

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

COOLANGATTA (AUSTRALIA)

Altitude: 6 m.

Latitude: 28°10'S Longitude: 153°30'E

Temperature observation period.: 1939-1994 (56)

Rainfall observation period....: 1903-1994 (92)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	25.00	29.44	20.56	43.33	15.00	162.6	139.86
Feb.	24.72	29.44	20.00	41.11	14.44	160.0	117.87
Mar.	23.34	27.78	18.89	37.22	11.11	144.8	107.65
Apr.	21.11	26.11	16.11	35.00	6.67	94.0	76.99
May.	18.33	23.33	13.33	32.22	5.00	71.1	54.87
Jun.	15.56	20.56	10.56	31.67	2.78	66.0	35.52
Jul.	14.72	20.00	9.44	28.33	1.67	55.9	32.79
Aug.	15.84	21.67	10.00	31.11	2.78	48.3	41.22
Sep.	18.61	24.44	12.78	35.00	5.00	48.3	61.04
Oct.	21.12	26.67	15.56	38.89	6.11	63.5	90.05
Nov.	22.78	27.78	17.78	41.11	8.89	94.0	108.67
Dec.	24.44	29.44	19.44	41.11	12.22	127.0	135.16
Year	20.46	25.56	15.37	36.34	7.64	1136	1001.7

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	499
Compensated thermicity index.....(Itc):	499
Simple continentality index.....(Ic):	10.3
Diurnality index.....(Id):	11.7
Annual ombrothermic index.....(Io):	4.62
Monthly dry ombrothermic index.....(Iod1):	3.05
Bimonthly dry ombrothermic index.....(Iod2):	2.80
Three monthly dry ombrothermic index.....(Iod3):	3.10
Four monthly dry ombrothermic index.....(Iod4):	3.38
Annual ombro-evaporation index.....(Ioe):	1.96
Annual positive temperature.....(Tp):	2456
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	492
Positive precipitation.....(Pp):	1136

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	7	5	0	0	0

Latitudinal Belt...: Subtropical

Continentalty.....: Hyperoceanic - Low Subhyperoceanic

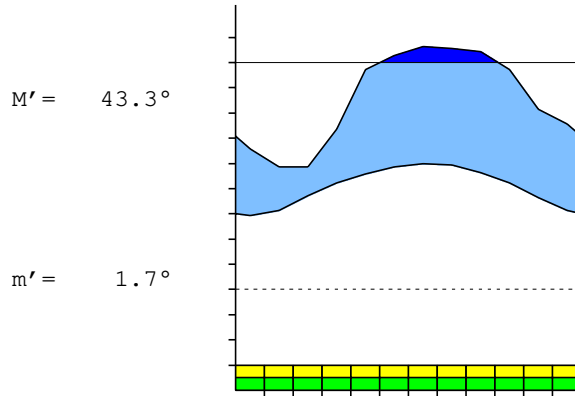
Bioclimate(Variant): TROPICAL PLUVIAL (HYGROPHYTIC)

Bioclimatic Belt...: UPPER THERMOTROPICAL LOW SUBHUMID

COOLANGATTA (AUSTRALIA)

6 m

P= 1136 28° 10' S 153° 30' E 56/92 y.
 T= 20.5° Ic= 10.3 Tp= 2456 Tn= 0
 m= 9.4° M= 20.0° Itc= 499 Io= 4.6



TROPICAL PLUVIAL (HYGROPHYTIC)
 UPPER THERMOTROPICAL LOW SUBHUMID

WATER INDEX CARD

COOLANGATTA (AUSTRALIA)

Altitude: 6 m.

Latitude: 28° 10' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	14.7	33	56	0	100	33	0	23	23	0.7
Aug.	15.8	41	48	0	100	41	0	7	15	0.1
Sep.	18.6	61	48	-13	87	61	0	0	8	-0.2
Oct.	21.1	90	64	-27	61	90	0	0	4	-0.2
Nov.	22.8	109	94	-15	46	109	0	0	2	-0.1
Dec.	24.4	135	127	-8	38	135	0	0	1	0.0
Jan.	25.0	140	163	23	61	140	0	0	0	0.1
Feb.	24.7	118	160	39	100	118	0	3	2	0.3
Mar.	23.3	108	145	0	100	108	0	37	19	0.3
Apr.	21.1	77	94	0	100	77	0	17	18	0.2
May.	18.3	55	71	0	100	55	0	16	17	0.2
Jun.	15.6	36	66	0	100	36	0	30	24	0.8
Year	20.5	1002	1136	*	*	1002	0	134	134	*

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

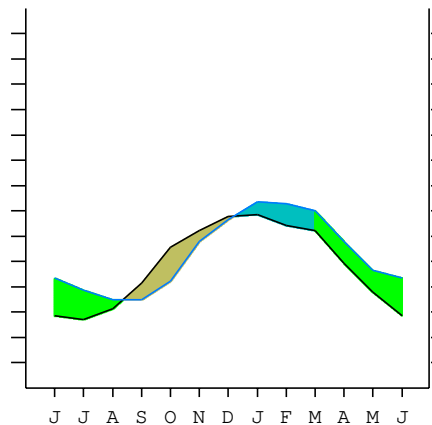
COOLANGATTA (AUSTRALIA)

28°10' S 153°30' E

6 m 56/92 y.

T= 20.5 Ic= 10.3 TROPICAL PLUVIAL (HYGROPHYTIC)
 m= 9.4 Tp= 2456 UPPER THERMOTROPICAL
 M= 20.0 Tn= 0 LOW SUBHUMID
 M' = 43.3 Itc= 499
 m' = 1.7 Io= 4.6
 P= 1136 mm ———
 PE= 1002 mm ———

Imbibing	8 Dec.
Saturation	29 Feb.
Reserve Use	11 Aug.
Deficit	



COOLANGATTA (AUSTRALIA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A3b]
 + Type: A. Hyperoceanic
 + Subtype: 3. Subhyperoceanic
 + 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 [A5.2a.6b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 5. PLUVIAL
 + Bioclimatic variant ..:
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Trhd.Ttr.Shu

COOLANGATTA (AUSTRALIA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 752
 Coldest semester of the year.....(Psw): 384
 Warmest four months period of the year.....(Pcm1): 594
 Following warmest four months period.....(Pcm2): 287
 Positive precipitation dryest 3 months.....(Ppd): 153
 Positive precipitation dryest 2 months.....(Ppd2): 97
 Positive precipitation dryest 1 month.....(Ppd1): 48
 Positive precipitation warmest 3 months.....(Pps): 450
 Positive precipitation warmest 2 months.....(Pps2): 323
 Positive precipitation warmest 1 month.....(Pps1): 163
 Positive precipitation coldest 3 months.....(Ppw): 170
 Positive precipitation coldest 2 months.....(Ppw2): 122
 Positive precipitation coldest 1 month.....(Ppw1): 56

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	170	205	449	309

Seasonal rainfall rhythms: S > F > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 25.0
 Average coldest month [T].....(Tmin): 14.7
 Maximum temp. warmest month [M].....(Tmmax): 29.4
 Minimum temp. coldest month [m].....(Tmmin): 9.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 43.3
 Absolute Min.temp. coldest month [m'].....(Tamin): 1.7
 First warmest contrasted month [M].....(Tcmax): 21.7 (8)
 First coldest contrasted month [m].....(Tcmin): 10.0 (8)
 Dry station temperature.....(Td): 492
 Positive temperature dryest 3 months.....(Tpd): 492
 Positive temperature dryest 2 months.....(Tpd2): 345
 Positive temperature dryest 1 month.....(Tpd1): 158
 Positive temperature warmest 3 months.....(Tps): 742
 Positive temperature warmest 2 months.....(Tps2): 497
 Positive temperature warmest 1 month.....(Tps1): 250
 Positive temperature coldest 3 months.....(Tpw): 461
 Positive temperature coldest 2 months.....(Tpw2): 303
 Positive temperature coldest 1 month.....(Tpw1): 147

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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)	o	o	o	o	o	o	o	o	o	o	o	o
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): 0.88
 Mediterranean index of January.....(Im1): 0.86
 Mediterranean index of January & February.....(Im2): 0.80
 Mediterranean index of December to February...(Im3): 0.87

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1270	1626	1600	1448	940	711	660	559	483	483	635	940
Tp	244	250	247	233	211	183	156	147	158	186	211	228
Io (Iom)	5.20	6.50	6.47	6.20	4.45	3.88	4.24	3.80	3.05	2.60	3.01	4.13
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	4496 / 742			3099 / 628			1702 / 461			2058 / 625		
Io (Iot)	6.063			4.936			3.690			3.292		
Semesters	December-May						June-November					
Pp(x10)/Tp	7595 / 1369						3760 / 1086					
Io (Iosm)	5.546						3.461					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 11355/2456=4.62 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1270	1626	1600	1448	940	711	660	559	483	483	635	940
Tp [T*10]	244	250	247	233	211	183	156	147	158	186	211	228
Iom [Pp/Tp]	520	650	647	620	445	388	424	380	305	260	301	413
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	4496 / 742			3099 / 628			1702 / 461			2058 / 625		
Iot [Pp/Tp]	606			494			369			329		
Avs E [Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 10.28
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	16.62
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	14.28
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	0.99
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	55.49
+ Semiarid (60>R>40)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	37.27
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	146.03
+ Humid (Q>90)	
I of Dantin & Revenga (1940) [DR=100*T/P]	1.80
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE]	1.13
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	23.28
+ 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	0.63	0.63	0.58	0.38	0.30	0.30	0.25	0.21	0.19	0.24	0.36	0.49	
T-E ratio	11.25	11.12	10.50	9.50	8.25	7.00	6.62	7.13	8.37	9.50	10.25	11.00	
Precipitation-effectiveness:	45.57					Temperature-efficiency							110.51
Moisture Index [MI=100*(P-PE)/PE]												13.36	
+ C2.Subhumid humid (0<MI<20)													
Index of dryness [DI=100*d/PE]												0.00	
+ No deficit (0<DI<16.7)													
Index of humidity [HI=100*s/PE]												13.36	
+ Moderate surplus (10<HI<20)													
Potential Evapotranspiration PE												1001.69	
+ Forth mesothermic (997<PE<1440)													

