

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

SAN IGNACIO DE BAL (BOLIVIA)

Altitude: 370 m.

Latitude: 16°22'S Longitude: 60°59'W

Temperature observation period.: 1989-1994 (6)

Rainfall observation period....: 1977-1994 (18)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	22.50	28.89	16.11	32.78	12.78	180.9	100.89
Feb.	21.95	28.33	15.56	32.78	7.22	132.8	82.99
Mar.	22.78	30.00	15.56	34.44	8.89	138.4	97.55
Apr.	20.83	29.44	12.22	32.78	1.67	52.1	72.82
May.	19.44	29.44	9.44	31.67	-2.22	47.2	61.28
Jun.	20.27	28.33	12.22	31.11	3.89	33.0	64.56
Jul.	19.73	28.89	10.56	32.78	2.78	21.6	62.94
Aug.	19.45	28.33	10.56	35.00	2.78	27.9	63.87
Sep.	23.06	31.67	14.44	37.78	5.56	43.9	95.78
Oct.	23.89	31.67	16.11	37.22	10.00	86.6	111.94
Nov.	24.17	31.11	17.22	35.00	10.00	134.4	115.24
Dec.	24.73	31.67	17.78	36.67	10.00	150.9	128.87
Year	21.90	29.81	13.98	34.17	6.11	1050	1058.7

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	608
Compensated thermicity index.....(Itc):	608
Simple continentality index.....(Ic):	5.3
Diurnality index.....(Id):	20.0
Annual ombrothermic index.....(Io):	3.99
Monthly dry ombrothermic index.....(Iod1):	1.09
Bimonthly dry ombrothermic index.....(Iod2):	1.26
Threemonthly dry ombrothermic index.....(Iod3):	1.39
Fourmonthly dry ombrothermic index.....(Iod4):	1.64
Annual ombro-evaporation index.....(Ioe):	0.99
Annual positive temperature.....(Tp):	2628
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	595
Positive precipitation.....(Pp):	1050

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

Latitudinal Belt...: Eutropical

Continentalty.....: Hyperoceanic - High Euhyperoceanic

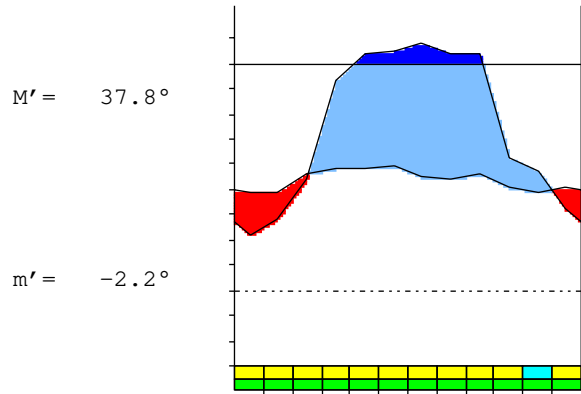
Bioclimate(Variant): TROPICAL PLUVISEASONAL (SUBMESOPHYTIC)

Bioclimatic Belt...: LOW THERMOTROPICAL LOW SUBHUMID

SAN IGNACIO DE BAL (BOLIVIA)

370 m

P= 1050 16° 22'S 60° 59'W 6/18 y.
 T= 21.9 ° Ic= 5.3 Tp= 2628 Tn= 0
 m= 9.4 ° M= 29.4 ° Itc= 608 Io= 4.0



TROPICAL PLUVISEASONAL (SUBMESOPHYTIC)
 LOW THERMOTROPICAL LOW SUBHUMID

WATER INDEX CARD SAN IGNACIO DE BAL (BOLIVIA)
 Altitude: 370 m. Latitude: 16° 22'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	19.7	63	22	-34	0	55	8	0	2	-0.6
Aug.	19.5	64	28	0	0	28	36	0	1	-0.5
Sep.	23.1	96	44	0	0	44	52	0	1	-0.5
Oct.	23.9	112	87	0	0	87	25	0	0	-0.2
Nov.	24.2	115	134	19	19	115	0	0	0	0.1
Dec.	24.7	129	151	22	41	129	0	0	0	0.1
Jan.	22.5	101	181	59	100	101	0	21	11	0.7
Feb.	22.0	83	133	0	100	83	0	50	30	0.6
Mar.	22.8	98	138	0	100	98	0	41	36	0.4
Apr.	20.8	73	52	-21	79	73	0	0	18	-0.2
May.	19.4	61	47	-14	65	61	0	0	9	-0.2
Jun.	20.3	65	33	-32	34	65	0	0	4	-0.4
Year	21.9	1059	1050	*	*	938	121	112	112	*

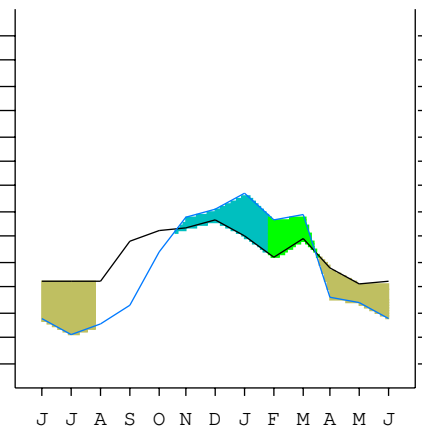
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

SAN IGNACIO DE BAL (BOLIVIA)

16°22'S 60°59'W 370 m 6/18 y.

T= 21.9 Ic= 5.3 TROPICAL PLUVISEASONAL (SUBMESOPHYTIC)
 m= 9.4 Tp= 2628 LOW THERMOTROPICAL
 M= 29.4 Tn= 0 LOW SUBHUMID
 M' = 37.8 Itc= 608
 m' = -2.2 Io= 4.0
 P= 1050 mm ———
 PE= 1059 mm ———

Imbibing	18 Oct.
Saturation	23 Jan.
Reserve Use	20 Mar.
Deficit	25 Jul.



SAN IGNACIO DE BAL (BOLIVIA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [A2a]
 + Type: A. Hyperoceanic
 + Subtype: 2. Euhyperoceanic
 + Variant: a. High
 Thermic types [A2.A2]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 2. Warm
 Bioclimatic types [A4.2b.6b]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 4. PLUVISEASONAL
 + Bioclimatic variant .: SUBMESOPHYTIC
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 6. SUBHUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic ClassificationTrps(Smf).Ttr.Shu.Eho

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 730
 Coldest semester of the year.....(Psw): 320
 Warmest four months period of the year.....(Pcm1): 416
 Following warmest four months period.....(Pcm2): 504
 Positive precipitation dryest 3 months.....(Ppd): 83
 Positive precipitation dryest 2 months.....(Ppd2): 50
 Positive precipitation dryest 1 month.....(Ppd1): 22
 Positive precipitation warmest 3 months.....(Pps): 372
 Positive precipitation warmest 2 months.....(Pps2): 285
 Positive precipitation warmest 1 month.....(Pps1): 151
 Positive precipitation coldest 3 months.....(Ppw): 102
 Positive precipitation coldest 2 months.....(Ppw2): 50
 Positive precipitation coldest 1 month.....(Ppw1): 47

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	82	264	464	237

Tropical rainfall rhythms: 1 > 4 > 2 > 3

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 24.7
 Average coldest month [T].....(Tmin): 19.4
 Maximum temp. warmest month [M].....(Tmmax): 31.7
 Minimum temp. coldest month [m].....(Tmmin): 9.4
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.8
 Absolute Min.temp. coldest month [m'].....(Tamin): -2.2
 First warmest contrasted month [M].....(Tcmax): 29.4 (5)
 First coldest contrasted month [m].....(Tcmin): 9.4 (5)
 Dry station temperature.....(Td): 595
 Positive temperature dryest 3 months.....(Tpd): 595
 Positive temperature dryest 2 months.....(Tpd2): 392
 Positive temperature dryest 1 month.....(Tpd1): 197
 Positive temperature warmest 3 months.....(Tps): 728
 Positive temperature warmest 2 months.....(Tps2): 489
 Positive temperature warmest 1 month.....(Tps1): 247
 Positive temperature coldest 3 months.....(Tpw): 594
 Positive temperature coldest 2 months.....(Tpw2): 392
 Positive temperature coldest 1 month.....(Tpw1): 194

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.01
 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)	1509	1809	1328	1384	521	472	330	216	279	439	866	1344
Tp	247	225	220	228	208	194	203	197	195	231	239	242
Io (Iom)	6.10	8.04	6.05	6.08	2.50	2.43	1.63	1.09	1.43	1.90	3.62	5.56
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	4646 / 692			2377 / 631			825 / 595			2649 / 711		
Io (Iot)	6.716			3.770			1.388			3.725		
Semesters	December-May						June-November					
Pp(x10)/Tp	7023 / 1322						3474 / 1306					
Io (Iosm)	5.311						2.661					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 10497/2628=3.99 There is No Yearly Aridity

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1509	1809	1328	1384	521	472	330	216	279	439	866	1344
Tp [T*10]	247	225	220	228	208	194	203	197	195	231	239	242
Iom [Pp/Tp]	610	804	605	608	250	243	163	109	143	190	362	556
Avm [200-Iom]	***	***	***	***	***	***	37	91	57	10	***	***
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	4646 / 692			2377 / 631			825 / 595			2649 / 711		
Iot [Pp/Tp]	672			377			139			372		
Avs E[Avm<200]	***			***			184			***		
Strong lower semiarid [1]						Weak lower semiarid [2]						
Strong upper semiarid [1]						Weak upper semiarid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp):	5.29
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]		11.51
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]		6.25
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)]		0.82
+ Oceanic (0.6<CI<1.1)		
Rainfall Index of Lang (1925) [R=P/T]		47.93
+ Semiarid (60>R>40)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)]		32.91
+ Humid (60>Ia>30)		
I of Emberger (1930) [Q=100*P/(Tmmax ² -Tmmin ²)]		114.86
+ Humid (Q>90)		
I of Dantin & Revenga (1940) [DR=100*T/P]		2.09
+ Semiarid (3>DR>2)		
Aridity Index of UNEP [I=P/PE]		0.99
+ Humid (I>0.65)		
Potencial Erosion I of Fournier (1960) [K=Pi ² /P].....		31.18
+ 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. Termoxeroteric (Mediterranean warm)
 + Thermic type: 2. Macrothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.76	0.54	0.56	0.20	0.18	0.12	0.08	0.10	0.15	0.32	0.52	0.59
T-E ratio	10.13	9.88	10.25	9.37	8.75	9.12	8.88	8.75	10.38	10.75	10.88	11.13
Precipitation-effectiveness: 41.24						Temperature-efficiency: 118.26						
Moisture Index [MI=100*(P-PE)/PE]												
+ C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]												
+ No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]												
+ Moderate surplus (10<HI<20)												
Potential Evapotranspiration PE												
+ Forth mesothermic (997<PE<1440)												

