with well above average temperatures in Greenland. In fact, simulations from the MARv3.9 model suggest this may be the largest surface melt event of the summer,” Labe said, referring to a computer model projection of surface ice melt in Greenland.

"Whether or not we set a new record low this year, the timing and extent of open water on the Pacific side of the Arctic has been unprecedented in our satellite

record. This is already having significant impacts to coastal communities in Alaska and marine ecosystems," Labe said.

Elsewhere in the Arctic, this summer has been similarly extreme.

Alaska had its warmest June on record, and more than 2 million acres have gone up in flames across the state as a result of a long stretch of above-average temperatures.

Arctic-wide, an unusual spate of wildfires is burning, affecting vast stretches of Siberia, as well. Smoke from these fires is circling the globe, tracked via satellite imagery.

These fires are also emitting greenhouse gases such as carbon dioxide.

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