

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

ROCKHAMPTON AIRPORT (AUSTRALIA)

Altitude: 10 m.

Latitude: 23°23'S Longitude: 150°28'E

Temperature observation period.: 1951-1990 (40)

Rainfall observation period....: 1939-1989 (51)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	26.34	31.93	20.88	0.00	0.00	145.8	154.89
Feb.	26.21	29.45	22.95	0.00	0.00	153.5	133.16
Mar.	25.36	27.63	23.08	0.00	0.00	107.1	127.22
Apr.	23.24	25.80	20.60	0.00	0.00	41.9	93.00
May.	19.54	24.15	15.05	0.00	0.00	47.0	59.01
Jun.	16.84	21.63	11.88	0.00	0.00	37.7	37.76
Jul.	15.69	19.93	11.48	0.00	0.00	33.4	32.92
Aug.	17.23	22.64	11.91	0.00	0.00	27.2	44.54
Sep.	19.93	23.35	16.85	0.00	0.00	24.3	65.34
Oct.	23.15	26.35	19.85	0.00	0.00	49.2	105.50
Nov.	25.20	30.78	19.73	0.00	0.00	69.3	131.13
Dec.	26.28	30.75	21.65	0.00	0.00	100.3	155.31
Year	22.08	26.20	17.99	0.00	0.00	836	1139.8

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	535
Compensated thermicity index.....(Itc):	535
Simple continentality index.....(Ic):	10.7
Diurnality index.....(Id):	11.1
Annual ombrothermic index.....(Io):	3.16
Monthly dry ombrothermic index.....(Iod1):	1.22
Bimonthly dry ombrothermic index.....(Iod2):	1.38
Three monthly dry ombrothermic index.....(Iod3):	1.60
Four monthly dry ombrothermic index.....(Iod4):	1.76
Annual ombro-evaporation index.....(Ioe):	2.83
Annual positive temperature.....(Tp):	2650
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	529
Positive precipitation.....(Pp):	836

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	3	6	3	0	0

Latitudinal Belt...: Eutropical

Continentality.....: Hyperoceanic - Low Subhyperoceanic

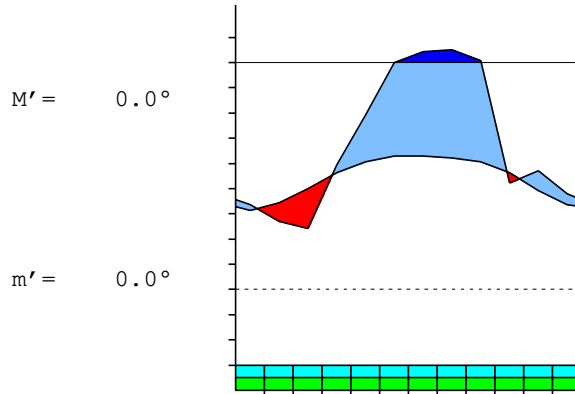
Bioclimate(Variant): TROPICAL XERIC (DRY)

Bioclimatic Belt...: UPPER THERMOTROPICAL UPPER DRY

ROCKHAMPTON AIRPORT (AUSTRALIA)

10 m

P= 836      23° 23'S      150° 28'E      40/51 y.  
 T= 22.1°    Ic= 10.7      Tp= 2650      Tn= 0  
 m= 11.5°    M= 19.9°      Itc= 535      Io= 3.2



TROPICAL XERIC (DRY)  
 UPPER THERMOTROPICAL UPPER DRY

WATER INDEX CARD      ROCKHAMPTON AIRPORT (AUSTRALIA)  
 Altitude: 10 m.      Latitude: 23° 23'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	15.7	33	33	0	0	33	0	0	0	0.0
Aug.	17.2	45	27	-0	0	28	17	0	0	-0.3
Sep.	19.9	65	24	0	0	24	41	0	0	-0.6
Oct.	23.1	106	49	0	0	49	56	0	0	-0.5
Nov.	25.2	131	69	0	0	69	62	0	0	-0.4
Dec.	26.3	155	100	0	0	100	55	0	0	-0.3
Jan.	26.3	155	146	0	0	146	9	0	0	0.0
Feb.	26.2	133	154	20	20	133	0	0	0	0.1
Mar.	25.4	127	107	-20	0	127	0	0	0	-0.1
Apr.	23.2	93	42	-0	0	42	51	0	0	-0.5
May.	19.5	59	47	0	0	47	12	0	0	-0.2
Jun.	16.8	38	38	0	0	38	0	0	0	0.0
Year	22.1	1140	836	*	*	836	303	0	0	*

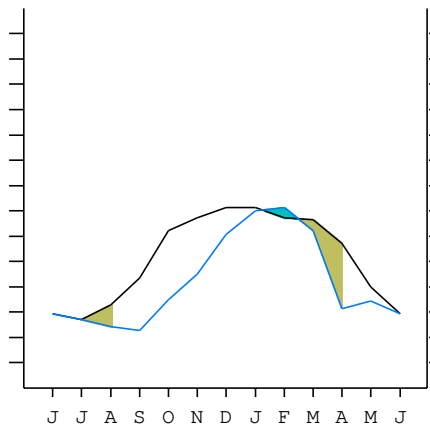
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coefficient    DF = Deficit    SP = Superavit

ROCKHAMPTON AIRPORT (AUSTRALIA)

23°23'S 150°28'E      10 m 40/51 y.

T= 22.1    Ic= 10.7      TROPICAL XERIC (DRY)  
 m= 11.5    Tp= 2650      UPPER THERMOTROPICAL  
 M= 19.9    Tn= 0      UPPER DRY  
 M' = 0.0    Itc= 535  
 m' = 0.0    Io= 3.2  
 P= 836      mm      ———  
 PE= 1140    mm      ———

Imbibing	10 Jan.
Saturation	16 Feb.
Reserve Use	1 Apr.
Deficit	



ROCKHAMPTON AIRPORT (AUSTRALIA)

Latitude: 23°23'S Longitude: 150°28'E Altitude: 10 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A3b]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 3. Subhyperoceanic  
 + Variant .....: b. Low  
 Thermic types [A2.A2]  
 + Latitudinal zone .....: A. Warm  
 + Latitudinal belt .....: 2. Eutropical  
 + Thermic type .....: A. Warm  
 + Thermic subtype .....: 2. Warm  
 Bioclimatic types [A3.2a.5a]  
 + Macrobioclimate .....: A. TROPICAL  
 + Bioclimate .....: 3. XERIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 2. THERMOTROPICAL  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: Trxe.Ttr.Dry

ROCKHAMPTON AIRPORT (AUSTRALIA)

Latitude: 23°23'S Longitude: 150°28'E Altitude: 10 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 618  
 Coldest semester of the year.....(Psw): 219  
 Warmest four months period of the year.....(Pcm1): 507  
 Following warmest four months period.....(Pcm2): 160  
 Positive precipitation dryest 3 months.....(Ppd): 85  
 Positive precipitation dryest 2 months.....(Ppd2): 51  
 Positive precipitation dryest 1 month.....(Ppd1): 24  
 Positive precipitation warmest 3 months.....(Pps): 400  
 Positive precipitation warmest 2 months.....(Pps2): 246  
 Positive precipitation warmest 1 month.....(Pps1): 146  
 Positive precipitation coldest 3 months.....(Ppw): 98  
 Positive precipitation coldest 2 months.....(Ppw2): 71  
 Positive precipitation coldest 1 month.....(Ppw1): 33

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	98	142	399	195

Tropical rainfall rhythms: 1 > 2 > 4 > 3

ROCKHAMPTON AIRPORT (AUSTRALIA)

Latitude: 23°23'S Longitude: 150°28'E Altitude: 10 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.3  
 Average coldest month [T].....(Tmin): 15.7  
 Maximum temp. warmest month [M].....(Tmmax): 31.9  
 Minimum temp. coldest month [m].....(Tmmin): 11.5  
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0  
 First warmest contrasted month [M].....(Tcmax): 31.9 (1)  
 First coldest contrasted month [m].....(Tcmin): 20.9 (1)  
 Dry station temperature.....(Td): 529  
 Positive temperature dryest 3 months.....(Tpd): 529  
 Positive temperature dryest 2 months.....(Tpd2): 372  
 Positive temperature dryest 1 month.....(Tpd1): 199  
 Positive temperature warmest 3 months.....(Tps): 788  
 Positive temperature warmest 2 months.....(Tps2): 526  
 Positive temperature warmest 1 month.....(Tps1): 263  
 Positive temperature coldest 3 months.....(Tpw): 498  
 Positive temperature coldest 2 months.....(Tpw2): 325  
 Positive temperature coldest 1 month.....(Tpw1): 157

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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

ROCKHAMPTON AIRPORT (AUSTRALIA)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.36  
 Mediterranean index of January.....(Im1): 1.06  
 Mediterranean index of January & February.....(Im2): 0.96  
 Mediterranean index of December to February...(Im3): 1.11

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1003	1458	1535	1071	419	470	377	334	272	243	492	693
Tp	263	263	262	254	232	195	168	157	172	199	232	252
Io (Iom)	3.81	5.53	5.86	4.22	1.80	2.40	2.24	2.13	1.58	1.22	2.13	2.75
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	3995 / 788			1960 / 681			982 / 498			1428 / 683		
Io (Iot)	5.068			2.876			1.973			2.091		
Semesters	December-May						June-November					
Pp(x10)/Tp	5955 / 1470						2410 / 1180					
Io (Iosm)	4.052						2.041					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 8365/2650=3.16 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1003	1458	1535	1071	419	470	377	334	272	243	492	693
Tp [T*10]	263	263	262	254	232	195	168	157	172	199	232	252
Iom [Pp/Tp]	381	553	586	422	180	240	224	213	158	122	213	275
Avm [200-Iom]	***	***	***	***	20	***	***	***	42	78	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	3995 / 788			1960 / 681			982 / 498			1428 / 683		
Iot [Pp/Tp]	507			288			197			209		
Avs E[Avm<200]	***			***			***			***		
Weak lower semiarid [1]							Strong upper semiarid [1]					
Weak upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	10.65
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		25.22
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		18.90
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		1.21
+ Subcontinental (1.1<CI<1.7)		
Rainfall Index of Lang (1925) [R=P/T] .....		37.88
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		26.07
+ Subhumid (30>Ia>20)		
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....		94.22
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		2.64
+ Semiarid (3>DR>2)		
Aridity Index of UNEP [I=P/PE] .....		0.73
+ Humid (I>0.65)		
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....		28.18
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....

- + Climate .....
- + Region .....
- + Thermic type: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.54	0.58	0.39	0.15	0.18	0.15	0.14	0.11	0.09	0.18	0.24	0.36
T-E ratio	11.85	11.79	11.41	10.46	8.79	7.58	7.06	7.75	8.97	10.42	11.34	11.83
Precipitation-effectiveness: 31.07						Temperature-efficiency .....						119.25
Moisture Index [MI=100*(P-PE)/PE] .....												
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE] .....												
+ Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE] .....												
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												
+ Forth mesothermic (997<PE<1440)												

