Sub-Seasonal Disaster Risk Assessment

Forecast-driven multi-hazard outlook (Brazil)

FORECAST START	FORECAST PERIOD	GENERATED	METHOD
2026-06-01	2026-06-01 - 2026-07-26	2026-10-28 04:07 UTC	Threshold-based

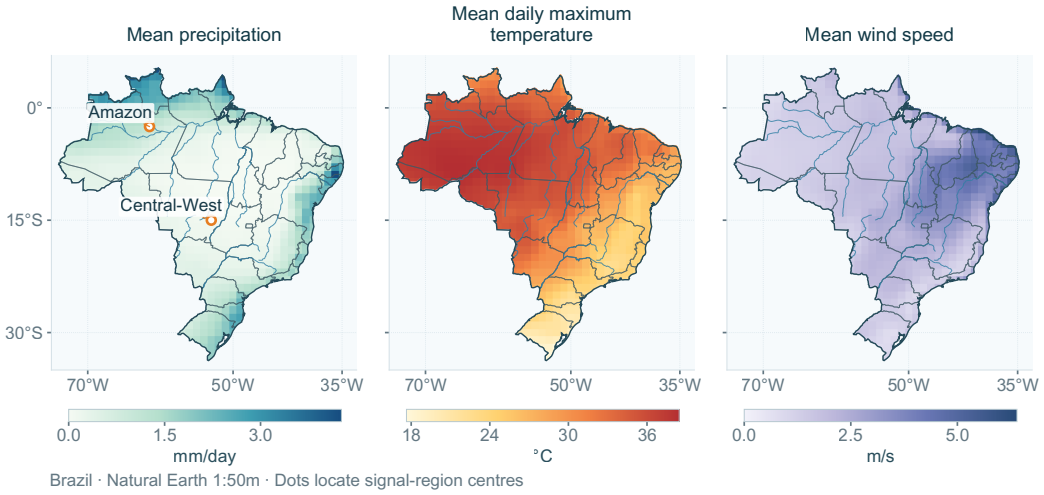
Executive summary

3 hazard signals detected: 0 high-risk and 3 medium-risk. Wildfire, Drought across 2 regions. Priority signal: Wildfire in Amazon, detected in Week 3.

Flood	Drought	Wildfire	Extreme wind
Below threshold	Signal detected	Signal detected	Insufficient data
0 regions detected	1 region detected	2 regions detected	0 regions detected

3 Detected signals | **0** High risk | **3** Medium risk

Forecast fields & geographic context



Mean forecast fields. Region-centre markers locate signals and do not represent measured hazard footprints.

Regional risk signals

Region	Hazard & signal level	Reference week
Amazon	Wildfire · Medium	W3
CenterWest	Drought · Medium / Wildfire · Medium	W5 / W2

Interpretation

Method: raw threshold mode (no normals — indicative only)

Levels are threshold-detection outputs, not probabilities. Reference weeks retain the input week index and do not identify maximum intensity or impact. Historical evidence and full cases follow.

01 / HAZARD BRIEF

Flood

Below threshold



Conceptual mechanism; the scene is not an observation, hazard footprint or loss prediction.

01 Rainfall | 02 Catchment response | 03 River rise | 04 Flood exposure

Forecast evidence

Region	Assessment	Reference	Detection values
Northeast	Outside scope	—	See assessment appendix
Southeast	Below threshold	—	See assessment appendix
Amazon	Below threshold	—	See assessment appendix
South	Below threshold	—	See assessment appendix
CenterWest	Below threshold	—	See assessment appendix



Detected region locators

Dots mark region centres, not hazard boundaries.

How to read this signal

PRECT screens rainfall conditions. Runoff, soil saturation, river levels and inundation require hydrological observations or models.

Historical context

No usable historical case for this hazard was supplied.

MONITORING FOCUS Review rainfall updates, gauges and catchment response.

02 / HAZARD BRIEF

Drought

Signal detected



Conceptual mechanism; the scene is not an observation, hazard footprint or loss prediction.

01 Rainfall deficit | 02 Water balance | 03 Drying landscape | 04 Water stress

Forecast evidence

Region	Assessment	Reference	Detection values
Northeast	Below threshold	—	See assessment appendix
Southeast	Outside scope	—	See assessment appendix
Amazon	Outside scope	—	See assessment appendix
South	Outside scope	—	See assessment appendix
CenterWest	Signal detected	W5	56-day mean rain 0.15 mm/day



Detected region locators

Dots mark region centres, not hazard boundaries.

How to read this signal

The threshold uses 56-day mean rainfall; the reference week is the driest. Soil moisture, reservoir storage and agricultural losses are not inferred from PRECT alone.

Historical context

2016 / CenterWest

The use of the Urubu and Formoso rivers for irrigating crops is being discussed at a public hearing held since 8 a.m. this Monday (5), at the Municipal Chamber of Councilors in Lagoa da Confusão. The···

Ranked by recorded impact, not climate similarity or predicted loss.

MONITORING FOCUS Review rainfall persistence, soil moisture and water storage.

03 / HAZARD BRIEF

Wildfire

Signal detected



Conceptual mechanism; the scene is not an observation, hazard footprint or loss prediction.

01 Heat & low rainfall | 02 Fuel drying | 03 Ignition potential | 04 Fire spread

Forecast evidence

Region	Assessment	Reference	Detection values
Northeast	Insufficient data	—	See assessment appendix
Southeast	Outside scope	—	See assessment appendix
Amazon	Signal detected	W3	Tmax 308.8 K; Rain 1.09 mm/day
South	Outside scope	—	See assessment appendix
CenterWest	Signal detected	W2	Tmax 305.6 K; Rain 0.73 mm/day



Detected region locators

Dots mark region centres, not hazard boundaries.

How to read this signal

Heat and low rainfall indicate fire-weather potential. Fuel moisture, ignition, burned area and fire occurrence are not measured by these inputs.

Historical context

2019 / Amazon

In 2019 there was a total of 89,178 fires that devastated large areas of the Amazon rainforest, 30% more than the previous year. The worst month was August, when 30,901 hotspots were recorded, the hig···

Ranked by recorded impact, not climate similarity or predicted loss.

MONITORING FOCUS Review humidity, fuel conditions and verified fire observations.

04 / HAZARD BRIEF

Extreme wind

Insufficient data



Conceptual mechanism; the scene is not an observation, hazard footprint or loss prediction.

01 Atmospheric flow | 02 Surface winds | 03 Local exposure | 04 Structural stress

Forecast evidence

Region	Assessment	Reference	Detection values
Northeast	Outside scope	—	See assessment appendix
Southeast	Insufficient data	—	See assessment appendix
Amazon	Outside scope	—	See assessment appendix
South	Insufficient data	—	See assessment appendix
CenterWest	Outside scope	—	See assessment appendix



Detected region locators

Dots mark region centres, not hazard boundaries.

How to read this signal

Wind is the speed of daily-mean u/v components, aggregated weekly. It is not gust speed, a wind extreme, or a cyclone forecast.

Historical context

No usable historical case for this hazard was supplied.

MONITORING FOCUS Review higher-frequency winds, gust observations and local exposure.

05 / SYNTHESIS

Synthesis & monitoring

3 hazard signals detected: 0 high-risk and 3 medium-risk. Wildfire, Drought across 2 regions. Priority signal: Wildfire in Amazon, detected in Week 3.

Flood	Drought	Wildfire	Extreme wind
Below threshold	Signal detected	Signal detected	Insufficient data
0 regions detected	1 region detected	2 regions detected	0 regions detected

Verification priorities

Flood	Review rainfall updates, gauges and catchment response.
Drought	Review rainfall persistence, soil moisture and water storage.
Wildfire	Review humidity, fuel conditions and verified fire observations.
Extreme wind	Review higher-frequency winds, gust observations and local exposure.

Inputs & method

Levels are regional threshold-screening outputs, not event probabilities. Below-threshold, insufficient-data and outside-scope assessments remain distinct; uncertainty varies with lead time.

Wind is the speed of daily-mean u/v components, aggregated weekly. It is not gust speed, a wind extreme, or a cyclone forecast.

Input & evidence quality

Temporal coverage, units, missing inputs and historical impact verification are documented in the appendix.

10m-u-wind-HKUST-F1.4-20260601-ensmean.famil.u10m.nc: incomplete daily sample coverage was masked before averaging; Input files have different initialization dates; composite tests use common valid cells and days

APPENDIX / EVIDENCE REGISTER

Assessment & source register

Regional assessment coverage

Region / hazard	Status	Reason & coverage
Northeast / Flood	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
Northeast / Drought	Below threshold	No configured threshold exceedance on the complete assessment window; this does not imply no hazard Valid days: 56
Northeast / Wildfire	Insufficient data	Incomplete common valid-day coverage; unobserved or partial weeks cannot establish a full-window non-detection Valid days: 53
Northeast / Extreme wind	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
Southeast / Flood	Below threshold	No configured threshold exceedance on the complete assessment window; this does not imply no hazard Valid days: 56
Southeast / Drought	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
Southeast / Wildfire	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
Southeast / Extreme wind	Insufficient data	Incomplete common valid-day coverage; unobserved or partial weeks cannot establish a full-window non-detection Valid days: 55
Amazon / Flood	Below threshold	No configured threshold exceedance on the complete assessment window; this does not imply no hazard Valid days: 56
Amazon / Drought	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
Amazon / Wildfire	Signal detected	Threshold met on grid cells with complete weekly support; this is a meteorological signal, not a realized impact forecast Valid days: 53
Amazon / Extreme wind	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
South / Flood	Below threshold	No configured threshold exceedance on the complete assessment window; this does not imply no hazard Valid days: 56
South / Drought	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
South / Wildfire	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0
South / Extreme wind	Insufficient data	Incomplete common valid-day coverage; unobserved or partial weeks cannot establish a full-window non-detection Valid days: 55
CenterWest / Flood	Below threshold	No configured threshold exceedance on the complete assessment window; this does not imply no hazard Valid days: 56
CenterWest / Drought	Signal detected	Threshold met on grid cells with complete weekly support; this is a meteorological signal, not a realized impact forecast Valid days: 56
CenterWest / Wildfire	Signal detected	Threshold met on grid cells with complete weekly support; this is a meteorological signal, not a realized impact forecast Valid days: 53
CenterWest / Extreme wind	Outside scope	Excluded by the configured regional susceptibility scope; no conclusion about absence of hazard Valid days: 0

Input provenance

- Forecast file: 10m-u-wind-HKUST-F1.4-20260601-ensmean.famil.u10m.nc
- Forecast file: 10m-v-wind-HKUST-F1.4-20260601-ensmean.famil.v10m.nc
- Forecast file: precipitaiton-HKUST-F1.4-20260601-ensmean.famil.PRECT.nc
- Forecast file: temperatrue-max-HKUST-F1.4-20260604-ensmean.famil.TREFHT_max.nc
- Hazard signal analysis
- Disaster DB event records
- EM-DAT historical records

File	Initialization / valid time	Variables / units
10m-u-wind-HKUST-F1.4-20260601-ensmean.famil.u10m.nc	2026-06-01 / 2026-06-01 - 2026-07-31	u10m [m/sec]
10m-v-wind-HKUST-F1.4-20260601-ensmean.famil.v10m.nc	2026-06-01 / 2026-06-01 - 2026-07-30	time_bounds [days]; v10m [m/sec]
precipitaiton-HKUST-F1.4-20260601-ensmean.famil.PRECT.nc	2026-06-01 / 2026-06-01 - 2026-07-30	PRECT [m/s]; time_bounds [days]
temperatrue-max-HKUST-F1.4-20260604-ensmean.famil.TREFHT_max.nc	2026-06-04 / 2026-06-04 - 2026-08-02	TREFHT_max [K]; time_bounds [days]

Variable	Units	Valid days / interval
PRECT_mm_day	mm/day	56 / 2026-06-01 - 2026-07-26
TREFHT_max	K	53 / 2026-06-04 - 2026-07-26
u10m	m/sec	55 / 2026-06-02 - 2026-07-26
v10m	m/sec	56 / 2026-06-01 - 2026-07-26
wind_speed	m/s	55 / 2026-06-02 - 2026-07-26

- 10m-u-wind-HKUST-F1.4-20260601-ensmean.famil.u10m.nc: incomplete daily sample coverage was masked before averaging
- Input files have different initialization dates; composite tests use common valid cells and days

The report snapshot retains the full input manifest, grids and calendars.

Illustration provenance

Hazard	Status / model	Asset checksum
Flood	reference_preview / Codex built-in image_gen (preview)	02059e31c9cbe3380c83063150eb8d071520f5696f7ff55b4a3788037a4041e3
Drought	reference_preview / Codex built-in image_gen (preview)	502eb2f0f488957662bf20b41bda173ae75b69714a444f87ad0e969027b74de0
Wildfire	reference_preview / Codex built-in image_gen (preview)	3346b125c4d5695a4c6704af9a19bee061370867a4b3b0c81e0dc0160e4b91fd
Extreme wind	reference_preview / Codex built-in image_gen (preview)	240ddcae8b950f06e4c3f284d3b6b25a9aecd715db409532a333f3462c492aa1

The visual manifest records full prompts, models, cache use and failures. Quantitative graphics and geographic boundaries are rendered programmatically.

Historical cohorts & verified impacts

Region / hazard	Events	Human deaths	People affected	Source
Amazon / wildfire	236	—	10002195.0	event_group (own)
CenterWest / drought	160	—	27000000.0	event_group (own)
CenterWest / wildfire	462	—	10038195.0	event_group (own)

A dash means unavailable, not zero. Verified coverage may differ between impact metrics.

Drought / Complete historical cases

2016 / CenterWest

The use of the Urubu and Formoso rivers for irrigating crops is being discussed at a public hearing held since 8 a.m. this Monday (5), at the Municipal Chamber of Councilors in Lagoa da Confusão. The municipality is responsible for a large share of the state's agricultural production and is a reference in the production of irrigated floodplains. Rural producers parked tractors in front of the Chamber to draw attention and assert the need to maintain crop irrigation. They state that due to the drought the crops are being harmed with loss of 80% of areas where there is no irrigation.

source: own · total_affected: 27000000.0 · economic_loss_usd: 5000000000.0

no_affected | 27000000.0 | humans | people | supported |

total_affected | 27000000.0 | humans | people | supported |

total_damage_000_usd | 5000000.0 | economic_loss | thousand_usd | supported |

total_affected | {'min': 1000001} | unknown | unknown | invalid_value | 2081669: The measure should benefit more than 1 million people in 759 municipalities

2021 / CenterWest

The wheat harvest, due to the drought in August and September, should have losses of 289 thousand tonnes compared to the previous projection; the new projection is 3.2 million tonnes. More than 80% of the planted area has already been harvested.

source: own · economic_loss_usd: 3000000000.0

total_damage_000_usd | 3000000.0 | economic_loss | thousand_usd | supported |

Wildfire / Complete historical cases

2019 / Amazon

In 2019 there was a total of 89,178 fires that devastated large areas of the Amazon rainforest, 30% more than the previous year. The worst month was August, when 30,901 hotspots were recorded, the highest number since 2006. Images of the 2019 fires were widely published and condemned internationally, and civil society attributed the disaster to President Bolsonaro's rhetoric in favor of exploiting natural resources across the Amazon, including indigenous reserves.

source: own · total_affected: 10002195.0

no_affected | 10000000.0 | humans | people | supported |

total_affected | 10002195.0 | humans | people | supported |

no_injured | 2195.0 | humans | people | supported |

2019 / Amazon

According to INPE's Queimadas program, between January and November 2019 an area of 70,698 km² was burned in the Brazilian Amazon; INPE is still processing December. Researchers say the Amazon forest does not burn naturally and that most fires in Brazil were initiated as part of the deforestation process, when vegetation is felled, left to dry in the sun and then burned. Experts say INPE figures underestimate the area burned because satellites have difficulty detecting fire under the canopy. The study 'Clarifying Amazonia's Burning Crisis' reported that the fires in August 2019 were almost three times larger than in 2018.

source: own · total_affected: 10002195.0

no_affected | 10000000.0 | humans | people | supported |

total_affected | 10002195.0 | humans | people | supported |

no_injured | 2195.0 | humans | people | supported |

2019 / CenterWest

The flames have been destroying part of the forest in Brazil for two weeks. Estimates indicate that thousands of hectares are being consumed by fire in the states of Rondônia, Mato Grosso and Mato Grosso do Sul. There is not yet official data on the extent of the damage. According to the National Institute for Space Research (Inpe), fire hotspots across the country this year exceed by 83% the number recorded in the same period in 2018. President Jair Bolsonaro blamed the drought for the tragedy and accused NGOs without evidence.

source: own · total_affected: 10002195.0

no_affected | 10000000.0 | humans | people | supported |

total_affected | 10002195.0 | humans | people | supported |

no_injured | 2195.0 | humans | people | supported |

2019 / CenterWest

Paraguay controlled a fire that ravaged a little more than 20,000 hectares in the Pantanal area at the triple border with Bolivia and Brazil, the Environment Minister Ariel Oviedo said on Friday. The fire, which began a week earlier in a pasture area, "was controlled naturally with a change in wind direction," Oviedo said. The ministry sent firefighters and doctors to Bahía Negra, the last Paraguayan urban area in the region, 900 km north of the capital Asunción, where about 60 people received medical assistance for smoke inhalation. The environmental organization owns a forest reserve known as Três Gigantes near the triple border, which had 70% of its area consumed by the flames. Pepe Cartes said many animal species died in the fire, such as tortoises, anteaters, armadillos, monkeys and snakes, and noted that although the fire is controlled "we remain on yellow alert."

source: own · total_affected: 36000.0

no_affected | 60 | unknown | unknown | pending_review | 1756240: about 60 people received medical assistance for smoke inhalation

no_injured | 60 | unknown | unknown | pending_review | 1756240: about 60 people received medical assistance for smoke inhalation

no_affected | 36000.0 | humans | people | supported |

total_affected | 36000.0 | humans | people | supported |

Pending or excluded historical impacts / Amazon

Metric / raw value	Subject / status	Witness segments
no_affected / 460000	unknown / pending_review	1479702
total_affected / 460000	unknown / pending_review	1479702
no_affected / 255000	unknown / pending_review	1402065
total_affected / 255000	unknown / pending_review	1402065
no_affected / 2000000	unknown / pending_review	928509
total_affected / 2000000	unknown / pending_review	928509
no_affected / 451000	unknown / pending_review	926701
total_affected / 451000	unknown / pending_review	926701
no_affected / 451000	unknown / pending_review	926703
total_affected / 451000	unknown / pending_review	926703
no_injured / 0	unknown / pending_review	927597
no_affected / 1169	unknown / pending_review	926593
no_injured / 0	unknown / pending_review	925440
total_affected / 451000	unknown / pending_review	926765
no_affected / 451000	unknown / pending_review	926765
no_injured / 0	unknown / pending_review	1853726
total_affected / {'min': 20000000}	unknown / invalid_value	1851347
no_affected / 500000	unknown / pending_review	1899499
total_affected / 500	unknown / pending_review	1850879
no_affected / {'min': 29000}	unknown / invalid_value	1856444
no_affected / {'max': 4500000, 'min': 3000000}	unknown / invalid_value	1881763, 1881763
total_affected / 2195	unknown / pending_review	1881757

These raw values are excluded from verified metrics. Full witness text, units and review reasons remain in the report snapshot pending_impact_records.

Pending or excluded historical impacts / CenterWest

Metric / raw value	Subject / status	Witness segments
no_affected / 100000	unknown / pending_review	301853
total_deaths / 0	unknown / pending_review	1401861
no_affected / 1600	unknown / pending_review	1046818
no_affected / 9300000	unknown / pending_review	1130532
total_affected / 9300000	unknown / pending_review	1130532
total_affected / 2000000	unknown / pending_review	1392150
total_affected / 326000	unknown / pending_review	935550, 936241
total_affected / 8600000	unknown / pending_review	708235
no_affected / {'min': 40000000}	unknown / invalid_value	708140
total_affected / {'min': 40000000}	unknown / invalid_value	708140
no_affected / 8000000	unknown / pending_review	901432
no_affected / {'min': 81000}	unknown / invalid_value	664620
no_affected / 101000	unknown / pending_review	853109
total_affected / 7500000	unknown / pending_review	838027
total_damage_000_usd / 4300000	unknown / pending_review	682327
total_damage_000_usd / 3000000	unknown / pending_review	571157
no_affected / 4500	unknown / pending_review	1853936
total_affected / {'min': 1000001}	unknown / invalid_value	2081669

These raw values are excluded from verified metrics. Full witness text, units and review reasons remain in the report snapshot pending_impact_records.

Pending or excluded historical impacts / CenterWest

Metric / raw value	Subject / status	Witness segments
no_injured / 0	unknown / pending_review	500709
no_affected / 7	unknown / pending_review	1405395
total_deaths / 2	unknown / pending_review	1404751
total_deaths / 1	unknown / pending_review	1404835, 1478664
no_affected / 510	unknown / pending_review	1402132, 1404524
no_injured / 60	unknown / pending_review	1402132, 1404428
total_affected / 510	unknown / pending_review	1404524
no_injured / 2	unknown / pending_review	1404140
total_deaths / 2	unknown / pending_review	1478583
total_affected / 800	unknown / pending_review	1480426
total_deaths / 2	unknown / pending_review	1404257, 1405216, 1480426
no_injured / 0	unknown / pending_review	1404151
total_deaths / 0	unknown / pending_review	1404151
no_injured / 3	animals / excluded_nonhuman	1404795
total_deaths / 2	animals / excluded_nonhuman	1478419
total_affected / 3000	unknown / pending_review	1403998
no_injured / 0	unknown / pending_review	1404030
no_injured / 66	unknown / pending_review	1405488
total_deaths / 2	unknown / pending_review	1405488
no_injured / 0	unknown / pending_review	1404307, 1404319
total_affected / 4400000	unknown / pending_review	1480915
total_affected / 112000	unknown / pending_review	1476889
no_affected / 18900000	unknown / pending_review	1418197
total_affected / 18900000	unknown / pending_review	1418197
total_deaths / 5	unknown / pending_review	1488357
total_affected / 4400000	unknown / pending_review	1402381
total_affected / 4400000	unknown / pending_review	1480728
no_injured / 0	animals / excluded_nonhuman	792723
total_deaths / 0	animals / excluded_nonhuman	792723
no_injured / 0	unknown / pending_review	923278
no_injured / 0	unknown / pending_review	959156
no_injured / 0	unknown / pending_review	894452
no_injured / 4	unknown / pending_review	855811
total_deaths / 3	unknown / pending_review	855625
no_injured / 0	animals / excluded_nonhuman	964671
no_affected / 100	unknown / pending_review	851874, 852084
no_injured / 2	unknown / pending_review	852084, 852139

Metric / raw value	Subject / status	Witness segments
total_affected / 100	unknown / pending_review	852090
total_deaths / 0	unknown / pending_review	851874, 964286
no_injured / 0	unknown / pending_review	598895
no_affected / 6	unknown / pending_review	854674
no_affected / 1400	unknown / pending_review	1908292, 1919899
no_affected / 1	unknown / pending_review	1884443
no_injured / 1	unknown / pending_review	1884404
total_deaths / 1	animals / excluded_nonhuman	1885476, 1922003
total_deaths / 1	unknown / pending_review	1893971
total_deaths / 1	unknown / pending_review	1884283, 1884289
no_injured / 2	unknown / pending_review	1906700
no_injured / 0	unknown / pending_review	1882553
total_deaths / 1	unknown / pending_review	1893977
total_deaths / 1	animals / excluded_nonhuman	1888667
no_affected / 220	unknown / pending_review	1883196
total_deaths / 1	animals / excluded_nonhuman	1883024
no_affected / 20	unknown / pending_review	1880045
no_affected / 9	unknown / pending_review	1883159
total_deaths / 0	animals / excluded_nonhuman	1884579
total_deaths / 2	unknown / pending_review	1891210
total_affected / 65000000	animals / excluded_nonhuman	853409
total_deaths / 17000000	animals / excluded_nonhuman	852230
no_injured / 1	unknown / pending_review	1918098
total_deaths / 1	unknown / pending_review	1900353
no_injured / 3	unknown / pending_review	1900022
no_affected / 1500	unknown / pending_review	1757528
total_affected / 1500	unknown / pending_review	1757528
no_affected / 60	unknown / pending_review	1756240
no_injured / 60	unknown / pending_review	1756240

These raw values are excluded from verified metrics. Full witness text, units and review reasons remain in the report snapshot pending_impact_records.