



# KMA CLIMATE CHARACTERISTICS BRIEFING

(4 pages total)

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## July 2010 Climate

◇ The temperature was higher than normal, while the precipitation amount was similar to normal.

- Climate characteristics of July 2010 and their long-term trends are analyzed based on data from 60 meteorological stations in Korea (national values) for the period of 1973-2010 (1908-2010 for Seoul).
- **The climatological characteristics of July 2010 were as follows:**
  - o For Korea (national values):
    - The mean (25.3°C), mean maximum (29.4°C), and mean minimum temperatures (22.2°C) were 0.8°C, 0.6°C, 1.1°C higher than normal, respectively.
    - The precipitation amount (263.5 mm) was similar (100%) to normal. The average number of rainfall days (16.1 days) increased by 2.3 days compared to normal; however, days with heavy precipitation above 150 mm/day (0.2 day) were the fifth highest on record (tied with 1984 and 2000) since 1973 (1st : 0.6 day in 1982; 2nd : 0.5 day in 1987 and 2009; 4th : 0.3 day in 1999).
  - o For Seoul:
    - The mean (25.8°C), mean maximum (29.3°C), and mean minimum temperatures (23.1°C) were 0.9°C, 0.5°C and 1.3°C higher than normal, respectively.
    - The precipitation amount (239.2 mm) was 27% lower than normal. The average number of rainfall days (17.0 days) increased by 1.5 days compared to normal; however, no days with heavy precipitation exceeding 30 mm/hour and 150 mm/day were recorded.

□ **Long-term climate trend for July**

- o The precipitation amount for July 2010 in Korea was 108.2 mm, 45.5 mm, and 89.6 mm higher than that of the 1970s, 1980s and 1990s, respectively; in contrast, the mean temperatures exhibited no changes over the years.

※ Normal: 30-year (1971-2000) average.

※ National average: Average of values collected from 60 meteorological stations since 1973.

※ The analyzed data for Seoul date back to 1908.

※ 1920s: Average from 1921 to 1930

※ 1970s: Average from 1973 (1971 for Seoul) to 1980

※ 2000s: Average from 2001 to 2009

## Appendix 1. July Climate Trends

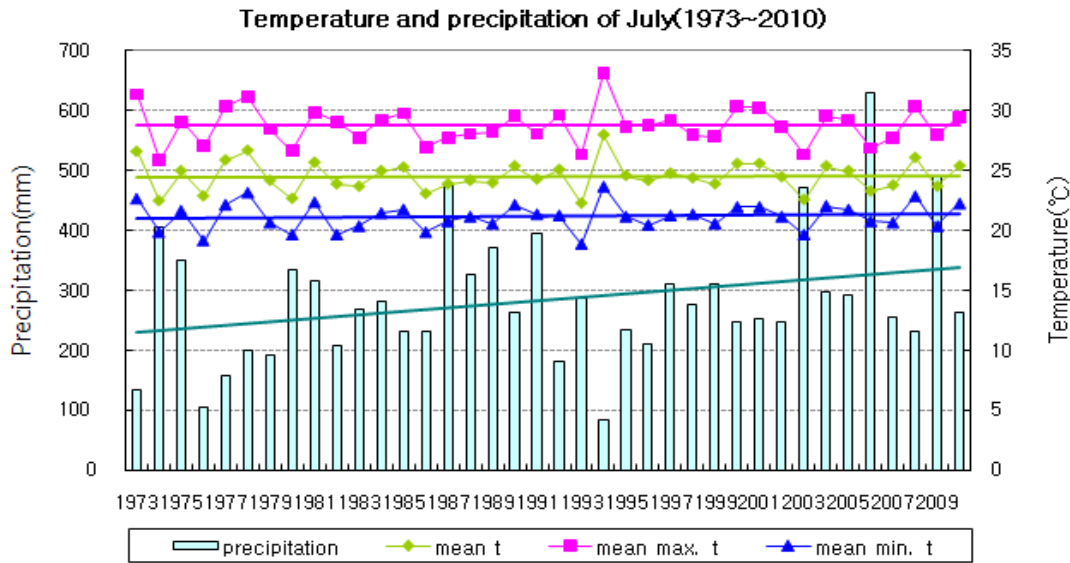


Fig. 1. Temperatures (mean, mean maximum, and mean minimum) and precipitation for the Republic of Korea for July (1973-2010)

### □ July average values of meteorological elements across Korea (1973~2010)

Elements (National)	July 2010 (a)	Normals for July (1971-2000) (b)	a - b	Rank since 1973 (up to 5th)
Mean temperature (°C)	25.3	24.5	0.8	-
Mean maximum t (°C)	29.4	28.8	0.6	-
Mean minimum t (°C)	22.2	21.1	1.1	-
Days with max. temp.(≥30°C)	15.0	12.4	2.6	-
Precipitation amount (mm)	263.5	263.4	0.1 (100%)	-
Rainfall days	16.1	13.8	2.3	-
Days with precip. greater than 30mm/hour	0.6	0.5	0.1	-
Days with precip. greater than 80mm/day	0.8	0.6	0.2	-
Days with precip. greater than 150mm/day	0.2	0.1	0.1	5th highest

### □ July average values of meteorological elements across Korea for each decade (1973-2010)

Decade	Mean temp. (°C)	Mean max temp (°C)	Mean min. temp (°C)	Days with max. temp. (≥30°C)	Precip. (mm)	Rainfall days	Days with precip. (≥30mm/h)	Days with precip. (≥80mm/d)	Days with precip. (≥150mm/d)
1973-1980년(a)	24.5	28.7	21.1	12.3	234.2	13.9	0.4	0.4	0.0
1981-1990년(b)	24.3	28.6	21.0	12.0	296.9	14.4	0.6	0.7	0.1
1991-2000년(c)	24.6	29.0	21.1	13.0	252.8	13.1	0.6	0.6	0.1
2001-2010년(d)	24.4	28.6	21.3	11.9	342.4	16.0	0.9	1.0	0.2
d - a	-0.1	-0.1	0.2	-0.4	108.2	2.1	0.5	0.6	0.2
d - b	0.1	0.0	0.3	-0.1	45.5	1.6	0.3	0.3	0.1
d - c	-0.2	-0.4	0.2	-1.1	89.6	2.9	0.3	0.4	0.1

Temperature and precipitation of July(1973~2010)

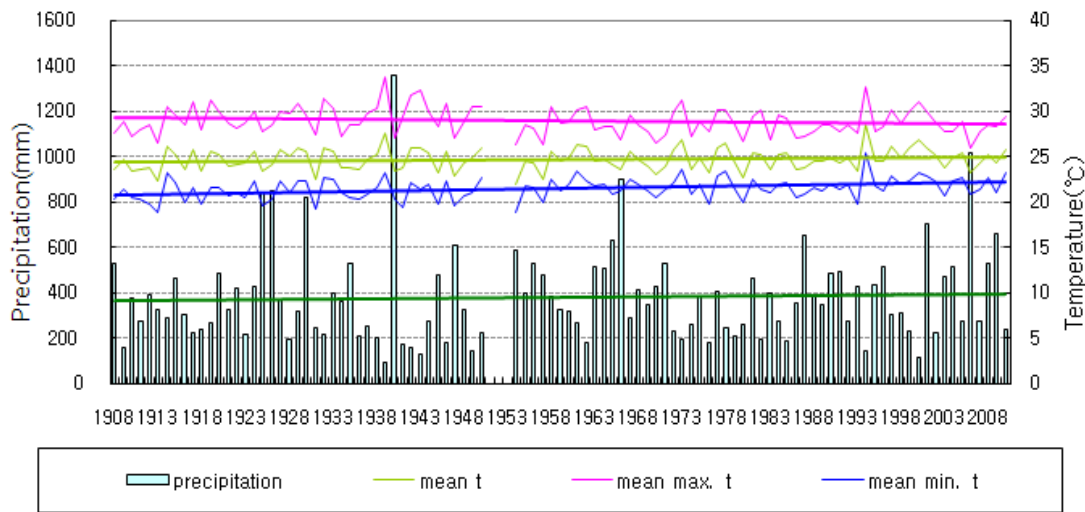


Fig. 2. Temperatures (mean, mean maximum, and mean minimum) and precipitation for Seoul (1908-2010)

□ July average of meteorological elements for Seoul (1908-2010)

Elements (National)	July 2010 (a)	Normals for July (1971-2000) (b)	a - b	Rank since 1973 (up to 5th)
Mean temperature (°C)	25.8	24.9	0.9	-
Mean maximum t (°C)	29.3	28.8	0.5	-
Mean minimum t (°C)	23.1	21.8	1.3	-
Days with max. temp.(≥30°C)	13.0	11.3	1.7	-
Precipitation amount (mm)	239.2	327.9	-88.7 (72.9%)	-
Rainfall days	17.0	15.5	1.5	-
Days with precip. greater than 30mm/hour	0.0	0.8	-0.8	-
Days with precip. greater than 80mm/day	1.0	0.8	0.2	-
Days with precip. greater than 150mm/day	0.0	0.1	-0.1	-

□ Average values of July meteorological elements by decade for Seoul (1973-2010)

Decade	Mean temp. (°C)	Mean max temp (°C)	Mean min. temp (°C)	Days with max. temp. (≥30°C)	Precip. (mm)	Rainfall days	Days with precip. (≥30mm/h)	Days with precip. (≥80mm/d)	Days with precip. (≥150mm/d)
1911-1920년	24.4	29.1	20.8	12.7	326.2	14.9	-	0.9	0.2
1921-1930년	24.7	29.2	21.2	13.0	477.0	17.4	-	1.5	0.6
1931-1940년	24.6	29.4	21.2	13.2	384.1	16.3	-	1.1	0.4
1941-1950년	24.8	29.9	21.1	15.6	268.2	15.7	-	0.2	0.1
1954-1960년	24.0	28.2	21.1	10.6	429.1	19.1	1.0	1.0	0.1
1961-1970년	24.6	28.4	21.7	10.0	446.3	18.1	1.9	1.4	0.2
<b>1971-1980년(a)</b>	<b>24.7</b>	<b>28.8</b>	<b>21.7</b>	<b>11.2</b>	<b>288.2</b>	<b>15.2</b>	<b>0.6</b>	<b>0.5</b>	<b>0.2</b>
1981-1990년	24.6	28.4	21.5	9.4	372.8	16.5	0.8	1.1	0.1
1991-2000년	25.4	29.2	22.2	13.2	322.7	14.7	1.0	0.9	0.1
<b>2001-2010년(b)</b>	<b>24.8</b>	<b>28.3</b>	<b>22.0</b>	<b>9.5</b>	<b>488.6</b>	<b>17.6</b>	<b>1.6</b>	<b>1.7</b>	<b>0.6</b>
b - a	0.1	-0.5	0.3	-1.7	200.4	2.4	1.0	1.2	0.4