

# Introducing super drought: A new framework and web service

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## Welcome to Super Drought

This website displays near real-time monitoring of global super drought and publishes global super drought dataset. **Super drought concept** and associated **Comprehensive Multiscalar Index (CMI)** are developed to describe the overall extremity of multiscalar drought. Super drought refers to the simultaneous occurrence of extreme droughts at multiple time scales. The physical significance of super drought represents compound water deficits in all parts of hydrowater resources. CMI is a powerful measure to determine the overall rarity of multiscalar drought and recognize super drought.

**Monitor**

The latest interactive global CMI map, [See More>>>>](#)

**Data**

The historical CMI data product, [See More>>>>](#)

**Concept**

Super drought concept, [See More>>](#)

**CMI**

Framework to calculate CMI, [See More>>](#)

**Publications**

Our featured publications, [See More>>](#)

At superdrought.com, end users and decision-makers can effortlessly access both near-real-time monitoring data and an extensive historical data archive. Credit: Lin Wang

In recent years, the world has witnessed an alarming increase in the occurrence and severity of catastrophic droughts across various regions. While extensive research has been dedicated to understanding extreme droughts, a fundamental question has remained overlooked: What truly defines an extreme drought? Unraveling this complex phenomenon requires addressing its multi-scalar nature.

Taking on this challenge, Dr. Lin Wang from the Institute of Atmospheric Physics at the Chinese Academy of Sciences introduces the concept of "super drought." This [theoretical framework](#), published in *Bulletin of the American Meteorological Society*, highlights the simultaneous occurrence of [extreme droughts](#) at multiple time scales, shedding light on the compound dry extremes that impact [water resources](#) and result in significant water storage loss.

It acts as a vital differentiator, separating high-impact droughts from those with milder consequences.

"To provide a quantitative representation of this concept, we have developed the Comprehensive Multiscalar Index (CMI) using the innovative vine copula framework," explains Dr. Wang. The CMI offers a pioneering approach to monitor super droughts, representing a significant advancement in our understanding of extreme events within the context of drought. Its potential applications are wide-ranging and hold great promise.

Recognizing the importance of international collaboration, Dr. Wang is committed to enhancing China's influence in the field of drought index and monitoring. In pursuit of global accessibility, he has launched the web service, [superdrought.com](#). This platform provides near-real-time monitoring of global super [drought](#) events, enabling users to stay informed about the latest developments. Additionally, the website serves as a comprehensive historical data repository, offering invaluable

insights to researchers, policymakers, and interested individuals.

"At [superdrought.com](https://superdrought.com), our utmost priorities are transparency and accessibility," Dr. Wang emphasizes. Through this public website, end users and decision-makers can effortlessly access both near-real-time monitoring data and an extensive historical data archive.

"Our goal is to empower individuals and organizations with the necessary tools to navigate the challenges posed by super droughts." Dr. Wang hopes. " Together, we can work towards improved anticipation and mitigation strategies, safeguarding our water resources and communities."

**More information:** Lin Wang et al, Super Drought under Global Warming: Concept, Monitoring Index, and Validation, *Bulletin of the American Meteorological Society* (2023). [DOI: 10.1175/BAMS-D-22-0182.1](https://doi.org/10.1175/BAMS-D-22-0182.1)

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