

Phytosociological Research Center

www.globalbioclimatics.org

Worldwide Bioclimatic Classification System

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

(Adapted to Synoptical Table 14/02/2020)

CAPE LEEUWIN (AUSTRALIA)

Altitude: 50 m.

Latitude: 34°22'S Longitude: 115°8'E

Temperature observation period.: 1946-1994 (49)

Rainfall observation period....: 1948-1994 (47)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	19.73	22.78	16.67	38.89	10.00	15.2	99.65
Feb.	20.27	23.33	17.22	42.78	10.00	17.8	89.78
Mar.	19.73	22.78	16.67	36.67	10.56	30.5	86.58
Apr.	18.34	21.11	15.56	35.00	7.22	58.4	67.84
May.	16.11	18.89	13.33	29.44	5.00	149.9	52.15
Jun.	14.72	17.22	12.22	23.89	5.56	185.4	41.28
Jul.	13.61	16.11	11.11	22.22	4.44	185.4	38.32
Aug.	13.61	16.11	11.11	23.89	5.56	137.2	41.37
Sep.	14.17	16.67	11.67	27.78	3.89	86.4	46.62
Oct.	15.00	17.78	12.22	31.67	6.11	7.1	58.02
Nov.	16.95	20.00	13.89	33.33	6.67	30.5	73.26
Dec.	18.62	21.67	15.56	36.67	10.56	20.3	91.82
Year	16.74	19.54	13.94	31.85	7.13	924	786.70

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	440
Compensated thermicity index.....(Itc):	426
Simple continentality index.....(Ic):	6.7
Diurnality index.....(Id):	6.1
Annual ombrothermic index.....(Io):	4.60
Monthly estival ombrothermic index.....(Ios1):	0.77
Bimonthly estival ombrothermic index.....(Ios2):	0.82
Threemonthly estival ombrothermic index.....(Ios3):	0.91
Fourmonthly estival ombrothermic index.....(Ios4):	1.11
Annual ombro-evaporation index.....(Ioe):	1.17
Annual positive temperature.....(Tp):	2009
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	586
Positive precipitation.....(Pp):	924

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	5	1	3	3	0

Latitudinal Belt...: Subtropical

Continentality.....: Hyperoceanic - Low Euhyperoceanic

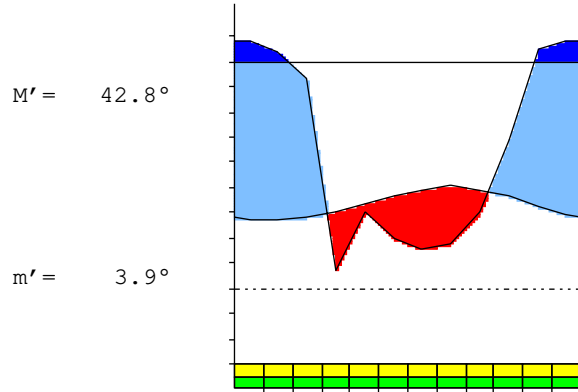
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW THERMOMEDITERRANEAN LOW SUBHUMID

CAPE LEEUWIN (AUSTRALIA)

50 m

P= 924 34° 22'S 115° 8'E 49/47 y.
 T= 16.7 ° Ic= 6.7 Tp= 2009 Tn= 0
 m= 11.1 ° M= 16.1 ° Itc= 426 Io= 4.6



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW THERMOMEDITERRANEAN LOW SUBHUMID

WATER INDEX CARD CAPE LEEUWIN (AUSTRALIA)
 Altitude: 50 m. Latitude: 34° 22'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	13.6	38	185	0	100	38	0	147	109	3.8
Aug.	13.6	41	137	0	100	41	0	96	102	2.3
Sep.	14.2	47	86	0	100	47	0	40	71	0.8
Oct.	15.0	58	7	-51	49	58	0	0	36	-0.8
Nov.	17.0	73	31	-43	6	73	0	0	18	-0.5
Dec.	18.6	92	20	-6	0	27	65	0	9	-0.7
Jan.	19.7	100	15	0	0	15	84	0	4	-0.8
Feb.	20.3	90	18	0	0	18	72	0	2	-0.8
Mar.	19.7	87	31	0	0	31	56	0	1	-0.6
Apr.	18.3	68	58	0	0	58	9	0	1	-0.1
May.	16.1	52	150	98	98	52	0	0	0	1.8
Jun.	14.7	41	185	2	100	41	0	142	71	3.4
Year	16.7	787	924	*	*	500	287	425	425	*

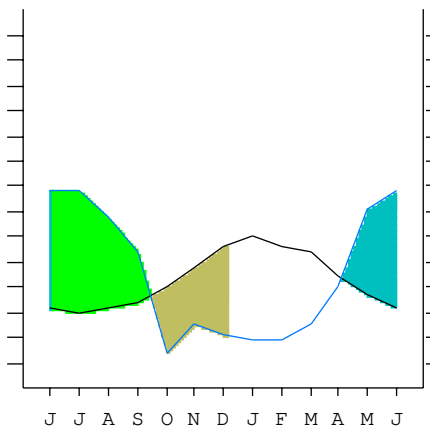
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

CAPE LEEUWIN (AUSTRALIA)

34°22'S 115°8'E 50 m 49/47 y.

T= 16.7 Ic= 6.7 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 11.1 Tp= 2009 LOW THERMOMEDITERRANEAN
 M= 16.1 Tn= 0 LOW SUBHUMID
 M' = 42.8 Itc= 426
 m' = 3.9 Io= 4.6
 P= 924 mm ———
 PE= 787 mm ———

Imbibing	3 Apr.
Saturation	1 Jun.
Reserve Use	14 Sep.
Deficit	3 Dec.



CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [A2b]
 + Type: A. Hyperoceanic
 + Subtype: 2. Euhyperoceanic
 + Variant: b. Low
 Thermic types [A3.A3]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 3. Subtropical
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm
 Bioclimatic types [B8.2b.6b]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 2. THERMOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic ClassificationMepo.Tme.Shu.Eho

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 173
 Coldest semester of the year.....(Psw): 751
 Warmest four months period of the year.....(Pcm1): 84
 Following warmest four months period.....(Pcm2): 579
 Positive precipitation dryest 3 months.....(Ppd): 53
 Positive precipitation dryest 2 months.....(Ppd2): 33
 Positive precipitation dryest 1 month.....(Ppd1): 7
 Positive precipitation warmest 3 months.....(Pps): 64
 Positive precipitation warmest 2 months.....(Pps2): 33
 Positive precipitation warmest 1 month.....(Pps1): 18
 Positive precipitation coldest 3 months.....(Ppw): 409
 Positive precipitation coldest 2 months.....(Ppw2): 323
 Positive precipitation coldest 1 month.....(Ppw1): 185

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	508	124	53	238

Seasonal rainfall rhythms: W > F > P > S

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 20.3
 Average coldest month [T].....(Tmin): 13.6
 Maximum temp. warmest month [M].....(Tmax): 23.3
 Minimum temp. coldest month [m].....(Tmin): 11.1
 Absolute Max.temp. warmest month [M'].....(Tamax): 42.8
 Absolute Min.temp. coldest month [m'].....(Tamin): 3.9
 First warmest contrasted month [M].....(Tcmax): 22.8 (1)
 First coldest contrasted month [m].....(Tcmin): 16.7 (1)
 Estival temperature.....(Ts): 586
 Positive temperature dryest 3 months.....(Tpd): 586
 Positive temperature dryest 2 months.....(Tpd2): 400
 Positive temperature dryest 1 month.....(Tpd1): 150
 Positive temperature warmest 3 months.....(Tps): 597
 Positive temperature warmest 2 months.....(Tps2): 400
 Positive temperature warmest 1 month.....(Tps1): 203
 Positive temperature coldest 3 months.....(Tpw): 414
 Positive temperature coldest 2 months.....(Tpw2): 272
 Positive temperature coldest 1 month.....(Tpw1): 136

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 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)												
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

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.85
 Mediterranean index of January.....(Im1): 6.56
 Mediterranean index of January & February....(Im2): 5.74
 Mediterranean index of December to February...(Im3): 5.28

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	203	152	178	305	584	1499	1854	1854	1372	864	71	305
Tp	186	197	203	197	183	161	147	136	136	142	150	170
Io (Iom)	1.09	0.77	0.88	1.55	3.18	9.30	12.6	13.6	10.1	6.10	0.47	1.80
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	533 / 586			2388 / 542			5080 / 419			1240 / 461		
Io (Iot)	0.909			4.408			12.11			2.689		
Semesters	December-May						June-November					
Pp(x10)/Tp	2921 / 1128						6320 / 881					
Io (Iosm)	2.590						7.177					

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

Aridity Value Index (AVI)

[10xPP/TP=IO]: 9241/2009=4.60 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	203	152	178	305	584	1499	1854	1854	1372	864	71	305
Tp [T*10]	186	197	203	197	183	161	147	136	136	142	150	170
Iom [Pp/Tp]	109	77	88	155	318	930	\$\$	\$\$	\$\$	610	47	180
Avm [200-Iom]	91	123	112	45	***	***	***	***	***	***	153	20
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	533 / 586			2388 / 542			5080 / 419			1240 / 461		
Iot [Pp/Tp]	91			441			1211			269		
Avs E[Avm<200]	326			***			***			***		
Strong lower arid [1]						Strong upper arid [1]						
Weak upper arid [2]						Strong lower semiarid [1]						
Strong upper semiarid [1]						Weak upper semiarid [1]						

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	6.66
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		-0.34
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		2.19
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		0.53
+ Hyperoceanic (0<CI<0.6)		
Rainfall Index of Lang (1925) [R=P/T]		55.21
+ Semiarid (60>R>40)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		34.56
+ Humid (60>Ia>30)		
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]		219.58
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		1.81
+ Humid (2>DR>0)		
Aridity Index of UNEP [I=P/PE]		1.17
+ Humid (I>0.65)		
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....		37.20
+ Very low (K<60)		

CAPE LEEUWIN (AUSTRALIA)

Latitude: 34°22'S Longitude: 115°8'E Altitude: 50 m

BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 3. Termoxeroteric (Mediterranean warm)
 + Thermic type: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.05	0.06	0.11	0.24	0.73	0.96	0.99	0.71	0.42	0.03	0.12	0.07
T-E ratio	8.88	9.12	8.88	8.25	7.25	6.62	6.12	6.12	6.38	6.75	7.63	8.38
Precipitation-effectiveness: 44.74						Temperature-efficiency: 90.39						
Moisture Index [MI=100*(P-PE)/PE]												
+ C2.Subhumid humid (0<MI<20)												
Index of dryness [DI=100*d/PE]												
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE]												
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												
+ Second mesothermic (712<PE<855)												

