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## Monthly (January) 2014 Climate Summary

The mean temperature $\left(0.5{ }^{\circ} \mathrm{C}\right)$ for January 2014 nationwide was higher than normal.

The monthly amount of precipitation ( 10.0 mm ) was $33.1 \%$ of normal
$\square$ Climate features and long-term trends in January 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 of January 2014 are described as follows:

o For Korea (whole country),

- The mean temperature $\left(0.5{ }^{\circ} \mathrm{C}\right)$, the mean maximum temperature $\left(6.3{ }^{\circ} \mathrm{C}\right)$ and the mean minimum temperature $\left(-4.8{ }^{\circ} \mathrm{C}\right)$ were $1.5{ }^{\circ} \mathrm{C}, 2.0{ }^{\circ} \mathrm{C}, 0.8{ }^{\circ} \mathrm{C}$ above normals, respectively.
- The high pressure brought the warm weather continued on for several days, during the first ten days of the month and warmer air moved in peninsular the weather is mild, during the last ten days of the month.
- The nationally-averaged precipitation was 10.0 mm , which was $33.1 \%$ of normal. The number of the days of rain was 4.4 days, which was 2.4 days less than normal.
- The high pressure brought the clear and dry weather continued on for several days of the month.
- The total number of the hours of sunshine was 202.1 hours, which was $116.8 \%$ of normal.
o For Seoul,
- The mean temperature $\left(-0.7{ }^{\circ} \mathrm{C}\right)$, the mean maximum temperature $\left(3.5{ }^{\circ} \mathrm{C}\right)$, the mean minimum temperature $\left(-4.9{ }^{\circ} \mathrm{C}\right)$ were $1.7{ }^{\circ} \mathrm{C}, 2.0{ }^{\circ} \mathrm{C}, 1.0{ }^{\circ} \mathrm{C}$ above normals, respectively.
- The amount of precipitation was 13.0 mm , which was $62.5 \%$ of normal.
- The number of the days of rain was 5.0 days, which is 1.5 days less than normal.
- The total number of the hours of sunshine was 184.4 hours, which was $110.0 \%$ of normal.


## Long-term trend in January 2014 climate

o For Korea (whole country),

- The national mean temperatures in January 2000s (2001-2010) is $0.5{ }^{\circ} \mathrm{C}$ above those of the same month in 1970s.
- The nationally-averaged precipitation in January 2000s (2001-2010) is 10.0 mm more than that of the same month in 1970s.
- The number of the days of rain in January 2000s are 0.6 days less than those of the same month in 1970s.
- The total sunshine in January 2000s (2001-2010) is 6.0 hours less than that of the same month in 1970s.
o For Seoul,
- The mean temperatures in January 2000s (2001-2010) are $0.4{ }^{\circ} \mathrm{C}$ above those of the same month in 1970s.
- The precipitation in January 2000s (2001-2010) is 2.4 mm less than that of the same month in 1970s.
- The number of the days of rain in January 2000s are 1.6 days less than those of the same month in 1970s.
- The total sunshine in January 2000s (2001-2010) is 5.7 hours more than that of the same month in 1970s.


## Remarks

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

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



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

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

| Elements (whole country) | $\begin{gathered} \text { Jan. } \\ \text { 2014(a) } \end{gathered}$ | $\begin{gathered} \text { Jan. } \\ \text { 2013(b) } \end{gathered}$ | Normals of Jan. (1981-2010) (c) | a-b | a-c | Rank since 1973 <br> (within 5th) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mean temperature ( ${ }^{\circ} \mathrm{C}$ ) | 0.5 | -2.1 | -1.0 | 2.6 | 1.5 |  |
| Mean maximum temp. ( ${ }^{\circ} \mathrm{C}$ ) | 6.3 | 3.2 | 4.3 | 3.1 | 2.0 | the third warmest |
| Mean minimum temp. ( ${ }^{\circ} \mathrm{C}$ ) | -4.8 | -6.8 | -5.6 | 2.0 | 0.8 |  |
| Precipitation (mm) | 10.0 | 28.5 | 28.3 | -18.5(38.1\%) | -18.3(33.1\%) |  |
| Days of rain (day) | 4.4 | 6.1 | 6.8 | -1.7 | -2.4 | the fifth least |
| Sunshine duration (hour) | 202.1 | 180.5 | 173.1 | 21.6(112.0\%) | 29.0(116.8\%) | the fifth largest |
| Mean cloud amount (1/10) | 3.2 | 4.0 | 4.0 | -0.8 | -0.8 | the fifth least |
| Days of minimum temperature less than $-10^{\circ} \mathrm{C}$ (day) | 3.3 | 8.3 | 5.7 | -5.0 | -2.4 |  |
| Days of maximum temperature less than $0^{\circ} \mathrm{C}$ (day) | 1.8 | 7.1 | 4.8 | -5.3 | -3.0 | the fifth least |
| Days of snow (day) | 3.9 | 5.8 | 6.8 | -1.9 | -2.9 | the second least |

$\square$ Average values of meteorological elements across Korea during January for each decade (1973-2010)

| Year | Mean <br> temp. <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Mean <br> max. <br> temp. <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Mean <br> min. <br> temp. <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Prep. <br> $(\mathrm{mm})$ | Days of <br> rain <br> $($ day $)$ | Sunshine <br> duration <br> (hour) | Mean <br> cloud <br> amount <br> $(1 / 10)$ | Days of <br> minimum <br> temperature <br> less than <br> $-10{ }^{\circ} \mathrm{C}($ day $)$ | Days of <br> maximum <br> temperatur <br> e less <br> than <br> $0^{\circ} \mathrm{C}($ day $)$ | Days of <br> snow <br> (day) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1973-1980(\mathrm{a})$ | -1.2 | 4.1 | -5.7 | 27.4 | 7.1 | 173.9 | 4.2 | 6.1 | 5.4 | 6.9 |
| $1981-1990(\mathrm{~b})$ | -2.0 | 3.4 | -6.7 | 31.1 | 7.0 | 181.4 | 4.0 | 7.7 | 6.9 | 7.1 |
| $1991-2000(\mathrm{c})$ | -0.5 | 4.8 | -5.2 | 25.5 | 6.9 | 169.9 | 4.0 | 4.6 | 3.4 | 6.5 |
| $2001-2010(\mathrm{~d})$ | -0.6 | 4.6 | -5.1 | 28.4 | 6.5 | 167.9 | 4.1 | 4.9 | 4.1 | 6.8 |
| $2013(\mathrm{e})$ | 0.5 | 6.3 | -4.8 | 10.0 | 4.4 | 202.1 | 3.2 | 3.3 | 1.8 | 3.9 |
| d-a | 0.6 | 0.5 | 0.6 | 1.0 | -0.6 | -6.0 | -0.1 | -1.2 | -1.3 | -0.1 |
| d-b | 1.4 | 1.2 | 1.6 | -2.7 | -0.5 | -13.5 | 0.1 | -2.8 | -2.8 | -0.3 |
| d-c | -0.1 | -0.2 | 0.1 | 2.9 | -0.4 | -2.0 | 0.1 | 0.3 | 0.7 | 0.3 |
| $\mathrm{e}-\mathrm{d}$ | 1.1 | 1.7 | 0.3 | -18.4 | -2.1 | 34.2 | -0.9 | -1.6 | -2.3 | -2.9 |

## Appendix 2 Climate features of Janyary 2014 [Seoull]



Fig 2. Temperatures (mean, mean maximum, and mean minimum) and precipitation in Seoul during January (1908-2014).

## Average values of meteorological elements in Seoul during January (1908-2014)

| Elements (Seoul) | Jan. <br> $2014(\mathrm{a})$ | Jan. <br> $2013(\mathrm{~b})$ | Normals of <br> Jan. <br> $(1981-2010)(\mathrm{c}$ <br> $)$ | a-b | a-c | Rank since <br> 1908 <br> (within 5th) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mean temperature ( $\left.{ }^{\circ} \mathrm{C}\right)$ | -0.7 | -3.4 | -2.4 | 2.7 | 1.7 |  |
| Mean maximum temp. $\left.{ }^{\circ} \mathrm{C}\right)$ | 3.5 | 0.3 | 1.5 | 3.2 | 2.0 |  |
| Mean minimum temp. $\left.{ }^{\circ} \mathrm{C}\right)$ | -4.9 | -6.6 | -5.9 | 1.7 | 1.0 |  |
| Precipitation (mm) | 13.0 | 22.1 | 20.8 | $-9.1(58.8 \%)$ | $-7.8(62.5 \%)$ |  |
| Days of rain (day) | 5.0 | 7.0 | 6.5 | -2.0 | -1.5 |  |
| Sunshine duration (hour) | 184.4 | 167.7 | 160.3 | $16.7(110.0 \%)$ | $24.1(115.0 \%)$ |  |
| Mean cloud amount (1/10) | 3.4 | 4.3 | 3.8 | -0.9 | -0.4 |  |
| Days of minimum <br> temperature less than <br> $-10{ }^{\circ} \mathrm{C}($ day) | 2.0 | 9.0 | 5.9 | -7.0 | -3.9 |  |
| Days of maximum <br> temperature less than 0 ${ }^{\circ} \mathrm{C}($ day $)$ | 4.0 | 12.0 | 10.7 | -8.0 | -6.7 | the fifth least |
| Days of snow (day) | 6.0 | 6.0 | 8.0 | 0.0 | -2.0 |  |

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

| Year | Mean <br> temp. <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Mean <br> max. <br> temp. <br> $\left({ }^{\circ} \mathrm{C}\right)$ | 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> $(1 / 10)$ | Days of <br> minimum <br> temperaturetemperature <br> less than <br> $-10^{\circ} \mathrm{C}($ day $)$ | Days of <br> less than <br> $0^{\circ} \mathrm{C}($ day $)$ | Days of <br> snow <br> (day) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1911-1920(\mathrm{a})$ | -4.9 | -0.1 | -9.9 | 33.5 | 7.8 | 176.2 | 4.2 | 15.1 | 14.5 | 10.3 |
| $1921-1930$ | -4.6 | -0.1 | -9.7 | 28.0 | 7.0 | 173.4 | 4.2 | 15.4 | 14.4 | 8.5 |
| $1931-1940(\mathrm{~b})$ | -5.4 | -0.8 | -9.9 | 11.7 | 6.6 | 185.0 | 3.6 | 17.0 | 17.3 | 9.0 |
| $1941-1949$ | -4.8 | -0.1 | -9.7 | 22.5 | 6.7 | 191.7 | 3.7 | 15.7 | 15.4 | 8.8 |
| $1954-1960$ | -4.1 | 0.1 | -8.5 | 19.9 | 7.6 | 160.9 | 4.2 | 12.3 | 14.6 | 11.1 |
| $1961-1970$ | -4.3 | 0.0 | -8.2 | 18.6 | 6.4 | 174.6 | 3.8 | 11.0 | 14.1 | 10.0 |
| $1971-1980(\mathrm{c})$ | -2.2 | 2.0 | -5.7 | 23.7 | 7.1 | 148.9 | 4.2 | 5.9 | 9.9 | 9.7 |
| $1981-1990$ | -3.7 | 0.4 | -7.3 | 26.5 | 6.8 | 166.2 | 4.1 | 9.7 | 14.4 | 9.2 |
| $1991-2000$ | -1.7 | 2.3 | -5.3 | 14.5 | 7.3 | 160.3 | 3.6 | 3.6 | 8.2 | 8.2 |
| $2001-2010(\mathrm{~d})$ | -1.8 | 1.9 | -5.2 | 21.3 | 5.5 | 154.6 | 3.6 | 4.4 | 9.5 | 6.5 |
| $2013(\mathrm{e})$ | -0.7 | 3.5 | -4.9 | 13.0 | 5.0 | 184.4 | 3.4 | 2.0 | 4.0 | 6.0 |
| $\mathrm{~d}-\mathrm{a}$ | 3.1 | 2.0 | 4.7 | -12.2 | -2.3 | -21.6 | -0.6 | -10.7 | -5.0 | -3.8 |
| $\mathrm{~d}-\mathrm{b}$ | 3.6 | 2.7 | 4.7 | 9.6 | -1.1 | -30.4 | 0.0 | -12.6 | -7.8 | -2.5 |
| d c | 0.4 | -0.1 | 0.5 | -2.4 | -1.6 | 5.7 | -0.6 | -1.5 | -0.4 | -3.2 |
| $\mathrm{e}-\mathrm{d}$ | 1.1 | 1.6 | 0.3 | -8.3 | -0.5 | 29.8 | -0.2 | -2.4 | -5.5 | -0.5 |

## Appendix 3 Meteorological observation network



