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In September 2026, the global average surface air temperature was above normal. Marked warming exceeding 4°C was observed across northwestern Russia, northwestern Africa's coastal areas, central United States, and near 150°W in Antarctica. By contrast, below-normal temperatures prevailed over eastern Russia, central East Asia, northeastern South Asia, northern Southeast Asia, northwestern Africa, northern Australia, northeastern and northwestern United States and Alaska, most of Greenland, southern South America, and most of Antarctica.

Global total precipitation was unevenly distributed and was generally below normal. In particular, areas such as northern Central Asia, northwest South Asia, northern West Asia, southern Southeast Asia, southwestern Europe, parts of northeastern and western Africa as well as parts of southern Africa, eastern Australia, northeastern Greenland, and parts of northern South America had experienced precipitation deficits exceeding 80%. Precipitation was over 100% more than normal

across northwest North Asia, parts of western East Asia, southern Central Asia, southern West Asia, northeast South Asia, parts of northern Europe, parts of northern Africa and its eastern coast and south, southwest Australia, central North America, northwest Greenland, parts of southern South America, and areas near 150-100°W in Antarctica.

In September 2026, sea surface temperatures (SSTs) in central and eastern tropical Pacific were anomalously warm, with a warm center located in the eastern equatorial Pacific. The Niño3.4 index was 2.94°C, rising by 0.35°C from the previous month. The three-month sliding average of the Niño3.4 index had exceeded 0.5°C for five consecutive months, with the July-September sliding average (2.54°C) surpassing 2.5°C, marking an eastern-type super El Niño event.

In September, sea ice concentrations over most Northern Hemisphere oceanic basins ranged from near-normal to below-normal. Over the Antarctic, sea ice concentrations were near-normal to below-normal across nearly all regions, except for some areas in the Drake Passage where above-normal sea ice concentrations persisted. Snow cover extents across the Northern Hemisphere, Eurasian continent, North America and China were all close to the climatological normal.

Major global weather and climate hazards in September primarily included rainstorms and flooding, typhoons (hurricanes) or storms, landslides, high temperatures, forest fires, and air pollution.

In September, France experienced an unprecedented heatwave characterized by its prolonged duration and intense intensity, with some regions setting new historical records. This phenomenon was primarily the result of anomalous atmospheric circulation driven by an eastern-type super El Niño event against the background of global warming, compounded by a "heat feedback" effect stemming from prior dry conditions in France, which together had amplified the impact.

It is predicted that in November 2026, temperatures over most parts of the globe will be near to above the climatological normal. Areas with temperature anomalies exceeding +2°C include most of Russia, northern East Asia, eastern Central Asia, eastern West Asia, northwestern South Asia, northeastern North America, parts of northern South America, and northwestern Greenland. Precipitation will be more than 20% above normal across central East Asia, northeastern and western northern Asia, southern Central Asia, central and northern West Asia, southern Southeast Asia, eastern Europe,

south-central North America, most of south-central South America, northwestern Greenland, and mid-western Australia. Among these regions, central East Asia (local areas), northeastern northern Asia, southern Central Asia, central and northern West Asia, southern North America, southern South America, northwestern Greenland and western Australia will see precipitation surpluses of 50%–200%, with some localities exceeding 200%, posing disaster risks from concentrated rainfall. Precipitation will be 20% below normal or less in northeastern Inner Mongolia of China, western Xizang, southeast China, most of southern China, northern and southwestern Africa, southern West Asia, most of South Asia, northern Southeast Asia and northeastern South America. Regions with precipitation deficits of 50%–80% include northern Africa, southern West Asia, most of South Asia, northern Southeast Asia and northeastern South America, where meteorological drought risks exist. SSTs over the equatorial central-eastern Pacific will continue to rise, and reach the peak from late autumn to early winter. This El Niño event will become the strongest one since systematic monitoring began.