

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

CUNNAMULLA (AUSTRALIA) Altitude: 189 m.

Latitude: 28°4'S Longitude: 145°44'E
 Temperature observation period.: 1907-1990 (84)
 Rainfall observation period....: 1879-1990 (112)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	28.88	37.08	20.83	0.00	0.00	43.0	182.37
Feb.	28.11	33.48	22.43	0.00	0.00	50.4	151.36
Mar.	25.44	30.98	19.93	0.00	0.00	43.5	130.16
Apr.	20.82	27.30	14.30	0.00	0.00	26.1	72.36
May.	16.15	20.93	11.18	0.00	0.00	29.3	38.67
Jun.	12.85	17.18	8.73	0.00	0.00	26.2	20.98
Jul.	11.97	16.18	7.73	0.00	0.00	23.4	18.53
Aug.	13.97	18.93	9.18	0.00	0.00	18.8	28.55
Sep.	17.81	22.35	13.25	0.00	0.00	19.1	52.50
Oct.	21.98	26.83	17.08	0.00	0.00	24.5	96.21
Nov.	25.29	32.63	17.68	0.00	0.00	26.7	136.82
Dec.	27.80	33.75	22.05	0.00	0.00	37.4	175.09
Year	20.92	26.47	15.36	0.00	0.00	368	1103.6

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	448
Compensated thermicity index.....(Itc):	448
Simple continentality index.....(Ic):	16.9
Diurnality index.....(Id):	16.3
Annual ombrothermic index.....(Io):	1.47
Monthly estival ombrothermic index.....(Ios1):	1.34
Bimonthly estival ombrothermic index.....(Ios2):	1.64
Threemonthly estival ombrothermic index.....(Ios3):	1.54
Fourmonthly estival ombrothermic index.....(Ios4):	1.43
Annual ombro-evaporation index.....(Ioe):	0.33
Annual positive temperature.....(Tp):	2511
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	848
Positive precipitation.....(Pp):	368

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	0	1	11	0	0

Latitudinal Belt...: Subtropical

Continentality.....: Oceanic - Low Euoceanic

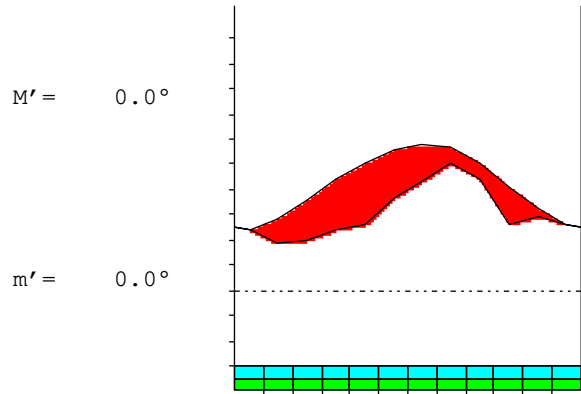
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: LOW THERMOMEDITERRANEAN LOW SEMIARID

CUNNAMULLA (AUSTRALIA)

189 m

P= 368 28° 4'S 145° 44'E 84/112 y.
 T= 20.9 ° Ic= 16.9 Tp= 2511 Tn= 0
 m= 7.7 ° M= 16.2 ° Itc= 448 Io= 1.5



MEDITERRANEAN XERIC-OCEANIC
 LOW THERMOMEDITERRANEAN LOW SEMIARID

WATER INDEX CARD CUNNAMULLA (AUSTRALIA)
 Altitude: 189 m. Latitude: 28° 4'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	12.0	19	23	5	10	19	0	0	0	0.2
Aug.	14.0	29	19	-10	0	29	0	0	0	-0.3
Sep.	17.8	52	19	-0	0	19	33	0	0	-0.6
Oct.	22.0	96	24	0	0	24	72	0	0	-0.7
Nov.	25.3	137	27	0	0	27	110	0	0	-0.8
Dec.	27.8	175	37	0	0	37	138	0	0	-0.7
Jan.	28.9	182	43	0	0	43	139	0	0	-0.7
Feb.	28.1	151	50	0	0	50	101	0	0	-0.6
Mar.	25.4	130	44	0	0	44	87	0	0	-0.6
Apr.	20.8	72	26	0	0	26	46	0	0	-0.6
May.	16.1	39	29	0	0	29	9	0	0	-0.2
Jun.	12.9	21	26	5	5	21	0	0	0	0.2
Year	20.9	1104	368	*	*	368	735	0	0	*

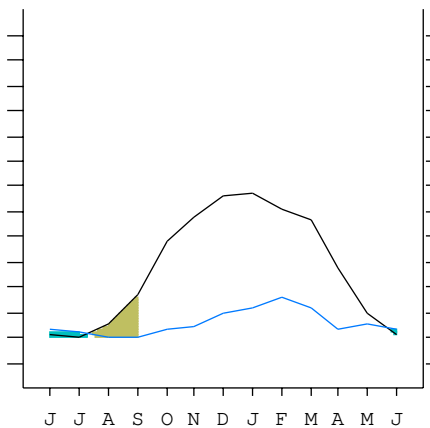
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

CUNNAMULLA (AUSTRALIA)

28°4'S 145°44'E 189 m 84/112 y.

T= 20.9 Ic= 16.9 MEDITERRANEAN XERIC-OCEANIC
 m= 7.7 Tp= 2511 LOW THERMOMEDITERRANEAN
 M= 16.2 Tn= 0 LOW SEMIARID
 M' = 0.0 Itc= 448
 m' = 0.0 Io= 1.5
 P= 368 mm ———
 PE= 1104 mm ———

Imbibing	20 May.
Saturation	
Reserve Use	10 Jul.
Deficit	1 Sep.



CUNNAMULLA (AUSTRALIA)

Latitude: 28°4'S Longitude: 145°44'E Altitude: 189 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2b]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: b. Low
 Thermic types [A3.A2]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 3. Subtropical
 + Thermic type: A. Warm
 + Thermic subtype: 2. Warm
 Bioclimatic types [B6.2b.4b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 6. XERIC-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 2. THERMOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 4. SEMIARID
 + Ombrothermic subtype : b. LOW
 Bioclimatic ClassificationMexo.Tme.Sar.Euo

CUNNAMULLA (AUSTRALIA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 225
 Coldest semester of the year.....(Psw): 143
 Warmest four months period of the year.....(Pcm1): 174
 Following warmest four months period.....(Pcm2): 105
 Positive precipitation dryest 3 months.....(Ppd): 61
 Positive precipitation dryest 2 months.....(Ppd2): 38
 Positive precipitation dryest 1 month.....(Ppd1): 19
 Positive precipitation warmest 3 months.....(Pps): 131
 Positive precipitation warmest 2 months.....(Pps2): 93
 Positive precipitation warmest 1 month.....(Pps1): 43
 Positive precipitation coldest 3 months.....(Ppw): 68
 Positive precipitation coldest 2 months.....(Ppw2): 50
 Positive precipitation coldest 1 month.....(Ppw1): 23

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	68	70	130	98

Seasonal rainfall rhythms: S > F > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.9
 Average coldest month [T].....(Tmin): 12.0
 Maximum temp. warmest month [M].....(Tmmax): 37.1
 Minimum temp. coldest month [m].....(Tmmin): 7.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0
 First warmest contrasted month [M].....(Tcmax): 37.1 (1)
 First coldest contrasted month [m].....(Tcmin): 20.8 (1)
 Estival temperature.....(Ts): 848
 Positive temperature dryest 3 months.....(Tpd): 438
 Positive temperature dryest 2 months.....(Tpd2): 318
 Positive temperature dryest 1 month.....(Tpd1): 140
 Positive temperature warmest 3 months.....(Tps): 848
 Positive temperature warmest 2 months.....(Tps2): 570
 Positive temperature warmest 1 month.....(Tps1): 289
 Positive temperature coldest 3 months.....(Tpw): 388
 Positive temperature coldest 2 months.....(Tpw2): 248
 Positive temperature coldest 1 month.....(Tpw1): 120

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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): 3.00
 Mediterranean index of January.....(Im1): 4.24
 Mediterranean index of January & February....(Im2): 3.57
 Mediterranean index of December to February...(Im3): 3.89

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	374	430	504	435	261	293	262	234	188	191	245	267
Tp	278	289	281	254	208	162	129	120	140	178	220	253
Io (Iom)	1.34	1.49	1.79	1.71	1.26	1.82	2.04	1.95	1.35	1.07	1.11	1.05
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	1308 / 848			990 / 624			684 / 388			703 / 651		
Io (Iot)	1.542			1.586			1.763			1.080		
Semesters	December-May						June-November					
Pp(x10)/Tp	2297 / 1472						1387 / 1039					
Io (Iosm)	1.561						1.335					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3684/2511=1.47 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	374	430	504	435	261	293	262	234	188	191	245	267
Tp [T*10]	278	289	281	254	208	162	129	120	140	178	220	253
Iom [Pp/Tp]	134	149	179	171	126	182	204	195	135	107	111	105
Avm [200-Iom]	66	51	21	29	74	18	***	5	65	93	89	95
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	1308 / 848			990 / 624			684 / 388			703 / 651		
Iot [Pp/Tp]	154			159			176			108		
Avs E[Avm<200]	137			122			***			276		
Strong lower semiarid [4]							Weak lower semiarid [4]					
Strong upper semiarid [2]							Weak upper semiarid [4]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 16.91
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	40.70
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	32.62
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	1.63
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T]	17.61
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	11.91
+ Arid -steppic- (15>Ia>5)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	28.01
+ Arid (30>Q>0)	
I of Dantin & Revenga (1940) [DR=100*T/P]	5.68
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE]	0.33
+ Semiarid (0.5>Im>0.2)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P].....	6.88
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate A. Warm and temperate warm
 + Region 2. Termohemieremic (Subdesertic warm)
 + Thermic type: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.13	0.16	0.14	0.09	0.12	0.12	0.10	0.08	0.07	0.08	0.08	0.12
T-E ratio	13.00	12.65	11.45	9.37	7.27	5.78	5.39	6.29	8.01	9.89	11.38	12.51
Precipitation-effectiveness: 12.98						Temperature-efficiency: 112.98						
Moisture Index [MI=100*(P-PE)/PE]												
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												
+ Forth mesothermic (997<PE<1440)												

