

HIGH-QUALITY AUSTRALIAN DAILY RAINFALL DATASET

Background

Lavery et al. (1992) used available station history information and a variety of graphical and statistical tests to select high-quality daily rainfall stations for monitoring long-term changes in Australian rainfall. Rainfall records were not adjusted for discontinuities but were rejected if suspected of having an inhomogeneity or data quality problem.

The reliability of the data at candidate stations was investigated by determining the number of missed observations and by examining frequency histograms of daily rainfall amounts for evidence of rounding errors or non-reporting of small rainfall amounts. The exposure and location of rainfall sites was also examined with available station history information. Stations with any changes that might have had an impact on the record were rejected. Rainfall records that passed these quality checks were then tested for homogeneity using a cumulative deviation statistic for each annual rainfall series to identify years with excessive drift from the expected climate. Metadata was then examined to determine whether the change was likely to be artificial or not.

Out of an initial list of around 2100 candidate stations only 191 rainfall records passed all quality and homogeneity tests to be included in the high-quality daily rainfall dataset of Lavery et al. (1992). The total number of open records has since declined to 152.

Data format

The compressed high-quality Australian daily rainfall dataset *HQ_daily_prdp_txt.tar* is available at: <ftp://ftp.bom.gov.au/anon/home/ncc/www/change/HQdailyR>

Within this compressed dataset:

HQDR_stations.txt contains a listing of all stations included in the dataset with station number, latitude, longitude, elevation and station name.

prdpq.<station number>.daily.txt.Z files contain the daily data for each individual station. The header in each data file includes variable type, station number, start date of data (yyyymmdd), end date of data (yyyymmdd) and station name. Data are in format <date (yyyymmdd)> <rainfall total (mm)>.

Daily rainfall totals are for the 24-hours to 9am (local time). However, the dataset contains some multi-day totals of rainfall. These are identifiable as totals which follow one or more days of missing data (99999.9). Any rainfall recorded on the first day following a period of missing data may have fallen on any of the previous days with missing data or may have been recorded over more than one day.

Throughout the data files 99999.9 is used to denote missing data.

Station list

Number	Lat.	Long.	El.(m)	Name
004035	-20.78	117.15	0012.0	ROEBOURNE
005008	-21.19	115.98	0011.0	MARDIE
006055	-27.75	115.83	0300.0	WOOLGORONG
007007	-26.98	116.54	0300.0	BOOLARDY
007057	-28.06	117.84	0426.0	MOUNT MAGNET
007095	-28.23	117.65	0400.0	YOWERAGABBIE
008066	-30.70	117.06	0310.0	KOKARDINE

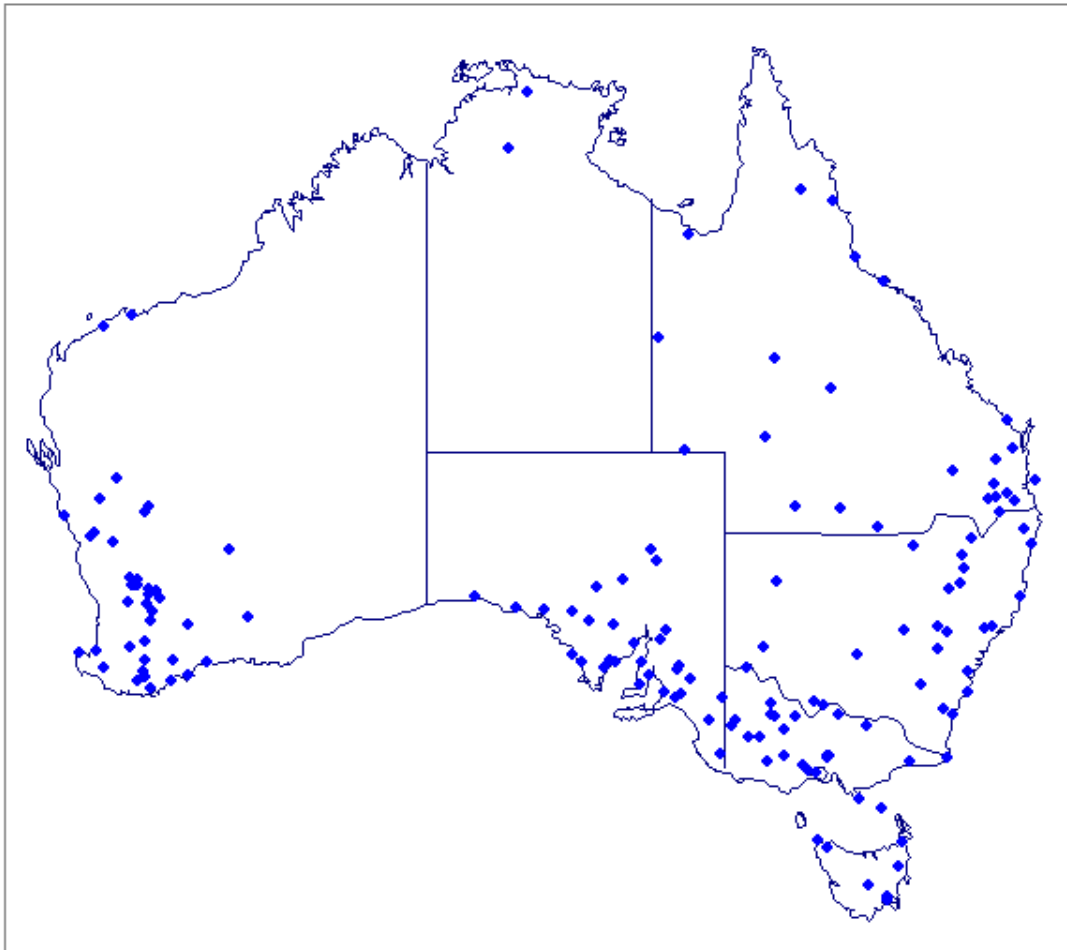
008079	-29.02	115.62	0260.0	MANARRA
008088	-29.19	115.44	0153.0	MINGENEW POST OFFICE
008106	-29.37	116.40	0280.0	PERANGERY
008141	-28.38	114.45	0100.0	WILLI GULLI NORTH
009503	-33.48	115.73	0037.0	BOYANUP POST OFFICE
009519	-33.54	115.02	0109.0	CAPE NATURALISTE
009520	-34.61	118.75	0040.0	CAPE RICHE
009557	-33.95	120.12	0015.0	HOPETOUN POST OFFICE
009561	-34.49	117.63	0262.0	KENDENUP POST OFFICE
009564	-34.94	117.92	0012.0	KING RIVER
009591	-34.64	117.38	0230.0	PARDELUP
009594	-34.44	119.36	0060.0	PEPPERMINT GROVE
009619	-34.15	116.02	0240.0	WILGARRUP
010032	-31.00	117.39	0300.0	COWCOWING
010037	-31.73	117.76	0300.0	CUTTENING
010039	-31.01	117.20	0295.0	DOODARDING WELL
010045	-31.01	117.13	0290.0	EJANDING
010091	-31.63	117.01	0195.0	MECKERING
010092	-31.48	118.28	0315.0	MERREDIN
010112	-31.19	118.10	0292.0	NUNGARIN POST OFFICE
010123	-31.99	117.93	0250.0	THE GRANITES
010126	-31.12	117.79	0290.0	TRAYNING
010133	-30.83	117.32	0320.0	WALK WALKIN
010149	-31.34	117.82	0320.0	CODG CODGEN
010505	-33.34	117.03	0300.0	ARTHUR RIVER COMP
010525	-33.85	117.64	0328.0	BROOMEHILL POST OFFICE
010536	-32.33	117.87	0295.0	CORRIGIN
010537	-34.30	117.57	0255.0	CRANBROOK
010541	-33.86	118.81	0280.0	NYERILUP
010636	-33.16	117.67	0340.0	THE OAKS
010670	-32.50	119.36	0310.0	LAKE CARMODY
012052	-29.69	121.03	0425.9	MENZIES
012065	-32.20	121.78	0277.0	NORSEMAN
014042	-12.33	133.06	0006.7	OENPELLI
014902	-14.46	132.26	0103.0	KATHERINE COUNCIL
016009	-31.06	135.87	0155.0	COONDAMBO
016022	-32.00	134.88	0271.0	KONDOOLKA
016032	-32.52	136.49	0205.0	NONNING
016039	-30.79	136.89	0085.0	PURPLE DOWNS
016055	-32.38	135.52	0384.0	YARDEA
017024	-30.07	138.27	0091.0	FARINA
017031	-29.65	138.06	0050.0	MARREE
018001	-33.91	136.57	0009.0	ARNO BAY
018002	-31.83	132.63	0036.0	PENNALUMBA
018033	-31.97	133.76	0132.0	GOODE
018045	-33.95	135.27	0008.0	LAKE HAMILTON
018049	-34.12	136.16	0100.0	NORTH PARNSDA
018058	-33.21	137.36	0050.0	MULLAQUANA
018065	-33.87	136.38	0076.0	PINESIDE
018069	-33.65	134.89	0004.0	ELLISTON
018106	-31.45	130.90	0064.0	NULLARBOR ROADHOUSE
019001	-33.05	138.43	0370.0	APPILA
019032	-32.74	138.61	0418.0	ORROROO
022000	-34.42	137.92	0022.0	ARDROSSAN
022009	-34.77	137.59	0070.0	MINLATON
022020	-33.93	137.63	0010.0	WALLAROO
023721	-35.06	138.56	0170.0	HAPPY VALLEY RESERVOIR E&WS
024501	-34.10	139.17	0285.0	AUSTRALIA PLAINS
024511	-34.18	139.08	0415.0	EUDUNDA
024515	-35.30	139.03	0018.0	LANGHORNE CREEK
024521	-35.12	139.27	0015.0	MURRAY BRIDGE
024535	-34.57	139.60	0024.0	SWAN REACH
025015	-35.26	140.91	0105.0	PINNAROO
025507	-36.10	140.35	0029.0	KEITH

026025	-37.38	140.84	0062.0	PENOLA POST OFFICE
028004	-16.00	144.08	0204.5	PALMERVILLE
029004	-17.74	139.55	0005.5	BURKETOWN POST OFFICE
031055	-16.47	145.37	0030.0	SOUTH MOSSMAN ALCHERA DVE
032032	-18.59	146.25	0010.0	MACKNADE SUGAR MILL
033035	-19.54	147.41	0006.1	KALAMIA ESTATE
036007	-23.55	145.29	0266.9	BARCALDINE POST OFFICE
037043	-21.61	138.31	0173.9	URANDANGIE
037051	-22.39	143.04	0181.9	WINTON POST OFFICE
038002	-25.90	139.35	0046.5	BIRDSVILLE POLICE STATION
038024	-25.42	142.66	0126.3	WINDORAH POST OFFICE
039037	-24.79	152.36	0003.0	FAIRYMEAD SUGAR MILL
040013	-25.82	152.62	0061.0	COWAL
040043	-27.03	153.47	0099.9	CAPE MORETON LIGHTHOUSE
040082	-27.55	152.34	0094.0	UNIVERSITY OF QUEENSLAND GATTON
040094	-27.81	152.67	0055.0	HARRISVILLE POST OFFICE
040152	-26.24	151.94	0300.0	MURGON POST OFFICE
041011	-27.71	151.87	0467.0	CAMBOOYA POST OFFICE
041013	-28.23	152.07	0456.0	CANNING DOWNS
041024	-27.21	151.85	0588.3	DOCTORS CREEK
041082	-27.72	151.63	0608.0	PITTSWORTH YANDILLA STREET
042023	-26.66	150.18	0304.8	MILES POST OFFICE
044026	-28.07	145.68	0188.7	CUNNAMULLA POST OFFICE
044054	-28.81	147.12	0130.0	MULGA DOWNS
045017	-28.00	143.82	0128.7	THARGOMINDAH POST OFFICE
046042	-30.85	143.09	0151.0	WHITE CLIFFS POST OFFICE
047029	-33.39	142.57	0053.0	POONCARIE TELECENTRE
047053	-34.11	141.91	0037.0	WENTWORTH POST OFFICE
048031	-29.55	148.59	0145.0	COLLARENEBRI (VIEWPOINT)
050031	-32.73	148.19	0285.0	PEAK HILL POST OFFICE
054003	-30.38	150.61	0500.0	BARRABA POST OFFICE
054004	-29.87	150.57	0296.0	BINGARA POST OFFICE
054036	-29.24	150.89	0440.0	WALLANGRA (WALLANGRA STATION)
055045	-31.18	150.03	0365.0	CURLEWIS (PINE CLIFF)
055055	-30.96	150.46	0290.0	CARROLL (THE RANCH)
058012	-29.43	153.36	0029.0	YAMBA PILOT STATION
058063	-28.88	153.05	0026.0	CASINO AIRPORT
060026	-31.44	152.92	0007.0	PORT MACQUARIE (HILL STREET)
061010	-32.59	151.78	0010.0	CLARENCE TOWN (GREY ST)
061014	-32.64	151.42	0030.0	BRANXTON (DALWOOD VINEYARD)
062021	-32.60	149.60	0454.0	MUDGEY (GEORGE STREET)
062026	-32.81	149.98	0605.0	RYLSTONE (ILFORD RD)
063005	-33.43	149.56	0713.0	BATHURST AGRICULTURAL STATION
068016	-34.27	150.81	0340.0	CATARACT DAM
068034	-35.09	150.80	0085.0	POINT PERPENDICULAR LIGHTHOUSE COMPARISON
069006	-35.72	149.78	0165.0	BETTOWYND (CONDRY)
069018	-35.91	150.15	0017.0	MORUYA HEADS PILOT STATION
070028	-34.74	148.89	0595.0	YASS (DERRINGULLEN)
074128	-35.55	144.95	0093.0	DENILIKUIN POST OFFICE
075012	-35.42	144.60	0084.0	WAKOOL (CALIMO)
075050	-33.61	146.32	0192.0	NARADHAN (URALBA)
077008	-35.93	142.85	0100.0	BIRCHIP (WOODLANDS)
077030	-36.01	143.03	0100.0	NARRAPORT
077039	-35.50	142.85	0054.0	SEA LAKE (POST OFFICE)
078043	-36.11	141.42	0130.0	YANAC NORTH
078078	-36.37	141.24	0140.0	KANIVA
079010	-36.78	142.40	0146.0	DRUNG DRUNG
079036	-36.74	141.94	0122.0	NATIMUK
080004	-35.98	143.85	0088.0	CANARY ISLAND
080009	-36.48	143.35	0177.0	COONOOER BRIDGE
080065	-35.88	145.55	0115.0	YARROWEYAH
082001	-36.37	146.71	0580.0	BEECHWORTH COMPOSITE
084016	-37.57	149.91	0015.2	GABO ISLAND LIGHTHOUSE
084030	-37.69	148.46	0041.0	ORBOST (COMPARISON)

085096	-39.13	146.42	0088.7	WILSONS PROMONTORY LIGHTHOUSE
086117	-37.48	145.15	0244.0	TOOROURRONG
086131	-37.56	145.13	0198.0	YAN YEAN
087034	-38.07	144.33	0082.6	LOVELY BANKS RESERVOIR
087043	-37.82	144.15	0347.4	MEREDITH (DARRA)
087053	-38.12	144.64	0077.0	PORTARLINGTON
088060	-37.45	145.21	0520.0	WALLABY CREEK WEIR
089005	-37.45	143.36	0450.0	BEAUFORT
089033	-37.69	142.72	0270.0	WICKLIFFE
091011	-40.69	144.72	0017.0	CAPE GRIM (WOOLNORTH)
091044	-40.92	145.14	0051.0	IRISHTOWN (JOHNS HILL ROAD)
092012	-41.64	147.97	0233.5	FINGAL (FORESTRY LEGGE STREET)
092037	-40.73	148.12	0009.0	SWAN ISLAND LIGHTHOUSE
094061	-42.93	147.52	0003.0	SANDFORD (MAYDENA)
094063	-42.79	147.56	0010.0	SORELL (WHITLEA)
095016	-42.34	146.75	0405.0	OSTERLEY
099001	-39.48	147.32	0085.0	DEAL ISLAND

Network Map

High-Quality Daily Rainfall Network



References

Lavery, B., Kariko, A. and Nicholls, N. 1992. A historical rainfall data set for Australia. *Aust. Met. Mag.*, 40, 33-39.

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