

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

BARCELOS (BRAZIL)

Altitude: 40 m.

Latitude: 0°59'S Longitude: 62°55'W

Temperature observation period.: 1964-1990 (27)

Rainfall observation period....: 1964-1990 (27)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	26.00	31.70	22.20	37.20	10.80	246.0	130.47
Feb.	26.30	31.90	22.10	37.10	10.70	387.0	122.81
Mar.	26.20	31.90	22.20	37.20	15.80	507.0	134.06
Apr.	25.90	31.30	22.00	38.10	15.80	496.0	124.99
May.	25.80	31.20	21.80	39.30	16.10	345.0	126.96
Jun.	25.50	30.80	21.80	36.10	15.50	205.0	118.30
Jul.	25.60	31.10	21.50	35.30	14.80	162.0	123.51
Aug.	25.70	31.60	21.50	36.20	15.00	100.0	125.23
Sep.	25.80	32.00	21.40	36.50	14.60	28.0	123.30
Oct.	26.10	32.30	21.60	36.50	15.10	23.0	132.26
Nov.	26.40	32.40	22.10	36.30	14.90	14.0	133.74
Dec.	26.20	31.90	22.00	36.30	16.20	129.0	134.06
Year	25.96	31.67	21.85	36.84	14.61	2642	1529.7

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	786
Compensated thermicity index.....(Itc):	786
Simple continentality index.....(Ic):	0.9
Diurnality index.....(Id):	10.7
Annual ombrothermic index.....(Io):	8.48
Monthly dry ombrothermic index.....(Iod1):	0.53
Bimonthly dry ombrothermic index.....(Iod2):	0.70
Three monthly dry ombrothermic index.....(Iod3):	0.83
Four monthly dry ombrothermic index.....(Iod4):	1.59
Annual ombro-evaporation index.....(Ioe):	0.98
Annual positive temperature.....(Tp):	3115
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	783
Positive precipitation.....(Pp):	2642

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	8	1	1	2	0

Latitudinal Belt...: Equatorial

Continentalty.....: Hyperoceanic - High Ultrahyperoceanic

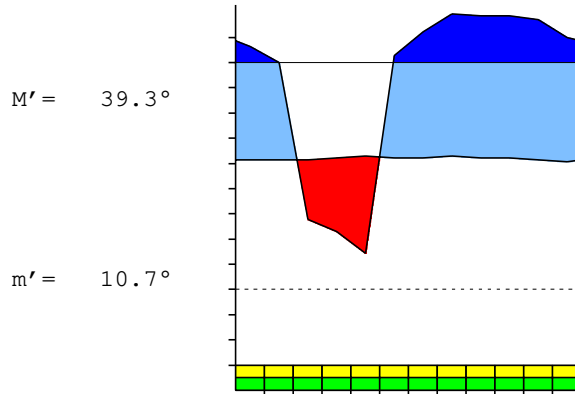
Bioclimate(Variant): TROPICAL PLUVISEASONAL (PLUVISEROTIN, SUBMESOPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL LOW HUMID

BARCELOS (BRAZIL)

40 m

P= 2642 0° 59' S 62° 55' W 27/27 y.
 T= 26.0° Ic= 0.9 Tp= 3115 Tn= 0
 m= 21.8° M= 30.8° Itc= 786 Io= 8.5



TROPICAL PLUVISEASONAL (PLUVISEROTIN)
 UPPER INFRATROPICAL LOW HUMID

WATER INDEX CARD

BARCELOS (BRAZIL)

Altitude: 40 m.

Latitude: 0° 59' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	25.6	124	162	0	100	124	0	38	107	0.3
Aug.	25.7	125	100	-25	75	125	0	0	54	-0.2
Sep.	25.8	123	28	-75	0	103	21	0	27	-0.7
Oct.	26.1	132	23	0	0	23	109	0	13	-0.8
Nov.	26.4	134	14	0	0	14	120	0	7	-0.8
Dec.	26.2	134	129	0	0	129	5	0	3	0.0
Jan.	26.0	130	246	100	100	130	0	16	9	0.8
Feb.	26.3	123	387	0	100	123	0	264	137	2.1
Mar.	26.2	134	507	0	100	134	0	373	255	2.7
Apr.	25.9	125	496	0	100	125	0	371	313	2.9
May.	25.8	127	345	0	100	127	0	218	265	1.7
Jun.	25.5	118	205	0	100	118	0	87	176	0.7
Year	26.0	1530	2642	*	*	1275	255	1367	1367	*

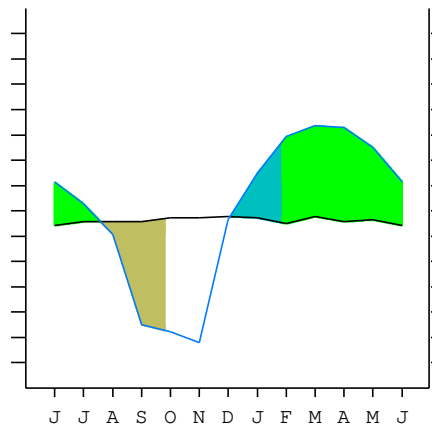
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

BARCELOS (BRAZIL)

0°59' S 62°55' W 40 m 27/27 y.

T= 26.0 Ic= 0.9 TROPICAL PLUVISEASONAL (PLUVISEROTIN)
 m= 21.8 Tp= 3115 UPPER INFRATROPICAL
 M= 30.8 Tn= 0 LOW HUMID
 M' = 39.3 Itc= 786
 m' = 10.7 Io= 8.5
 P= 2642 mm ———
 PE= 1530 mm ———

Imbibing	2 Dec.
Saturation	26 Jan.
Reserve Use	19 Jul.
Deficit	24 Sep.



BARCELOS (BRAZIL)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A1a]
 + Type: A. Hyperoceanic
 + Subtype: 1. Ultrahyperoceanic
 + Variant: a. High

Thermic types [A1.A1]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 1. Equatorial
 + Thermic type: A. Warm
 + Thermic subtype: 1. Torrid

Bioclimatic types [A4e.1a.7b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant ..: e. PLUVISEROTIN, SUBMESOPHYTIC
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 7. HUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Trde (Pse).Itr.Hum

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 1306
 Coldest semester of the year.....(Psw): 1336
 Warmest four months period of the year.....(Pcm1): 776
 Following warmest four months period.....(Pcm2): 1553
 Positive precipitation dryest 3 months.....(Ppd): 65
 Positive precipitation dryest 2 months.....(Ppd2): 37
 Positive precipitation dryest 1 month.....(Ppd1): 14
 Positive precipitation warmest 3 months.....(Pps): 166
 Positive precipitation warmest 2 months.....(Pps2): 143
 Positive precipitation warmest 1 month.....(Pps1): 14
 Positive precipitation coldest 3 months.....(Ppw): 467
 Positive precipitation coldest 2 months.....(Ppw2): 367
 Positive precipitation coldest 1 month.....(Ppw1): 205

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	467	65	762	1348

Tropical rainfall rhythms: 2 > 1 > 3 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 26.4
 Average coldest month [T].....(Tmin): 25.5
 Maximum temp. warmest month [M].....(Tmmax): 32.4
 Minimum temp. coldest month [m].....(Tmmin): 21.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 39.3
 Absolute Min.temp. coldest month [m'].....(Tamin): 10.7
 First warmest contrasted month [M].....(Tcmax): 32.3 (10)
 First coldest contrasted month [m].....(Tcmin): 21.6 (10)
 Dry station temperature.....(Td): 783
 Positive temperature dryest 3 months.....(Tpd): 783
 Positive temperature dryest 2 months.....(Tpd2): 525
 Positive temperature dryest 1 month.....(Tpd1): 264
 Positive temperature warmest 3 months.....(Tps): 787
 Positive temperature warmest 2 months.....(Tps2): 526
 Positive temperature warmest 1 month.....(Tps1): 264
 Positive temperature coldest 3 months.....(Tpw): 768
 Positive temperature coldest 2 months.....(Tpw2): 511
 Positive temperature coldest 1 month.....(Tpw1): 255

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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): 0.58
 Mediterranean index of January.....(Im1): No
 Mediterranean index of January & February.....(Im2): No
 Mediterranean index of December to February...(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1290	2460	3870	5070	4960	3450	2050	1620	1000	280	230	140
Tp	262	260	263	262	259	258	255	256	257	258	261	264
Io (Iom)	4.92	9.46	14.7	19.4	19.2	13.4	8.04	6.33	3.89	1.09	0.88	0.53
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	7620 / 785			13480 / 779			4670 / 768			650 / 783		
Io (Iot)	9.707			17.30			6.081			0.830		
Semesters	December-May						June-November					
Pp(x10)/Tp	21100 / 1564						5320 / 1551					
Io (Iosm)	13.49						3.430					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 26420/3115=8.48 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1290	2460	3870	5070	4960	3450	2050	1620	1000	280	230	140
Tp [T*10]	262	260	263	262	259	258	255	256	257	258	261	264
Iom [Pp/Tp]	492	946	\$\$	\$\$	\$\$	\$\$	804	633	389	109	88	53
Avm [200-Iom]	***	***	***	***	***	***	***	***	***	91	112	147
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	7620 / 785			13480 / 779			4670 / 768			650 / 783		
Iot [Pp/Tp]	971			1730			608			83		
Avs E[Avm<200]	***			***			***			350		
Weak lower arid [1]							Weak upper arid [2]					
Strong lower semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 0.90
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 68.75
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: -5.97
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.68
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 101.78
 + Temperate humid (160>R>100)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 73.47
 + Perhumid (Ia>60)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 446.43
 + Humid (Q>90)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 0.98
 + Humid (2>DR>0)
 Aridity Index of UNEP [I=P/PE]: 1.73
 + Humid (I>0.65)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 97.29
 + Moderate (90<K<120)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region: 3. Termoxeroteric (Mediterranean warm)
 + Thermic type: 1. Megathermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.98	1.61	2.18	2.14	1.43	0.81	0.62	0.36	0.09	0.07	0.04	0.48
T-E ratio	11.70	11.83	11.79	11.65	11.61	11.48	11.52	11.57	11.61	11.75	11.88	11.79
Precipitation-effectiveness:	108.18					Temperature-efficiency: 140.18						
Moisture Index [MI=100*(P-PE)/PE]: 72.71 + B3.Humid high-humid (60<MI<80)												
Index of dryness [DI=100*d/PE]: 16.64 + No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]: 89.35 + Strong surplus (20<HI)												
Potential Evapotranspiration PE: 1529.69 + Megathermic (PE>1440)												

