



KMA'S BRIEFING ON CLIMATE CHARACTERISTICS

(total 6 pages)

Division	Meteorological Resources Division
Contact	LEE Jae-Won
Phone/email	+82-2-2181-0882/ jlee99@korea.kr
Release	March 10, 2011

February 2011 and the winter 2010 Climate Summary

- ◇ Temperatures for February 2011 was above-normal and precipitation anomalies was above-normal.
- ◇ Temperatures for the winter 2010 was below-normal and precipitation was similar to normal.

- Climate characteristics of February 2011 and the winter 2010 (December 2010 through February 2011) and its long-term trends are analyzed using 48 meteorological stations in Korea (the national average) during 1973-2011 (1908-2011 for Seoul).
- **The climatological characteristics in February 2011 can be described as follows:**
 - o For Korea (whole nation),
 - The mean temperature (2.1°C), the mean maximum temperature (8.1°C), and the mean minimum (-3.0°C) were 0.7°C, 1.1°C and 0.5°C higher than normal, respectively.
 - Rainfall total (62.5mm) was 169% of normal.
 - The average days of rain (5.5 days) had 1.1 less days compared to normal.
 - o For Seoul,
 - The mean temperature (1.2°C), the mean maximum temperature (5.9°C), and the mean minimum (-2.5°C) were 0.8°C, 1.2°C and 0.9°C higher than normal, respectively.
 - Rainfall total (29.1mm) was 116% of normal.
 - The average days of rain (3.0 days) had 2.8 less days compared to normal.

□ **The climatological characteristics in the winter 2010 (December 2010 through February 2011) can be described as follows:**

o Korea (whole nation),

- The mean temperature (-0.4°C) and the mean maximum temperature (5.1°C) and the mean minimum temperature (-5.3°C) were 1.2°C and 1.2°C and 1.4°C below-normal, respectively.
- Rainfall total (100.1mm) was 108% of normal.
- The average days of rain (17.8 days) had 2.5 less days compared to normal.

o For Seoul,

- The mean temperature (-2.4°C), the mean maximum temperature (1.9°C), and mean minimum (-6.0°C) were 1.9°C , 1.6°C and 1.8°C below-normal, respectively.
- Days with minimum temperature below -10°C or equal (27.0 days) and days with maximum temperature below 0°C (42.0 days) had 16.9 more day and 21.2 more day compared to normal, respectively.
- Rainfall total (54.1mm) was 80% of normal.
- The average days of rain (17 days) had 2.7 less days compared to normal.

□ **Long-term trend of February 2011 and the winter 2010 climate**

- o National mean, mean maximum, and mean minimum temperatures of February 2000s (2001-2010) were 1.5°C , 1.8°C , and 1.4°C higher than those of the 1970s, respectively.
- o For Seoul, days with minimum temperature below -10°C or equal (1 days), days with maximum temperature below 0°C (4 days) of the February during 2001 and 2010 were 2.4 and 2.2 days less than those of the 1970s, respectively.
- o National mean, all of the days with minimum temperature below -10°C or equal (9.6 days) and days with maximum temperature below 0°C (8.0 days) of the winter during 2001 and 2010 were 5.6 and 5.4 days less than those of the 1970s, respectively.
- o National mean, rainfall total (94.3mm) of the winter during 2001 and 2010 was 2.2mm less than those of the 1970s. also, for Seoul, the figures (63.0cm) was 11.9cm less than those of the 1970s.

※ Normal: average from 1981 to 2010.

※ National average is used average values of 48 meteorological stations.

※ In Seoul, data are analyzed from 1908.

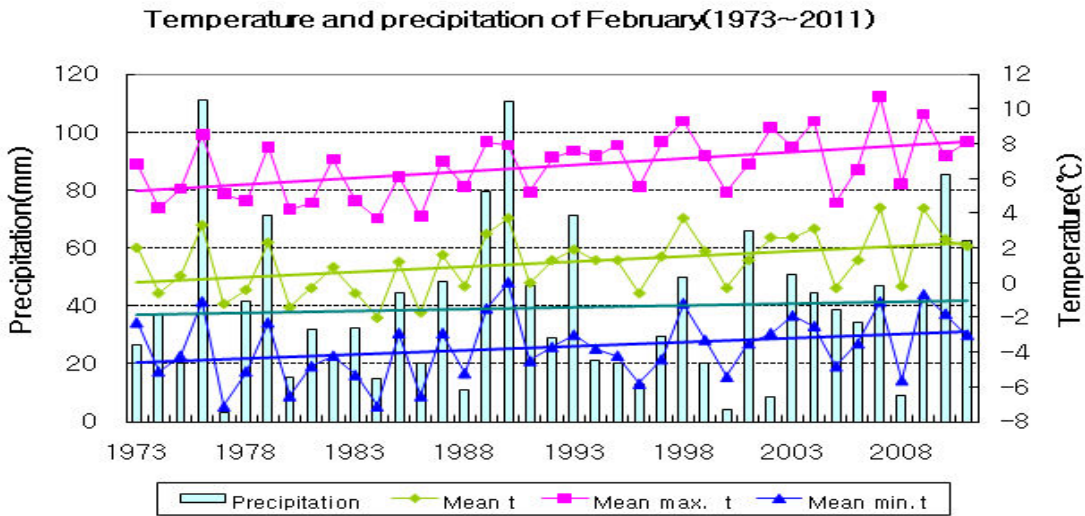
※ 1920s: average from 1921 to 1930

※ 1970s: average from 1973 to 1980

※ 2000s: average from 2001 to 2010

Appendix 1. February, 2011 climate

Fig. 1. Temperatures (mean, mean maximum, and mean minimum), and precipitation across South Korea during February (1973-2011)



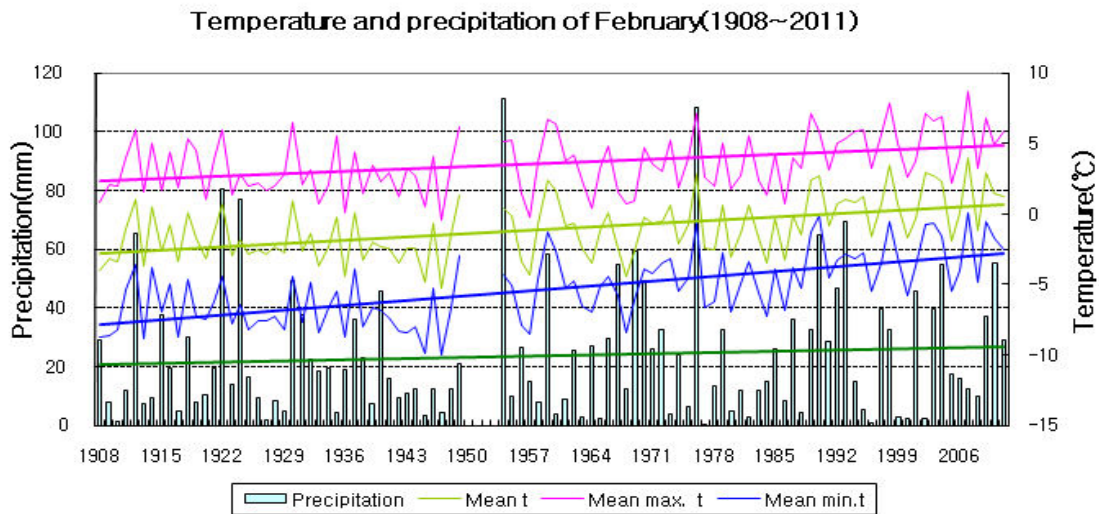
□ Average values of meteorological elements across Korea (1973-2011)

Elements (National) average	February 2011(a)	Normals of February (1981-2010) (b)	a-b-	rank since 1973 (within 5th)
mean temperature (°C)	2.1	1.4	0.7	-
mean maximum t (°C)	8.1	7.0	1.1	-
mean minimum t (°C)	-3.0	-3.5	0.5	-
days with minimum t below -10°C	1.2	2.7	-1.5	-
days with maximum t below 0°C	0.8	1.7	-0.9	-
rainfall total(mm)	62.5	37.1	25.4(168.5%)	-
rainy days	5.5	6.6	-1.1	-

□ Average values of meteorological elements across Korea for each decade (1973-2010)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Days with minimum t below -10°C	Days with maximum t below 0°C	Precipitation (mm)	rainy days
1973-1980 (a)	0.6	5.9	-4.2	4.2	4.0	40.7	7.2
1981-1990 (b)	0.5	5.9	-4.0	3.9	3.0	41.5	7.7
1991-2000 (c)	1.2	7.1	-3.9	3.0	1.4	30.5	6.1
2001-2010 (d)	2.1	7.7	-2.8	2.1	1.3	42.7	6.3
d-a	1.5	1.8	1.4	-2.1	-2.7	2.0	-0.9
d-b	1.6	1.8	1.2	-1.8	-1.7	1.2	-1.4
d-c	0.9	0.6	1.1	-0.9	-0.1	12.2	0.2

Fig. 2. Temperatures (mean, mean maximum, and mean minimum), and precipitation across Seoul (1908-2011)



□ Average values of meteorological elements across Seoul during February (1908-2011)

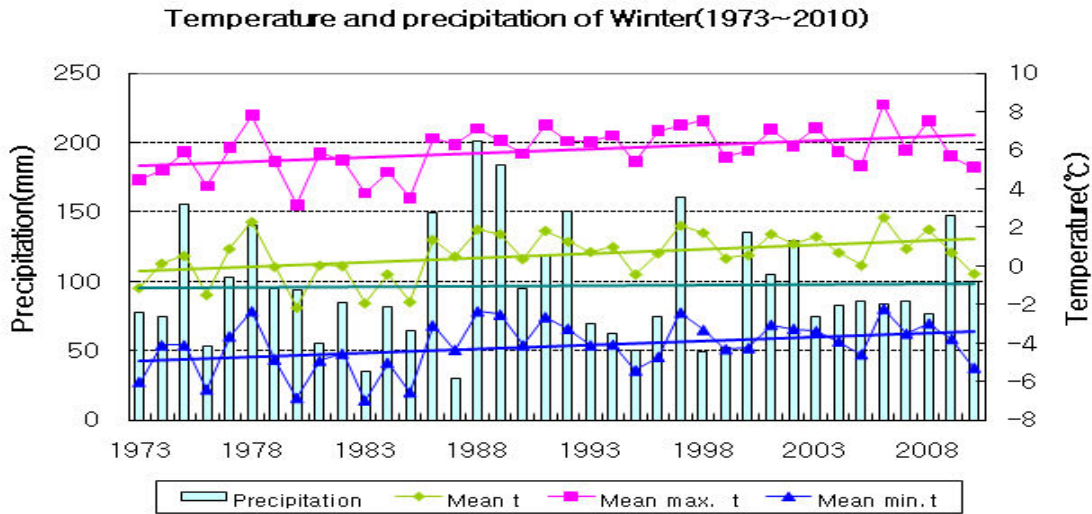
Elements (Seoul) average	February 2011 (a)	Normals of February (1981-2010) (b)	a-b	rank since 1908 (within 5th)
mean temperature (°C)	1.2	0.4	0.8	-
mean maximum t (°C)	5.9	4.7	1.2	-
mean minimum t (°C)	-2.5	-3.4	0.9	-
days with minimum t below -10°C	0	1.9	-1.9	-
days with maximum t below 0°C	3.0	4.2	-1.2	-
rainfall total(mm)	29.1	25.0	4.1(116.4%)	-
rainy days	3.0	5.8	-2.8	-

□ Meteorological elements across Seoul during February for each decade (1911-2010)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Days with minimum t below -10°C	Days with maximum t below 0°C	Precipitation (mm)	rainy days
1911-1920	-1.5	3.5	-6.2	5.3	6.3	20.3	6.6
1921-1930	-1.8	3.1	-6.8	8.1	7.5	28.0	6.1
1931-1940 (a)	-2.2	2.5	-6.8	6.9	8.0	23.3	6.0
1941-1950	-2.4	2.6	-7.4	8.7	8.0	11.3	5.2
1954-1960	-0.6	4.0	-4.9	4.7	5.3	33.1	6.1
1961-1970	-1.8	2.7	-5.7	6.0	7.9	27.2	5.8
1971-1980 (b)	-0.8	3.6	-4.4	3.4	6.2	25.2	6.5
1981-1990	-0.6	3.7	-4.3	3.5	6.2	21.4	6.0
1991-2000	0.4	4.9	-3.5	1.1	2.5	24.2	5.6
2001-2010 (c)	1.3	5.4	-2.3	1.0	4.0	29.0	5.7
c-a	3.5	2.9	4.5	-5.9	-4.0	5.7	-0.3
c-b	2.1	1.8	2.1	-2.4	-2.2	3.8	-0.8

Appendix 2. Winter, 2010 climate

Fig. 1. Temperatures (mean, mean maximum, and mean minimum), and precipitation across South Korea during the winter seasons(1973-2010)



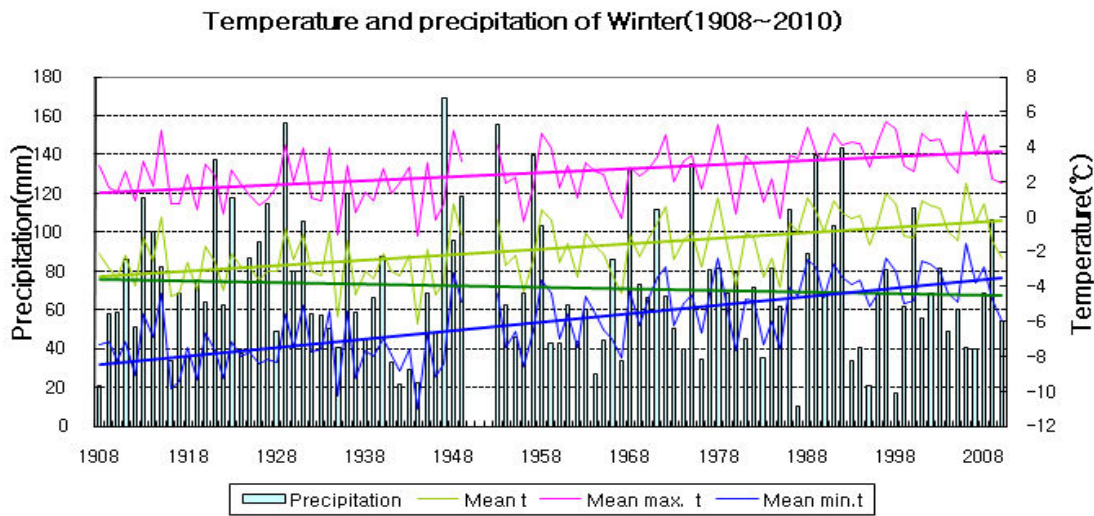
Average values of meteorological elements during the winter seasons (1973-2010)

Elements (National) average	Winter 2010 (a)	Normals of Winter (1981-2010) (b)	a-b	rank since 1973 (within 5th)
mean temperature (°C)	-0.4	0.8	-1.2	-
mean maximum t (°C)	5.1	6.3	-1.2	-
mean minimum t (°C)	-5.3	-3.9	-1.4	-
days with minimum t below -10°C	18.6	10.6	8.0	5th highest
days with maximum t below 0°C	17.8	8.3	9.5	5th highest
rainfall total(mm)	100.1	92.4	7.7(108.3%)	-
rainy days	17.8	20.3	-2.5	-

Average values of meteorological elements during the winter seasons for each decade (1973-2010)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Days with minimum t below -10°C	Days with maximum t below 0°C	Precipit- ation (mm)	rainy days
1973-1980 (a)	0.0	5.4	-4.7	15.2	13.4	96.5	21.4
1981-1990 (b)	0.3	5.7	-4.3	13.1	11.0	95.6	21.9
1991-2000 (c)	1.1	6.7	-3.7	9.2	5.9	88.5	19.0
2001-2010 (d)	1.2	6.5	-3.5	9.6	8.0	94.3	19.8
d-a	1.2	1.1	1.2	-5.6	-5.4	-2.2	-1.6
d-b	0.9	0.8	0.8	-3.5	-3.0	-1.3	-2.1
d-c	0.1	-0.2	0.2	0.4	2.1	5.8	0.8

Fig. 2. Temperatures (mean, mean maximum, and mean minimum), and precipitation across Seoul during the winter seasons (1908-2010)



□ Average values of meteorological elements during the winter seasons across Seoul (1908-2010)

Elements (Seoul) average	Winter 2010 (a)	Normals of Winter (1981-2010) (b)	a-b	rank since 1908 (within 5th)
mean temperature (°C)	-2.4	-0.5	-1.9	-
mean maximum t (°C)	1.9	3.5	-1.6	-
mean minimum t (°C)	-6.0	-4.2	-1.8	-
days with minimum t below -10°C	27.0	10.1	16.9	-
days with maximum t below 0°C	42.0	20.8	21.2	-
rainfall total(mm)	54.1	67.3	-13.2(80.4%)	-
rainy days	17.0	19.7	-2.7	-

□ Meteorological elements across Seoul for each decade (1911-2010)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Days with minimum t below -10°C	Days with maximum t below 0°C	Precipit- ation (mm)	rainy days
1911-1920	-2.7	2.1	-7.6	27.6	29.5	71.4	21.9
1921-1930	-2.8	1.8	-7.8	32.6	30.7	93.5	22.7
1931-1940 (a)	-2.9	1.7	-7.3	29.5	32.0	68.7	21.0
1941-1950	-2.8	1.8	-7.5	33.0	32.9	67.3	20.9
1954-1960	-1.8	2.5	-6.1	21.8	30.0	82.4	21.6
1961-1970	-2.2	2.1	-6.0	21.2	29.3	62.8	18.5
1971-1980 (b)	-1.3	3.0	-4.9	13.8	24.2	74.9	21.2
1981-1990	-1.3	2.8	-4.9	15.0	25.2	71.4	20.7
1991-2000	-0.1	4.0	-3.9	6.5	15.4	68.0	19.6
2001-2010 (c)	-0.2	3.8	-3.7	8.9	21.8	63.0	18.6
c-a	2.7	2.1	3.6	-20.6	-10.2	-5.7	-2.4
c-b	1.1	0.8	1.2	-4.9	-2.4	-11.9	-2.6