

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

LAGO ARGENTINO (ARGENTINA)

Altitude: 223 m.

Latitude: 50°20'S Longitude: 72°16'W

Temperature observation period.: 1982-1994 (13)

Rainfall observation period....: 1984-1994 (11)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPi
Jan.	12.78	18.89	6.67	27.22	-2.22	16.8	95.82
Feb.	13.06	19.44	6.67	27.22	0.00	16.3	80.59
Mar.	10.28	16.11	4.44	27.78	-2.22	23.4	63.25
Apr.	7.23	12.78	1.67	18.89	-8.89	24.6	37.28
May.	3.89	8.33	-0.56	17.78	-7.78	25.4	18.95
Jun.	1.95	6.11	-2.22	18.89	-10.00	10.4	8.76
Jul.	1.11	5.00	-2.78	17.22	-11.11	14.2	5.74
Aug.	2.22	6.67	-2.22	16.11	-12.78	13.2	12.45
Sep.	5.28	10.56	0.00	17.22	-7.22	15.5	31.26
Oct.	8.61	15.00	2.22	27.22	-2.78	11.7	58.33
Nov.	10.28	16.67	3.89	27.78	-1.11	11.2	74.17
Dec.	12.50	18.89	6.11	27.22	0.00	11.4	96.67
Year	7.43	12.87	1.99	22.55	-5.51	194	583.27

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	97
Compensated thermicity index.....(Itc):	97
Simple continentality index.....(Ic):	12.0
Diurnality index.....(Id):	12.8
Annual ombrothermic index.....(Io):	2.18
Monthly estival ombrothermic index.....(Ios1):	0.91
Bimonthly estival ombrothermic index.....(Ios2):	1.28
Threemonthly estival ombrothermic index.....(Ios3):	1.16
Fourmonthly estival ombrothermic index.....(Ios4):	1.15
Annual ombro-evaporation index.....(Ioe):	0.88
Annual positive temperature.....(Tp):	892
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	383
Positive precipitation.....(Pp):	194

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

Latitudinal Belt...: High eutemperate

Continentalty.....: Oceanic - High Semihyperoceanic

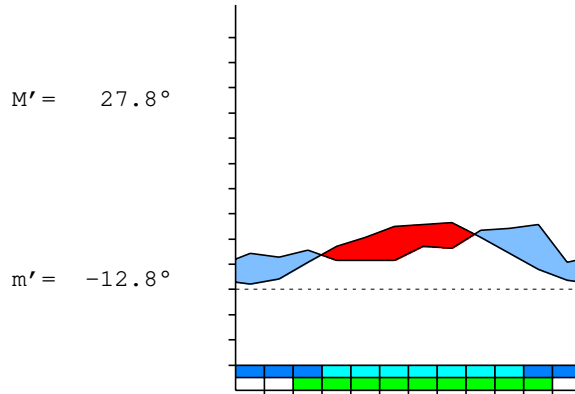
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: LOW OROMEDITERRANEAN LOW DRY

LAGO ARGENTINO (ARGENTINA)

223 m

P= 194 50° 20' S 72° 16' W 13/11 y.  
 T= 7.4° Ic= 12.0 Tp= 892 Tn= 0  
 m= -2.8° M= 5.0° Itc= 97 Io= 2.2



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 LOW OROMEDITERRANEAN LOW DRY

WATER INDEX CARD LAGO ARGENTINO (ARGENTINA)  
 Altitude: 223 m. Latitude: 50° 20' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	1.1	6	14	8	17	6	0	0	0	1.4
Aug.	2.2	12	13	1	17	12	0	0	0	0.0
Sep.	5.3	31	16	-16	2	31	0	0	0	-0.5
Oct.	8.6	58	12	-2	0	13	45	0	0	-0.7
Nov.	10.3	74	11	0	0	11	63	0	0	-0.8
Dec.	12.5	97	11	0	0	11	85	0	0	-0.8
Jan.	12.8	96	17	0	0	17	79	0	0	-0.8
Feb.	13.1	81	16	0	0	16	64	0	0	-0.7
Mar.	10.3	63	23	0	0	23	40	0	0	-0.6
Apr.	7.2	37	25	0	0	25	13	0	0	-0.3
May.	3.9	19	25	6	6	19	0	0	0	0.3
Jun.	2.0	9	10	2	8	9	0	0	0	0.1
Year	7.4	583	194	*	*	194	389	0	0	*

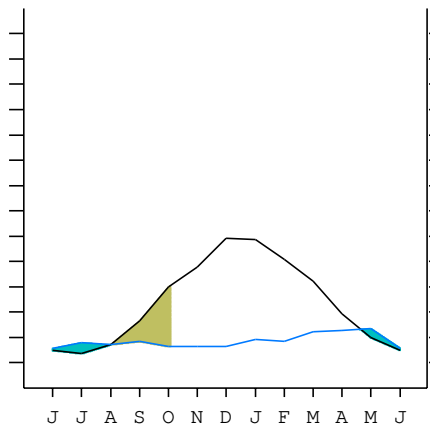
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration  
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

LAGO ARGENTINO (ARGENTINA)

50°20' S 72°16' W 223 m 13/11 y.

T= 7.4 Ic= 12.0 MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= -2.8 Tp= 892 LOW OROMEDITERRANEAN  
 M= 5.0 Tn= 0 LOW DRY  
 M' = 27.8 Itc= 97  
 m' = -12.8 Io= 2.2  
 P= 194 mm ———  
 PE= 583 mm ———

Imbibing	20 Apr.
Saturation	2 Aug.
Reserve Use	1 Oct.
Deficit	



LAGO ARGENTINO (ARGENTINA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1a]  
 + Type .....: B. Oceanic  
 + Subtype .....: 1. Semihyperoceanic  
 + Variant .....: a. High  
 Thermic types [B1.B5]  
 + Latitudinal zone .....: B. Temperate  
 + Latitudinal belt .....: 1. High eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 5. Subtemperate  
 Bioclimatic types [B8.5b.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 5. OROMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Mehc.Ome.Dry

LAGO ARGENTINO (ARGENTINA)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 91  
 Coldest semester of the year.....(Psw): 103  
 Warmest four months period of the year.....(Pcm1): 56  
 Following warmest four months period.....(Pcm2): 84  
 Positive precipitation dryest 3 months.....(Ppd): 34  
 Positive precipitation dryest 2 months.....(Ppd2): 23  
 Positive precipitation dryest 1 month.....(Ppd1): 10  
 Positive precipitation warmest 3 months.....(Pps): 45  
 Positive precipitation warmest 2 months.....(Pps2): 33  
 Positive precipitation warmest 1 month.....(Pps1): 16  
 Positive precipitation coldest 3 months.....(Ppw): 38  
 Positive precipitation coldest 2 months.....(Ppw2): 25  
 Positive precipitation coldest 1 month.....(Ppw1): 14

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	37	38	44	73

Seasonal rainfall rhythms: F > S > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 13.1  
 Average coldest month [T].....(Tmin): 1.1  
 Maximum temp. warmest month [M].....(Tmmax): 19.4  
 Minimum temp. coldest month [m].....(Tmmin): -2.8  
 Absolute Max.temp. warmest month [M'].....(Tamax): 27.8  
 Absolute Min.temp. coldest month [m'].....(Tamin): -12.8  
 First warmest contrasted month [M].....(Tcmax): 15.0 (10)  
 First coldest contrasted month [m].....(Tcmin): 2.2 (10)  
 Estival temperature.....(Ts): 383  
 Positive temperature dryest 3 months.....(Tpd): 314  
 Positive temperature dryest 2 months.....(Tpd2): 228  
 Positive temperature dryest 1 month.....(Tpd1): 20  
 Positive temperature warmest 3 months.....(Tps): 383  
 Positive temperature warmest 2 months.....(Tps2): 258  
 Positive temperature warmest 1 month.....(Tps1): 131  
 Positive temperature coldest 3 months.....(Tpw): 53  
 Positive temperature coldest 2 months.....(Tpw2): 31  
 Positive temperature coldest 1 month.....(Tpw1): 11

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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
Ultragelid...[M' <=0] (Pf)												
Hypergelid...[M <=0] (Pf)												
Gelid.....[T <=0] (Pf)												
Subgelid.....[m <=0] (Pf)					o	o	o	o	o			
Pregelid.....[m' <=0] (Pf)	o	o	o	o	o	o	o	o	o	o	o	o
Agelid.....[m' > 0] (Pf)												
HiperAgelid..[all>0] (Pf)												

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## OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 3.00  
Mediterranean index of January.....(Im1): 5.70  
Mediterranean index of January & February.....(Im2): 5.33  
Mediterranean index of December to February...(Im3): 6.14

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	114	168	163	234	246	254	104	142	132	155	117	112
Tp	125	128	131	103	72	39	20	11	22	53	86	103
Io (Iom)	0.91	1.31	1.25	2.28	3.40	6.53	5.33	12.8	5.95	2.94	1.36	1.09
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	445 / 383			734 / 214			378 / 53			384 / 242		
Io (Iot)	1.161			3.430			7.159			1.589		
Semesters	December-May						June-November					
Pp(x10)/Tp	1179 / 597						762 / 295					
Io (Iosm)	1.974						2.587					

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## Aridity Value Index (AVI)

[10xPP/TP=IO]: 1941/892=2.18 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	114	168	163	234	246	254	104	142	132	155	117	112
Tp [T*10]	125	128	131	103	72	39	20	11	22	53	86	103
Iom [Pp/Tp]	91	131	125	228	340	653	533	\$\$	595	294	136	109
Avm [200-Iom]	109	69	75	***	***	***	***	***	***	***	64	91
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	445 / 383			734 / 214			378 / 53			384 / 242		
Iot [Pp/Tp]	116			343			716			159		
Avs E[Avm<200]	253			***			***			***		
Weak upper arid [1]						Strong lower semiarid [2]						
Weak lower semiarid [3]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	11.95
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		5.99
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		9.38
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		0.67
+ Oceanic (0.6<CI<1.1)		
Rainfall Index of Lang (1925) [R=P/T] .....		26.12
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		11.13
+ Arid -steppic- (15>Ia>5)		
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....		52.43
+ Subhumid (90>Q>50)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		3.83
+ Arid (6>DR>3)		
Aridity Index of UNEP [I=P/PE] .....		0.33
+ Semiarid (0.5>Im>0.2)		
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....		3.32
+ Very low (K<60)		

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)  
 + Climate .....

- + Climate .....
- + Region .....
- + Thermic type: 5. Meso-microthermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.07	0.07	0.11	0.13	0.15	0.06	0.09	0.08	0.08	0.05	0.05	0.05
T-E ratio	5.75	5.88	4.63	3.25	1.75	0.88	0.50	1.00	2.38	3.87	4.63	5.63
Precipitation-effectiveness: 9.91						Temperature-efficiency .....						40.14
Moisture Index [MI=100*(P-PE)/PE] .....												-66.72
+ E.Dry (-110<MI<-66.7)												
Index of dryness [DI=100*d/PE] .....												66.71
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												583.27
+ First mesothermic (570<PE<712)												

