



# KMA'S BRIEFING IN CLIMATE CHARACTERISTICS

(total 4 pages)

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## July 2009, Climate

- ◇ July mean temperature for the national average is 0.8°C lower than normal.
- ◇ July precipitation for the national average is 86% greater than normal.

□ Climate characteristics of July, and its long-term trends are analyzed based on 60 Korean meteorological stations (national average) for the period 1973-2009 (1908-2009 in Seoul).

□ **July, 2009 climate is as follows:**

o For the national average,

- the mean temperature (23.7°C) is 0.8°C lower than normal. The mean maximum (27.9°C) and the mean minimum (20.3°C) temperatures are 0.9°C and 0.8°C lower than normal, respectively.
- the amount of precipitation (490.6mm) is 86% greater than normal, making it the second highest record since 1973.
- the average rainy days (19 days) are 5.2 day greater than normal.
- days with heavy precipitation above 30mm/1 hour are 3.6 times greater than normal, making it the highest record since 1973.
- days with heavy precipitation above 80mm/day and above 150mm/day are 3.2 times and 5 times greater than normal, respectively.

o For Seoul,

- both the mean temperature (24.3°C) and the mean maximum temperature(28.2°C) are 0.6°C lower than normal. The mean minimum temperatures(21.0°C) is 0.8°C lower than normal.
- The amount of precipitation (659.4mm) is 2 times greater than normal
- The average rainy days (20 days) are 4.5 days greater than normal.

□ **Long term trend of July climate**

- o days with heavy precipitation (above 30mm/1 hour, 80mm/day, 150mm/day) during 2000s increased approximately 2 times compared to those of the 1970s for the national average, and approximately 3 times for the Seoul.

※ 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 1908.

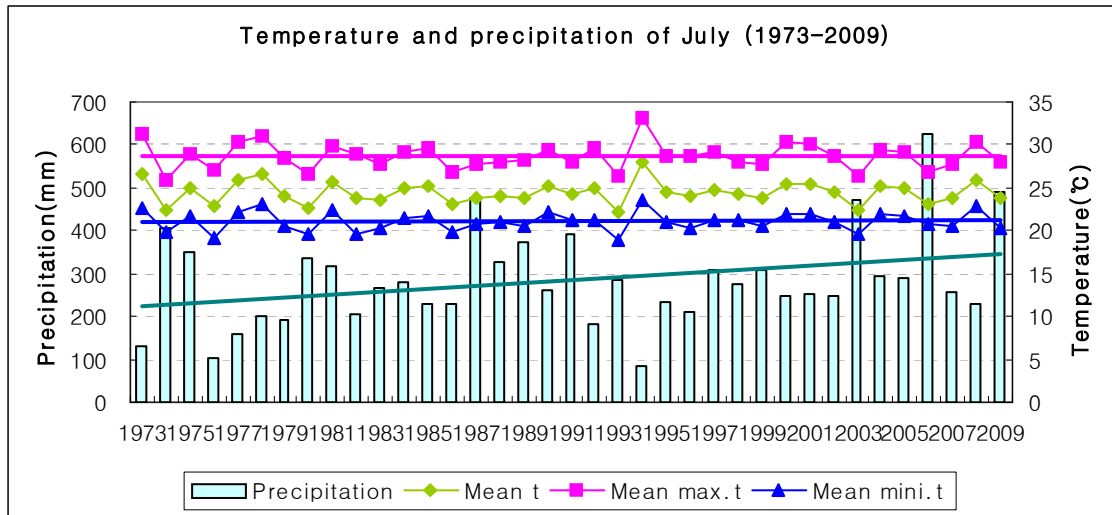
※ 1910s: average from 1911 to 1920

※ 1970s: average from 1973 to 1980

※ 2000s: average from 2001 to 2009

Appendix

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



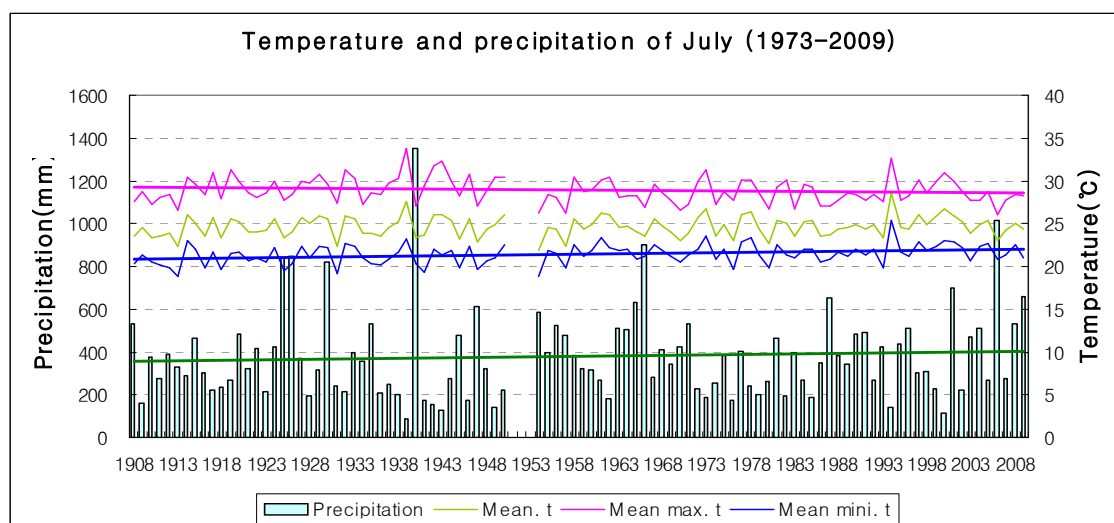
□ National average values of July meteorological elements (1973–2009)

Elements (National) average	July 2009 (a)	Normals of July (1971–2000) (b)	a-b	rank since 1973 (within 5th)
mean temperature(°C)	23.7	24.5	-0.8	-
mean maximum t (°C)	27.9	28.8	-0.9	-
mean minimum t(°C)	20.3	21.1	-0.8	-
amount of precipitation (mm)	490.6	263.4	227.2(186.3%)	second highest
rainy days	19.0	13.8	5.2	fifth highest
days with greater than 30mm/1hour	1.8	0.5	1.3	highest
days with greater than 80mm/day	1.9	0.6	1.3	-
days with greater than 150mm/day	0.5	0.1	0.4	-
precipitation intensity (mm/day)	25.8	19.1	6.7	fifth highest

□ National average values of July meteorological elements in each decade (1973–2009)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Precipitation (mm)	rainy days	days with greater than 30mm/1hour	days with greater than 80mm/day	days with greater than 150mm/day	precipitation intensity (mm/day)
1973-1980년(a)	24.5	28.7	21.1	234.2	13.9	0.4	0.4	0.0	16.8
1981-1990년(b)	24.3	28.6	21.0	296.9	14.4	0.6	0.7	0.1	20.6
1991-2000년(c)	24.6	29.0	21.1	252.8	13.1	0.6	0.6	0.1	19.3
2001-2009년(d)	24.4	28.5	21.2	351.1	16.0	0.9	1.0	0.2	21.9
d-a	-0.1	-0.2	0.1	116.9	2.1	0.5	0.6	0.2	5.1
d-b	0.1	-0.1	0.2	54.2	1.6	0.3	0.3	0.1	1.3
d-c	-0.2	-0.5	0.1	98.3	2.9	0.3	0.4	0.1	2.6

Fig. 2. Time series of July temperatures (mean, mean maximum, and mean minimum), and precipitation in Seoul for the period 1908–2009.



□ Average values of June meteorological elements in Seoul (1908–2009)

Elements (Seoul) average	July 2009 (a)	Normals of July (1971-2000) (b)	a-b	rank since 1908 (within 5th)
mean temperature(°C)	24.3	24.9	-0.6	-
mean maximum t (°C)	28.2	28.8	-0.6	-
mean minimum t(°C)	21.0	21.8	-0.8	-
amount of precipitation (mm)	659.4	327.9	331.5(201.1%)	-
rainy days	20	15.5	4.5	-
days with greater than 30mm/1hour	2	0.8	1.2	-
days with greater than 80mm/day	4	0.8	3.2	second highest
days with greater than 150mm/day	1	0.1	0.9	-
precipitation intensity (mm/day)	33.0	21.2	11.8	-

□ July meteorological elements in Seoul in each decade (1911–2009)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Precipitation (mm)	rainy days	days with greater than 30mm/1hour	days with greater than 80mm/day	days with greater than 150mm/day	precipitation intensity (mm/day)
1911-1920년	24.4	29.1	20.8	326.2	14.9	-	0.9	0.2	21.9
1921-1930년	24.7	29.2	21.2	477.0	17.4	-	1.5	0.6	27.4
1931-1940년	24.6	29.4	21.2	384.1	16.3	-	1.1	0.4	23.6
1941-1950년	24.8	29.9	21.1	268.2	15.7	-	0.2	0.1	17.1
1954-1960년	24.0	28.2	21.1	429.1	19.1	1.0	1.0	0.1	22.5
1961-1970년	24.6	28.4	21.7	446.3	18.1	1.9	1.4	0.2	24.7
1971-1980년(a)	24.7	28.8	21.7	288.2	15.2	0.6	0.5	0.2	19.0
1981-1990년	24.6	28.4	21.5	372.8	16.5	0.8	1.1	0.1	22.6
1991-2000년	25.4	29.2	22.2	322.7	14.7	1.0	0.9	0.1	22.0
2001-2009년(b)	24.6	28.1	21.8	516.4	17.7	1.8	1.8	0.7	29.2
b-a	-0.1	-0.7	0.1	228.2	2.5	1.2	1.3	0.5	10.2