

# Rainfall Analysis



Rainiest District

Nizamabad

Total Rainfall (mm)

2.05M

Avg Rainfall (mm)

2.91

Least Rainfall District

Jogulamba...

Year

All

District & Mandal

All

Month

All

Metric

Humidity

Highest Average Rainfall by District

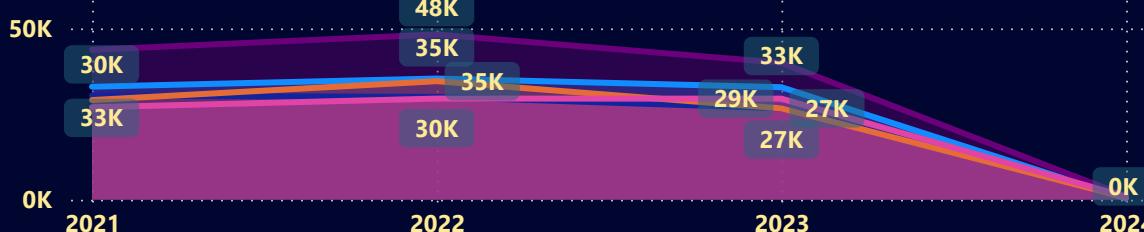


Monthly Rainfall Distribution by Mandal



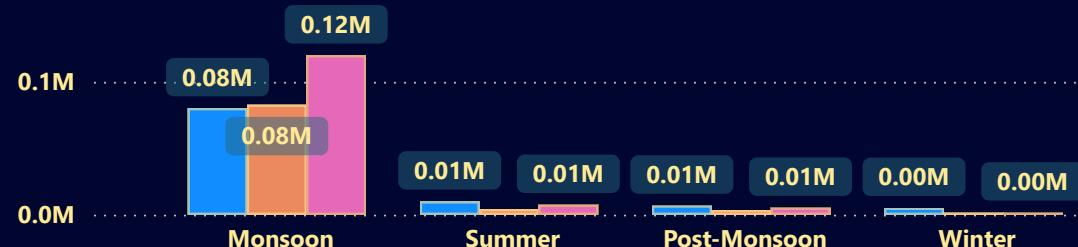
Yearly Rainfall Trend by District

Bhadradri Kothagudem, Kamareddy, Nirmal, Nizamabad, Sangareddy



Seasonal Rainfall Variation Across Districts

Bhadradri Kothagudem, Nirmal, Nizamabad



# Rainfall Analysis



Monthly % of Annual Rainfall

99.71

Year

All

Heavy Rain Days Records

2K

District & Mandal

All

Rainfall YoY Change

-0.99

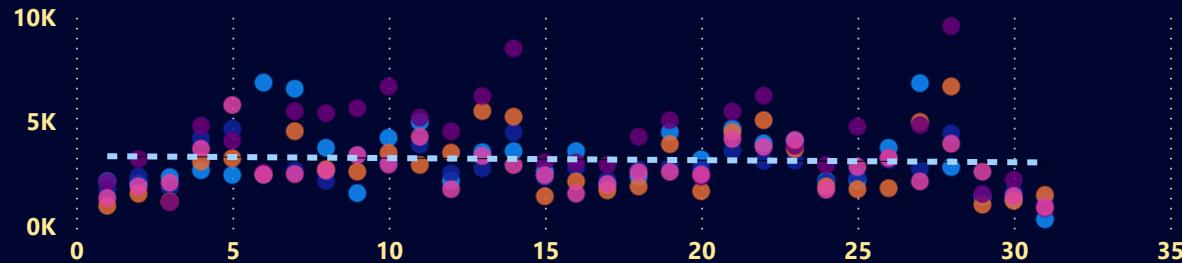
01-01-2021

24-03-2024



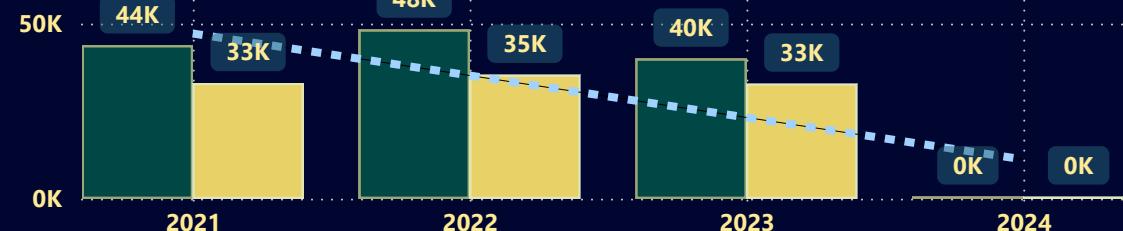
Rainfall Patterns on Key Dates

● Bhadradi Kothagudem ● Kamareddy ● Nirmal ● Nizamabad ● Sangareddy



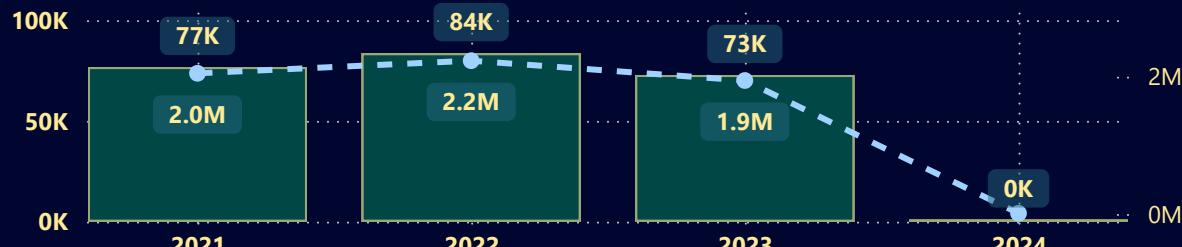
Annual Rainfall Comparison Between Districts

● Nizamabad ● Bhadradi Kothagudem



Rainfall Anomalies Over the Years

● Sum of Rain (mm) ● Rainfall Anomaly (%)



Monthly Share of Annual Rainfall (%)



# Temperature Insights



Avg Max Temp (°C)

33.97

Avg Min Temp (°C)

21.75

Avg Daily Temp Range (°C)

12.23

Monthly Temp Range (°C)

12.25

Year

All

District & Mandal

All

Month

All

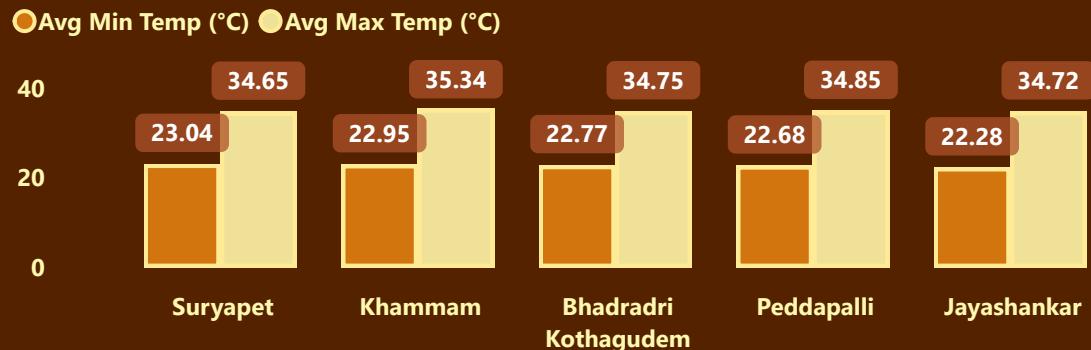
Metric

Humidity

Avg Daily Temperature Range by District



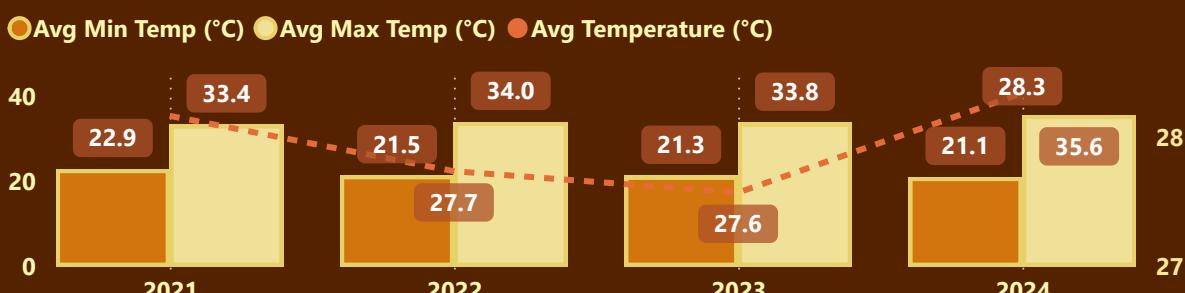
Average Min & Max Temperature by District



Seasonal Avg Temperature Variation by Mandal



Yearly Trend of Min & Max Temperatures



# Temperature Insights



Hottest District Name

Khammam

Year

All

Heatwave Days Records

51K

Temp YoY Change

0.05

Coldest District Name

Vikarabad

District & Mandal

All

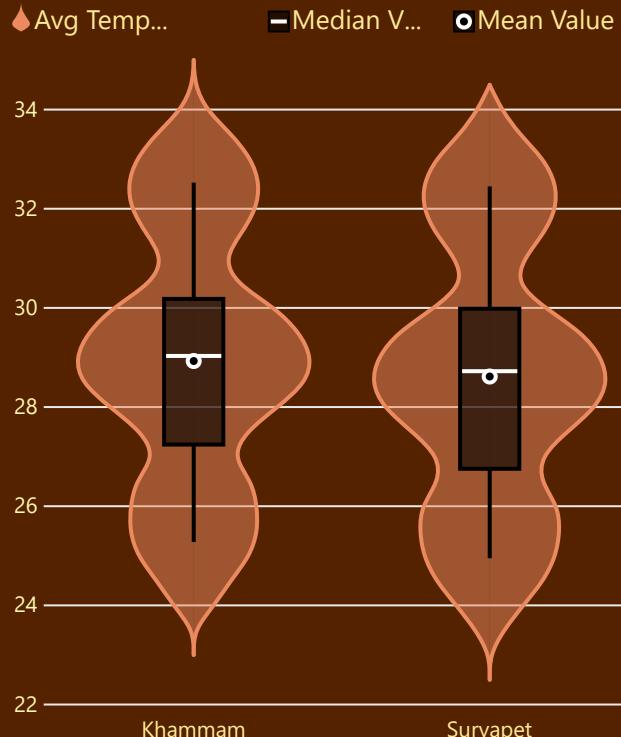
Month

All

Metric

Humidity

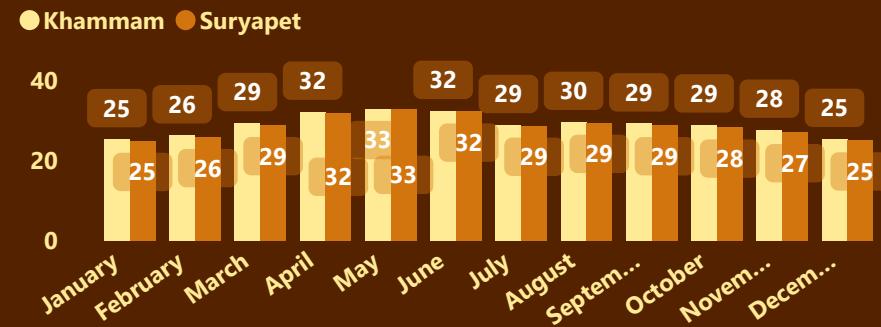
Temperature Distribution Between Two Districts



Correlation Between Avg Min & Max Temperatures



Monthly Temperature Comparison Between Two Districts



District

District	2021	2022	2023	2024
Adilabad	-0.18	0.08	-0.10	0.35
Bhadradri Kothagudem	0.12	0.19	0.17	0.49
Hanumakonda	-0.51	0.05	-0.09	0.24
Hyderabad	-0.35	-0.22	-0.18	0.50
Jagtial	0.08	0.20	0.13	0.42
Jangaon	-0.09	0.00	-0.03	0.23
Jayashankar	0.05	0.23	0.16	0.53
Jogulamba Gadwal	-0.18	-0.06	0.00	0.67
Kamareddy	-0.26	-0.07	-0.20	0.27
Karimnagar	0.00	0.10	-0.02	0.28
Khammam	0.29	0.32	0.32	0.67
Kumuram Bheem	-0.15	0.00	-0.08	0.35
Mahabubabad	-0.01	0.10	0.12	0.53
Mahabubnagar	-0.31	-0.12	-0.12	0.53
Mancherial	0.00	0.10	0.09	0.47
Medak	-0.36	-0.25	-0.33	0.23
Medchal-Malkajgiri	-0.32	-0.16	-0.16	0.44
Mulugu	0.02	0.18	0.13	0.58
Nagarkurnool	-0.39	-0.16	-0.16	0.52

# Humidity Patterns



Average Humidity (%)

67.31

Avg Min Humidity (%)

45.55

Extreme Wind Count

21.965K

Avg Daily Humidity Range (%)

61.17

Year

District & Mandal

All

All

Month

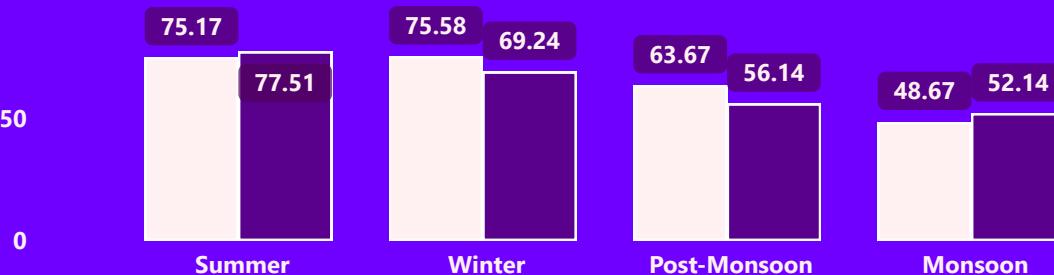
All

Metric

Humidity

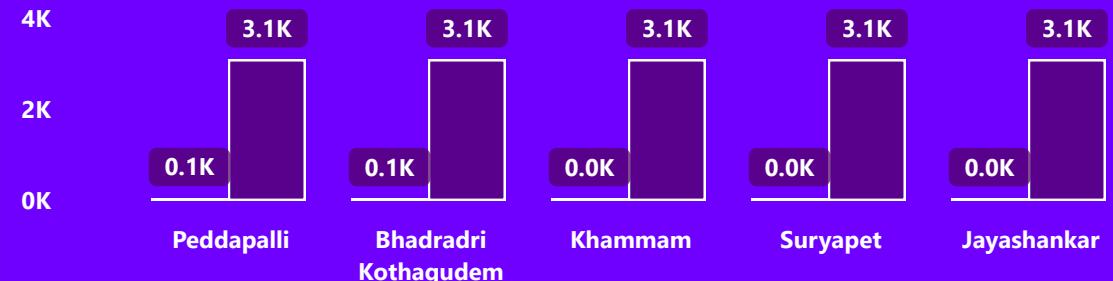
## Daily Humidity Range by District

Kamareddy O Nalgonda



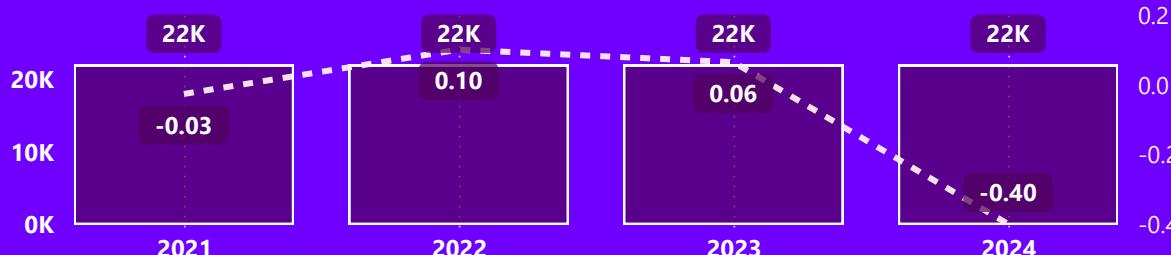
## Average Min & Max Humidity by District

Avg Min Humidity (%) O Extreme Wind Count



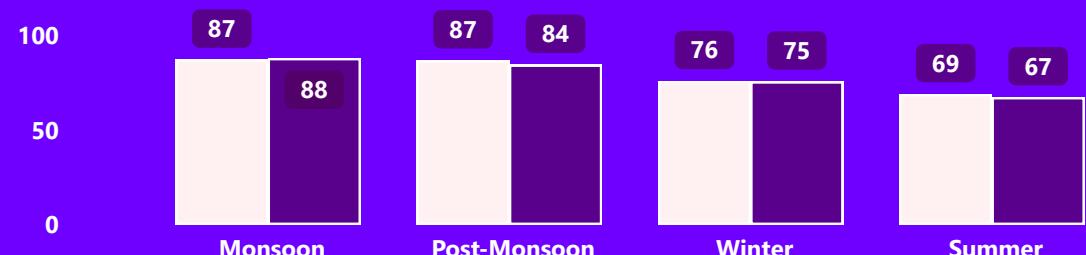
## Humidity Anomalies Over the Years

Extreme Wind Count O Humidity Z-Score



## Seasonal Humidity Variation by Mandal

Burgampadu O Elgaid



# Humidity Patterns

Most Humid District  
**Peddapalli**

Year  
All

Extreme Humidity Records  
**455K**

District & Mandal  
All

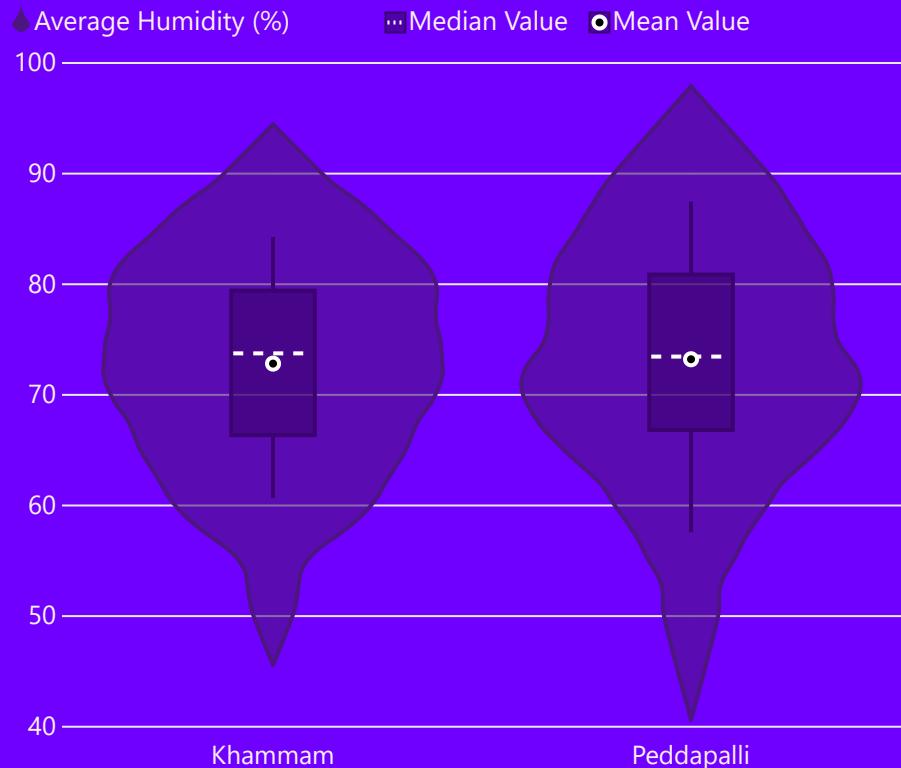
Humidity YoY Change  
**-0.11**

Month  
All

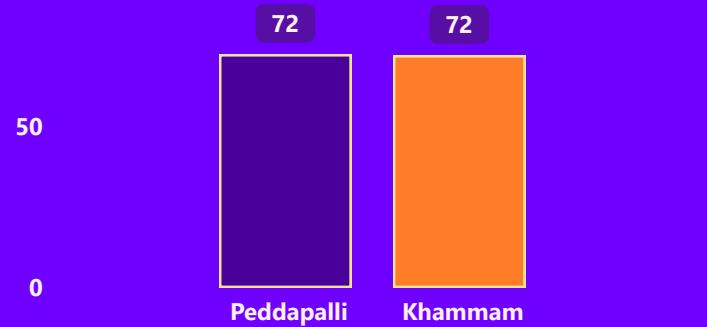
Least Humid District  
**Hyderabad**

Metric  
Humidity

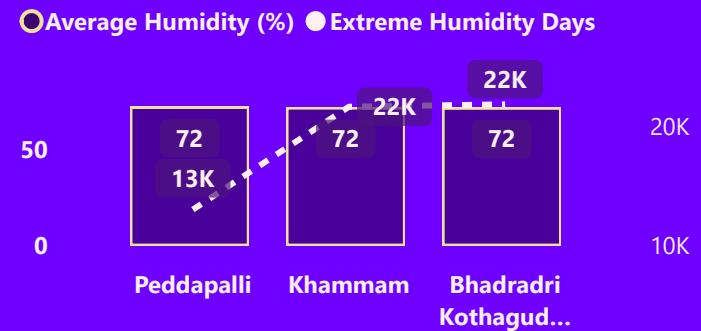
## Humidity Distribution Between Two Districts



## Humidity Comparison Between Two Districts



## Extreme Humidity Days by District



## Yearly Trend of Min & Max Humidity



# Wind Speed Analysis 🌬

Avg Wind (Kmph)

4.85

Year

All

Avg Min Wind (Kmph)

0.13

District & Mandal

All

Avg Max Wind (Kmph)

9.57

Avg Daily Wind Range...

19.80

Month

All

Metric

Humidity

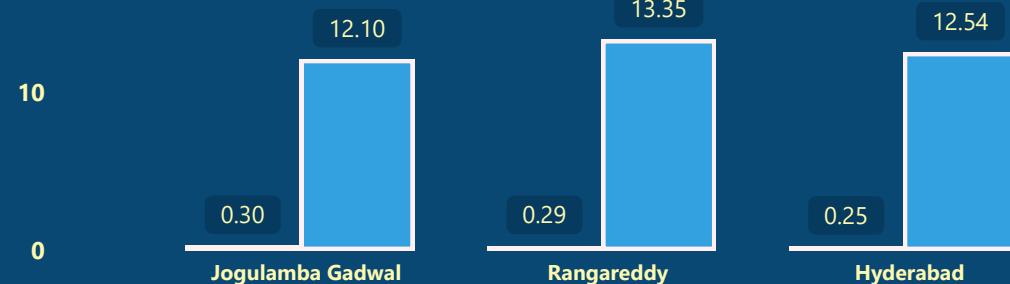
Wind Speed Patterns & Outliers

● Normal ● Very High

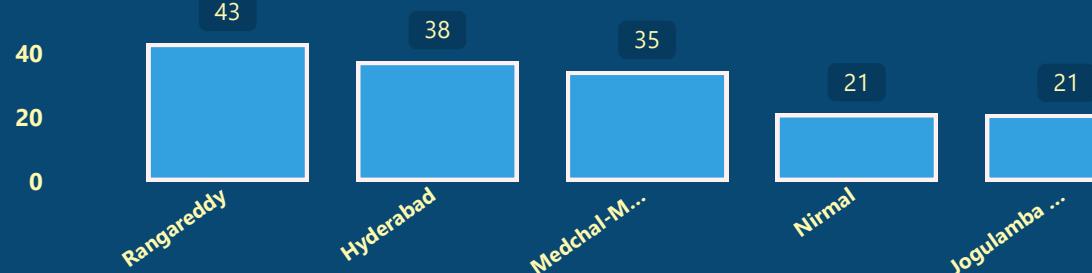


Average Min & Max Wind Speed by District

● Avg Min Wind (Kmph) ● Avg Max Wind (Kmph)



Daily Wind Speed Range by District



Yearly Wind Speed Variation by Mandal

● Abdullapurmet ● Hayathnagar ● Malkajgiri ● Serilingampally



# Wind Speed Analysis 🌬

Highest Wind Speed...  
Rangareddy

Year  
All

High Wind Days  
61

District & Mandal  
All

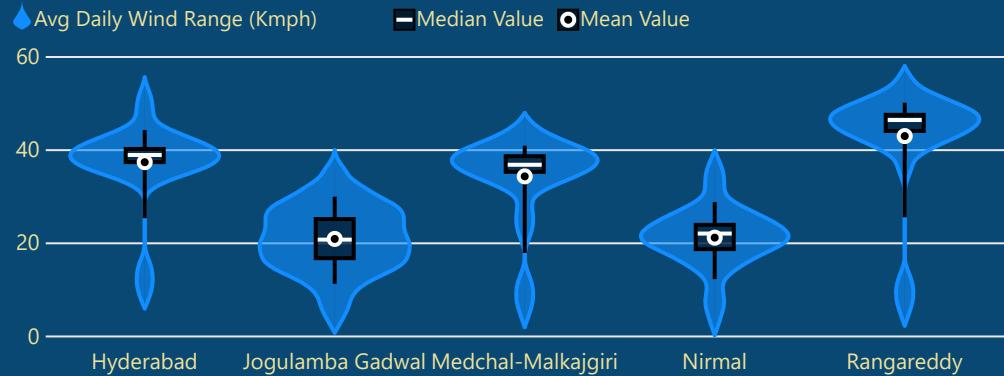
Wind YoY Change  
-0.05

Month  
All

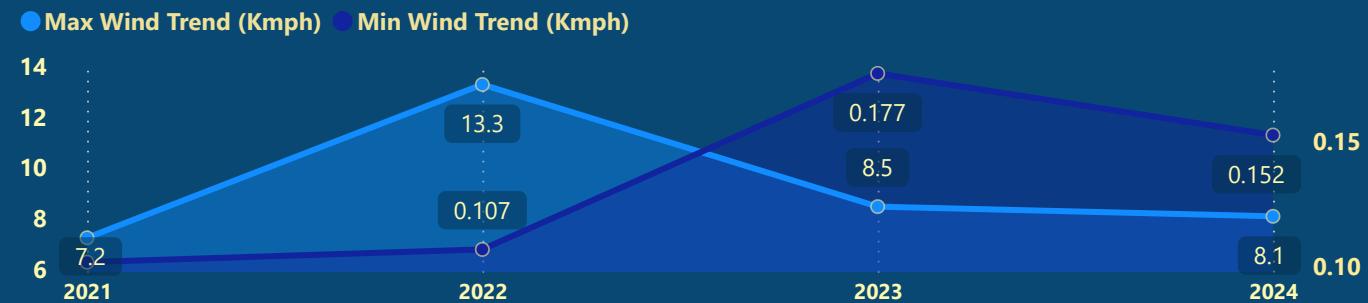
Lowest Wind Speed...  
Mahabubabad

Metric  
Humidity

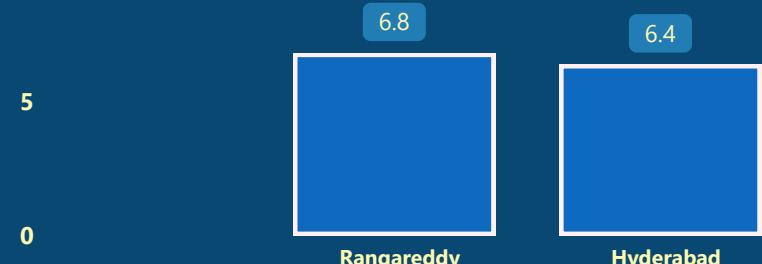
Wind Speed Distribution Across Districts



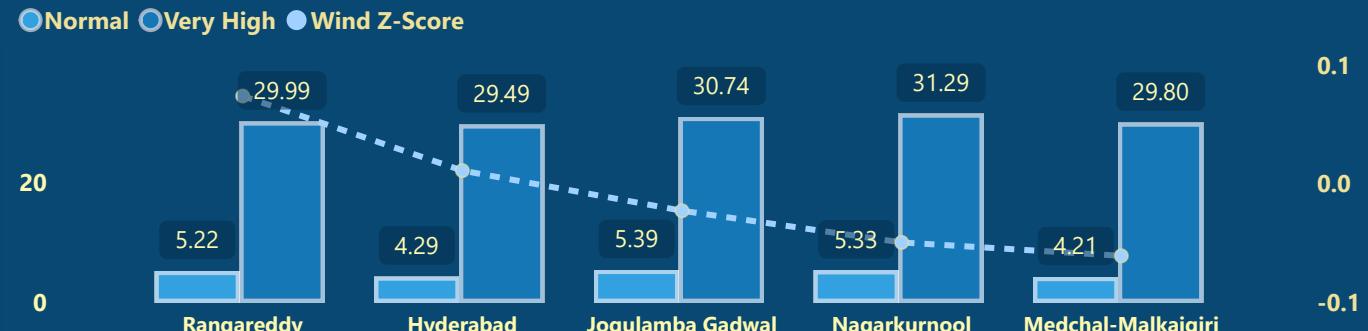
Trend of Min & Max Wind Speeds Over Years



Wind Speed Comparison Between Two Districts



Extreme Wind Speed Periods by District





# Comprehensive Weather Insights

Avg Rainfall (mm)

**2.91**

Year

All

Avg Temperature (°C)

**27.86**

District & Mandal

All

Average Humidity (%)

**67.31**

Avg Wind (Kmph)

**4.85**

Month

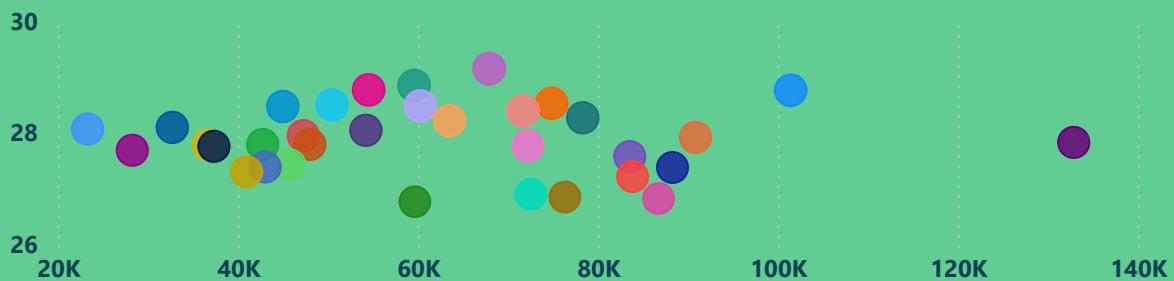
All

Metric

Humidity

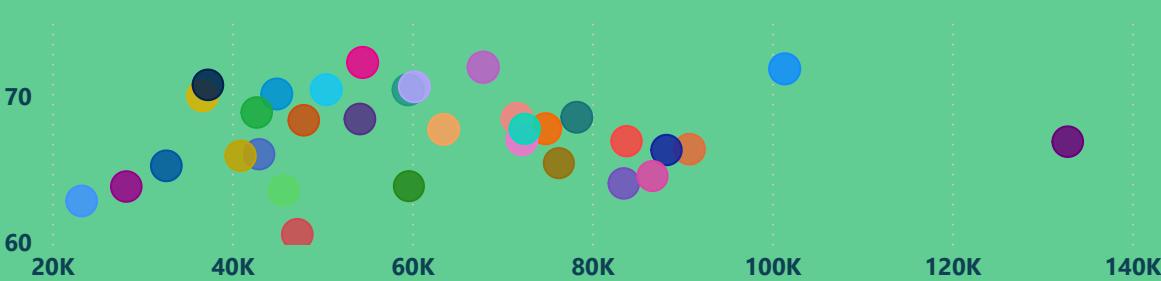
Rainfall vs Temperature

● Adilabad ● Bhadrak Kot... ● Hanumak... ● Hyderabad ● Jagtial ● Jangaon ● Jayashankar



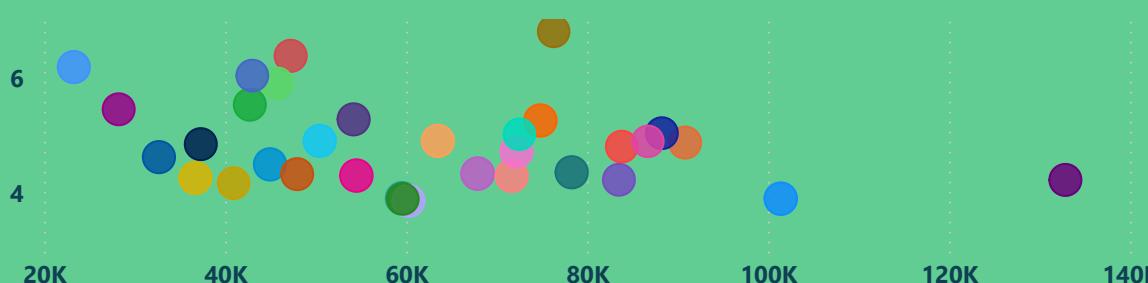
Rainfall vs Humidity

● Adilabad ● Bhadrak Kot... ● Hanumak... ● Hyderabad ● Jagtial ● Jangaon ● Jayashankar



Rainfall vs Wind

● Adilabad ● Bhadrak Kot... ● Hanumak... ● Hyderabad ● Jagtial ● Jangaon ● Jayashankar



Corr Rain vs Temp

**-0.05**

Corr Rain vs Humidity

**0.10**

Corr Rain vs Wind

**-0.28**



# Comprehensive Weather Insights

Daily Rain Range (mm)

55.91K

Avg Daily Temp Range (°C)

12.23

Avg Daily Humidity Range (%)

61.17

Avg Daily Wind Range (Kmph)

19.80

Year



All



District & Mandal

Month

Metric

All

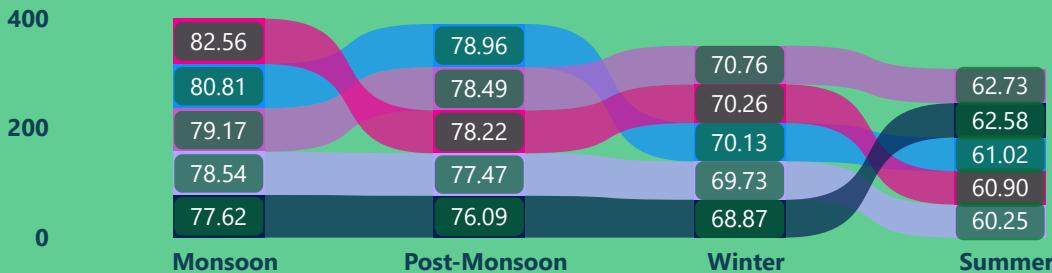
All

Humidity



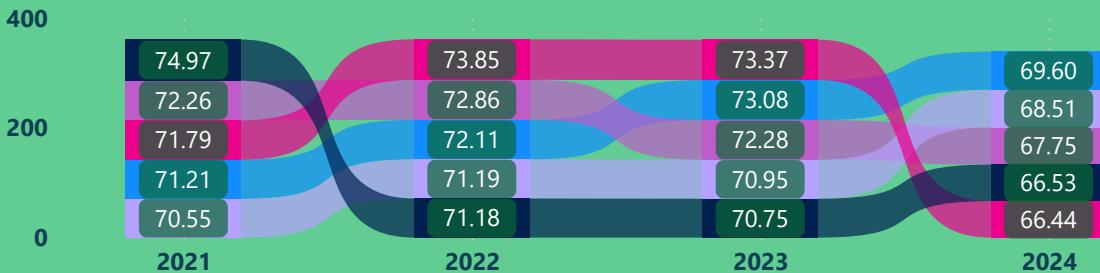
## Seasonal Weather Patterns Across Districts

● Bhadrak Kothagudem ● Khammam ● Mahabubabad ● Peddapalli ● Warangal



## Yearly Trends in Key Weather Metrics

● Bhadrak Kothagudem ● Khammam ● Mahabubabad ● Peddapalli ● Warangal



## Seasonal Weather Metrics Across Districts

District	Seasonal Rainfall (mm)	Seasonal Avg Temp (°C)	Seasonal Avg Humidity (%)	Seasonal Avg Wind Speed (Kmph)
Nizamabad	1,32,860.70	27.83	66.89	4.23
Bhadradri Kothagudem	1,01,410.20	28.76	71.87	3.90
Nirmal	90,840.20	27.92	66.38	4.88
Kamareddy	88,277.40	27.38	66.32	5.05



# Comprehensive Weather Insights

Rainfall YoY %

-0.98

Temperature YoY Δ (°C)

0.77

Humidity YoY Δ (%)

-7.54

Wind YoY Δ (Kmph)

-0.20

Year

All

District & Mandal

All

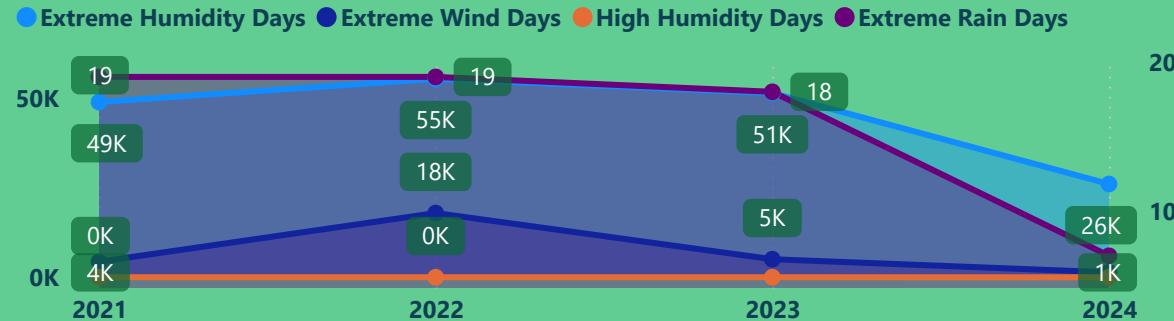
Month

All

Metric

Humidity

## Anomalies in Weather Data



## Δ Temp when Extreme Rain

-1.57

## Δ Wind when Extreme Rain

0.68

## Δ Humid when Extreme Rain

20.55

## Most Affected District

Mahabubnaga...

## Anomalies in Weather Data

District	Rainfall Z-Score	Temperature Z-Score	Humidity Z-Score	Wind Speed Z-Score	Anomaly Flag
Adilabad	0.08	-0.08	-0.20	-0.11	<input checked="" type="checkbox"/> Normal
Bhadradri Kothagudem	0.07	0.26	0.28	-0.17	<input checked="" type="checkbox"/> Normal
Hanumakonda	0.00	-0.02	0.17	-0.11	<input checked="" type="checkbox"/> Normal