

Phytosociological Research Center

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Worldwide Bioclimatic Classification System

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(Adapted to Synoptical Table 30/08/2017)

MCMURDO STATION (ANTARCTICA TERR.)

Altitude: 2 m.

Latitude: 77°53'S Longitude: 166°48'W

Temperature observation period.: 1984-1994 (11)

Rainfall observation period....: 1984-1994 (11)

| (C/mm) | Ti | Mi | mi | M'i | m'i | Pi | EPI |
|--------|--------|--------|--------|-------|--------|------|------|
| Jan. | -3.61 | -1.11 | -6.11 | 5.56 | -15.56 | 12.2 | 0.00 |
| Feb. | -9.17 | -6.67 | -11.67 | 3.89 | -21.67 | 16.5 | 0.00 |
| Mar. | -19.17 | -16.11 | -22.22 | -3.33 | -34.44 | 8.9 | 0.00 |
| Apr. | -21.67 | -18.33 | -25.00 | -5.00 | -39.44 | 9.7 | 0.00 |
| May. | -23.61 | -20.00 | -27.22 | -7.22 | -42.78 | 10.2 | 0.00 |
| Jun. | -23.61 | -20.00 | -27.22 | -7.78 | -39.44 | 8.1 | 0.00 |
| Jul. | -26.95 | -22.78 | -31.11 | -4.44 | -50.56 | 5.8 | 0.00 |
| Aug. | -28.89 | -24.44 | -33.33 | -1.67 | -49.44 | 8.4 | 0.00 |
| Sep. | -24.17 | -20.00 | -28.33 | -7.78 | -41.11 | 9.9 | 0.00 |
| Oct. | -20.56 | -16.67 | -24.44 | -4.44 | -39.44 | 5.8 | 0.00 |
| Nov. | -9.17 | -6.11 | -12.22 | 2.78 | -27.78 | 5.1 | 0.00 |
| Dec. | -3.89 | -1.67 | -6.11 | 5.56 | -16.67 | 7.6 | 0.00 |
| Year | -17.87 | -14.49 | -21.25 | -1.99 | -34.86 | 108 | 0.00 |

BIOCLIMATIC INDICES AND DIAGNOSIS

| | |
|--|------|
| Thermicity index.....(It): | -756 |
| Compensated thermicity index.....(Itc): | -677 |
| Simple continentality index.....(Ic): | 25.3 |
| Diurnality index.....(Id): | 8.9 |
| Annual ombrothermic index.....(Io): | No |
| Monthly estival ombrothermic index.....(Ios1): | No |
| Bimonthly estival ombrothermic index.....(Ios2): | No |
| Three monthly estival ombrothermic index.....(Ios3): | No |
| Four monthly estival ombrothermic index.....(Ios4): | No |
| Annual ombro-evaporation index.....(Ioe): | No |
| Annual positive temperature.....(Tp): | 0 |
| Annual negative temperature.....(Tn): | 2145 |
| Estival temperature.....(Ts): | 0 |
| Positive precipitation.....(Pp): | 0 |

| N. of | P>4T | P:2T-4T | PT-2T | P<T | T<0 |
|--------|------|---------|-------|-----|-----|
| Months | 0 | 0 | 0 | 0 | 12 |

Latitudinal Belt...: Low polar

Continentality.....: Continental - High Subcontinental

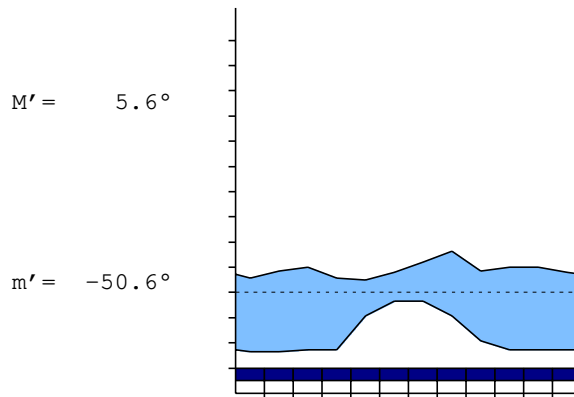
Bioclimate.....: Polar Hypogelid

Bioclimatic Belt...: Upper Hypogelid Scanty-Snowy

MCMURDO STATION (ANTARCTICA TERR.)

2 m

P= 108 77° 53'S 166° 48'W 11/11 y.
 T= -17.9° Ic= 25.3 Tp= 0 Tn= 2145
 m= -33.3° M= -24.4° Itc= -677 Io=9999.9



Polar Hypogelid
 Upper Hypogelid Scanty-Snowy

WATER INDEX CARD MCMURDO STATION (ANTARCTICA TERR.)

Altitude: 2 m. Latitude: 77° 53'S

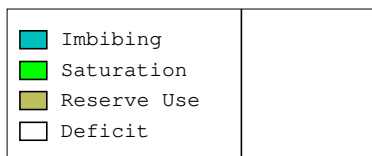
| (C/mm) | T | PE | P | VR | R | RE | DF | SP | DR | HC |
|--------|-------|----|-----|----|-----|----|----|-----|-----|----|
| Jul. | -27.0 | 0 | 6 | 0 | 100 | 0 | 0 | 6 | 7 | * |
| Aug. | -28.9 | 0 | 8 | 0 | 100 | 0 | 0 | 8 | 8 | * |
| Sep. | -24.2 | 0 | 10 | 0 | 100 | 0 | 0 | 10 | 9 | * |
| Oct. | -20.6 | 0 | 6 | 0 | 100 | 0 | 0 | 6 | 7 | * |
| Nov. | -9.2 | 0 | 5 | 0 | 100 | 0 | 0 | 5 | 6 | * |
| Dec. | -3.9 | 0 | 8 | 0 | 100 | 0 | 0 | 8 | 7 | * |
| Jan. | -3.6 | 0 | 12 | 0 | 100 | 0 | 0 | 12 | 10 | * |
| Feb. | -9.2 | 0 | 17 | 0 | 100 | 0 | 0 | 17 | 13 | * |
| Mar. | -19.2 | 0 | 9 | 0 | 100 | 0 | 0 | 9 | 11 | * |
| Apr. | -21.7 | 0 | 10 | 0 | 100 | 0 | 0 | 10 | 10 | * |
| May. | -23.6 | 0 | 10 | 0 | 100 | 0 | 0 | 10 | 10 | * |
| Jun. | -23.6 | 0 | 8 | 0 | 100 | 0 | 0 | 8 | 9 | * |
| Year | -17.9 | 0 | 108 | * | * | 0 | 0 | 108 | 108 | * |

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

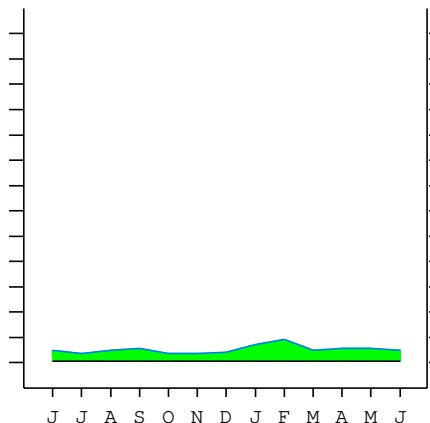
MCMURDO STATION (ANTARCTICA TERR.)

77°53'S 166°48'W 2 m 11/11 y.

T= -17.9 Ic= 25.3 Polar Hypogelid
 m= -33.3 Tp= 0 Upper Hypogelid
 M= -24.4 Tn= 2145 Scanty-Snowy
 M' = 5.6 Itc= -677
 m' = -50.6 Io=9999.9
 P= 108 mm ———
 PE= 0 mm ———



All over the year,
 there is no hydric deficit



MCMURDO STATION (ANTARCTICA TERR.)

Latitude: 77°53'S Longitude: 166°48'W Altitude: 2 m

SUMMARY OF RIVAS-MARTINEZ CLASSIFICATION

Continental Index [C2b]
 + Type: C. Continental
 + Subtype: 2. Subcontinental
 + Variant: b. High
 Thermic types [C2.D10]
 + Latitudinal zone: C. Cold
 + Latitudinal belt: 2. Low polar
 + Thermic type: D. Gelid
 + Thermic subtype: 10.Hipergelid
 Bioclimatic types [E3.5.2]
 + Macrobioclimate: E. Polar
 + Bioclimate: 3. Hypogelid
 + Bioclimatic variant ..:
 + Thermic type.....: 5. Upper Hypogelid
 + Thermic subtype.....:
 + Ombrothermic type ...: 2. Scanty-Snowy
 + Ombrothermic subtype :
 Bioclimatic Classification

MCMURDO STATION (ANTARCTICA TERR.)

Latitude: 77°53'S Longitude: 166°48'W Altitude: 2 m

PRECIPITATION PARAMETERS

Warmest semester of the year.....(Pss): 56
 Coldest semester of the year.....(Psw): 52
 Warmest four months period of the year.....(Pcm1): 41
 Following warmest four months period.....(Pcm2): 37
 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): 0
 Positive precipitation warmest 2 months.....(Pps2): 0
 Positive precipitation warmest 1 month.....(Pps1): 0
 Positive precipitation coldest 3 months.....(Ppw): 0
 Positive precipitation coldest 2 months.....(Ppw2): 0
 Positive precipitation coldest 1 month.....(Ppw1): 0

| Seasons | Winter Tr1-W | Spring Tr2-P | Summer Tr3-S | Automn Tr4-F |
|----------|-----------------|-----------------|-----------------|-----------------|
| Rainfall | 22 | 20 | 36 | 28 |

Seasonal rainfall rhythms: S > F > W > P

MCMURDO STATION (ANTARCTICA TERR.)

Latitude: 77°53'S Longitude: 166°48'W Altitude: 2 m

TEMPERATURE PARAMETERS

Average warmest month [T].....(Tmax): -3.6
 Average coldest month [T].....(Tmin): -28.9
 Maximum temp. warmest month [M].....(Tmmax): -1.1
 Minimum temp. coldest month [m].....(Tmmin): -33.3
 Absolute Max.temp. warmest month [M'].....(Tamax): 5.6
 Absolute Min.temp. coldest month [m'].....(Tamin): -50.6
 First warmest contrasted month [M].....(Tcmax): -24.4 (8)
 First coldest contrasted month [m].....(Tcmin): -33.3 (8)
 Estival temperature.....(Ts): 0
 Positive temperature dryest 3 months.....(Tpd): 0
 Positive temperature dryest 2 months.....(Tpd2): 0
 Positive temperature dryest 1 month.....(Tpd1): 0
 Positive temperature warmest 3 months.....(Tps): 0
 Positive temperature warmest 2 months.....(Tps2): 0
 Positive temperature warmest 1 month.....(Tps1): 0
 Positive temperature coldest 3 months.....(Tpw): 0
 Positive temperature coldest 2 months.....(Tpw2): 0
 Positive temperature coldest 1 month.....(Tpw1): 0

MCMURDO STATION (ANTARCTICA TERR.)

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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) | | | | | | | | | | | | |
| Ultragelid...[M' <=0] (Pf) | | | o | o | o | o | o | o | o | o | | |
| Hypergelid...[M <=0] (Pf) | o | o | o | o | o | o | o | o | o | o | o | o |
| Gelid.....[T <=0] (Pf) | o | o | o | o | o | o | o | o | o | o | o | o |
| Subgelid.....[m <=0] (Pf) | o | o | o | o | o | o | o | o | o | o | o | o |
| Pregelid.....[m' <=0] (Pf) | o | o | o | o | o | o | o | o | o | o | o | o |
| Agelid.....[m' > 0] (Pf) | | | | | | | | | | | | |
| HiperAgelid..[all>0] (Pf) | | | | | | | | | | | | |

MCMURDO STATION (ANTARCTICA TERR.)

Latitude: 77°53'S Longitude: 166°48'W Altitude: 2 m

OMBROTHERMIC PARAMETERS

Annual aridity index.[PE/P].....(Iar): 0.00
 Mediterranean index of January.....(Im1): 0.00
 Mediterranean index of January & February.....(Im2): 0.00
 Mediterranean index of December to February...(Im3): 0.00

| Months | Dec. | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. |
|------------|--------------|------|------|--------|------|------|---------------|------|------|--------|------|------|
| Pp(x10) | * | * | * | * | * | * | * | * | * | * | * | * |
| Tp | * | * | * | * | * | * | * | * | * | * | * | * |
| Io (Iom) | * | * | * | * | * | * | * | * | * | * | * | * |
| Seasons | Summer | | | Autumn | | | Winter | | | Spring | | |
| Pp(x10)/Tp | */* | | | */* | | | */* | | | */* | | |
| Io (Iot) | * | | | * | | | * | | | * | | |
| Semesters | December-May | | | | | | June-November | | | | | |
| Pp(x10)/Tp | */* | | | | | | */* | | | | | |
| Io (Iosm) | * | | | | | | * | | | | | |

MCMURDO STATION (ANTARCTICA TERR.)

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Aridity Value Index (AVI)

[10xPP/TP=IO]: 0/0=9999.90 There is No Yearly Aridity

| Months | Dec. | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. |
|----------------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| Pp [P*10] | * | * | * | * | * | * | * | * | * | * | * | * |
| Tp [T*10] | * | * | * | * | * | * | * | * | * | * | * | * |
| Iom [Pp/Tp] | !! | !! | !! | !! | !! | !! | !! | !! | !! | !! | !! | !! |
| Avm [200-Iom] | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** | *** |
| Seasons | Summer | | | Autumn | | | Winter | | | Spring | | |
| Pp / Tp | * / * | | | * / * | | | * / * | | | * / * | | |
| Iot [Pp/Tp] | ** | | | ** | | | ** | | | ** | | |
| Avs E[Avm<200] | *** | | | *** | | | *** | | | *** | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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BIOCLIMATIC INDICES I

CI of Supan (1884) [Tmax-Tmin](Sp): 25.28
 CI of Gorezinski (1920) [1.7*Sp/sin(Lat)-20.4]: 23.56
 CI of Conrad (1946) [1.7*Sp/sin(Lat+10)-14]: 29.01
 + Oceanic (20<CI<40)
 CI of Currey (1974) [CI=Sp/(1+Lat/3)]: 0.94
 + Oceanic (0.6<CI<1.1)
 Rainfall Index of Lang (1925) [R=P/T]: -6.05
 +
 Aridity Index of Martonne (1926) [Ia=P/(T+10)]: -13.74
 +
 I of Emberger (1930) [Q=100*P/(Tmax²-Tmin²)]: -9.75
 +
 I of Dantin & Revenga (1940) [DR=100*T/P]: -16.52
 +
 Aridity Index of UNEP [I=P/PE]: 0.00
 + Hyperarid (0.05>Im)
 Potential Erosion I of Fournier (1960) [K=Pi²/P].....: 2.52
 + Very low (K<60)

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BIOCLIMATIC INDICES II

Bioclimatic classification of Gaussen & Bagnouls (1957)
 + Climate: C. Gelid
 + Region: 12. Criomeric (Gelid)
 + Thermic type: 10. Hipergelid

| Thornthwaite (1948) | | | | | | | | | | | | |
|--|------|------|------|------|------|------------------------------------|------|------|------|------|------|------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| P-E ratio | 0.09 | 0.12 | 0.06 | 0.07 | 0.07 | 0.06 | 0.04 | 0.06 | 0.07 | 0.04 | 0.03 | 0.05 |
| T-E ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Precipitation-effectiveness: 7.63 | | | | | | Temperature-efficiency: 0.00 | | | | | | |
| Moisture Index [MI=100*(P-PE)/PE]: 0.00 + C2.Subhumid humid (0<MI<20) | | | | | | | | | | | | |
| Index of dryness [DI=100*d/PE]: 0.00 + No deficit (0<DI<16.7) | | | | | | | | | | | | |
| Index of humidity [HI=100*s/PE]: 0.00 + No surplus (0<HI<10) | | | | | | | | | | | | |
| Potential Evapotranspiration PE: 0.00 + Ice climate (PE<142) | | | | | | | | | | | | |

