

# Phytosociological Research Center

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## Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PUERTO DESEADO (ARGENTINA)

Altitude: 79 m.

Latitude: 47°44'S Longitude: 65°55'W

Temperature observation period.: 1941-1950 (10)

Rainfall observation period....: 1941-1950 (10)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	15.00	21.90	10.20	37.00	3.00	18.0	98.43
Feb.	15.30	22.40	10.10	36.70	3.10	11.0	83.28
Mar.	13.30	19.50	8.40	33.30	0.00	24.0	70.38
Apr.	10.60	16.40	5.90	26.00	-2.70	13.0	45.56
May.	6.90	11.10	3.00	22.50	-8.90	25.0	25.56
Jun.	4.50	8.40	1.10	17.40	-9.50	10.0	14.14
Jul.	4.40	8.10	1.20	17.20	-9.50	23.0	14.99
Aug.	4.80	9.50	0.90	20.30	-9.00	16.0	18.84
Sep.	7.20	12.60	2.70	23.90	-4.60	21.0	33.11
Oct.	10.60	17.10	5.20	27.50	-1.30	7.0	59.73
Nov.	12.30	19.00	7.00	31.30	0.10	14.0	75.41
Dec.	14.40	21.10	9.60	35.80	1.40	15.0	96.32
Year	9.94	15.59	5.44	27.41	-3.16	197	635.73

### BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	192
Compensated thermicity index.....(Itc):	192
Simple continentality index.....(Ic):	10.9
Diurnality index.....(Id):	12.3
Annual ombrothermic index.....(Io):	1.65
Monthly estival ombrothermic index.....(Ios1):	0.72
Bimonthly estival ombrothermic index.....(Ios2):	0.96
Threemonthly estival ombrothermic index.....(Ios3):	0.98
Fourmonthly estival ombrothermic index.....(Ios4):	1.02
Annual ombro-evaporation index.....(Ioe):	0.82
Annual positive temperature.....(Tp):	1193
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	447
Positive precipitation.....(Pp):	197

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

Latitudinal Belt...: High eutemperate

Continentalty.....: Hyperoceanic - Low Subhyperoceanic

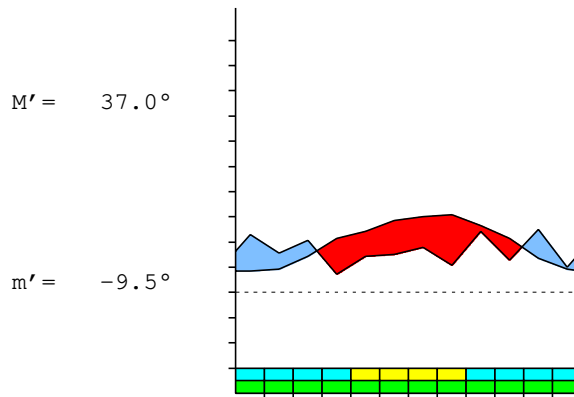
Bioclimate.....: MEDITERRANEAN XERIC-OCEANIC

Bioclimatic Belt...: LOW SUPRAMEDITERRANEAN UPPER SEMIARID

PUERTO DESEADO (ARGENTINA)

79 m

P= 197      47° 44' S      65° 55' W      10/10 y.  
 T= 9.9°      Ic= 10.9      Tp= 1193      Tn= 0  
 m= 1.2°      M= 8.1°      Itc= 192      Io= 1.7



MEDITERRANEAN XERIC-OCEANIC  
 LOW SUPRAMEDITERRANEAN UPPER SEMIARID

WATER INDEX CARD      PUERTO DESEADO (ARGENTINA)  
 Altitude: 79 m.      Latitude: 47° 44' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	4.4	15	23	8	8	15	0	0	0	0.5
Aug.	4.8	19	16	-3	5	19	0	0	0	-0.1
Sep.	7.2	33	21	-5	0	26	7	0	0	-0.3
Oct.	10.6	60	7	0	0	7	53	0	0	-0.8
Nov.	12.3	75	14	0	0	14	61	0	0	-0.8
Dec.	14.4	96	15	0	0	15	81	0	0	-0.8
Jan.	15.0	98	18	0	0	18	80	0	0	-0.8
Feb.	15.3	83	11	0	0	11	72	0	0	-0.8
Mar.	13.3	70	24	0	0	24	46	0	0	-0.6
Apr.	10.6	46	13	0	0	13	33	0	0	-0.7
May.	6.9	26	25	0	0	25	1	0	0	0.0
Jun.	4.5	14	10	0	0	10	4	0	0	-0.2
Year	9.9	636	197	*	*	197	439	0	0	*

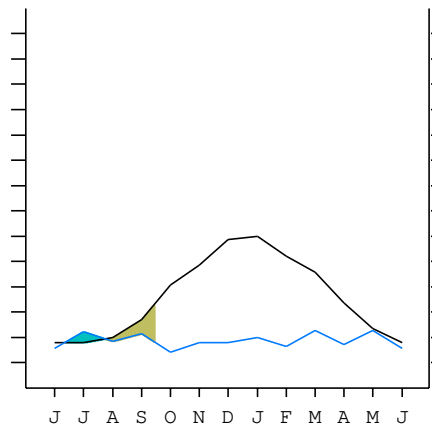
R = Reserve      VR = Variation of the reserve      RE = Real evapotranspiration  
 DR = Drainage      HC = Humidity coefficient      DF = Deficit      SP = Superavit

PUERTO DESEADO (ARGENTINA)

47°44' S      65°55' W      79 m 10/10 y.

T= 9.9      Ic= 10.9      MEDITERRANEAN XERIC-OCEANIC  
 m= 1.2      Tp= 1193      LOW SUPRAMEDITERRANEAN  
 M= 8.1      Tn= 0      UPPER SEMIARID  
 M' = 37.0      Itc= 192  
 m' = -9.5      Io= 1.7  
 P= 197      mm      ———  
 PE= 636      mm      ———

Imbibing	11 Jun.
Saturation	23 Jul.
Reserve Use	13 Sep.
Deficit	



PUERTO DESEADO (ARGENTINA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [A3b]  
 + Type .....: A. Hyperoceanic  
 + Subtype .....: 3. Subhyperoceanic  
 + Variant .....: b. Low  
 Thermic types [B1.B5]  
 + Latitudinal zone ....: B. Temperate  
 + Latitudinal belt ....: 1. High eutemperate  
 + Thermic type .....: B. Temperate  
 + Thermic subtype .....: 5. Subtemperate  
 Bioclimatic types [B6.4b.4a]  
 + Macrobioclimate .....: B. MEDITERRANEAN  
 + Bioclimate .....: 6. XERIC-OCEANIC  
 + Bioclimatic variant .:  
 + Thermic type.....: 4. SUPRAMEDITERRANEAN  
 + Thermic subtype.....: b. LOW  
 + Ombrothermic type ...: 4. SEMIARID  
 + Ombrothermic subtype : a. UPPER  
 Bioclimatic Classification .....: MepDC.Sme.Sar

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 89  
 Coldest semester of the year.....(Psw): 108  
 Warmest four months period of the year.....(Pcm1): 68  
 Following warmest four months period.....(Pcm2): 71  
 Positive precipitation dryest 3 months.....(Ppd): 36  
 Positive precipitation dryest 2 months.....(Ppd2): 21  
 Positive precipitation dryest 1 month.....(Ppd1): 7  
 Positive precipitation warmest 3 months.....(Pps): 44  
 Positive precipitation warmest 2 months.....(Pps2): 29  
 Positive precipitation warmest 1 month.....(Pps1): 11  
 Positive precipitation coldest 3 months.....(Ppw): 49  
 Positive precipitation coldest 2 months.....(Ppw2): 33  
 Positive precipitation coldest 1 month.....(Ppw1): 23

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	49	42	44	62

Seasonal rainfall rhythms: F > W > S > P

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 15.3  
 Average coldest month [T].....(Tmin): 4.4  
 Maximum temp. warmest month [M].....(Tmmax): 22.4  
 Minimum temp. coldest month [m].....(Tmmin): 0.9  
 Absolute Max.temp. warmest month [M'].....(Tamax): 37.0  
 Absolute Min.temp. coldest month [m'].....(Tamin): -9.5  
 First warmest contrasted month [M].....(Tcmax): 22.4 (2)  
 First coldest contrasted month [m].....(Tcmin): 10.1 (2)  
 Estival temperature.....(Ts): 447  
 Positive temperature dryest 3 months.....(Tpd): 373  
 Positive temperature dryest 2 months.....(Tpd2): 229  
 Positive temperature dryest 1 month.....(Tpd1): 106  
 Positive temperature warmest 3 months.....(Tps): 447  
 Positive temperature warmest 2 months.....(Tps2): 303  
 Positive temperature warmest 1 month.....(Tps1): 153  
 Positive temperature coldest 3 months.....(Tpw): 137  
 Positive temperature coldest 2 months.....(Tpw2): 89  
 Positive temperature coldest 1 month.....(Tpw1): 44

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 3.23  
 Mediterranean index of January.....(Im1): 5.47  
 Mediterranean index of January & February.....(Im2): 6.27  
 Mediterranean index of December to February...(Im3): 6.32

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	150	180	110	240	130	250	100	230	160	210	70	140
Tp	144	150	153	133	106	69	45	44	48	72	106	123
Io (Iom)	1.04	1.20	0.72	1.80	1.23	3.62	2.22	5.23	3.33	2.92	0.66	1.14
Seasons	Summer			Autumn			Winter			Spring		
Pp(x10)/Tp	440 / 447			620 / 308			490 / 137			420 / 301		
Io (Iot)	0.984			2.013			3.577			1.395		
Semesters	December-May						June-November					
Pp(x10)/Tp	1060 / 755						910 / 438					
Io (Iosm)	1.404						2.078					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 1970/1193=1.65 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	150	180	110	240	130	250	100	230	160	210	70	140
Tp [T*10]	144	150	153	133	106	69	45	44	48	72	106	123
Iom [Pp/Tp]	104	120	72	180	123	362	222	523	333	292	66	114
Avm [200-Iom]	96	80	128	20	77	***	***	***	***	***	134	86
Seasons	Summer			Autumn			Winter			Spring		
Pp / Tp	440 / 447			620 / 308			490 / 137			420 / 301		
Iot [Pp/Tp]	98			201			358			140		
Avs E[Avm<200]	304			***			***			***		
Weak lower arid [1]						Strong upper arid [1]						
Weak upper arid [1]						Strong lower semiarid [3]						
Weak lower semiarid [1]						Weak upper semiarid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin] .....	(Sp):	10.90
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4] .....		4.64
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14] .....		7.91
+ Hyperoceanic (-20<CI<20)		
CI of Currey (1974) [CI=Sp/(1+Lat/3)] .....		0.64
+ Oceanic (0.6<CI<1.1)		
Rainfall Index of Lang (1925) [R=P/T] .....		19.82
+ Steppic (40>R>0)		
Aridity Index of Martonne (1926) [Ia=P/(T+10)] .....		9.88
+ Arid -steppic- (15>Ia>5)		
I of Emberger (1930) [Q=100*P/(Tmax <sup>2</sup> -Tmin <sup>2</sup> )] .....		39.33
+ Semiarid (50>Q>30)		
I of Dantin & Revenga (1940) [DR=100*T/P] .....		5.05
+ Arid (6>DR>3)		
Aridity Index of UNEP [I=P/PE] .....		0.31
+ Semiarid (0.5>Im>0.2)		
Potential Erosion I of Fournier (1960) [K=Pi <sup>2</sup> /P] .....		3.17
+ 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	0.04	0.10	0.06	0.13	0.05	0.13	0.09	0.11	0.03	0.06	0.06
T-E ratio	6.75	6.89	5.99	4.77	3.11	2.03	1.98	2.16	3.24	4.77	5.54	6.48
Precipitation-effectiveness: 9.33						Temperature-efficiency .....						53.69
Moisture Index [MI=100*(P-PE)/PE] .....												-69.01
+ E.Dry (-110<MI<-66.7)												
Index of dryness [DI=100*d/PE] .....												69.01
+ Strong deficit (33.3<DI)												
Index of humidity [HI=100*s/PE] .....												0.00
+ No surplus (0<HI<10)												
Potential Evapotranspiration PE .....												635.73
+ First mesothermic (570<PE<712)												

