

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

PORT HEDLAND (AUSTRALIA)

Altitude: 8 m.

Latitude: 20°23'S Longitude: 118°37'E

Temperature observation period.: 1984-1994 (11)

Rainfall observation period....: 1961-1994 (34)

(C/mm)	Ti	Mi	mi	M'i	m'i	Pi	Epi
Jan.	30.56	36.11	25.00	45.00	20.00	38.1	191.52
Feb.	30.28	35.56	25.00	44.44	16.11	63.0	165.76
Mar.	30.56	37.22	23.89	44.44	17.22	75.9	176.40
Apr.	27.78	35.00	20.56	42.22	12.22	20.1	141.37
May.	23.33	29.44	17.22	37.22	7.22	26.9	82.35
Jun.	19.72	26.11	13.33	31.67	4.44	36.1	43.21
Jul.	18.89	26.11	11.67	33.33	3.89	11.9	38.78
Aug.	20.56	28.89	12.22	35.56	3.89	6.1	54.99
Sep.	23.61	32.22	15.00	38.33	8.33	0.0	89.46
Oct.	25.56	33.89	17.22	43.33	11.67	0.0	128.91
Nov.	28.06	35.56	20.56	45.56	14.44	0.0	161.31
Dec.	29.72	36.11	23.33	47.78	16.67	9.9	185.46
Year	25.72	32.68	18.75	40.74	11.34	288	1459.5

BIOCLIMATIC INDICES AND DIAGNOSIS

Thermicity index.....(It):	635
Compensated thermicity index.....(Itc):	635
Simple continentality index.....(Ic):	11.7
Diurnality index.....(Id):	17.2
Annual ombrothermic index.....(Io):	0.93
Monthly dry ombrothermic index.....(Iod1):	No
Bimonthly dry ombrothermic index.....(Iod2):	No
Three monthly dry ombrothermic index.....(Iod3):	No
Four monthly dry ombrothermic index.....(Iod4):	0.06
Annual ombro-evaporation index.....(Ioe):	2.56
Annual positive temperature.....(Tp):	3086
Annual negative temperature.....(Tn):	0
Dry station temperature.....(Td):	772
Positive precipitation.....(Pp):	288

N. of	P>4T	P:2T-4T	PT-2T	P<T	T<0
Months	0	2	3	7	0

Latitudinal Belt...: Eutropical

Continentalty.....: Oceanic - High Semihyperoceanic

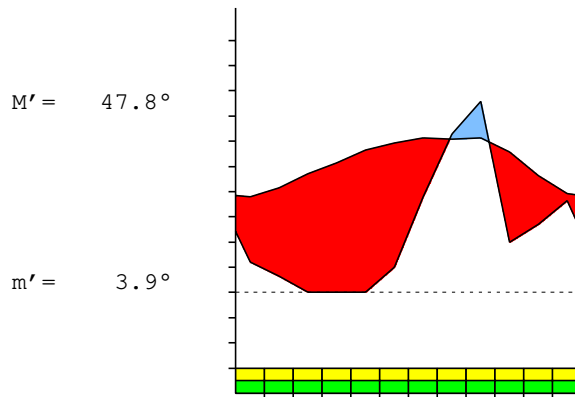
Bioclimate(Variant): TROPICAL DESERTIC (PLUVISEROTIN,ARID)

Bioclimatic Belt...: LOW THERMOTROPICAL UPPER ARID

PORT HEDLAND (AUSTRALIA)

8 m

P= 288 20° 23' S 118° 37' E 11/34 y.
 T= 25.7° Ic= 11.7 Tp= 3086 Tn= 0
 m= 11.7° M= 26.1° Itc= 635 Io= 0.9



TROPICAL DESERTIC (PLUVISEROTIN)
 LOW THERMOTROPICAL UPPER ARID

WATER INDEX CARD

PORT HEDLAND (AUSTRALIA)

Altitude: 8 m.

Latitude: 20° 23' S

(C/mm)	T	PE	P	VR	R	RE	DF	SP	DR	HC
Jul.	18.9	39	12	0	0	12	27	0	0	-0.6
Aug.	20.6	55	6	0	0	6	49	0	0	-0.8
Sep.	23.6	89	0	0	0	0	89	0	0	-1.0
Oct.	25.6	129	0	0	0	0	129	0	0	-1.0
Nov.	28.1	161	0	0	0	0	161	0	0	-1.0
Dec.	29.7	185	10	0	0	10	176	0	0	-0.9
Jan.	30.6	192	38	0	0	38	153	0	0	-0.8
Feb.	30.3	166	63	0	0	63	103	0	0	-0.6
Mar.	30.6	176	76	0	0	76	100	0	0	-0.5
Apr.	27.8	141	20	0	0	20	121	0	0	-0.8
May.	23.3	82	27	0	0	27	55	0	0	-0.6
Jun.	19.7	43	36	0	0	36	7	0	0	-0.1
Year	25.7	1460	288	*	*	288	1172	0	0	*

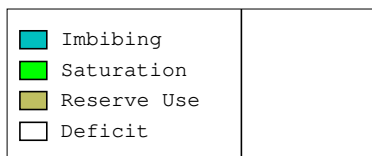
R = Reserve VR = Variation of the reserve RE = Real evapotranspiration
 DR = Drainage HC = Humidity coefficient DF = Deficit SP = Superavit

PORT HEDLAND (AUSTRALIA)

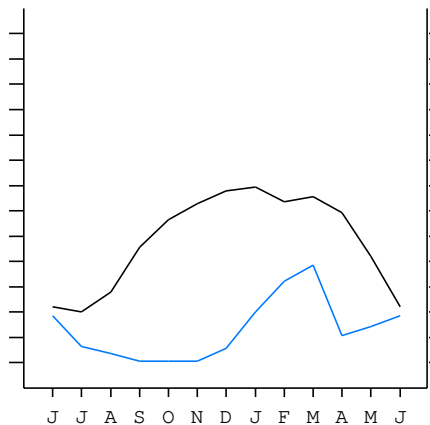
20°23' S 118°37' E

8 m 11/34 y.

T= 25.7 Ic= 11.7 TROPICAL DESERTIC (PLUVISEROTIN)
 m= 11.7 Tp= 3086 LOW THERMOTROPICAL
 M= 26.1 Tn= 0 UPPER ARID
 M' = 47.8 Itc= 635
 m' = 3.9 Io= 0.9
 P= 288 mm ———
 PE= 1460 mm ———



All over the year,
 there is hydric deficit



PORT HEDLAND (AUSTRALIA)

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SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [B1a]
 + Type: B. Oceanic
 + Subtype: 1. Semihyperoceanic
 + Variant: a. High
 Thermic types [A2.A1]
 + Latitudinal zone: A. Warm
 + Latitudinal belt: 2. Eutropical
 + Thermic type: A. Warm
 + Thermic subtype: 1. Torrid
 Bioclimatic types [A2e.2b.3a]
 + Macrobioclimate: A. TROPICAL
 + Bioclimate: 2. DESERTIC
 + Bioclimatic variant .: e. PLUVISEROTIN, ARID
 + Thermic type.....: 2. THERMOTROPICAL
 + Thermic subtype.....: b. LOW
 + Ombrothermic type ...: 3. ARID
 + Ombrothermic subtype : a. UPPER
 Bioclimatic Classification: Trps (Pse).Ttr.Ari

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PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 207
 Coldest semester of the year.....(Psw): 81
 Warmest four months period of the year.....(Pcm1): 187
 Following warmest four months period.....(Pcm2): 95
 Positive precipitation dryest 3 months.....(Ppd): 0
 Positive precipitation dryest 2 months.....(Ppd2): 0
 Positive precipitation dryest 1 month.....(Ppd1): 0
 Positive precipitation warmest 3 months.....(Pps): 177
 Positive precipitation warmest 2 months.....(Pps2): 101
 Positive precipitation warmest 1 month.....(Pps1): 38
 Positive precipitation coldest 3 months.....(Ppw): 54
 Positive precipitation coldest 2 months.....(Ppw2): 48
 Positive precipitation coldest 1 month.....(Ppw1): 12

Seasons	Jun+Jul+Aug Ttr3-3	Sep+Oct+Nov Ttr4-4	Dec+Jan+Feb Ttr1-1	Mar+Apr+May Ttr2-2
Rainfall	54	0	111	122

Tropical rainfall rhythms: 2 > 1 > 3 > 4

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TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): 30.6
 Average coldest month [T].....(Tmin): 18.9
 Maximum temp. warmest month [M].....(Tmmax): 37.2
 Minimum temp. coldest month [m].....(Tmmin): 11.7
 Absolute Max.temp. warmest month [M'].....(Tamax): 47.8
 Absolute Min.temp. coldest month [m'].....(Tamin): 3.9
 First warmest contrasted month [M].....(Tcmax): 32.2 (9)
 First coldest contrasted month [m].....(Tcmin): 15.0 (9)
 Dry station temperature.....(Td): 772
 Positive temperature dryest 3 months.....(Tpd): 772
 Positive temperature dryest 2 months.....(Tpd2): 492
 Positive temperature dryest 1 month.....(Tpd1): 236
 Positive temperature warmest 3 months.....(Tps): 914
 Positive temperature warmest 2 months.....(Tps2): 608
 Positive temperature warmest 1 month.....(Tps1): 306
 Positive temperature coldest 3 months.....(Tpw): 592
 Positive temperature coldest 2 months.....(Tpw2): 386
 Positive temperature coldest 1 month.....(Tpw1): 189

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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)	o	o	o	o	o	o	o	o	o	o	o	o
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): 5.07
 Mediterranean index of January.....(Im1): No
 Mediterranean index of January & February.....(Im2): No
 Mediterranean index of December to February...(Im3): No

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp(x10)	99	381	630	759	201	269	361	119	61	0	0	0
Tp	297	306	303	306	278	233	197	189	206	236	256	281
Io (Iom)	0.33	1.25	2.08	2.48	0.72	1.15	1.83	0.63	0.30	0.00	0.00	0.00
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp(x10)/Tp	1110 / 906			1229 / 817			541 / 592			0 / 772		
Io (Iot)	1.226			1.505			0.914			0.000		
Semesters	December-May						June-November					
Pp(x10)/Tp	2339 / 1722						541 / 1364					
Io (Iosm)	1.358						0.397					

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 2880/3086=0.93 **There is No Yearly Aridity**

Months	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Pp [P*10]	99	381	630	759	201	269	361	119	61	0	0	0
Tp [T*10]	297	306	303	306	278	233	197	189	206	236	256	281
Iom [Pp/Tp]	33	125	208	248	72	115	183	63	30	0	0	0
Avm [200-Iom]	167	75	***	***	128	85	17	137	170	200	200	200
Seasons	Dec+Jan+Feb			Mar+Apr+May			Jun+Jul+Aug			Sep+Oct+Nov		
Pp / Tp	1110 / 906			1229 / 817			541 / 592			0 / 772		
Iot [Pp/Tp]	123			150			91			0		
Avs E[Avm<200]	***			***			324			600		
Lower ultrahyperarid [4]							Lower hyperarid [1]					
Upper hyperarid [1]							Weak lower arid [1]					
Strong upper arid [1]							Weak upper arid [1]					
Strong lower semiarid [1]							Weak lower semiarid [1]					

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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 11.67
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 36.56
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 25.22
 + Oceanic (20<CI<40)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 1.50
 + Subcontinental (1.1<CI<1.7)
 Rainfall Index of Lang (1925) [R=P/T]: 11.20
 + Steppic (40>R>0)
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: 8.06
 + Arid -steppic- (15>Ia>5)
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: 23.06
 + Arid (30>Q>0)
 I of Dantin & Revenga (1940) [DR=100*T/P]: 8.93
 + Extremely arid (DR>6)
 Aridity Index of UNEP [I=P/PE]: 0.20
 + Arid (0.2>Im>0.05)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 20.00
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: A. Warm and temperate warm
 + Region:
 + Thermic type: 1. Megathermic

Thornthwaite (1948)												
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
P-E ratio	0.11	0.20	0.24	0.06	0.09	0.14	0.04	0.02	0.00	0.00	0.00	0.03
T-E ratio	13.75	13.63	13.75	12.50	10.50	8.87	8.50	9.25	10.62	11.50	12.63	13.37
Precipitation-effectiveness: 9.16						Temperature-efficiency: 138.88						
Moisture Index [MI=100*(P-PE)/PE]: -80.27 + E.Dry (-110<MI<-66.7) Index of dryness [DI=100*d/PE]: 80.27 + Strong deficit (33.3<DI) Index of humidity [HI=100*s/PE]: 0.00 + No surplus (0<HI<10) Potential Evapotranspiration PE: 1459.51 + Megathermic (PE>1440)												

