

# Phytosociological Research Center

www.globalbioclimatics.org

## Worldwide Bioclimatic Classification System

S.Rivas-Martinez(+) & S.Rivas-Saenz

(Adapted to Synoptical Table 14/02/2020)

WILCANNIA (AUSTRALIA)

Altitude: 81 m.

Latitude: 31°33'S Longitude: 143°23'E

Temperature observation period.: 1944-1994 (51)

Rainfall observation period....: 1928-1994 (67)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	27.22	35.00	19.44	50.00	10.00	22.9	170.93
Feb.	26.95	35.00	18.89	46.11	10.00	22.9	144.67
Mar.	23.61	31.11	16.11	44.44	6.67	20.3	112.25
Apr.	18.61	26.11	11.11	38.33	1.67	17.8	61.13
May.	14.45	21.11	7.78	33.33	-2.22	25.4	34.48
Jun.	11.11	17.22	5.00	30.00	-2.78	22.9	18.36
Jul.	10.28	16.67	3.89	31.67	-3.33	15.2	16.53
Aug.	12.50	19.44	5.56	32.22	-2.22	17.8	26.57
Sep.	15.83	23.33	8.33	36.67	0.00	15.2	45.86
Oct.	20.00	27.78	12.22	41.11	1.67	22.9	83.80
Nov.	23.62	31.67	15.56	45.00	5.56	17.8	121.89
Dec.	26.39	34.44	18.33	46.67	7.78	25.4	163.09
Year	19.21	26.57	11.85	39.63	2.73	246	999.55

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	398
Compensated thermicity index.....(Itc):	398
Simple continentality index.....(Ic):	16.9
Diurnality index.....(Id):	16.1
Annual ombrothermic index.....(Io):	1.07
Monthly estival ombrothermic index.....(Ios1):	0.84
Bimonthly estival ombrothermic index.....(Ios2):	0.85
Threemonthly estival ombrothermic index.....(Ios3):	0.88
Fourmonthly estival ombrothermic index.....(Ios4):	0.85
Annual ombro-evaporation index.....(Ioe):	0.25
Annual positive temperature.....(Tp):	2306
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	806
Positive precipitation.....(Pp):	247

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

Latitudinal Belt...: Subtropical

Continentality.....: Oceanic - Low Euoceanic

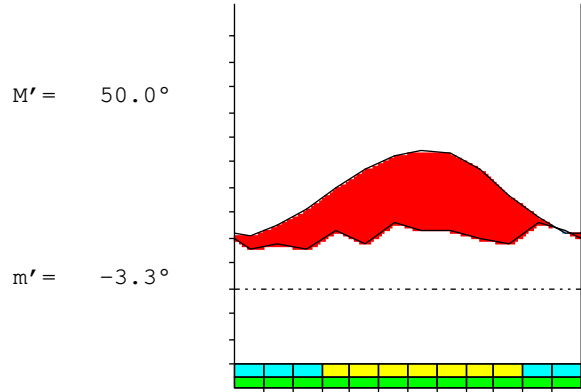
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: UPPER THERMOMEDITERRANEAN LOW SEMIARID

WILCANNIA (AUSTRALIA)

81 m

P= 246 31° 33'S 143° 23'E 51/67 y.  
 T= 19.2 ° Ic= 16.9 Tp= 2306 Tn= 0  
 m= 3.9 ° M= 16.7 ° Itc= 398 Io= 1.1



MEDITERRANEAN XERIC-OCEANIC  
 UPPER THERMOMEDITERRANEAN LOW SEMIARID

WATER INDEX CARD WILCANNIA (AUSTRALIA)  
 Altitude: 81 m. Latitude: 31° 33'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	10.3	17	15	-1	3	17	0	0	0	0.0
Aug.	12.5	27	18	-3	0	21	6	0	0	-0.3
Sep.	15.8	46	15	0	0	15	31	0	0	-0.6
Oct.	20.0	84	23	0	0	23	61	0	0	-0.7
Nov.	23.6	122	18	0	0	18	104	0	0	-0.8
Dec.	26.4	163	25	0	0	25	138	0	0	-0.8
Jan.	27.2	171	23	0	0	23	148	0	0	-0.8
Feb.	27.0	145	23	0	0	23	122	0	0	-0.8
Mar.	23.6	112	20	0	0	20	92	0	0	-0.8
Apr.	18.6	61	18	0	0	18	43	0	0	-0.7
May.	14.4	34	25	0	0	25	9	0	0	-0.2
Jun.	11.1	18	23	5	5	18	0	0	0	0.2
Year	19.2	1000	246	*	*	246	753	0	0	*

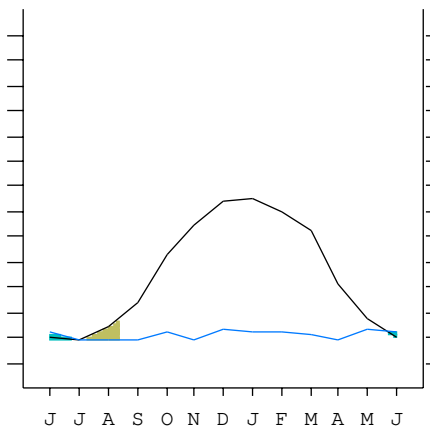
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration  
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

WILCANNIA (AUSTRALIA)

31°33'S 143°23'E 81 m 51/67 y.

T= 19.2 Ic= 16.9 MEDITERRANEAN XERIC-OCEANIC  
 m= 3.9 Tp= 2306 UPPER THERMOMEDITERRANEAN  
 M= 16.7 Tn= 0 LOW SEMIARID  
 M' = 50.0 Itc= 398  
 m' = -3.3 Io= 1.1  
 P= 246 mm ———  
 PE= 1000 mm ———

Imbibing	20 May.
Saturation	
Reserve Use	24 Jun.
Deficit	11 Aug.



WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 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 [B6.2a.4b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 6. XERIC-OCEANIC  
 + Bioclimatic variant .:  
 + Thermic type.....: 2. THERMOMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 4. SEMIARID  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....Mexo.Tme.Sar.Euo

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 132  
 Coldest semester of the year.....(Psw): 114  
 Warmest four months period of the year.....(Pcm1): 89  
 Following warmest four months period.....(Pcm2): 86  
 Positive precipitation dryest 3 months.....(Ppd): 48  
 Positive precipitation dryest 2 months.....(Ppd2): 33  
 Positive precipitation dryest 1 month.....(Ppd1): 15  
 Positive precipitation warmest 3 months.....(Pps): 71  
 Positive precipitation warmest 2 months.....(Pps2): 46  
 Positive precipitation warmest 1 month.....(Pps1): 23  
 Positive precipitation coldest 3 months.....(Ppw): 56  
 Positive precipitation coldest 2 months.....(Ppw2): 38  
 Positive precipitation coldest 1 month.....(Ppw1): 15

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	55	55	71	63

Seasonal rainfall rhythms: S > F > P > W

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 27.2  
 Average coldest month [T].....(Tmin): 10.3  
 Maximum temp. warmest month [M].....(Tmmax): 35.0  
 Minimum temp. coldest month [m].....(Tmmin): 3.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 50.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): -3.3  
 First warmest contrasted month [M].....(Tcmax): 35.0 (2)  
 First coldest contrasted month [m].....(Tcmin): 18.9 (2)  
 Estival temperature.....(Ts): 806  
 Positive temperature dryest 3 months.....(Tpd): 386  
 Positive temperature dryest 2 months.....(Tpd2): 228  
 Positive temperature dryest 1 month.....(Tpd1): 103  
 Positive temperature warmest 3 months.....(Tps): 806  
 Positive temperature warmest 2 months.....(Tps2): 542  
 Positive temperature warmest 1 month.....(Tps1): 272  
 Positive temperature coldest 3 months.....(Tpw): 339  
 Positive temperature coldest 2 months.....(Tpw2): 214  
 Positive temperature coldest 1 month.....(Tpw1): 103

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

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)					o	o	o	o	o			
Agelid.....[m'> 0] (Pf)	o	o	o	o						o	o	o
HiperAgelid..[all>0] (Pf)	o	o	o	o						o	o	o

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 4.05  
 Mediterranean index of January.....(Im1): 7.46  
 Mediterranean index of January & February.....(Im2): 6.89  
 Mediterranean index of December to February...(Im3): 6.72

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	254	229	229	203	178	254	229	152	178	152	229	178
Tp	264	272	270	236	186	145	111	103	125	158	200	236
Io (Iom)	0.96	0.84	0.85	0.86	0.96	1.76	2.06	1.48	1.42	0.96	1.15	0.75
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	712 / 806			635 / 567			559 / 339			559 / 595		
Io (Iot)	0.884			1.121			1.649			0.940		
Semesters	December-May						June-November					
Pp(x10)/Tp	1347 / 1372						1118 / 933					
Io (Iosm)	0.982						1.198					

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 2465/2306=1.07 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	254	229	229	203	178	254	229	152	178	152	229	178
Tp [T*10]	264	272	270	236	186	145	111	103	125	158	200	236
Iom [Pp/Tp]	96	84	85	86	96	176	206	148	142	96	115	75
Avm [200-Iom]	104	116	115	114	104	24	***	52	58	104	86	125
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	712 / 806			635 / 567			559 / 339			559 / 595		
Iot [Pp/Tp]	88			112			165			94		
Avs E[Avm<200]	335			243			***			314		
Strong upper arid [1]							Weak upper arid [8]					
Strong lower semiarid [2]							Weak lower semiarid [2]					
Weak upper semiarid [1]												

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 16.94
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	34.64
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	29.42
+ Oceanic (20<CI<40)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.47
+ Subcontinental (1.1<CI<1.7)	
Rainfall Index of Lang (1925) [R=P/T] .....	12.83
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	8.44
+ Arid -steppic- (15>Ia>5)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	20.37
+ Arid (30>Q>0)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	7.79
+ Extremely arid (DR>6)	
Aridity Index of UNEP [I=P/PE] .....	0.25
+ Semiarid (0.5>Im>0.2)	
Potencial Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P].....	2.62
+ Very low (K<60)	

WILCANNIA (AUSTRALIA)

Latitude: 31°33'S Longitude: 143°23'E Altitude: 81 m

BIOCLIMATIC INDICES II

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

Thorntthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.07	0.07	0.06	0.06	0.11	0.10	0.07	0.08	0.06	0.08	0.06	0.08
T-E ratio	12.25	12.13	10.62	8.37	6.50	5.00	4.63	5.63	7.12	9.00	10.63	11.88
Precipitation-effectiveness: 8.92						Temperature-efficiency .....: 103.76						
Moisture Index [MI=100*(P-PE)/PE] .....: -75.34												
+ E.Dry (-110<MI<-66.7)												
Index of dryness [DI=100*d/PE] .....: 75.33												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....: 0.00												
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....: 999.55												
+ Forth mesothermic (997<PE<1440)												

