المركز الإقليمي للعواصف الغبارية والرملية
Sand and Dust Storm Regional Center

المركز الوطني للأرصاد
National Center for Meteorology

Dust and Sandstorms Events in April 2024

Executive Summary:

This report presents an in-depth analysis of dust and sandstorm (SDS) events across Saudi Arabia during April 2024, benchmarked against the 21-year climatological average (2003–2023). A total of 236 dust hours distributed over 57 days were recorded, reflecting a 56% decrease in dust hours and a 56% decrease in dust days compared to the long-term mean (594 hours; 130 days). Regional variations were pronounced: the Eastern Province showed mixed signals. Al-Ahsa (4 d; 13 h) matched its long-term hours (0 anomaly in h) but fell –6 days short. Dammam (3 d; 6 h, –5 d; –41 h) and Dhahran (3 d; 4 h, –4 d; –35 h) exhibited steep deficits. In contrast, Wadi Al-Dawasir emerged as a hotspot with (9 d; 58 h), showing only slight declines (–1 d; –36 h). The Central Region displayed moderate activity: Riyadh (4 d; 19 h, –5 d; –29 h), Al-Kharj (5 d; 8 h, –3 d; –38 h), Al-Qassim (3 d; 15 h, –4 d; –28 h), and Dawadmi (5 d; 19 h, –1 d; –27 h). Most stations showed sharp drops in hours relative to climatology. In the Northern Region, Arar (3 d; 15 h, –4 d; –29 h), Qurayyat (1 d; 1 h, –2 d; –15 h), Rafha (4 d; 9 h, –6 d; –58 h), and Tabuk (2 d; 2 h, –1 d; –9 h) reflected widespread deficits .The Western Region exhibited localized activity: Jeddah (3 d; 8 h) exceeded its climatology (+1 d; 0 h), while Yanbu (1 d; 1 h) and Al-Madinah (1 d; 1 h) recorded limited events. The Southern and Southwestern Regions showed contrasting signals. Bisha (3 d; 3 h) matched its long-term mean, while Najran (2 d; 7 h, –2 d; –6 h) declined slightly. In contrast, Khamis Mushait (4 d; 27 h) exceeded expectations despite no long-term climatology, and Sharorah (7 d; 13 h) recorded strong activity, though still below its average (–1 d; –29 h). Jizan (3 d; 4 h) reported more days than its average but remained below hours. On the event scale, blowing dust dominated, while isolated dust storms (DS) and sandstorms (SS) were reported at select central and eastern stations, though contributing marginally to totals. These results emphasize that April 2024 was markedly below climatology, with national totals reduced by more than half.