

# Phytosociological Research Center

www.globalbioclimatics.org

## Worldwide Bioclimatic Classification System

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### CAPE AGULHAS (SOUTH AFRICA)

Altitude: 19 m.

Latitude: 34° 50'S Longitude: 20° 1'E

Temperature observation period.: 1969-1994 (26)

Rainfall observation period....: 1925-1994 (70)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	20.27	23.33	17.22	28.89	8.33	20.3	105.07
Feb.	20.27	23.33	17.22	36.11	8.89	17.8	89.70
Mar.	19.17	22.22	16.11	35.00	9.44	33.0	82.37
Apr.	17.50	20.56	14.44	35.56	5.00	38.1	62.57
May.	15.84	18.89	12.78	33.89	4.44	50.8	50.03
Jun.	14.17	17.22	11.11	30.00	5.56	58.4	38.15
Jul.	13.06	16.11	10.00	29.44	3.89	53.3	35.24
Aug.	13.89	17.22	10.56	31.67	4.44	48.3	42.28
Sep.	14.17	17.22	11.11	32.22	4.44	40.6	46.52
Oct.	15.84	18.89	12.78	26.11	5.00	38.1	63.52
Nov.	17.78	20.56	15.00	30.56	5.00	27.9	80.01
Dec.	19.17	22.22	16.11	30.56	5.00	17.8	97.13
Year	16.76	19.81	13.70	31.67	5.79	444	792.58

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	429
Compensated thermicity index.....(Itc):	421
Simple continentality index.....(Ic):	7.2
Diurnality index.....(Id):	6.7
Annual ombrothermic index.....(Io):	2.21
Monthly estival ombrothermic index.....(Ios1):	0.88
Bimonthly estival ombrothermic index.....(Ios2):	0.94
Threemonthly estival ombrothermic index.....(Ios3):	0.94
Fourmonthly estival ombrothermic index.....(Ios4):	1.08
Annual ombro-evaporation index.....(Ioe):	0.56
Annual positive temperature.....(Tp):	2011
Annual negative temperature.....(Tn):	-0
Estival temperature.....(Ts):	597
Positive precipitation.....(Pp):	444

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

Latitudinal Belt...: Subtropical

Continentalty.....: Hyperoceanic - Low Euhyperoceanic

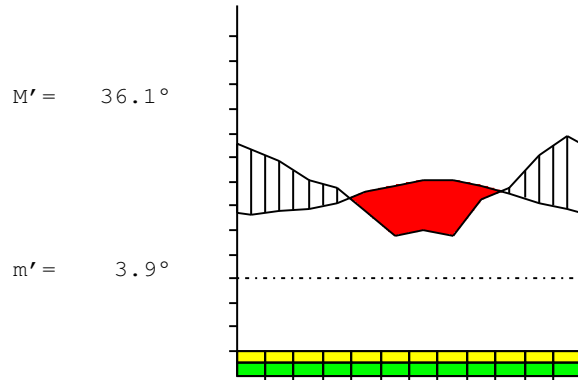
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic belt...: LOW THERMOMEDITERRANEAN LOW DRY

**CAPE AGULHAS (SOUTH AFRICA)**

19 m

P= 444      34° 50'S      20° 1'E      26/70 y.  
 T= 16.8 °    Ic= 7.2      Tp= 2011      Tn= -0  
 m= 10.0 °    M= 16.1 °      Itc= 421      Io= 2.2



**MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 LOW THERMOMEDITERRANEAN LOW DRY**

**WATER INDEX CARD**

**CAPE AGULHAS (SOUTH AFRICA)**

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Latitude: 34° 50'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	13.1	35	53	18	39	35	0	0	0	0.5
Aug.	13.9	42	48	6	45	42	0	0	0	0.1
Sep.	14.2	47	41	-6	39	46	0	0	0	-0.1
Oct.	15.8	64	38	-25	14	64	0	0	0	-0.4
Nov.	17.8	80	28	-14	0	42	38	0	0	-0.6
Dec.	19.2	97	18	0	0	18	79	0	0	-0.8
Jan.	20.3	105	20	0	0	20	85	0	0	-0.8
Feb.	20.3	90	18	0	0	18	72	0	0	-0.8
Mar.	19.2	82	33	0	0	33	49	0	0	-0.5
Apr.	17.5	63	38	0	0	38	24	0	0	-0.3
May.	15.8	50	51	1	1	50	0	0	0	0.0
Jun.	14.2	38	58	20	21	38	0	0	0	0.5
<b>Year</b>	16.8	793	444	*	*	444	348	0	0	*

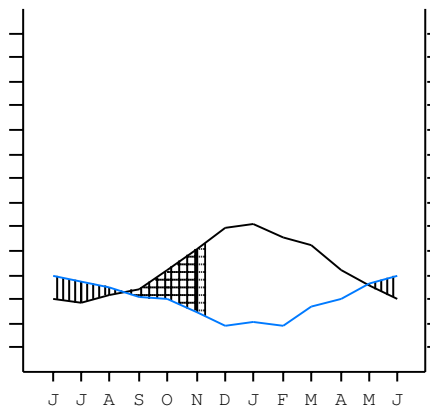
R = Reserve    VR = Variation of the reserve    RE = Real evapotranspiration  
 DR = Drainage    HC = Humidity coeficient    DF = Deficit    SP = Superavit

**CAPE AGULHAS (SOUTH AFRICA)**

34°50'S    20°1'E    19 m 26/70 y.

T= 16.8    Ic= 7.2    **MEDITERRANEAN PLUVISEASONAL-OCEANIC**  
 m= 10.0    Tp= 2011    **LOW THERMOMEDITERRANEAN**  
 M= 16.1    Tn= -0    **LOW DRY**  
 M' = 36.1    Itc= 421  
 m' = 3.9    Io= 2.2  
 P= 444    mm ———  
 PE= 793    mm ———

	Imbibing	30 Apr.
■	Saturation	
▨	Reserve Use	16 Aug.
□	Deficit	8 Nov.



**CAPE AGULHAS (SOUTH AFRICA)**

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**SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION**

Continental 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.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 2. THERMOMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW

**Bioclimatic Classification .....: Mehc.Tme.Dry**

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**PRECIPITATION PARAMETERS**

Warmest semester of the year.....(Pss): 155  
 Coldest semester of the year.....(Psw): 290  
 Warmest four months period of the year.....(Pcm1): 89  
 Following warmest four months period.....(Pcm2): 201  
 Positive precipitation dryest 3 months.....(Ppd): 56  
 Positive precipitation dryest 2 months.....(Ppd2): 38  
 Positive precipitation dryest 1 month.....(Ppd1): 18  
 Positive precipitation warmest 3 months.....(Pps): 71  
 Positive precipitation warmest 2 months.....(Pps2): 38  
 Positive precipitation warmest 1 month.....(Pps1): 20  
 Positive precipitation coldest 3 months.....(Ppw): 160  
 Positive precipitation coldest 2 months.....(Ppw2): 102  
 Positive precipitation coldest 1 month.....(Ppw1): 53

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	160	106	55	121

**Seasonal rainfall rhythms: W > F > P > S**

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**TEMPERATURE PARAMETERS**

Average warmest month [T].....(Tmax): 20.3  
 Average coldest month [T].....(Tmin): 13.1  
 Maximum temp. warmest month [M].....(Tmmax): 23.3  
 Minimum temp. coldest month [m].....(Tmmin): 10.0  
 Absolute Max.temp. warmest month [M'].....(Tamax): 36.1  
 Absolute Min.temp. coldest month [m'].....(Tamin): 3.9  
 First warmest contrasted month [M].....(Tcmax): 17.2 (8)  
 First coldest contrasted month [m].....(Tcmin): 10.6 (8)  
 Estival temperature.....(Ts): 597  
 Positive temperature dryest 3 months.....(Tpd): 597  
 Positive temperature dryest 2 months.....(Tpd2): 405  
 Positive temperature dryest 1 month.....(Tpd1): 203  
 Positive temperature warmest 3 months.....(Tps): 597  
 Positive temperature warmest 2 months.....(Tps2): 405  
 Positive temperature warmest 1 month.....(Tps1): 203  
 Positive temperature coldest 3 months.....(Tpw): 411  
 Positive temperature coldest 2 months.....(Tpw2): 270  
 Positive temperature coldest 1 month.....(Tpwl): 131

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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): 1.78  
 Mediterranean index of January.....(Im1): 5.18  
 Mediterranean index of January & February....(Im2): 5.11  
 Mediterranean index of December to February...(Im3): 5.22

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	178	203	178	330	381	508	584	533	483	406	381	279
Tp	192	203	203	192	175	158	142	131	139	142	158	178
<b>Io (Iom)</b>	0.93	1.00	0.88	1.72	2.18	3.21	4.12	4.08	3.48	2.87	2.41	1.57
Seasons	<b>Summer</b>			<b>Autumn</b>			<b>Winter</b>			<b>Spring</b>		
Pp(x10)/Tp	559 / 597			1219 / 525			1600 / 411			1066 / 478		
<b>Io (Iot)</b>	0.936			2.321			3.891			2.231		
Semesters	<b>December-May</b>						<b>June-November</b>					
Pp(x10)/Tp	1778 / 1122						2666 / 889					
<b>Io (Iosm)</b>	1.584						2.999					

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**BIOCLIMATIC INDICES I**

CI of Supan (1884) [Tmax-Tmin] .....(Sp): 7.21  
 CI of Gorezinski (1920) [1.7\*Sp/sin(Lat)-20.4] .....: 1.06  
 CI of Conrad (1946) [1.7\*Sp/sin(Lat+10)-14] .....: 3.38  
 + Hyperoceanic (-20<CI<20)  
 CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....: 0.57  
 + Hyperoceanic (0<CI<0.6)  
 Rainfall Index of Lang (1925) [R=P/T] .....: 26.51  
 + Steppic (40>R>0)  
 Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....: 16.61  
 + Semiarid -mediterranean- (20>Ia>15)  
 I of Emberger (1930) [Q=100\*P/(Tmmax<sup>2</sup>-Tmmin<sup>2</sup>)] .....: 100.03  
 + Humid (Q>90)  
 I of Dantin & Revenga (1940) [DR=100\*T/P] .....: 3.77  
 + Arid (6>DR>3)  
 Aridity Index of UNEP [I=P/PE] .....: 0.56  
 + Subhumid - dry (0.65>I>0.5)  
 Potential Erosion I of Fournier (1960) [K=Pi<sup>2</sup>/P].....: 7.67  
 + Very low (K<60)

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**BIOCLIMATIC INDICES II**

Bioclimatic classification of Gaussen & Bagnouls (1957)

- + Climate ....: A. Warm and temperate warm
- + Region .....: 3. Termoxerotic (Mediterranean warm)
- + Thermic type: 3. Macro-mesothermic

Thorntthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.07	0.06	0.12	0.15	0.22	0.27	0.25	0.22	0.18	0.16	0.11	0.06
T-E ratio	9.12	9.12	8.63	7.88	7.13	6.38	5.88	6.25	6.38	7.13	8.00	8.63
Precipitation-effectiveness: 18.76						Temperature-efficiency ....: 90.51						
Moisture Index [MI=100*(P-PE)/PE] .....: -43.93 + D.Semiarid (-66.7<MI<-33.3) Index of dryness [DI=100*d/PE] .....: 43.92 + Strong deficit (33.3<DI) Index of humidity [HI=100*s/PE] .....: 0.00 + No surplus (0<HI<10) Potential Evapotranspiration PE .....: 792.58 + Second mesothermic (712<PE<855)												

