

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

ROBORE (BOLIVIA)

Altitude: 300 m.

Latitude: 18°19'S Longitude: 59°45'W

Temperature observation period.: 1951-1990 (40)

Rainfall observation period....: 1950-1981 (32)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	27.99	31.25	24.75	0.00	0.00	168.8	166.59
Feb.	27.69	33.17	22.13	0.00	0.00	134.6	143.58
Mar.	27.24	31.48	23.03	0.00	0.00	134.2	148.50
Apr.	25.36	31.10	19.40	0.00	0.00	95.5	111.29
May.	23.53	30.20	17.20	0.00	0.00	63.9	85.28
Jun.	21.84	28.90	14.60	0.00	0.00	61.2	62.07
Jul.	22.50	29.73	14.78	0.00	0.00	20.2	71.99
Aug.	24.33	32.33	16.08	0.00	0.00	30.6	99.01
Sep.	26.55	32.80	19.80	0.00	0.00	57.0	135.90
Oct.	27.88	33.29	22.56	0.00	0.00	96.2	159.74
Nov.	28.11	32.46	23.69	0.00	0.00	119.5	160.26
Dec.	28.44	33.19	23.76	0.00	0.00	162.0	172.17
Year	25.96	31.66	20.15	0.00	0.00	1144	1516.4

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	695
Compensated thermicity index.....(Itc):	695
Simple continentality index.....(Ic):	6.6
Diurnality index.....(Id):	16.3
Annual ombrothermic index.....(Io):	3.67
Monthly dry ombrothermic index.....(Iod1):	0.90
Bimonthly dry ombrothermic index.....(Iod2):	1.08
Three monthly dry ombrothermic index.....(Iod3):	1.47
Four monthly dry ombrothermic index.....(Iod4):	1.77
Annual ombro-evaporation index.....(Ioe):	2.48
Annual positive temperature.....(Tp):	3115
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	734
Positive precipitation.....(Pp):	1144

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

Latitudinal Belt...: Eutropical

Continentality.....: Hyperoceanic - Low Euhyperoceanic

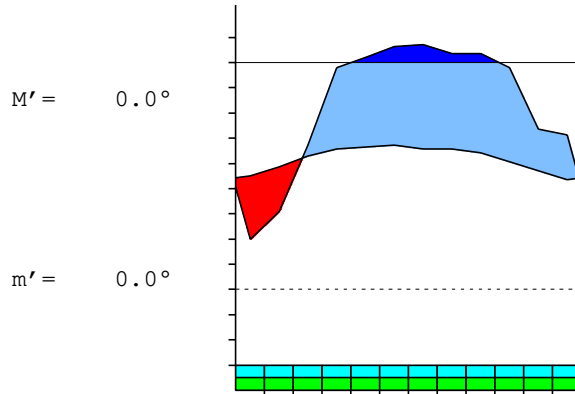
Bioclimate(Variant): TROPICAL PLUVISEASONAL (MESOPHYTIC)

Bioclimatic Belt...: UPPER INFRATROPICAL LOW SUBHUMID

ROBORE (BOLIVIA)

300 m

P= 1144 18° 19' S 59° 45' W 40/32 y.
 T= 26.0° Ic= 6.6 Tp= 3115 Tn= 0
 m= 14.6° M= 28.9° Itc= 695 Io= 3.7



TROPICAL PLUVISEASONAL (MESOPHYTIC)
 UPPER INFRATROPICAL LOW SUBHUMID

WATER INDEX CARD ROBORE (BOLIVIA)
 Altitude: 300 m.

Latitude: 18° 19' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	22.5	72	20	0	0	20	52	0	0	-0.7
Aug.	24.3	99	31	0	0	31	68	0	0	-0.6
Sep.	26.5	136	57	0	0	57	79	0	0	-0.5
Oct.	27.9	160	96	0	0	96	64	0	0	-0.3
Nov.	28.1	160	120	0	0	120	41	0	0	-0.2
Dec.	28.4	172	162	0	0	162	10	0	0	0.0
Jan.	28.0	167	169	2	2	167	0	0	0	0.0
Feb.	27.7	144	135	-2	0	137	7	0	0	0.0
Mar.	27.2	148	134	0	0	134	14	0	0	0.0
Apr.	25.4	111	96	0	0	96	16	0	0	-0.1
May.	23.5	85	64	0	0	64	21	0	0	-0.2
Jun.	21.8	62	61	0	0	61	1	0	0	0.0
Year	26.0	1516	1144	*	*	1144	373	0	0	*

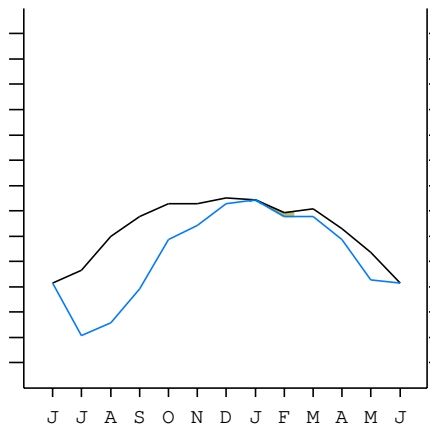
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

ROBORE (BOLIVIA)

18°19' S 59°45' W 300 m 40/32 y.

T= 26.0 Ic= 6.6 TROPICAL PLUVISEASONAL (MESOPHYTIC)
 m= 14.6 Tp= 3115 UPPER INFRATROPICAL
 M= 28.9 Tn= 0 LOW SUBHUMID
 M' = 0.0 Itc= 695
 m' = 0.0 Io= 3.7
 P= 1144 mm ———
 PE= 1516 mm ———

Imbibing	25 Dec.
Saturation	6 Jan.
Reserve Use	8 Feb.
Deficit	



ROBORE (BOLIVIA)

Latitude: 18°19'S Longitude: 59°45'W Altitude: 300 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [A2b]
 + Type: A. Hyperoceanic
 + Subtype: 2. Euhyperoceanic
 + Variant: b. Low

Thermic types [A2.A1]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 1. Torrid

Bioclimatic types [A4.1a.6b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant .:
 + Thermic type.....: 1. INFRATROPICAL
 + Thermic subtype.....: a. UPPER
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW

Bioclimatic Classification: Trde.Itr.Shu

ROBORE (BOLIVIA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 815
 Coldest semester of the year.....(Psw): 328
 Warmest four months period of the year.....(Pcm1): 547
 Following warmest four months period.....(Pcm2): 428
 Positive precipitation dryest 3 months.....(Ppd): 108
 Positive precipitation dryest 2 months.....(Ppd2): 51
 Positive precipitation dryest 1 month.....(Ppd1): 20
 Positive precipitation warmest 3 months.....(Pps): 450
 Positive precipitation warmest 2 months.....(Pps2): 282
 Positive precipitation warmest 1 month.....(Pps1): 162
 Positive precipitation coldest 3 months.....(Ppw): 145
 Positive precipitation coldest 2 months.....(Ppw2): 81
 Positive precipitation coldest 1 month.....(Ppw1): 61

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	111	272	465	293

Tropical rainfall rhythms: 1 > 2 > 4 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 28.4
 Average coldest month [T].....(Tmin): 21.8
 Maximum temp. warmest month [M].....(Tmmax): 33.3
 Minimum temp. coldest month [m].....(Tmmin): 14.6
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0
 First warmest contrasted month [M].....(Tcmax): 32.3 (8)
 First coldest contrasted month [m].....(Tcmin): 16.1 (8)
 Dry station temperature.....(Td): 734
 Positive temperature dryest 3 months.....(Tpd): 734
 Positive temperature dryest 2 months.....(Tpd2): 468
 Positive temperature dryest 1 month.....(Tpd1): 225
 Positive temperature warmest 3 months.....(Tps): 845
 Positive temperature warmest 2 months.....(Tps2): 566
 Positive temperature warmest 1 month.....(Tps1): 284
 Positive temperature coldest 3 months.....(Tpw): 679
 Positive temperature coldest 2 months.....(Tpw2): 443
 Positive temperature coldest 1 month.....(Tpw1): 218

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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)												
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): 1.33
 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)	1620	1688	1346	1342	955	639	612	202	306	570	962	1195
Tp	284	280	277	272	254	235	218	225	243	266	279	281
Io (Iom)	5.70	6.03	4.86	4.93	3.77	2.72	2.80	0.90	1.26	2.15	3.45	4.25
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	4655 / 841			2936 / 761			1120 / 687			2727 / 825		
Io (Iot)	5.533			3.857			1.630			3.304		
Semesters	December-May						June-November					
Pp(x10)/Tp	7591 / 1603						3847 / 1512					
Io (Iosm)	4.737						2.544					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 11437/3115=3.67 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1620	1688	1346	1342	955	639	612	202	306	570	962	1195
Tp [T*10]	284	280	277	272	254	235	218	225	243	266	279	281
Iom [Pp/Tp]	570	603	486	493	377	272	280	90	126	215	345	425
Avm [200-Iom]	***	***	***	***	***	***	***	110	74	***	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	4655 / 841			2936 / 761			1120 / 687			2727 / 825		
Iot [Pp/Tp]	553			386			163			330		
Avs E[Avm<200]	***			***			***			***		
Weak upper arid [1]							Weak lower semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	6.60
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		15.30
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		9.65
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		0.93
+ Oceanic (0.6<CI<1.1)		
Rainfall Index of Lang (1925) [R=P/T]		44.07
+ Semiarid (60>R>40)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		31.81
+ Humid (60>Ia>30)		
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]		127.78
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		2.27
+ Semiarid (3>DR>2)		
Aridity Index of UNEP [I=P/PE]		0.75
+ Humid (I>0.65)		
Potential Erosion I of Fournier (1960) [K=Pi ² /P]		24.92
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate

- + Climate
- + Region
- + Thermic type: 1. Megathermic

Thornthwaite (1948)													
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
P-E ratio	0.62	0.48	0.49	0.35	0.23	0.23	0.07	0.10	0.19	0.33	0.42	0.58	
T-E ratio	12.60	12.46	12.26	11.41	10.59	9.83	10.13	10.95	11.95	12.55	12.65	12.80	
Precipitation-effectiveness:	40.90						Temperature-efficiency						140.16
Moisture Index [MI=100*(P-PE)/PE]													
+ C1.Subhumid dry (-33.3<MI<0)													
Index of dryness [DI=100*d/PE]													
+ Moderate deficit (16.7<DI<33.3)													
Index of humidity [HI=100*s/PE]													
+ No surplus (0<HI<10)													
Potential Evapotranspiration PE													
+ Megathermic (PE>1440)													

