

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

MACQUARIE (ANTARCTICA TERR.)

Altitude: 6 m.

Latitude: 54°30'S Longitude: 158°57'E

Temperature observation period.: 1991-1994 (4)

Rainfall observation period....: 1992-1994 (3)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	6.39	8.33	4.44	11.11	1.67	74.9	75.58
Feb.	6.67	8.33	5.00	10.56	0.56	97.5	62.70
Mar.	6.11	7.78	4.44	10.00	-1.11	86.9	56.50
Apr.	5.56	7.22	3.89	9.44	-0.56	76.5	41.50
May.	3.89	5.56	2.22	10.00	-6.67	62.5	27.25
Jun.	3.62	5.56	1.67	8.33	-4.44	104.4	22.39
Jul.	3.06	5.00	1.11	8.33	-8.33	82.8	21.22
Aug.	3.34	5.00	1.67	7.22	-3.89	79.5	27.91
Sep.	3.62	5.56	1.67	7.78	-5.56	67.6	35.18
Oct.	4.17	6.11	2.22	8.89	-1.67	45.2	47.77
Nov.	4.45	6.11	2.78	8.89	-2.22	80.5	55.28
Dec.	5.84	7.78	3.89	11.11	-8.33	42.4	73.03
Year	4.73	6.53	2.92	9.31	-3.38	901	546.31

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	108
Compensated thermicity index.....(Itc):	64
Simple continentality index.....(Ic):	3.6
Diurnality index.....(Id):	3.9
Annual ombrothermic index.....(Io):	15.88
Monthly estival ombrothermic index.....(Ios1):	14.62
Bimonthly estival ombrothermic index.....(Ios2):	13.20
Threemonthly estival ombrothermic index.....(Ios3):	13.53
Fourmonthly estival ombrothermic index.....(Ios4):	12.06
Annual ombro-evaporation index.....(Ioe):	1.04
Annual positive temperature.....(Tp):	567
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	192
Positive precipitation.....(Pp):	901

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	12	0	0	0	0

Latitudinal Belt...: Low subtemperate

Continentality.....: Hyperoceanic - Low Ultrahyperoceanic

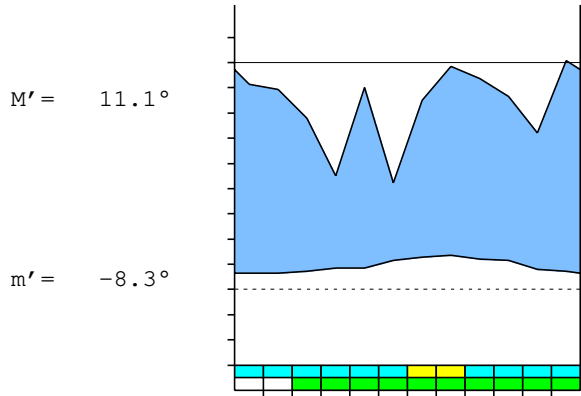
Bioclimate.....: Polar Semipolar

Bioclimatic Belt...: Infrapolar LOW HYPERHUMID

MACQUARIE (ANTARCTICA TERR.)

6 m

P= 901      54° 30'S      158° 57'E      4/3 y.  
 T= 4.7°      Ic= 3.6      Tp= 567      Tn= 0  
 m= 1.1°      M= 5.0°      Itc= 64      Io= 15.9



Polar Semipolar  
 Infrapolar LOW HYPERHUMID

WATER INDEX CARD      MACQUARIE (ANTARCTICA TERR.)

Altitude: 6 m.      Latitude: 54° 30'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	3.1	21	83	0	100	21	0	62	59	2.9
Aug.	3.3	28	80	0	100	28	0	52	55	1.8
Sep.	3.6	35	68	0	100	35	0	32	44	0.9
Oct.	4.2	48	45	-3	97	48	0	0	22	0.0
Nov.	4.4	55	81	3	100	55	0	23	22	0.4
Dec.	5.8	73	42	-31	69	73	0	0	11	-0.4
Jan.	6.4	76	75	-1	69	76	0	0	6	0.0
Feb.	6.7	63	98	31	100	63	0	3	5	0.5
Mar.	6.1	56	87	0	100	56	0	30	17	0.5
Apr.	5.6	42	77	0	100	42	0	35	26	0.8
May.	3.9	27	63	0	100	27	0	35	31	1.2
Jun.	3.6	22	104	0	100	22	0	82	56	3.6
Year	4.7	546	901	*	*	546	0	354	354	*

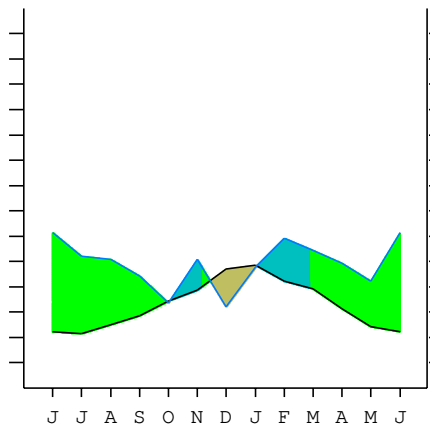
R = Reserve      VR = Variation of the reserve      RE = Real evapotranspiration  
 DR = Drainage      HC = Humidity coefficient      DF = Deficit      SP = Superavit

MACQUARIE (ANTARCTICA TERR.)

54°30'S 158°57'E      6 m      4/3 y.

T= 4.7      Ic= 3.6      Polar Semipolar  
 m= 1.1      Tp= 567      Infrapolar  
 M= 5.0      Tn= 0      LOW HYPERHUMID  
 M' = 11.1      Itc= 64  
 m' = -8.3      Io= 15.9  
 P= 901      mm      ———  
 PE= 546      mm      ———

Imbibing	1 Jan.
Saturation	27 Feb.
Reserve Use	14 Nov.
Deficit	



MACQUARIE (ANTARCTICA TERR.)

Latitude: 54°30'S Longitude: 158°57'E Altitude: 6 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A1b]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 1. Ultrahyperoceanic  
 + Variant .....: b. Low  
 Thermic types [B3.C6]  
 + Latitudinal zone .....: B. Temperate  
 + Latitudinal belt .....: 3. Low subtemperate  
 + Thermic type .....: C. Cold  
 + Thermic subtype .....: 6. Cool  
 Bioclimatic types [E1.1.8b]  
 + Macrobioclimate .....: E. Polar  
 + Bioclimate .....: 1. Semipolar  
 + Bioclimatic variant ..:  
 + Thermic type.....: 1. Infrapolar  
 + Thermic subtype.....:  
 + Ombrothermic type ...: 8. HYPERHUMID  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 459  
 Coldest semester of the year.....(Psw): 442  
 Warmest four months period of the year.....(Pcm1): 302  
 Following warmest four months period.....(Pcm2): 326  
 Positive precipitation dryest 3 months.....(Ppd): 168  
 Positive precipitation dryest 2 months.....(Ppd2): 113  
 Positive precipitation dryest 1 month.....(Ppd1): 42  
 Positive precipitation warmest 3 months.....(Pps): 259  
 Positive precipitation warmest 2 months.....(Pps2): 172  
 Positive precipitation warmest 1 month.....(Pps1): 98  
 Positive precipitation coldest 3 months.....(Ppw): 267  
 Positive precipitation coldest 2 months.....(Ppw2): 162  
 Positive precipitation coldest 1 month.....(Ppw1): 83

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	266	193	214	225

Seasonal rainfall rhythms: W > F > S > P

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 6.7  
 Average coldest month [T].....(Tmin): 3.1  
 Maximum temp. warmest month [M].....(Tmmax): 8.3  
 Minimum temp. coldest month [m].....(Tmmin): 1.1  
 Absolute Max.temp. warmest month [M'].....(Tamax): 11.1  
 Absolute Min.temp. coldest month [m'].....(Tamin): -8.3  
 First warmest contrasted month [M].....(Tcmax): 8.3 (1)  
 First coldest contrasted month [m].....(Tcmin): 4.4 (1)  
 Estival temperature.....(Ts): 192  
 Positive temperature dryest 3 months.....(Tpd): 145  
 Positive temperature dryest 2 months.....(Tpd2): 78  
 Positive temperature dryest 1 month.....(Tpd1): 58  
 Positive temperature warmest 3 months.....(Tps): 192  
 Positive temperature warmest 2 months.....(Tps2): 131  
 Positive temperature warmest 1 month.....(Tps1): 67  
 Positive temperature coldest 3 months.....(Tpw): 100  
 Positive temperature coldest 2 months.....(Tpw2): 64  
 Positive temperature coldest 1 month.....(Tpw1): 31

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.61  
 Mediterranean index of January.....(Im1): 1.01  
 Mediterranean index of January & February.....(Im2): 0.80  
 Mediterranean index of December to February...(Im3): 0.98

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	424	749	975	869	765	625	1044	828	795	676	452	805
Tp	58	64	67	61	56	39	36	31	33	36	42	45
Io (Iom)	7.26	11.7	14.6	14.2	13.8	16.1	28.8	27.1	23.8	18.7	10.8	18.1
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	2148 / 189			2259 / 156			2667 / 100			1933 / 122		
Io (Iot)	11.37			14.52			26.62			15.79		
Semesters	December-May						June-November					
Pp(x10)/Tp	4407 / 345						4600 / 223					
Io (Iosm)	12.79						20.66					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 9007/567=15.88 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	424	749	975	869	765	625	1044	828	795	676	452	805
Tp [T*10]	58	64	67	61	56	39	36	31	33	36	42	45
Iom [Pp/Tp]	726	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	***	***	***
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	2148 / 189			2259 / 156			2667 / 100			1933 / 122		
Iot [Pp/Tp]	1137			1452			2662			1579		
Avs E[Avm<200]	***			***			***			***		

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 3.61  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: -12.86  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: -7.20  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.19  
 + Hyperoceanic (0<CI<0.6)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 190.56  
 + Humid (R>160)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 61.16  
 + Perhumid (Ia>60)  
 I of Emberger (1930) [Q=100\*P/(Tmax<sup>2</sup>-Tmin<sup>2</sup>)] .....:1321.51  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 0.52  
 + Humid (2>DR>0)  
 Aridity Index of UNEP [I=P/PE] .....: 1.65  
 + Humid (I>0.65)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 12.10  
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....: A. Warm and temperate warm  
 + Region .....: 7. Mesoaxeric (Axeric temperate)  
 + Thermic type: 6. Microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.46	0.61	0.55	0.49	0.41	0.74	0.59	0.55	0.46	0.29	0.54	0.25
T-E ratio	2.88	3.00	2.75	2.50	1.75	1.63	1.38	1.50	1.63	1.88	2.00	2.63
Precipitation-effectiveness: 59.24						Temperature-efficiency .....: 25.52						
Moisture Index [MI=100*(P-PE)/PE] .....: 64.87 + B3.Humid high-humid (60<MI<80)												
Index of dryness [DI=100*d/PE] .....: 0.00 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE] .....: 64.85 + Strong surplus (20<HI)												
Potential Evapotranspiration PE .....: 546.31 + Second microthermic (427<PE<570)												

