



Dust and Sandstorms Events in April 2025

Executive Summary:

This report presents a comprehensive analysis of dust and sandstorm (SDS) events across Saudi Arabia during April 2025, benchmarked against the 21-year climatological average (2003–2024). A total of 334 dust hours distributed over 26 days were recorded, reflecting a 41% decrease in dust hours but a 4% increase in dust storm days compared to the long-term mean of 556 hours and 25 days. Regional variations were evident. The Northern and Eastern regions (notably Rafha, Hafar Al-Batin, and Guriat) recorded the highest activity, with anomalies ranging from +10% to +92% in dust hours. Rafha stood out with 59 hours and 11 days (intensity level 7), while Hafar Al-Batin registered 48 hours and 9 days (intensity level 6). In contrast, the Central and Southern regions (Riyadh, Gassim, Najran, Wadi Al-Dawasir) reported sharp declines, with anomalies of –12 to –26 hours and –3 to –5 days, and Najran showed no dust activity at all. The Western region showed mixed patterns: Jeddah dropped to zero (–100%), while Bisha and Yenbo exhibited localized increases up to +100% in hours. On the event scale, blowing dust dominated with 325 cases (97%), though below the historical average of 512 cases (92%). Dust storms decreased to 8 cases (vs. 21 historically), and sandstorms dropped to only 1 case (vs. 23 historically). This reflects a pronounced suppression of storm-scale SDS events compared to climatology. A case study from April 14, 2025 highlighted severe blowing dust events in Rafha and Hafar Al-Batin. At Rafha, strong westerly winds of 20 knots under a low-pressure system reduced visibility to 500 m, with satellite imagery confirming dust plumes from the An-Nafud Desert. At Hafar Al-Batin, northwesterly winds of 24 knots, combined with hot and dry conditions (28°C, dew point –1°C), transported dust from Iraq and the Ad-Dahna Desert, reducing visibility to 1 km (temporarily 500 m). These results emphasize April 2025 as a month of contrasting SDS dynamics: overall reduced activity across much of the Kingdom but localized intensification in the Northern and Eastern regions, driven by synoptic low-pressure systems, strong wind regimes, and exceptionally dry soil conditions.