

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

VIEDMA AERO (ARGENTINA)

Altitude: 6 m.

Latitude: 40°51'S Longitude: 63°1'W

Temperature observation period.: 1971-1993 (23)

Rainfall observation period....: 1971-1993 (23)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	21.94	29.25	14.95	0.00	0.00	33.6	130.12
Feb.	20.94	23.60	18.40	0.00	0.00	39.6	102.41
Mar.	18.20	22.48	14.03	0.00	0.00	34.1	83.45
Apr.	14.31	18.58	10.13	0.00	0.00	33.3	51.07
May.	10.12	15.35	4.95	0.00	0.00	33.5	28.15
Jun.	7.01	11.10	3.30	0.00	0.00	22.0	14.92
Jul.	6.85	12.00	1.60	0.00	0.00	24.9	15.55
Aug.	8.34	11.38	5.53	0.00	0.00	22.0	22.97
Sep.	10.81	16.00	5.60	0.00	0.00	23.5	36.46
Oct.	14.01	18.00	10.20	0.00	0.00	25.5	61.22
Nov.	17.54	23.83	11.48	0.00	0.00	25.2	89.42
Dec.	20.31	26.08	15.03	0.00	0.00	24.0	119.00
Year	14.20	18.97	9.60	0.00	0.00	341	754.75

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	278
Compensated thermicity index.....(Itc):	278
Simple continentality index.....(Ic):	15.1
Diurnality index.....(Id):	14.3
Annual ombrothermic index.....(Io):	2.00
Monthly estival ombrothermic index.....(Ios1):	1.18
Bimonthly estival ombrothermic index.....(Ios2):	1.71
Threemonthly estival ombrothermic index.....(Ios3):	1.54
Fourmonthly estival ombrothermic index.....(Ios4):	1.52
Annual ombro-evaporation index.....(Ioe):	1.26
Annual positive temperature.....(Tp):	1704
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	632
Positive precipitation.....(Pp):	341

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	0	6	6	0	0

Latitudinal Belt...: Low eutemperate

Continentalty.....: Oceanic - Low Euoceanic

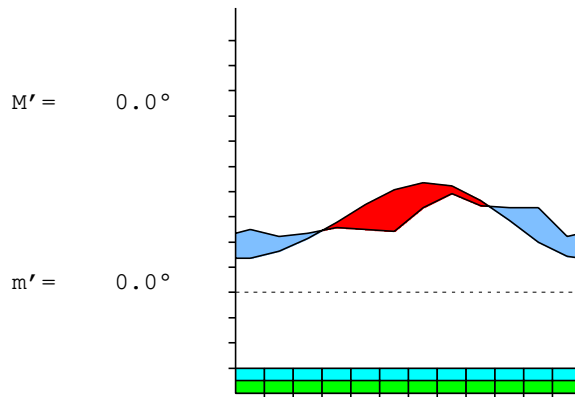
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt...: UPPER MESOMEDITERRANEAN LOW DRY

VIEDMA AERO (ARGENTINA)

6 m

P= 341 40° 51'S 63° 1'W 23/23 y.  
 T= 14.2° Ic= 15.1 Tp= 1704 Tn= 0  
 m= 1.6° M= 12.0° Itc= 278 Io= 2.0



MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 UPPER MESOMEDITERRANEAN LOW DRY

WATER INDEX CARD  
 Altitude: 6 m.

VIEDMA AERO (ARGENTINA)  
 Latitude: 40° 51'S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	6.8	16	25	9	22	16	0	0	0	0.5
Aug.	8.3	23	22	-1	21	23	0	0	0	0.0
Sep.	10.8	36	24	-13	8	36	0	0	0	-0.3
Oct.	14.0	61	25	-8	0	33	28	0	0	-0.5
Nov.	17.5	89	25	0	0	25	64	0	0	-0.7
Dec.	20.3	119	24	0	0	24	95	0	0	-0.7
Jan.	21.9	130	34	0	0	34	96	0	0	-0.7
Feb.	20.9	102	40	0	0	40	63	0	0	-0.6
Mar.	18.2	83	34	0	0	34	49	0	0	-0.5
Apr.	14.3	51	33	0	0	33	18	0	0	-0.3
May.	10.1	28	34	5	5	28	0	0	0	0.1
Jun.	7.0	15	22	7	12	15	0	0	0	0.4
Year	14.2	755	341	*	*	341	414	0	0	*

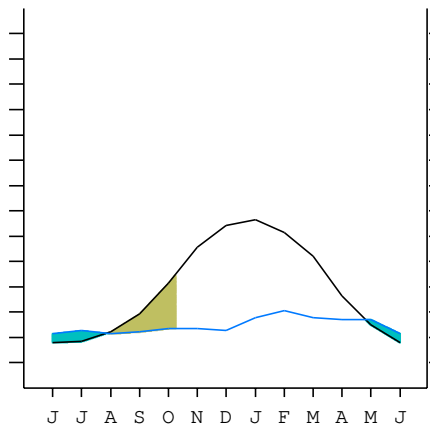
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration  
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

VIEDMA AERO (ARGENTINA)

40°51'S 63°1'W 6 m 23/23 y.

T= 14.2 Ic= 15.1 MEDITERRANEAN PLUVISEASONAL-OCEANIC  
 m= 1.6 Tp= 1704 UPPER MESOMEDITERRANEAN  
 M= 12.0 Tn= 0 LOW DRY  
 M' = 0.0 Itc= 278  
 m' = 0.0 Io= 2.0  
 P= 341 mm  
 PE= 755 mm

Imbibing	24 Apr.
Saturation	28 Jul.
Reserve Use	7 Oct.
Deficit	



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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B2b]  
 + Type .....: B. Oceanic  
 + Subtype .....: 2. Euoceanic  
 + Variant .....: b. Low  
 Thermic types [B1.B4]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. Low eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 4. Temperate  
 Bioclimatic types [B8.3a.5b]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 8. PLUVISEASONAL-OCEANIC  
 + Bioclimatic variant ..:  
 + Thermic type.....: 3. MESOMEDITERRANEAN  
 + Thermic subtype.....: a. UPPER  
 + Ombrothermic type ...: 5. DRY  
 + Ombrothermic subtype : b. LOW  
 Bioclimatic Classification .....: Mehc.Mme.Dry

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 190  
 Coldest semester of the year.....(Psw): 151  
 Warmest four months period of the year.....(Pcm1): 131  
 Following warmest four months period.....(Pcm2): 114  
 Positive precipitation dryest 3 months.....(Ppd): 69  
 Positive precipitation dryest 2 months.....(Ppd2): 45  
 Positive precipitation dryest 1 month.....(Ppd1): 22  
 Positive precipitation warmest 3 months.....(Pps): 97  
 Positive precipitation warmest 2 months.....(Pps2): 73  
 Positive precipitation warmest 1 month.....(Pps1): 34  
 Positive precipitation coldest 3 months.....(Ppw): 69  
 Positive precipitation coldest 2 months.....(Ppw2): 47  
 Positive precipitation coldest 1 month.....(Ppw1): 25

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	68	74	97	100

Seasonal rainfall rhythms: F > S > P > W

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 21.9  
 Average coldest month [T].....(Tmin): 6.8  
 Maximum temp. warmest month [M].....(Tmmax): 29.3  
 Minimum temp. coldest month [m].....(Tmmin): 1.6  
 Absolute Max.temp. warmest month [M'].....(Tamax): 0.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): 0.0  
 First warmest contrasted month [M].....(Tcmax): 29.3 (1)  
 First coldest contrasted month [m].....(Tcmin): 14.9 (1)  
 Estival temperature.....(Ts): 632  
 Positive temperature dryest 3 months.....(Tpd): 222  
 Positive temperature dryest 2 months.....(Tpd2): 192  
 Positive temperature dryest 1 month.....(Tpd1): 83  
 Positive temperature warmest 3 months.....(Tps): 632  
 Positive temperature warmest 2 months.....(Tps2): 429  
 Positive temperature warmest 1 month.....(Tps1): 219  
 Positive temperature coldest 3 months.....(Tpw): 222  
 Positive temperature coldest 2 months.....(Tpw2): 139  
 Positive temperature coldest 1 month.....(Tpw1): 69

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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): 2.21  
 Mediterranean index of January.....(Im1): 3.87  
 Mediterranean index of January & February.....(Im2): 3.18  
 Mediterranean index of December to February...(Im3): 3.62

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	240	336	396	341	333	335	220	249	220	235	255	252
Tp	203	219	209	182	143	101	70	69	83	108	140	175
Io (Iom)	1.18	1.53	1.89	1.87	2.33	3.31	3.13	3.63	2.63	2.18	1.82	1.44
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	972 / 632			1009 / 426			688 / 222			742 / 424		
Io (Iot)	1.539			2.368			3.097			1.751		
Semesters	December-May						June-November					
Pp(x10)/Tp	1981 / 1058						1429 / 646					
Io (Iosm)	1.873						2.214					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 3411/1704=2.00 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	240	336	396	341	333	335	220	249	220	235	255	252
Tp [T*10]	203	219	209	182	143	101	70	69	83	108	140	175
Iom [Pp/Tp]	118	153	189	187	233	331	313	363	263	218	182	144
Avm [200-Iom]	82	47	11	13	***	***	***	***	***	***	18	56
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	972 / 632			1009 / 426			688 / 222			742 / 424		
Iot [Pp/Tp]	154			237			310			175		
Avs E[Avm<200]	139			***			***			***		
Strong lower semiarid [1]						Weak lower semiarid [1]						
Strong upper semiarid [2]						Weak upper semiarid [3]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp): 15.09
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....	18.82
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....	19.08
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....	1.03
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T] .....	24.02
+ Steppic (40>R>0)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....	14.10
+ Arid -steppic- (15>Ia>5)	
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....	39.99
+ Semiarid (50>Q>30)	
I of Dantin & Revenga (1940) [DR=100*T/P] .....	4.16
+ Arid (6>DR>3)	
Aridity Index of UNEP [I=P/PE] .....	0.45
+ Semiarid (0.5>Im>0.2)	
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....	4.60
+ Very low (K<60)	

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BIOCLIMATIC INDICES II

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

- + Climate .....
- + Region .....
- + Thermic type: 4. Mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.12	0.15	0.13	0.14	0.16	0.11	0.13	0.11	0.11	0.11	0.10	0.08
T-E ratio	9.87	9.42	8.19	6.44	4.55	3.15	3.08	3.75	4.86	6.30	7.89	9.14
Precipitation-effectiveness: 14.58						Temperature-efficiency .....						76.67
Moisture Index [MI=100*(P-PE)/PE] .....												-54.81
+ D.Semiarid (-66.7<MI<-33.3)												
Index of dryness [DI=100*d/PE] .....												54.80
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												754.75
+ Second mesothermic (712<PE<855)												

