

Climate Summary of Weather Events in the Sultanate of Oman

2025



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Introduction

Weather events and climate variability affect multiple vital sectors in the Sultanate of Oman. They have direct implications for public safety, resource management, and long-term national planning.

As meteorological information becomes increasingly important and demand for reliable climate data continues to grow among researchers, institutions, and development and planning entities, the need for scientific publications that accurately document and analyse weather events and variability is greater than ever.

This third edition of the Annual Climate Summary of Weather Events in the Sultanate of Oman for 2025 provides a comprehensive and precise overview of the most significant weather events affecting the Sultanate of Oman throughout the year. It highlights the major weather systems that affected Oman in 2025 and presents key climatological statistics recorded across the governorates.

This publication is based on data and analysis provided by the Directorate General of Meteorology at the Civil Aviation Authority. It aims to raise awareness of climate and weather variability among organisations and individuals and reflects the Civil Aviation Authority's commitment to maintaining a high-quality climatological database built on systematic observations of key weather elements.

National Multi-Hazard Early Warning Centre

The National Multi-Hazard Early Warning Centre, affiliated with the Civil Aviation Authority, is responsible for issuing meteorological bulletins, operational services, and associated warnings related to weather and tsunami hazards. The Centre represents one of the key pillars of Oman's national Emergency management framework.

Operating around the clock, the Centre monitors atmospheric and marine parameters that may impact weather patterns and sea state. Specialists analyse and study real-time weather data and climate information collected from many sources, including ground stations, weather balloons, satellites, weather radars, and marine radar systems.

In addition to its role in monitoring and analysing atmospheric phenomena, the Centre also undertakes monitoring of seismic data when offshore or nearby coastal earthquakes occur, which may generate tsunami waves, and assesses the threat to Oman. It issues warnings and guidance as necessary.

Operations at the centre rely on real-time meteorological observations and data derived from a network of observation stations that is distributed across the Sultanate of Oman, in addition to upper-air observation stations. Satellite data is also used to track and monitor weather phenomena, and so are Weather radars. The operations also rely on Numerical weather prediction models that use mathematical equations and current weather observations to forecast weather for a few days ahead.

The Centre disseminates bulletins and information to beneficiaries through multiple channels, including public alerts and notifications to relevant authorities, in addition to providing specialised bulletins tailored to various sectors.

During significant weather events, the Centre, in accordance with defined operational procedures, issues reports, alerts, and warnings on weather conditions or tsunami risks that may pose a threat to lives and property. Detailed bulletins are also issued to the National Emergency Management Committee and relevant sectors, outlining weather conditions and providing guidance on essential preparedness measures to mitigate risks during these circumstances.



المركز الوطني للإنذار المبكر من المخاطر المتعددة
NATIONAL MULTI HAZARD EARLY WARNING CENTER





General Concepts and Terminology



Indicator	Classification	Definition
Atmospheric Trough	Westerly Trough	An elongated region of relatively low atmospheric pressure, typically associated with frontal systems causing rainfall and winds
	Easterly Trough	
Temperature	Average Temperature	The average temperature calculated from hourly temperature measurements for a station (°C)
	Maximum Temperature	The highest temperature recorded from hourly temperature measurements for a station (°C)
	Minimum Temperature	The lowest temperature recorded from hourly temperature measurements for a station (°C)
Humidity	Relative Humidity	The percentage of moisture in the air compared to the maximum it can hold at a given temperature
Wind	Average Wind	The average wind speed calculated from hourly wind speed measurements at the station
	Maximum Gust Speed	The highest wind speed lasting two seconds or less, recorded from hourly wind speed measurements
Rainfall	Accumulated Rainfall	The total rainfall calculated from hourly rainfall measurements (millimeters)

Weather Events Affecting the Sultanate of Oman

In 2025, the Sultanate of Oman experienced several weather events of varying intensities and spatial extent. These events included winter westerly low-pressure systems and troughs, summer easterly low-pressure systems and troughs, summer orographic rainfall over the Al Hajar Mountains, tropical systems, dust outbreaks, and notable increases and decreases in temperature.

The table below summarises the most prominent weather events affecting the Sultanate of Oman during 2025.

Type of Weather Events		Frequency (No. Of cases/Days)
	Tropical Systems	2 cases - First case: Category 1 tropical cyclone - Second case: Tropical depression
	Winter Westerly Troughs and low-pressure systems	12 cases
	Summer Easterly Troughs and low-pressure systems	1 case
	Summer Orographic Rainfall	98 days
	Notable Increase in Temperatures	10 cases
	Notable Decrease in Temperatures	9 cases
	Dust Storms	23 days - Local dust events: 14 days - Regional dust events: 9 days

Weather Events Affecting the Sultanate of Oman

During the winter season, Oman experienced 12 westerly wave systems, most of which caused a limited impact. However, three produced moderate to heavy rainfall. The first was in early February, the second in mid-October, and the most impactful was Al Khuzam in mid-December. The highest accumulated rainfall was 243.6 mm at Jabal Harim station in Wilayat Khasab during the impact of Al Khuzam Depression on Oman from 13 to 20 December.

During the summer, Al Hajar Mountains and adjacent areas experienced enhanced convective activity, with a total of 98 convectively active days recorded across the Sultanate of Oman. NMHEWC meteorological stations recorded moderate to high rainfall. Some convective events were accompanied by strong winds, causing dust to rise in desert-exposed regions.

In addition, during summer, the Sultanate was affected by an easterly wave system ,Al-Istibshar Trough, which affected Oman from 17 to 21 August. The impact extended across all governorates, bringing light to moderate rainfall, with locally heavy falls in some areas.

The prevailing summer monsoon winds also enhanced Khareef Dhofar season, which is typical at this time of year. This eventually led to the formation of low clouds and fog, light drizzle, rainfall in coastal areas and the mountains of Dhofar Governorate, and reduced horizontal visibility, especially in mountainous regions.

In 2025, two tropical systems formed in the Arabian Sea, but neither had a direct impact on Oman. The first, Category 1 Tropical Cyclone "Shakti," lasted from 28 September to 7 October. It moved south-southeast, stayed far from the Omani coast, and eventually faded over the central Arabian Sea.

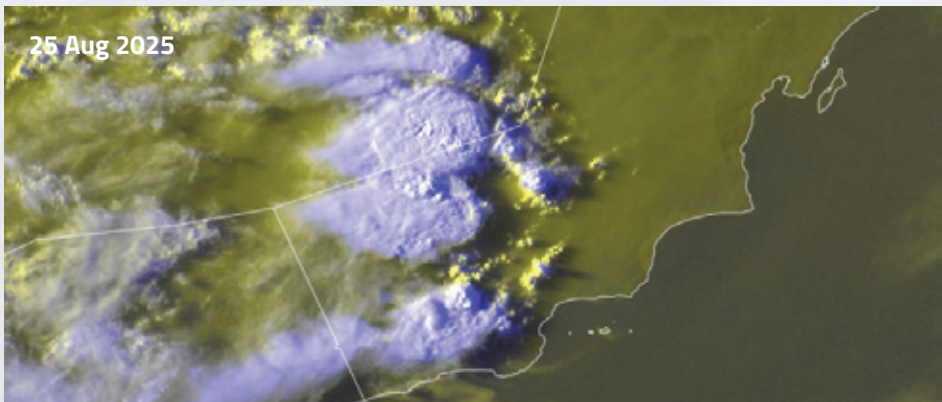
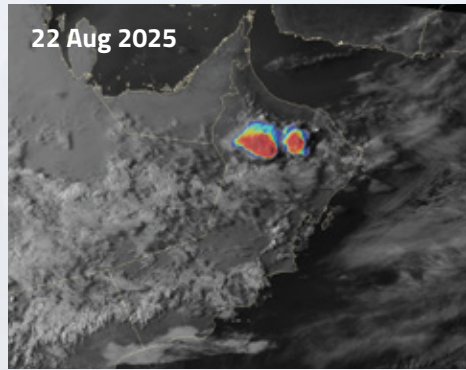
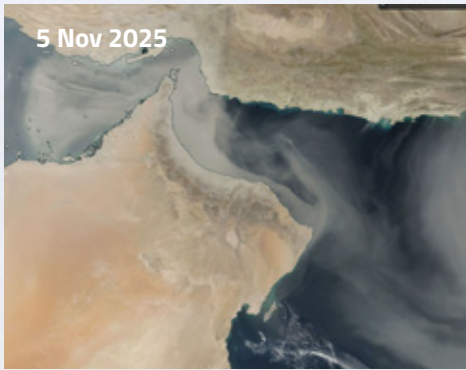
The second case was a tropical depression that formed between 18 and 22 October. Its direct impacts were represented by increased wave heights and cloud advection over parts of the Sultanate of Oman.

Weather Events Affecting the Sultanate of Oman

Regarding temperatures, the Sultanate of Oman recorded 10 notable temperature increase events the most significant of which occurred in July, when the Barka observation station recorded the year's highest temperature at 50.7°C. In contrast, several governorates experienced nine notable temperature-decrease events, the most significant of which occurred at the end of November and affected all governorates of the Sultanate.

In 2025, the Sultanate of Oman was affected by a number of regional and local dust events occurring at different times throughout the year, as well as by localised cases resulting from wind activity associated with summer orographic convection. The total number of dust-affected days reached 23, generally leading to a slight to moderate reduction in horizontal visibility during certain periods.

Satellite images showing some of the weather events affecting Oman in 2025



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Rainfall

Rainfall

In 2025, the Sultanate of Oman recorded varying rainfall totals across its governorates. According to rainfall data from the National Multi-Hazard Early Warning Centre’s observation stations, Dhofar Governorate recorded the highest annual rainfall total, with the Dhalkut observation station recording 379.6 mm. This was mainly associated with persistent drizzle during the Khareef season and the influence of the easterly summer trough “Al-Istibshar”.

Musandam Governorate recorded the second highest annual accumulated rainfall, with Jabal Harim station recording 266.4 mm, influenced by winter westerly troughs and low-pressure systems. Al Dakhiliyah Governorate followed, with Jabal Shams station recording 173.6 mm, largely associated with summer convective activity over the Al Hajar Mountains.

In contrast, Muscat, South Al Sharqiyah, and North Al Batinah Governorates recorded annual rainfall totals of less than 10 mm.

The table below presents the highest annual accumulated rainfall recorded in each governorate and the corresponding observation station.

Highest annual accumulated rainfall by Governorate in 2025		
Governorate	Observation Station	annual accumulated rainfall (mm)
Dhofar Governorate	Dhalkut	379.6
Musandam Governorate	Jabal Harim	266.4
Al Dakhiliyah Governorate	Jabal Shams	173.6
Al Dhahirah Governorate	Yanqul	101.6
Al Buraimi Governorate	Mahdha	84.8
North Al Sharqiyah Governorate	Al Mudhaibi	45.4
Al Wusta Governorate	Port of Duqm	40.4
South Al Batinah Governorate	Al Awabi	32.8
North Al Batinah Governorate	Shinas	8
South Al Sharqiyah Governorate	Ras Al Hadd	7
Muscat Governorate	Muscat International Airport	6.2

Rainfall

The data also showed notable variation in monthly accumulated rainfall throughout 2025. The monthly accumulated rainfall was recorded in December, reaching 243.6 mm at the Jabal Harim station in the Musandam Governorate, influenced by the westerly low-pressure system “Al-Khuzam from 13 to 20 December.

The period from June to September also stood out for rainfall totals, driven by Khareef activity in the Dhofar Governorate, summer orographic rainfall over the Al Hajar Mountains, and the influence of the easterly summer trough system “Al-Istibshar”.

In contrast, the lowest monthly accumulated rainfall were recorded in January, April, May, and November, due to the limited occurrence of significant weather systems.

The table below presents the highest monthly accumulated rainfall recorded in 2025 and the corresponding observation stations.

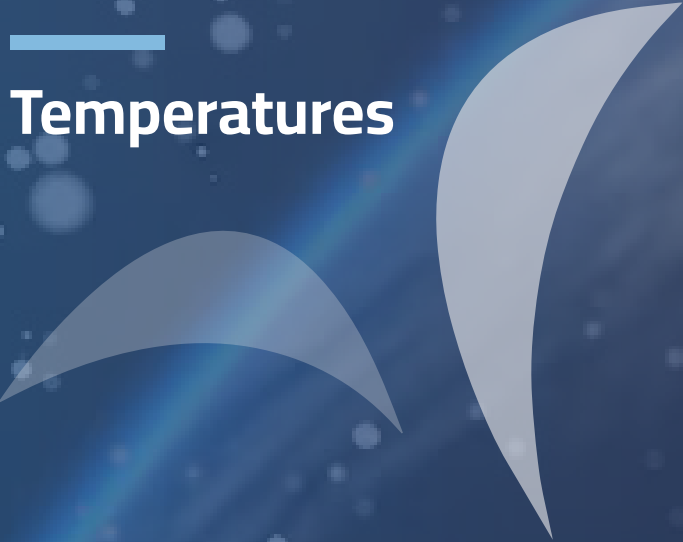
Highest Monthly Rainfall Total in 2025		
Month	Observation Station	Highest Rainfall total (mm)
January	Sultan Qaboos Port	2.2
February	Khasab Airport	12.8
March	Jabal Harim	18.2
April	Al Jazir	1
May	Saiq	9
June	Dhalkut	45.6
July	Dhalkut	79
August	Dhalkut	126.2
September	Dhalkut	127.2
October	Jabal Shams	53.2
November	Al Hallaniyat	1.2
December	Jabal Harim	243.6



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Temperatures



Temperatures

Temperature observations during 2025 showed considerable spatial and temporal variability across the Sultanate of Oman, reflecting Oman’s diverse geographical and climatic conditions. The highest air temperature was recorded at the Barka observation station, reaching 50.7 °C, while the lowest was recorded at the Jabal Shams station in Al Hamra, where the temperature dropped to –1.1 °C.

The year also witnessed several episodes of significant temperature fluctuations. Oman experienced ten notable heat events during 2025. The most significant episode occurred during 30 and 31 July, affecting the northern governorates, during which Barka recorded the year’s peak temperature of 50.7 °C. Another remarkable episode occurred from 28 to 30 January, when temperatures reached 33°C in Salalah and 32.6°C in Al Jazir. This episode had a widespread impact across several governorates.

The Table below presents the notable high-temperature Periods recorded across Oman during 2025, along with the affected areas and the maximum recorded Temperature (°C).

Notable High-Temperature Periods in 2025		
Period	Affected Area	Maximum Recorded Temperature (°C) / Observation Station
28–30 January	All governorates	33.0 (Salalah)
23–24 February	Most governorates	38.2 (Al Mazyunah)
20–23 March	Northern coasts, North Al Sharqiyah, and adjacent areas	39.6 (Sur)
29–30 April	Northern governorates	45.5 (Saham)
17–18 May	North Al Sharqiyah coasts and adjacent areas	48.6 (Quriyat)
14–17 June	Desert regions and surrounding areas	49.1 (Fahud)
22–24 June	Northern governorates	49.2 (Bidiya)
30–31 July	Northern governorates	50.7 (Barka)
06–10 September	All governorates	47.0 (Hamra Al Duroo)
1 October	All governorates	43.8 (Fahud)

Temperatures

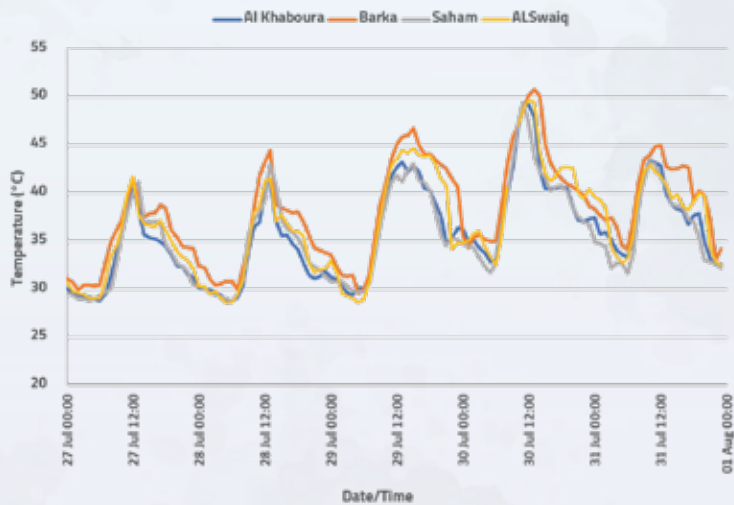
In contrast, the Sultanate of Oman experienced nine notable low-temperature episodes in 2025. One of the most significant was the episode from 24 November to 2 December, during which the Jabal Shams station recorded a temperature of -0.3°C .

Overall, the data indicate that the number of notable low-temperature episodes recorded in 2025 was lower than in 2024. This decline is primarily attributed to the reduced frequency of winter westerly troughs affecting the Sultanate during 2025 compared to the previous year.

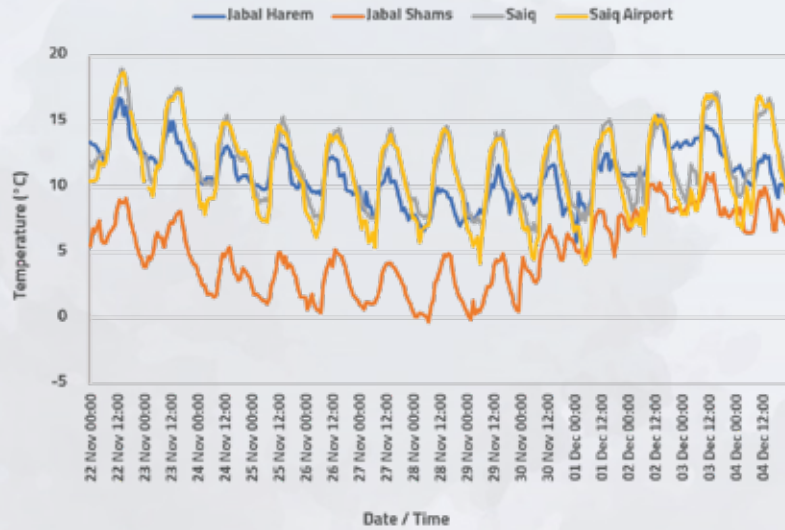
The Table below presents the notable low-temperature periods recorded across Oman during 2025, along with the affected areas and the minimum recorded temperature ($^{\circ}\text{C}$).

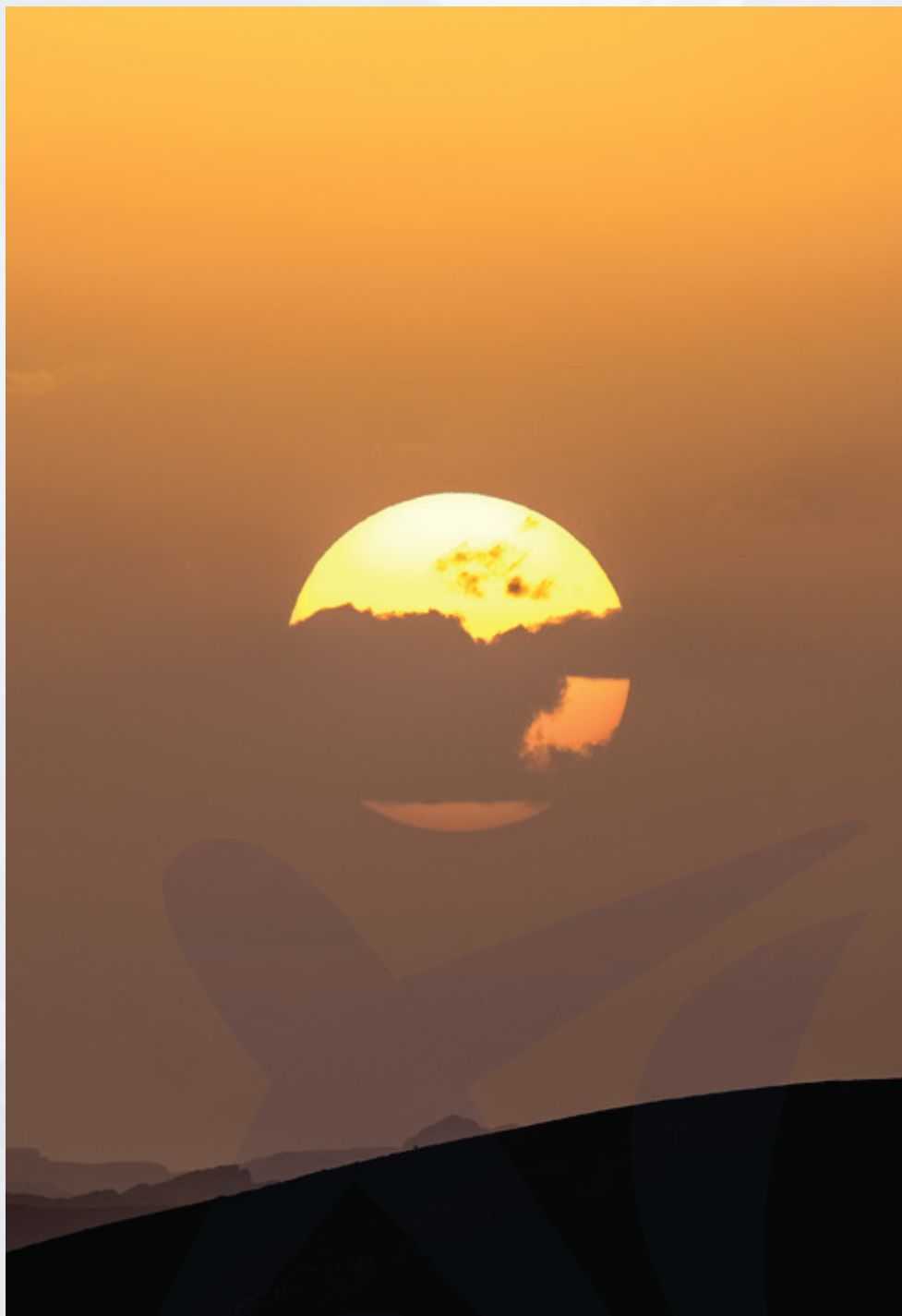
Notable Low-Temperature Periods in 2025		
Period	Affected Areas	Minimum Recorded Temperature ($^{\circ}\text{C}$) / Observation Station
04–07 January	Desert and mountainous regions	2.6 (Saiq)
01–04 February	All governorates	1.5 (Saiq)
03–06 March	Northern governorates	2.7 (Jabal Harim)
26–27 March	All governorates	6.0 (Jabal Harim)
01–04 April	All governorates	12.4 (Saiq)
08–10 May	Northern governorates	15.0 (Saiq)
06–09 June	Northern governorates	14.6 (Jabal Harim)
05–10 November	Mountainous areas and adjacent desert regions	4.2 (Jabal Shams)
22 November –02 December	All governorates	-0.3 (Jabal Shams)

Maximum Temperatures Recorded During the Notable High-Temperature Period 26 July – 1 August 2025



Minimum Temperatures Recorded During the Notable Low-Temperature Period 22 November – 04 December 2025





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Winter Westerly Troughs and Low-Pressure Systems



Winter Westerly Troughs and Low-Pressure Systems

During the winter season of 2025, the Sultanate of Oman was affected by 12 winter westerly troughs and low-pressure systems of varying intensity. While most of these systems had limited impacts, the low-pressure system affecting the Sultanate from 14 to 18 February was associated with broader geographic impacts across all governorates. During this event, 17 observation stations recorded rainfall ranging from light to moderate.

However, the westerly system in December, locally known as “Al-Khuzam” was the most significant winter event of 2025 and is described in detail in the following sections.

The table below summarises the monthly distribution of winter westerly troughs and low-pressure systems

Monthly Distribution of Winter Westerly Troughs and Low-Pressure Systems During 2025	
Month	Number of Systems
January	3
February	5
March	1
October	1
December	2

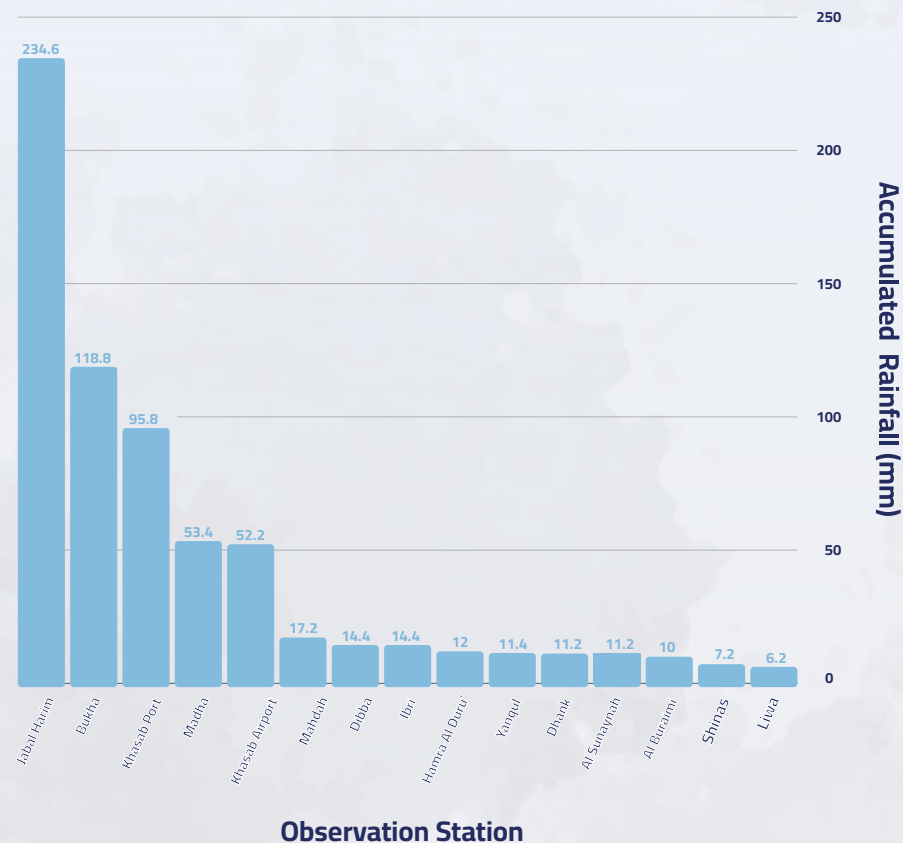
Winter Westerly Low-pressure System “Al Khuzam”

One of the most significant winter westerly troughs and low-pressure systems affecting the Sultanate of Oman in 2025 was the “Al-Khuzam” low-pressure system, which affected the Sultanate from 13 to 20 December. During this event, the highest accumulated rainfall reached 243.6 mm at the Jabal Harim observation station in the Wilayat of Khasab, as a direct result of the system’s influence on the Musandam Governorate.

Winter Westerly Troughs and Low-Pressure Systems

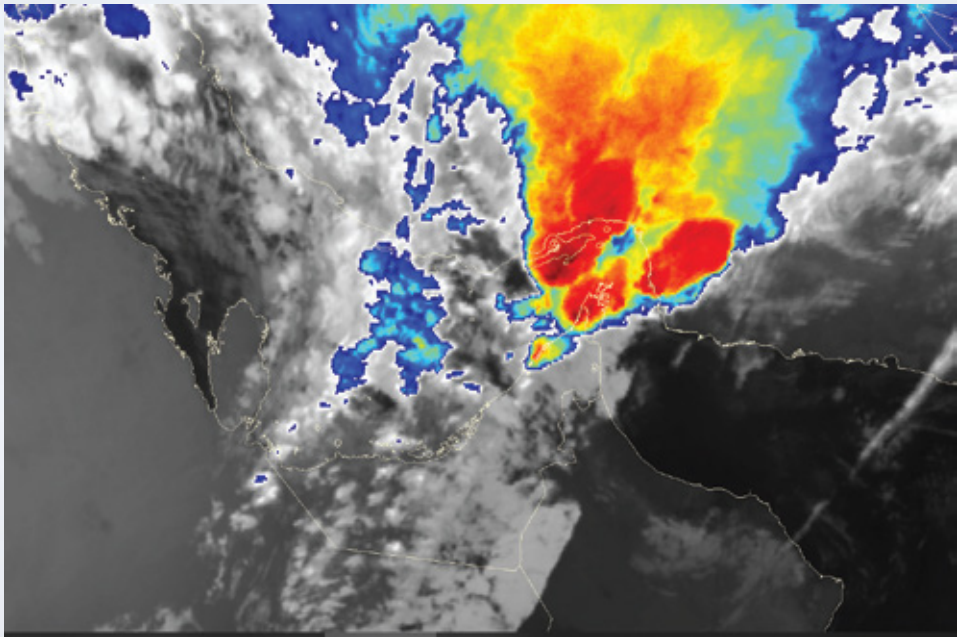
The system's impacts later extended to the Al Buraimi, Al Dhahirah, North Al Batinah, South Al Batinah, and Muscat governorates, where rainfall of varying intensity was recorded at 30 meteorological stations. In addition, 10 meteorological stations recorded strong wind gusts exceeding 40 knots. Strong winds and localised wadi flow also caused limited damage to public and private property across parts of the Musandam Governorate.

Accumulated rainfall associated with the “Al Khuzam” Low-Pressure System over the Sultanate of Oman



Winter Westerly Troughs and Low-Pressure Systems

Satellite Image of the “Al Khuzam” Low-Pressure System over the Sultanate of Oman on 17 December 2025

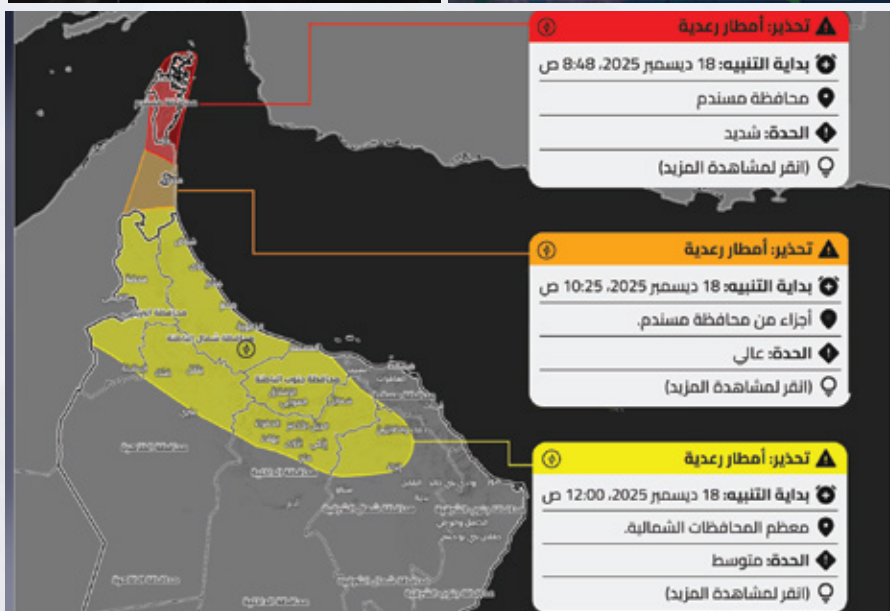
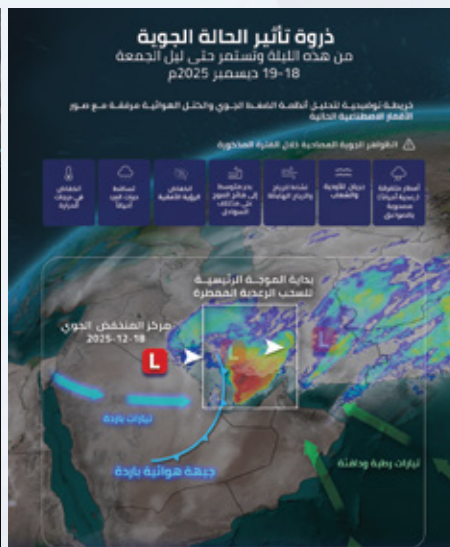
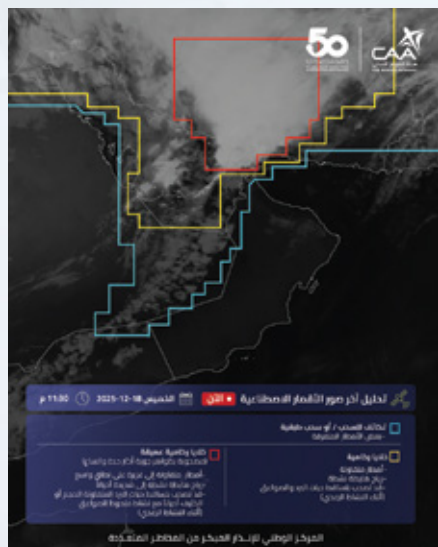


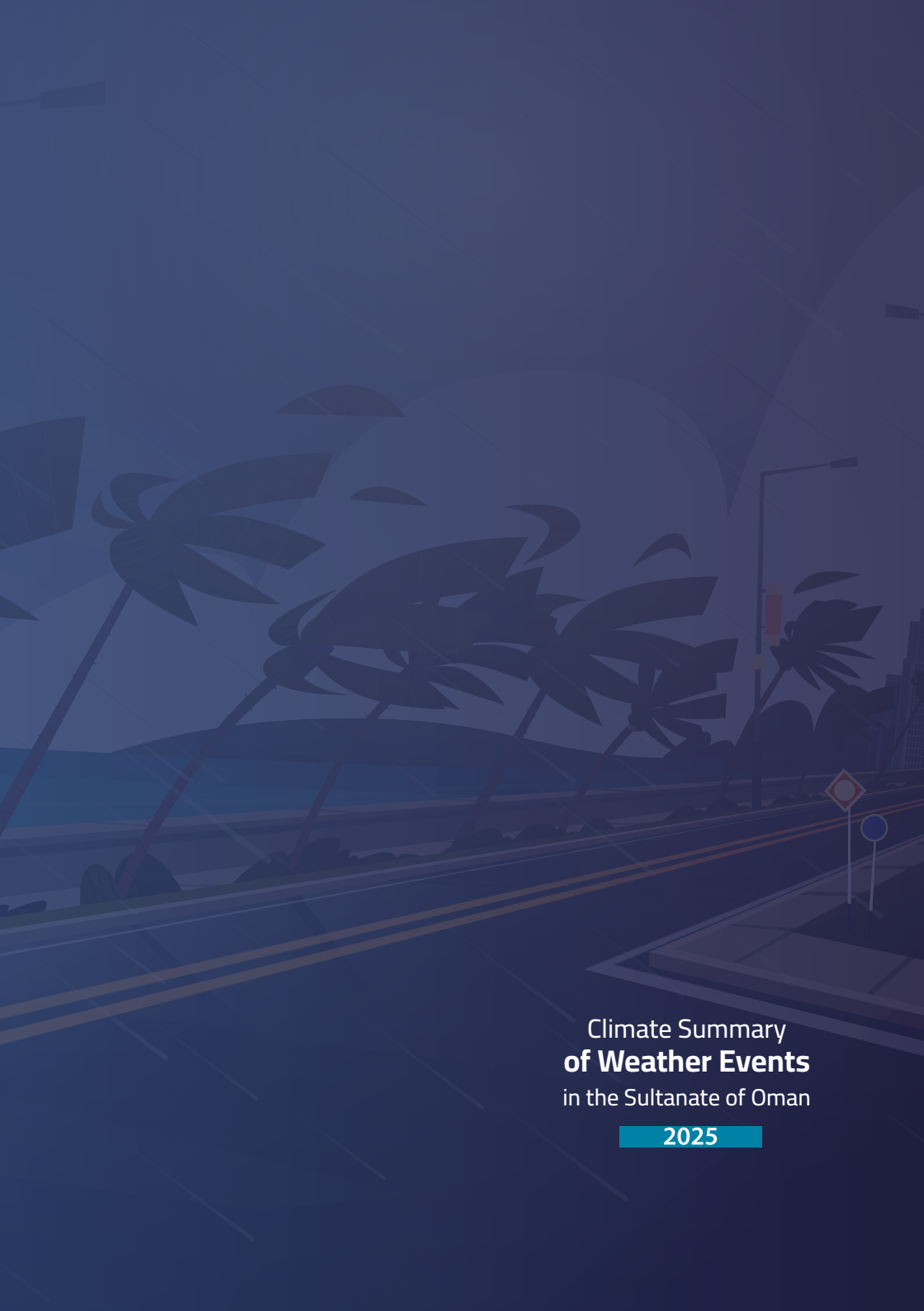
Highest Wind Gust Recorded at Observation Stations Associated with the “Al Khuzam” Low-Pressure System, 13-20 December.

Observation Stations (Wilayat)	Gust wind (Knots)	Date & Time (Local Time)
Saiq (Jabal Al Akhdar)	72.2	13 December – 12:00 PM
Khasab Port (Khasab)	63.7	19 December – 1:00 AM
Jabal Harim (Khasab)	60.7	19 December – 1:00 AM
Bukha (Bukha)	54.8	18 December – 8:00 PM

Winter Westerly Troughs and Low-Pressure Systems

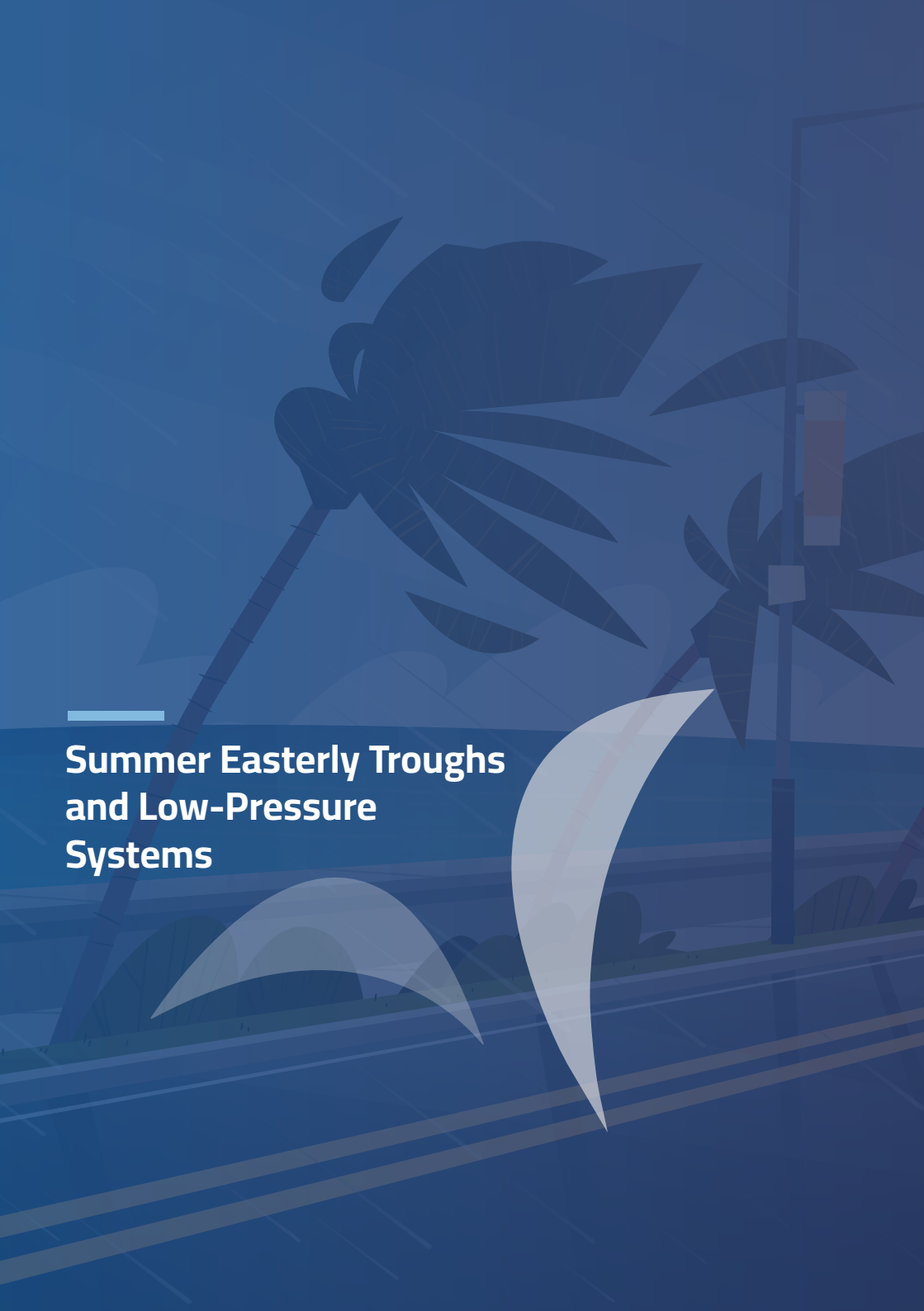
Examples of Posts Issued by the National Multi-Hazard Early Warning Centre During the Impact of AI “Khuzam” low-pressure system





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A stylized, monochromatic blue-toned illustration of a rainy tropical street scene. In the foreground, two umbrellas are open: a light blue one on the left and a white one on the right. The background features palm trees, a street with lane markings, and a building. Rain is depicted as numerous short, diagonal white lines falling across the entire scene. The overall mood is calm and atmospheric.

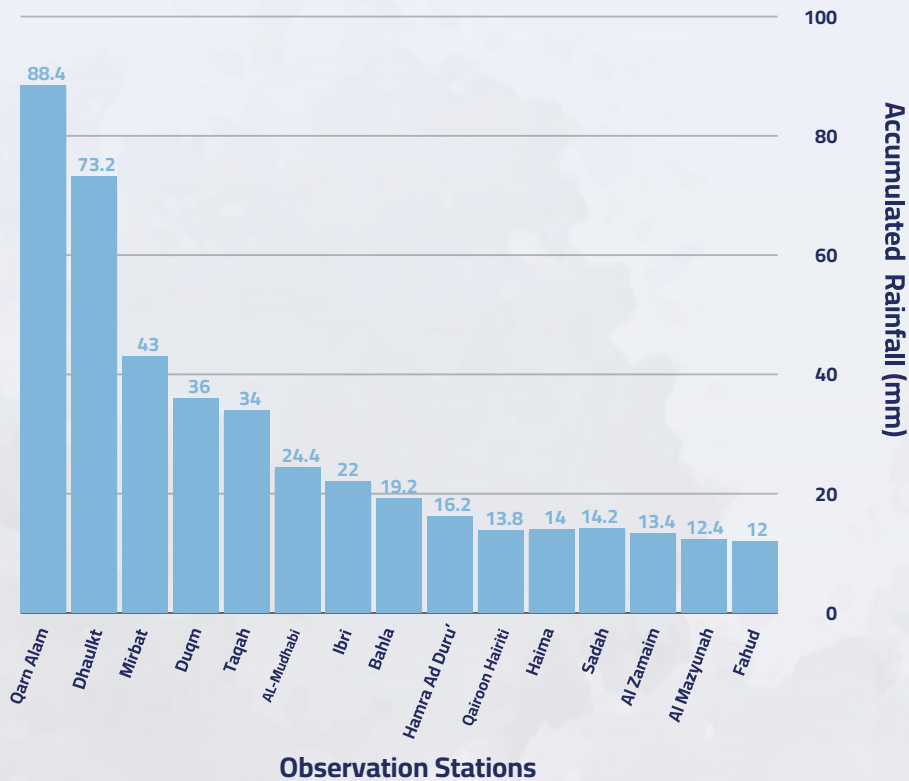
Summer Easterly Troughs and Low-Pressure Systems

Summer Easterly Troughs and Low-Pressure Systems

“Al-Istibshar” Easterly Summer Trough

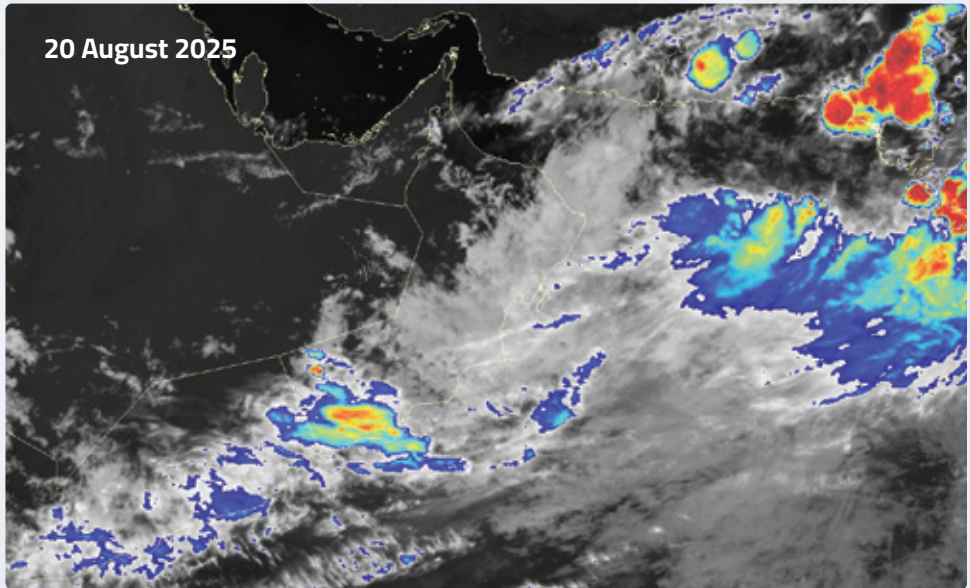
The Sultanate of Oman was affected by a summer easterly low-pressure system between 17 and 21 August 2025, which resulted in widespread convective activity and rainfall of varying intensity across several governorates. Qarn Al Alam observation station recorded the highest accumulated rainfall during the event, reaching 88.4 mm, followed by Dhalkut station, which recorded 73.2 mm. In addition, Qarn Al Alam recorded the highest wind gust, reaching 69 knots, caused by downdraft winds from thunderstorm activity.

Accumulated rainfall Recorded During the Impact of the “Al-Istibshar” Summer Easterly Trough



Summer Easterly Troughs and Low-Pressure Systems

Examples of Satellite Imagery and Public Weather Advisories Issued During the Impact of the Al-Istibshar Easterly Trough across the Sultanate of Oman



Examples of Posts Issued by the National Multi Hazard Early Warning Centre during the impact of the “Al-Istibshar” easterly trough





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Summer Orographic Rainfall over Al Hajar Mountains

Summer Orographic Rainfall over Al Hajar Mountains

During the summer of 2025, the Al Hajar Mountains and surrounding areas experienced approximately 98 days of notable convective activity.

Most of this activity occurred during June, July, and August, with August alone recording convective activity on all 31 days, indicating persistent convective development throughout the month. The season was also characterised by the continuation of summer orographic rainfall into September, reflecting the persistence of atmospheric conditions favourable to convective cloud development.

The table below illustrates the monthly distribution of summer orographic rainfall over the Al Hajar Mountains during June, July, August and September.

Summer Orographic Rainfall over the Al Hajar Mountains – Summer 2025	
Month	Number of Days
June	23
July	26
August	31
September	18

In terms of intensity, the convective activity varied in spatial extent and associated rainfall totals. The highest rainfall totals recorded at observation stations were at Saiq (152.4 mm), followed by Jabal Shams (118.8 mm) and Qarn Al Alam (102 mm).

Summer Orographic Rainfall over Al Hajar Mountains

Highest Recorded Accumulated Rainfall During the Summer 2025

Observation Station (Wilayat)	Accumulated Rainfall (mm)
Saiq (Jabal Al Akhdar)	152.4
Jabal Shams (Al Hamra)	118.8
Qarn Al Alam (Adam)	102
Al Hamra (Al Hamra)	90.2
Bahla (Bahla)	87.6
Yanqul (Yanqul)	86.6

Convective activity was recorded on 23 days during June, with the highest daily rainfall of 27.2 mm at the Hamra Ad Duru’ station, followed by Al Awabi with 22.6 mm and Saiq with 17.4 mm. One of the most significant periods of convective activity occurred between 19 and 21 June, bringing heavy rainfall, thunderstorms, and downdraft winds to the wilayats of Samail, Al Khabourah, Sohar, Ibri, and Bahla. This led to reduced horizontal visibility and the flow of several wadis.

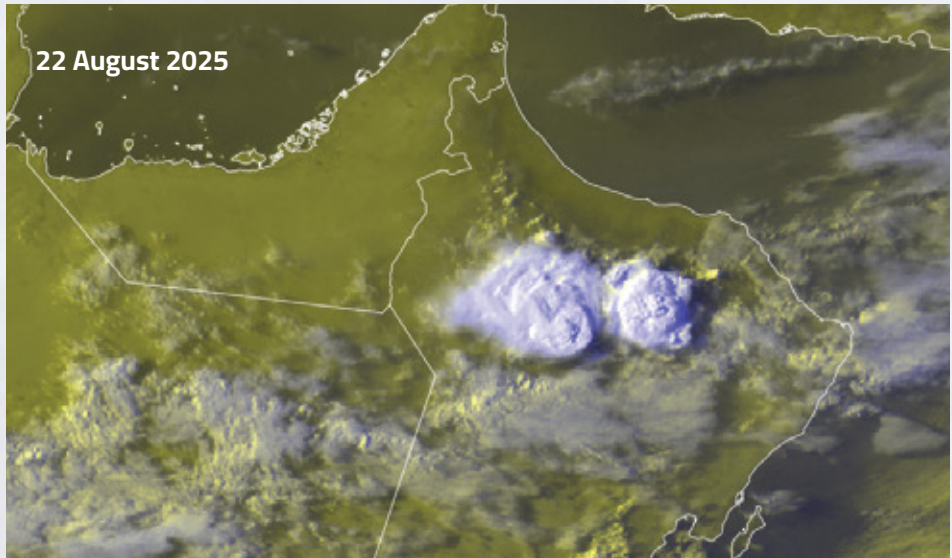
In July, the Jabal Shams station recorded the highest daily rainfall of 46 mm, followed by Samail and Saiq, both with 29.6 mm. Several wilayats, including Ibri and Bidiyah, also experienced thunderstorms and heavy rainfall between 13 and 18 July, resulting in strong wadi flows. Bahla was affected by strong winds and heavy rain, while severe thunderstorms in the Wilayat of Nizwa led to Wadi Al-Masla overflowing and caused property damage.

Summer Orographic Rainfall over Al Hajar Mountains

Summer convective activity peaked in August, with local cloud formations persisting throughout the month. As a result, the highest daily rainfall total was recorded at Qarn Al Alam station at 102 mm, followed by Saiq at 84.2 mm. One of the most prominent periods of summer orographic rainfall in August occurred between 15 and 29 August, coinciding with the passage of the easterly trough known as the “Al-Istibshar” low-pressure system. During this period, the Al Hajar Mountains experienced an extended rainfall episode characterised by very heavy rainfall, thunderstorms, and reduced horizontal visibility in the Wilayat of Al Qabil. It also led to wadi flows in the Wilayat of Ibri, with impacts extending to the wilayats of Al Mudhaibi, Dama Wa Attaiyyin, Nizwa, and Al-Hamra.

Convective activity continued into September, with the highest daily rainfall total recorded at Jabal Shams station at 52.4 mm, followed by Saiq at 39.6 mm and Yanqul at 38.4 mm. During the period from 1 to 7 September, several areas of the Al Hajar Mountains experienced Convective cells and thunderstorms accompanied by downdraft winds and hail. These conditions led to heavy rainfall and wadi flow in Rustaq, Samail, and Dama Wa Attayeen.

Satellite image showing summer orographic cloud activity over the Al Hajar Mountains





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Tropical Cyclones

In 2025, the Arabian Sea witnessed the development of two tropical systems that had no direct impacts on the Sultanate of Oman. The first system, Tropical Cyclone “SHAKTI”, which intensified into a Category 1 tropical cyclone in early October, as classified by the National Multi-Hazard Early Warning Centre. The second was classified as a tropical depression from 18 to 24 October.

Additionally, two weak systems also formed and remained low-pressure areas. The first occurred from 22 to 25 May. The second developed between 8 and 10 September. Neither had any direct impact on Oman.

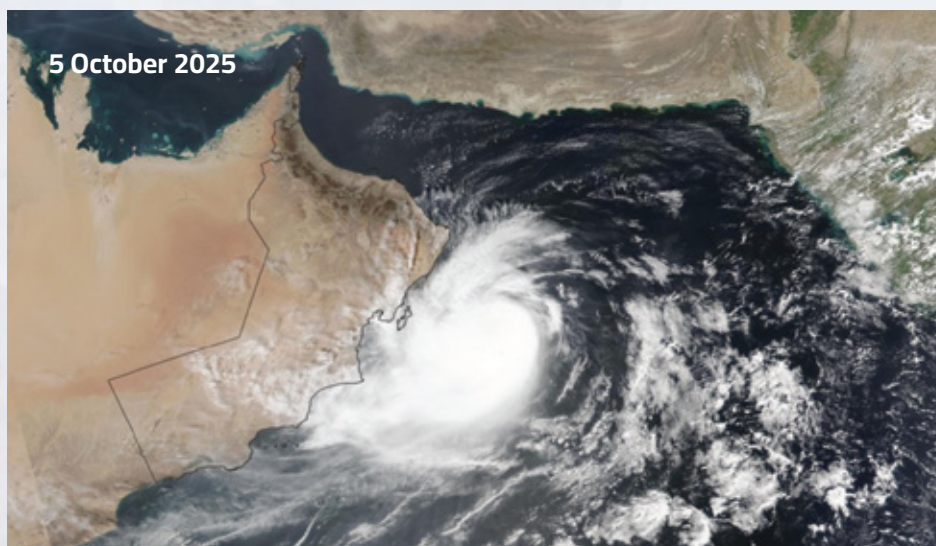
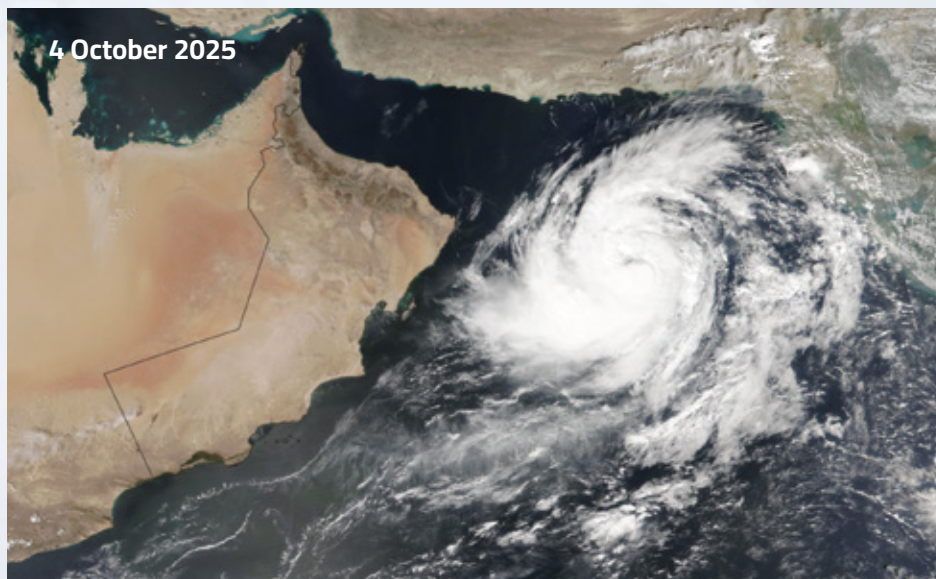
Tropical Cyclone “SHAKTI”

A tropical depression developed on 30 September 2025 over the northeastern Arabian Sea, near the Gujarat coast of India, centred near 22.5°N and 68.8°E, with maximum sustained winds of 20–27 knots (37–50 km/h). The system moved westwards towards the central Arabian Sea.

On 3 October, the system intensified into a deep depression before further intensifying later that same day into a tropical storm, which was assigned the name “SHAKTI”. it continued its southwestward movement over the Arabian Sea.

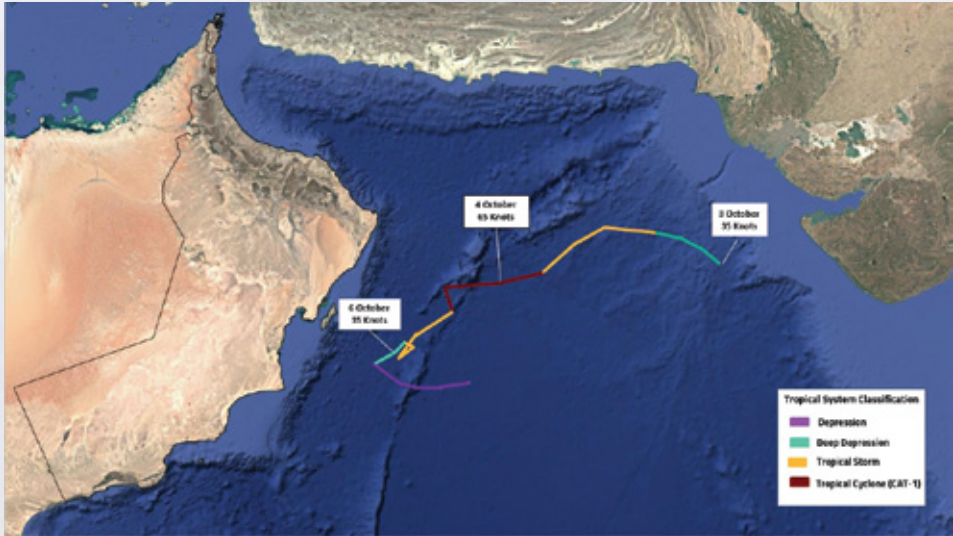
The system reached its peak intensity on 4 October 2025 as a Category 1 tropical cyclone. On 5 October, the cyclone began to weaken gradually while located approximately 150 km offshore from the Sultanate of Oman's coasts. By 6 October, the system had weakened to a deep depression and subsequently curved southwards before turning eastwards towards the central Arabian Sea, away from the Oman coasts, where it continued to weaken and eventually dissipated.

Satellite imagery of Tropical Cyclone (SHAKTI)



Summary of Tropical Cyclone (SHAKTI)	
Period	30 September – 7 October 2025
Formation Location	Northeastern Arabian Sea
Peak Intensity	Category 1 tropical cyclone
Track	Southwest – Southeast
Landfall	Did not make landfall; dissipated over the central Arabian Sea
Impacts	Indirect effects, cloud advection, and increased wave heights

Track of Tropical Cyclone (SHAKTI)



Examples of Posts Issued by the National Multi-Hazard Early Warning Centre During Monitoring of Tropical Cyclone "Shakti"



A satellite image of Earth, showing a large, swirling storm system over the Indian Ocean. The storm has a distinct eye and is surrounded by dense, white clouds. The ocean is a deep blue, and the surrounding landmasses are visible in the distance. The image is taken from a high angle, looking down at the storm.

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2025



Remarkable Weather Events



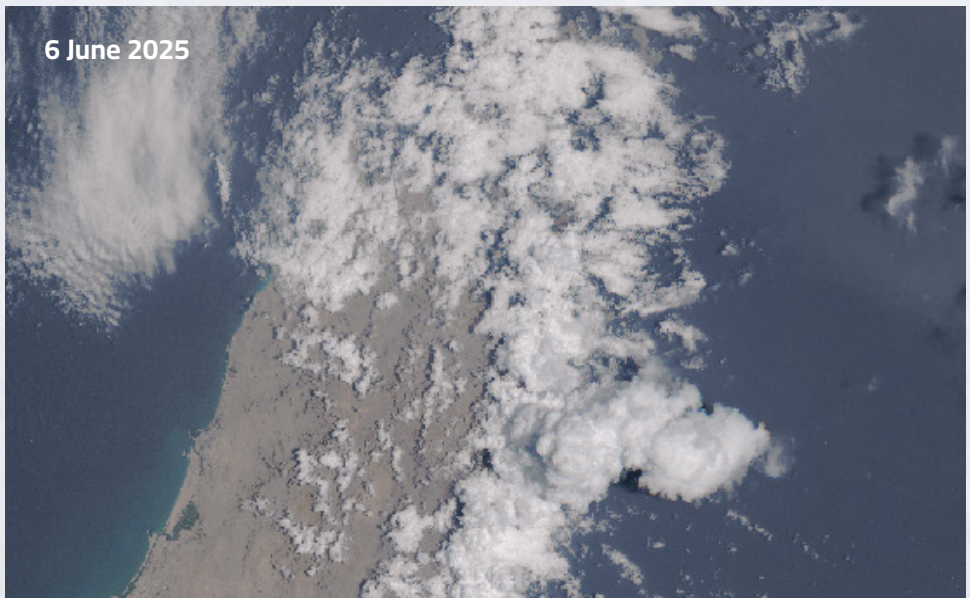
Remarkable Weather Events

Severe Thunderstorm over Lima

Lima, located on the eastern coast of Musandam Governorate, experienced a severe thunderstorm on 6 June 2025, which was an unusual event for this time of year. Nearly 140 mm of rain fell within a few hours, according to the Ministry of Agriculture, Fisheries and Water Resources, significantly exceeding the typical rainfall for early June.

The event resulted from the passage of an upper-level trough, combined with favourable atmospheric conditions, leading to a rapid flare-up of convective cloud and thunderstorm development over the eastern coast of Musandam, and subsequently to thunderstorms affecting Lima. Heavy rainfall triggered flash floods, damaging some internal roads. Rising water levels also damaged several houses and affected residential areas.

Satellite imagery showing thunderstorm development over the eastern coast of Musandam Governorate.







Climate Summary
of Weather Events
in the Sultanate of Oman

2025

Khareef Dhofar

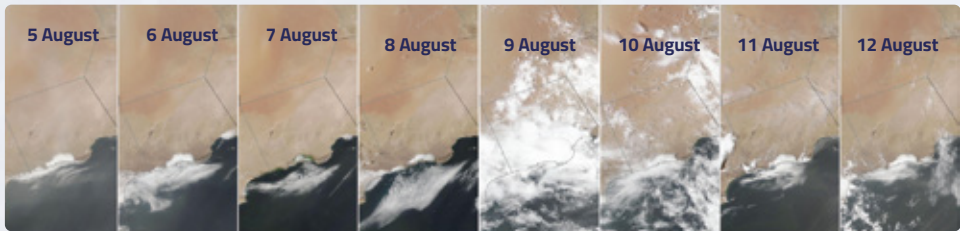
Khareef Dhofar

Khareef conditions prevailed along the coasts and mountains of Dhofar Governorate from 15 July to 15 September 2025. The season featured persistent low cloud cover, continuous drizzle, and dense fog over mountainous areas, which eventually led to the development of green landscapes across the highlands and adjacent plains.

In August, which is normally the peak of Khareef Dhofar season, conditions were slightly different this year. There was a partial retreat and weakening of Khareef cloud cover. This was due to a disruption of the atmospheric regime, as the eastern coasts were affected by a summer easterly wave, after which typical conditions resumed later in the month. In contrast, other parts of the governorate, especially the northern desert areas, experienced convective clouds and scattered thunderstorms during this moist easterly wave, notably between 15 and 20 August.

Overall, Khareef Dhofar 2025 was typical, except for several days with a noticeable reduction in Khareef activity, particularly on 7 August, as shown in the sequence of satellite images below.

Satellite images illustrating the variation in Khareef cloud cover over Dhofar Governorate during August 2025.



Satellite image illustrating vegetation cover across Dhofar Governorate at the end of the 2025 Khareef season





Climate Summary
of Weather Events
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Fog

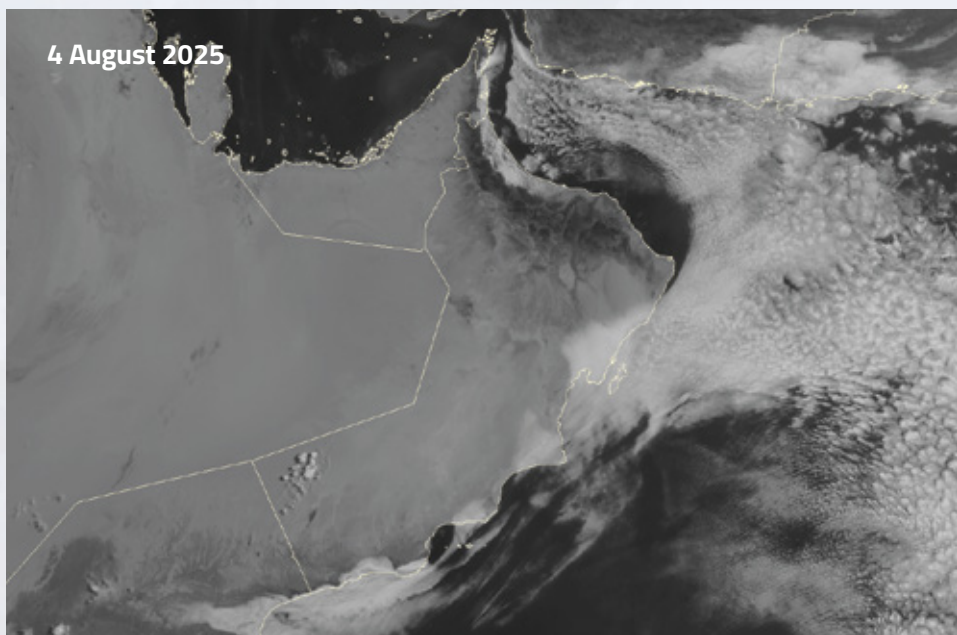
Fog

The Sultanate of Oman experienced recurrent fog events in 2025, particularly during the late night and early morning. These events mainly affected coastal areas along the Sea of Oman and the Arabian Sea, as well as desert regions in the governorates of Al Wusta, Al Dhahirah, Al Buraimi, and Al Dakhiliyah.

One of the most notable fog events was a dense fog that affected the wilayats of Al Musannah and Al Duqm on 11 and 12 March, persisting from midnight into the early morning. Another notable event occurred in the Wilayat of Al Ashkhara, South Al Sharqiyah Governorate, on 30 May. All these events led to a marked reduction in horizontal visibility.

Fog formation was most frequent in August and during the Khareef season, driven by increased humidity and favourable atmospheric conditions. Fog activity was mainly concentrated over the coastal and mountainous areas of Dhofar Governorate and extended along the Sultanate of Oman's south-eastern coast.

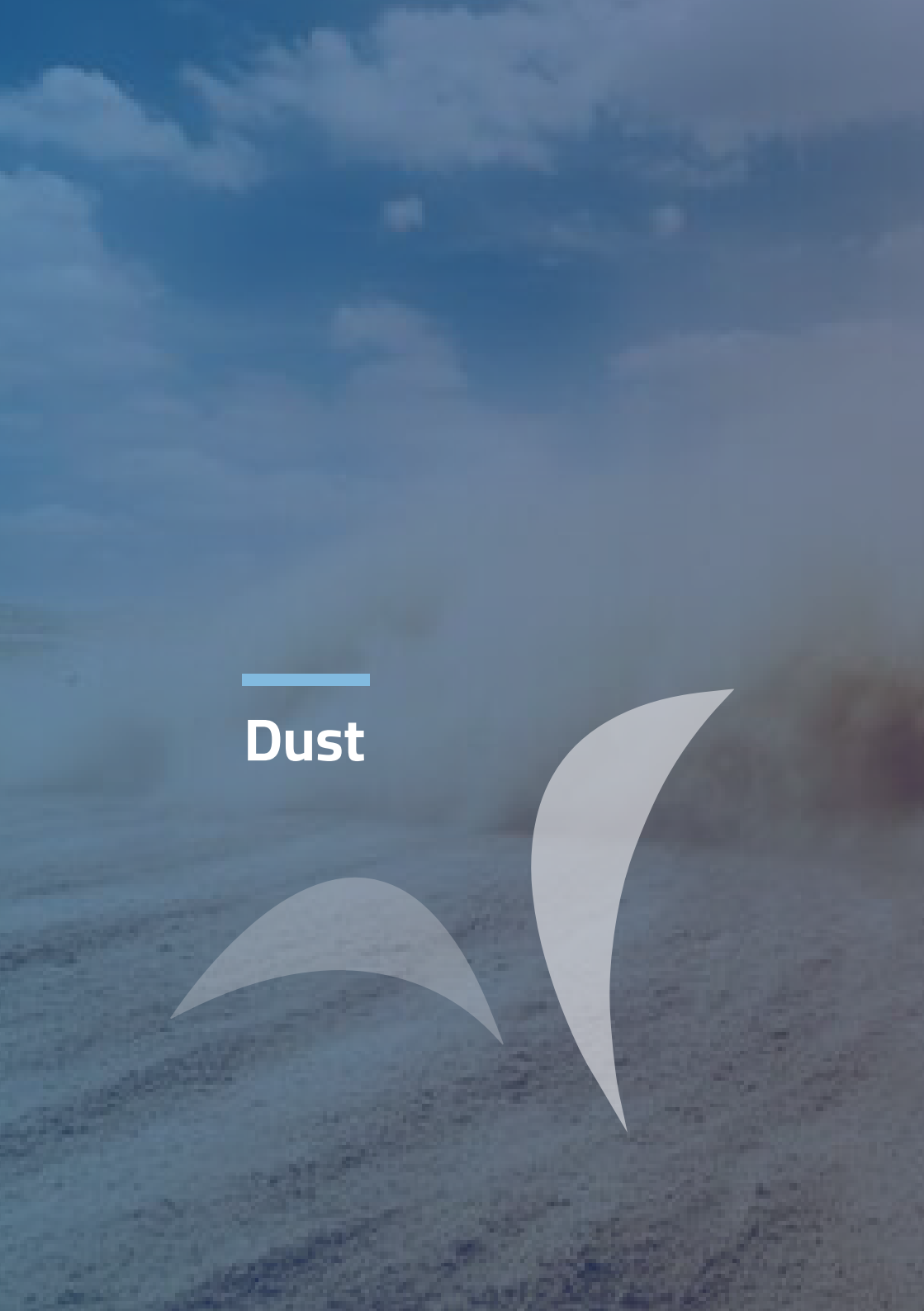
Satellite imagery showing extensive fog coverage over the south-eastern coast of Oman and the North Al Batinah coast.





Climate Summary
of Weather Events
in the Sultanate of Oman

2025




Dust



Dust

The Sultanate of Oman experienced several dust events in 2025, originating from both local and regional sources. These events varied in intensity, spatial extent, and associated impacts.

Local Dust Events

Most locally generated dust outbreaks were associated with the lifting of dust and sand from desert areas by downdraft winds accompanying convective clouds and thunderstorms, particularly those related to summer orographic convection. These events were generally characterised by their localised nature, short duration, and temporary reductions in horizontal visibility over the affected areas.

Several moderate local dust events were also recorded during January and May, affecting large parts of the Sultanate. These events were associated with northwesterly winds that raised dust and generated rough sea conditions over the Sea of Oman and the Arabian Sea, with the most significant event occurring during 16–18 May. During the summer season, the wilayats of Haima, Adam, and Manah experienced recurring dust events associated with enhanced monsoon winds. These conditions led to frequent dust uplift and noticeable reductions in horizontal visibility, affecting traffic movement on some roads.

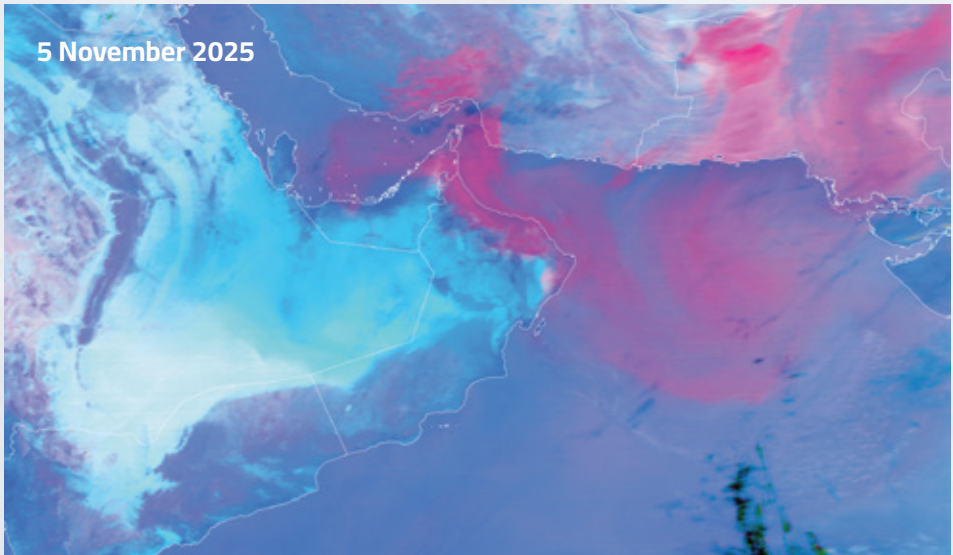
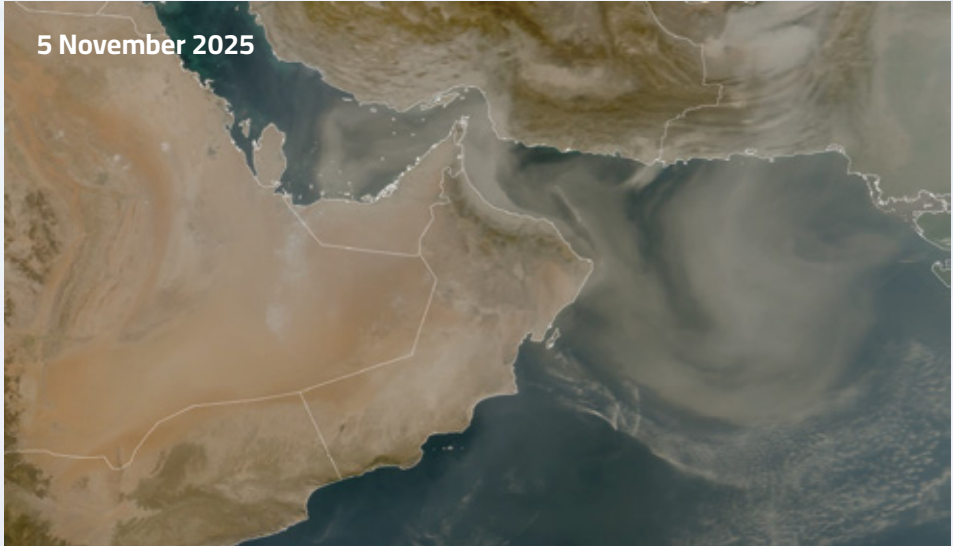
Regional Dust Events

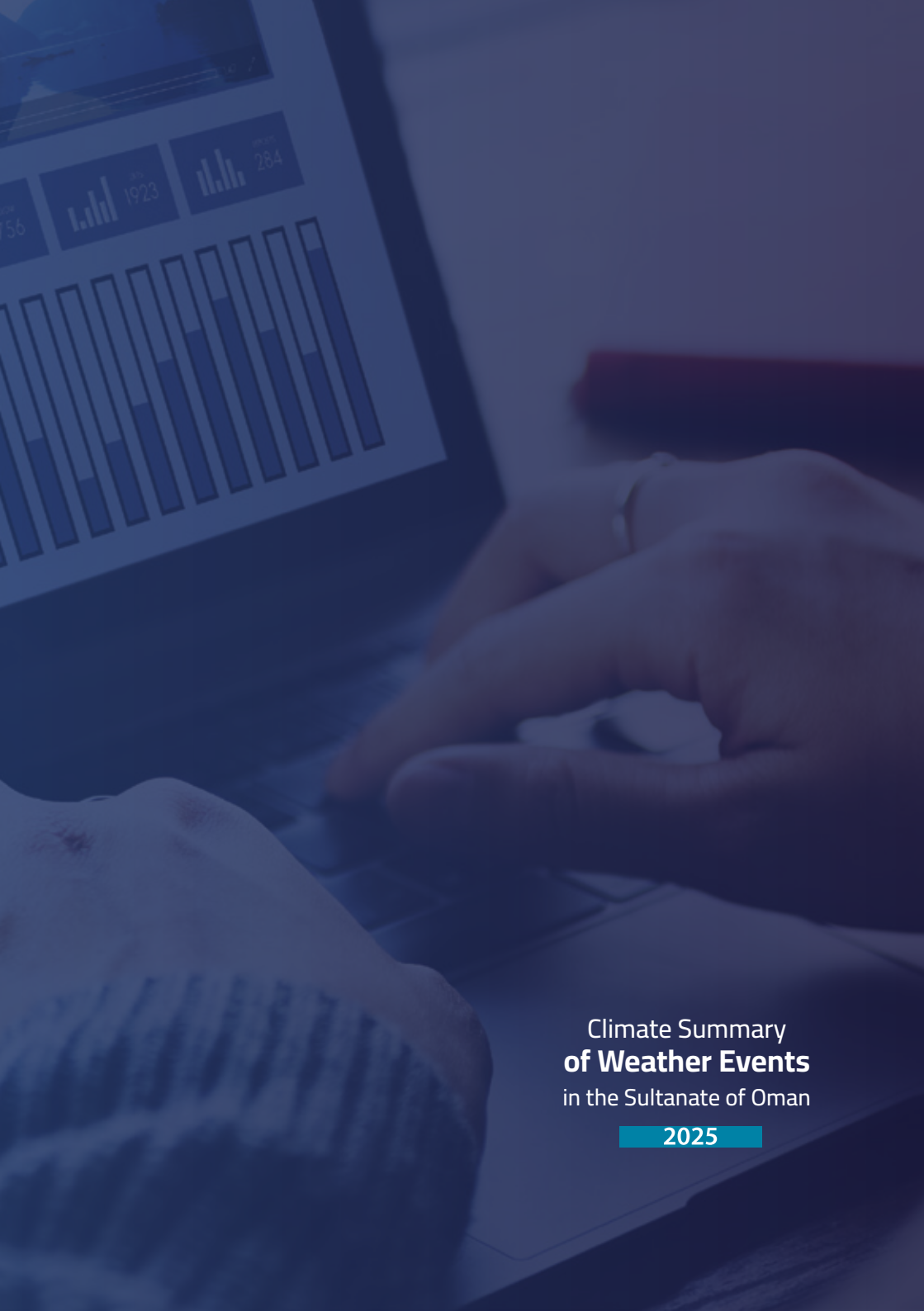
Several regional dust events affected northern Oman during January, June, and November. These events originated in southern Iran and were associated with northeasterly to northwesterly airflow. Their impacts included reduced horizontal visibility along the coast of the Sea of Oman and across the governorates of North Al Sharqiyah, South Al Sharqiyah, and Al Wusta.

The most significant regional dust event of the year occurred from 4–7 November. Dust enveloped the northern governorates and parts of the Arabian Sea coast. It led to substantial reductions in horizontal visibility at several coastal and inland locations and was among the most impactful dust events recorded this year.

Dust

Different satellite products show the impact of dust over the Sultanate of Oman, driven by north and northeast wind activity





Climate Summary
of Weather Events
in the Sultanate of Oman

2025



Climatic Statistics of 2025

**Meteorological Records from
Ground Stations Network – 2025**
Muscat Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	48.7	Qurayyat	23 June 2025
	Lowest	12.3	Muscat Airport	24 January 2025
Daily accumulated rainfall (mm)		3.8	Muscat Airport	19 December 2025
Maximum Wind Gust (knots)		60.1	Muscat Airport	16 July 2025

Meteorological Records from Ground Stations Network – 2025

Dhofar Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	48.9	Muqshin	1 July 2025
	Lowest	4	Muqshin	4 January 2025
Daily accumulated rainfall (mm)		56.6	Dhalkut	20 August 2025
Maximum Wind Gust (knots)		57.6	Dhalkut	3 January 2025

Meteorological Records from Ground Stations Network – 2025

Musandam Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	48.5	Khasab	23 June 2025
	Lowest	0.8	Jabal Harim	31 December 2025
Daily accumulated rainfall (mm)		128	Jabal Harim	19 December 2025
Maximum Wind Gust (knots)		69.8	Jabal Harim	30 December 2025



Meteorological Records from Ground Stations Network – 2025

Al Buraimi Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	49,3	Al Sunaynah	31 July 2025
	Lowest	7.2	Al Sunaynah	6 January 2025
Daily accumulated rainfall (mm)		21	Mhadha	9 August 2025
Maximum Wind Gust (knots)		66.7	Mhadha	11 August 2025

**Meteorological Records from
Ground Stations Network – 2025**
Al Dakhiliyah Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	49	Izki / Bidbid	24 June 2025 30 July 2025
	Lowest	-1.1	Jabal Shams	31 December 2025
Daily accumulated rainfall (mm)		54	Qarn Alam	21 August 2025
Maximum Wind Gust (knots)		86.8	Nizwa	14 October 2025

**Meteorological Records from
Ground Stations Network – 2025**
North Al Batinah Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	49,6	Al Suwaiq	30 July 2025
	Lowest	9	Sohar	25 January 2025
Daily accumulated rainfall (mm)		7.2	Shinas	19 December 2025
Maximum Wind Gust (knots)		40.4	Shinas	19 December 2025



Meteorological Records from
Ground Stations Network – 2025
South Al Batinah Governorate

Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	50.7	Barka	30 July 2025
	Lowest	10.6	Al Rustaq	06 January 2025
Daily accumulated rainfall (mm)		14.2	Al Awabi	08 June 2025
Maximum Wind Gust (knots)		50.9	Nakhal	06 July 2025

**Meteorological Records from
Ground Stations Network – 2025**
North Al Sharqiyah Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	49.2	Bidiyah / Dima wa Al Tayeen	23 June 2025 24 June 2025
	Lowest	7.7	Al Qabil	07 January 2025
Daily accumulated rainfall (mm)		19	Al Mudhaibi	19 August 2025
Maximum Wind Gust (knots)		63.9	Bidiyah	27 August 2025

Meteorological Records from Ground Stations Network – 2025

South Al Sharqiyah Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	48.2	Al Kamil wa Al Wafi	25 June 2025
	Lowest	10.8	Al Kamil wa Al Wafi	25 January 2025
Daily accumulated rainfall (mm)		4.6	Ras Al Hadd	10 September 2025
Maximum Wind Gust (knots)		47.5	Sur	20 June 2025

Meteorological Records from
Ground Stations Network – 2025
Al Dhahirah Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	49.7	Hamra Al Drooa	30 July 2025
	Lowest	6.6	Yanqul	20 January 2025
Daily accumulated rainfall (mm)		27.2	Hamra Al Drooa	29 July 2025
Maximum Wind Gust (knots)		60.2	Yanqul	24 July 2025

Meteorological Records from Ground Stations Network – 2025

Al Wusta Governorate



Weather Parameter		Record	Station	Date
Temperature (°C)	Highest	48.8	Mahout	24 June 2025
	Lowest	6.2	Haima	21 December 2025
Daily accumulated rainfall (mm)		35.8	Duqm	21 August 2025
Maximum Wind Gust (knots)		65.7	Duqm	26 June 2025



Oman Meteorology Website and Application

An official digital platform for weather information and forecasts in the Sultanate of Oman. Through a modern, user-friendly interface, it enables users to quickly access weather data and meteorological services.

The application provides daily and hourly weather forecasts, live radar maps, and weather alerts for various conditions, including heavy rainfall, strong winds, fog, thunderstorms, and tropical cyclones. It also offers information on sea conditions and tsunami waves.

Oman Meteorology Website and Application



To Download the App
on smartphones



App link : met.caa.gov.om

Conclusion

Documenting and analysis of weather phenomena are crucial due its direct effect on vital sectors. Accordingly, the third edition of the Annual Climate Summary of Weather Events for 2025 continued the series by providing a comprehensive and accurate overview of the significant weather events that effecting the Sultanate of Oman During 2025.

This publication aims to provide specialists, researchers, and those interested in meteorological sciences, whether individuals or institutions with accurate and simplified data and statistics, thereby enhancing scientific understanding of these phenomena and their impacts. It also reflects the Civil Aviation Authority's commitment to supporting scientific research through the provision of reliable data that contributes to the development of meteorological studies.

The Authority envisions that the publication will serve as a valuable scientific reference that enhances knowledge in weather and atmospheric sciences and supports research efforts across various related fields.



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