

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 14/02/2020)

EL PRAT DE LLOBREGAT (ESP BARCELONA) Altitude: 8 m.

Latitude: 41°18'N Longitude: 2°6'E

Temperature observation period.: 1935-1969 (35)

Rainfall observation period....: 1935-1969 (35)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	EPI
Jan.	8.40	12.80	4.10	18.60	-0.60	36.0	17.88
Feb.	9.20	13.80	4.50	19.50	-0.30	36.0	20.67
Mar.	11.20	15.30	7.20	21.80	2.40	47.0	35.11
Apr.	13.50	17.80	9.20	22.80	5.20	42.0	50.98
May.	16.40	20.90	12.00	25.90	7.90	43.0	78.31
Jun.	20.40	24.60	16.30	29.60	12.00	33.0	111.83
Jul.	23.00	27.30	18.80	31.20	15.60	23.0	136.50
Aug.	23.30	27.40	19.20	31.30	15.90	40.0	130.57
Sep.	21.40	25.40	17.30	29.00	12.50	91.0	99.63
Oct.	17.20	21.50	13.00	25.90	7.10	92.0	64.89
Nov.	12.70	17.00	8.40	22.00	3.50	53.0	34.16
Dec.	9.60	13.70	5.40	18.70	0.50	47.0	21.33
Year	15.52	19.79	11.28	24.69	6.81	583	801.87

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	324
Compensated thermicity index.....(Itc):	324
Simple continentality index.....(Ic):	14.9
Diurnality index.....(Id):	9.3
Annual ombrothermic index.....(Io):	3.13
Monthly estival ombrothermic index.....(Ios1):	1.00
Bimonthly estival ombrothermic index.....(Ios2):	1.36
Threemonthly estival ombrothermic index.....(Ios3):	1.44
Fourmonthly estival ombrothermic index.....(Ios4):	1.67
Annual ombro-evaporation index.....(Ioe):	0.73
Annual positive temperature.....(Tp):	1863
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	667
Positive precipitation.....(Pp):	583

N. of Months	P>4T	P:2T-4T	PT-2T	P<T	T<0
	6	3	3	0	0

Latitudinal Belt....: Low Eutemperate

Continentality.....: Oceanic - High Euoceanic

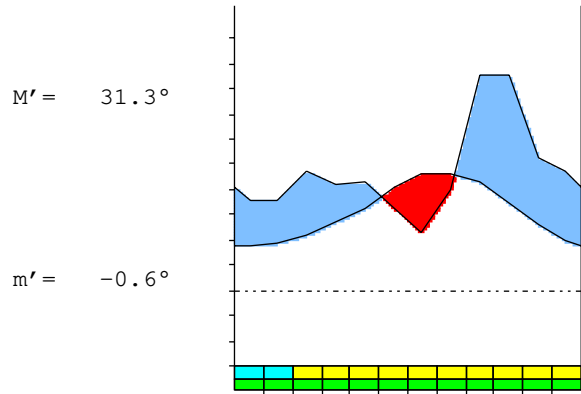
Bioclimate.....: MEDITERRANEAN PLUVISEASONAL-OCEANIC

Bioclimatic Belt....: LOW MESOMEDITERRANEAN UPPER DRY

EL PRAT DE LLOBREGAT (ESP BARCELONA)

8 m

P= 583 41° 18'N 2° 6'E 35/35 y.
 T= 15.5 ° Ic= 14.9 Tp= 1863 Tn= 0
 m= 4.1 ° M= 12.8 ° Itc= 324 Io= 3.1



MEDITERRANEAN PLUVISEASONAL-OCEANIC
 LOW MESOMEDITERRANEAN UPPER DRY

WATER INDEX CARD

EL PRAT DE LLOBREGAT (ESP BARCELONA)

Altitude: 8 m.

Latitude: 41° 18'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	8.4	18	36	18	90	18	0	0	0	1.0
Feb.	9.2	21	36	10	100	21	0	5	3	0.7
Mar.	11.2	35	47	0	100	35	0	12	7	0.3
Apr.	13.5	51	42	-9	91	51	0	0	4	-0.1
May.	16.4	78	43	-35	56	78	0	0	2	-0.4
Jun.	20.4	112	33	-56	0	89	23	0	1	-0.7
Jul.	23.0	136	23	0	0	23	113	0	0	-0.8
Aug.	23.3	131	40	0	0	40	91	0	0	-0.6
Sep.	21.4	100	91	0	0	91	9	0	0	0.0
Oct.	17.2	65	92	27	27	65	0	0	0	0.4
Nov.	12.7	34	53	19	46	34	0	0	0	0.5
Dec.	9.6	21	47	26	72	21	0	0	0	1.2
Year	15.5	802	583	*	*	566	236	17	17	*

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

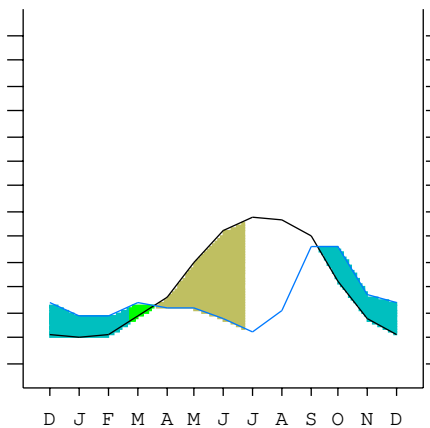
EL PRAT DE LLOBREGAT (ESP BARCELONA)

41°18'N 2°6'E

8 m 35/35 y.

T= 15.5 Ic= 14.9 MEDITERRANEAN PLUVISEASONAL-OCEANIC
 m= 4.1 Tp= 1863 LOW MESOMEDITERRANEAN
 M= 12.8 Tn= 0 UPPER DRY
 M' = 31.3 Itc= 324
 m' = -0.6 Io= 3.1
 P= 583 mm ———
 PE= 802 mm ———

Imbibing	8 Sep.
Saturation	21 Feb.
Reserve Use	18 Mar.
Deficit	22 Jun.



EL PRAT DE LLOBREGAT (ESP BARCELONA)
 Latitude: 41°18'N Longitude: 2°6'E Altitude: 8 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continentality Index [B2a]
 + Type: B. Oceanic
 + Subtype: 2. Euoceanic
 + Variant: a. High
 Thermic types [B1.A3]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. Low Eutemperate
 + Thermic type: A. Warm
 + Thermic subtype: 3. Subwarm
 Bioclimatic types [B8.3b.5a]
 + Macrobioclimate: B. MEDITERRANEAN
 + Bioclimate: 8. PLUVISEASONAL-OCEANIC
 + Bioclimatic variant .:
 + Thermic type.....: 3. MESOMEDITERRANEAN
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 5. DRY
 + Ombrothermic subtype : a. UPPER
 Bioclimatic ClassificationMepo.Mme.Dry.Euo

EL PRAT DE LLOBREGAT (ESP BARCELONA)
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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 322
 Coldest semester of the year.....(Psw): 261
 Warmest four months period of the year.....(Pcm1): 187
 Following warmest four months period.....(Pcm2): 228
 Positive precipitation dryest 3 months.....(Ppd): 96
 Positive precipitation dryest 2 months.....(Ppd2): 56
 Positive precipitation dryest 1 month.....(Ppd1): 23
 Positive precipitation warmest 3 months.....(Pps): 154
 Positive precipitation warmest 2 months.....(Pps2): 63
 Positive precipitation warmest 1 month.....(Pps1): 40
 Positive precipitation coldest 3 months.....(Ppw): 119
 Positive precipitation coldest 2 months.....(Ppw2): 72
 Positive precipitation coldest 1 month.....(Ppw1): 36

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	119	132	96	236

Seasonal rainfall rhythms: F > P > W > S

EL PRAT DE LLOBREGAT (ESP BARCELONA)
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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 23.3
 Average coldest month [T].....(Tmin): 8.4
 Maximum temp. warmest month [M].....(Tmmax): 27.4
 Minimum temp. coldest month [m].....(Tmmin): 4.1
 Absolute Max.temp. warmest month [M'].....(Tamax): 31.3
 Absolute Min.temp. coldest month [m'].....(Tamin): -0.6
 First warmest contrasted month [M].....(Tcmax): 13.8 (2)
 First coldest contrasted month [m].....(Tcmin): 4.5 (2)
 Estival temperature.....(Ts): 667
 Positive temperature dryest 3 months.....(Tpd): 667
 Positive temperature dryest 2 months.....(Tpd2): 434
 Positive temperature dryest 1 month.....(Tpd1): 230
 Positive temperature warmest 3 months.....(Tps): 677
 Positive temperature warmest 2 months.....(Tps2): 463
 Positive temperature warmest 1 month.....(Tps1): 233
 Positive temperature coldest 3 months.....(Tpw): 272
 Positive temperature coldest 2 months.....(Tpw2): 176
 Positive temperature coldest 1 month.....(Tpw1): 84

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

EL PRAT DE LLOBREGAT (ESP BARCELONA)

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 1.38
 Mediterranean index of July.[PE/P].....(Im1): 5.93
 Mediterranean index of July & August.....(Im2): 4.24
 Mediterranean index of June, July & August....(Im3): 3.95

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	470	360	360	470	420	430	330	230	400	910	920	530
Tp	96	84	92	112	135	164	204	230	233	214	172	127
Io (Iom)	4.90	4.29	3.91	4.20	3.11	2.62	1.62	1.00	1.72	4.25	5.35	4.17
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	1190 / 272			1320 / 411			960 / 667			2360 / 513		
Io (Iot)	4.375			3.212			1.439			4.600		
Semesters	December-May						June-November					
Pp(x10)/Tp	2510 / 683						3320 / 1180					
Io (Iosm)	3.675						2.814					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 5830/1863=3.13 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	470	360	360	470	420	430	330	230	400	910	920	530
TP [T*10]	96	84	92	112	135	164	204	230	233	214	172	127
Iom [Pp/TP]	490	429	391	420	311	262	162	100	172	425	535	417
Avm [200-Iom]	***	***	***	***	***	***	38	100	28	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	1190 / 272			1320 / 411			960 / 667			2360 / 513		
Iot [Pp/TP]	438			321			144			460		
Avs E[Avm<200]	***			***			167			***		
Weak upper arid [1]						Weak lower semiarid [1]						
Strong upper semiarid [1]						Weak upper semiarid [1]						

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 14.90
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 17.98
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 18.46
 + Hyperoceanic (-20<CI<20)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.01
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: 37.55
 + Steppic (40>R>0)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 22.84
 + Subhumid (30>Ia>20)
 I of Emberger (1930) [Q=100*P/(Tmmax²-Tmmin²)]: 79.43
 + Subhumid (90>Q>50)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 2.66
 + Semiarid (3>DR>2)
 Aridity Index of UNEP [I=P/PE]: 0.73
 + Humid (I>0.65)
 Potencial Erosion I of Fournier (1960) [K=Pi²/P].....: 14.52
 + 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: 3. Macro-mesothermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.19	0.18	0.23	0.19	0.18	0.12	0.08	0.14	0.36	0.41	0.25	0.24
T-E ratio	3.78	4.14	5.04	6.07	7.38	9.18	10.35	10.48	9.63	7.74	5.71	4.32
Precipitation-effectiveness: 25.77						Temperature-efficiency: 83.83						
Moisture Index [MI=100*(P-PE)/PE]: -27.29 + C1.Subhumid dry (-33.3<MI<0)												
Index of dryness [DI=100*d/PE]: 29.41 + Moderate deficit (16.7<DI<33.3)												
Index of humidity [HI=100*s/PE]: 2.11 + No surplus (0<HI<10)												
Potential Evapotranspiration PE: 801.87 + Second mesothermic (712<PE<855)												

