World Map of Köppen−Geiger Climate Classification

updated with CRU TS 2.1 temperature and VASClimO v1.1 precipitation data 1951 to 2000

| Af	Am	As	Aw	BWk	BWh	BSk	BSh	Cfa	Cfb	Cfc	Csa	Csb	Csc	Cwa

Cwb	Cwc	Dfa	Dfb	Dfc	Dfd	Dsa	Dsb	Dsc	Dsd	Dwa	Dwb	Dwc	Dwd	EF	ET
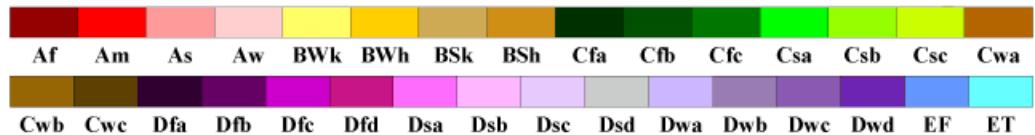
Main climates

A: equatorial
B: arid
C: warm temperate
D: snow
E: polar

Precipitation

W: desert
S: steppe
f: fully humid
s: summer dry
w: winter dry
m: monsoonal

Temperature

h: hot arid
k: cold arid
a: hot summer
b: warm summer
c: cool summer
d: extremely continental

F: polar frost
T: polar tundra

Resolution: 0.5 deg lat/lon

Version of April 2006

http://gpcc.dwd.de
http://koeppen-geiger.vu-wien.ac.at
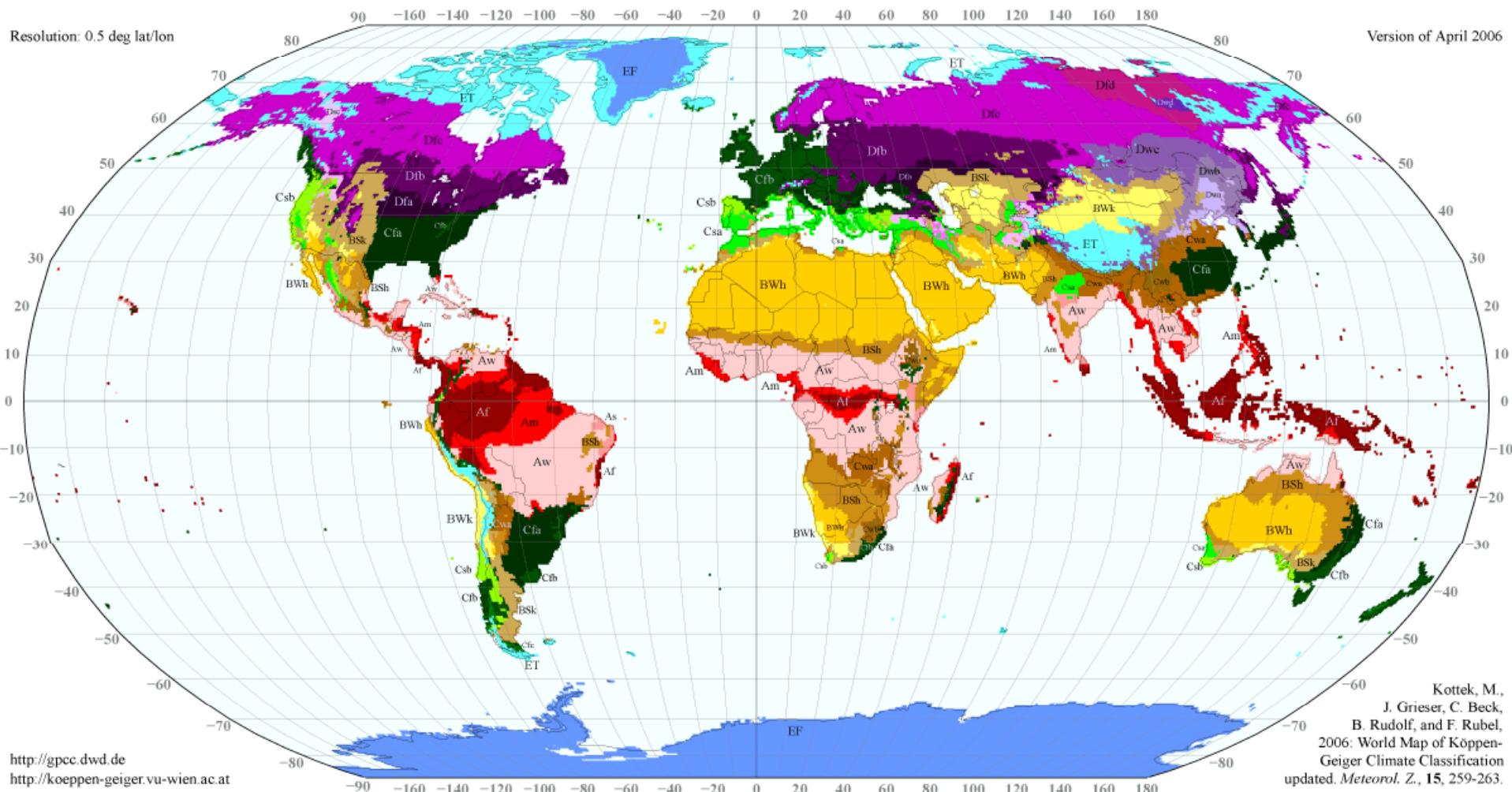
Kottek, M.,
J. Grieser, C. Beck,
B. Rudolf, and F. Rubel,
2006: World Map of Köppen-
Geiger Climate Classification
updated. *Meteorol. Z.*, **15**, 259-263.

The Koeppen Climate Classification System

The Koeppen System has been used for over 100 years

Requirements:

System had to be global, so input data had to be simple, only monthly average temp and precip.

Boundaries of climate regions should coincide with boundaries of vegetation (ecosystem) regions.

The Koeppen Climatic Classification System
Has Five Major Climate Groups
### Each Is Designated with an Alphabetic Letter

A Tropical Wet Climates

B Dry Climates, both desert and semi-desert

C Mesothermal, mid-latitude or subtropical seasonal

D Microthermal, humid continental

E Polar

Wet Equatorial Climate, Group A
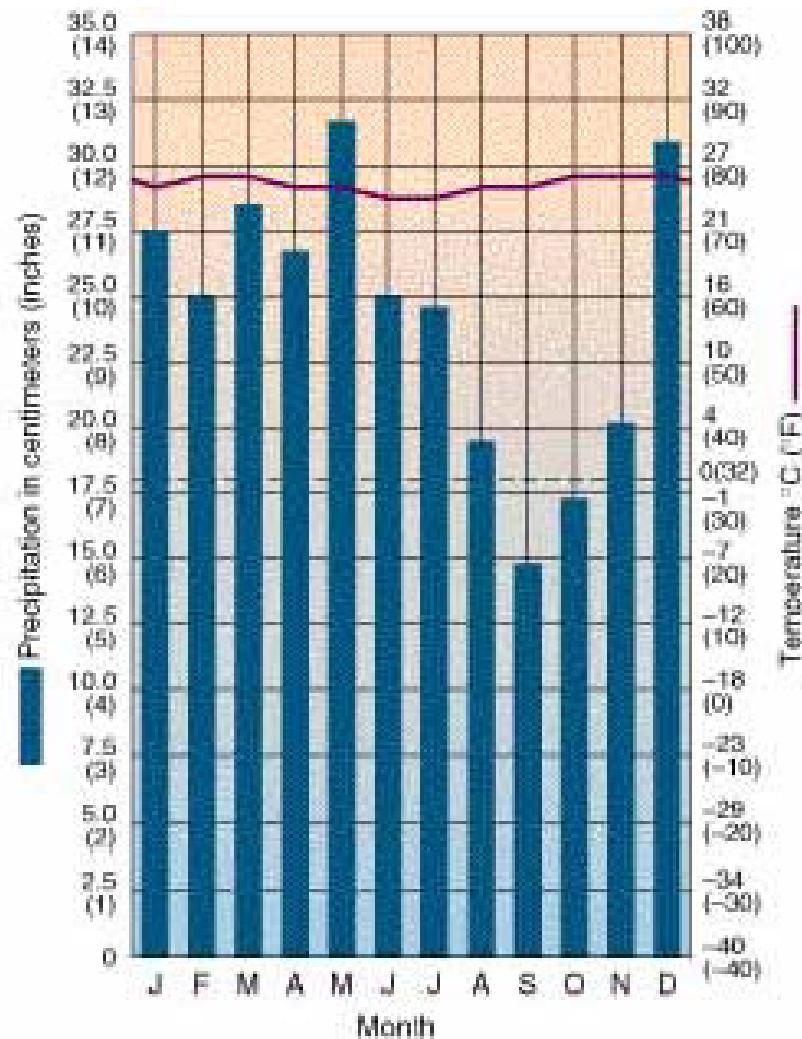
Station: Uaupés, Brazil   Af
Lat/long: 0°08' S 67°05' W
Avg. Ann. Temp.: 25°C (77°F)
Total Ann. Precip.: 291.7 cm (114.8 in.)

Elevation: 86 m (282.2 ft)
Population: 7500
Ann. Temp. Range: 2 C° (3.6 F°)
Ann. Hr of Sunshine: 2018
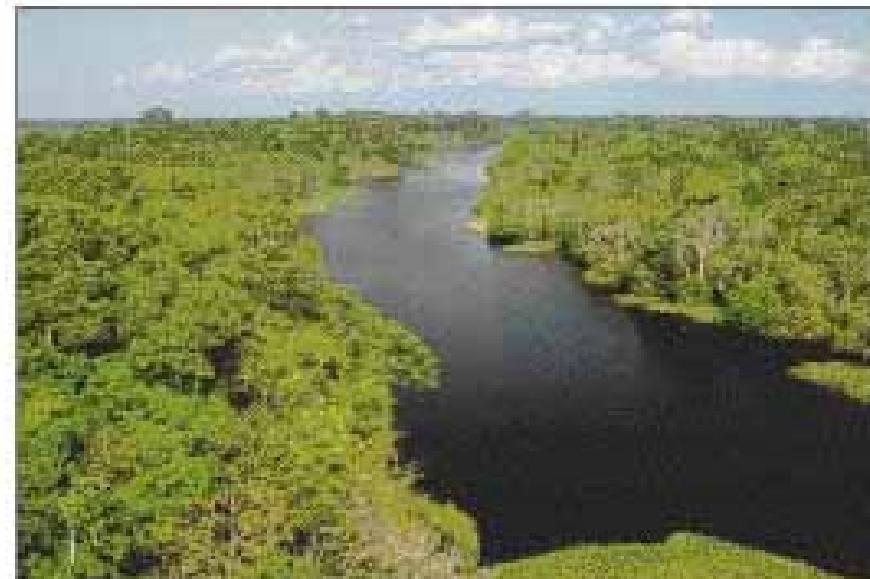
Tropical Monsoon Climate, Group A
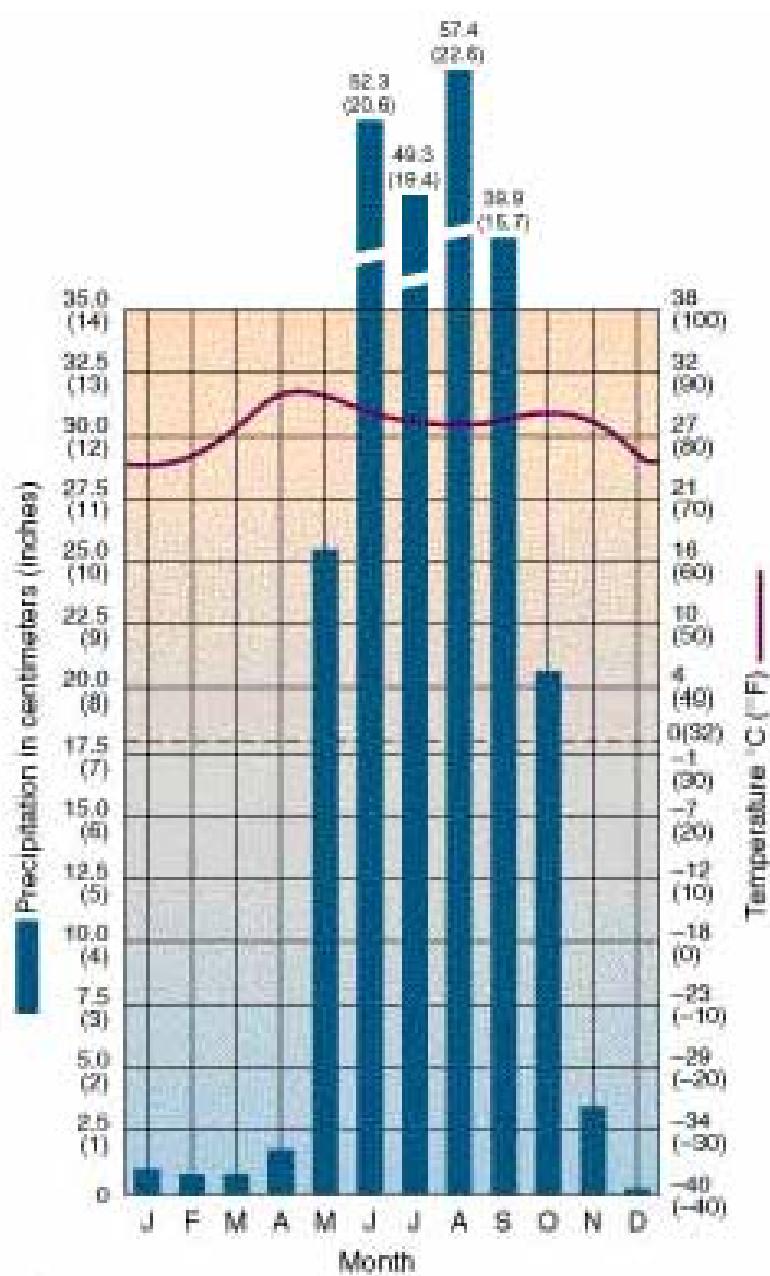
Station: Yangon, Myanmar* **Am**
Lat/long: 16°47' N 96°10' E
Avg. Ann. Temp.: 27.3°C (81.1°F)
Total Ann. Precip.:
    252.7 cm (99.5 in.)

Elevation: 23 m (76 ft)
Population: 2,458,700
Ann. Temp. Range:
   5.5 C° (9.9 F°)

*(Formerly Rangoon, Burma)

Tropical Wet and Dry Climate, Group A

Station: Mérida, Mexico   **Aw**   **Elevation:** 22 m (72.2 ft)
Lat/long: 20°59' N 89°39' W   **Population:** 400,000
Avg. Ann. Temp.: 26°C (78.8°F)   **Ann. Temp. Range:** 5 C°(9 F°)
Total Ann. Precip.:   **Ann. Hr of Sunshine:** 2379
   93 cm (36.6 in.)
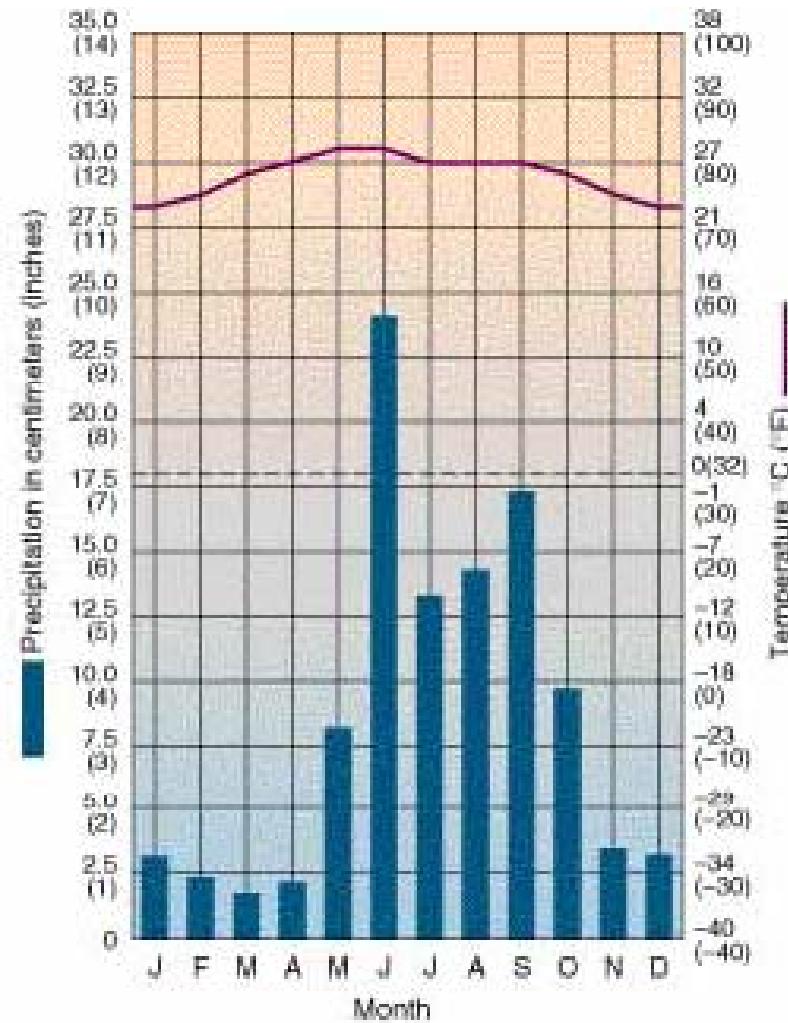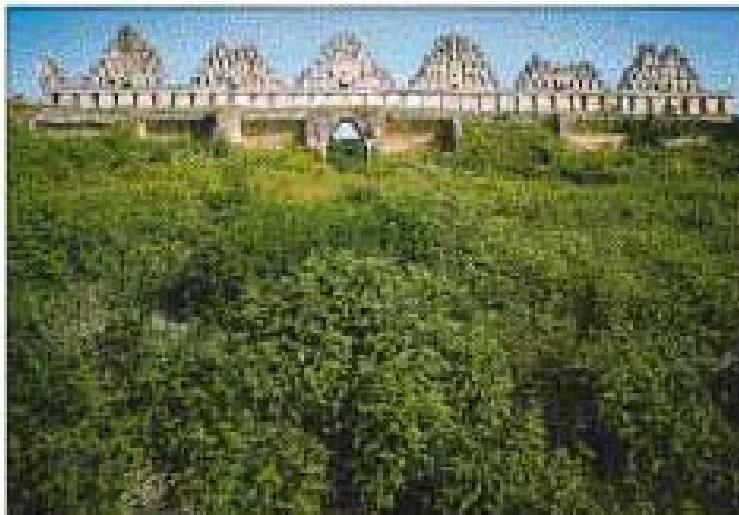
Humid Subtropical Climate, Croup C
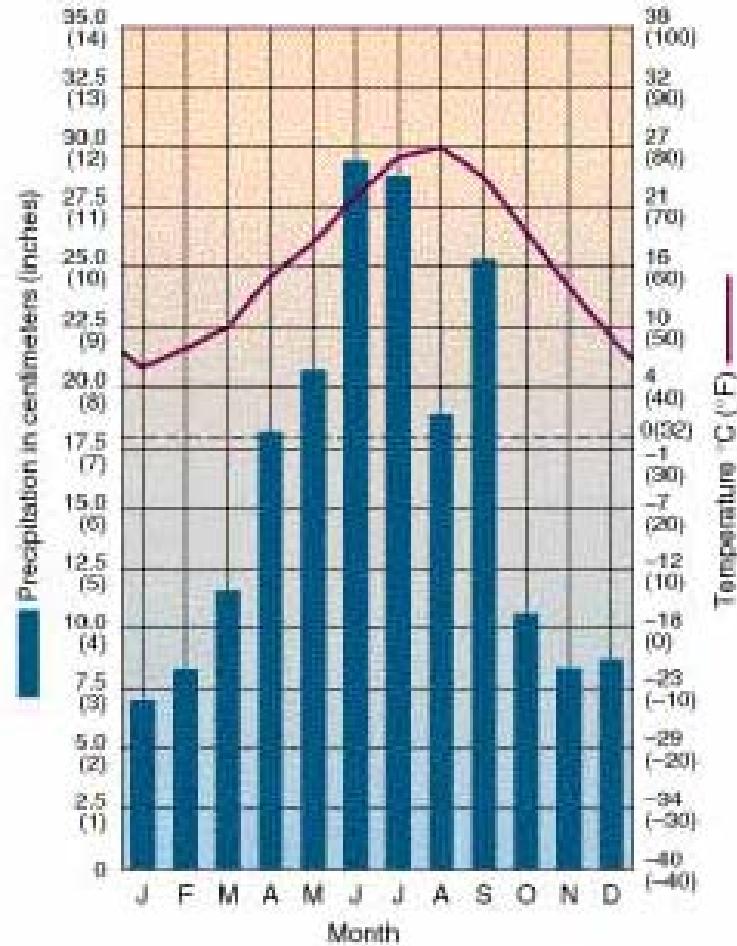
Station: Nagasaki, Japan   Cfa   Elevation: 27 m (88.6 ft)
Lat/long: 32°44' N 129°52' E   Population: 449,000
Avg. Ann. Temp.: 16°C (60.8°F)   Ann. Temp. Range:
Total Ann. Precip.:   21 C° (37.8 F°)
   195.7 cm (77 in.)   Ann. Hr of Sunshine: 2131

(a)
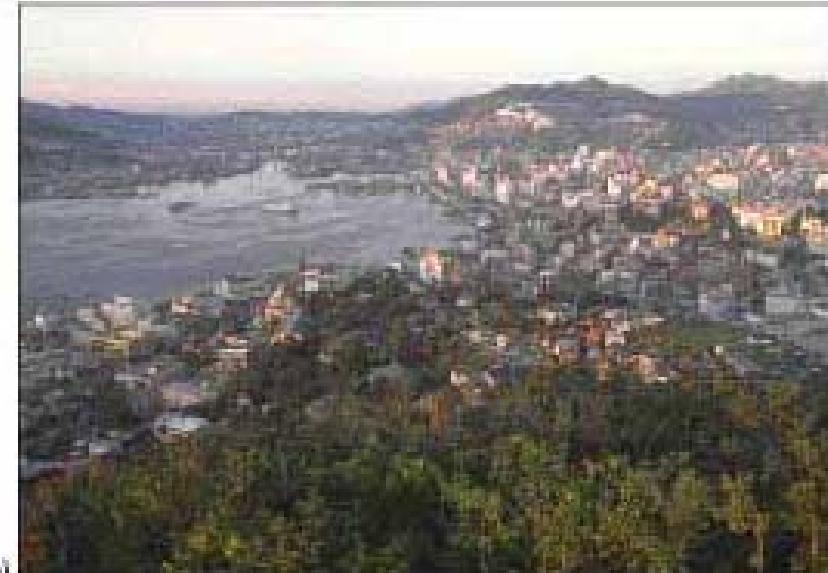
(c)

Subtropical Monsoon Climate, Group C
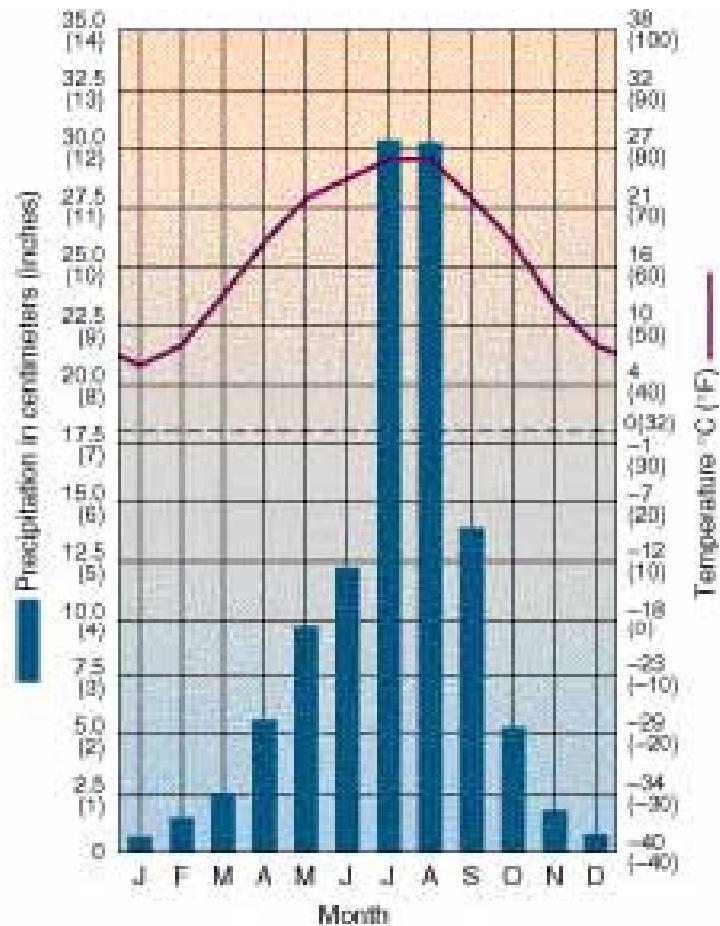
Station: Chengdu, China   Cwa   Elevation: 498 m (1633.9 ft)
Lat/long: 30°40' N 104°04' E   Population: 2,260,000
Avg. Ann. Temp.: 17°C (62.6°F)   Ann. Temp. Range:
Total Ann. Precip.:   20 C° (36 F°)
   114.6 cm (45.1 in.)   Ann. Hr of Sunshine: 1058
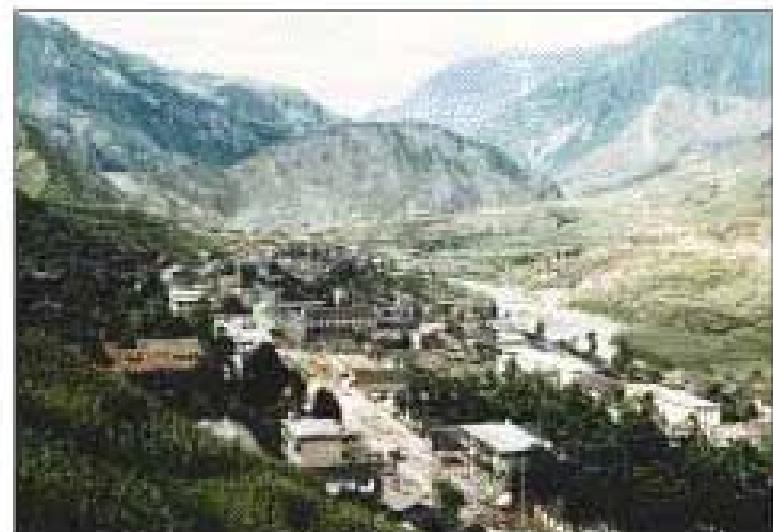
Cool Marine West Coast Climate, Group C
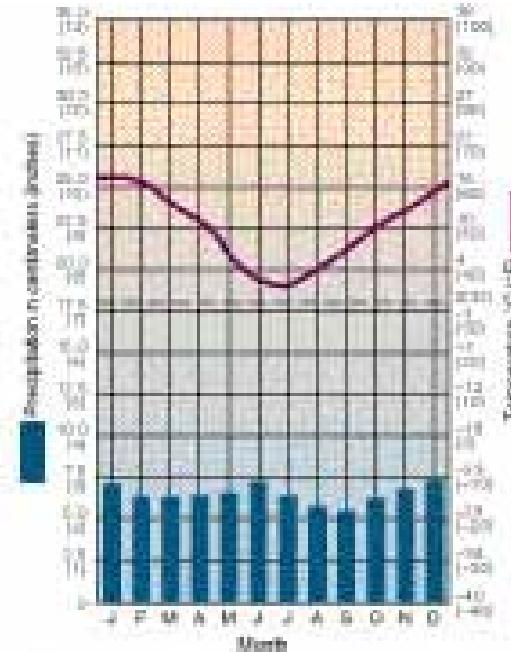
Station: Dunedin, New Zealand Cfb   Elevation: 1.6 m (6 ft)
Lat/long: 45°54′ S 170°31′ E   Population: 77,500
Avg. Ann. Temp.: 10.2°C (50.3°F)   Ann. Temp. Range:
Total Ann. Precip.:   14.2°C (25.6°F)
   78.7 cm (31.0 in.)

Marine West Coast Climate in the Highest Mountains of the Appalachians, Group C
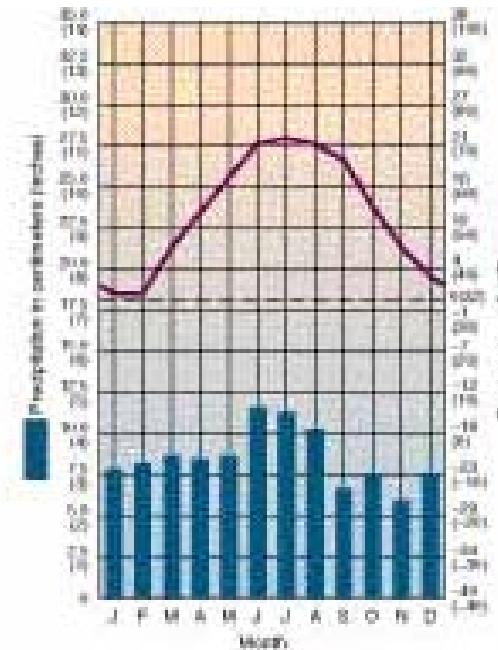
Station: Bluefield, West Virginia Cfb
Lat/long: 37°16' N/81°13' W
Avg. Ann. Temp.:
 12°C (53.6°F)
Total Ann. Precip.:
 101.5 cm (40.1 in.)

Elevation: 780 m (2558 ft)
Population: 16,900
Ann. Temp. Range:
 21°C (37.8°F)
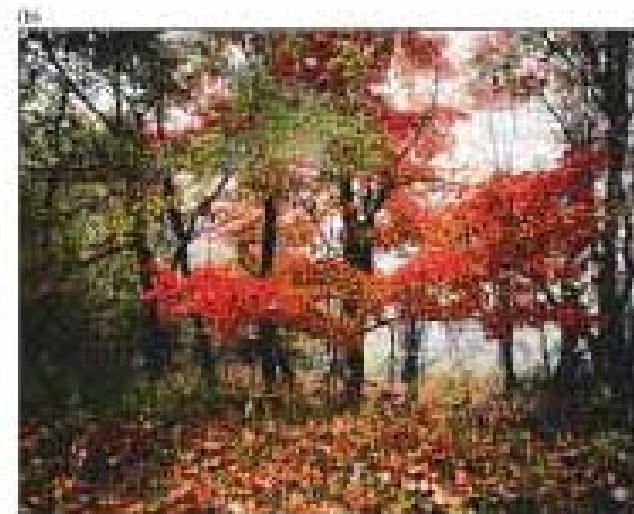
Mediterranean Climate

Warm, Dry Summers with Cool Moist Winters, Group C
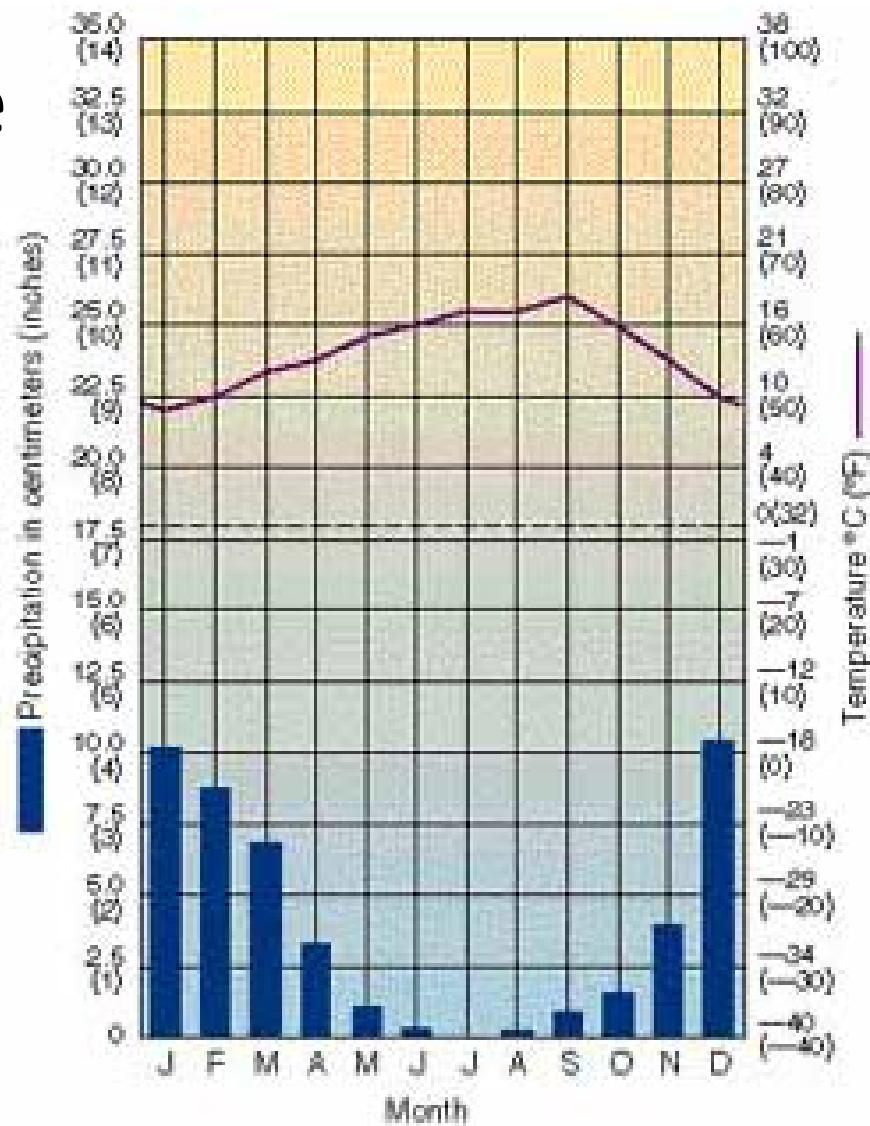
Station: San Francisco, California Csb
Lat/long: 37°37' N 122°23' W
Avg. Ann. Temp.:
14°C (57.2°F)
Total Ann. Precip.:
47.5 cm (18.7 in.)

Elevation: 5 m (16.4 ft)
Population: 750,000
Ann. Temp. Range:
9 C° (16.2 F°)
Ann. Hr of Sunshine:
2975

(a)

Mediterranean Climate Often Associated with Chaparral Vegetation
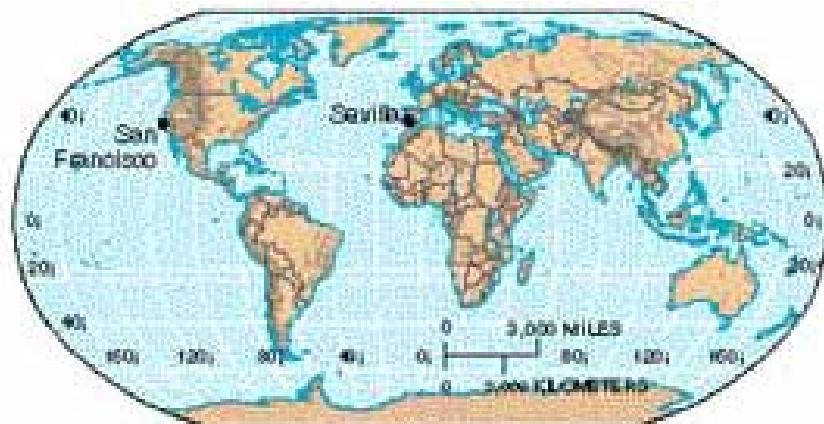
(d)

Humid Continental Climate, Group D Warm Summers

Precipitation in centimeters (inches)

Temperature °C (°F)

Month
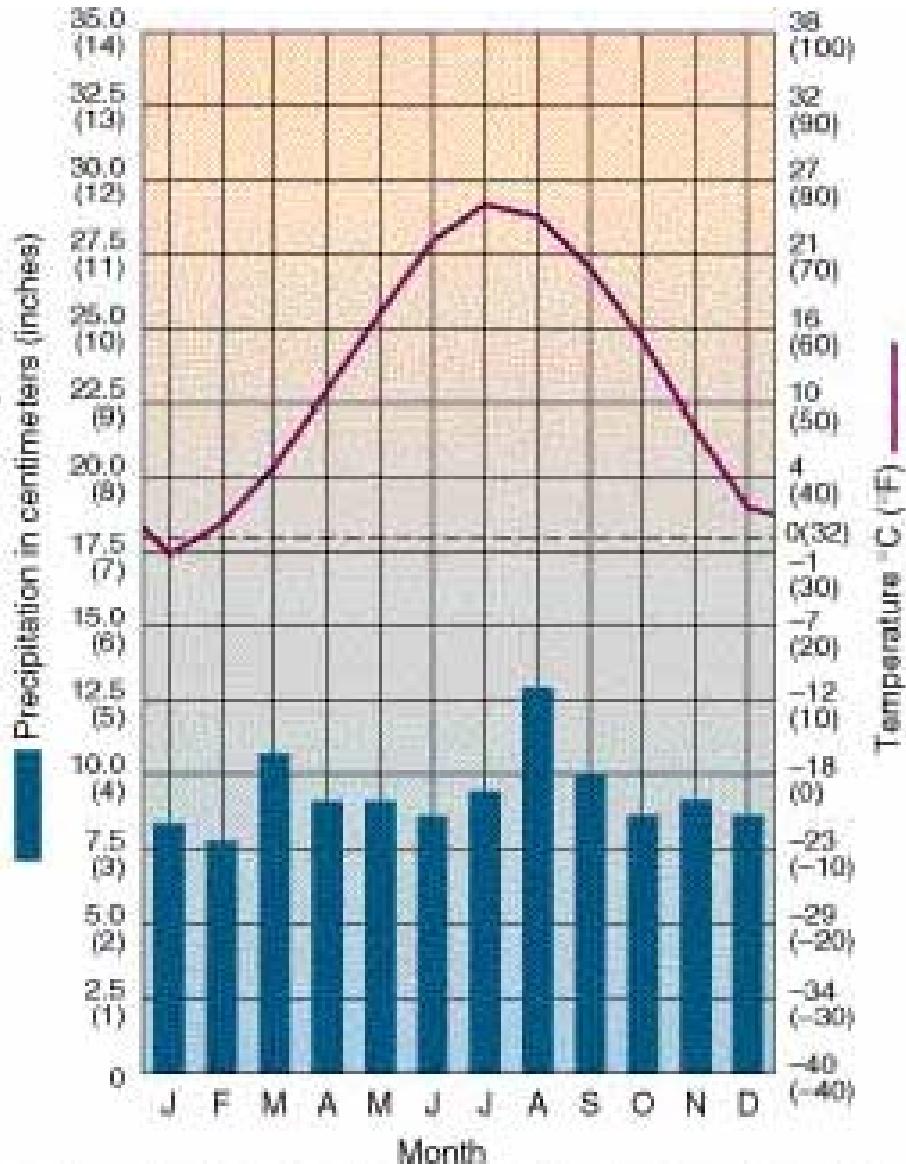
Station: New York, New York Dfa
Lat/long: 40°46' N 74°01' W
Avg. Ann. Temp.:
            13°C (55.4°F)
Total Ann. Precip.:
            112.3 cm (44.2 in.)

Elevation: 16 m (52.5 ft)
Population: 7,100,000
Ann. Temp. Range:
            24 C° (43.2 F°)
Ann. Hr of Sunshine:
                        2564

(a)

Humid Continental Climate, Group D

with Hint of Monsoon Effects –Strong Seasonality of Temp and Dry Winters

Precipitation in centimeters (inches)

Temperature °C (°F)

35.0 (14)
32.5 (13)
30.0 (12)
27.5 (11)
25.0 (10)
22.5 (9)
20.0 (8)
17.5 (7)
15.0 (6)
12.5 (5)
10.0 (4)
7.5 (3)
5.0 (2)
2.5 (1)
0

38 (100)
32 (90)
27 (80)
21 (70)
16 (60)
10 (50)
4 (40)
0 (32)
−1 (30)
−7 (20)
−12 (10)
−18 (0)
−23 (−10)
−29 (−20)
−34 (−30)
−40 (−40)

J F M A M J J A S O N D

Month
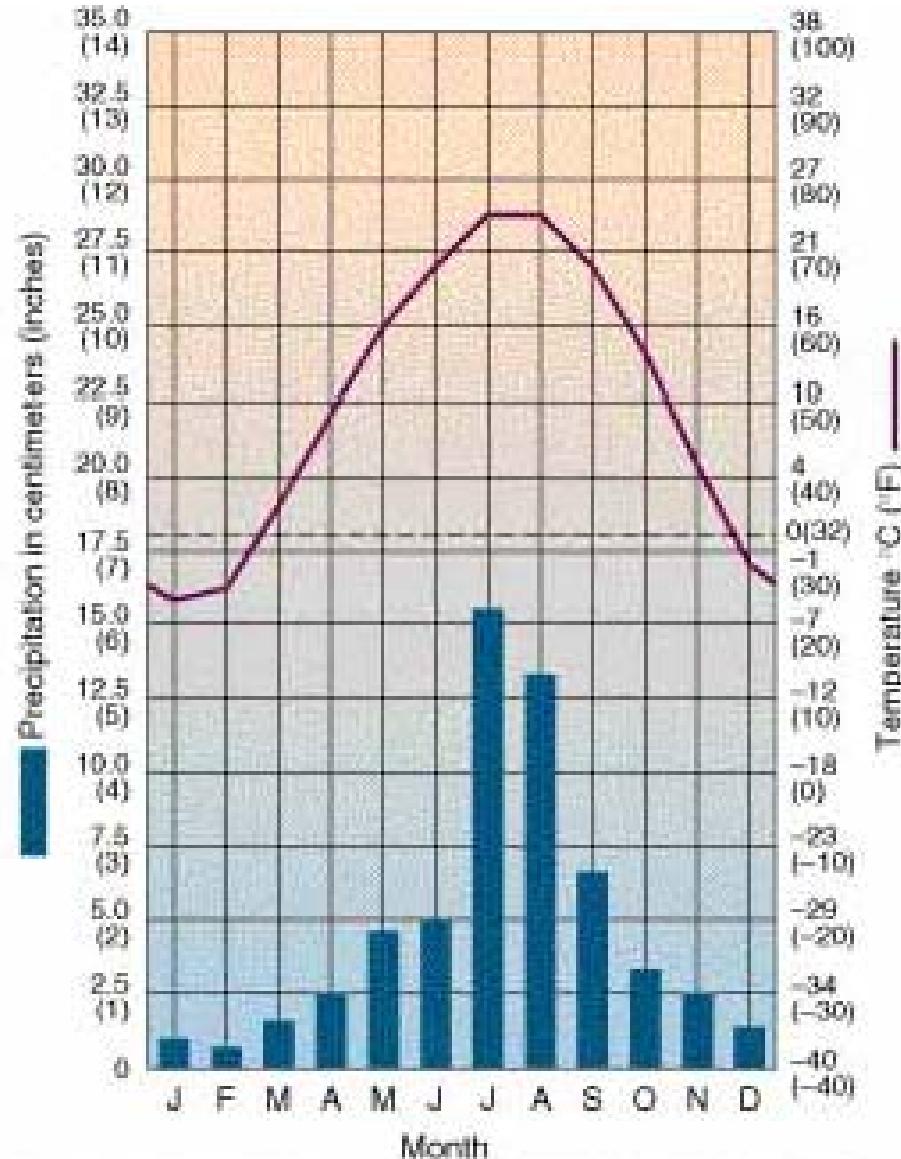
Station: Dalian, China   Dwa   **Elevation:** 96 m (314.9 ft)
Lat/long: 38°54' N 121°54' E   **Population:** 4,270,000
Avg. Ann. Temp.:   **Ann. Temp. Range:**
     10°C (50°F)   29 C° (52.2 F°)
Total Ann. Precip.:   **Ann. Hr of Sunshine:**
     57.8 cm (22.8 in.)   2762

(b)

Humid Continental Climate in Indiana, Soybean Field

(c)

Humid Continental, Mild Summer, Group D
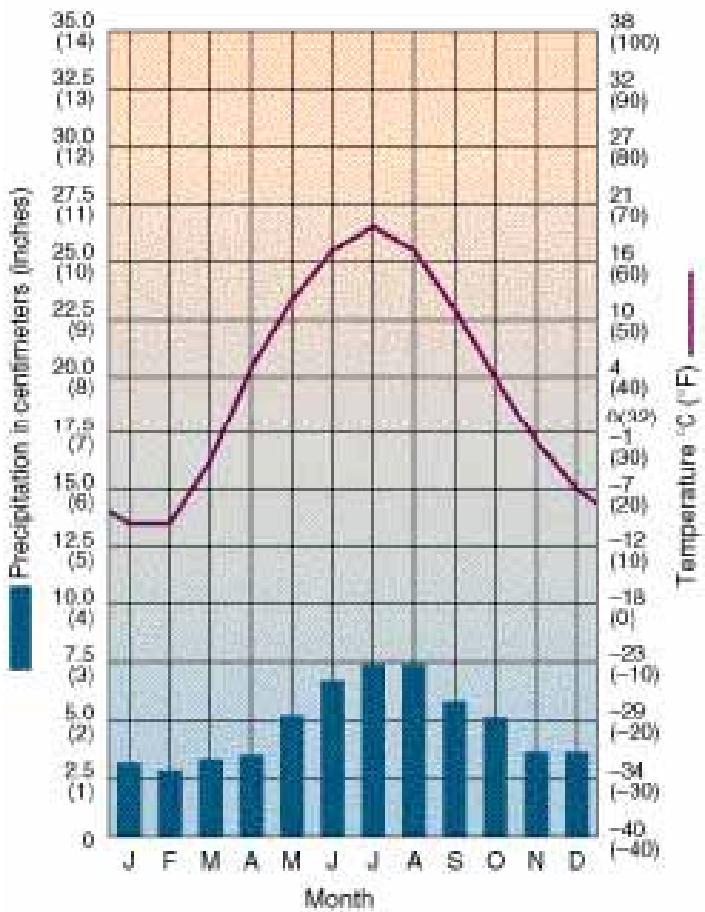
Station: Moscow, Russia   Dfb
Lat/long: 55°45' N 37°34' E
Avg. Ann. Temp.: 4°C (39.2°F)
Total Ann. Precip.:
57.5 cm (22.6 in.)

Elevation: 156 m (511.8 ft)
Population: 9,900,000
Ann. Temp. Range:
29 C° (52.2 F°)
Ann. Hr of Sunshine:
1597

Extreme Continental in Canada, Not as Extreme as Siberia, Cool Summers and Cold Winters, Group D
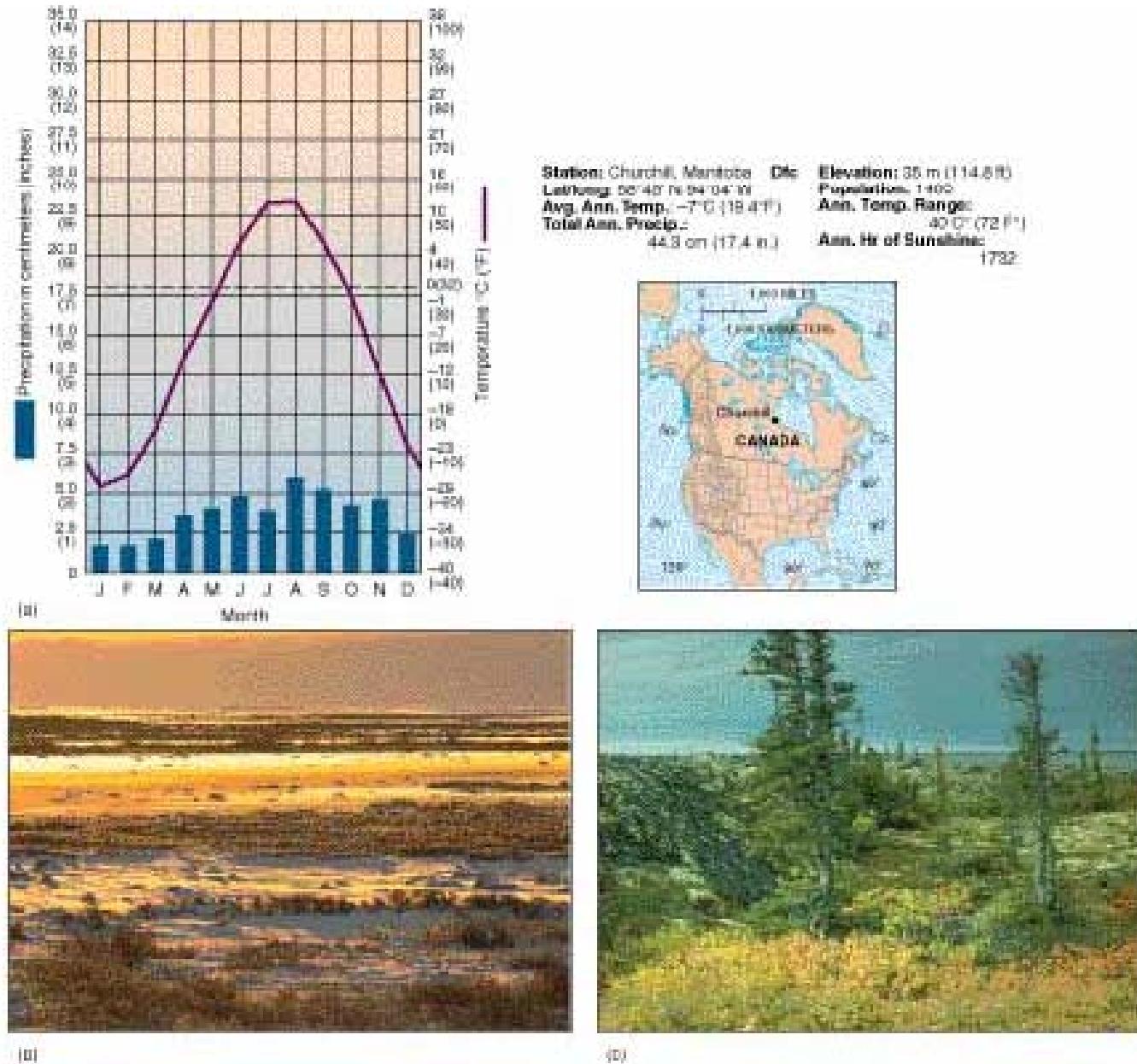
Environment Typical of the Great Northern Forest of Alaska, Canada and Russia, Group D

Extreme Continental in Northern Siberia, Winter Dry Because of Extreme Cold, Group D
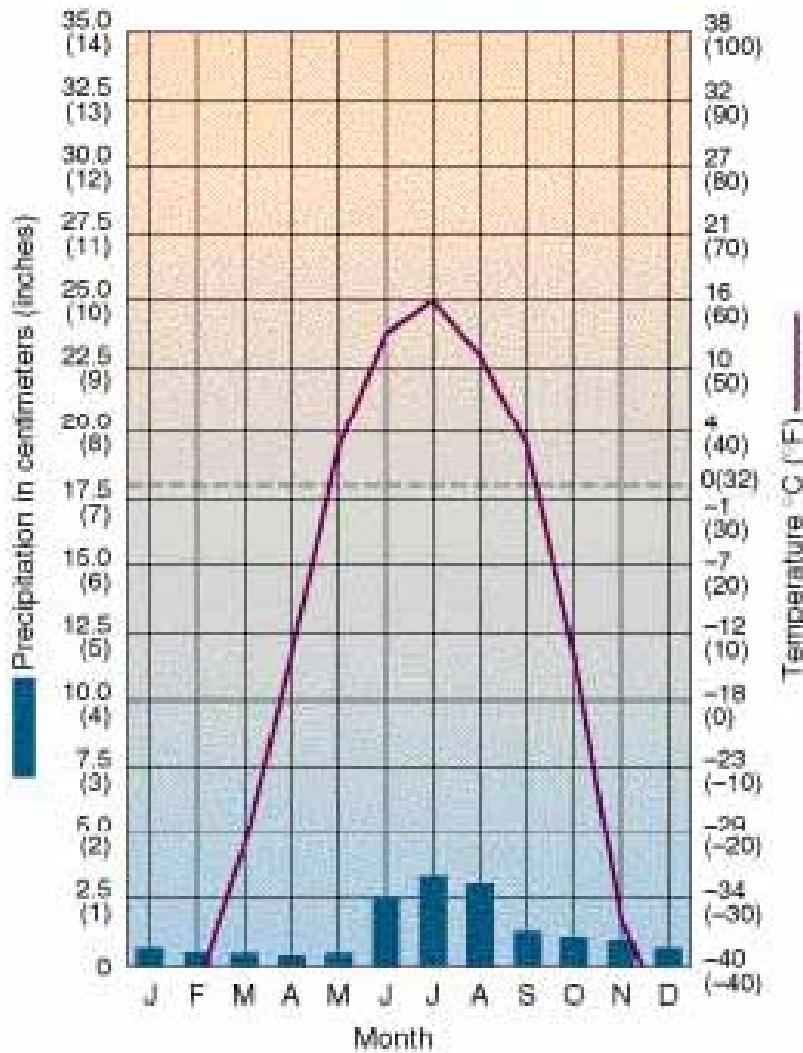
(a)

Station: Verkhoyansk, Russia Dwd
Lat/long: 67°35′ N 133°27′ E
Avg. Ann. Temp.: −15°C (5°F)
Total Ann. Precip.: 15.5 cm (6.1 in.)

Elevation: 137 m (449.5 ft)
Population: 1400
Ann. Temp. Range: 63 C (113.4 F°)
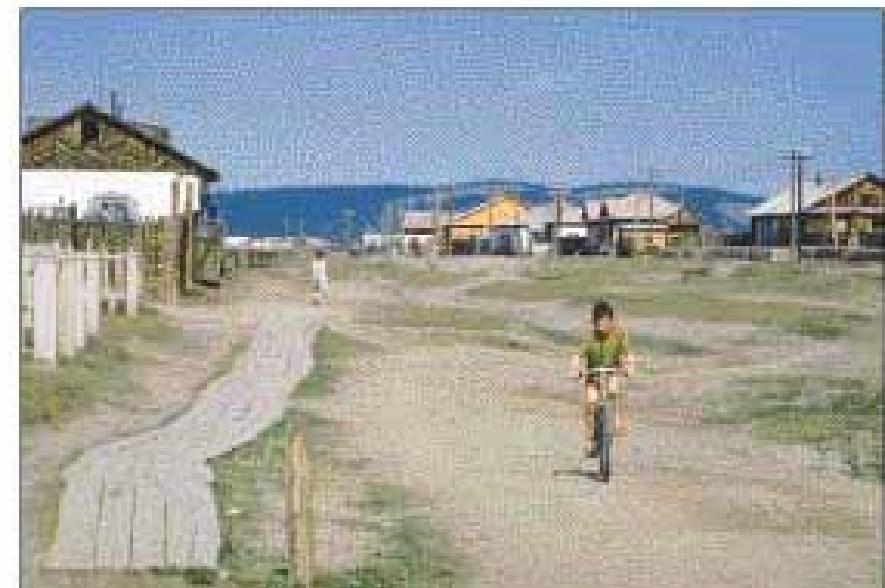
(b)

Arctic Tundra, Group E

Polar Climate, Group E

(a)

# Hot, Dry Climate, Subtropical Desert, Group B
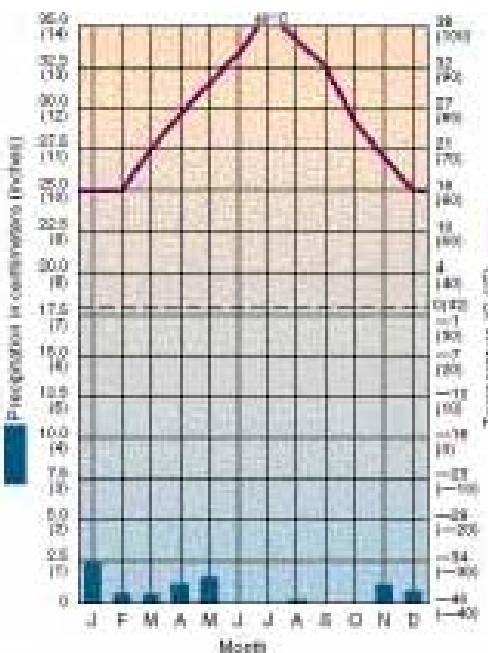
Desert of Southern Arizona

(a)

Hot, Semi-desert, Group B

(a)

Station: Walgett, New South Wales, Australia   BSh
Lat/long: 30°0'S 148°07'E
Avg. Ann.Temp.: 20°C (68°F)
Total Ann. Precip.:
           45.0 cm (17.7 in.)

Elevation: 133 m (436 ft)
Population: 2160
Ann. Temp. Range:
           17 C (31 F°)
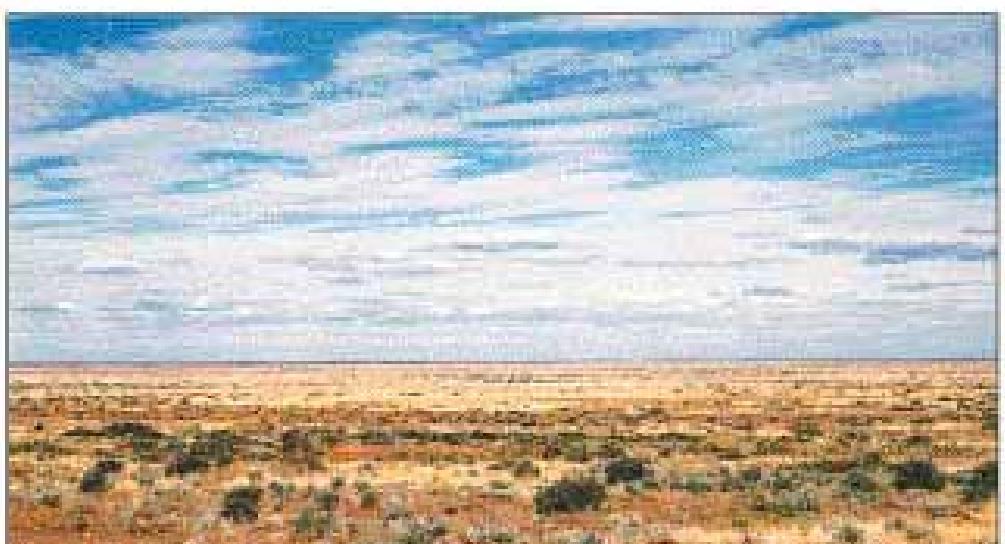
(b)

Hot, Semi-desert in India

Cool Desert, Great Basin of Nevada, Group B
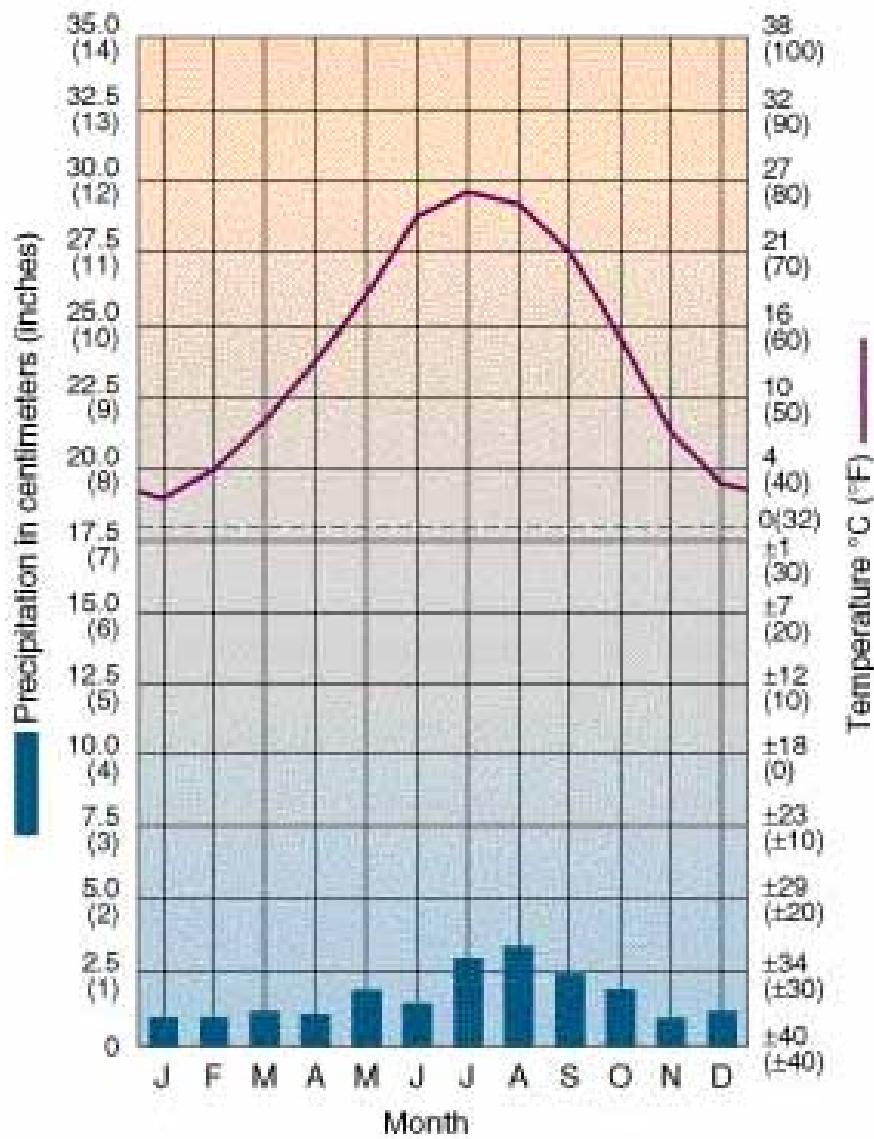
Station: Albuquerque, New Mexico — BWk
Lat/long: 35°03© N 106°37© W
Avg. Ann. Temp.: 14°C (57.2°F)
Total Ann. Precip.: 20.7 cm (8.1 in.)

Elevation: 1620 m (5315 ft)
Population: 370,000
Ann. Temp. Range: 24 C° (43.2 F°)
Ann. Hr of Sunshine: 3420
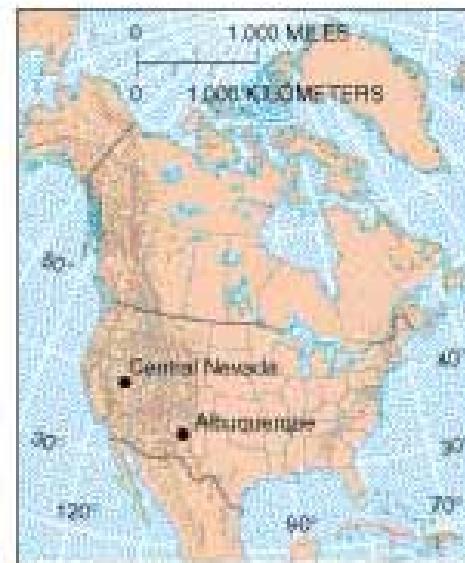
Scrub and Sagebrush in Cool Desert Climate Group B
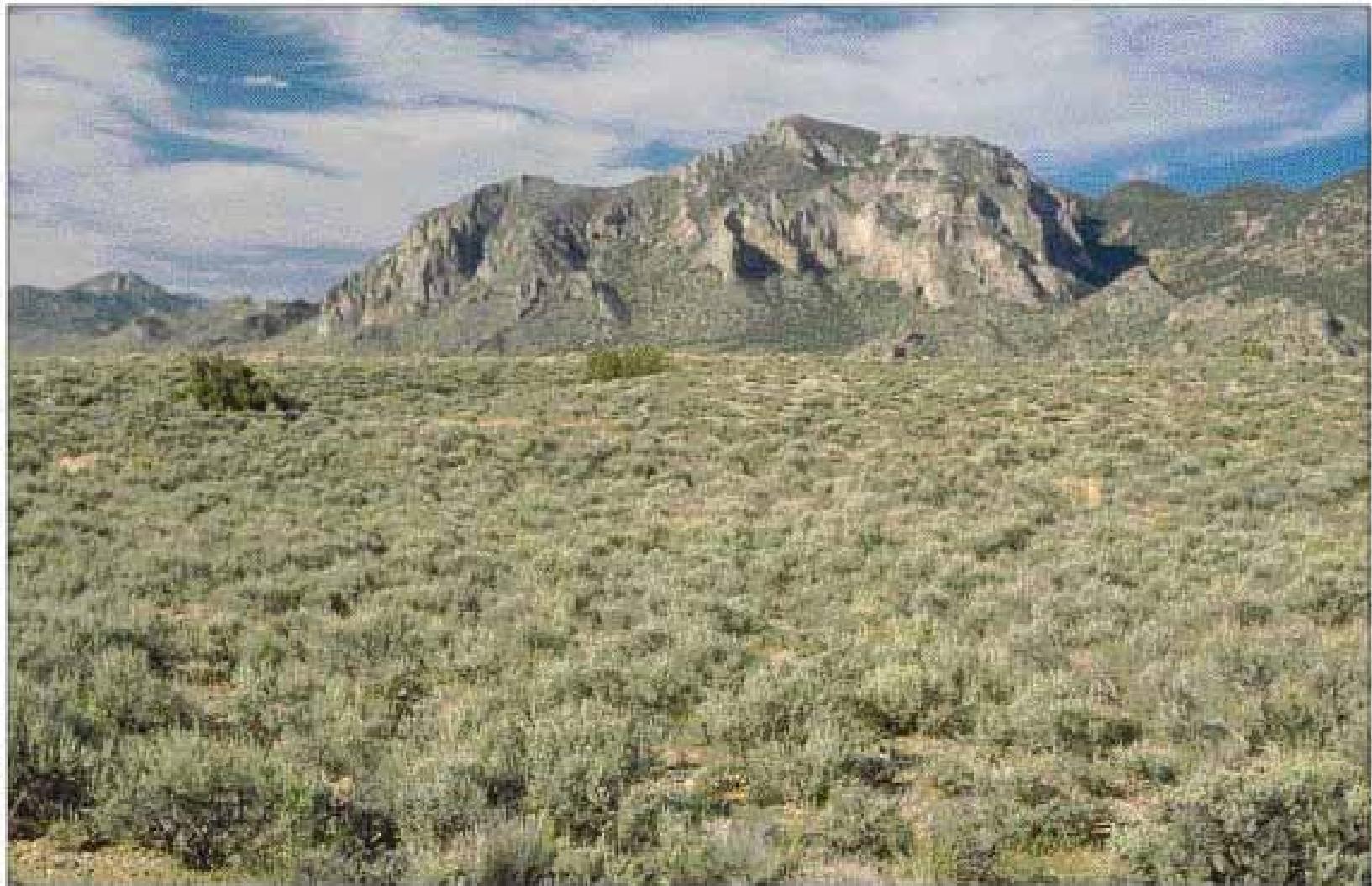

(b)

Desert of Western U.S.

(b)

# Cool Grassland or Steppe – Short Grass Prairie, Group B
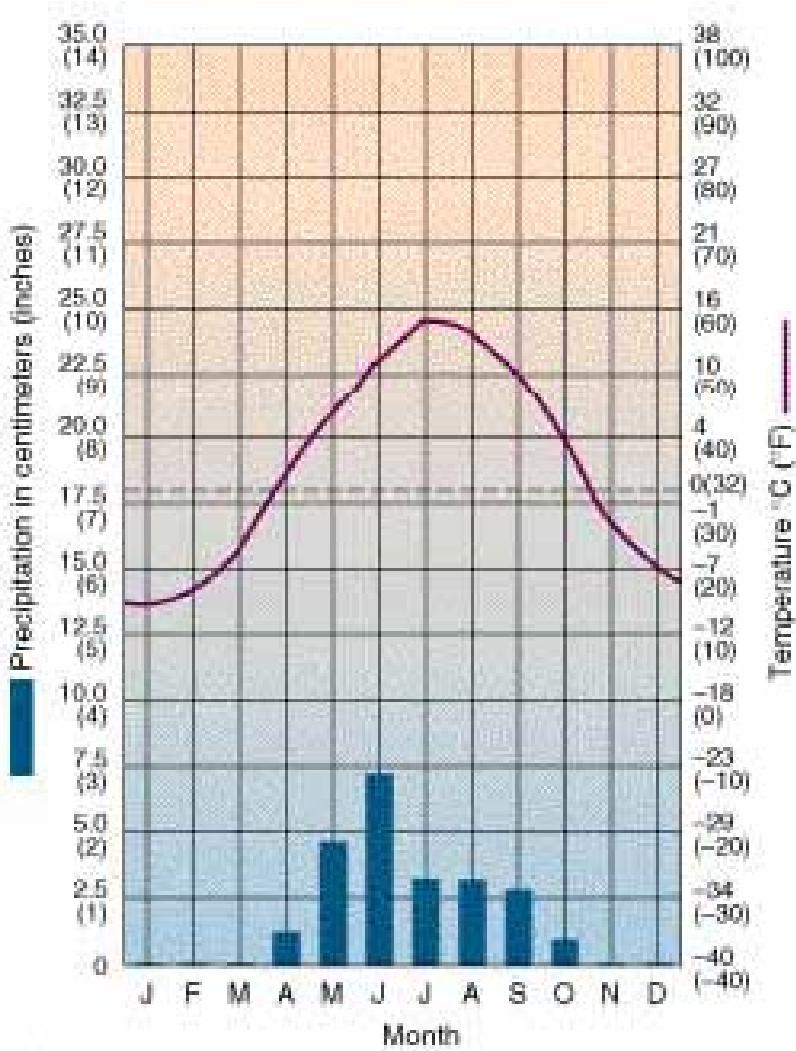
(c)

Station: Lethbridge, Alberta   BSk
Lat/long: 49°42' N 110°50' W
Avg. Ann. Temp.: 2.9°C (37.3°F)
Total Ann. Precip.:
        25.8 cm (10.2 in.)

Elevation: 910 m (2985 ft)
Population: 56,840
Ann. Temp. Range:
        24.3 C (43.7 F°)

(d)

Cool Grassland or Steppe, in Kazakstan, Group B
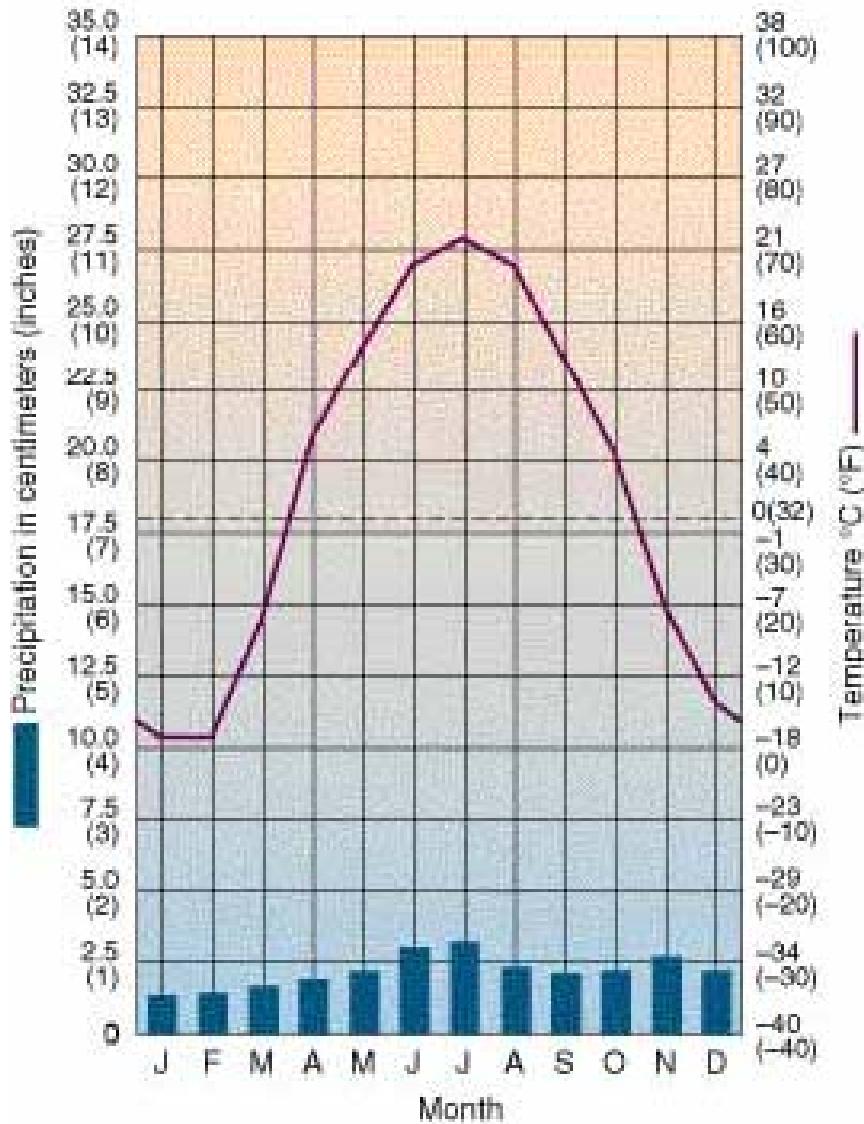
Station: Semey (Semipalatinsk), BSk Kazakstan
Lat/long: 50°21' N 80°15' E
Avg. Ann. Temp.: 3°C (37.4°F)
Total Ann. Precip.: 26.4 cm (10.4 in.)

Elevation: 206 m (675.9 ft)
Population: 330,000
Ann. Temp. Range: 39 C° (70.2 F°)

South Australia Near Coast