

Integrated Drought & Vegetation Condition Analysis

Relationship between Rainfall Deficits, Vegetation Health, and Anomalies (2023–2025)

Panama, Coclé Province



Drought and Wetness

Vegetation Anomaly

Vegetation Stress

SPI Median

0.12

NDVI Median

0.26

VCI Median

65.69

2023

2024

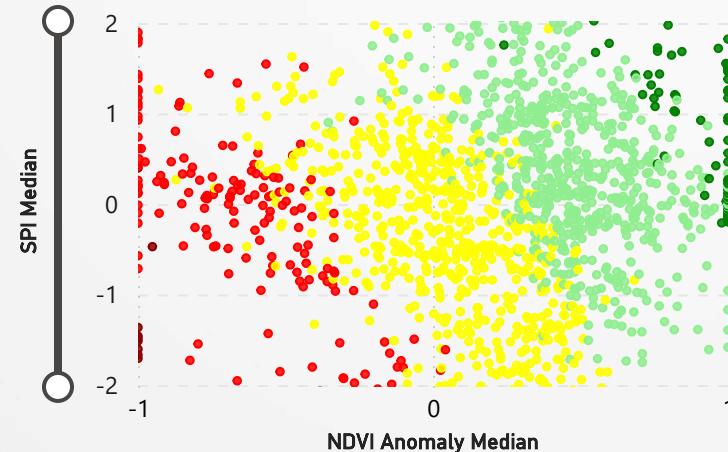
2025

January

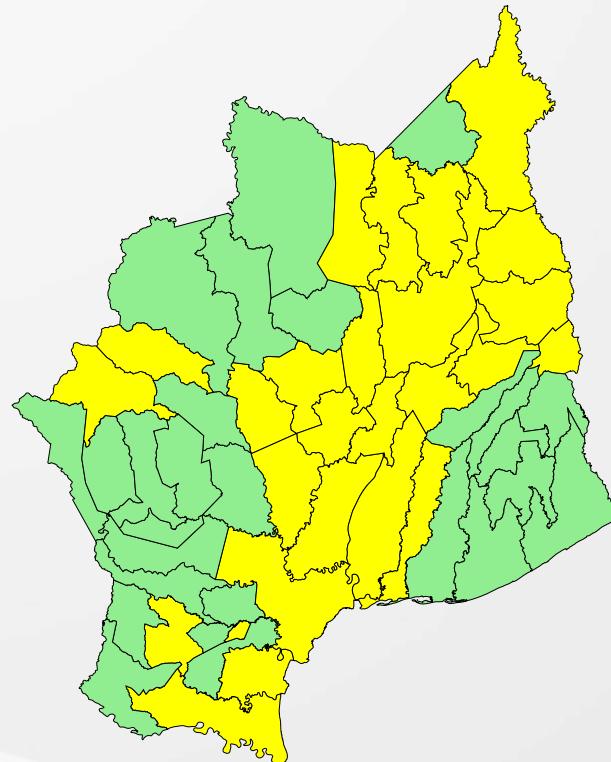
February

March

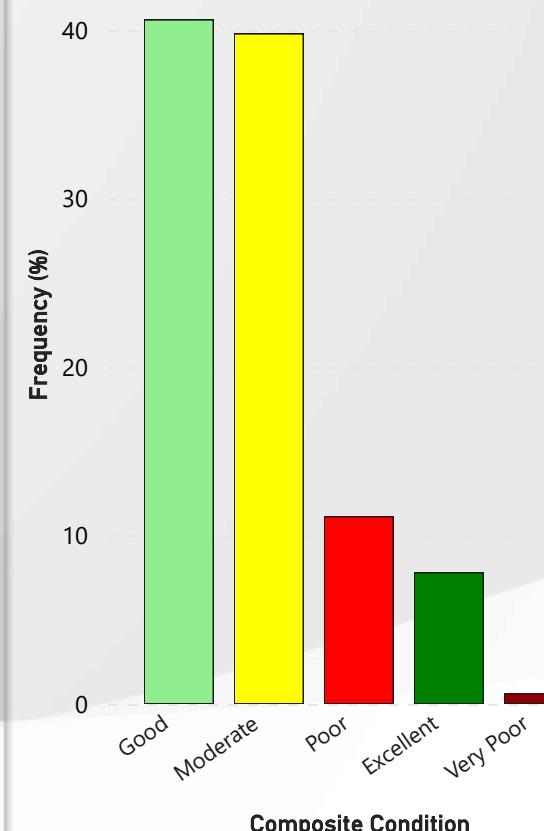
Relationship between Rainfall & Vegetation Anomalies



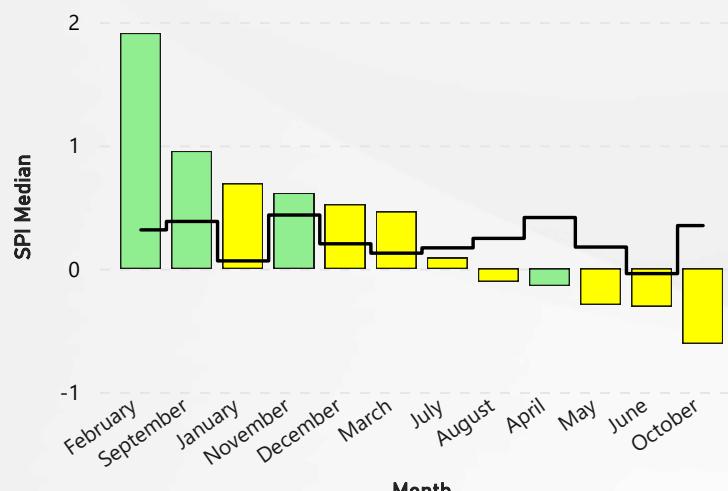
Composite Drought-Vegetation Condition



Condition Category Distribution (%)



Monthly Trends of SPI & NDVI Anomaly



SPI-Based Drought & Wetness Analysis (2023–2025)

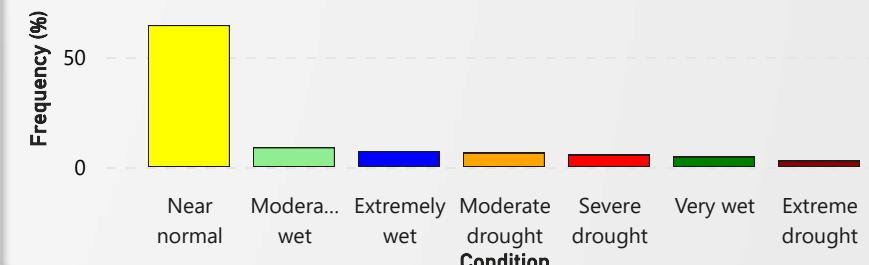


2023
2024
2025

Quarter
1
2
3

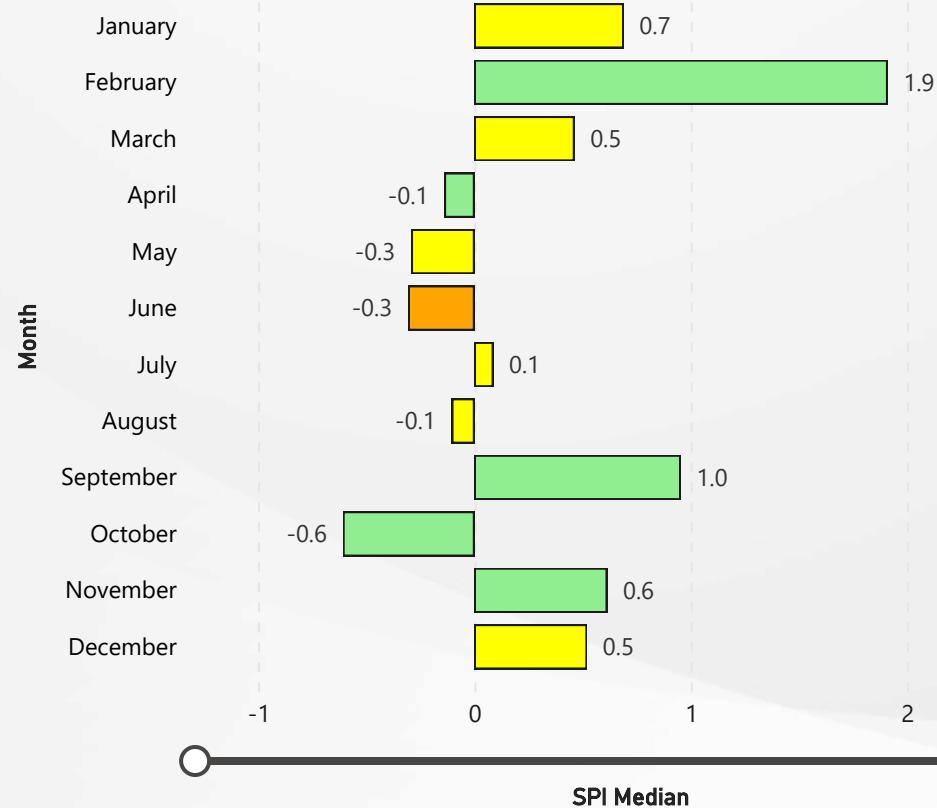
- January
- February
- March
- April
- May
- June

Condition Frequency (%)

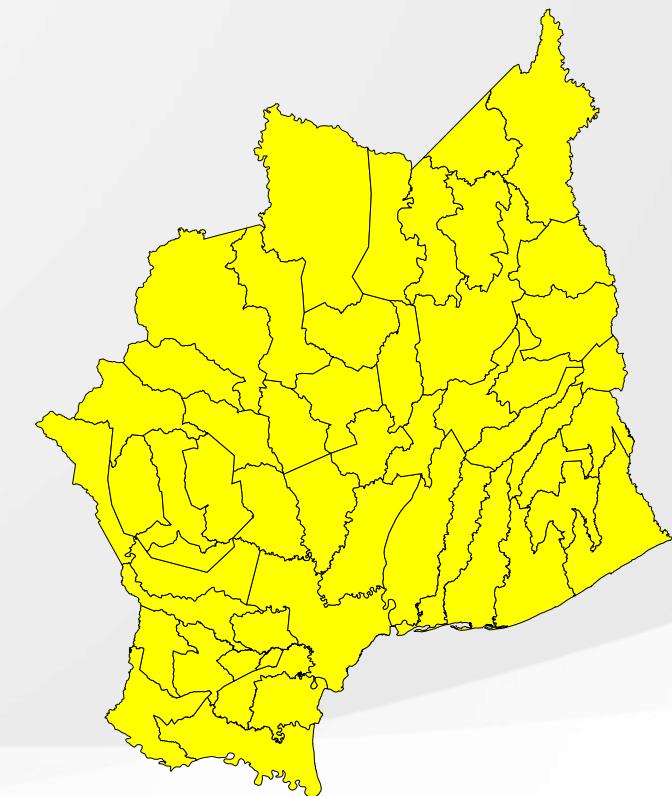


Corregimiento	SPI Median
Las Huacas	0.27
Toza	0.26
El Valle	0.25
El Píchano	0.25
Pajonal	0.23
El Copé	0.20
El Roble	0.19
Victoriano	0.19
Lorenzo	
San Juan de Dios	0.17
San Miguel	0.17
Toabré	0.17
Olá (Cabecera)	0.16
Villarreal	0.16
Chiguirí Arriba	0.15
Cabuya	0.15
Barrios Unidos	0.15
Llano Norte	0.15
El Chirú	0.14
Aguadulce (Cabecera)	0.14
Río Hato	0.14

Monthly Drought/Wetness Index (SPI)



Geographic Patterns of Drought & Wetness



NDVI-Based Vegetation Anomaly Analysis (2023–2025)

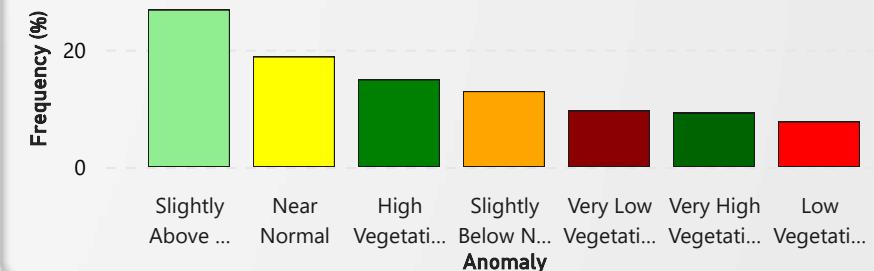


2023
2024
2025

Quarter
1
2
3

- January
- February
- March
- April
- May
- June

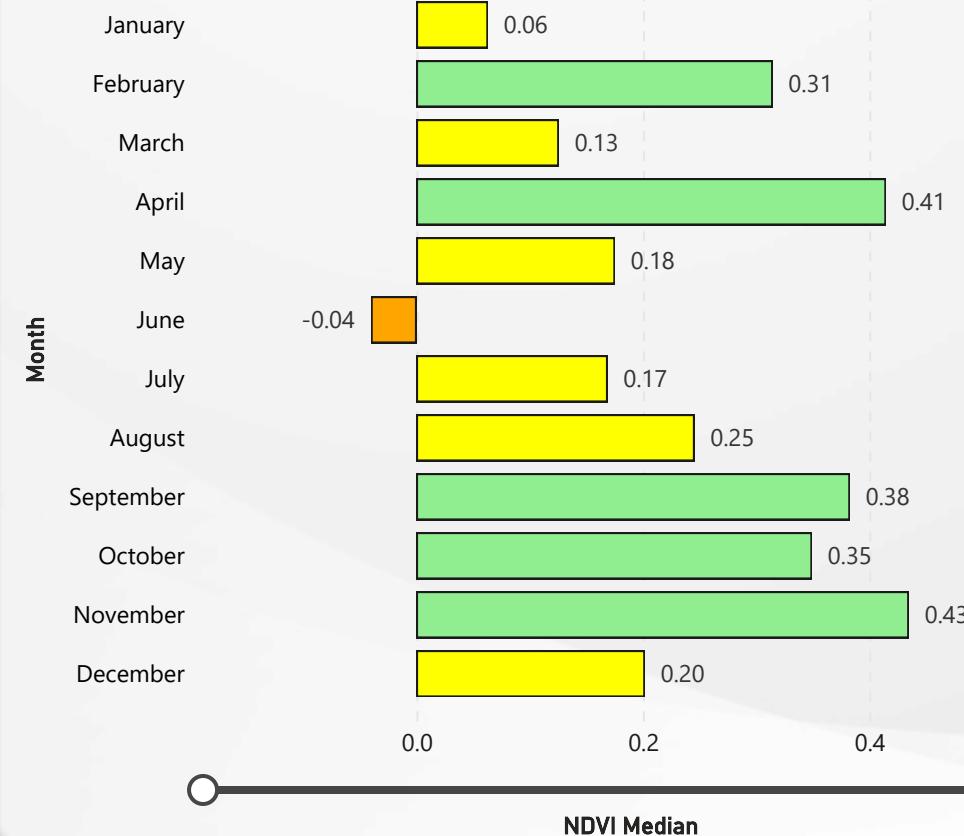
Distribution of Drought & Wetness Conditions (%)



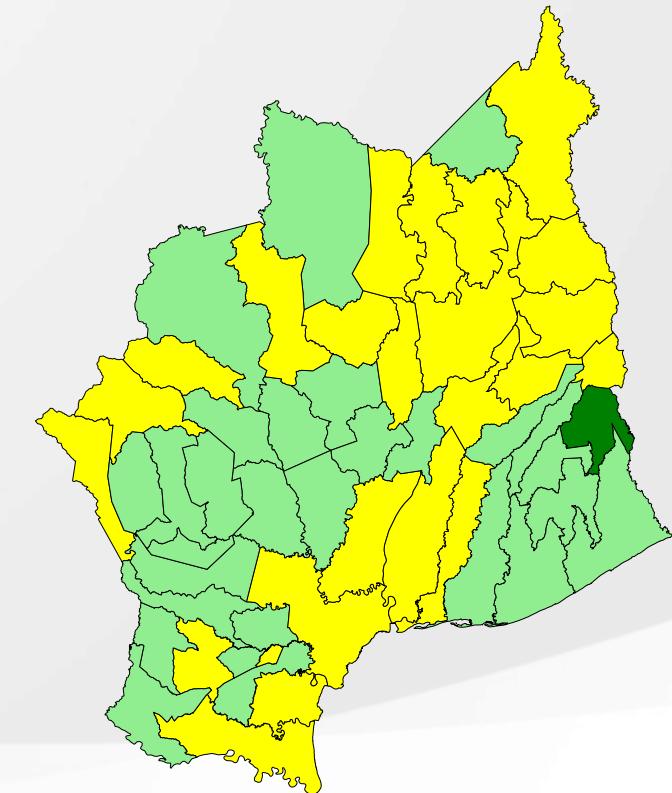
Corregimiento NDVI Median

Corregimiento	NDVI Median
Cabuya	0.51
Virgen del Carmen	0.50
La Pava	0.44
Río Hato	0.42
Guzmán	0.42
Santa Rita	0.41
Toza	0.39
Caballero	0.36
El Copé	0.34
San Juan de Dios	0.32
Llano Norte	0.32
El Caño	0.31
El Chirú	0.30
El Retiro	0.30
El Potrero	0.30
Antón (Cabecera)	0.29
Capellánía	0.29
Villarreal	0.29
Aguadulce (Cabecera)	0.29

Monthly Median NDVI Anomaly



Geographic Patterns of NDVI Anomaly



VCI-Based Vegetation Health Analysis (2023–2025)



2023

2024

2025

Quarter

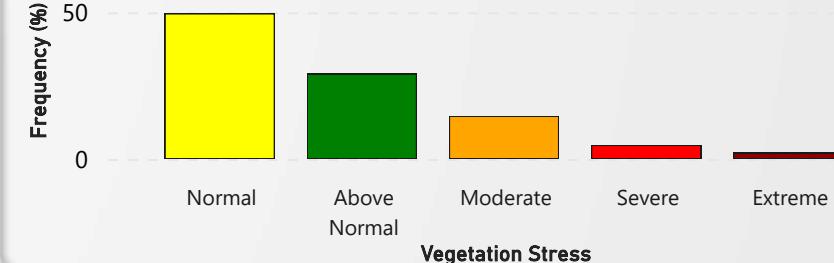
1

2

3

- January
- February
- March
- April
- May
- June

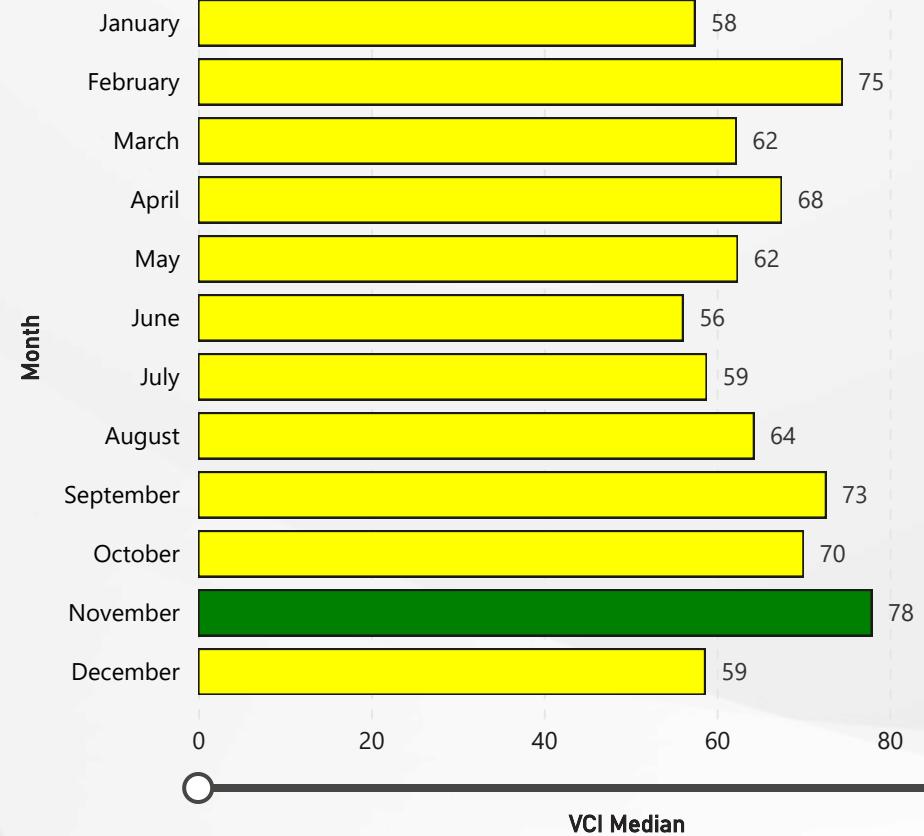
Distribution of Vegetation Conditions (%)



Corregimiento VCI Median

Corregimiento	VCI Median
Cabuya	81.30
Santa Rita	74.65
Llano Norte	73.04
El Retiro	72.82
La Pava	70.93
Caballero	70.84
El Cristo	70.80
Villarreal	70.08
Llano Grande	69.51
Piedras Gordas	69.49
El Hato de San	69.06
Juan de Dios	69.00
Reicito	68.83
Pueblos Unidos	67.79
El Chirú	67.75
Río Hato	67.68
Antón (Cabecera)	67.62
El Caño	67.03
Toza	66.96
El Copé	66.90

Monthly Median Vegetation Condition Index (VCI)



Geographic Patterns of Vegetation Condition

