

Weather characteristic prediction for the coming winter of Thailand About during middle October 2016 until middle February 2017:

This coming winter season of 2016 - 2017 follows that

- It starts at about end of October 2016 and finished at about middle February 2017.
- Mean minimum temperature is near normal but lower than that of last year and is colder than that of the last 2 3 years ago.
- The coldest period is during the 2<sup>nd</sup> half of December till middle January.
- The mountain tops and mountainous areas will face up cold to very cold weather with possible frost.
- The Southern Thailand is cool mostly at the upper portion of the part and still faces up to dense rainfall mostly in November and December, especially at the eastern coast (the Gulf of Thailand) from Chumphon province downward. In other words, the Southern Thailand will face up to heavy rain at many areas and very heavy rain at some areas. Together with the area favors a high chance to be affected by some tropical cyclones in the South China Sea. Additionally, a monsoon trough places over the area at some periods causing flash or forest flood overflowing at many areas. Whereas wind waves in the Gulf of Thailand will be active from time to time at 2 4 meters high while those in the Andaman Sea are 1 2 meters high.
- The northeastern monsoon will prevail over Thailand all over the winter season.

# General Climatic Characteristics

#### Upper Thailand (Northern, Northeastern, Central and Eastern parts)

During the 2nd half of October, cool weather occurs widely with cold weather at some areas in northern and northeastern parts including with thunder rains and gusty winds at some areas.

Then during November until January, the northern and northeastern parts will face up to colder or cooler weather widely at many areas with thunder rains and gusty winds at some areas whereas the central and eastern parts will face up to cold or cool weather widely. For mountain tops and mountainous areas – cold to very cold weather with possible frost will occur. Due to the northeastern monsoon prevailing over Thailand continuously almost all of the winter season together with active high pressure air mass areas prevailing over Thailand periodically, for during the 1st period at the high pressure air mass areas starts to prevail, thunder rains and gusty winds will develop at some areas. Furthermore, occasionally westerly wind waves will prevail over the Upper Thailand bringing about thunder rains, gusty winds and possible hails at some areas.

Later, at the 1st half of February, warmer weather with thick fog at many areas including with hot weather at many areas during day time, while morning cold or cool weather occurs at the northern and northeastern parts because of weakening high pressure air mass areas over the Upper Thailand. Southern Thailand

From middle October until middle January, dense rainfall with heavy rain at many areas and very heavy rain at some areas, especially at the eastern coast from Chumphon province downward. Thus, flash flood may overflow at some areas. While wind waves in the Gulf of Thailand will be active from time to time since active northeastern monsoon prevails over the Gulf of Thailand and the Southern Thailand periodically, specifically in November and December. Additionally, the monsoon trough will place over the upper, central and lower portions of the Southern Thailand in October, November and December consecutively. Moreover, some tropical cyclones are highly possible to move near or through the Southern Thailand further.

During middle January till the 1st half of February, the amount and distribution of rainfall will reduce for the prevailing northeastern monsoon over the Gulf of Thailand and the Southern Thailand weakening and changing to be the prevailing eastern or southeastern winds instead.

# Details of each part are as follows:

## Northern and Northeastern part:

During middle October until November, cool weather occurs widely with very cold weather at many areas. Especially during November, morning fog happens with 10% thunder rains of the area.

Then during December and January, cold or cool weather occurs widely. Besides, very cold weather appears at many areas at some periods with thick fog at many areas. For mountain tops and mountainous areas, cold to very cold weather happens with frost occurring at some periods.

While at the 2nd half of February, warmer weather with thick fog occurs at many areas. Hot weather happens at many areas during day time but morning cold or cool weather still appears.

### Central and Eastern parts:

During middle October till November, cool weather occurs widely with cold weather at some areas, specifically at the upper portion. Together with morning fog appears and thunder rains occur for 10 - 20% of the area.

Then from December and January, cold or cool weather occurs widely, specifically around the mountainous areas of Nakhon Sawan, Uthaithani, Kanchana Buri, Ratcha Buri, Suphan Buri, Saraburi, Nakornnayok, Chachoengsao, Prachin Buri and Chantha Buri. Including with thick fog will occur at many areas at some periods.

Whereas at the 1st half of February, warmer weather occurs with thick fog at many areas. Hot weather appears at day time while the upper portion and mountainous areas are still cool in the morning.

#### Southern Thailand - Eastern Coast (The Gulf of Thailand side):

During middle October till middle January, dense rainfall with active wind waves will occur. Especially, during November and December, thunder rains happen at 70 - 80% of the area with heavy rain at many areas and very heavy rain at some areas, mostly from Chumphon province downward. Consequently, flash or forest flood will overflow at some areas. For wind waves in the Gulf of Thailand, they will be 2 - 4 meters high at some periods.

Afterward, the amount and distribution of rainfall will lessen. However, the lower portion of the part still faces up to rainfall at 20 - 30% of the area with heavy rain at some areas on some days.

#### Southern Thailand – Western Coast (The Andaman Sea):

During middle October till November, thunder rains happen at 60 - 70% of the area while wind waves in the Andaman Sea will be 1 - 2 meters high.

Later since December onwards, the amount and distribution of rainfall will reduce. Bangkok Metropolis and neighbor provinces:

During middle October until November, thunder rains will happen at 30 - 40% of the area together with cool weather on some days with morning fog.

Then in December and January, cool weather occurs widely with very cold weather at some areas on some days.

While at the 1st half of February, warmer weather starts to appear with hot weather at day time.

# Cautions:

1. During October, the central and eastern parts still face up to continuous rainfall. Additionally, high tides will occur at some periods causing flash flood to overflow at some areas.

2. In November and December, active low pressure air mass cells develop in the lower portion of the South China Sea. Then, they strengthen to become tropical cyclones (depressions, tropical storms or typhoons) and are highly possible to move pass the Gulf of Thailand toward the Southern Thailand. As a result, the Southern Thailand will face up to rainfall occurring widely with heavy to very heavy rain at many areas. Furthermore, wind waves around the Gulf of Thailand are actively windy at 2 - 4 meters high. Thus, the public should follow the weather forecast news from the Thai Meteorological Department closely further.

3. During December and January, frost may occur at mountain tops or mountainous areas with thick fog at many areas, specifically at the northern and northeastern parts. Thus, the public should be cautious with road accidents.

4. During January and February, westerly wind waves may pass from Myanmar through the Upper Thailand causing thunder rain and gusty wind to occur and possible hail at some areas.

# Remarks:

- Daily minimum temperature criteria for the winter season:

| Cool air      | = | 16.0 - 22.9 °C. |
|---------------|---|-----------------|
| Cold air      | = | 8.0 - 15.9 °C.  |
| Very cold air | = | below 8.0 °C.   |

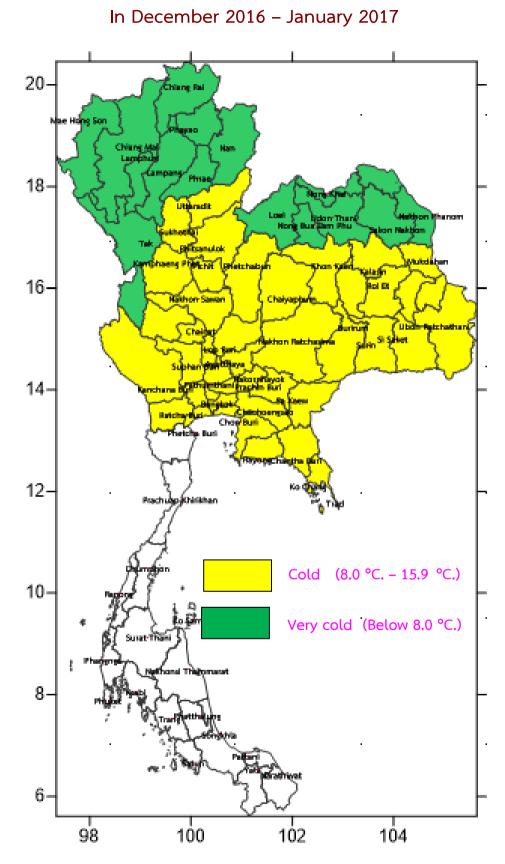
- These long rang climate expectation is derived from utilizing statistical methods and climate model analyses.

- This expectation will be updated at the last week of October 2016.

- Monthly or seasonal climate forecast can be enquired at Tel: 02-398-9929 or Fax: 02-383-8827

- Please follow weather forecast news and climate forecasts at <u>www.tmd.go.th</u> or at <u>www.tmd.go.th/en</u>: climate tab.

Climatological Center, Meteorological Development Bureau Thai Meteorological Department September 2016



Map for possible areas for cold air



1. This map is for the long range prediction purpose. Thus, please follow up daily weather forecast news further for more accuracy.

2. This map does not include mountain top and mountainous area data.

| Regions        | November2016                      | December2016                        | January 2017                    | February 2017                   |                   |  |
|----------------|-----------------------------------|-------------------------------------|---------------------------------|---------------------------------|-------------------|--|
|                |                                   |                                     |                                 |                                 | Second half       |  |
| Upper          | 16-18 °C.                         | 13-15 °C.                           | 14-16 °C.                       | 16-18 °C.                       | 18-20 °C.         |  |
| Northern       | With 10% rainfall of the area     | With slightly rain in some area     | With slightly rain in some area | With slightly rain in some area |                   |  |
| Lower          | 18-20 °C.                         | 15-17 °C.                           | 16-18 °C.                       | 18-20 °C. 20-22 °C              |                   |  |
| Upper          | 16-18 °C.                         | 14-16 °C.                           | 14-16 °C.                       | 17-19 <sup>°</sup> C.           | 19-21 °C.         |  |
| Northeastern   | With 10% rainfall of the area     | With slightly rain in some area     | With slightly rain in some area | With slightly rain in some are  |                   |  |
| Lower          | 18-20 °C.                         | 16-18 °C.                           | 16-18 °C.                       | 19-21 °C.                       | 21-23 °C.         |  |
| Central        | 20-22 °C.                         | 18-20 °C.                           | 19-21 °C.                       | 21-23 °C.                       | 23-25 °C.         |  |
|                | With 10-20% rainfall of the area  | With slightly rain in some area     | With slightly rain in some area | With slightly rain in some area |                   |  |
| East           | 21-23 °C.                         | 19-21 °C.                           | 19-21 °C.                       | 21-23 °C.                       | 23-25 °C.         |  |
|                | With 10-20% rainfall of the area  | With slightly rain in some area     | With slightly rain in some area | With 10% rainfall of the area   |                   |  |
|                | 22-24 °C.                         | 21-23 °C.                           | 21-23 °C.                       | 22-24 °C.                       |                   |  |
| Southern       | With 70-80% thunder rain          | With 60-70% thunder rain            | With 30-40% thunder rain        | With 20-30% thunder rain o      |                   |  |
| Thailand       | of the area, mostly from          | of the area, mostly from            | of the area, mostly during      | the area, mostly around the     |                   |  |
| (East coast)   | the Chumporn province<br>downward | the Surat Tani province<br>downward | the first half of the month     | lower                           | lower portion     |  |
| Southern       | 22-24 °C.                         | 22-24 °C.                           | 22-24 °C.                       | 22-24 °C.                       |                   |  |
| Thailand       | With 60-70% thunder rain          | With 30-40% thunder rain            | With 10% rainfall of the area   | With 10% rainfall of the area   |                   |  |
| (West coast)   | rainfall of the area              | of the area.                        |                                 |                                 |                   |  |
| Bangkok        | 22-24 °C.                         | 20-22 °C.                           | 20-22 °C.                       | 22-24 °C.                       | 24-26 °C.         |  |
| Metropolis and | With 30-40% rainfall of the       | With slightly rain in some area     | With slightly rain in some area | With 10% rai                    | nfall of the area |  |
| Vicinity       | area                              |                                     |                                 |                                 |                   |  |

Mean minimum temperature and rainfall prediction for each part of Thailand during the winter of 2016 – 2017

|   | December                                   |                |                      |                      |  | January           |  |  |                     |                      |
|---|--|----------------|----------------------|----------------------|--|-------------------|--|--|---------------------|----------------------|
|   | Extreme minimum temperature<br>(1951-2013) |                |                      |                      | Extreme minimum temperature<br>(1951-2014) |                   | Extreme<br>minimum<br>temperature<br>in 2016 | Ext. minimum<br>temperature<br>forecast in<br>2017 |                     |                      |
|   | ( °C.)                                     | Date           | Year                 | ( °C.)               | ( °C.)                                     | ( °C.)            | Date   | Year   | ( °C.)              | ( °C.)               |
| Northern                                |  |                |                      |                      |  |                   |  |  |                     |                      |
| Chiang Rai<br>Chiang Mai<br>Phitsanulok | 1.5<br>3.8<br>8.9                          | 25<br>25<br>26 | 1999<br>1999<br>1999 | 13.5<br>15.6<br>17.8 | 5-7<br>7-9<br>10-12                        | 1.5<br>3.7<br>7.5 | 2<br>2<br>13                                 | 1974<br>1974<br>1955                               | 8.1<br>10.0<br>12.3 | 6-8<br>8-10<br>11-13 |
| Northeastern                            | 0.7  | 20             | 1///                 | 11.0                 | 10 12                                      | 1.5               | 15   | 1755   | 12.5                | 11 15                |
| loei                                    | 2.2  | 31             | 1973<br>1975         | 12.8                 | 6-8  | 0.1               | 2  | 1974   | 10.5                | 6-8                  |
| Nakhon Phanom                           | 4.1  | 30             | 1975                 | 14.0                 | 7-9  | 1.8               | 12   | 1955   | 10.7                | 7-9                  |
| Nakhon Ratchasima                       | 6.2  | 31             | 1975                 | 17.1                 | 11-13                                      | 4.9               | 12   | 1955   | 12.0                | 11-13                |
| Ubon Ratchathani                        | 8.5  | 30             | 1975                 | 15.1                 | 12-14                                      | 7.6               | 12   | 1955   | 13.0                | 12-14                |
| Central                                 |  |                |                      |                      |  |                   |  |  |                     |                      |
| Nakhon Sawan                            | 7.7  | 25             | 1999                 | 17.3                 | 11-13                                      | 6.1               | 13   | 1955   | 14.0                | 12-14                |
| Suphanburi                              | 10.0                                       | 31             | 1975                 | 18.6                 | 12-14                                      | 9.2               | 13   | 1955   | 14.3                | 13-15                |
| Kanchanaburi                            | 6.8  | 31             | 1975                 | 18.2                 | 11-13                                      | 5.5               | 13   | 1955   | 13.6                | 12-14                |
| Eastern                                 |  |                |                      |                      |  |                   |  |  |                     |                      |
| Sa kaew                                 | 9.0  | 24             | 1999                 | 18.3                 | 13-15                                      | 11.4              | 12   | 2009   | 14.5                | 14-16                |
| Chon Buri                               | 12.0                                       | 29             | 1975                 | 21.0                 | 14-16                                      | 9.9               | 12   | 1955   | 16.4                | 15-17                |
| South                                   |  |                |                      |                      |  |                   |  |  |                     |                      |
| Prachuap Khiri Khan                     | 11.4                                       | 31             | 1956                 | 20.3                 | 18-20                                      | 10.5              | 19   | 1963   | 14.0                | 18-20                |
| Phuket                                  | 18.4                                       | 1              | 1982                 | 21.2                 | 20-22                                      | 17.8              | 4  | 1957   | 20.9                | 20-22                |
| Bangkok                                 | 10.5                                       | 30             | 1975                 | 20.6                 | 14-16                                      | 9.9               | 12   | 1955   | 14.8                | 15-17                |

# Extreme minimum temperature statistic and prediction during December 2016 – January 2017

Remark : Not including mountainous area data.