

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

COWRA (AUSTRALIA)

Altitude: 301 m.

Latitude: 33°51'S Longitude: 148°39'E

Temperature observation period.: 1984-1994 (11)

Rainfall observation period....: 1948-1994 (47)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	24.45	32.78	16.11	0.00	0.00	55.1	143.49
Feb.	24.17	32.78	15.56	0.00	0.00	37.6	121.13
Mar.	20.84	28.89	12.78	0.00	0.00	49.5	95.34
Apr.	16.11	23.89	8.33	0.00	0.00	44.2	54.87
May.	11.67	18.33	5.00	0.00	0.00	40.9	30.57
Jun.	8.89	14.44	3.33	0.00	0.00	63.8	17.85
Jul.	8.34	13.89	2.78	0.00	0.00	48.5	17.00
Aug.	9.17	15.56	2.78	0.00	0.00	49.8	21.53
Sep.	11.94	19.44	4.44	0.00	0.00	50.8	35.30
Oct.	15.84	23.89	7.78	0.00	0.00	51.6	64.11
Nov.	19.72	28.33	11.11	0.00	0.00	41.9	95.09
Dec.	22.78	31.11	14.44	0.00	0.00	59.4	129.51
Year	16.16	23.61	8.70	0.00	0.00	593	825.79

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	328
Compensated thermicity index.....(Itc):	328
Simple continentality index.....(Ic):	16.1
Diurnality index.....(Id):	17.2
Annual ombrothermic index.....(Io):	3.06
Monthly estival ombrothermic index.....(Ios1):	1.56
Bimonthly estival ombrothermic index.....(Ios2):	1.91
Threemonthly estival ombrothermic index.....(Ios3):	2.13
Fourmonthly estival ombrothermic index.....(Ios4):	2.13
Annual ombro-evaporation index.....(Ioe):	0.94
Annual positive temperature.....(Tp):	1939
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	714
Positive precipitation.....(Pp):	593

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	4	7	1	0	0

Latitudinal Belt...: Subtropical

Continentality.....: Oceanic - Low Euoceanic

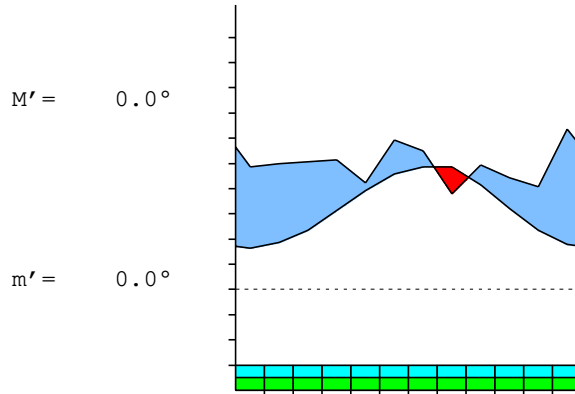
Bioclimate(Variant): TEMPERATE XERIC (SUBMEDITERRANEAN)

Bioclimatic Belt...: UPPER THERMOTEMPERATE UPPER DRY

COWRA (AUSTRALIA)

301 m

P= 593      33° 51'S      148° 39'E      11/47 y.  
 T= 16.2°    Ic= 16.1      Tp= 1939      Tn= 0  
 m= 2.8°      M= 13.9°      Itc= 328      Io= 3.1



TEMPERATE XERIC (SUBMEDITERRANEAN)  
 UPPER THERMOTEMPERATE UPPER DRY

WATER INDEX CARD

COWRA (AUSTRALIA)

Altitude: 301 m.

Latitude: 33° 51'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	8.3	17	49	31	88	17	0	0	0	1.8
Aug.	9.2	22	50	12	100	22	0	16	8	1.3
Sep.	11.9	35	51	0	100	35	0	16	12	0.4
Oct.	15.8	64	52	-13	87	64	0	0	6	-0.1
Nov.	19.7	95	42	-53	34	95	0	0	3	-0.5
Dec.	22.8	130	59	-34	0	94	36	0	1	-0.5
Jan.	24.5	143	55	0	0	55	88	0	1	-0.6
Feb.	24.2	121	38	0	0	38	84	0	0	-0.6
Mar.	20.8	95	50	0	0	50	46	0	0	-0.4
Apr.	16.1	55	44	0	0	44	11	0	0	-0.1
May.	11.7	31	41	10	10	31	0	0	0	0.3
Jun.	8.9	18	64	46	56	18	0	0	0	2.5
Year	16.2	826	593	*	*	562	264	32	32	*

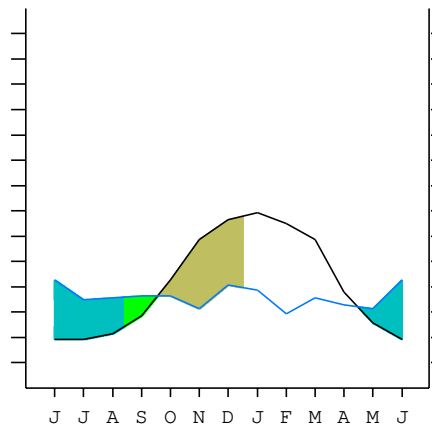
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

COWRA (AUSTRALIA)

33°51'S 148°39'E      301 m 11/47 y.

T= 16.2    Ic= 16.1      TEMPERATE XERIC (SUBMEDITERRANEAN)  
 m= 2.8    Tp= 1939      UPPER THERMOTEMPERATE  
 M= 13.9    Tn= 0            UPPER DRY  
 M' = 0.0    Itc= 328  
 m' = 0.0    Io= 3.1  
 P= 593      mm    ———  
 PE= 826     mm    ———

Imbibing	16 Apr.
Saturation	13 Aug.
Reserve Use	17 Sep.
Deficit	15 Dec.



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 2. Euoceanic  
 + Variant .....: b. Low

Thermic types [A3.A3]  
 + Latitudinal zone ....: A. Warm  
 + Latitudinal belt ....: 3. Subtropical  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 3. Subwarm

Bioclimatic types [C1b.2a.5a]  
 + Macroclimate .....: C. TEMPERATE  
 + Bioclimate .....: 1. XERIC  
 + Bioclimatic variant .: b. SUBMEDITERRANEAN  
 + Thermic type.....: 2. THERMOTEMPERATE  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Teho (Sbm).Tte.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 288  
 Coldest semester of the year.....(Psw): 305  
 Warmest four months period of the year.....(Pcm1): 202  
 Following warmest four months period.....(Pcm2): 197  
 Positive precipitation dryest 3 months.....(Ppd): 131  
 Positive precipitation dryest 2 months.....(Ppd2): 85  
 Positive precipitation dryest 1 month.....(Ppd1): 38  
 Positive precipitation warmest 3 months.....(Pps): 152  
 Positive precipitation warmest 2 months.....(Pps2): 93  
 Positive precipitation warmest 1 month.....(Pps1): 55  
 Positive precipitation coldest 3 months.....(Ppw): 162  
 Positive precipitation coldest 2 months.....(Ppw2): 112  
 Positive precipitation coldest 1 month.....(Ppw1): 49

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	162	144	152	134

Seasonal rainfall rhythms: W > S > P > F

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.5  
 Average coldest month [T].....(Tmin): 8.3  
 Maximum temp. warmest month [M].....(Tmmax): 32.8  
 Minimum temp. coldest month [m].....(Tmmin): 2.8  
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0  
 First warmest contrasted month [M].....(Tcmax): 32.8 (2)  
 First coldest contrasted month [m].....(Tcmin): 15.6 (2)  
 Estival temperature.....(Ts): 714  
 Positive temperature dryest 3 months.....(Tpd): 611  
 Positive temperature dryest 2 months.....(Tpd2): 278  
 Positive temperature dryest 1 month.....(Tpd1): 242  
 Positive temperature warmest 3 months.....(Tps): 714  
 Positive temperature warmest 2 months.....(Tps2): 486  
 Positive temperature warmest 1 month.....(Tps1): 245  
 Positive temperature coldest 3 months.....(Tpw): 264  
 Positive temperature coldest 2 months.....(Tpw2): 172  
 Positive temperature coldest 1 month.....(Tpw1): 83

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SEASONAL PARAMETERS

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Warmest semester...(Sms)	o	o	o	o							o	o
Dryest semester....(Smd)		o	o	o	o	o	o					
Warmest 4 months...(Cm1)	o	o	o									o
Dryest 4 months....(Cmd)		o	o	o	o							
Vegetation Activity(Pav)	o	o	o	o	o	o	o	o	o	o	o	o
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)												
Pregelid.....[m' <=0] (Pf)												
Agelid.....[m' > 0] (Pf)												
HiperAgelid..[all>0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.39  
 Mediterranean index of January.....(Im1): 2.60  
 Mediterranean index of January & February.....(Im2): 2.85  
 Mediterranean index of December to February...(Im3): 2.59

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	594	551	376	495	442	409	638	485	498	508	516	419
Tp	228	245	242	208	161	117	89	83	92	119	158	197
Io (Iom)	2.61	2.25	1.56	2.38	2.74	3.50	7.18	5.82	5.43	4.25	3.26	2.12
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	1521 / 714			1346 / 486			1621 / 264			1443 / 475		
Io (Iot)	2.130			2.768			6.140			3.038		
Semesters	December-May						June-November					
Pp(x10)/Tp	2867 / 1200						3064 / 739					
Io (Iosm)	2.389						4.146					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5931/1939=3.06 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	594	551	376	495	442	409	638	485	498	508	516	419
Tp [T*10]	228	245	242	208	161	117	89	83	92	119	158	197
Iom [Pp/Tp]	261	225	156	238	274	350	718	582	543	425	326	212
Avm [200-Iom]	***	***	44	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	1521 / 714			1346 / 486			1621 / 264			1443 / 475		
Iot [Pp/Tp]	213			277			614			304		
Avs E[Avm<200]	***			***			***			***		
Strong upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 16.11  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 28.77  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 25.53  
 + Oceanic (20<CI<40)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 1.31  
 + Subcontinental (1.1<CI<1.7)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 36.70  
 + Steppic (40>R>0)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 22.67  
 + Subhumid (30>Ia>20)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....: 55.60  
 + Subhumid (90>Q>50)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 2.72  
 + Semiarid (3>DR>2)  
 Aridity Index of UNEP [I=P/PE] .....: 0.72  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 6.86  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: A. Warm and temperate warm  
 + Region .....: 3. Termoxeroteric (Mediterranean warm)  
 + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.19	0.13	0.19	0.19	0.20	0.35	0.26	0.26	0.25	0.22	0.16	0.22
T-E ratio	11.00	10.88	9.38	7.25	5.25	4.00	3.75	4.13	5.37	7.13	8.87	10.25
Precipitation-effectiveness: 26.16						Temperature-efficiency .....: 87.26						
Moisture Index [MI=100*(P-PE)/PE] .....: -28.18 + C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....: 31.99 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE] .....: 3.81 + No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 825.79 + Second mesothermic (712<PE<855)												

