



WORLD
METEOROLOGICAL
ORGANIZATION



GLOBAL SEASONAL CLIMATE UPDATE

TARGET SEASON: August-September-October 2023

Prepared: 26 July 2023



Summary

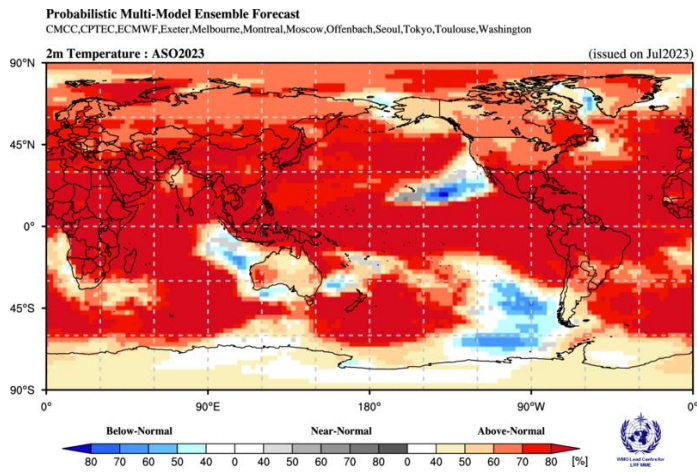
During April-June 2023, Pacific Niño sea-surface temperature (SST) index in the eastern Pacific (Niño 1+2) were much above-normal and the other three indices in the central Pacific were also positive. The observed SST conditions in the equatorial Pacific were characterized by a weak El Niño state. The Indian Ocean Dipole (IOD) was near normal. The North Tropical Atlantic (NTA) and the South Tropical Atlantic (STA) SST indices were also positive and reflected widespread warmth in the tropical Atlantic above the equator.

For the August-October 2023 (ASO 2023) season, the sea-surface temperature anomalies in the Niño 3.4 and Niño 3 regions in the central and eastern Pacific are predicted to become warmer to reach moderate El Niño conditions.

As warmer-than-average SSTs are generally predicted over oceanic regions for the ASO 2023 season, they contribute to widespread prediction of above-normal temperatures over land areas. Without exception, the likelihood of above-normal temperature anomalies is expected over all land areas in the Northern and Southern Hemisphere. The largest increase in probabilities for above-normal temperatures extend around the globe within the 50° S and 60° N band that includes the Maritime continent, New Zealand, Central America, the Caribbean, southern regions of North America, northern regions of South America, Africa, southern Europe, the Arabian Peninsula, east and southeast Asia. Over these regions the model consistency is high. There are also enhanced probabilities for above-normal temperatures over other regions of Asia and North America, Europe, and southern regions of South America. Over these regions, however, the probabilities for above-normal temperature have a moderate increase. Strongly enhanced probabilities for above-normal temperatures are predicted in a band from north of Australia, extending to the south-eastern South Pacific, and in an arc extending over New Zealand to the vicinity of Tasmania. Over Australia, there is a weak enhancement in the likelihood of above-normal temperature.

Predictions for rainfall in the ASO 2023 season are similar to some of the canonical rainfall impacts of El Niño. Probabilities for above-normal rainfall are enhanced over a narrow band along and just north of the equator from the Philippines extending along the equator to the west coast of South America. This anomalously wet area extends discontinuously westward and with weaker signal and is most evident in south-east Asia, eastern parts of the Indian subcontinent, and along the southern part of West Africa, extending most of the way across the Atlantic Ocean. Across most of the Pacific Ocean south of about 30° N, and immediately to the north of the equatorial wet band, rainfall is predicted to be below-normal. This area of dryness extends eastward across much of the northern part of South America north of about 10° S, the southern Caribbean, south-western region of North America, and the northern region of Central America. There is another band of predicted below-normal rainfall in the Central South Pacific east of the Dateline and extending in a narrowband to a little beyond 120° W. Over the south-central and western parts of the Maritime continent, below-normal rainfall is also predicted. This area extends along the equator almost to the east coast of Africa, but also to the south and east, so that most of Australia and the northern part of New Zealand have increased probabilities of below-normal rain. Over much of Africa north of the equator the probabilities for above-normal rainfall are weakly to moderately increased. Outside of the tropics, there are no large-scale strong indications of anomalous rainfall over land.

Surface Air Temperature, ASO 2023



Precipitation, ASO 2023

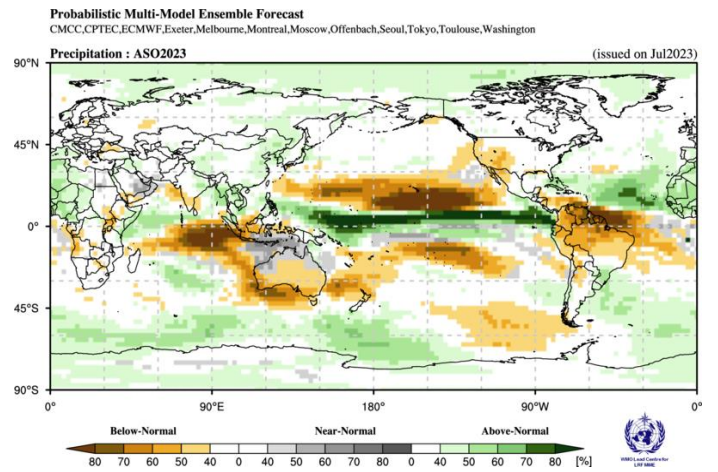


Figure 1. Probabilistic forecasts of surface air temperature and precipitation for the season August-October 2023. The tercile category with the highest forecast probability is indicated by shaded areas. The most likely category for below-normal, above-normal, and near-normal is depicted in blue, red, and grey shadings respectively for temperature, and orange, green and grey shadings respectively for precipitation. White areas indicate equal chances for all categories in both cases. The baseline period is 1993-2009.

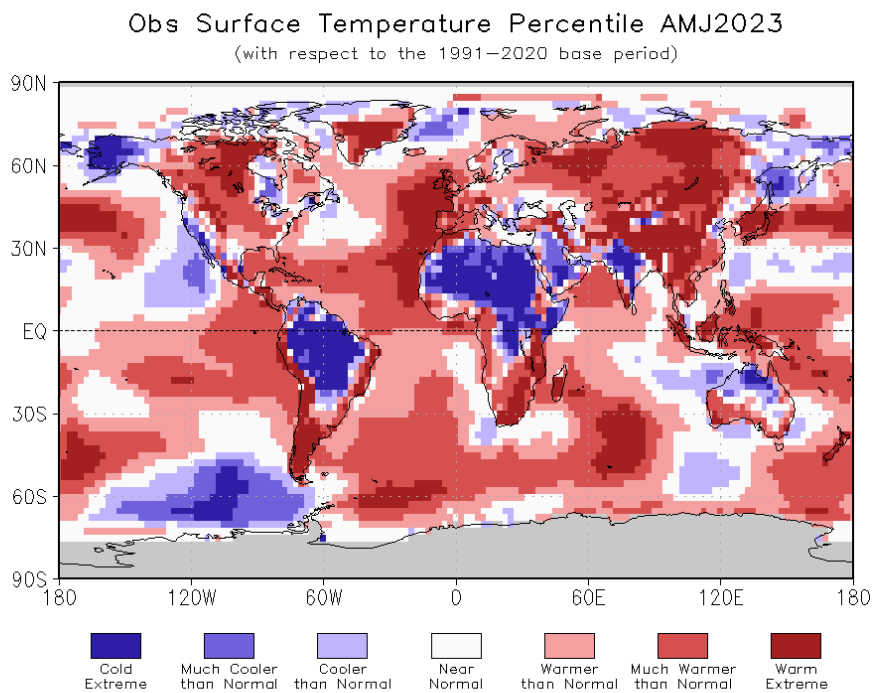
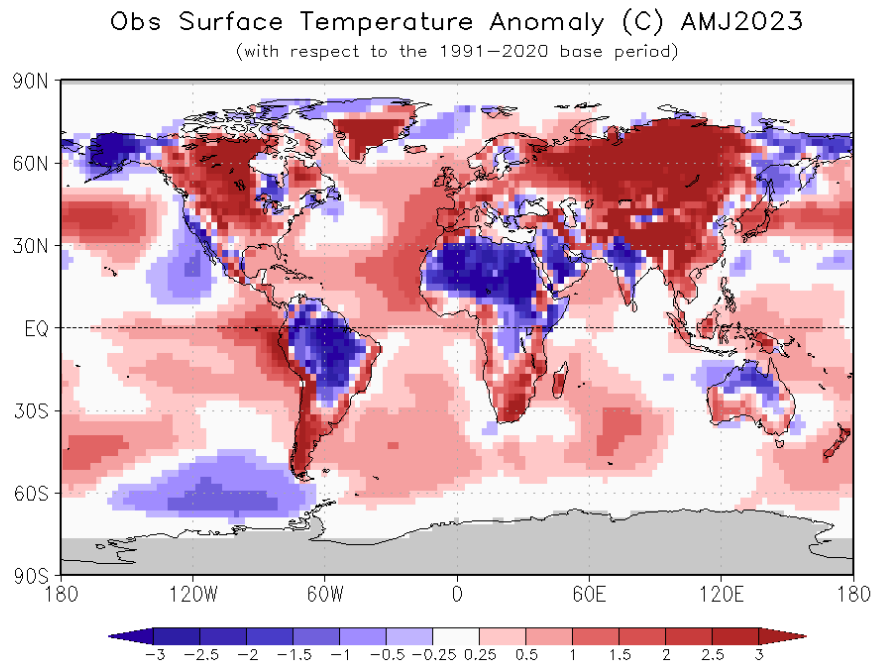


Figure 2. Observed April-June 2023 near-surface temperature anomalies relative to 1991-2020 (top). The Cooler than Normal, Near Normal, and Warmer than Normal shadings on the percentile map (bottom) indicate that seasonal mean anomalies were in the bottom, middle, and upper tercile of the 1991-2020 distribution, respectively. Regions with anomalies in the lowest and highest decile (or 10%) of the distribution are marked as Much Cooler than Normal and Much Warmer than Normal, respectively. The Cold Extreme and Warm Extreme shadings indicate that the anomalies exceeded the coldest and warmest temperature values of the 1991-2020 period for the season. Grey shading indicates areas where observational analysis was not available. (Source: U.S. Climate Prediction Center).

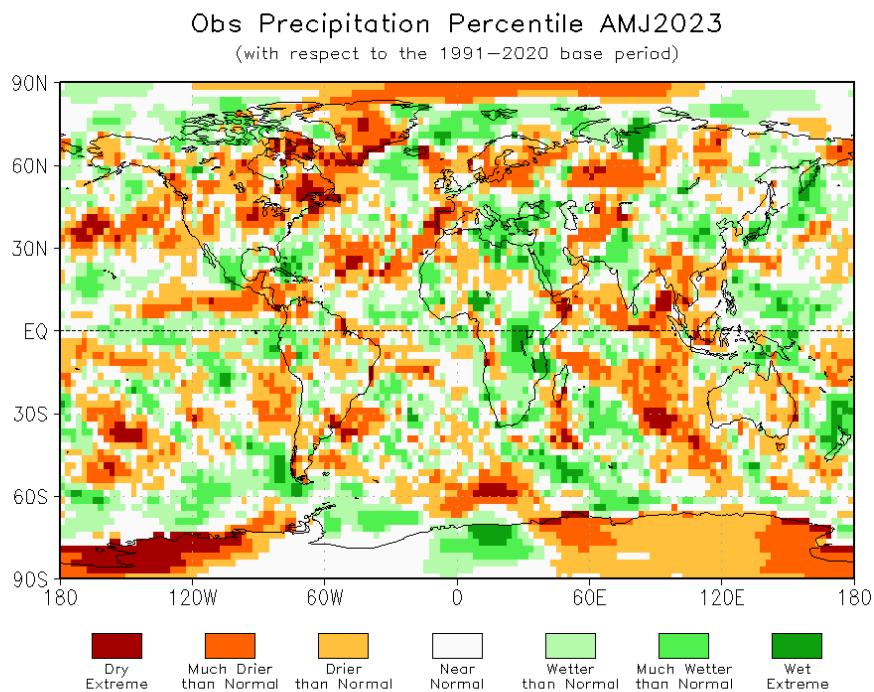
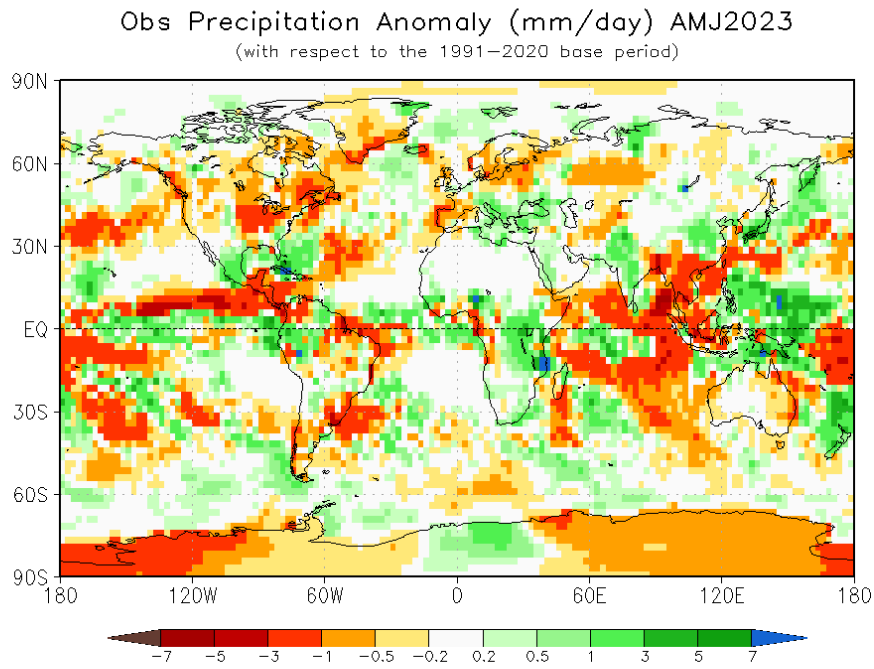


Figure 3. Observed precipitation anomalies for April–June 2023, relative to 1991–2020 base period (top). The Drier than Normal, Near Normal and Wetter than Normal shadings on the percentile map (bottom) indicate that seasonal mean anomalies were in the bottom, middle, and upper tercile of the 1991–2020 distribution, respectively. Regions with anomalies in the lowest and highest decile (or 10%) of the distribution are marked as Much Drier than Normal and Much Wetter than Normal, respectively. The Dry Extreme and Wet Extreme shadings indicate that the anomalies exceeded the driest and wettest values of the 1991–2020 period for the season. (Source: U.S. Climate Prediction Center).