



KMA'S BRIEFING IN CLIMATE CHARACTERISTICS

(total 8 pages)

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February and Winter, 2009 Climate

- ◇ National mean temperature of Winter is 1.5 °C higher than normal, making it the fifth highest record since 1973.
- ◇ National mean precipitation of Winter is 80% relative to normal.
- ◇ National mean temperature of February is 3.5 °C higher than normal, making it the highest record since 1973.
- ◇ Mean temperature of February in Pusan (the second largest city) and Taegu (the third largest city) show the highest since the beginning of observation in 1905, and 1909, respectively.

※ Every data in this text are shown Tables 1~4.

- Climate characteristics of February 2009 and Winter (December of 2008–February, 2009), and their long-term trends are analyzed based on 60 Korean meteorological stations (national average) for the period 1973–2009 (1908–2009 in Seoul).
 - National mean winter temperature (1.9°C) is 1.5°C higher than normal, and the amount of precipitation (76.6mm) is 80% relative to normal.
 - National mean temperature (4.3°C) of February 2009 is 3.5°C higher than normal, making it the highest record since 1973.
 - Mean temperature of February 2009 in Pusan and Taegu show the highest record since the beginning of observation in 1905, and 1909, respectively.

[February, 2009]

- February, 2009 climate is as follows:
 - For the national average,
 - the mean temperature (4.3°C) is 3.5°C higher than normal, making it the highest record since 1973.
 - the mean maximum temperature (9.7°C) is 3.4°C higher than normal,

making it the second highest record since 1973.

- the mean minimum temperature (-0.7°C) is 3.3°C higher than normal, making it the second highest record since 1973.
- the amount of precipitation (43.0mm) is 114.7% relative to normal.
- the average duration of sunshine (130.0 hours) is 38.2 hours shorter than normal, making it the second lowest record since 1973.

o For Seoul

- the mean temperature (2.9°C) is 3.2°C higher than normal, making it the third highest record since the observation begins in 1908.
- the mean maximum temperature (6.8°C) is 2.7°C higher than normal.
- the mean minimum temperature (-0.6°C) is 3.5°C higher than normal, making it the third highest record since the observation begins in 1908.
- the amount of precipitation (36.9mm) is 156.4% relative to normal.
- days with daily minimum temperature below 0°C (12.0 days) are 10.8 days shorter than normal, making it the second lowest record since the observation begins in 1908.

o For Pusan (second largest city)

- mean temperature of Pusan (8.3°C) is 4.0°C higher than normal, making it the highest record since the beginning of observation in 1905. The mean minimum temperature (5.0°C) is 4.5°C higher than normal, making it also the highest record since the beginning of observation in 1905.

o For Taegu (the third largest city)

- mean temperature of Taegu (6.4°C) is 4.3°C higher than normal, making it the highest record since the beginning of observation in 1909.

[Winter (from December 2008 to February 2009)]

Winter, 2009 climate is as follows:

o For the national average,

- the mean temperature (1.9°C) is 1.5°C higher than normal, making it the fifth highest record since 1973.
- the mean maximum temperature (7.5°C) is 1.6°C higher than normal,

making it the fourth highest record since 1973.

- the mean minimum temperature (-3.0°C) is 1.3°C higher than normal.
- the amount of precipitation (76.6mm) is 79.5% relative to normal.

o For Seoul,

- the mean (0.7°C), mean maximum (4.7°C), and mean minimum (-2.9°C) temperatures are 1.6°C , 1.4°C , and 1.7°C higher than normal, respectively.
- the amount of precipitation (68.5mm) is 97.7% relative to normal.

※ Normal: average from 1971 to 2000.

※ National average is used average values of 60 meteorological stations starting from 1973.

※ In Seoul, data are analyzed from 1909.

※ 1910s: average from 1911 to 1920

※ 1970s: average from 1973 to 1980

※ 2000s: average from 2001 to 2009

Appendix

Fig. 1. Time series of February temperatures (mean, mean maximum, and mean minimum), and precipitation across the South Korea for the period 1973–2009.

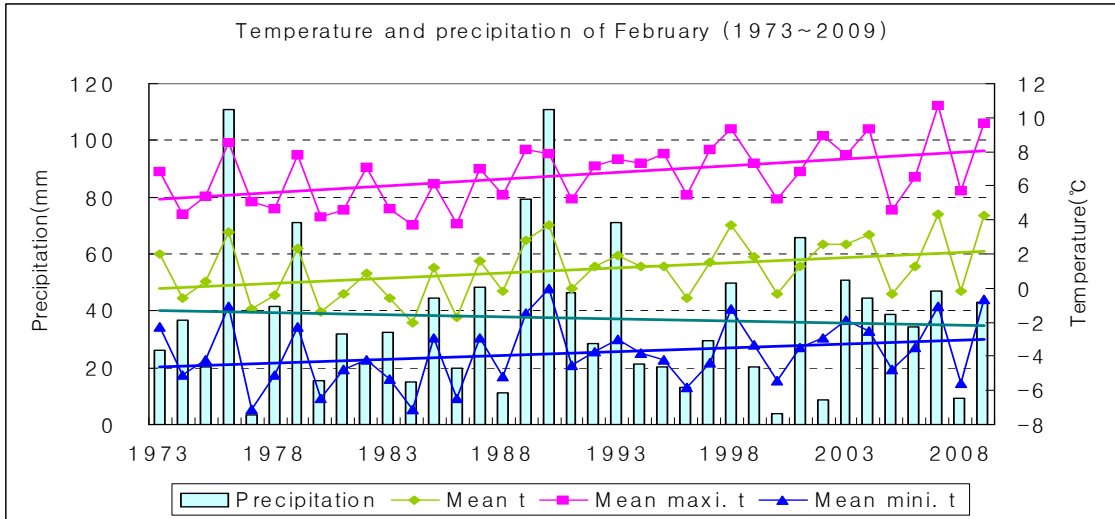
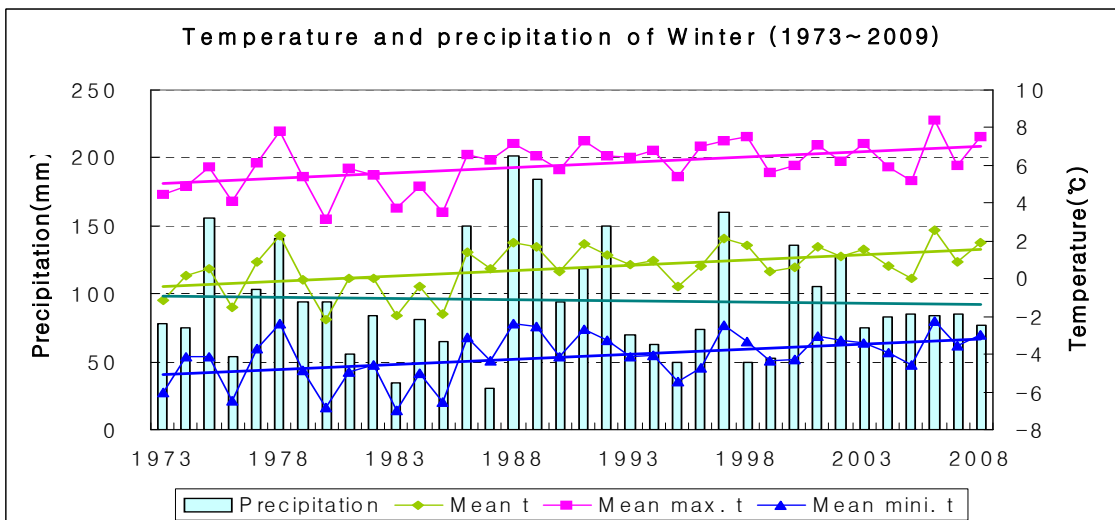


Fig. 2. Time series of Winter temperatures (mean, mean maximum, and mean minimum), and precipitation across the South Korea for the period 1973–2009.



**Table 1. National average values of February meteorological elements
(1973–2009)**

Elements (National average)	Febr., 2009 (a)	Normals of Febr., (1971–2000) (b)	a–b	rank since 1973 (within 5th)	February 1970s (1973–1980) (c)	February 2000s (2001–2009) (d)	d–c
mean temperature(°C)	4.3	0.8	3.5	highest	0.6	2.1	1.6
mean maximum temperature (°C)	9.7	6.3	3.4	2nd highest	5.9	7.8	1.9
mean minimum temperature(°C)	-0.7	-4.0	3.3	2nd highest	-4.2	-2.9	1.3
amount of precipitation (mm)	43.0 (114.7%)	37.5	5.5	-	40.7	37.9	-2.8 (93.1%)
rainy days	6.6	7.1	-0.5	-	7.2	6.1	-1.1
precipitation intensity (mm/day)	6.5	5.3	1.2	-	5.7	6.3	0.6
diurnal temperature range (°C)	10.4	10.3	0.1	-	10.1	10.7	0.6
sunshine duration (hours)	130.0	168.2	-38.2	2nd lowest	168.7	168.7	0.0
cloud amounts (among 10)	5.6	4.5	1.1	3rd highest	4.5	4.2	-0.3
relative humidity (%)	63.6	65.1	-1.5	-	66.4	59.2	-7.2
foggy days (days)	2.2	1.1	1.1	-	0.9	1.3	0.4
days with daily minimum temperature below 0°C	16.1	19.6	-3.5	2nd lowest	21.9	20.8	-1.1

Table 2. Average values of February meteorological elements in Seoul (1908–2009)

Elements (Seoul)	Febr., 2008 (a)	Normals of February (1971–2000) (b)	a-b	rank since 1973 (within 5th)	Febr., 1910s (1911–1920) (c)	Febr., 1970s (1973–1980) (d)	Febr., 2000s (2001–2009) (e)	e-c	e-d
mean temperature(°C)	2.9	-0.3	3.2	3rd highest	-1.5	-0.9	1.3	2.8	2.2
mean maximum t (°C)	6.8	4.1	2.7	-	3.5	3.7	5.5	2.0	1.8
mean minimum t(°C)	-0.6	-4.1	3.5	3rd highest	-6.2	-4.6	-2.4	3.8	2.2
amount of precipitation (mm)	36.9 (156.4%)	23.6	13.3	-	20.3	24.2	26.0	5.7 (128%)	1.8 (107%)
rainy days (days)	7	6.0	1.0	-	6.6	6.3	5.4	-1.2	-0.9
precipitation intensity (mm/day)	5.3	3.9	1.4	-	3.0	2.7	4.4	1.4	1.7
diurnal temperature range (°C)	7.4	8.2	-0.8	-	9.7	8.3	7.9	-1.8	-0.4
sunshine duration(hours)	125.6	163.3	-37.7	-	182.2	155.6	152.6	-29.6	-3.0
cloud amounts (among 10)	5.3	4.1	1.2	-	4.5	4.2	3.9	-0.6	-0.3
relative humidity(%)	56.8	61.0	-4.2	-	65.8	63.2	54.4	-11.4	-8.8
foggy days (days)	0	1.4	-1.4	-	-	1.1	0.4	-	-0.7
days with daily minimum temperature below 0°C	12.0	22.8	-10.8	2nd lowest	25.2	21.8	18.7	-6.5	-3.1

**Table 3. National average values of Winter meteorological elements
(1973–2009)**

Elements (National average)	Winter 2008 (a)	Normals of Winter (1971–2000) (b)	a–b	rank since 1973 (within 5th)	Winter of 1970s (1973–1980) (c)	Winter of 2000s (2001–2009) (d)	d–c
mean temperature(°C)	1.9	0.4	1.5	5th highest	-0.1	1.3	1.4
mean maximum t (°C)	7.5	5.9	1.6	4th highest	5.2	6.7	1.5
mean minimum t(°C)	-3.0	-4.3	1.3	-	-4.8	-3.4	1.4
amount of precipitation (mm)	76.6 (79.5%)	96.4	-19.8	-	99.1	90.2	-8.9 (91%)
rainy days	19.6	21.4	-1.8	-	21.9	19.5	-2.4
precipitation intensity (mm/day)	3.9	4.5	-0.6	-	4.5	4.6	0.1
diurnal temperature range (°C)	10.5	10.2	0.3	-	10.1	10.1	0.0
sunshine duration(hours)	471.9	503.0	-31.1	-	508.6	498.3	-10.3
cloud amounts (among 10)	4.4	4.2	0.2	-	4.3	4.1	-0.2
relative humidity(%)	61.9	66.3	-4.4	-	67.7	61.2	-6.5
foggy days (days)	3.2	4.0	-0.8	-	4.3	3.4	-0.9
days with daily minimum temperature below 0°C	64.8	63.3	1.5	-	72.5	67.9	-4.6

Table 4. Average values of Winter meteorological elements in Seoul
(1908–2009)

Elements (Seoul)	Winter 2008 (a)	Normals of Winter (1971–2000) (b)	a–b	rank since 1973 (within 5th)	Winter of 1910s (1911– 1920) (c)	Winter of 1970s (1973– 1980) (d)	Winter of 2000s (2001– 2009) (e)	e–c	e–d
mean temperature(°C)	0.7	-0.9	1.6	-	-2.7	-1.7	0.3	3.0	2.0
mean maximum t (°C)	4.7	3.3	1.4	-	2.1	2.7	4.2	2.1	1.5
mean minimum t(°C)	-2.9	-4.6	1.7	-	-7.6	-5.3	-3.2	4.4	2.1
amount of precipitation (mm)	68.5 (97.7%)	70.1	-1.6	-	71.4	71.2	58.0	-13.4 (81%)	-13.2 (81%)
rainy days (days)	23	20.4	2.6	-	21.9	20.9	17.9	-4.0	-3.0
precipitation intensity (mm/day)	3.0	3.4	0.4	-	3.3	3.4	3.2	-0.1	-0.2
diurnal temperature range (°C)	7.6	7.9	-0.3	-	9.7	8.0	7.4	-2.3	-0.6
sunshine duration(hours)	493.2	471.6	21.6	-	539.2	466.4	472.0	-67.2	5.6
cloud amounts (among 10)	4.0	4.0	0.0	-	4.3	4.1	3.6	-0.7	-0.5
relative humidity(%)	54.3	62.5	-8.2	-	66.4	64.2	55.3	-11.1	-8.9
foggy days (days)	1.0	4.3	-3.3	-	-	7.0	2.0	-	-5.0
days with daily minimum temperature below 0°C	61.0	74.3	-13.3	-	84	74.4	66.8	-17.2	-7.6