المركز الإقليمي للعواصف الغبارية والرملية
Sand and Dust Storm Regional Center

المركز الوطني للأرصاد
National Center for Meteorology

Dust and Sandstorms Events in August 2024

Executive Summary:

This report presents an in-depth analysis of dust and sandstorm (SDS) events across Saudi Arabia during August 2024, benchmarked against the 21-year climatological average (2003–2023). A total of 136 dust hours distributed over 59 days were recorded, reflecting a 29% decrease in dust hours and a 12% decrease in dust days compared to the long-term mean (191 hours; 67 days). Regional variations were pronounced: the Southern and Southwestern Regions were the most active, with Sharurah (19 d; 60 h, +10 d; +30 h) emerging as the national hotspot, followed by Al-Madinah (6 d; 14 h, +5 d; +11 h) and Bisha (6 d; 9 h, +4 d; +7 h). Najran increased slightly (5 d; 9 h, +1 d; +2 h), and Jeddah (4 d; 9 h, +3 d; +6 h) signaled coastal activity. In contrast, the Eastern Province recorded notable deficits: Al-Ahsa (1 d; 2 h, –3 d; –20 h), Dammam (1 d; 1 h, –1 d; –10 h), and Dhahran (0, –2 d; –8 h). Hafar Al-Batin also dropped to zero (–3 d; –14 h). The Central and Northern Regions were mostly suppressed: Riyadh (1 d; 7 h, –2 d; –8 h), Al-Kharj (1 d; 1 h, –2 d; –9 h), Al-Dawadmi (2 d; 2 h, near-normal in days but –4 h), while Arar, Qurayyat, Turaif, Rafha, and Al-Jouf recorded no events. Yanbu (2 d; 5 h) and Tabuk (1 d; 2 h) showed marginal contributions. On the event scale, blowing dust (BLDU) dominated (167 h), accompanied by blowing sand (27 h), dust storms (4 h), and sandstorms (14 h). Notably, about 40% of storm hours were associated with thunderstorm-induced outflows. These results emphasize that August 2024 was below climatology.