المركز الإقليمي للعواصف الغبارية والرملية
Sand and Dust Storm Regional Center

المركز الوطني للأرصاد
National Center for Meteorology

Dust and Sandstorms Events in September 2025

Executive Summary:

This report presents a comprehensive analysis of dust and sandstorm (SDS) events across Saudi Arabia during September 2025, benchmarked against the 21-year climatological average (2003–2024). A total of 39 dust hours distributed over 9 dusty days were recorded, representing a 62% decrease in total dust hours and a 36% decline in dusty days compared to the long-term mean. Regionally, the Eastern, Western, and Southern regions were the most affected, with Al-Ahsa, Guriat, and Yenbo showing the highest activity—recording 13, 4, and 7 hours of dust respectively. In contrast, the Central and Northern regions (including Riyadh, Arar, and Al-Jouf) experienced a complete absence of dust events. Moderate activity was observed in Bisha, Dawadmi, Dammam, Dhahran, and Gizan, with durations ranging between 1 and 6 hours.

Comparative analysis with the historical climatology revealed a general weakening of SDS intensity across most regions, particularly in the Central and Eastern provinces, while localized increases were detected along the western coast and the northwest. On the event scale, blowing dust (BLDU) significantly decreased by 78%, while sandstorms (SS) remained constant and dust storms (DS) slightly declined. A case study at Gizan (OEGN) on 8 September 2025 documented a thunderstorm-induced sandstorm, driven by strong northwesterly winds (35 knots) and convective downdrafts under a low-pressure environment (1006 hPa).

These findings highlight strong spatial contrasts in SDS activity across the Kingdom and underscore the influence of synoptic and mesoscale drivers—including pressure gradients, thermal contrasts, and coastal wind convergence—in shaping dust storm variability during September 2025.