

Global Disastrous Weather Report in October 2022

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Abstract: In October 2022, the temperature in most parts of the Northern Hemisphere was higher than that in the same period of the year, and many parts of Europe has experienced record-breaking daily maximum temperature in October. The temperature in parts of East Asia, North America and other regions was also higher, accompanied by less precipitation. The meteorological drought in southern China continued and developed, and the accumulated precipitation in northern and western parts of the United States reached the third lowest in history. In addition, during the first half of October, frequent high-temperature heat wave happened from North Africa, West Asia to South Asia. Bangladesh, Nepal, Thailand and other places experienced continuous heavy rainfall, and the super long rainy season in Nigeria, Africa, has caused serious geological disasters. During October, the number of typhoon generation was less, but their intensity was high, resulting in serious economic losses in the Philippines, Vietnam, Myanmar, Mexico and other places.

1. Overview of global weather

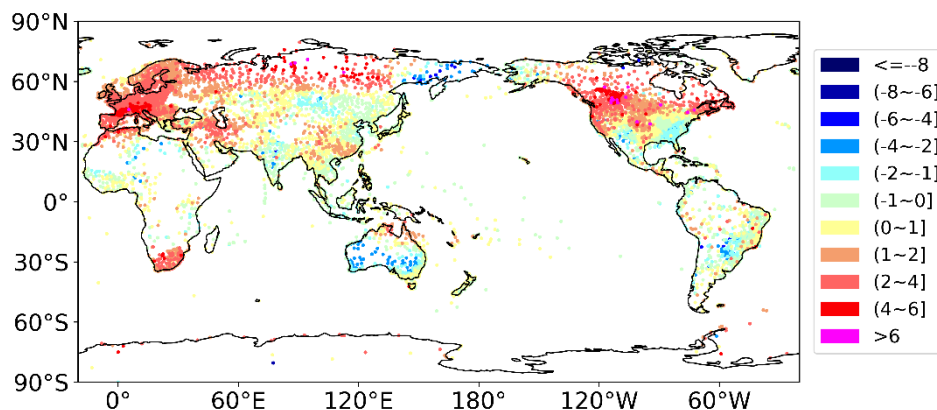


Fig.1 Monthly 2m temperature anomaly in October 2022 (unit:°C)

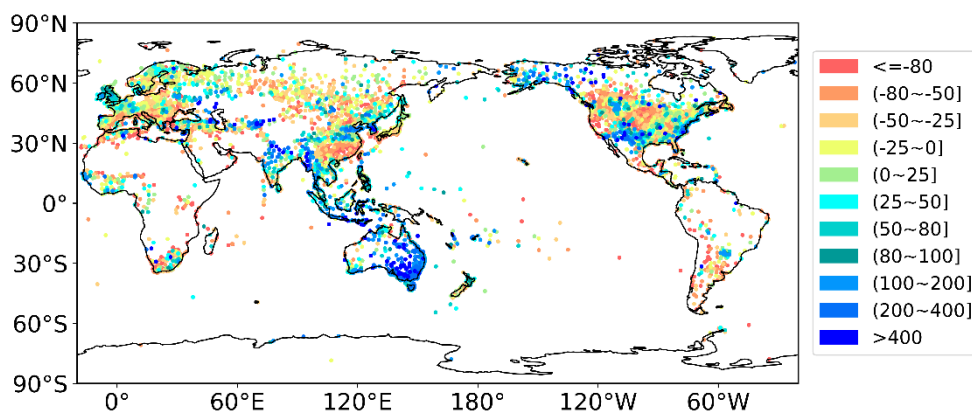


Fig.2 Monthly total accumulated precipitation percentage anomaly in October 2022 (unit:%)

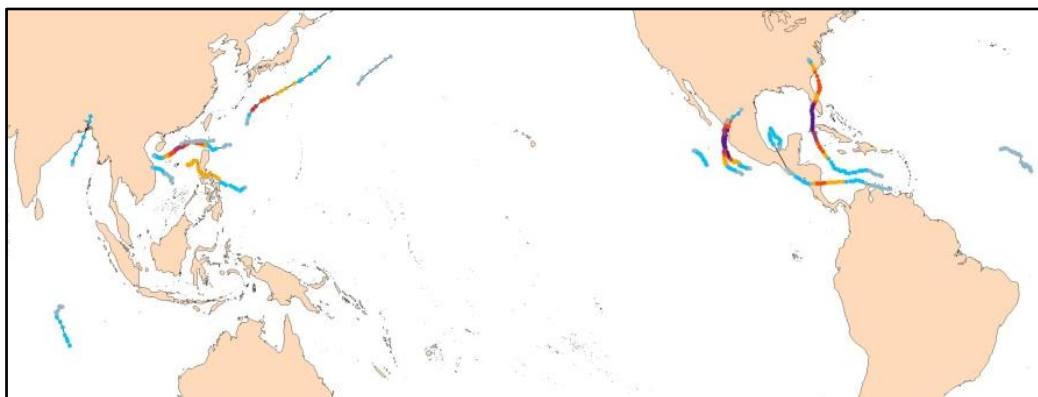


Fig.3 Global tropical cyclones in October 2022

In October 2022, the temperature in most parts of the middle and high latitudes of the Northern Hemisphere was higher. Persistent high temperature weather occurred in North Africa, West Asia, northern India and western North America. The average temperature of the above areas was 2-4 °C higher than that in the same period of the year, and in some parts of North America the average temperature was about 6 °C higher. Influenced by both the subtropical high and monsoon systems, India to Indochina Peninsula experienced continuous heavy rainfall, and the accumulated rainfall was 1~2 times more than that in the same period of the year. Nigeria, Indonesia and other places near the equator areas experienced many heavy rainfall processes, and the accumulated rainfall was 50% to 80% more than that in the same period of the year. The total precipitation in Eastern Australia, Central Africa, Argentina and other places are 2-4 times more than usual.

2. Severe weather

Heat wave continued in parts of Africa, West Asia, India and northern Australia. The high-temperature and less-rainfall weather in southern China, Thailand and Laos, made the meteorological drought in those areas continued to develop. It is reported that, 34 cities in Brazil announced that they were on drought alert.

The tropical convergence zone was very active and heavy rainfall occurred in many countries at low latitudes. On October 12, 23 cities in the west and southwest of Parana State in Brazil suffered from rainstorm and flood disasters. Nigeria, a country near the equator, has witnessed many rare extreme rainfall processes, with the flood level reaching 13.22 meters.

Typhoon "Nalgae" hit the Philippines. Due to Typhoon "Nalgae", the accumulated precipitation of more than 200 mm occurred in most parts of the Philippines during October 26 to 30, with the total precipitation in some parts of the central and southern Philippines exceeded 400 mm (the maximum precipitation reached 444.7 mm). Heavy rainfall has triggered disasters such as landslides and mud rock flows, causing serious impact on local areas.

3. Outlook

It is predicted that in the next two weeks, the temperature in western Europe, Central Asia, southern Siberia, East Asia and West Asia will be 2-3 °C higher than that in the same period of the year, while the temperature in eastern Europe, northern West Asia and most parts of North America will be significantly lower. The regions with more rainfall are mainly located in South Central Africa, the eastern coast of the Indian Peninsula, the southern part of Southeast Asia, the eastern part of Australia, the eastern part of North America, Alaska, the northwestern part of South America and Paraguay. With the active cold air in the Western Hemisphere, there will be obvious cold air processes affecting most of Canada, the central and western United States and other places. In addition, it is still important to pay attention to the generation and development of typhoons in the Northwest Pacific Ocean and the Atlantic Ocean.

Editor: Yang Shunan, Ma Jie, Kong Qi, Liu Yi, Shi Dawei