WEATHER CLIMATE WATER

WORLD METEOROLOGICAL ORGANIZATION

GLOBAL SEASONAL CLIMATE UPDATE

TARGET SEASON: April-May-June 2023

Prepared: 26 March 2023

Summary

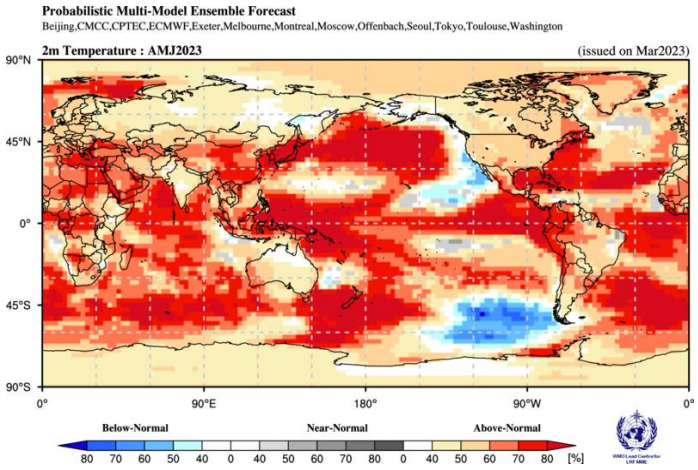
During December-February 2022/2023, Pacific Niño sea-surface temperature (SST) indices in the central and eastern Pacific, except in the far east near the South American coast, were below-normal. The observed SST conditions in the equatorial Pacific were characterized by a weak La Niña. The Indian Ocean Dipole (IOD) over the observed period was weakly positive. The North Tropical Atlantic (NTA) index was near-zero while the South Tropical Atlantic (STA) SST index was positive.

For the April-June 2023 season, near-normal sea-surface temperature anomalies in the Niño 3.4 and Niño 3 regions are predicted and indicate a tendency for weak La Niña conditions to transition towards neutral ENSO conditions with SST anomalies favouring positive values.

As warmer-than-average SSTs are generally predicted over oceanic regions, they contribute to widespread prediction of above-normal temperatures over land areas. Positive temperature anomalies are expected over most of the land areas in the Northern and Southern Hemisphere. The largest increase in probabilities for above-normal temperatures are in southern Europe, the Arbian Peninsula, eastern Asia, the Caribbean, north-western South America, the eastern Maritime Continent, and New Zealand. There are enhanced probabilities for above-normal temperatures over most of Asia, Europe, Africa, South America, North and Central America, and Australia. However, over most land areas, the probabilities for above-normal temperature are only weakly or moderately increased. 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. Many of the southwest Pacific islands lie within this band of above-normal temperatures. From the Maritime Continent east of 120° E, this area with the likelihood of above-normal temperature also extends into the central North Pacific, and at about 40° N stretches continuously from the west coast of North America to the east coast of Asia.

Probabilities for above-normal rainfall are enhanced over an area extending from north of Australia, primarily below the equator, into the Southwest Pacific to an area east of New Zealand, extending to about 120° W. Starting from southeast Asia around 120° E, there is an additional band of probabilities for above-normal rainfall stretching along the equator to the South American coast. This area is broader in the western Pacific and is confined along the equator east of the dateline. Towards the north the equator of this band, probabilities for below-normal rainfall anomalies stretch from the dateline to southern parts of Central America and extend into the southern regions of the Caribbean. Probabilities for below-normal rainfall are also predicted south of the equator starting near the dateline and extending south-eastward towards the South American coast. Probability for below-normal rainfall is also enhanced in the eastern parts of the Maritime continent and extend into the eastern Indian Ocean to 75° E. These probabilities for below-normal rainfall further extend south-eastward into Australia. Weak probabilities for above-normal rainfall anomalies are predicted over the coastal regions of northeast Asia, and over some patches over Africa. Over much of Asia, South America, Africa, and Europe there is no clear signal.

Surface Air Temperature, AMJ 2023



Precipitation, AMJ 2023

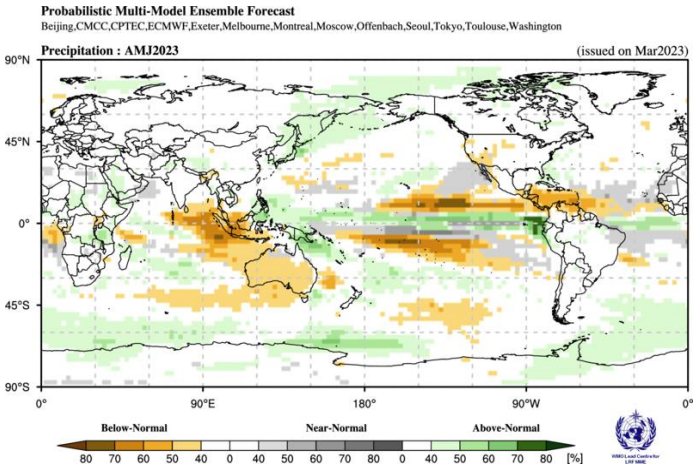
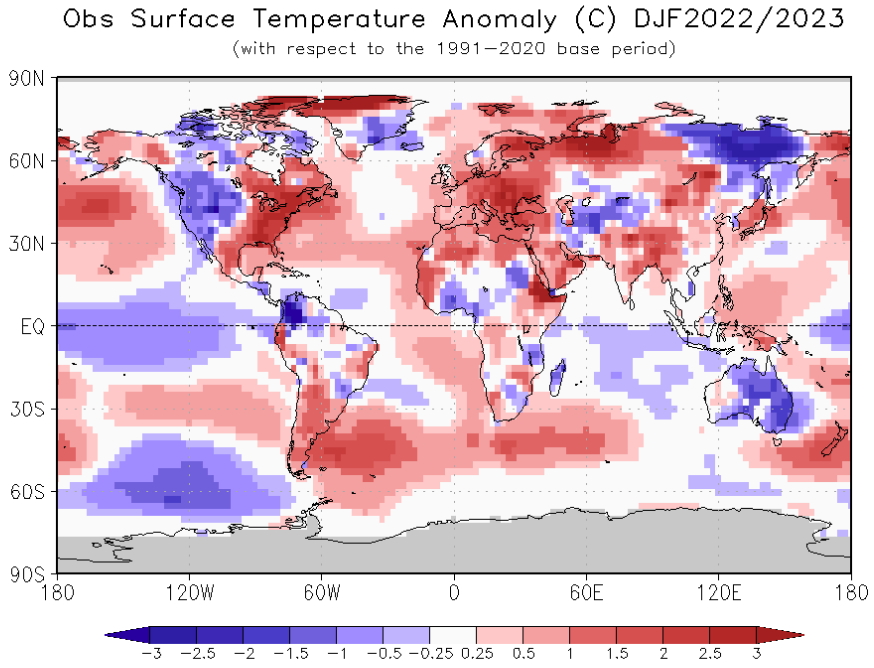


Figure 1. Probabilistic forecasts of surface air temperature and precipitation for the season April-June 2023. The tercile category with the highest forecast probability is indicated by shaded areas. The most likely category for below-normal, above-normal and near-normal is depicted in blue, red and 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.



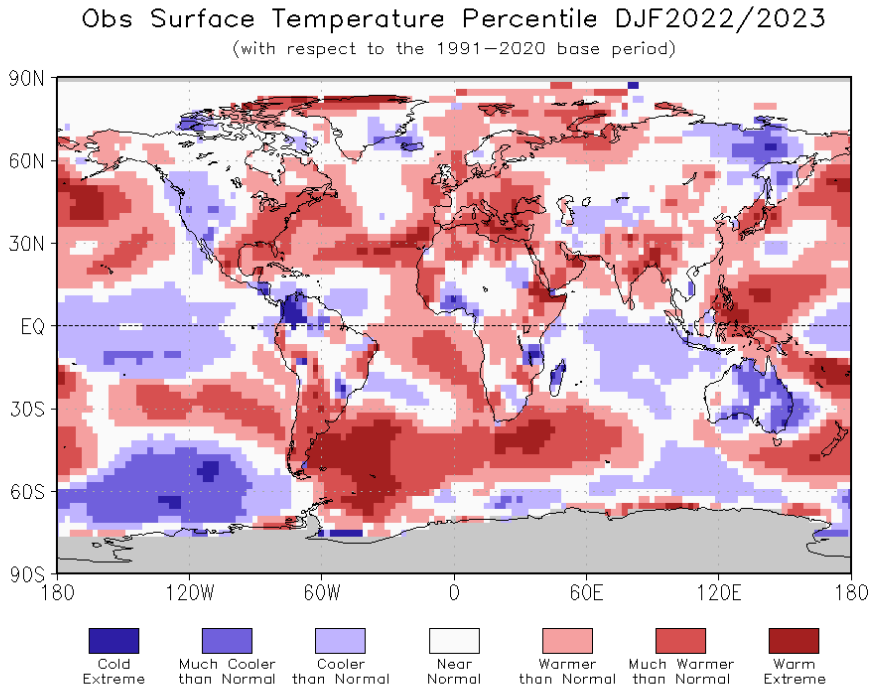
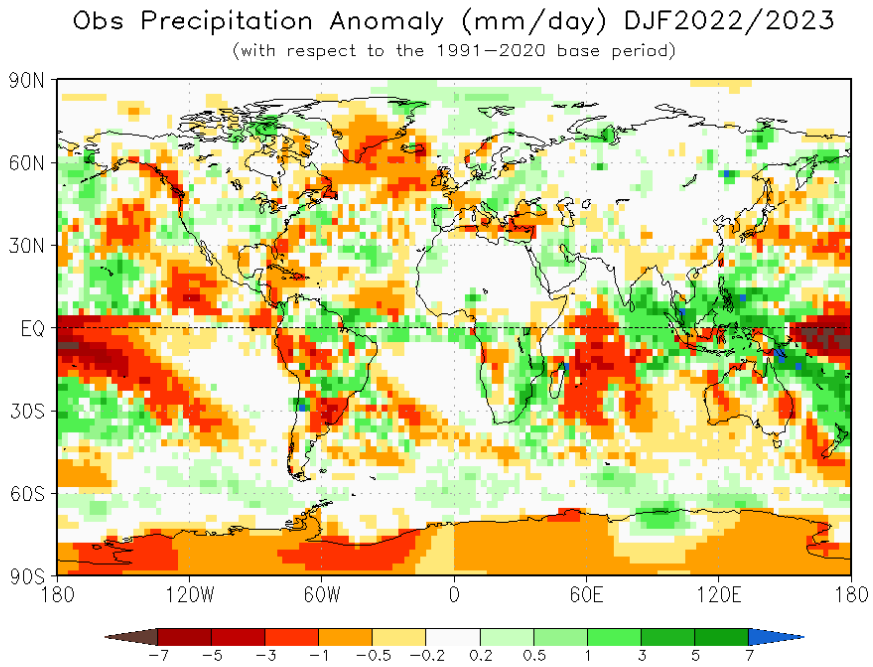


Figure 2. Observed December-February 2022/23 near-surface temperature anomalies relative to 1991–2020 (top). The Cooler than Normal, Near Normal, and Warmer than Normal shadings on the percentile map (bottom) indicate that seasonal mean anomalies were in the bottom, middle, and upper tercile of the 1991–2020 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).



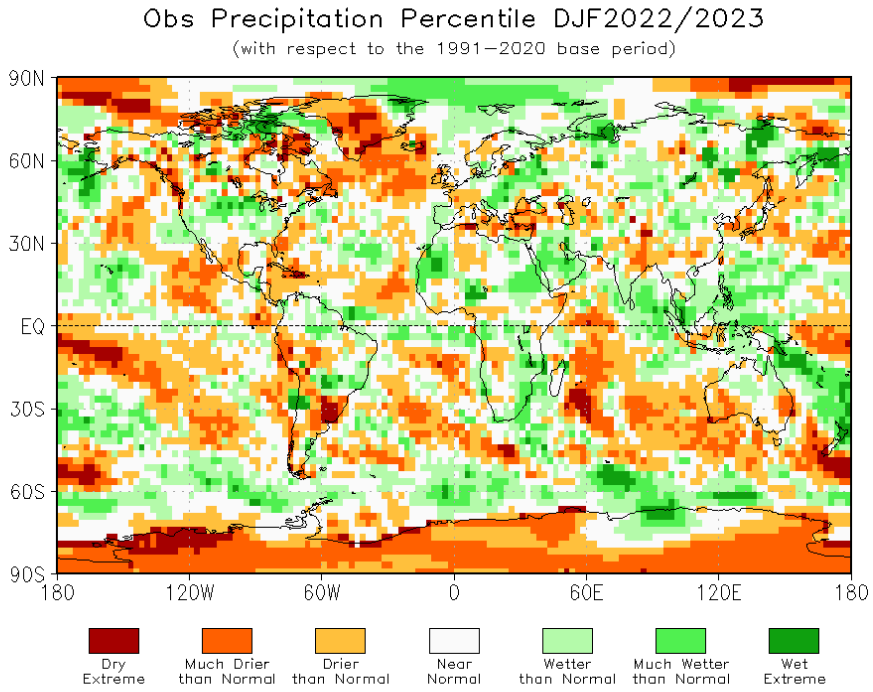


Figure 3. Observed precipitation anomalies for December-February 2022/23, relative to 1991–2020 base period (top). The Drier than Normal, Near Normal and Wetter than Normal shadings on the percentile map (bottom) indicate that seasonal mean anomalies were in the bottom, middle, and upper tercile of the 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).