

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

RICHMOND (AUSTRALIA)

Altitude: 211 m.

Latitude: 20°43'S Longitude: 143°8'E

Temperature observation period.: 1908-1990 (83)

Rainfall observation period....: 1889-1990 (102)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	29.88	36.50	23.50	0.00	0.00	116.6	186.94
Feb.	28.98	36.42	21.48	0.00	0.00	101.5	155.35
Mar.	27.70	33.92	21.58	0.00	0.00	61.2	152.36
Apr.	24.75	31.30	18.30	0.00	0.00	21.9	105.61
May.	20.95	27.68	14.03	0.00	0.00	16.4	60.75
Jun.	17.79	24.58	10.93	0.00	0.00	15.5	34.53
Jul.	17.20	22.68	11.63	0.00	0.00	9.4	32.03
Aug.	19.18	24.50	14.10	0.00	0.00	3.6	48.24
Sep.	22.83	26.88	18.43	0.00	0.00	6.7	84.13
Oct.	26.74	31.11	22.34	0.00	0.00	16.1	149.79
Nov.	29.02	33.92	24.18	0.00	0.00	28.8	169.68
Dec.	30.11	35.67	24.63	0.00	0.00	70.7	189.05
Year	24.59	30.43	18.76	0.00	0.00	468	1368.5

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	589
Compensated thermicity index.....(Itc):	589
Simple continentality index.....(Ic):	12.9
Diurnality index.....(Id):	14.9
Annual ombrothermic index.....(Io):	1.59
Monthly dry ombrothermic index.....(Iod1):	0.19
Bimonthly dry ombrothermic index.....(Iod2):	0.24
Three monthly dry ombrothermic index.....(Iod3):	0.33
Four monthly dry ombrothermic index.....(Iod4):	0.46
Annual ombro-evaporation index.....(Ioe):	5.38
Annual positive temperature.....(Tp):	2951
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	592
Positive precipitation.....(Pp):	468

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	0	4	0	8	0

Latitudinal Belt...: Eutropical

Continentalty.....: Oceanic - Low Semihyperoceanic

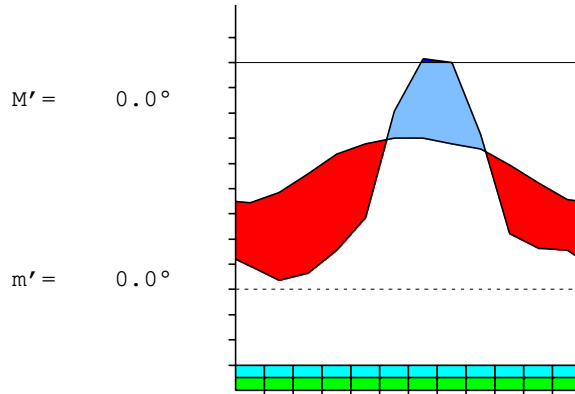
Bioclimate(Variant): TROPICAL XERIC (SEMIARID)

Bioclimatic Belt...: LOW THERMOTROPICAL UPPER SEMIARID

RICHMOND (AUSTRALIA)

211 m

P= 468 20° 43'S 143° 8'E 83/102 y.
 T= 24.6° Ic= 12.9 Tp= 2951 Tn= 0
 m= 11.6° M= 22.7° Itc= 589 Io= 1.6



TROPICAL XERIC (SEMIARID)
 LOW THERMOTROPICAL UPPER SEMIARID

WATER INDEX CARD RICHMOND (AUSTRALIA)
 Altitude: 211 m. Latitude: 20° 43'S

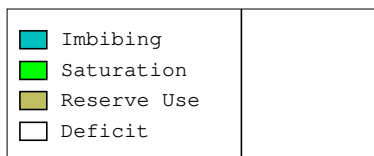
(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	17.2	32	9	0	0	9	23	0	0	-0.7
Aug.	19.2	48	4	0	0	4	45	0	0	-0.9
Sep.	22.8	84	7	0	0	7	77	0	0	-0.9
Oct.	26.7	150	16	0	0	16	134	0	0	-0.8
Nov.	29.0	170	29	0	0	29	141	0	0	-0.8
Dec.	30.1	189	71	0	0	71	118	0	0	-0.6
Jan.	29.9	187	117	0	0	117	70	0	0	-0.3
Feb.	29.0	155	102	0	0	102	54	0	0	-0.3
Mar.	27.7	152	61	0	0	61	91	0	0	-0.5
Apr.	24.8	106	22	0	0	22	84	0	0	-0.7
May.	21.0	61	16	0	0	16	44	0	0	-0.7
Jun.	17.8	35	16	0	0	16	19	0	0	-0.5
Year	24.6	1368	468	*	*	468	900	0	0	*

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

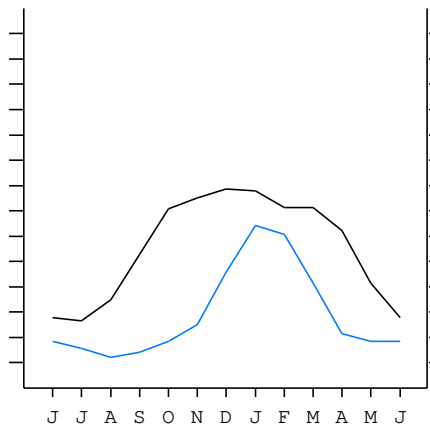
RICHMOND (AUSTRALIA)

20°43'S 143°8'E 211 m 83/102 y.

T= 24.6 Ic= 12.9 TROPICAL XERIC (SEMIARID)
 m= 11.6 Tp= 2951 LOW THERMOTROPICAL
 M= 22.7 Tn= 0 UPPER SEMIARID
 M' = 0.0 Itc= 589
 m' = 0.0 Io= 1.6
 P= 468 mm ———
 PE= 1368 mm ———



All over the year,
 there is hydric deficit



RICHMOND (AUSTRALIA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1b]
 + Type: B. Oceanic
 + Subtype: 1. Semihyperoceanic
 + Variant: b. Low

Thermic types [A2.A1]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 1. Torrid

Bioclimatic types [A3.2b.4a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 3. XERIC
 + Bioclimatic variant ..:
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 4. SEMIARID
 + Ombrothermic subtype : a. UPPER

Bioclimatic Classification: Trxe.Ttr.Sar

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 395
 Coldest semester of the year.....(Psw): 73
 Warmest four months period of the year.....(Pcm1): 318
 Following warmest four months period.....(Pcm2): 115
 Positive precipitation dryest 3 months.....(Ppd): 20
 Positive precipitation dryest 2 months.....(Ppd2): 10
 Positive precipitation dryest 1 month.....(Ppd1): 4
 Positive precipitation warmest 3 months.....(Pps): 216
 Positive precipitation warmest 2 months.....(Pps2): 187
 Positive precipitation warmest 1 month.....(Pps1): 71
 Positive precipitation coldest 3 months.....(Ppw): 28
 Positive precipitation coldest 2 months.....(Ppw2): 25
 Positive precipitation coldest 1 month.....(Ppw1): 9

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	28	51	288	99

Tropical rainfall rhythms: 1 > 2 > 4 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 30.1
 Average coldest month [T].....(Tmin): 17.2
 Maximum temp. warmest month [M].....(Tmmax): 36.5
 Minimum temp. coldest month [m].....(Tmmin): 10.9
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0
 First warmest contrasted month [M].....(Tcmax): 36.4 (2)
 First coldest contrasted month [m].....(Tcmin): 21.5 (2)
 Dry station temperature.....(Td): 592
 Positive temperature dryest 3 months.....(Tpd): 592
 Positive temperature dryest 2 months.....(Tpd2): 420
 Positive temperature dryest 1 month.....(Tpd1): 192
 Positive temperature warmest 3 months.....(Tps): 890
 Positive temperature warmest 2 months.....(Tps2): 600
 Positive temperature warmest 1 month.....(Tps1): 301
 Positive temperature coldest 3 months.....(Tpw): 542
 Positive temperature coldest 2 months.....(Tpw2): 350
 Positive temperature coldest 1 month.....(Tpw1): 172

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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): 2.92
 Mediterranean index of January.....(Im1): No
 Mediterranean index of January & February.....(Im2): No
 Mediterranean index of December to February...(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	707	1166	1015	612	219	164	155	94	36	67	161	288
Tp	301	299	290	277	248	210	178	172	192	228	267	290
Io (Iom)	2.35	3.90	3.50	2.21	0.89	0.78	0.87	0.55	0.19	0.29	0.60	0.99
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	2888 / 890			995 / 734			285 / 542			515 / 786		
Io (Iot)	3.246			1.356			0.525			0.655		
Semesters	December-May						June-November					
Pp(x10)/Tp	3883 / 1624						800 / 1328					
Io (Iosm)	2.392						0.602					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 4683/2951=1.59 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	707	1166	1015	612	219	164	155	94	36	67	161	288
Tp [T*10]	301	299	290	277	248	210	178	172	192	228	267	290
Iom [Pp/Tp]	235	390	350	221	89	78	87	55	19	29	60	99
Avm [200-Iom]	***	***	***	***	111	122	113	145	181	171	140	101
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	2888 / 890			995 / 734			285 / 542			515 / 786		
Iot [Pp/Tp]	325			136			53			66		
Avs E[Avm<200]	***			***			440			412		
Upper ultrahyperarid [1]						Lower hyperarid [1]						
Weak lower arid [4]						Strong upper arid [1]						
Weak upper arid [3]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	12.91
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		41.64
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		28.97
+ 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]		19.04
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		13.54
+ Arid -steppic- (15>Ia>5)		
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]		38.61
+ Semiarid (50>Q>30)		
I of Dantin & Revenga (1940) [DR=100*T/P]		5.25
+ Arid (6>DR>3)		
Aridity Index of UNEP [I=P/PE]		0.34
+ Semiarid (0.5>Im>0.2)		
Potential Erosion I of Fournier (1960) [K=Pi ² /P]		29.04
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 1. Megathermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.39	0.34	0.20	0.07	0.05	0.06	0.03	0.01	0.02	0.05	0.08	0.22
T-E ratio	13.45	13.04	12.47	11.14	9.43	8.01	7.74	8.63	10.27	12.03	13.06	13.55
Precipitation-effectiveness: 15.35						Temperature-efficiency						132.81
Moisture Index [MI=100*(P-PE)/PE]												-65.78
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE]												65.77
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE												1368.46
+ Forth mesothermic (997<PE<1440)												

