

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

Prof.Dr. Salvador Rivas-Martinez

(Adapted to Synoptical Table 30/08/2017)

CANGAS DE ONIS (ESP OVIEDO)

Altitude: 87 m.

Latitude: 43°21'N Longitude: 5°7'W

Temperature observation period.: 1953-1969 (17)

Rainfall observation period....: 1953-1969 (17)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	7.60	13.00	2.20	20.40	-4.20	119.0	20.72
Feb.	8.30	13.70	2.90	20.60	-3.10	84.0	23.59
Mar.	10.10	16.20	4.00	23.60	-1.10	84.0	38.12
Apr.	11.30	17.10	5.60	24.50	0.50	92.0	48.61
May.	14.30	20.20	8.40	27.70	3.60	71.0	74.85
Jun.	16.70	22.40	11.00	30.40	6.10	62.0	93.51
Jul.	18.90	24.20	13.60	31.30	8.30	32.0	111.14
Aug.	18.70	24.90	12.60	31.10	9.20	52.0	101.93
Sep.	17.90	24.00	11.80	30.70	6.00	78.0	83.34
Oct.	15.00	20.90	9.00	27.50	4.00	94.0	60.15
Nov.	10.00	15.60	4.30	22.60	-1.30	130.0	29.87
Dec.	8.10	13.40	2.90	19.60	-2.50	152.0	21.44
Year	13.08	18.80	7.36	25.83	2.13	1050	707.28

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	283
Compensated thermicity index.....(Itc):	283
Simple continentality index.....(Ic):	11.3
Diurnality index.....(Id):	12.3
Annual ombrothermic index.....(Io):	6.69
Monthly estival ombrothermic index.....(Ios1):	1.69
Bimonthly estival ombrothermic index.....(Ios2):	2.23
Threemonthly estival ombrothermic index.....(Ios3):	2.69
Fourmonthly estival ombrothermic index.....(Ios4):	3.16
Annual ombro-evaporation index.....(Ioe):	0.59
Annual positive temperature.....(Tp):	1569
Annual negative temperature.....(Tn):	0
Estival temperature.....(Ts):	543
Positive precipitation.....(Pp):	1050

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	9	2	1	0	0

Latitudinal Belt...: High eutemperate

Continentalty.....: Oceanic - High Semihyperoceanic

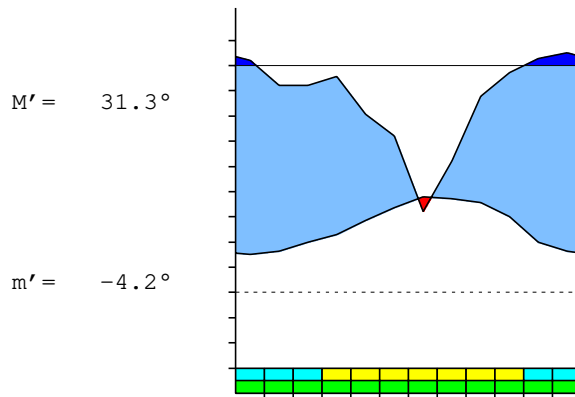
Bioclimate(Variant): TEMPERATE OCEANIC (SUBMEDITERRANEAN)

Bioclimatic Belt...: LOW MESOTEMPERATE LOW HUMID

CANGAS DE ONIS (ESP OVIEDO)

87 m

P= 1050 43° 21'N 5° 7'W 17/17 y.
 T= 13.1° Ic= 11.3 Tp= 1569 Tn= 0
 m= 2.2° M= 13.0° Itc= 283 Io= 6.7



TEMPERATE OCEANIC (SUBMEDITERRANEAN)
 LOW MESOTEMPERATE LOW HUMID

WATER INDEX CARD

CANGAS DE ONIS (ESP OVIEDO)

Altitude: 87 m.

Latitude: 43° 21'N

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jan.	7.6	21	119	0	100	21	0	98	86	4.7
Feb.	8.3	24	84	0	100	24	0	60	73	2.5
Mar.	10.1	38	84	0	100	38	0	46	60	1.2
Apr.	11.3	49	92	0	100	49	0	43	51	0.8
May.	14.3	75	71	-4	96	75	0	0	26	0.0
Jun.	16.7	94	62	-32	65	94	0	0	13	-0.3
Jul.	18.9	111	32	-65	0	97	15	0	6	-0.7
Aug.	18.7	102	52	0	0	52	50	0	3	-0.4
Sep.	17.9	83	78	0	0	78	5	0	2	0.0
Oct.	15.0	60	94	34	34	60	0	0	1	0.5
Nov.	10.0	30	130	66	100	30	0	34	17	3.3
Dec.	8.1	21	152	0	100	21	0	131	74	6.0
Year	13.1	707	1050	*	*	638	70	412	412	*

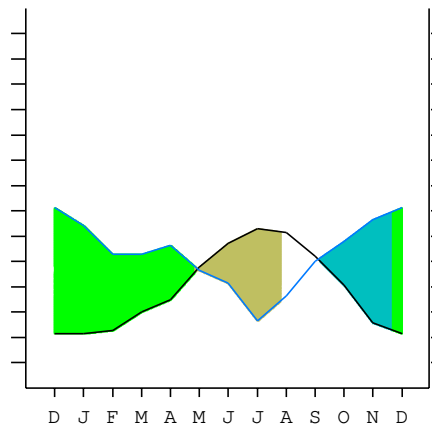
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

CANGAS DE ONIS (ESP OVIEDO)

43°21'N 5°7'W 87 m 17/17 y.

T= 13.1 Ic= 11.3 TEMPERATE OCEANIC (SUBMEDITERRANEAN)
 m= 2.2 Tp= 1569 LOW MESOTEMPERATE
 M= 13.0 Tn= 0 LOW HUMID
 M' = 31.3 Itc= 283
 m' = -4.2 Io= 6.7
 P= 1050 mm ———
 PE= 707 mm ———

Imbibing	5 Sep.
Saturation	20 Nov.
Reserve Use	28 Apr.
Deficit	25 Jul.



CANGAS DE ONIS (ESP OVIEDO)

Latitude: 43°21'N Longitude: 5°7'W Altitude: 87 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1a]
 + Type: B. Oceanic
 + Subtype: 1. Semihyperoceanic
 + Variant: a. High

Thermic types [B1.B4]
 + Latitudinal zone: B. Temperate
 + Latitudinal belt: 1. High eutemperate
 + Thermic type: B. Temperate
 + Thermic subtype: 4. Temperate

Bioclimatic types [C3b.3b.7b]
 + Macroclimate: C. TEMPERATE
 + Bioclimate: 3. OCEANIC
 + Bioclimatic variant .: b. SUBMEDITERRANEAN
 + Thermic type.....: 3. MESOTEMPERATE
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 7. HUMID
 + Ombrothermic subtype : b. LOW
 Bioclimatic Classification: Teco (Sbm) .Mte.Hum

CANGAS DE ONIS (ESP OVIEDO)

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 389
 Coldest semester of the year.....(Psw): 661
 Warmest four months period of the year.....(Pcm1): 224
 Following warmest four months period.....(Pcm2): 495
 Positive precipitation dryest 3 months.....(Ppd): 146
 Positive precipitation dryest 2 months.....(Ppd2): 84
 Positive precipitation dryest 1 month.....(Ppd1): 32
 Positive precipitation warmest 3 months.....(Pps): 162
 Positive precipitation warmest 2 months.....(Pps2): 84
 Positive precipitation warmest 1 month.....(Pps1): 32
 Positive precipitation coldest 3 months.....(Ppw): 355
 Positive precipitation coldest 2 months.....(Ppw2): 271
 Positive precipitation coldest 1 month.....(Ppw1): 119

Seasons	Winter Tr1-W	Spring Tr2-P	Summer Tr3-S	Automn Tr4-F
Rainfall	355	247	146	302

Seasonal rainfall rhythms: W > F > P > S

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 18.9
 Average coldest month [T].....(Tmin): 7.6
 Maximum temp. warmest month [M].....(Tmmax): 24.9
 Minimum temp. coldest month [m].....(Tmmin): 2.2
 Absolute Max.temp. warmest month [M'].....(Tamax): 31.3
 Absolute Min.temp. coldest month [m'].....(Tamin): -4.2
 First warmest contrasted month [M].....(Tcmax): 24.9 (8)
 First coldest contrasted month [m].....(Tcmin): 12.6 (8)
 Estival temperature.....(Ts): 543
 Positive temperature dryest 3 months.....(Tpd): 543
 Positive temperature dryest 2 months.....(Tpd2): 376
 Positive temperature dryest 1 month.....(Tpd1): 189
 Positive temperature warmest 3 months.....(Tps): 555
 Positive temperature warmest 2 months.....(Tps2): 376
 Positive temperature warmest 1 month.....(Tps1): 189
 Positive temperature coldest 3 months.....(Tpw): 240
 Positive temperature coldest 2 months.....(Tpw2): 157
 Positive temperature coldest 1 month.....(Tpw1): 76

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

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OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.67
 Mediterranean index of July.[PE/P].....(Im1): 3.47
 Mediterranean index of July & August.....(Im2): 2.54
 Mediterranean index of June, July & August....(Im3): 2.10

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	1520	1190	840	840	920	710	620	320	520	780	940	1300
Tp	81	76	83	101	113	143	167	189	187	179	150	100
Io (Iom)	18.8	15.7	10.1	8.32	8.14	4.97	3.71	1.69	2.78	4.36	6.27	13.0
Seasons	Winter			Spring			Summer			Autumn		
Pp(x10)/Tp	3550 / 240			2470 / 357			1460 / 543			3020 / 429		
Io (Iot)	14.79			6.919			2.689			7.040		
Semesters	December-May						June-November					
Pp(x10)/Tp	6020 / 597						4480 / 972					
Io (Iosm)	10.08						4.609					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 10500/1569=6.69 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	1520	1190	840	840	920	710	620	320	520	780	940	1300
Tp [T*10]	81	76	83	101	113	143	167	189	187	179	150	100
Iom [Pp/Tp]	\$\$	\$\$	\$\$	832	814	497	371	169	278	436	627	\$\$
Avm [200-Iom]	***	***	***	***	***	***	***	31	***	***	***	***
Seasons	Winter			Spring			Summer			Autumn		
Pp / Tp	3550 / 240			2470 / 357			1460 / 543			3020 / 429		
Iot [Pp/Tp]	1479			692			269			704		
Avs E[Avm<200]	***			***			***			***		
Strong upper semiarid [1]												

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin]	(Sp): 11.30
CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]	7.58
CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]	9.94
+ Hyperoceanic (-20<CI<20)	
CI of Currey (1974) [CI=Sp/(1+Lat/3)]	0.73
+ Oceanic (0.6<CI<1.1)	
Rainfall Index of Lang (1925) [R=P/T]	80.31
+ Temperate warm (100>R>60)	
Aridity Index of Martonne (1926) [Ia=P/(T+10)]	45.50
+ Humid (60>Ia>30)	
I of Emberger (1930) [Q=100*P/(Tmax ² -Tmin ²)]	170.68
+ Humid (Q>90)	
I of Dantin & Revenga (1940) [DR=100*T/P]	1.25
+ Humid (2>DR>0)	
Aridity Index of UNEP [I=P/PE]	1.48
+ Humid (I>0.65)	
Potential Erosion I of Fournier (1960) [K=Pi ² /P]	22.00
+ 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	0.73	0.49	0.46	0.49	0.33	0.27	0.12	0.21	0.33	0.45	0.75	0.95
T-E ratio	3.42	3.74	4.55	5.09	6.44	7.52	8.50	8.42	8.05	6.75	4.50	3.65
Precipitation-effectiveness: 55.70						Temperature-efficiency						70.61
Moisture Index [MI=100*(P-PE)/PE]												48.46
+ B2.Humid medium-humid (40<MI<60)												
Index of dryness [DI=100*d/PE]												9.85
+ No deficit (0<DI<16.7)												
Index of humidity [HI=100*s/PE]												58.31
+ Strong surplus (20<HI)												
Potential Evapotranspiration PE												707.28
+ First mesothermic (570<PE<712)												

