Long hot summer of fire and floods fit predictions

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These two satellite images provided by NASA taken on July 28, 2010, left, and Aug. 5, 2010, right, shows the Petermann Glacier in Northern Greenland. A giant ice island, seen in image at right, has broken off the Petermann Glacier. A University of Delaware researcher says the floating ice sheet covers 100 square miles (260 sq. kilometers) _ more than four times the size of New York's Manhattan Island. The World Meteorological Organization (WMO) says the weather-related cataclysms of July and August fit patterns predicted by climate scientists, although those scientists always shy from tying individual disasters directly to global warming. (AP Photo/NASA)

(AP) -- Floods, fires, melting ice and feverish heat: From smoke-choked Moscow to water-soaked Pakistan and the High Arctic, the planet seems to be having a midsummer breakdown. It's not just a portent of things to come, scientists say, but a sign of troubling climate change already under way.

The weather-related cataclysms of July and August fit patterns predicted

by climate scientists, the Geneva-based World Meteorological Organization says - although those scientists always shy from tying individual disasters directly to global warming.

The experts now see an urgent need for better ways to forecast extreme events like Russia's heat wave and wildfires and the record deluge devastating Pakistan. They'll discuss such tools in meetings this month and next in Europe and America, under United Nations, U.S. and British government sponsorship.

"There is no time to waste," because societies must be equipped to deal with global warming, says British government climatologist Peter Stott.

He said modelers of climate systems are "very keen" to develop supercomputer modeling that would enable more detailed linking of cause and effect as a warming world shifts jet streams and other atmospheric currents. Those changes can wreak weather havoc.

The U.N.'s network of climate scientists - the Intergovernmental Panel on Climate Change (IPCC) - has long predicted that rising global temperatures would produce more frequent and intense heat waves, and more intense rainfalls. In its latest assessment, in 2007, the Nobel Prize-winning panel went beyond that. It said these trends "have already been observed," in an increase in heat waves since 1950, for example.

Still, climatologists generally refrain from blaming warming for this drought or that flood, since so many other factors also affect the day's weather.

Stott and NASA's Gavin Schmidt at the Goddard Institute of Space Studies in New York, said it's better to think in terms of odds: Warming might double the chances for a heat wave, for example. "That is exactly what's happening," Schmidt said, "a lot more warm extremes and less

cold extremes."

The WMO did point out, however, that this summer's events fit the international scientists' projections of "more frequent and more intense extreme weather events due to global warming."

In fact, in key cases they're a perfect fit:

RUSSIA

It's been the hottest summer ever recorded in Russia with Moscow temperatures topping 100 degrees Fahrenheit (37.8 degrees C) for the first time. The drought there has sparked hundreds of wildfires in forests and dried peat bogs, blanketing western Russia with a toxic smog. Moscow's death rate has doubled to 700 people a day. The drought reduced the wheat harvest by more than one-third.

The 2007 IPCC report predicted a doubling of disastrous droughts in Russia this century and cited studies foreseeing catastrophic fires during dry years. It also said Russia would suffer large crop losses.

PAKISTAN

The heaviest monsoon rains on record - 12 inches (300 millimeters) in one 36-hour period - have sent rivers rampaging over huge swaths of countryside. It's left 14 million Pakistanis homeless or otherwise affected, and killed 1,500. The government calls it the worst natural disaster in the nation's history.

A warmer atmosphere can hold - and discharge - more water. The 2007 IPCC report said rains have grown heavier for 40 years over north Pakistan and predicted greater flooding this century in south Asia's

monsoon region.

CHINA

China is witnessing its worst floods in decades, the WMO says, particularly in the northwest province of Gansu. There, floods and landslides last weekend killed at least 1,117 people and left more than 600 missing, feared swept away or buried beneath mud and debris.

The IPCC reported in 2007 that rains had increased in northwest China by up to 33 percent since 1961, and floods nationwide had increased sevenfold since the 1950s. It predicted still more frequent flooding this century.

ARCTIC

Researchers last week spotted a 100-square-mile (260-square-kilometer) chunk of ice calved off from the great Petermann Glacier in Greenland's far northwest. It was the most massive ice island to break away in the Arctic in a half-century of observation.

The huge iceberg appeared just five months after an international scientific team published a report saying ice loss from the Greenland ice sheet is expanding up its northwest coast from the south.

Changes in the ice sheet "are happening fast, and we are definitely losing more ice mass than we had anticipated," said one of the scientists, NASA's Isabella Velicogna.

In the Arctic Ocean itself, the summer melt of the vast ice cap has reached unprecedented proportions. Satellite data show the ocean area covered by ice last month was the second-lowest ever recorded for July.

The melting of land ice into the oceans is causing about 60 percent of the accelerating rise in sea levels worldwide, with thermal expansion from warming waters causing the rest. The WMO'S World Climate Research Program says seas are rising by 1.34 inches (3.4 millimeters) per decade, about twice the 20th century's average.

Worldwide temperature readings, meanwhile, show that this January-June was the hottest first half of a year in 150 years of global climate record keeping. Meteorologists say 17 nations have recorded all-time-high temperatures in 2010, more than in any other year.

Scientists blame the warming on carbon dioxide and other heat-trapping gases pouring into the atmosphere from power plants, cars and trucks, furnaces and other fossil fuel-burning industrial and residential sources.

Experts are growing ever more vocal in urging sharp cutbacks in emissions, to protect the climate that has nurtured modern civilization.

"Reducing emissions is something everyone is capable of," Nanjing-based climatologist Tao Li told an academic journal in China, now the world's No. 1 emitter, ahead of the U.S.

But not everyone is willing to act.

The U.S. remains the only major industrialized nation not to have legislated caps on carbon emissions, after Senate Majority Leader Harry Reid last week withdrew climate legislation in the face of resistance from Republicans and some Democrats.

The U.S. inaction, dating back to the 1990s, is a key reason global talks have bogged down for a pact to succeed the expiring Kyoto Protocol. That is the relatively weak accord on emissions cuts adhered to by all other industrialized states.

Governments around the world, especially in poorer nations that will be hard-hit, are scrambling to find ways and money to adapt to shifts in climate and rising seas.

The meetings of climatologists in the coming weeks in Paris, Britain and Colorado will be one step toward adaptation, seeking ways to identify trends in extreme events and better means of forecasting them.

A U.N. specialist in natural disasters says much more needs to be done.

Salvano Briceno of the U.N.'s International Strategy for Disaster Reduction pointed to aggravating factors in the latest climate catastrophes: China's failure to stem deforestation, contributing to its deadly mudslides; Russia's poor forest management, feeding fires; and the settling of poor Pakistanis on flood plains and dry riverbeds in the densely populated country, squatters' turf that suddenly turned into torrents.

"The IPCC has already identified the influence of climate change in these disasters. That's clear," Briceno said. "But the main trend we need to look at is increasing vulnerability, the fact we have more people living in the wrong places, doing the wrong things."