



## Basic Climatological Station Metadata

Current status

Metadata compiled: 11 JAN 2008

**Station:** MANDURAH

**Bureau of Meteorology station number:** 009887

**Bureau of Meteorology district name:** South Coast

**State:** WA

**World Meteorological Organization number:** ?

**Identification:** MDU

**Network Classification:**

**Station purpose:** Synoptic

**Automatic Weather Station:**



Current Station Location				
<b>Latitude</b>	<b>Decimal</b>	-32.5211	<b>Hour Min Sec</b>	32°31'16"S
<b>Longitude</b>	<b>Decimal</b>	115.7500	<b>Hour Min Sec</b>	115°45'00"E
<b>Station Height</b>	21 m	<b>Barometer Height</b>	22 m	
<b>Method of station geographic positioning</b>			GPS	

**Year opened:** 1987

**Status:** Closed

## Station summary

No summary for this site has been written as yet.

**Historical metadata for this site has not been quality controlled for accuracy and completeness. Data other than current station information, particularly earlier than 1998, should be considered accordingly. Information may not be complete, as backfilling of historical data is incomplete.**

Prepared by National Climate Centre of the Bureau of Meteorology.

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Current status

<b>Station:</b> MANDURAH	<b>Location:</b> MANDURAH	<b>State:</b> WA
<b>Bureau No.:</b> 009887	<b>WMO No.:</b> ?	<b>Aviation ID:</b> MDU
<b>Latitude:</b> -32.5211	<b>Longitude:</b> 115.7500	<b>Elevation:</b> 21 m
	<b>Opened:</b> 01 Jan 1987	<b>Barometer Elev:</b> 22 m
	<b>Current Status:</b> Closed	<b>Metadata compiled:</b> 11 JAN 2008

### Observation summary

The table below indicates the approximate completeness of the record for individual element types within the Australian Data Archive for Meteorology. For elements not listed see the note at the end of the holdings.



#### DAILY DATA HOLDINGS

OBSERVATION TYPE	FIRST MONTH	LAST MONTH	COMPLETENESS (% estimate)	SINGLE DAYS MISSED	FULL MONTHS MISSED
MAXIMUM AIR TEMPERATURE	FEB 1988	JUL 2001	78.8	189	28
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0
RAINFALL	JUN 1994	AUG 2001	85	N/A	N/A
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0

#### HOURLY SYNOPTIC DATA HOLDINGS - from 1 to 24 observations per day

OBSERVATION TYPE	FIRST MONTH	LAST MONTH	COMPLETENESS (% estimate)	FREQUENCY average daily	SINGLE DAYS MISSED	FULL MONTHS MISSED
AIR TEMPERATURE	NOV 1987	OCT 2001	93.7	7.7	122	2
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0	2 0 0 0
DEW POINT	FEB 1990	JUN 2001	94.9	8.0	92	1
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0	2 0 0 0
MEAN SEA LEVEL PRESSURE	NOV 1987	OCT 2001	94.1	7.7	107	2
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0	2 0 0 0
PRECIPITATION SINCE LAST OBS	MAR 1988	AUG 1999	24.9	2.9	2543	15
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0	2 0 0 0
TOTAL CLOUD AMOUNT	DEC 1987	AUG 1988	1.2	1.3	87	6
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0	2 0 0 0
WIND SPEED	NOV 1987	OCT 2001	95.6	7.7	75	0
1 8 5 0	1 9 0 0	1 9 5 0	1 9 5 0		2 0 0 0	2 0 0 0

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## Basic Climatological Station Metadata

Current status

<b>Station:</b>	MANDURAH		<b>Location:</b>	MANDURAH		<b>State:</b>	WA	
<b>Bureau No.:</b>	009887	<b>WMO No.:</b>	?	<b>Aviation ID:</b>	MDU	<b>Opened:</b>	01 Jan 1987	
<b>Latitude:</b>	-32.5211	<b>Longitude:</b>	115.7500	<b>Elevation:</b>	21 m	<b>Barometer Elev:</b>	22 m	
							<b>Current Status:</b>	Closed
							<b>Metadata compiled:</b>	11 JAN 2008

**THERE ARE NO RAINFALL INTENSITY DATA HOLDINGS**

**THERE ARE NO ONE-MINUTE DATA HOLDINGS**

**THERE ARE NO HALF-HOURLY DATA HOLDINGS**

**THERE ARE NO UPPER-AIR EDT DATA HOLDINGS**

### Holdings calculated up to 01 Jan 2008

The % complete figure is the completeness of observations averaged over all months of record, for the given station and observation type, taking gaps into account. For hourly holdings, the completeness is relative to the maximum number of daily observations for the site each month, and is therefore an estimate. For daily holdings, the completeness figure shown is exact. For half-hourly holdings, the completeness figure may exceed 100%. This may be due to a high incidence of special observations measured in addition to routine observations.

The single days missed figure is the total number of days for which no observation was received, not including full missed months. The full months missed figure is the total of full month gaps over the period of record. Where an element is not included assumptions can generally be made about availability, and the list to use has been suggested below.

#### Unlisted element

Minimum air temperature  
Wet bulb temperature  
Soil temperature at 20, 50 & 100cm  
Relative humidity  
Minimum temp. of water in evaporimeter  
Visual observations eg. weather, visibility  
Sea related observations

#### Listed element to use

Maximum air temperature  
Dew point  
10cm soil temperature  
Dew point  
Evaporimeter - max water temp  
Total cloud amount  
Sea state

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## Notes on these metadata

The following notes have been compiled to assist with interpreting the metadata provided in this document. These notes are subject to change as the network evolves. Changes in station-specific metadata occur more frequently, both as recent changes are recorded and historical information is transferred from paper file to electronic database.

### Reliability of the metadata

The Commonwealth Bureau of Meteorology maintains information on more than 20,000 stations which have operated since observations began in the mid 1800s. The amount of information available for each of these sites and its associated uncertainty is influenced by a number of factors including the type and purpose of the station and the time over which it operated.

Early information about stations was held only on paper file. In 1998 a corporate electronic database was established to help maintain information about the network and its components. The number of parameters recorded about a station is now much greater than before this database was established. The national database has also helped improve consistency in the metadata through the implementation of predefined fields. As a result, and through the refinement of operating procedures, station metadata recorded since 1998 are of a higher overall standard than previously, although occasional omissions and errors are still possible.

The Bureau is part way through a task of entering historical information held on paper file into the corporate database. **Until this process is completed there will remain large gaps in the information contained in these metadata documents and considerable caution should be used when deriving conclusions from the metadata.** As an example, two consecutive entries about a rain gauge dated 50 years apart may appear in the equipment metadata. This may either mean that nothing happened to that instrument over the 50 years, or that information for the intervening period has yet to be entered into the database. Similarly, if no information was available about instruments at a site when it was first established, fields which were required to have a value present may have used the earliest information available as a best-guess estimate. Sometimes this was the metadata current when the database was established in 1998. In some instances there may be gaps in metadata relevant to the post 1998 period.

For the above reasons it is recommended that all metadata prior to 1998 be considered as indicative only, and used with caution, unless it has been quality controlled. The Bureau of Meteorology should be contacted if further information or confirmation of the data is required. Depending on the nature of the inquiry there may be a fee associated with this request. Contact details are provided in the telephone book for each capital city or the Bureau's web site at:  
<http://www.bom.gov.au>

The following pages contain explanatory notes for selected terms found in this document.

### Station Number

The Bureau of Meteorology station number uniquely specifies a station and is not intended to change over time, although on very rare occasions a station number may change or be deleted from the record (usually to correct an error). Generally a new station number is established if an existing station changes in a way that would affect the climate data record for that site (measured in terms of air temperature and precipitation). Significant station moves are an example of this.

Some stations also possess a World Meteorological Organization (WMO) station number. The WMO number is different to the Bureau of Meteorology number. It also uniquely specifies a station at any given time but can be reassigned to another station if the new station takes priority in the global reporting network. Only selected stations will have a WMO number. Significant stations may maintain their WMO number for many decades.

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## Notes on these metadata

### Network Classification

<b>SUPPORTING the BASIC CLIMATE SERVICE</b>
Global Climate Observing System (GCOS)
GCOS Upper Air Network (GUAN)
GCOS Surface Network (GSN)
National Climate Network {not yet assigned}
Reference Climate Stations (RCS)
Regional Basic Climatological Network (RBCN)
CLIMAT Stations (CLC)
CLIMAT TEMP Stations (CLT)
<b>SUPPORTING the NATIONAL WEATHER WATCH SYSTEM</b>
WMO Global Observing System (GOS)
GOS Upper Air Network
GOS Satellite Network
Global Atmospheric Watch
Background Atmospheric Pollution Monitoring Network (BAPMON)
Basic Ozone Network
Basic Solar and Terrestrial Radiation Network
Regional Basic Synoptic Network (RBSN)
WMO Global Oceanic Observing System (GOOS)
<b>SUPPORTING the BASIC WEATHER SERVICE (BWS)</b>
BWS Land Network
Significant Land Locations
Capital City Mesonets
National Benchmark Network for Agrometeorology (NBNA)
BWS Marine Network
Significant Coastal Locations
Open Ocean Network
BWS Upper Air Network
Major Significant Locations
BWS Remote Sensing Network
Weather Watch Radar Network
Fire Weather Wind Mesonets
High Resolution Satellite
<b>SUPPORTING the BASIC HYDROLOGICAL SERVICE</b>
Regional Flood Warning Network
Water Resources Assessment Network
Global Hydrological Network
Global Terrestrial Observing System (GTOS)
World Hydrological Cycle Observing System (WHYCOS)
National Hydrological Network

Networks of stations are defined for a variety of purposes (as defined in above table).

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## Notes on these metadata

### Network Classification Continued...

Stations may be included in several different networks, which may change over time. The table on the previous page lists current network classifications related to the scientific purpose of the network. Some of these networks - the GCOS network for instance - are components of a global network. Entries in the database for some networks may not be complete, thus not properly representing the status of the network. The composition of the network will usually change over time. While several of the networks have international significance, other network classifications have been developed to aid operational management.

### Station Purpose

The station purpose can be classified according to the observation program listed below. Parameters in brackets list some of the various different configurations which occur.

- Synoptic [Seasonal, River Height, Climatological, Telegraphic Rain, Aeronautical, Upper Air]
- Climatological [Seasonal, Telegraphic Rain]
- Aeronautical
- Rainfall [River Height]
- River Height
- Telegraphic Rain [Non-Telegraphic River Height, Telegraphic River Height]
- Non-Telegraphic Rain [Telegraphic River Height]
- Evaporation [Rainfall, River Height, Telegraphic River Height, Non-Telegraphic River Height, Telegraphic Rain, Non-Telegraphic Rain]
- Pluviograph [Rainfall, Telegraphic Rain, Non-Telegraphic Rain, River Height, Telegraphic River Height, Non-Telegraphic River Height]
- Radiation
- Lightning Flash Counter
- Public Information
- Local Conditions
- Radar Site
- Unclassified
- No Routine Observations

Note: Telegraphic observations are those which are sent by some electronic means be it a phone or telegram to the responsible Bureau office. It is a term which is historically linked to analogue non automatic data transmission.

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