



## Dust and Sandstorms Events in May 2025

### Executive Summary:

This report presents a detailed analysis of dust and sandstorm (SDS) events across Saudi Arabia during May 2025, benchmarked against the 21-year climatological average (2003–2024). A total of 187 dust hours distributed over 12 days were recorded, reflecting a 40% decrease in dust hours and a 40% decrease in dust storm days compared to the long-term mean of 570 hours and 20 days. Regional variations were pronounced. The Northern and Eastern regions (particularly Rafha, Hafar Al-Batin, and Dammam) experienced the most severe activity, driven by strong and persistent northwesterly winds. Central areas, including Riyadh, were also significantly impacted, with widespread deterioration in air quality and transport disruption. In contrast, Western and Southern regions recorded much lower activity, although satellite data confirmed dust plume extensions into the Red Sea and Arabian Sea. On the event scale, May 2025 was dominated by dust storms and sandstorms, in contrast to the earlier months of 2025 when blowing dust prevailed. Source attribution identified contributions primarily from the Mesopotamian Basin (58%), followed by the A Nafud Desert (27%) and Ad-Dahna corridor (15%). A case study from 19 May 2025 highlighted the peak of the outbreak, when strong northwesterly winds exceeding 25 knots reduced visibility to below 1 km across much of the Kingdom. The storm's persistence over four consecutive days underscores the role of low-pressure systems, strong gradients, and hyper-arid soils in sustaining severe SDS conditions. These findings emphasize that May 2025 was characterized by a single, large-scale, and intense SDS outbreak, but overall activity was well below the historical baseline in both duration and frequency.