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## Monthly (June) 2014 Climate Summary

The mean temperature $\left(21.9{ }^{\circ} \mathrm{C}\right)$ for June 2014 nationwide was above normal. The monthly amount of precipitation ( 77.6 mm ) was $49.8 \%$ of normal.
$\square$ Climate features and long-term trends in June 2014 have been analyzed with the data collected at the 45 meteorological stations throughout Korea (national average) from 1973 to 2014 (1908-2014 for Seoul).
※ Normal : Average value of climatic element data collected from 1981 to 2010

## The climatic characteristics in June 2014 are described as follows:

o For Korea (whole country),

- The mean temperature $\left(21.9{ }^{\circ} \mathrm{C}\right)$, the mean minimum temperature $\left(17.9{ }^{\circ} \mathrm{C}\right)$ and the mean maximum temperature (26.8 ${ }^{\circ} \mathrm{C}$ ) and were $0.7{ }^{\circ} \mathrm{C}, 1.2{ }^{\circ} \mathrm{C}, 0.3{ }^{\circ} \mathrm{C}$ above normals, respectively.
- The mean minimum temperature was the forth highest in a record extending back to 1973.
- The nationally-averaged precipitation was 77.6 mm , which was $49.8 \%$ of normal. The number of the days of rain was 10.4 days, which was 0.7 days more than normal.
- The total number of the hours of sunshine was 172.6 hours, which was $95.1 \%$ of normal.
o For Seoul,
- The mean temperature $\left(23.1{ }^{\circ} \mathrm{C}\right)$, the mean maximum temperature $\left(27.8^{\circ} \mathrm{C}\right)$, the mean minimum temperature $\left(19.7{ }^{\circ} \mathrm{C}\right)$ were $0.9{ }^{\circ} \mathrm{C}, 0.7{ }^{\circ} \mathrm{C}, 1.5{ }^{\circ} \mathrm{C}$ above normals, respectively.
- The amount of precipitation was 98.1 mm , which was $73.6 \%$ of normal.
- The number of the days of rain was 11.0 days, which was 1.1 above normal.
- The total number of the hours of sunshine was 184.9 hours, which was $101.6 \%$ of normal.


## Long-term trend in June 2014 climate

o For Korea (whole country),

- The national mean temperatures in June 2000s (2001-2010) is $0.7{ }^{\circ} \mathrm{C}$ above those of the same month in 1970s.
- The nationally-averaged precipitation in June 2000s (2001-2010) is 15.7 mm less than that of the same month in 1970s.
- The number of the days of rain in June 2000s are 1.4 days less than those of the same month in 1970s.
- The total sunshine in June 2000s (2001-2010) is 12.5 hours less than that of the same month in 1970s.
o For Seoul,
- The mean temperatures in June 2000s (2001-2010) are $0.9{ }^{\circ} \mathrm{C}$ above those of the same month in 1970s.
- The precipitation in June 2000s (2001-2010) is 0.1 mm less than that of the same month in 1970s.
- The number of the days of rain in June 2000s are 0.3 days less than those of the same month in 1970s.
- The total sunshine in June 2000s (2001-2010) is 12.5 hours less than that of the same month in 1970s.


## $\square$ Remarks

|  | temperature difference <br> between the normal temperature ( $\left.{ }^{\circ} \mathrm{C}\right)$ |  | precipitation ratio <br> of the normal precipitation (\%) |  |
| :---: | :---: | :---: | :---: | :---: |
|  | ten-day | month | ten-day | month |
|  | $>0.7$ | $>0.5$ | $>130$ | $>120$ |
| nearly | $-0.7 \sim 0.7$ | $-0.5 \sim 0.5$ | $50 \sim 130$ | $70 \sim 120$ |
| below(less) | $<-0.7$ | $<-0.5$ | $<50$ | $<70$ |

## Appendix 1 Climate features of June 2014 [Nationwide)



Fig 1. Temperatures (mean, mean maximum and mean minimum) and precipitation in South Korea during June (1973-2014).

Average values of meteorological elements across Korea during May (1973-2014)

| Elements <br> (whole country) | June <br> 2014(a) | June <br> $2013(\mathrm{~b})$ | Normals of <br> June <br> $(1981-2010)$ <br> (c) | $\mathrm{a}-\mathrm{b}$ | a-c | Rank since <br> 1973 <br> (within 5th) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mean temperature ( ${ }^{\circ} \mathrm{C}$ ) | 21.9 | 22.6 | 21.2 | -0.7 | 0.7 |  |
| Mean maximum temp. ( ${ }^{\circ} \mathrm{C}$ ) | 26.8 | 27.7 | 26.5 | -0.9 | 0.3 |  |
| Mean minimum temp. ( $\left.{ }^{\circ} \mathrm{C}\right)$ | 17.9 | 18.6 | 16.7 | -0.7 | 1.2 | the forth highest |
| Precipitation (mm) | 77.6 | 101.1 | 158.6 | $-23.5(94.4 \%)$ | $-81.0(49.8 \%)$ |  |
| Days of rain (day) | 10.4 | 10.2 | 9.7 | 0.2 | 0.7 |  |
| Sunshine duration (hour) | 172.6 | 188.9 | 181.4 | $-16.3(91.4 \%)$ | $-8.8(95.1 \%)$ |  |
| Mean cloud amount (1/10) | 6.8 | 6.3 | 6.3 | 0.5 | 0.5 |  |
| Precipitation more than <br> $80 \mathrm{~mm} /$ day(day) | 0.0 | 0.3 | 0.3 | -0.3 | -0.3 |  |
| Days of maximum <br> temperature more than $33^{\circ} \mathrm{C}(\mathrm{day})$ | 0.2 | 0.4 | 0.6 | -0.2 | -0.4 |  |

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

| Year | Mean temp. <br> ( ${ }^{\circ} \mathrm{C}$ ) | Mean max. temp. ( ${ }^{\circ} \mathrm{C}$ ) | Mean $\min$. temp. ( ${ }^{\circ} \mathrm{C}$ ) | Prep. <br> (mm) | Days of rain (day) | Sunshine duration (hour) | Mean cloud amount (1/10) | Precipitation more than $80 \mathrm{~mm} /$ day (day) | Days of maximum temperature more than $33^{\circ} \mathrm{C}$ (day) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1973-1980(a) | 20.9 | 26.0 | 16.5 | 166.4 | 11.2 | 185.6 | 6.6 | 0.3 | 0.3 |
| 1981-1990(b) | 21.1 | 26.4 | 16.4 | 162.0 | 9.6 | 193.6 | 6.4 | 0.3 | 0.5 |
| 1991-2000(c) | 21.1 | 26.3 | 16.6 | 163.2 | 9.8 | 177.5 | 6.3 | 0.4 | 0.6 |
| 2001-2010(d) | 21.6 | 26.9 | 17.0 | 150.7 | 9.8 | 173.1 | 6.1 | 0.3 | 0.7 |
| 2014(e) | 21.9 | 26.8 | 17.9 | 77.6 | 10.4 | 172.6 | 6.8 | 0.0 | 0.2 |
| d-a | 0.7 | 0.9 | 0.5 | -15.7 | -1.4 | -12.5 | -0.5 | 0.0 | 0.4 |
| d-b | 0.5 | 0.5 | 0.6 | -11.3 | 0.2 | -20.5 | -0.3 | 0.0 | 0.2 |
| d-c | 0.5 | 0.6 | 0.4 | -12.5 | 0.0 | -4.4 | -0.2 | -0.1 | 0.1 |
| e-d | 0.3 | -0.1 | 0.9 | -73.1 | 0.6 | -0.5 | 0.7 | -0.3 | -0.5 |

## Appendix 2 Climate features of June 2014 [Seoul]



Fig 2. Temperatures (mean, mean maximum and mean minimum) and precipitation in Seoul during June (1908-2014).
$\square$ Average values of meteorological elements in Seoul during June (1908-2014)

| Elements (Seoul) | June <br> $2014(\mathrm{a})$ | June <br> $2013(\mathrm{~b})$ | Normals of <br> June <br> $(1981-2010)$ <br> (c) | a-b | a-c | Rank since <br> 1908 <br> (within 5th) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mean temperature ( ${ }^{\circ} \mathrm{C}$ ) | 23.1 | 24.4 | 22.2 | -1.3 | 0.9 |  |
| Mean maximum temp. ( $\left.{ }^{\circ} \mathrm{C}\right)$ | 27.8 | 29.2 | 27.1 | -1.4 | 0.7 |  |
| Mean minimum temp. $\left.{ }^{\circ} \mathrm{C}\right)$ | 19.7 | 20.5 | 18.2 | -0.8 | 1.5 | the third highest |
| Precipitation (mm) | 98.1 | 28.3 | 133.2 | 69.8 <br> $(346.6 \%)$ | -35.1 <br> $(73.6 \%)$ |  |
| Days of rain (day) | 11.0 | 9.0 | 9.9 | 2.0 | 1.1 |  |
| Sunshine duration (hour) | 184.9 | 224.0 | 182.0 | -39.1 | $2.9(101.6 \%)$ |  |
| Mean cloud amount (1/10) | 6.7 | 5.4 | 6.1 | 1.3 | 0.6 |  |
| Precipitation more than <br> 80mm/day(day) | 0.0 | 0.0 | 0.2 | 0.0 | -0.2 |  |
| Days of maximum temperature <br> more than $33^{\circ} \mathrm{C}($ day $)$ | 0.0 | 0.0 | 0.4 | 0.0 | -0.4 |  |

$\square$ Average values of meteorological elements in Seoul during June for each decade (1911-2010)

| Year | Mean <br> temp. <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Mean <br> max. <br> temp. $\left({ }^{\circ} \mathrm{C}\right)$ | Mean <br> min. <br> temp. <br> ( $\left.{ }^{\circ} \mathrm{C}\right)$ | Prep. <br> $(\mathrm{mm})$ | Days of <br> rain (day) | Sunshine <br> duration <br> (hour) | Mean <br> cloud <br> amount <br> $(1 / 10)$ | Precipitation <br> more than <br> $80 \mathrm{~mm} /$ day <br> (day) | Days of <br> maximum <br> temperature <br> more than <br> $33{ }^{\circ} \mathrm{C}($ day) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1911-1920(\mathrm{a})$ | 20.8 | 26.6 | 16.2 | 152.7 | 11.7 | 228.3 | 7.0 | 0.2 | 0.8 |
| $1921-1930$ | 21.2 | 27.7 | 15.8 | 98.3 | 8.1 | 258.8 | 6.3 | 0.2 | 1.2 |
| $1931-1940(\mathrm{~b})$ | 20.7 | 26.6 | 16.4 | 116.0 | 10.0 | 221.6 | 6.8 | 0.0 | 0.1 |
| $1941-1949$ | 20.8 | 26.9 | 16.2 | 210.3 | 11.4 | 233.7 | 6.7 | 0.7 | 1.0 |
| $1954-1960$ | 20.6 | 26.1 | 16.5 | 200.5 | 12.0 | 179.8 | 6.9 | 0.4 | 1.3 |
| $1961-1970$ | 21.1 | 26.3 | 16.9 | 134.6 | 11.1 | 193.8 | 6.6 | 0.3 | 0.5 |
| $1971-1980(\mathrm{c})$ | 21.5 | 26.5 | 17.5 | 133.0 | 10.9 | 171.8 | 6.6 | 0.1 | 0.3 |
| $1981-1990$ | 21.9 | 26.9 | 17.7 | 133.9 | 9.6 | 205.1 | 6.2 | 0.3 | 0.1 |
| $1991-2000$ | 22.4 | 27.3 | 18.2 | 132.9 | 9.5 | 186.6 | 6.0 | 0.2 | 1.0 |
| $2001-2010(\mathrm{~d})$ | 22.4 | 27.0 | 18.7 | 132.9 | 10.6 | 154.4 | 6.0 | 0.2 | 0.1 |
| $2014(\mathrm{e})$ | 23.1 | 27.8 | 19.7 | 98.1 | 11.0 | 184.9 | 6.7 | 0.0 | 0.0 |
| $\mathrm{~d}-\mathrm{a}$ | 1.6 | 0.4 | 2.5 | -19.8 | -1.1 | -73.9 | -1.0 | 0.0 | -0.7 |
| $\mathrm{~d}-\mathrm{b}$ | 1.7 | 0.4 | 2.3 | 16.9 | 0.6 | -67.2 | -0.8 | 0.2 | 0.0 |
| $\mathrm{~d}-\mathrm{c}$ | 0.9 | 0.5 | 1.2 | -0.1 | -0.3 | -17.4 | -0.6 | 0.1 | -0.2 |
| $\mathrm{e}-\mathrm{d}$ | 0.7 | 0.8 | 1.0 | -34.8 | 0.4 | 30.5 | 0.7 | -0.2 | -0.1 |

## Appendix 3 Meteorological observation network



